MHI

TECHNICAL MANUAL

Manual No. '12・PAC-T-174
updated July 12 ,2013

MICRO INVERTER PACKAGED AIR-CONDITIONERS

(Split system, Air to air heat pump type)

CEILING CASSETTE-4WAY TYPE

Single type	Twin type	Triple type
FDT100VNVF	FDT100VNPVF	FDT140VNTVF
100VNVF1	100VSPVF	140VSTVF
100VSVF	125VNPVF	200VSTVF
100VSVF1	125VSPVF	200VSTVF1
125VNVF	140VNPVF	Double twin type
125VSVF	140VNPVF1	FDT200VSDVF
140VNVF	140VSPVF	250VSDVF
140VSVF	140VSPVF1	
	200VSPVF	
	200VSPVF1	
	250VSPVF	

CEILING CASSETTE-4WAY COMPACT TYPE

Twin type	Triple type	Double twin type
FDTC100VNPVF	FDTC140VNTVF	FDTC200VSDVF
100VSPVF	140VSTVF	250VSDVF
125VNPVF		
125VSPVF		

CEILING SUSPENDED TYPE

Single type	Twin type	Triple type
FDEN100VNVF	FDEN100VNPVF	FDEN140VNTVF
100VNVF1	100VSPVF	140VSTVF
100VSVF	125VNPVF	200VSTVF
100VSVF1	125VSPVF	200VSTVF1
125VNVF	140VNPVF	Double twin type
125VSVF	140VNPVF1	FDEN200VSDVF
140VNVF	140VSPVF	250VSDVF
140VSVF	140VSPVF1	
	200VSPVF	
	200VSPVF1	
	250VSPVF	

DUCT CONNECTED-LOW/MIDDLE STATIC PRESSURE TYPE

Single type	Twin type	Triple type
FDUM100VNVF	FDUM100VNPVF	FDUM140VNTVF
100VNVF1	100VSPVF	140VSTVF
100VSVF	125VNPVF	200VSTVF
100VSVF1	125VSPVF	200VSTVF1
125VNVF	140VNPVF	
125VSVF	140VNPVF1	
140VNVF	140VSPVF	
140VSVF	140VSPVF1	
	200VSPVF	
	200VSPVF1	
	250VSPVF	

DUCT CONNECTED-HIGH STATIC PRESSURE TYPE

Single type
FDU100VNVD
100VSVD
125VNVD
125VSVD
140VNVD
140VSVD
200VSVF
250VSVF

FLOOR STANDING TYPE

Single type	Twin type
FDF100VNVD	FDF140VNPVD
100VNVD1	140VNPVD1
100VSVD	140VSPVD
100VSVD1	140VSPVD1
125VNVD	200VSPVD
125VSVD	200VSPVD1
140VNVD	250VSPVD
140VSVD	

WALL MOUNTED TYPE

Twin type	Triple type
SRK100VNPZJX	SRK140VNTZJX
100VSPZJX	140VSTZJX
125VNPZJX	
125VSPZJX	

・**Note:**
Service code : Please refer to next page.

V Multi System

(OUTDOOR UNIT)	(INDOOR UNIT)	
FDC100VN	FDT50VF	FDEN50VF
100VS	60VF	60VF
125VN	71VF	71VF
125VS	100VF	100VF
140VN	125VF	125VF
140VS		
200VS		
250VS		

MITSUBISHI HEAVY INDUSTRIES, LTD.

Indoor unit

Type		Model name	History of service code				Changes
Ceiling cassette	4way	FDT40VF	1	A			1→A : Comply with Lot10 discontinued : newer model is VF1
		FDT50VF	1	A			
		FDT60VF	1	A			
		FDT71VF	1	A	discontinued		
		FDT100VF	1	A	discontinued		
		FDT125VF	1	A			
		FDT140VF	1	A			
		FDT71VF1	1				―――
		FDT100VF1	1				
	4way compact	FDTC40VF	1	A			1→A : Comply with Lot10
		FDTC50VF	1	A			
		FDTC60VF	1	A			
Duct connected	Low/middle static pressure	FDUM50VF	1	B	C		1→B : Change of PWB due to flood in Thailand B→C : Comply with Lot10 discontinued : newer model is VF1
		FDUM60VF	1	B	C		
		FDUM71VF	1	B	C	discontinued	
		FDUM100VF	1	B	C	discontinued	
		FDUM125VF	1	B	C		
		FDUM140VF	1	B	C		
		FDUM71VF1	1				―――
		FDUM100VF1	1				
Ceiling suspended		FDEN40VF	1	A			1→A : Comply with Lot10 discontinued : newer model is VF1
		FDEN50VF	1	A			
		FDEN60VF	1	A			
		FDEN71VF	1	discontinued			
		FDEN100VF	1	discontinued			
		FDEN125VF	1	A			
		FDEN140VF	1	A			
		FDEN71VF1	1				―――
		FDEN100VF1	1				
Floor standing		FDF71VD	1	discontinued			1→A : Comply with Lot10 discontinued : newer model is VD1
		FDF100VD	1	discontinued			
		FDF125VD	1	A			
		FDF140VD	1	A			
		FDF71VD1	1				―――
		FDF100VD1	1				
Wall mounted		SRK50ZJX-S1	1	B	C		1→B : modify to Russian specification B→C : Comply with Lot10
		SRK60ZJX-S1	1	B	discontinued		
		SRK60ZJX-S2	C				

(Note) ∗Lot10 : The Ecodesign Directive in EU/EEA
∗As PWB mounted on 100/125/140 is same, 100/125/140 apply the same service code.
125/140 are out of Lot10 scope (below cooling capacity 12kW)

Outdoor unit

Type	Model name	History of service code				Changes
Micro inverter	FDC100VN,100VS	blank	A	B	C	blank→A : Expand usage of temperature range to -20℃ in heating A→B : Expand diameter of half punched hole for the pipes to be drawn in from behind B→C : Comply with Lot10 Replace to new compressor and new PCB Please refer to Technical information: MQC-TSI-12010
	FDC125VN,125VS	blank	A	B	C	
	FDC140VN,140VS	blank	A	B	C	

(Note) ∗Lot10 : The Ecodesign Directive in EU/EEA

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Note: Only model name is changed.(VF→VF1)
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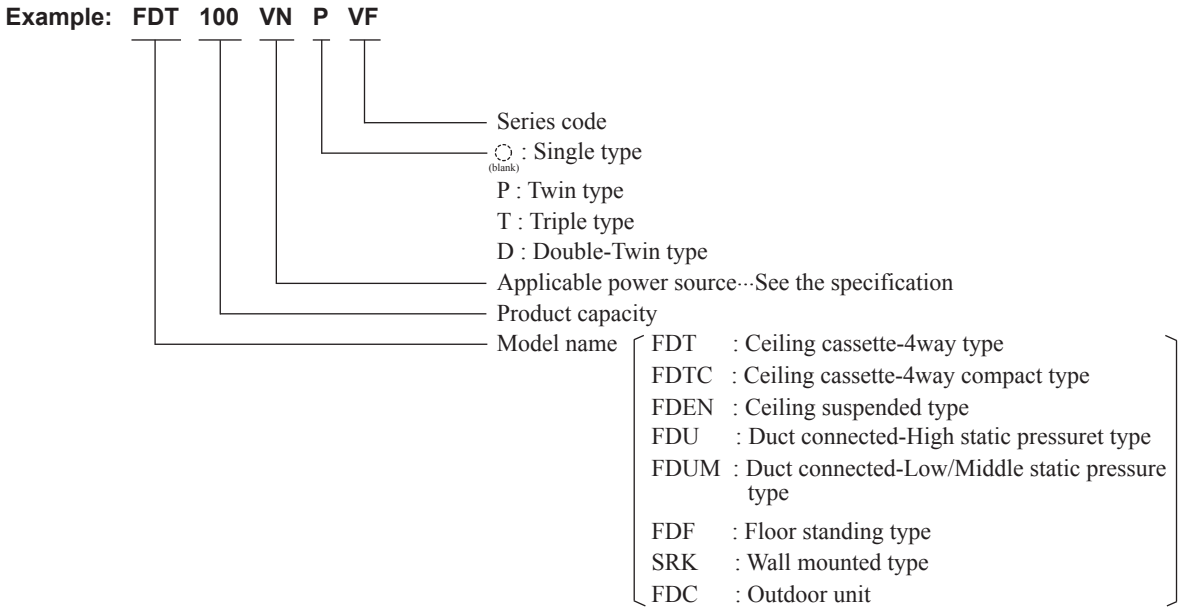
How to read the model name



1.1 SPECIFICATIONS

(1) Ceiling cassette-4way type (FDT)

(a) Single type

Adapted to **RoHS** directive

Item \ Model		FDT100VNVF	
		Indoor unit **FDT100VF**	Outdoor unit **FDC100VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.76	2.74
Running current	A	12.1 / 12.7	12.0 / 12.6
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 40 Me : 37 Lo : 35	49
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	140 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT100VSVF	
		Indoor unit **FDT100VF**	Outdoor unit **FDC100VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.76	2.74
Running current	A	4.2 / 4.4	4.2 / 4.4
Power factor	%	95 / 91	94 / 95
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 40 Me : 37 Lo : 35	49
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	140 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT125VNVF	
		Indoor unit **FDT125VF**	Outdoor unit **FDC125VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.05	3.77
Running current	A	17.7 / 18.6	16.6 / 17.3
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 42 Me : 40 Lo : 37	Coolingi : 50 Heatingi : 51
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	140 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 30 Me : 27 Lo : 23	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT125VSVF	
		Indoor unit **FDT125VF**	Outdoor unit **FDC125VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.05	3.77
Running current	A	5.9 / 6.3	5.5 / 5.9
Power factor	%	99 / 98	99 / 97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 42 Me : 40 Lo : 37	Coolingi : 50 Heatingi : 51
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	140 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 30 Me : 27 Lo : 23	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT140VNVF	
		Indoor unit **FDT140VF**	Outdoor unit **FDC140VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.98	4.57
Running current	A	22.0 / 23.0	20.2 / 21.2
Power factor	%	98	98
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 43 Me : 41 Lo : 38	51
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	140 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 30 Me : 27 Lo : 23	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT140VSVF	
		Indoor unit **FDT140VF**	Outdoor unit **FDC140VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.～16.5 (Max.)]
Power consumption	kW	4.98	4.57
Running current	A	7.4 / 7.8	6.7 / 7.4
Power factor	%	97	98 / 94
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 43 Me : 41 Lo : 38	51
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	140 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 30 Me : 27 Lo : 23	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

(b) Twim type

Adapted to **RoHS** directive

Item \ Model		FDT100VNPVF	
		Indoor unit **FDT50VF (2 units)**	Outdoor unit **FDC100VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.94	3.09
Running current	A	12.9 / 13.7	13.6 / 14.2
Power factor	%	99 / 98	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 39 Hi : 33 Me : 31 Lo : 30	49
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 22 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 18 Me : 16 Lo : 14	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDT100VSPVF	
		Indoor unit **FDT50VF (2 units)**	Outdoor unit **FDC100VS**
		Panel **T-PSA-3BW-E**	
Power source			380-410V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.94	3.09
Running current	A	4.3 / 4.6	4.5 / 4.8
Power factor	%	99 / 97	99 / 98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 39 Hi : 33 Me : 31 Lo : 30	49
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 22 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 18 Me : 16 Lo : 14	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDT125VNPVF	
		Indoor unit **FDT60VF (2 units)**	Outdoor unit **FDC125VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	3.95	3.70
Running current	A	17.7 / 18.5	16.6 / 17.3
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 33 Me : 31 Lo : 30	Cooling : 50 Heating : 51
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 24 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 18 Me : 16 Lo : 14	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDT125VSPVF	
		Indoor unit **FDT60VF (2 units)**	Outdoor unit **FDC125VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	3.95	3.70
Running current	A	5.9 / 6.2	5.5 / 5.8
Power factor	%	97	97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 33 Me : 31 Lo : 30	Cooling : 50 Heating : 51
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 24 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 18 Me : 16 Lo : 14	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT140VNPVF	
		Indoor unit **FDT71VF (2 units)**	Outdoor unit **FDC140VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.51	4.58
Running current	A	19.8 / 20.7	20.1 / 21.0
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 35 Me : 33 Lo : 31	51
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 24 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 21 Me : 19 Lo : 17	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT140VSPVF	
		Indoor unit **FDT71VF (2 units)**	Outdoor unit **FDC140VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.51	4.58
Running current	A	6.7 / 7.1	6.7 / 7.1
Power factor	%	97	99 / 98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 35 Me : 33 Lo : 31	51
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 24 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 21 Me : 19 Lo : 17	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outside air intake		possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT200VSPVF	
		Indoor unit **FDT100VF (2 units)**	Outdoor unit **FDC200VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Power consumption	kW	6.58	6.02
Running current	A	9.9 / 10.6	9.1 / 9.8
Power factor	%	96 / 94	95 / 93
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 40 Me : 37 Lo : 35	57
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	140 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"× 1 (option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT250VSPVF	
		Indoor unit **FDT125VF (2 units)**	Outdoor unit **FDC250VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)～28.0 (Max.)]	28.0 [9.5 (Min.)～31.5 (Max.)]
Power consumption	kW	8.30	7.75
Running current	A	12.4 / 13.0	11.8 / 12.3
Power factor	%	97	95 / 96
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 42 Me : 40 Lo : 37	Cooling : 57 Heating : 58
Exterior dimensions Height × Width × Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	1,505 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 27 PANEL 5.5	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	140 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 37 Hi : 30 Me : 27 Lo : 23	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") ②ϕ9.52 (3/8") × 0.8 ①ϕ12.7 (1/2") × 0.8 O/U ϕ12.7 (1/2")	
		Gas line : I/U ϕ15.88 (5/8") ②ϕ15.88 (5/8") × 1.0 ①ϕ22.22 (7/8") × 1.6 O/U ϕ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"× 1 (option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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(c) Triple type

Adapted to **RoHS** directive

Item \ Model		FDT140VNTVF	
		Indoor unit **FDT50VF (3 units)**	Outdoor unit **FDC140VN**
		Panel **T-PSA-3BW-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.65	4.63
Running current	A	20.8 / 22.1	20.3 / 21.2
Power factor	%	97 / 96	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 39 Hi : 33 Me : 31 Lo : 30	51
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 22 PANEL 5.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 18 Me : 16 Lo : 14	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ6.35 (1/4") ② ϕ9.52 (3/8") × 0.8 ① ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ12.7 (1/2") ② ϕ12.7 (1/2") × 0.8 ① ϕ15.88 (5/8") × 1.0 O/U ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT140VSTVF	
		Indoor unit **FDT50VF (3 units)**	Outdoor unit **FDC140VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.65	4.63
Running current	A	6.9 / 7.4	6.8 / 7.1
Power factor	%	97 / 95	98 / 99
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 39 Hi : 33 Me : 31 Lo : 30	51
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 22 PANEL 5.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	50 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 18 Me : 16 Lo : 14	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT200VSTVF	
		Indoor unit **FDT71VF (3 units)**	Outdoor unit **FDC200VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0(Min.)～22.4(Max.)]	22.4 [7.6(Min.)～25.0(Max.)]
Power consumption	kW	6.49	6.12
Running current	A	9.7 / 10.2	9.1 / 9.6
Power factor	%	97	97
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 35 Me : 33 Lo : 31	57
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 24 PANEL 5.5	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	50 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 21 Me : 19 Lo : 17	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

(d) Double twim type

Adapted to **RoHS** directive

Item \ Model		FDT200VSDVF	
		Indoor unit **FDT50VF (4 units)**	Outdoor unit **FDC200VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Power consumption	kW	6.58	6.15
Running current	A	9.8 / 10.3	9.2 / 9.6
Power factor	%	97	97
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 39 Hi : 33 Me : 31 Lo : 30	57
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 22 PANEL 5.5	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	50 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 18 Me : 16 Lo : 14	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ③② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O / U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ③ φ12.7 × 0.8 ② φ15.88 ① φ22.22 (7/8") × 1.6 O / U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is four indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"× 1,"DIS-WA1"× 2 (option). Pipe ① : O/U～Branch, ② : Branch～Branch, ③ : Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT250VSDVF	
		Indoor unit **FDT60VF (4 units)**	Outdoor unit **FDC250VS**
		Panel **T-PSA-3BW-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)～28.0 (Max.)]	28.0 [9.5 (Min.)～31.5 (Max.)]
Power consumption	kW	8.28	7.70
Running current	A	12.3 / 13.0	11.5 / 12.1
Power factor	%	97	97
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 33 Me : 31 Lo : 30	Cooling : 57 Heating : 58
Exterior dimensions Height × Width × Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	1,505 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 22 PANEL 5.5	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	50 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 18 Me : 16 Lo : 14	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A , RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ③② φ9.52 (3/8") × 0.8 ① φ12.7 (1/2") × 0.8 O/U φ12.7 (1/2")	
		Gas line : I/U φ12.7 (1/2") ③ φ12.7 × 0.8 ② φ15.88 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is four indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"× 1,"DIS-WA1"× 2 (option). Pipe ① : O/U～Branch, ② : Branch～Branch, ③ : Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

(2) Ceiling cassette-4way compact type (FDTC)

(a) Twin type

Adapted to **RoHS** directive

Item \ Model		FDTC100VNPVF	
		Indoor unit **FDT50VF (2 units)**	Outdoor unit **FDC100VN**
		Panel **TC-PSA-25W-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	3.25	3.26
Running current	A	14.3 / 14.9	14.3 / 14.9
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 42 Me : 36 Lo : 30 Heating P-Hi : 47 Hi : 42 Me : 36 Lo : 32	49
Exterior dimensions Height × Width × Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL3.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	33 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7 Heating P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJA003Z395 A

Adapted to **RoHS** directive

Item \ Model		FDTC100VSPVF	
		Indoor unit **FDTC50VF (2 units)**	Outdoor unit **FDC100VS**
		Panel **TC-PSA-25W-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	3.25	3.26
Running current	A	4.8 / 5.0	4.8 / 5.1
Power factor	%	98	99 / 97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 42 Me : 36 Lo : 30 Heating P-Hi : 47 Hi : 42 Me : 36 Lo : 32	49
Exterior dimensions Height × Width × Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL 3.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	33 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7 Heating P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.25 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"× 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJA003Z395 Ⓐ

Adapted to **RoHS** directive

Item \ Model		FDTC125VNPVF	
		Indoor unit **FDTC60VF (2 units)**	Outdoor unit **FDC125VN**
		Panel **TC-PSA-25W-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	5.35	4.62
Running current	A	24.0 / 25.1	20.7 / 21.6
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 46 Me : 39 Lo : 30 Heating P-Hi : 47 Hi : 46 Me : 39 Lo : 32	Cooling : 50 Heating : 51
Exterior dimensions Height × Width × Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL3.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	33 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 7 Heating P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJA003Z395 A

Adapted to **RoHS** directive

Item \ Model		FDTC125VSPVF	
		Indoor unit **FDTC60VF (2 units)**	Outdoor unit **FDC125VS**
		Panel **TC-PSA-25W-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	5.35	4.62
Running current	A	8.0 / 8.4	6.9 / 7.2
Power factor	%	97	97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 46 Me : 39 Lo : 30 Heating P-Hi : 47 Hi : 46 Me : 39 Lo : 32	Cooling : 50 Heating : 51
Exterior dimensions Height × Width × Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL 3.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	33 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 7 Heating P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not Possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.25 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"× 1 (option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJA003Z395 A

(b) Triple type

Adapted to **RoHS** directive

Item \ Model		FDTC140VNTVF	
		Indoor unit **FDTC50VF (3 units)**	Outdoor unit **FDC140VN**
		Panel **TC-PSA-25W-E**	
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.64	4.52
Running current	A	20.4 / 21.3	20.0 / 20.9
Power factor	%	99	98
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 42 Me : 36 Lo : 30 Heating P-Hi : 47 Hi : 42 Me : 36 Lo : 32	51
Exterior dimensions Height × Width × Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL3.5	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	33 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7 Heating P-Hi : 13.5 Hi : 11.5 Me :9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ6.35 (1/4") ② ϕ9.52 (3/8") × 0.8 ① ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ12.7 (1/2") ② ϕ12.7 (1/2") × 0.8 ① ϕ15.88 (5/8") × 1.0 O/U ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDTC140VSTVF	
		Indoor unit **FDTC50VF (3 units)**	Outdoor unit **FDC140VS**
		Panel **TC-PSA-25W-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.64	4.52
Running current	A	6.8 / 7.1	6.6 / 7.0
Power factor	%	98 / 99	99 / 98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 42 Me : 36 Lo : 30 Heating P-Hi : 47 Hi : 42 Me : 36 Lo : 32	51
Exterior dimensions Height x Width x Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL 3.5	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 1
Motor <Starting method>	W	33 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7 Heating P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ6.35 (1/4") ② ϕ9.52 (3/8") × 0.8 ① ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ12.7 (1/2") ② ϕ12.7 (1/2") × 0.8 ① ϕ15.88 (5/8") × 1.0 O/U ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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(c) Double twin type

Adapted to **RoHS** directive

Item \ Model		FDTC200VSDVF	
		Indoor unit **FDTC50VF (4 units)**	Outdoor unit **FDC200VS**
		Panel **TC-PSA-25W-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Power consumption	kW	7.33	6.98
Running current	A	10.9 / 11.5	10.4 / 10.9
Power factor	%	97	97
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 42 Me : 36 Lo : 30 Heating P-Hi : 47 Hi : 42 Me : 36 Lo : 32	57
Exterior dimensions Height x Width x Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL 3.5	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	33 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7 Heating P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	Cooling : 150, Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/O φ6.35 (1/4") ③② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ③ φ12.7 × 0.8 ② φ15.88 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is four indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1,"DIS-WA1"×2 (option). Pipe ①: O/U～Branch, ②: Branch～Branch, ③: Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDTC250VSDVF	
		Indoor unit **FDTC60VF (4 units)**	Outdoor unit **FDC250VS**
		Panel **TC-PSA-25W-E**	
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)～28.0 (Max.)]	28.0 [9.5 (Min.)～31.5 (Max.)]
Power consumption	kW	11.28	10.19
Running current	A	16.8 / 17.7	15.2 / 16.0
Power factor	%	97	97
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	Cooling P-Hi : 47 Hi : 46 Me : 39 Lo : 30 Heating P-Hi : 47 Hi : 46 Me : 39 Lo : 32	Cooling : 57 Heating : 58
Exterior dimensions Height x Width x Depth	mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	1,505 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	UNIT 15 PANEL 3.5	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Turbo fan × 1	Propeller fan × 2
Motor <Starting method>	W	33 < Direct line start >	86 x 2 < Direct line start >
Air flow (Standard)	CMM	Cooling P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 7 Heating P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 8	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-TC-24W-ER (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/O ϕ6.35 (1/4") ③② ϕ9.52 (3/8") × 0.8 ① ϕ12.7 (1/2") × 0.8 O/U ϕ12.7 (1/2")	
		Gas line : I/U ϕ12.7 (1/2") ③ ϕ12.7 × 0.8 ② ϕ15.88 ① ϕ22.22 (7/8") × 1.6 O/U ϕ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is four indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1,"DIS-WA1"×2 (option). Pipe ①: O/U～Branch, ②: Branch～Branch, ③: Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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(3) Ceiling suspended type (FDEN)

(a) Single type

Adapted to **RoHS** directive

Item \ Model		FDEN100VNVF	
		Indoor unit **FDEN100VF**	Outdoor unit **FDC100VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.85	2.97
Running current	A	12.5 / 13.1	13.0 / 13.6
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 44 Me : 41 Lo : 39	49
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	30 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ 9.52 (3/8") Pipe ϕ 9.52(3/8") × 0.8 O/U ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8") ϕ 15.88 (5/8") × 1.0 ϕ 15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ 20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN100VSVF	
		Indoor unit **FDEN100VF**	Outdoor unit **FDC100VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.85	2.97
Running current	A	4.2 / 4.4	4.3 / 4.6
Power factor	%	98	99 / 98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 44 Me : 41 Lo : 39	49
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	30 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN125VNVF	
		Indoor unit **FDEN125VF**	Outdoor unit **FDC125VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.45	4.08
Running current	A	19.5 / 20.4	17.9 / 18.7
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 46 Me : 44 Lo : 43	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	40 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 32 Hi : 29 Me : 26 Lo : 23	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ 9.52 (3/8") Pipe ϕ 9.52(3/8") × 0.8 O/U ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8") ϕ 15.88(5/8") × 1.0 ϕ 15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ 20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN125VSVF	
		Indoor unit **FDEN125VF**	Outdoor unit **FDC125VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.45	4.08
Running current	A	6.6 / 6.8	6.0 / 6.3
Power factor	%	97 / 99	98 / 99
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 46 Me : 44 Lo : 43	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	40 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 32 Hi : 29 Me : 26 Lo : 23	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ 9.52 (3/8") Pipe ϕ 9.52(3/8") × 0.8 O/U ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8") ϕ 15.88(5/8") × 1.0 ϕ 15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ 20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN140VNVF	
		Indoor unit **FDEN140VF**	Outdoor unit **FDC140VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	5.80	4.92
Running current	A	25.2 / 26.0	21.6 / 22.6
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 46 Me : 44 Lo : 43	51
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	40 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 32 Hi : 29 Me : 26 Lo : 23	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ 9.52 (3/8") Pipe ϕ 9.52(3/8") × 0.8 O/U ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8") ϕ 15.88(5/8") × 1.0 ϕ 15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ 20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN140VSVF	
		Indoor unit **FDEN140VF**	Outdoor unit **FDC140VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	5.80	4.92
Running current	A	8.6 / 9.1	7.2 / 7.6
Power factor	%	97	99
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 46 Me : 44 Lo : 43	51
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	40 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 32 Hi : 29 Me : 26 Lo : 23	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ 9.52 (3/8") Pipe ϕ 9.52(3/8") × 0.8 O/U ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8") ϕ 15.88(5/8") × 1.0 ϕ 15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ 20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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(b) Twin type

Adapted to **RoHS** directive

Item \ Model		FDEN100VNPVF	
		Indoor unit **FDEN50VF (2 units)**	Outdoor unit **FDC100VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	3.12	3.49
Running current	A	13.7 / 14.3	15.3 / 16.0
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 39 Me : 38 Lo : 37	49
Exterior dimensions Height x Width x Depth	mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	28	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	25 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 11 Hi : 10 Me : 9 Lo : 7	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN100VSPVF	
		Indoor unit **FDEN50VF (2 units)**	Outdoor unit **FDC100VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	3.12	3.49
Running current	A	4.6 / 4.8	5.1 / 5.4
Power factor	%	98	99
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 39 Me : 38 Lo : 37	49
Exterior dimensions Height x Width x Depth	mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	28	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	25 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 11 Hi : 10 Me : 9 Lo : 7	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN125VNPVF	
		Indoor unit **FDEN60VF (2 units)**	Outdoor unit **FDC125VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.23	3.83
Running current	A	18.5 / 19.4	16.8 / 17.6
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 48 Hi : 41 Me : 39 Lo : 38	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	37	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	20 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1 (option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN125VSPVF	
		Indoor unit **FDEN60VF (2 units)**	Outdoor unit **FDC125VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0(Min.)～ 14.0(Max.)]	14.0 [4.0(Min.)～ 16.0(Max.)]
Power consumption	kW	4.23	3.83
Running current	A	6.2 / 6.5	5.6 / 5.9
Power factor	%	98 / 99	99
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 48 Hi : 41 Me : 39 Lo : 38	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	37	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	20 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN140VNPVF	
		Indoor unit **FDEN71VF (2 units)**	Outdoor unit **FDC140VN**
Power source			220-240V ～ 50Hz / 220V ～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0(Min.) ～ 14.5(Max.)]	16.0 [4.0(Min.) ～ 16.5(Max.)]
Power consumption	kW	4.87	4.59
Running current	A	21.6 / 22.6	20.1 / 21.0
Power factor	%	98	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 41 Me : 39 Lo : 38	51
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	37	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	20 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") ② ϕ9.52 (3/8") × 0.8 ① ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ② ϕ15.88 (5/8") × 1.0 ① ϕ15.88 (5/8") × 1.0 O/U ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN140VSPVF	
		Indoor unit **FDEN71VF (2 units)**	Outdoor unit **FDC140VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0(Min.)～ 14.5(Max.)]	16.0 [4.0(Min.)～ 16.5(Max.)]
Power consumption	kW	4.87	4.59
Running current	A	7.2 / 7.6	6.7 / 7.1
Power factor	%	98	99 / 98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 41 Me : 39 Lo : 38	51
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	37	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 1
Motor <Starting method>	W	20 × 2 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN200VSPVF	
		Indoor unit **FDEN100VF (2 units)**	Outdoor unit **FDC200VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0(Min.)～ 22.4(Max.)]	22.4 [7.6(Min.)～ 25.0(Max.)]
Power consumption	kW	6.47	5.97
Running current	A	9.7 / 10.1	9.1 / 9.5
Power factor	%	96 / 97	95
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 44 Me : 41 Lo : 39	57
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 2
Motor <Starting method>	W	30 × 2 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN250VSPVF	
		Indoor unit **FDEN125VF (2 units)**	Outdoor unit **FDC250VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0(Min.)～ 28.0(Max.)]	28.0 [9.5(Min.)～ 31.5(Max.)]
Power consumption	kW	9.01	8.05
Running current	A	13.5 / 14.1	12.2 / 12.8
Power factor	%	96 / 97	95 / 96
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 46 Me : 44 Lo : 43	Cooling : 57 Heating : 58
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	1,505 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 2
Motor <Starting method>	W	40 × 2 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 32 Hi : 29 Me : 26 Lo : 23	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ12.7 (1/2") × 0.8 O/U φ12.7 (1/2")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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(c) Triple type

Adapted to **RoHS** directive

Item \ Model		FDEN140VNTVF	
		Indoor unit **FDEN50VF (3 units)**	Outdoor unit **FDC140VN**
Power source			220-240V～ 50Hz / 220V～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0(Min.) ～ 14.5(Max.)]	16.0 [4.0(Min.) ～ 16.5(Max.)]
Power consumption	kW	4.88	4.58
Running current	A	21.7 / 22.6	20.2 / 21.1
Power factor	%	98	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 39 Me : 38 Lo : 37	51
Exterior dimensions Height x Width x Depth	mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	28	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	25 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 11 Hi : 10 Me : 9 Lo : 7	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.85 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

PFA003Z954 A

Adapted to **RoHS** directive

Item \ Model		FDEN140VSTVF	
		Indoor unit **FDEN50VF (3 units)**	Outdoor unit **FDC140VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0(Min.)～ 14.5(Max.)]	16.0 [4.0(Min.)～ 16.5(Max.)]
Power consumption	kW	4.88	4.58
Running current	A	7.2 / 7.6	6.7 / 7.0
Power factor	%	98	99
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 39 Me : 38 Lo : 37	51
Exterior dimensions Height x Width x Depth	mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	28	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	25 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 11 Hi : 10 Me : 9 Lo : 7	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN200VSTVF	
		Indoor unit **FDEN71VF (3 units)**	Outdoor unit **FDC200VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0(Min.)～ 22.4(Max.)]	22.4 [7.6(Min.)～ 25.0(Max.)]
Power consumption	kW	6.40	5.90
Running current	A	9.6 / 10.0	9.0 / 9.4
Power factor	%	96 / 97	95
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 41 Me : 39 Lo : 38	57
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	37	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 2
Motor <Starting method>	W	20 ×2 < Direct line start >	86 x 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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(d) Double twin type

Adapted to **RoHS** directive

Item \ Model		FDEN200VSDVF	
		Indoor unit **FDEN50VF (4 units)**	Outdoor unit **FDC200VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0(Min.)～ 22.4(Max.)]	22.4 [7.6(Min.)～ 25.0(Max.)]
Power consumption	kW	7.43	7.26
Running current	A	11.1 / 11.6	10.8 / 11.4
Power factor	%	97	97
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 39 Me : 38 Lo : 37	57
Exterior dimensions Height x Width x Depth	mm	210 × 1,070 × 690	1,300 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	28	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 2
Motor <Starting method>	W	25 < Direct line start >	86 x 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 11 Hi : 10 Me : 9 Lo : 7	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ③② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ③ φ12.7 × 0.8 ② φ15.88 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is four indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1,"DIS-WA1"×2 (option). Pipe ① : O/U～Branch, ② : Branch～Branch, ③ : Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDEN250VSDVF	
		Indoor unit **FDEN60VF (4 units)**	Outdoor unit **FDC250VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0(Min.)～ 28.0(Max.)]	28.0 [9.5(Min.)～ 31.5(Max.)]
Power consumption	kW	9.50	8.69
Running current	A	14.1 / 14.9	12.9 / 13.6
Power factor	%	97	97
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	P-Hi : 48 Hi : 41 Me : 39 Lo : 38	Cooling : 57 Heating : 58
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	1,505 × 970 × 370
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	37	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 2
Motor <Starting method>	W	20 ×2 < Direct line start >	86 x 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	Cooling : 150 , Heating : 145
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ③② φ9.52 (3/8") × 0.8 ① φ12.7 (1/2") × 0.8 O/U φ12.7 (1/2")	
		Gas line : I/U φ12.7 (1/2") ③ φ12.7 × 0.8 ② φ15.88 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is four indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1,"DIS-WA1"×2 (option). Pipe ① : O/U～Branch, ② : Branch～Branch, ③ : Branch～I/U
(7) When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.

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(4) Duct connected-High static pressure type (FDU)

(a) Single type

Adapted to **RoHS** directive

Item \ Model		FDU100VNVD	
		Indoor unit **FDU100VD**	Outdoor unit **FDC100VN**
Power source			220-240V～50Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.88	2.99
Running current	A	12.7	13.1
Power factor	%	99	99
Inrush current	A	5 < Max.running current 25 >	
Sound Pressure Level	dB(A)	Hi : 42 Lo : 37	49
Exterior dimensions Height x Width x Depth	mm	350 × 1,370 × 650	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	63	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	280 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 34 Lo : 27	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 130	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz
(5) External static pressure can be changed from standard external static pressure (factory setting) to maximum external static pressuer (high static pressure setting) by remote controller.
(6) Value of sound pressure level become increased 5dB (A), when external static pressure is 130Pa.

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Adapted to **RoHS** directive

Item \ Model		FDU100VSVD	
		Indoor unit **FDU100VD**	Outdoor unit **FDC100VS**
Power source			380-415V 3N～50Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.88	2.99
Running current	A	4.3	4.4
Power factor	%	97	99
Inrush current	A	5 < Max.running current 16 >	
Sound Pressure Level	dB(A)	Hi : 42 Lo : 37	49
Exterior dimensions Height x Width x Depth	mm	350 × 1,370 × 650	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	63	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	280 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 34 Lo : 27	Cooling : 75, Heating : 73
External static pressure	Pa	Standard : 60 Max : 130	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : /U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz
(5) External static pressure can be changed from standard external static pressure (factory setting) to maximum external static pressuer (high static pressure setting) by remote controller.
(6) Value of sound pressure level become increased 5dB (A), when external static pressure is 130Pa.

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Adapted to **RoHS** directive

Item \ Model		FDU125VNVD	
		Indoor unit **FDU125VD**	Outdoor unit **FDC125VN**
Power source			220-240V～50Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.04	3.79
Running current	A	17.8	16.6
Power factor	%	99	99
Inrush current	A	5 < Max.running current 27 >	
Sound Pressure Level	dB(A)	Hi : 43 Lo : 38	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	350 × 1,370 × 650	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	63	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	370 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 42 Lo : 33.5	Cooling : 75, Heating : 73
External static pressure	Pa	Standard : 60 Max : 130	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz
(5) External static pressure can be changed from standard external static pressure (factory setting) to maximum external static pressuer (high static pressure setting) by remote controller.
(6) Value of sound pressure level become increased 5dB (A), when external static pressure is 130Pa.

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Adapted to **RoHS** directive

Item \ Model		FDU125VSVD	
		Indoor unit **FDU125VD**	Outdoor unit **FDC125VS**
Power source			380-415V 3N～50Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.04	3.79
Running current	A	6.0	5.6
Power factor	%	97	98
Inrush current	A	5 < Max.running current 18 >	
Sound Pressure Level	dB(A)	Hi : 43 Lo : 38	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	350 × 1,370 × 650	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	63	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	370 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 42 Lo : 33.5	Cooling : 75, Heating : 73
External static pressure	Pa	Standard : 60 Max : 130	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz
(5) External static pressure can be changed from standard external static pressure (factory setting) to maximum external static pressuer (high static pressure setting) by remote controller.
(6) Value of sound pressure level become increased 5dB (A), when external static pressure is 130Pa.

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Adapted to **RoHS** directive

Item \ Model		FDU140VNVD	
		Indoor unit **FDU140VD**	Outdoor unit **FDC140VN**
Power source			220-240V～50Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.95	4.43
Running current	A	21.7	19.5
Power factor	%	99	99
Inrush current	A	5 < Max.running current 28 >	
Sound Pressure Level	dB(A)	Hi : 43 Lo : 38	51
Exterior dimensions Height x Width x Depth	mm	350 × 1,370 × 650	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	63	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	370 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 42 Lo : 33.5	Cooling : 75, Heating : 73
External static pressure	Pa	Standard : 60 Max : 130	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz
(5) External static pressure can be changed from standard external static pressure (factory setting) to maximum external static pressuer (high static pressure setting) by remote controller.
(6) Value of sound pressure level become increased 5dB (A), when external static pressure is 130Pa.

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Adapted to **RoHS** directive

Item \ Model		FDU140VSVD	
		Indoor unit **FDU140VD**	Outdoor unit **FDC140VS**
Power source			380-415V 3N～50Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.95	4.43
Running current	A	7.4	6.6
Power factor	%	97	97
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	Hi : 43 Lo : 38	51
Exterior dimensions Height x Width x Depth	mm	350 × 1,370 × 650	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	63	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 1
Motor <Starting method>	W	370 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 42 Lo : 33.5	Cooling : 75, Heating : 73
External static pressure	Pa	Standard : 60 Max : 130	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz
(5) External static pressure can be changed from standard external static pressure (factory setting) to maximum external static pressuer (high static pressure setting) by remote controller.
(6) Value of sound pressure level become increased 5dB (A), when external static pressure is 130Pa.

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Adapted to **RoHS** directive

Item \ Model		FDU200VSVF	
		Indoor unit **FDU200VF**	Outdoor unit **FDC200VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Power consumption	kW	6.59 / 6.58	6.08 / 5.84
Running current	A	10.8 / 11.4	10.2 / 10.3
Power factor	%	88	86
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	51	57
Exterior dimensions Height x Width x Depth	mm	360 × 1,570 × 830	1,300 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	92	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 2
Motor <Starting method>	W	270 × 2 < Direct line start >	86 × 2 < Direct line start >
Air flow	CMM	Hi : 51 / 60	Cooling : 150 , Heating : 145
External static pressure	Pa	200	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") Pipe φ9.52 (3 /8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ25.4 (1") φ22.22 (7/8") × 1.6 φ22.22 (7/8")	
Connecting method		Brazing	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP25	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		—	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	100 (With optional fan controller kit : U-FCRA)
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Values of sound pressure level become increased 5dB(A) when external static pressure is 200Pa (factory setting).
(6) Values of air flow are those at external static pressure 200Pa (factory setting).

PJD001Z362

Adapted to **RoHS** directive

Item \ Model		FDU250VSVF	
		Indoor unit **FDU250VSVF**	Outdoor unit **FDC250VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)～28.0 (Max.)]	28.0 [9.5 (Min.)～31.5 (Max.)]
Power consumption	kW	9.91 / 10.21	8.50 / 8.22
Running current	A	15.7 / 17.0	14.4 / 14.7
Power factor	%	91	85
Inrush current	A	5 < Max.running current 27 >	
Sound Pressure Level	dB(A)	52	Cooling : 57 Heating : 58
Exterior dimensions Height x Width x Depth	mm	360 × 1,570 × 830	1,505 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	92	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	Propeller fan × 2
Motor <Starting method>	W	270 × 2 < Direct line start >	86 × 2 < Direct line start >
Air flow	CMM	Hi : 68 / 80	Cooling : 150 , Heating : 145
External static pressure	Pa	200	0
Outdoor air intake		Possible (on return duct)	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-EX1A (option) wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ12.7 (1/2") Pipe ϕ12.7 (1/2") × 0.8 O/U ϕ12.7 (1/2")	
		Gas line : I/U ϕ25.4 (1") ϕ22.22 (7/8") × 1.6 ϕ22.22 (7/8")	
Connecting method		Brazing	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP25	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		—	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	100 (With optional fan controller kit : U-FCRA)
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Values of sound pressure level become increased 5dB (A) when external static pressure is 200Pa (factory setting).
(6) Values of air flow are those at external static pressure 200Pa (factory setting).

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(5) Duct connected-Low / Middle static pressure type (FDUM)

(a) Single type

Adapted to **RoHS** directive

Item \ Model		FDUM100VNVF	
		Indoor unit **FDUM100VF**	Outdoor unit **FDC100VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.8	3.02
Running current	A	12.6 / 13.2	13.5 / 14.1
Power factor	%	97 / 96	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 44 Hi : 38 Me : 36 Lo : 30	49
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 1
Motor <Starting method>	W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(6) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM100VSVF	
		Indoor unit **FDUM100VF**	Outdoor unit **FDC100VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.8	3.02
Running current	A	4.2 / 4.4	4.5 / 4.7
Power factor	%	96 / 97	97 / 98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 44 Hi : 38 Me : 36 Lo : 30	49
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 1
Motor <Starting method>	W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(6) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM125VNVF	
		Indoor unit **FDUM125VF**	Outdoor unit **FDC125VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.～16.0 (Max.)]
Power consumption	kW	3.90	3.88
Running current	A	17.5 / 18.3	17.4 / 18.2
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 45 Hi : 40 Me : 34 Lo : 29	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 1
Motor <Starting method>	W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(6) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

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Adapted to **RoHS** directive

Item \ Model		FDUM125VSVF	
		Indoor unit **FDUM125VF**	Outdoor unit **FDC125VN**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	3.90	3.88
Running current	A	5.8 / 6.1	5.8 / 6.1
Power factor	%	97	97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 45 Hi : 40 Me : 34 Lo : 29	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 1
Motor <Starting method>	W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/ U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(6) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM140VNVF	
		Indoor unit **FDUM140VF**	Outdoor unit **FDC140VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.95	4.69
Running current	A	22.2 / 23.2	21.0 / 22.0
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 47 Hi : 40 Me : 35 Lo : 30	51
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 1
Motor <Starting method>	W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 48 Hi : 35 Me : 28 Lo : 22	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(6) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM140VNVF	
		Indoor unit **FDUM140VF**	Outdoor unit **FDC140VN**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.95	4.69
Running current	A	7.4 / 7.8	7.0 / 7.4
Power factor	%	97 / 96	97 / 96
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 47 Hi : 40 Me : 35 Lo : 30	51
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 1
Motor <Starting method>	W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 48 Hi : 35 Me : 28 Lo : 22	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	※1.See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(6) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

(b) Twin type

Adapted to **RoHS** directive

Item \ Model		FDUM100VSPVF	
		Indoor unit **FDUM50VF (2 units)**	Outdoor unit **FDC100VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.84	3.35
Running current	A	12.7 / 13.3	15.0 / 15.7
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 37 Hi : 32 Me : 29 Lo : 26	49
Exterior dimensions Height x Width x Depth	mm	280 × 750 × 635	845×970×370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5 / 1.1) near equivalent
Net weight	kg	29	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2×1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan ×1	Propeller fan × 1
Motor <Starting method>	W	100 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	35
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM100VSPVF	
		Indoor unit **FDUM50VF (2 units)**	Outdoor unit **FDC100VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.84	3.35
Running current	A	4.2 / 4.4	5.0 / 5.3
Power factor	%	98	97 / 96
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 37 Hi : 32 Me : 29 Lo : 26	49
Exterior dimensions Height x Width x Depth	mm	280 × 750 × 635	845×970×370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5 / 1.1) near equivalent
Net weight	kg	29	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3×1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan ×1	Propeller fan × 1
Motor <Starting method>	W	100 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	35
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM125VNPVF	
		Indoor unit **FDUM60VF (2 units)**	Outdoor unit **FDC125VN**
Power source			220-240V ～ 50Hz / 220V ～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	3.87	4.07
Running current	A	17.3 / 18.1	18.2 / 19.0
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 36 Hi : 31 Me : 28 Lo : 25	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	280 × 950 × 635	845×970×370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5 / 1.1) near equivalent
Net weight	kg	34	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2×1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan ×2	Propeller fan × 1
Motor <Starting method>	W	130 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 15 Me : 13 Lo : 10	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	35
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM125VSPVF	
		Indoor unit **FDUM60VF (2 units)**	Outdoor unit **FDC125VS**
Power source			380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	3.87	4.07
Running current	A	5.8 / 6.1	6.1 / 6.4
Power factor	%	96	96 / 97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 36 Hi : 31 Me : 28 Lo : 25	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	280 × 950 × 635	845×970×370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5 / 1.1) near equivalent
Net weight	kg	34	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3×1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan ×2	Propeller fan × 1
Motor <Starting method>	W	130 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 20 Hi : 15 Me : 13 Lo : 10	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	35
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM140VNPVF	
		Indoor unit **FDUM71VF (2 units)**	Outdoor unit **FDC140VN**
Power source			220-240V ～ 50Hz / 220V ～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～ 16.5 (Max.)]
Power consumption	kW	4.78	4.60
Running current	A	21.4 / 22.4	20.6 / 21.5
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 38 Hi : 33 Me : 29 Lo : 25	51
Exterior dimensions Height × Width × Depth	mm	280 × 950 × 635	845×970×370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5 / 1.1) near equivalent
Net weight	kg	34	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2×1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan ×2	Propeller fan × 1
Motor <Starting method>	W	130 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	35
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

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Adapted to **RoHS** directive

Item \ Model		FDUM140VSPVF	
		Indoor unit **FDUM71VF (2 units)**	Outdoor unit **FDC140VS**
Power source		—	380-415V 3N～ 50Hz / 380V 3N～ 60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.78	4.60
Running current	A	7.1 / 7.5	6.8 / 7.2
Power factor	%	97	98 / 97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 38 Hi : 33 Me : 29 Lo : 25	51
Exterior dimensions Height × Width × Depth	mm	280 × 950 × 635	845×970×370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5 / 1.1) near equivalent
Net weight	kg	34	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3×1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan ×2	Propeller fan × 1
Motor <Starting method>	W	130 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		Possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ②φ9.52 (3/8") × 0.8 ①φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ②φ15.88 (5/8") × 1.0 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	35
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

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Adapted to **RoHS** directive

Item \ Model		FDUM200VSPVF	
		Indoor unit **FDUM100VF (2 units)**	Outdoor unit **FDC200VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Power consumption	kW	6.86	7.22
Running current	A	10.5 / 11.1	11.1 / 11.7
Power factor	%	94	94
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 44 Hi : 38 Me : 36 Lo : 30	57
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	1,300 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 2
Motor <Starting method>	W	100 + 130 < Direct line start >	86 x 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	Cooling : 150 , Heating : 145
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	BD	WB	DB	WB	Pa
Cooling	27˚C	19˚C	35˚C	24˚C	60
Heating	20˚C		7˚C	6˚C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM250VSPVF	
		Indoor unit **FDUM125VF (2 units)**	Outdoor unit **FDC250VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)～28.0 (Max.)]	28.0 [9.5 (Min.)～31.5 (Max.)]
Power consumption	kW	9.05	8.51
Running current	A	13.9 / 14.6	13.1 / 13.8
Power factor	%	94	94
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	P-Hi : 45 Hi : 40 Me : 34 Lo : 29	Cooling : 57 Heating : 58
Exterior dimensions Height x Width x Depth	mm	280 × 1,370 × 740	1,505 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	54	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 3	Propeller fan × 2
Motor <Starting method>	W	100 + 200 < Direct line start >	86 x 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	Cooling : 150 , Heating : 145
External static pressure	Pa	Standard : 60 Max : 100	0
Outdoor air intake		possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ12.7 (1/2") × 0.8 O/U φ12.7 (1/2")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	BD	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

(c) Triple type

Adapted to **RoHS** directive

Item \ Model		FDUM140VNTVF	
		Indoor unit **FDUM50VF (3 units)**	Outdoor unit **FDC140VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.65	5.15
Running current	A	20.8 / 21.7	23.1 / 24.2
Power factor	%	97	97
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 37 Hi : 32 Me : 29 Lo : 26	51
Exterior dimensions Height x Width x Depth	mm	280 × 750 × 635	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	29	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	100 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	DB	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM140VSTVF	
		Indoor unit **FDUM50VF (3 units)**	Outdoor unit **FDC140VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.65	5.15
Running current	A	6.9 / 7.3	7.7 / 8.1
Power factor	%	97	97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 37 Hi : 32 Me : 29 Lo : 26	51
Exterior dimensions Height x Width x Depth	mm	280 × 750 × 635	845 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	29	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	100 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	Cooling : 75 , Heating : 73
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	BD	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

Adapted to **RoHS** directive

Item \ Model		FDUM200VSTVF	
		Indoor unit **FDUM71VF (3 units)**	Outdoor unit **FDC200VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Power consumption	kW	6.57	6.26
Running current	A	10.1 / 10.6	9.6 / 10.1
Power factor	%	94	94
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 38 Hi : 33 Me : 29 Lo : 25	57
Exterior dimensions Height x Width x Depth	mm	280 × 950 × 635	1,300 × 970 × 370
Exterior appearance (Munsell color)		—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	34	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	Propeller fan × 2
Motor <Starting method>	W	130 < Direct line start >	86 × 2 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	Cooling : 150 , Heating : 145
External static pressure	Pa	Standard : 35 Max : 100	0
Outdoor air intake		possible	—
Air filter, Q'ty		Procure locally	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		wired : RC-E5 (option) wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ9.52 (3/8") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ15.88 (5/8") ② φ15.88 (5/8") × 1.0 ① φ22.22 (7/8") × 1.6 O/U φ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m)Outdoor unit	
Drain pump		Built-in Drain pump	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Drain hose	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit
Operation	BD	WB	DB	WB	Pa
Cooling	27℃	19℃	35℃	24℃	60
Heating	20℃		7℃	6℃	

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(7) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(8) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PJG000Z032

(6) Floor standing type

(a) Single type

Adapted to **RoHS** directive

Item \ Model		FDF100VNVD	
		Indoor unit **FDF100VD**	Outdoor unit **FDC100VN**
Power source			220-240V~50Hz / 220V~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)~11.2 (Max.)]	11.2 [4.0 (Min.)~12.5 (Max.)]
Power consumption	kW	3.12	3.10
Running current	A	13.8 / 14.5	13.8 / 14.4
Power factor	%	98	98
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	49
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8") Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

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Adapted to **RoHS** directive

Item \ Model		FDF100VSVD	
		Indoor unit **FDF100VD**	Outdoor unit **FDC100VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)~11.2 (Max.)]	11.2 [4.0 (Min.)~12.5 (Max.)]
Power consumption	kW	3.12	3.1
Running current	A	4.6 / 4.8	4.6 / 4.8
Power factor	%	98/99	97/98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	49
Exterior dimensions Height x Width x Depth	mr	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
Refrigerant piping size		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

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Adapted to **RoHS** directive

Item \ Model		FDF125VNVD	
		Indoor unit **FDF125VD**	Outdoor unit **FDC125VN**
Power source			220-240V~50Hz / 220V~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)~14.0 (Max.)]	14.0 [4.0 (Min.)~16.0 (Max.)]
Power consumption	kW	4.40	4.36
Running current	A	19.5 / 20.4	19.3 / 20.2
Power factor	%	98	98
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

Adapted to **RoHS** directive

Item \ Model		FDF125VSVD	
		Indoor unit **FDF125VD**	Outdoor unit **FDC125VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)~14.0 (Max.)]	14.0 [4.0 (Min.)~16.0 (Max.)]
Power consumption	kW	4.4	4.36
Running current	A	6.5 / 6.8	6.5 / 6.8
Power factor	%	98	97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

Adapted to **RoHS** directive

Item \ Model		FDF140VNVD	
		Indoor unit **FDF140VD**	Outdoor unit **FDC140VN**
Power source			220-240V~50Hz / 220V~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)~14.5 (Max.)]	16.0 [4.0 (Min.)~16.5 (Max.)]
Power consumption	kW	5.15	5.31
Running current	A	22.8 / 23.9	23.6 / 24.6
Power factor	%	98	98
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

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Adapted to **RoHS** directive

Item \ Model		FDF140VSVD	
		Indoor unit **FDF140VD**	Outdoor unit **FDC140VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)~14.5 (Max.)]	16.0 [4.0 (Min.)~16.5 (Max.)]
Power consumption	kW	5.15	5.31
Running current	A	7.6 / 8.0	7.9 / 8.2
Power factor	%	98	97/98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ9.52 (3/8") Pipe ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : ϕ15.88 (5/8") ϕ15.88 (5/8") × 1.0 ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

(b) Twin type

Adapted to **RoHS** directive

Item \ Model		FDF140VNPVD	
		Indoor unit **FDF71VD (2 units)**	Outdoor unit **FDC140VN**
Power source			220-240V~50Hz / 220V~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)~14.5 (Max.)]	16.0 [4.0 (Min.)~16.5 (Max.)]
Power consumption	kW	5.16	5.01
Running current	A	22.9 / 23.9	22.2 / 23.2
Power factor	%	98	98
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	P-Hi : 42 Hi : 39 Me : 35 Lo : 33	51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	81
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 18 Hi : 16 Me : 14 Lo : 12	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/Uϕ9.52 (3/8") ②ϕ9.52 (3/8") × 0.8 ①ϕ9.52 (3/8") × 0.8 O/Uϕ9.52 (3/8")	
		Gas line :Uϕ15.88 (5/8") ②ϕ15.88 (5/8") × 1.0 ①ϕ15.88 (5/8") × 1.0 O/Uϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.

(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U~Branch, ②: Pipe of Branch~I/U

(7) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

Adapted to **RoHS** directive

Item \ Model		FDF140VSPVD	
		Indoor unit **FDF71VD (2 units)**	Outdoor unit **FDC140VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)~14.5 (Max.)]	16.0 [4.0 (Min.)~16.5 (Max.)]
Power consumption	kW	5.16	5.01
Running current	A	7.6 / 8.0	7.4 / 7.8
Power factor	%	98	98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 42 Hi : 39 Me : 35 Lo : 33	51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	49	83
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Revision Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 18 Hi : 16 Me : 14 Lo : 12	Cooling : 75, Heating : 73
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/Uϕ9.52 (3/8") ②ϕ9.52 (3/8") × 0.8 ①ϕ9.52 (3/8") × 0.8 O/Uϕ9.52 (3/8")	
		Gas line : I/Uϕ15.88 (5/8") ②ϕ15.88 (5/8") × 1.0 ①ϕ15.88 (5/8") × 1.0 O/Uϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.

(6) Branching pipe set "DIS-WA1" × 1 (option). ①: Pipe of O/U~Branch, ②: Pipe of Branch~I/U

(7) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

Adapted to **RoHS** directive

Item \ Model		FDF200VSPVD	
		Indoor unit **FDF100VD (2 units)**	Outdoor unit **FDC200VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)~22.4 (Max.)]	22.4 [7.6 (Min.)~25.0 (Max.)]
Power consumption	kW	6.50	6.42
Running current	A	9.6 / 10.1	9.5 / 10.0
Power factor	%	98	98
Inrush current	A	5 < Max.running current 19 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	57
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	1,300 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	122
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 2
Motor <Starting method>	W	157 < Direct line start >	86 × 2 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 150, Heating : 145
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/Uϕ9.52 (3/8") ②ϕ9.52 (3/8") × 0.8 ①ϕ9.52 (3/8") × 0.8 O/Uϕ9.52 (3/8")	
		Gas line : I/Uϕ15.88 (5/8") ②ϕ15.88 (5/8") × 1.0 ①ϕ22.22 (7/8") × 1.0 O/Uϕ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1" × 1(option). ①: Pipe of O/U~Branch, ②: Pipe of Branch~I/U
(7) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

Adapted to **RoHS** directive

Item \ Model		FDF250VSPVD	
		Indoor unit **FDF125VD (2 units)**	Outdoor unit **FDC250VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)~28.0 (Max.)]	28.0 [9.5 (Min.)~31.5 (Max.)]
Power consumption	kW	8.95	9.17
Running current	A	13.2 / 13.9	13.5 / 14.2
Power factor	%	98	98
Inrush current	A	5 < Max.running current 22 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	Cooling : 57 Heating : 58
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	1,505 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	140
Refrigerant equipment Compressor type & Q'ty		—	GTC5150ND70K × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	1.45 M-MA32R
Heat exchanger		Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 2
Motor <Starting method>	W	157 < Direct line start >	86 × 2 < Direct line start >
Air flow(Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 150, Heating : 145
External static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	33 (Crank case heater)
Remote controller		RC-E5 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/Uϕ9.52 (3/8") ②ϕ9.52 (3/8") × 0.8 ①ϕ12.7 (1/2") × 0.8 O/Uϕ12.7 (1/2")	
		Gas line : I/Uϕ15.88 (5/8") ②ϕ15.88 (5/8") × 1.0 ①ϕ22.22 (7/8") × 1.0 O/Uϕ22.22 (7/8")	
Connecting method		Flare piping	Liquid : Flare / Gas : Brazing
Refrigerant line (one way) length		Max.70m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit	Connecting pipe, Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WB1" × 1(option). ① : Pipe of O/U~Branch, ② : Pipe of Branch~I/U
(7) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

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(7) Wall mounted type (SRK)

(a) Twin type

Adapted to **RoHS** directive

Item \ Model		SRK100VNPZJX	
		Indoor unit **SRK50ZJX-S1 (2 units)**	Outdoor unit **FDC100VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.72	2.86
Running current	A	11.9 / 12.5	12.6 / 13.1
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	Hi : 47 Me : 40 Lo : 27 (C) / Hi : 48 Me : 40 Lo : 33 (H)	49
Exterior dimensions Height x Width x Depth	mm	309 × 890 × 220	845 × 970 × 370
Exterior appearance (Munsell color)		Fine snow (8.0Y9.3/0.1) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	15	74
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Tangential fan × 1	Propeller fan × 1
Motor <Starting method>	W	27 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 13.5 Me : 11 Lo : 8 (C) / Hi : 16.5 Me : 14.5 Lo : 10.5 (H)	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Polypropylene net (washable) × 2	—
Shock & vibration absorber		—	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 (option) & SC-BIKN-E (Interface kit, (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP16	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Clean filter	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U

PCA001Z566 b

Adapted to **RoHS** directive

Item \ Model		SRK100VSPZJX	
		Indoor unit **SRK50ZJX-S1 (2 units)**	Outdoor unit **FDC100VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Power consumption	kW	2.72	2.86
Running current	A	4.0 / 4.2	4.2 / 4.4
Power factor	%	98	98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	Hi : 47 Me : 40 Lo : 27 (C) / Hi : 48 Me : 40 Lo : 33 (H)	49
Exterior dimensions Height x Width x Depth	mm	309 × 890 × 220	845 × 970 × 370
Exterior appearance (Munsell color)		Fine snow (8.0Y9.3/0.1) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	15	74
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Tangential fan × 1	Propeller fan × 1
Motor <Starting method>	W	27 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 13.5 Me : 11 Lo : 8 (C) / Hi : 16.5 Me : 14.5 Lo : 10.5 (H)	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Polypropylene net (washable) × 2	—
Shock & vibration absorber		—	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 (option) & SC-BIKN-E (Interface kit, option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP16	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain filter	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ①: Pipe of O/U～Branch, ②: Pipe of Branch～I/U

PCA001Z566 b

Adapted to **RoHS** directive

Item \ Model		SRK125VNPZJX	
		Indoor unit **SRK60ZJX-S1 (2 units)**	Outdoor unit **FDC125VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.25	4.29
Running current	A	18.7 / 19.5	18.8 / 19.7
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	Hi : 51 Me : 41 Lo : 29 (C) / Hi : 48 Me : 41 Lo : 34 (H)	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	309 × 890 × 220	845 × 970 × 370
Exterior appearance (Munsell color)		Fine snow (8.0Y9.3/0.1) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	15	74
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Tangential fan × 1	Propeller fan × 1
Motor <Starting method>	W	27 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 14.5 Me : 12.5 Lo : 8.5 (C) / Hi : 17 Me : 15 Lo : 11 (H)	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Polypropylene net (washable) × 2	—
Shock & vibration absorber		—	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 (option) & SC-BIKN-E (Interface kit, (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP16	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Clean hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PCA001Z566 b

Adapted to **RoHS** directive

Item \ Model		SRK125VSPZJX	
		Indoor unit **SRK60ZJX-S1 (2 units)**	Outdoor unit **FDC125VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Power consumption	kW	4.25	4.29
Running current	A	6.3 / 6.6	6.3 / 6.7
Power factor	%	98	98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	Hi : 51 Me : 41 Lo : 29 (C) / Hi : 48 Me : 41 Lo : 34 (H)	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	309 × 890 × 220	845 × 970 × 370
Exterior appearance (Munsell color)		Fine snow (8.0Y9.3/0.1) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	15	74
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Tangential fan × 1	Propeller fan × 1
Motor <Starting method>	W	27 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 14.5 Me : 12.5 Lo : 8.5 (C) / Hi : 17 Me : 15 Lo : 11 (H)	Cooling : 75 Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Polypropylene net (washable) × 2	—
Shock & vibration absorber		—	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 (option) & SC-BIKN-E (Interface kit, option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ②φ9.52 (3/8") × 0.8 ①φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ②φ12.7 (1/2") × 0.8 ①φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP16	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(6) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PCA001Z566 b

(b) Triple type

Adapted to **RoHS** directive

Item \ Model		SRK140VNTZJX	
		Indoor unit **SRK50ZJX-S1 (3 units)**	Outdoor unit **FDC140VN**
Power source			220-240V～50Hz / 220V～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.53	4.05
Running current	A	19.9 / 20.8	17.8 / 18.6
Power factor	%	99	99
Inrush current	A	5 < Max.running current 24 >	
Sound Pressure Level	dB(A)	Hi : 47 Me : 40 Lo : 27 (C) / Hi : 48 Me : 40 Lo : 33 (H)	51
Exterior dimensions Height x Width x Depth	mm	309 × 890 × 220	845 × 970 × 370
Exterior appearance (Munsell color)		Fine snow (8.0Y9.3/0.1) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	15	74
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE2 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Tangential fan × 1	Propeller fan × 1
Motor <Starting method>	W	27 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 13.5 Me : 11 Lo : 8 (C) / Hi : 16.5 Me : 14.5 Lo : 10.5 (H)	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Polypropylene net (washable) × 2	—
Shock & vibration absorber		—	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 (option) & SC-BIKN-E (Interface kit, (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U ϕ6.35 (1/4") ② ϕ9.52 (3/8") × 0.8 ① ϕ9.52 (3/8") × 0.8 O/U ϕ9.52 (3/8")	
		Gas line : I/U ϕ12.7 (1/2") ② ϕ12.7 (1/2") × 0.8 ① ϕ15.88 (5/8") × 1.0 O/U ϕ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP16	Holes size ϕ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Clean hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PCA001Z566 b

Adapted to **RoHS** directive

Item \ Model		SRK140VSTZJX	
		Indoor unit **SRK50ZJX-S1 (3 units)**	Outdoor unit **FDC140VS**
Power source			380-415V 3N～50Hz / 380V 3N～60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Power consumption	kW	4.53	4.05
Running current	A	6.7 / 7.0	6.0 / 6.3
Power factor	%	98	98
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	Hi : 47 Me : 40 Lo : 27 (C) / Hi : 48 Me : 40 Lo : 33 (H)	51
Exterior dimensions Height x Width x Depth	mm	309 × 890 × 220	845 × 970 × 370
Exterior appearance (Munsell color)		Fine snow (8.0Y9.3/0.1) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	15	74
Refrigerant equipment Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	ℓ	—	0.9 M-MA68
Heat exchanger		Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment Fan type & Q'ty		Tangential fan × 1	Propeller fan × 1
Motor <Starting method>	W	27 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	Hi : 13.5 Me : 11 Lo : 8 (C) / Hi : 16.5 Me : 14.5 Lo : 10.5 (H)	Cooling : 75 , Heating : 73
External static pressure	Pa	0	0
Outdoor air intake		Not possible	—
Air filter, Q'ty		Polypropylene net × 1 (washable) × 2	—
Shock & vibration absorber		—	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E5 (option) & SC-BIKN-E (Interface kit, option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line : I/U φ6.35 (1/4") ② φ9.52 (3/8") × 0.8 ① φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8")	
		Gas line : I/U φ12.7 (1/2") ② φ12.7 (1/2") × 0.8 ① φ15.88 (5/8") × 1.0 O/U φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Drain pump		—	—
Drain		Hose Connectable with VP16	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	IPX4
Standard Accessories		Mounting kit, Drain hose	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(5) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(6) Branching pipe set "DIS-TA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

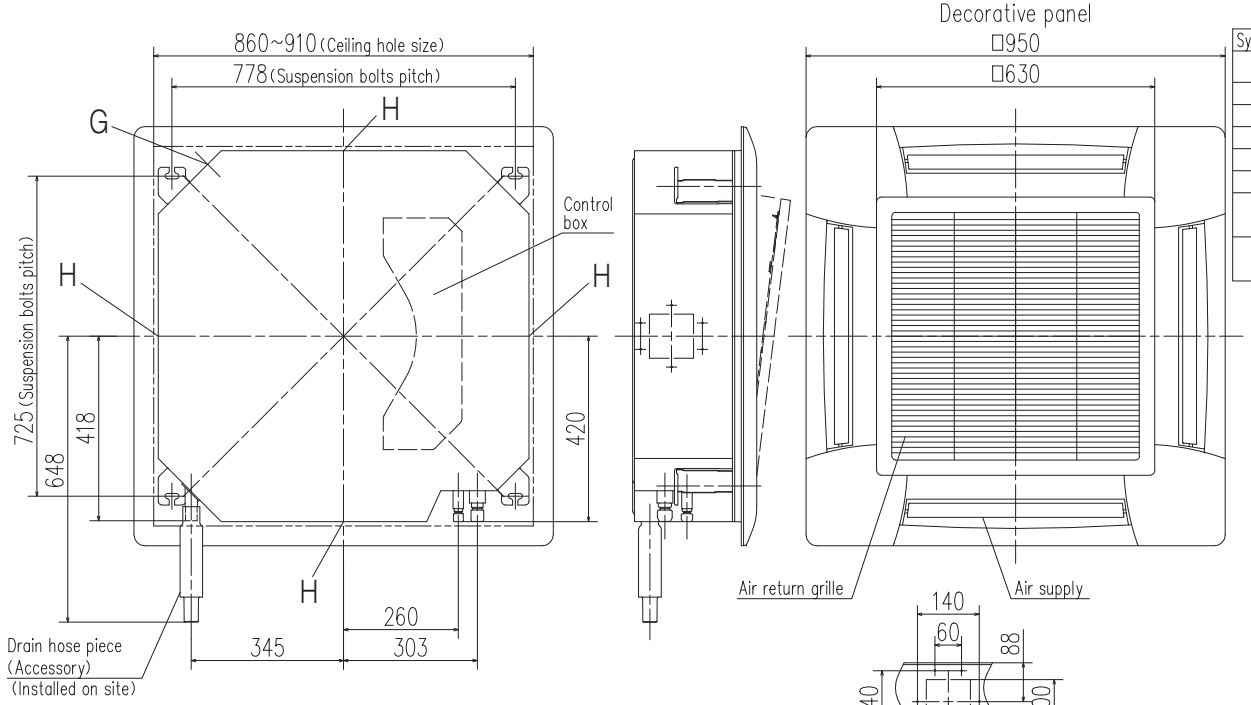
PCA001Z566 b

1.2 EXTERIOR DIMENSIONS

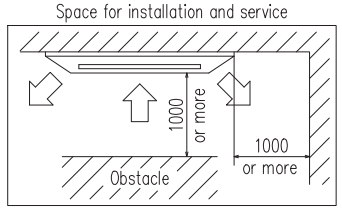
(1) Indoor units

(a) Ceiling cassette-4way type (FDT)

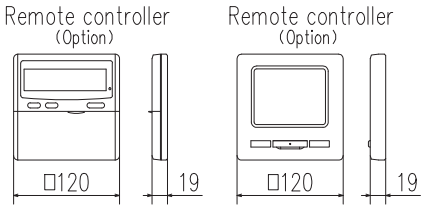
Models FDT50VF, 60VF, 71VF

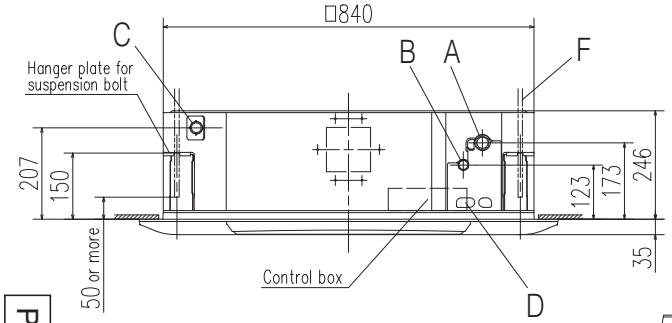


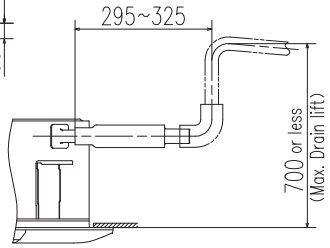
Symbol	Content		
	Model	40,50,60	71
A	Gas piping	φ12.7 (1/2") (Flare)	φ15.88 (5/8") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)	φ9.52 (3/8") (Flare)
C	Drain piping	VP25 (I.D.25, O.D.34) Note (2)	
D	Hole for wiring		
F	Suspension bolts	(M10 or M8)	
G	Outside air opening for ducting	(Knock out)	
H	Air outlet opening for ducting	(Knock out)	

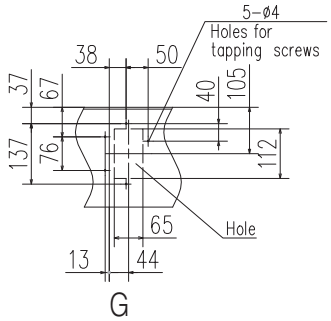


Make a space of 4000 or more between the units when installing more than one.







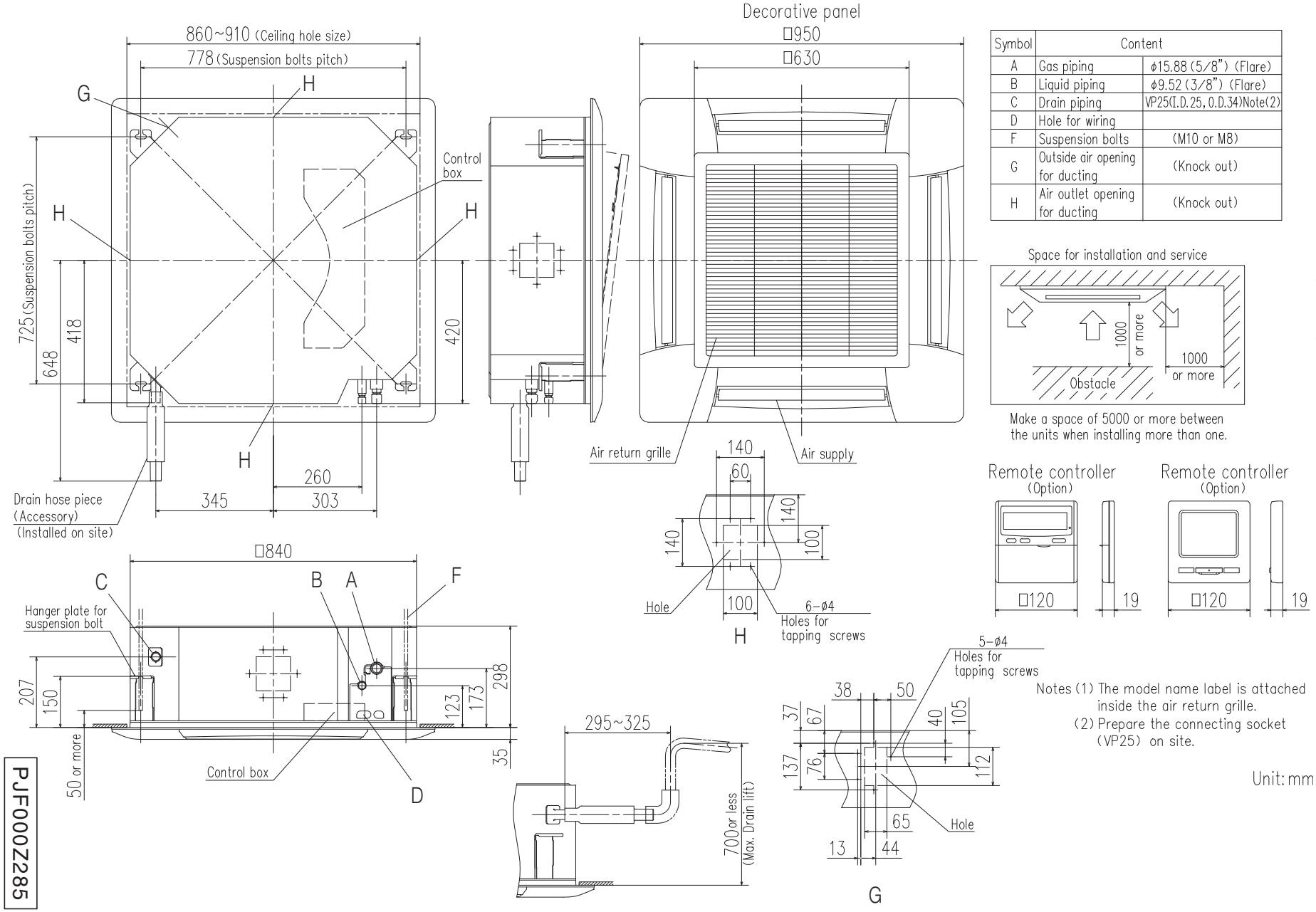


Notes (1) The model name label is attached inside the air return grille.
(2) Prepare the connecting socket (VP25) on site.

Unit: mm

PJF000Z284

Models FDT100VF, 125VF, 140VF



Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C	Drain piping	VP25(I.D.25, O.D.34)Note(2)
D	Hole for wiring	
F	Suspension bolts	(M10 or M8)
G	Outside air opening for ducting	(Knock out)
H	Air outlet opening for ducting	(Knock out)

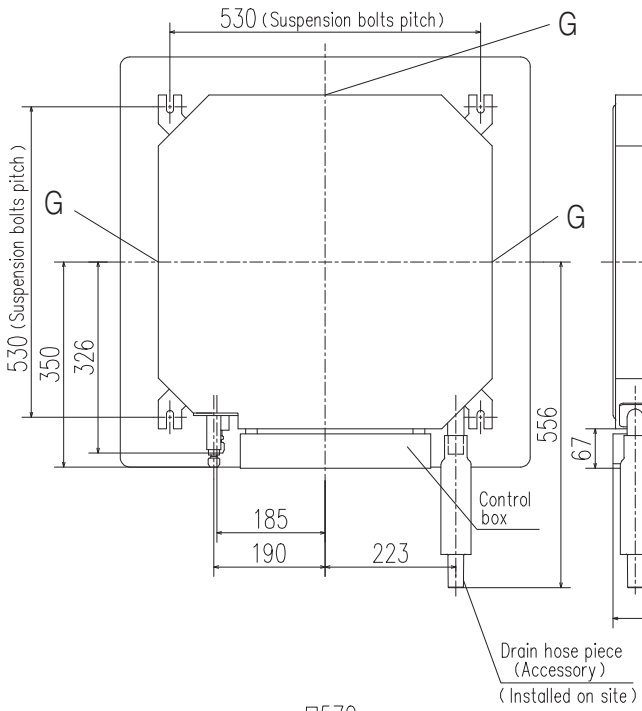
Notes (1) The model name label is attached inside the air return grille.
(2) Prepare the connecting socket (VP25) on site.

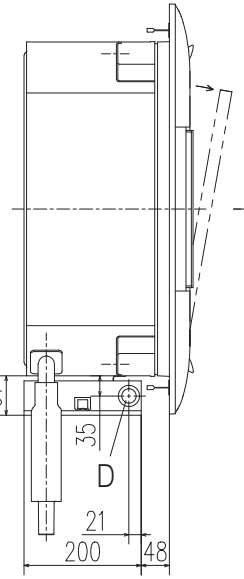
Unit: mm

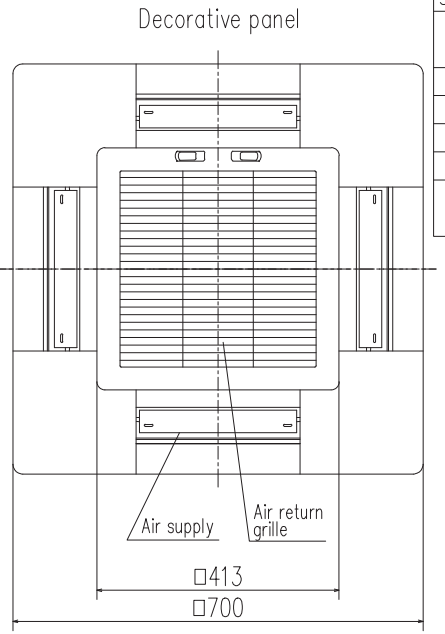
PJF000Z285

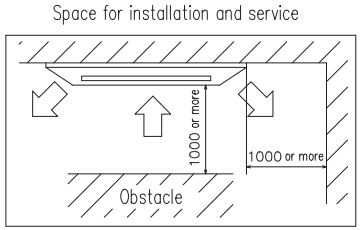
(b) Ceiling cassette-4way compact type (FDTC) Models FDTC50VF, 60VF

Symbol	Content		
A	Gas piping	Model	25,35 : ϕ9.52 (3/8") (Flare)
			40–60 : ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)	
C	Drain piping	VP20 (I.D.20,O.D.26) Note (2)	
D	Hole for wiring	ϕ25	
F	Suspension bolts	(M10 or M8)	
G	Air outlet opening for ducting	(Knock out)	

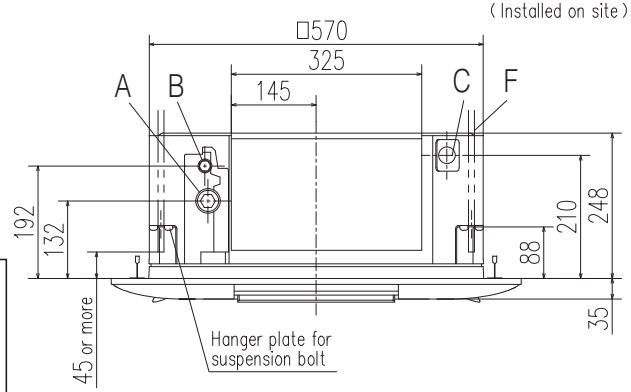


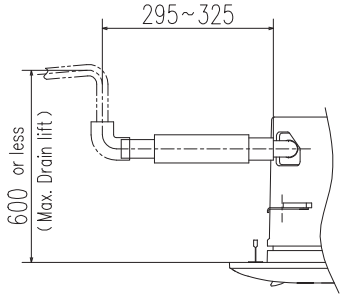


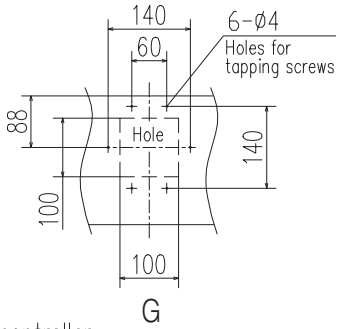




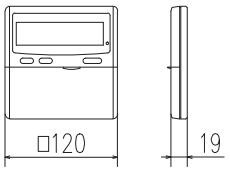
Make a space of 4000 or more between the units when installing more than one.



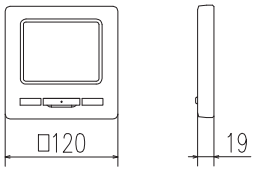




Remote controller (Option)



Remote controller (Option)



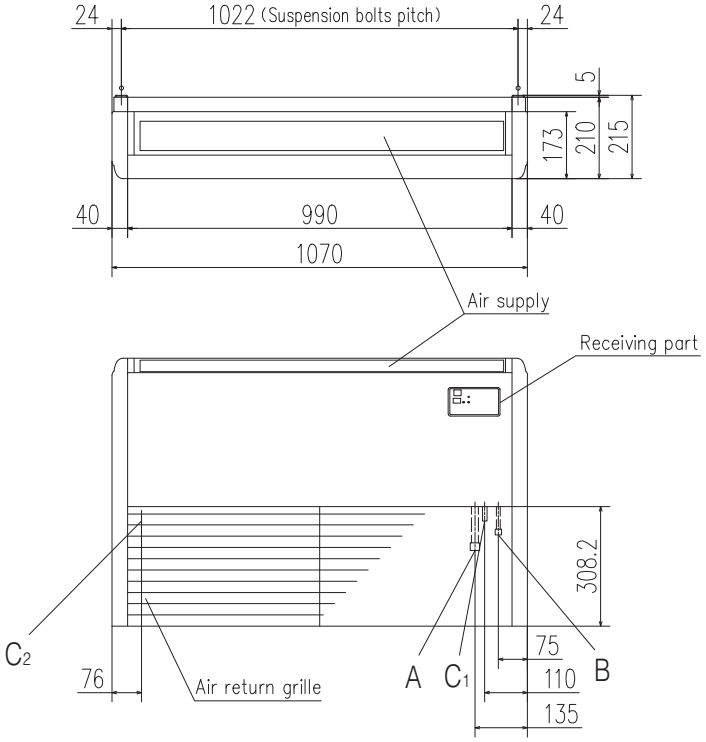
Unit: mm

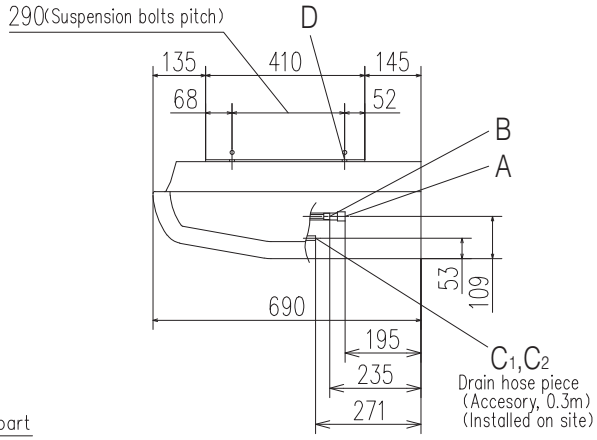
Notes (1) The model name label is attached on the control box lid.
(2) Prepare the connecting socket (VP20) on site.
(3) This unit is designed for 2x2 grid ceiling.
If it is installed on a ceiling other than 2x2 grid ceiling, provide an inspection port on the control box side.

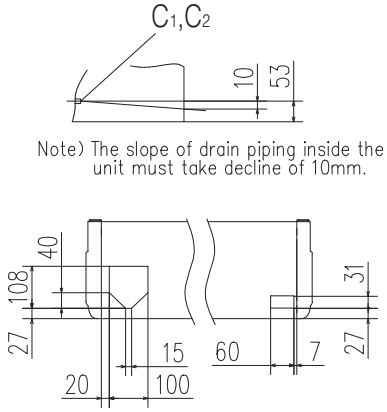
PJA003Z338 C

(c) Ceiling suspended type (FDEN)
Model FDEN50VF

Note (1) The model name label is attached on the fan casing inside the air return grille.

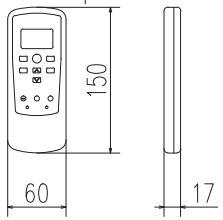




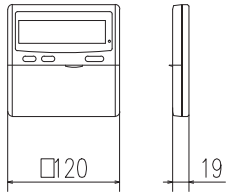


Note) The slope of drain piping inside the unit must take decline of 10mm.

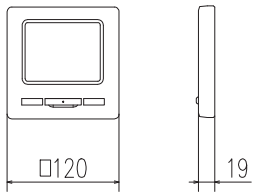
Wireless remote controller (Option)



Wired remote controller (Option)



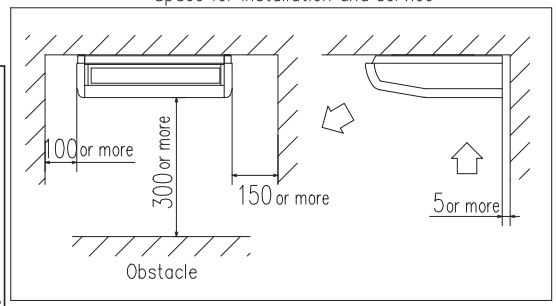
Wired remote controller (Option)



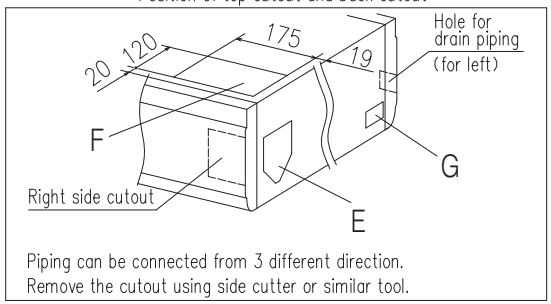
Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C 1,2	Drain piping	VP20 (I.D.20, O.D.26)
D	Hole for suspension bolts	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Drain piping (for left back)	(Knock out)

Unit: mm

Space for installation and service



Position of top cutout and back cutout

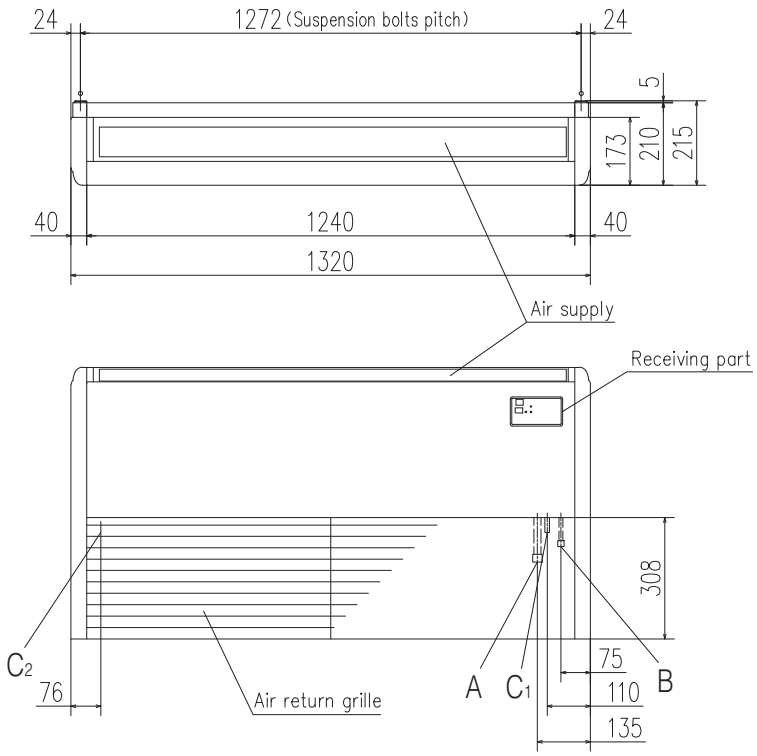


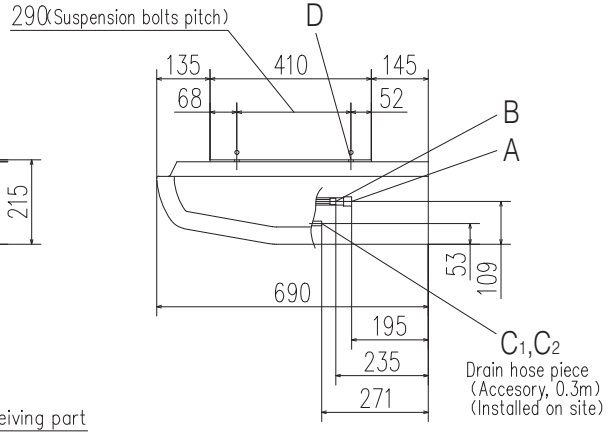
Piping can be connected from 3 different direction.
Remove the cutout using side cutter or similar tool.

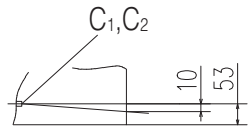
PFA003Z816 B

Models FDEN60VF, 71VF

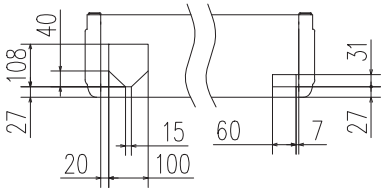
Note (1) The model name label is attached on the fan casing inside the air return grille.



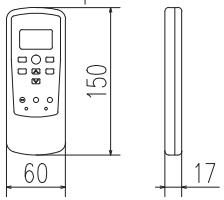




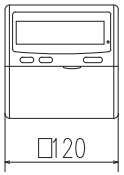
Note) The slope of drain piping inside the unit must take decline of 10mm.



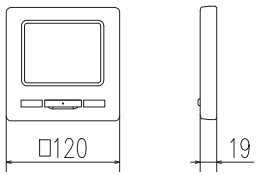
Wireless remote controller (Option)



Wired remote controller (Option)



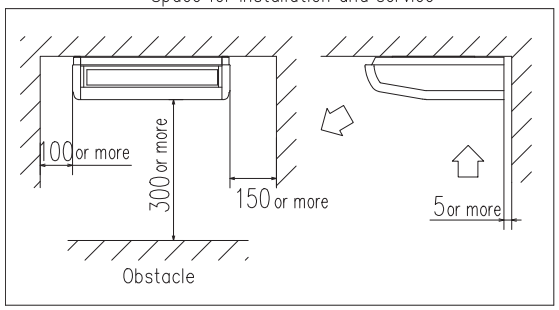
Wired remote controller (Option)



Symbol		Content	
	Model	60	71
A	Gas piping	ϕ12.7 (1/2") (Flare)	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)	ϕ9.52 (3/8") (Flare)
C 1,2	Drain piping	VP20 (I.D.20, O.D.26)	
D	Hole for suspension bolts	(M10 or M8)	
E	Back cutout	PE cover	
F	Top cutout	Plate cover	
G	Hole for drain piping (for left back)	(Knock out)	

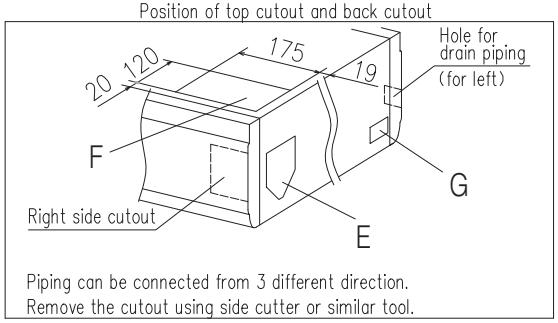
Unit: mm

Space for installation and service



Make a space of 4500 or more between the units when installing more than one.

Position of top cutout and back cutout

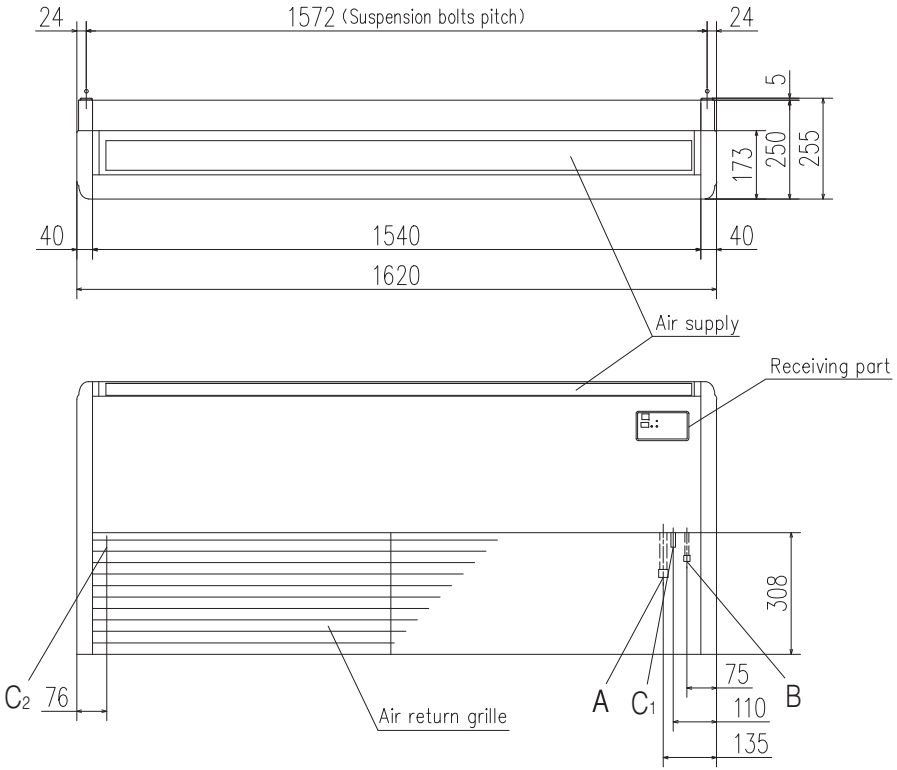


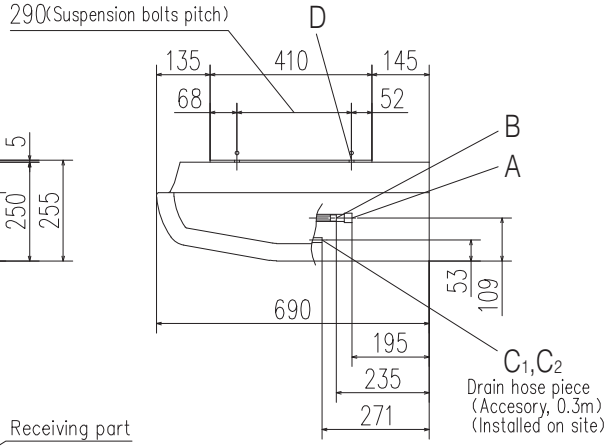
Piping can be connected from 3 different direction.
Remove the cutout using side cutter or similar tool.

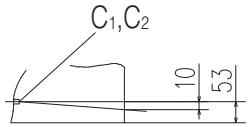
PFA003Z817 B

Models FDEN100VF, 125VF, 140VF

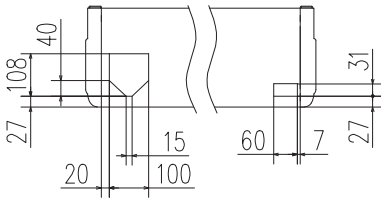
Note (1) The model name label is attached on the fan casing inside the air return grille.



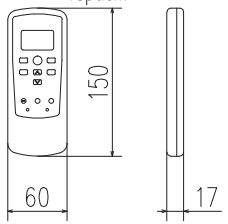




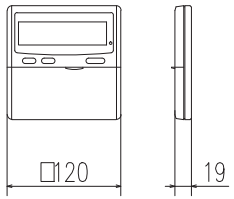
Note) The slope of drain piping inside th unit must take decline of 10mm.



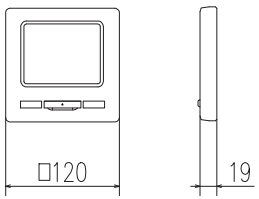
Wireless remote controller (Option)



Wired remote controller (Option)



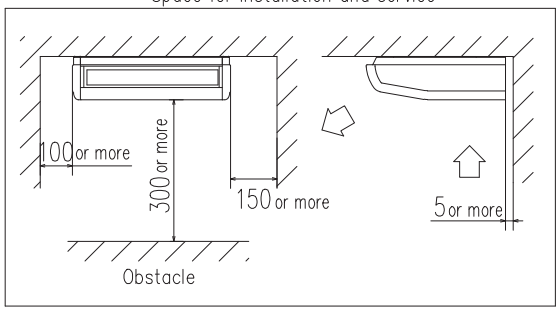
Wired remote controller (Option)



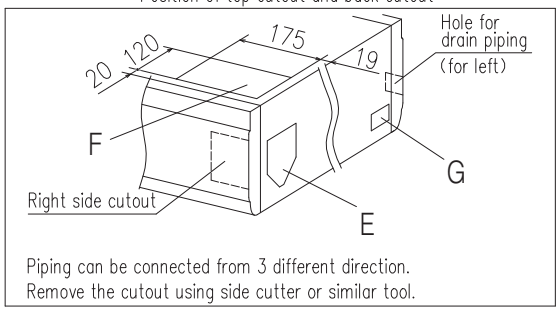
Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C 1,2	Drain piping	VP20 (I.D. 20, O.D.26)
D	Hole for suspension bolt	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Hole for drain piping (for left back)	(Knock out)

Unit: mm

Space for installation and service



Position of top cutout and back cutout



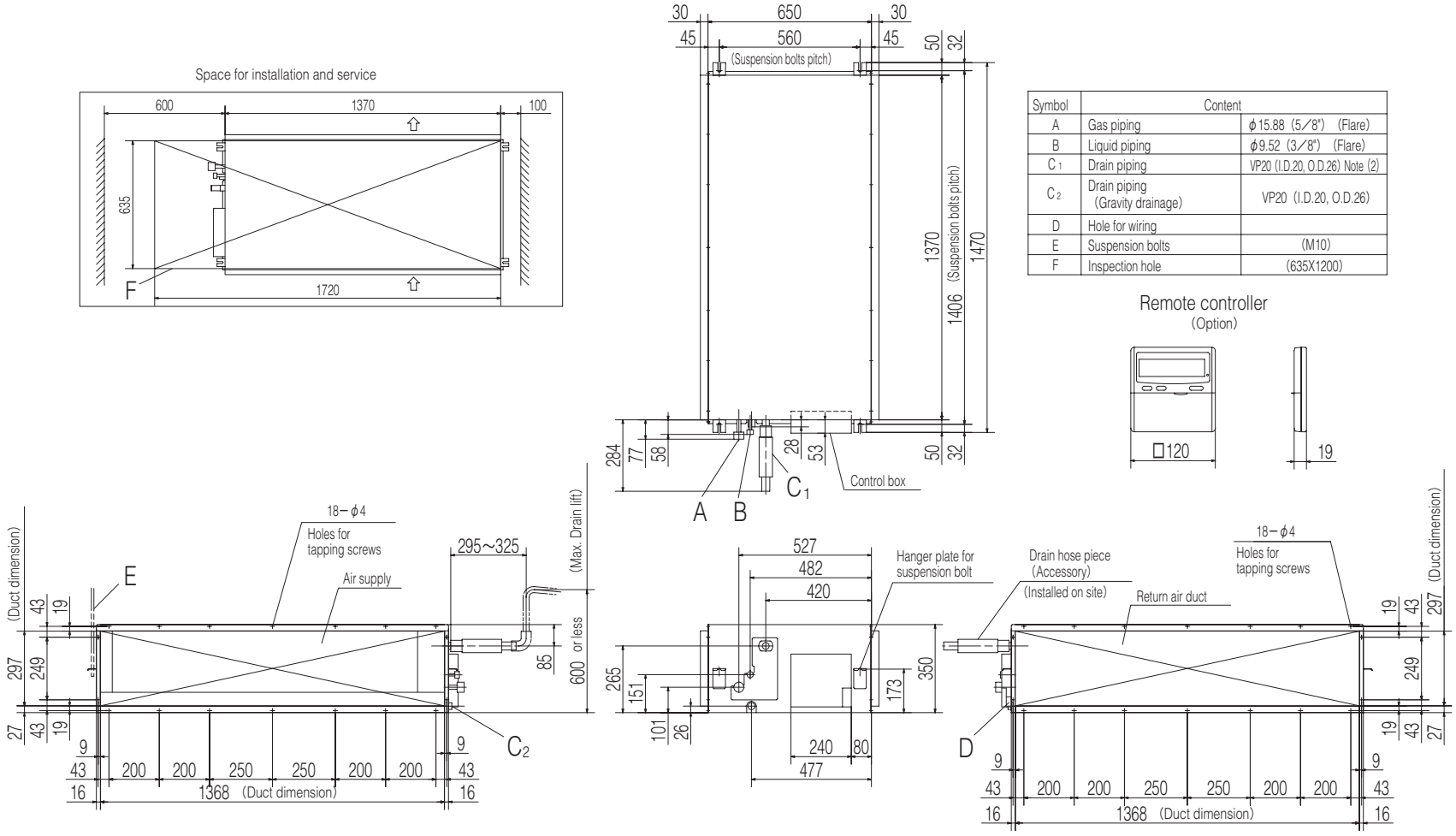
Piping can be connected from 3 different direction.
Remove the cutout using side cutter or similar tool.

Make a space of 5000 or more between the units when installing more than one.

PFA003Z818 B

(d) Duct connected-High static pressure type (FDU)

Models FDU100VD, 125VD, 140VD



Symbol	Content	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C_1	Drain piping	VP20 (I.D.20, O.D.26) Note (2)
C_2	Drain piping (Gravity drainage)	VP20 (I.D.20, O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Inspection hole	(635X1200)

Unit:mm

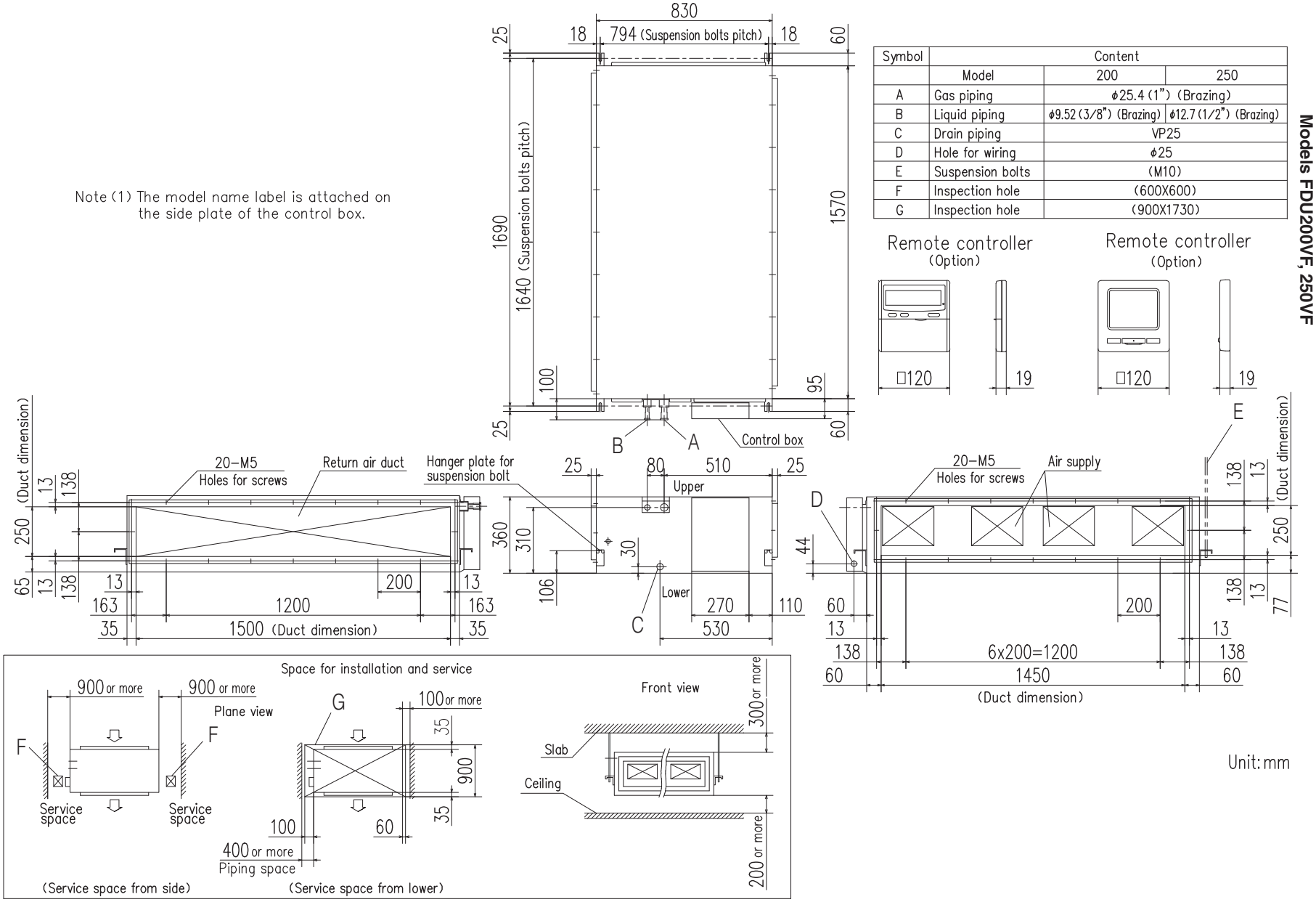
Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20) on site.

PJD001Z215 ⓒ

Models FDU200VF, 250VF

Symbol	Content		
	Model	200	250
A	Gas piping	φ25.4 (1") (Brazing)	
B	Liquid piping	φ9.52 (3/8") (Brazing)	φ12.7 (1/2") (Brazing)
C	Drain piping	VP25	
D	Hole for wiring	φ25	
E	Suspension bolts	(M10)	
F	Inspection hole	(600X600)	
G	Inspection hole	(900X1730)	

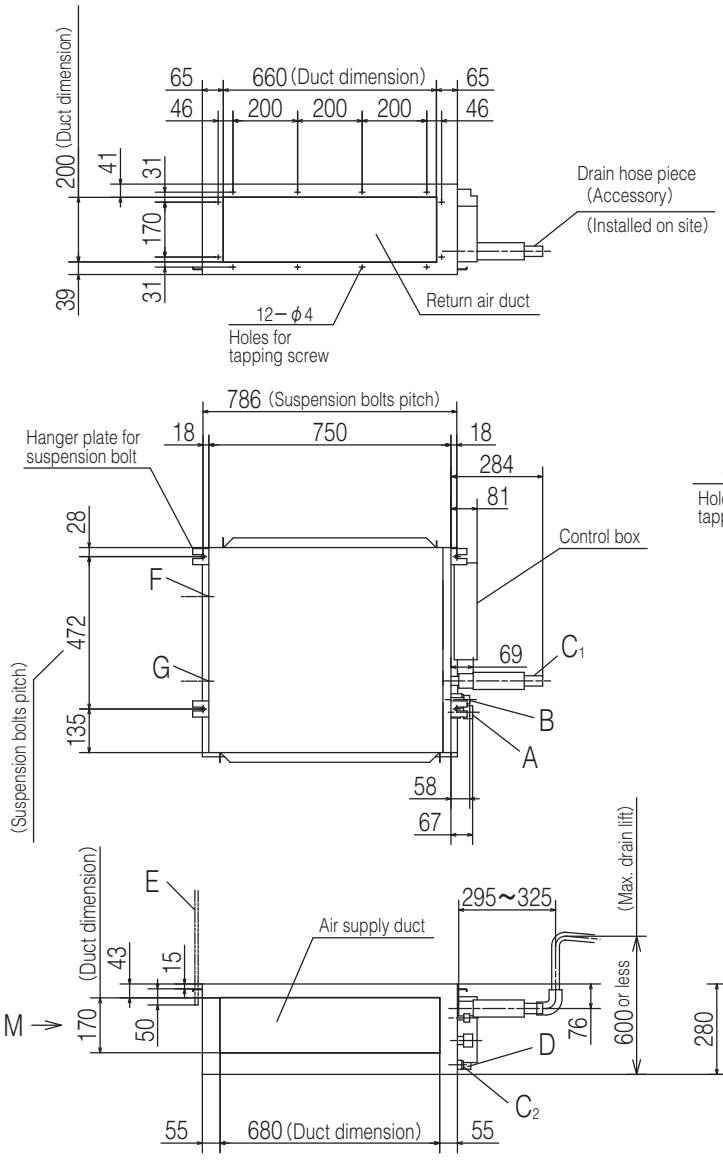
Note (1) The model name label is attached on the side plate of the control box.



PJD001Z216 B

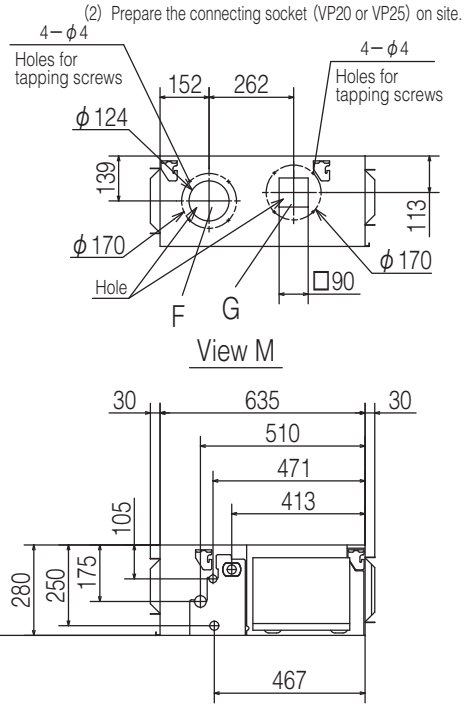
(e) Duct connected-Low / Middle static pressure type (FDUM)

Model FDUM50VF



Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C1	Drain piping	VP20 (standard:I.D.20, O.D.26) or VP25 (Used with attached socket:I.D.25, O.D.34) Note (2)
C2	Drain piping (Gravity drainage)	VP20 (standard:I.D.20, O.D.26) or VP25 (Used with attached socket:I.D.25, O.D.34
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

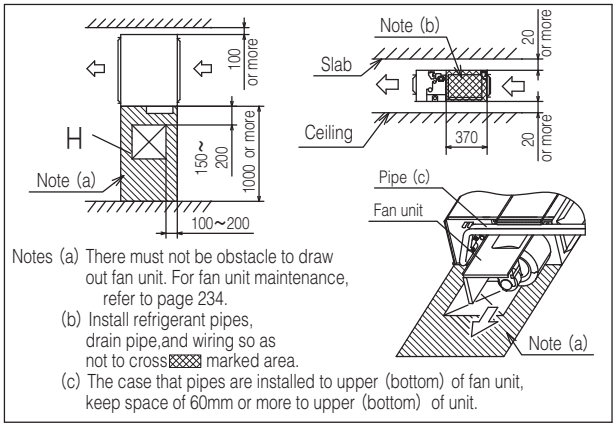


Unit:mm

Space for installation and service

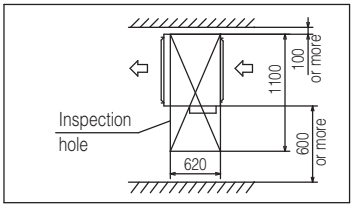
Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

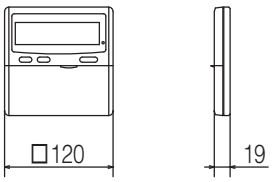


Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 234.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit

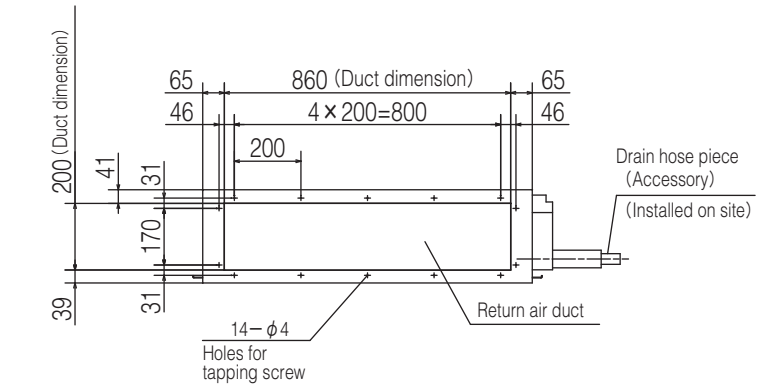


Remote controller
(Option)



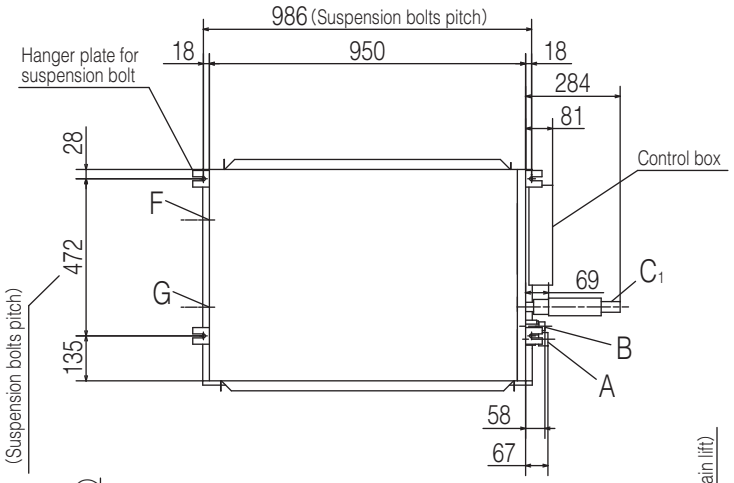
PJG000Z002 A

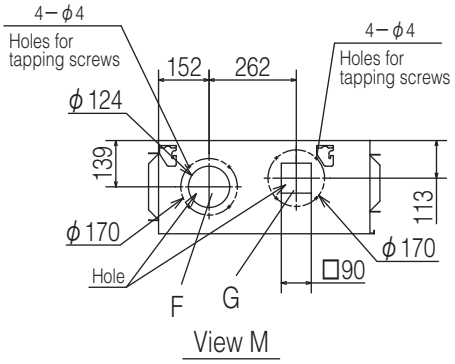
Model FDUM60VF

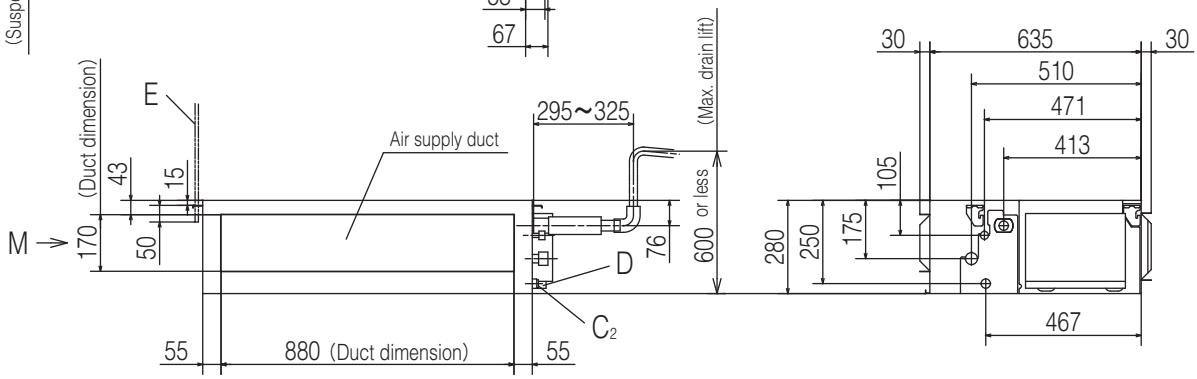


Symbol	Content	
A	Gas piping	φ12.7 (1／2") (Flare)
B	Liquid piping	φ6.35 (1／4") (Flare)
C1	Drain piping	VP20 (standard:I.D.20, O.D.26) or VP25 (Used with attached so cket:I.D.25, O.D.34) Note (2)
C2	Drain piping (Gravity drainage)	VP20 (standard:I.D.20, O.D.26) or VP25 (U sed with attached socket:I.D.25, O.D.34
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

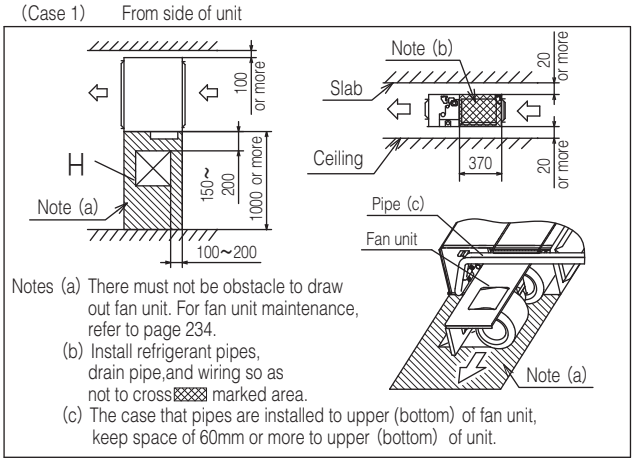




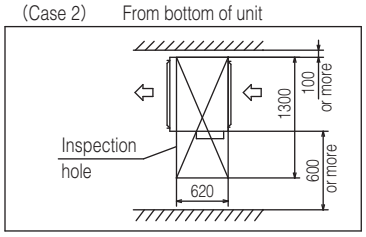


Space for installation and service

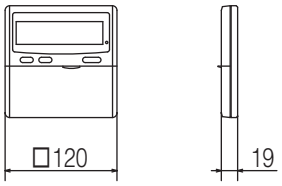
Select either of two cases to keep space for installation and services.



Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 234.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

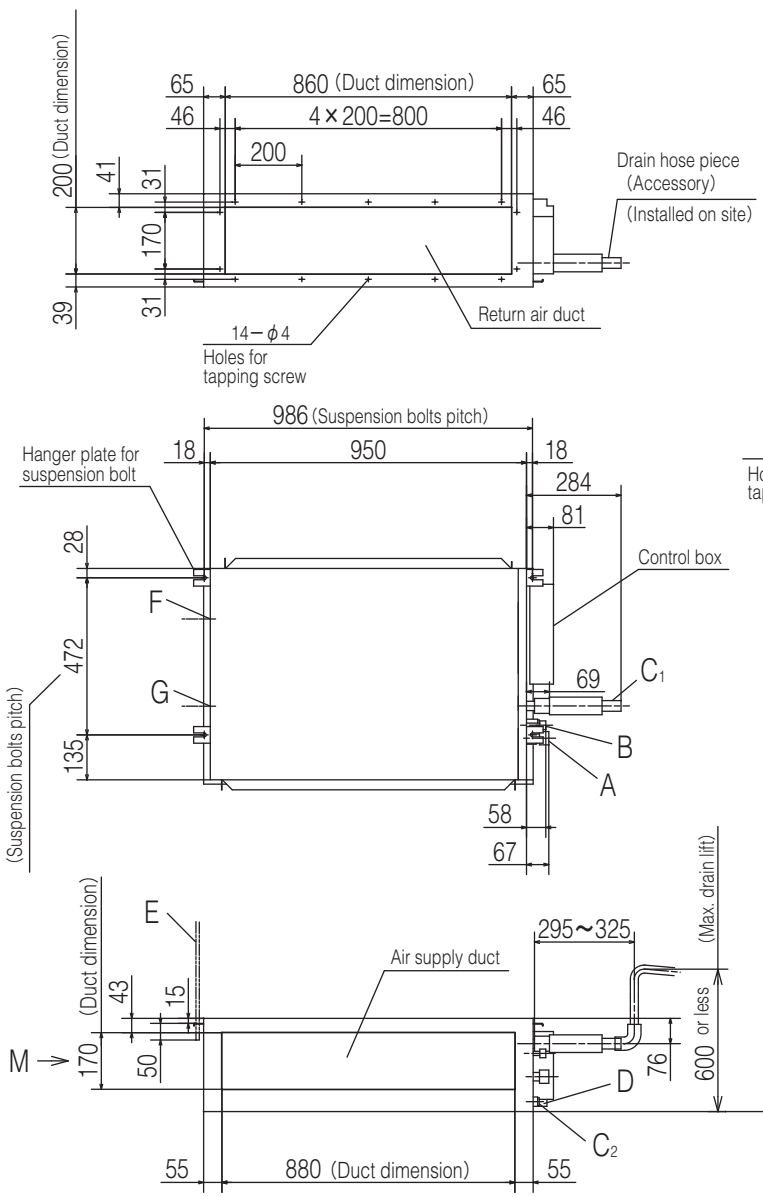


Remote controller
(Option)



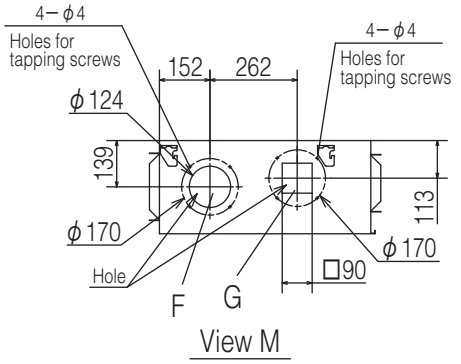
PJG000Z003 A

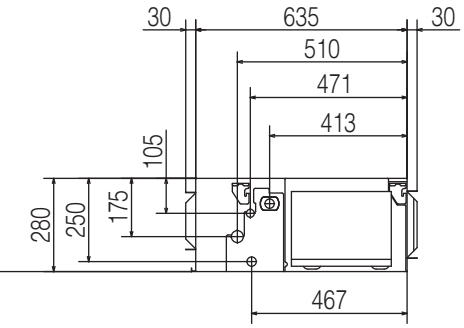
Model FDUM71VF



Symbol	Content	
A	Gas piping	φ15.88 (5／8") (Flare)
B	Liquid piping	φ9.52 (3／8") (Flare)
C1	Drain piping	VP20 (standard:I.D.20, O.D.26) or VP25 (Used with attached so cket:I.D.25, O.D.34) Note (2)
C2	Drain piping (Gravity drainage)	VP20 (standard:I.D.20, O.D.26) or VP25 (U sed with attached socket:I.D.25, O.D.34
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

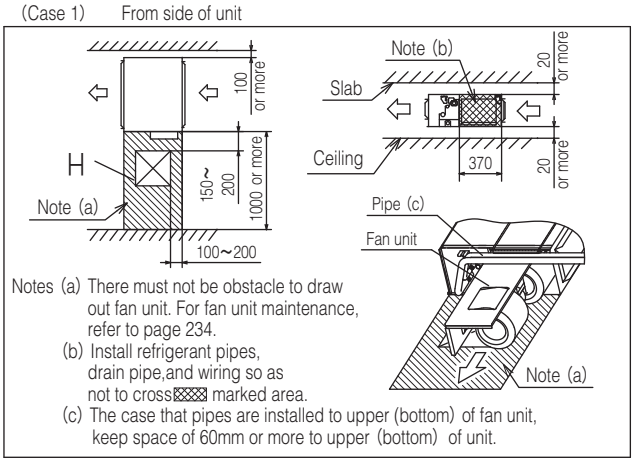
Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.



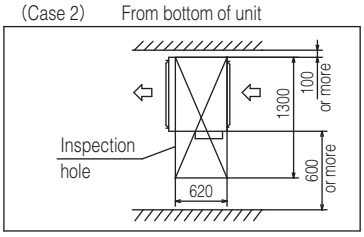


Space for installation and service

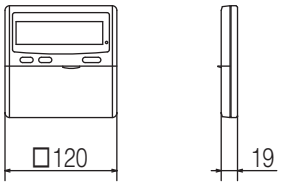
Select either of two cases to keep space for installation and services.



Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 234.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

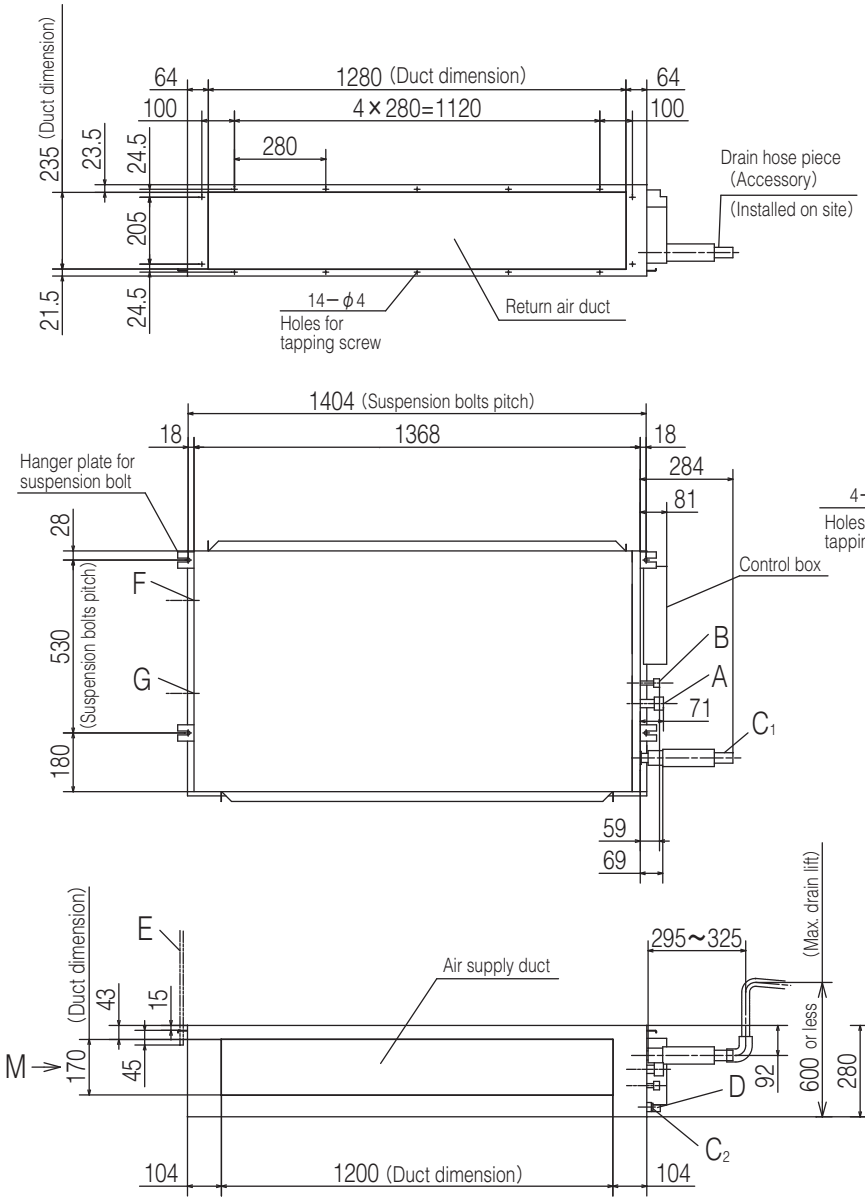


Remote controller
(Option)



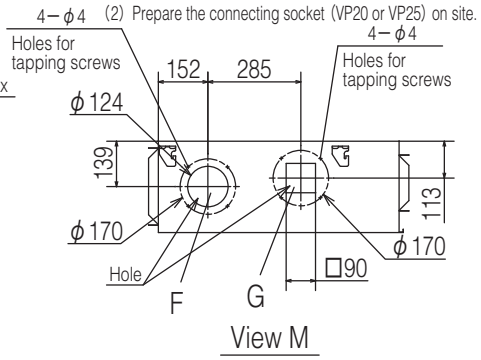
PJG000Z003 A

Models FDUM100VF, 125VF, 140VF



Symbol	Content	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") 8Flare)
C1	Drain piping	VP20 (standard:I.D.20, O.D.26) or VP25 (Used with attached socket:I.D.25, O.D.34) Note (2)
C2	Drain piping (Gravity drainage)	VP20 (standard:I.D.20, O.D.26) or VP25 (Used with attached socket:I.D.25, O.D.34
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

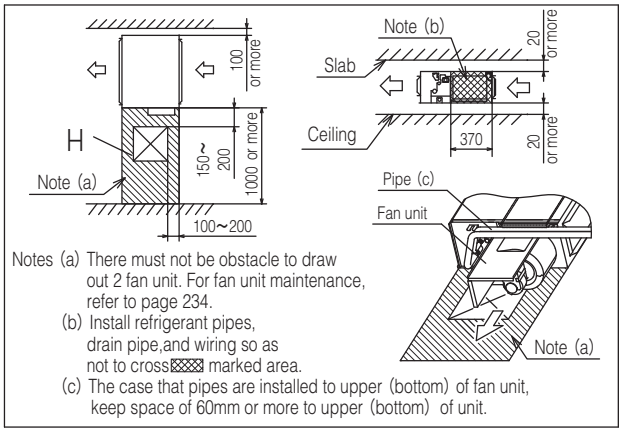


Unit:mm

Space for installation and service

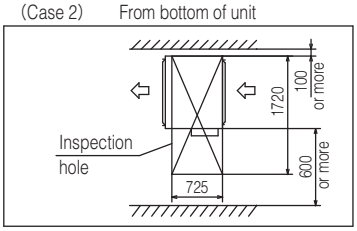
Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

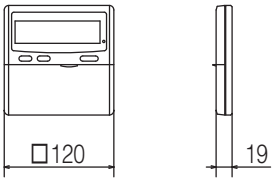


Notes (a) There must not be obstacle to draw out 2 fan unit. For fan unit maintenance, refer to page 234.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



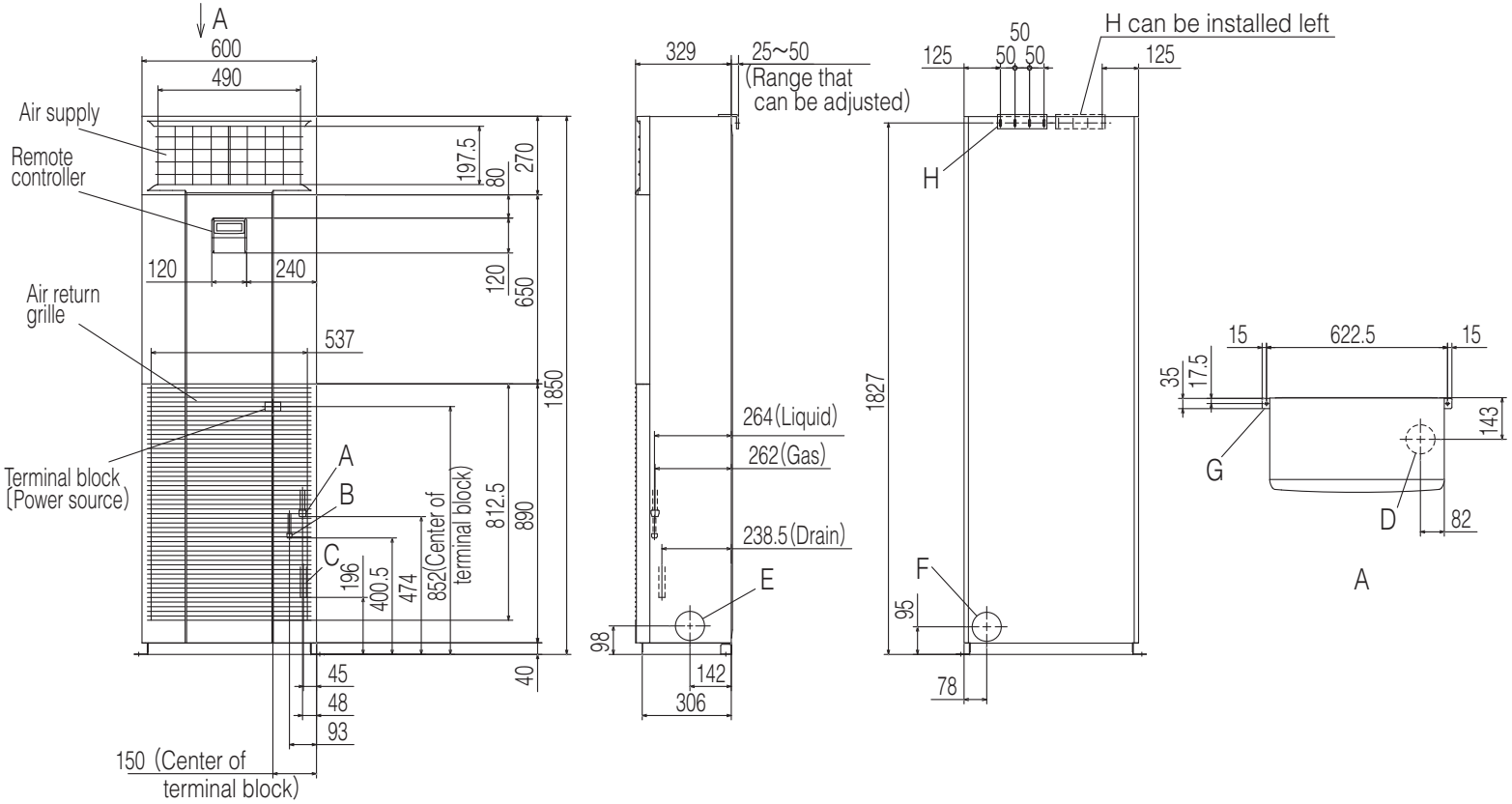
Remote controller
(Option)



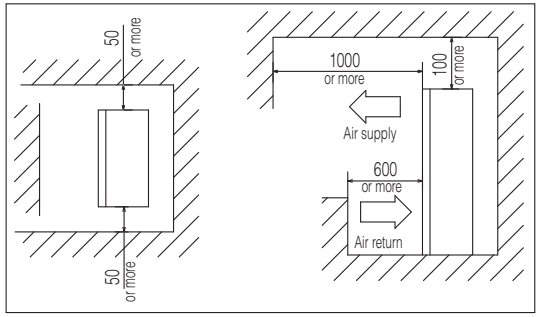
PJG000Z004 A

(f) Floor standing type (FDF)

Models FDF71VD, 100VD, 125VD, 140VD



Space for installation and service



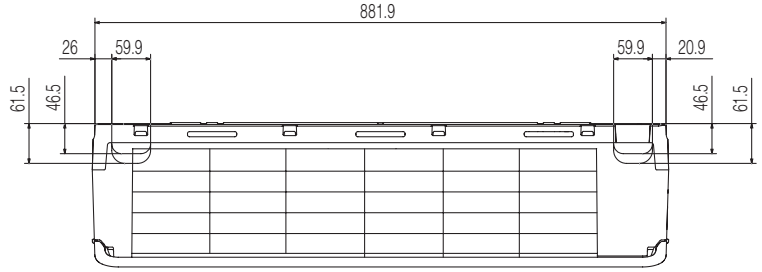
Symbol	Content	
A	Gas piping	φ15.88(5/8") (Flare)
B	Liquid piping	φ9.52(3/8") (Flare)
C	Drain piping	V20(I.D.20, O.D.26)
D	Hole on wall for bottom piping	φ100(Resin cap having)
E	Hole on wall for side piping	φ100(Knock out)
F	Hole on wall for rear piping	φ100(Knock out)
G	Metal fittings to fix to floor face	M8(2 places)
H	Fall prevention metal fittings	4-7×25(Slot)

Note(1) The model name label is attached on the left lower side panel inside the air return grille.

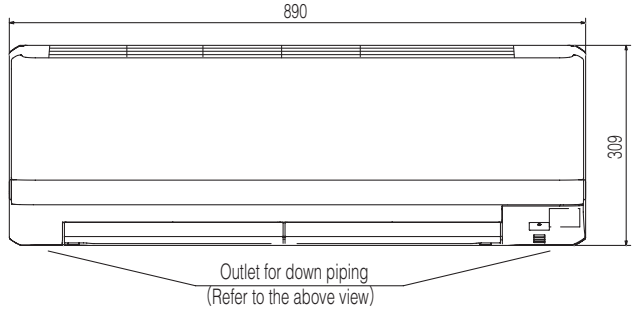
Unit:mm

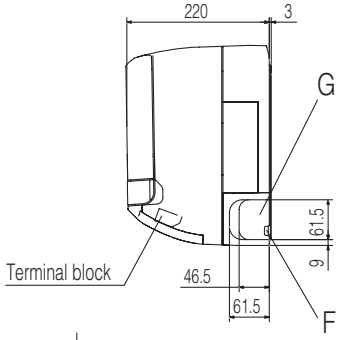
PGA000Z781

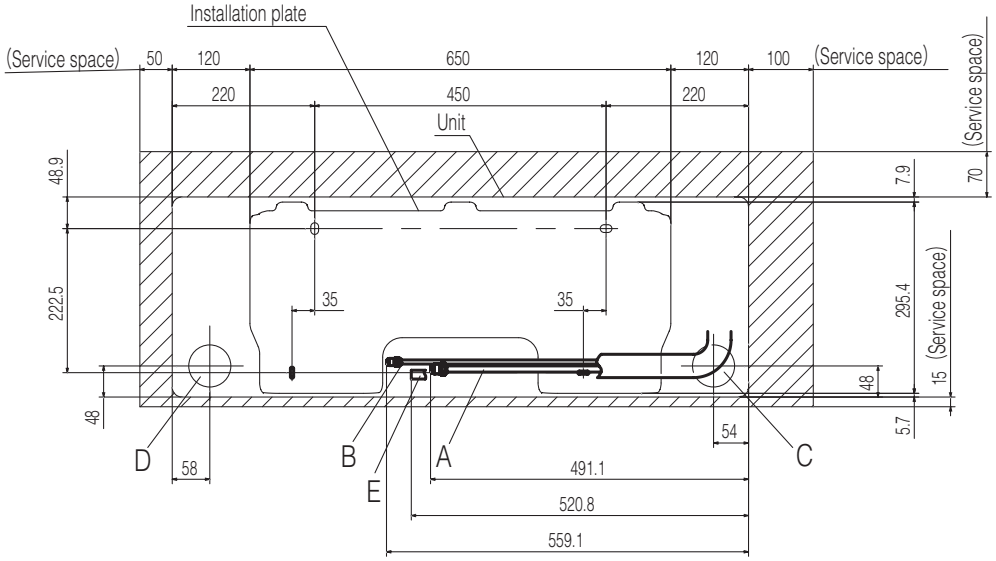
(g) Wall mounted type (SRK)
Models SRK50ZJX-S1, 60ZJX-S1



Symbol	Content	
A	Gas piping	φ12.7(1/2") (Flare)
B	Liquid piping	φ6.35(1/4") (Flare)
C	Hole on wall for right rear piping	(φ65)
D	Hole on wall for left rear piping	(φ65)
E	Drain hose	VP16
F	Outlet for wiring	
G	Outlet for piping(on both side)	

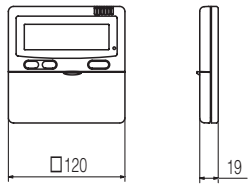






Space for installation and service when viewing from the front

Wired - remote controller
(Option)



Notes (1) The model name label is attached on the underside of the panel.
(2) It takes the interface kit (SC-BIKN-E) to connect the wired remote controller.

Unit:mm

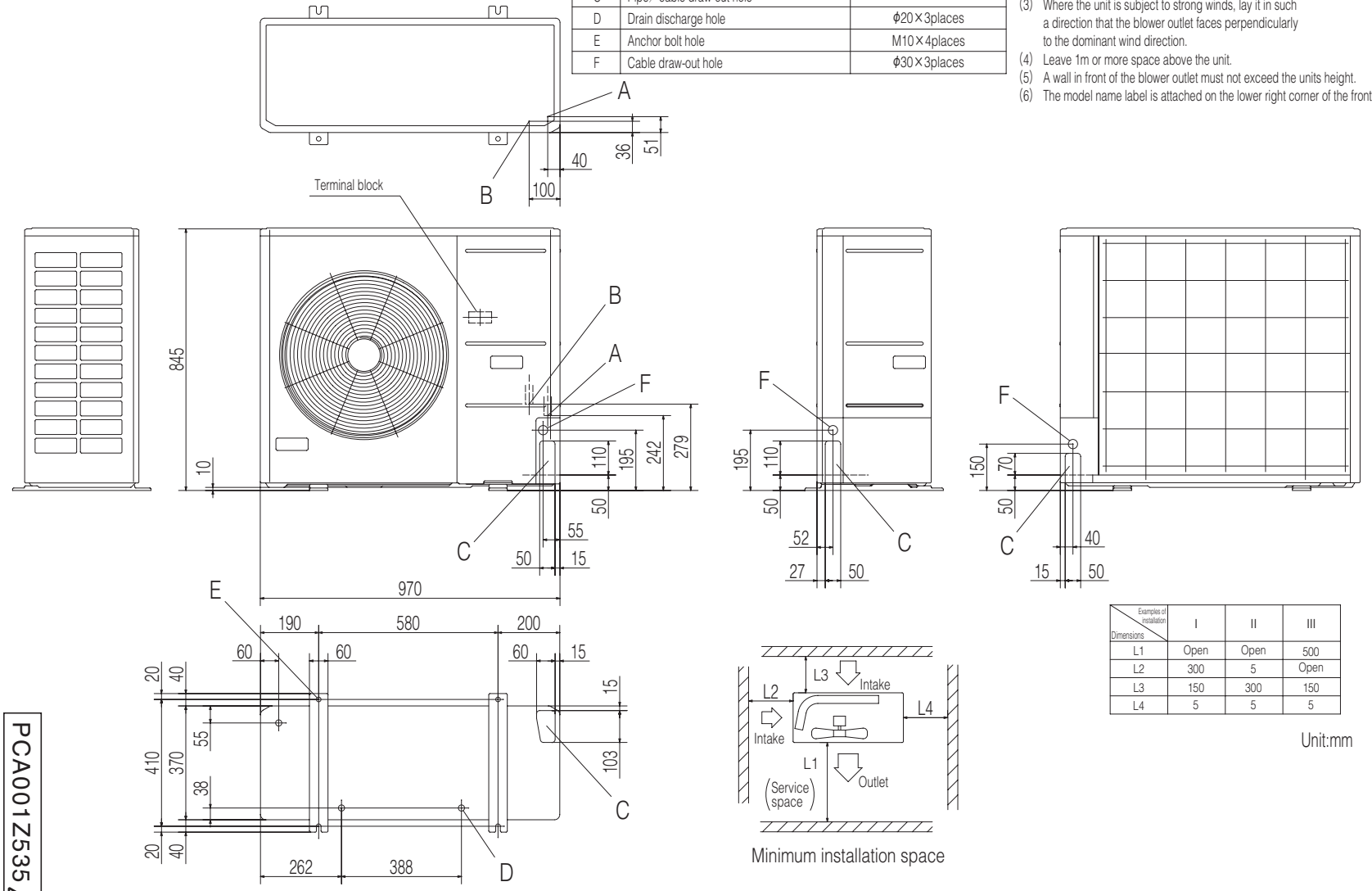
RKY000Z054

(2) Outdoor units

Models FDC100VN, 125VN, 140VN
FDC100VS, 125VS, 140VS

Symbol	Content	
A	Service valve connection (gas side)	ϕ15.88 (5/8") (Flare)
B	Service valve connection (liquid side)	ϕ9.52 (3/8") (Flare)
C	Pipe/cable draw-out hole	
D	Drain discharge hole	ϕ20×3places
E	Anchor bolt hole	M10×4places
F	Cable draw-out hole	ϕ30×3places

Notes
(1) It must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more the 15mm.
(3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
(4) Leave 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front panel.

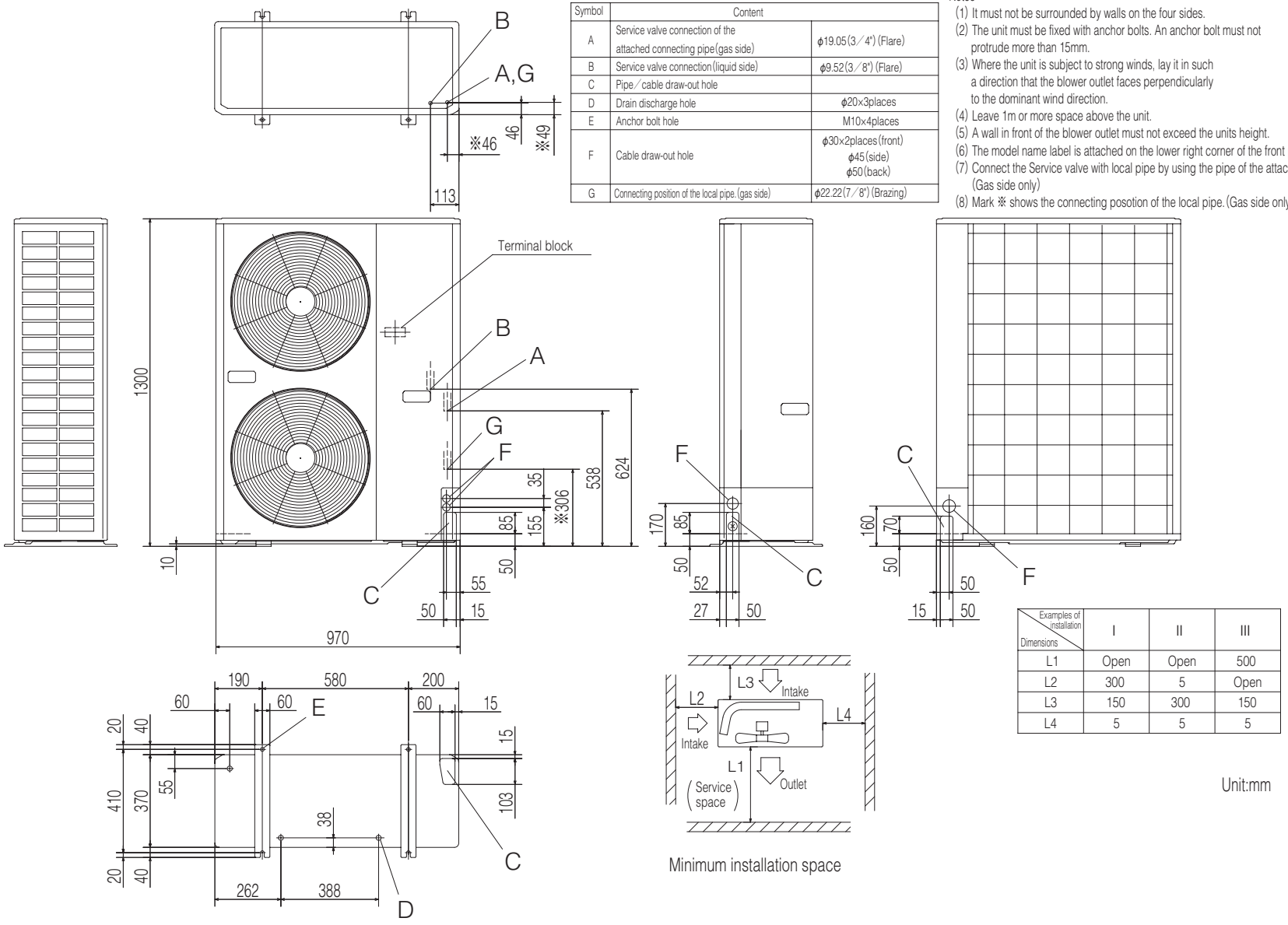


Minimum installation space

Dimensions \ Examples of installation	I	II	III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	5	5	5

Unit:mm

PCA001Z535 a



Symbol	Content	
A	Service valve connection of the attached connecting pipe(gas side)	ϕ19.05(3／4") (Flare)
B	Service valve connection(liquid side)	ϕ9.52(3／8") (Flare)
C	Pipe／cable draw-out hole	
D	Drain discharge hole	ϕ20×3places
E	Anchor bolt hole	M10×4places
F	Cable draw-out hole	ϕ30×2places(front) ϕ45(side) ϕ50(back)
G	Connecting position of the local pipe.(gas side)	ϕ22.22(7／8") (Brazing)

Notes

(1) It must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
(3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
(4) Leave 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front panel.
(7) Connect the Service valve with local pipe by using the pipe of the attachment. (Gas side only)
(8) Mark ※ shows the connecting posotion of the local pipe.(Gas side only)

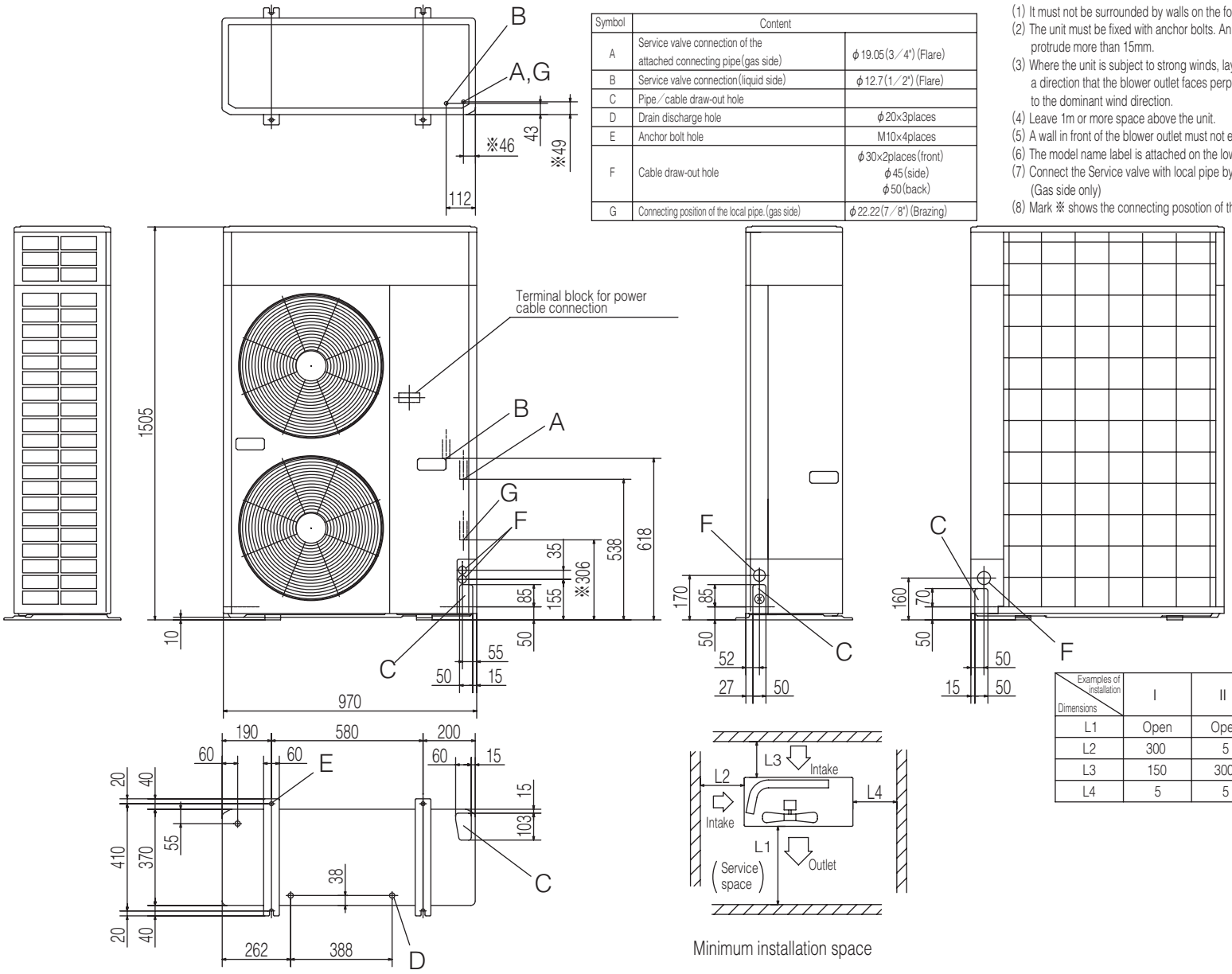
Examples of installation / Dimensions	I	II	III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	5	5	5

Unit:mm

Minimum installation space

PCA001Z536 a

Model FDC250VS



Symbol	Content	
A	Service valve connection of the attached connecting pipe(gas side)	φ19.05(3／4") (Flare)
B	Service valve connection(liquid side)	φ12.7(1／2") (Flare)
C	Pipe／cable draw-out hole	
D	Drain discharge hole	φ20×3places
E	Anchor bolt hole	M10×4places
F	Cable draw-out hole	φ30×2places(front) φ45(side) φ50(back)
G	Connecting position of the local pipe.(gas side)	φ22.22(7／8") (Brazing)

Notes
(1) It must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
(3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
(4) Leave 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front panel.
(7) Connect the Service valve with local pipe by using the pipe of the attachment. (Gas side only)
(8) Mark ※ shows the connecting posotion of the local pipe (Gas side only)

Dimensions \ Examples of installation	I	II	III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	5	5	5

Unit:mm

Minimum installation space

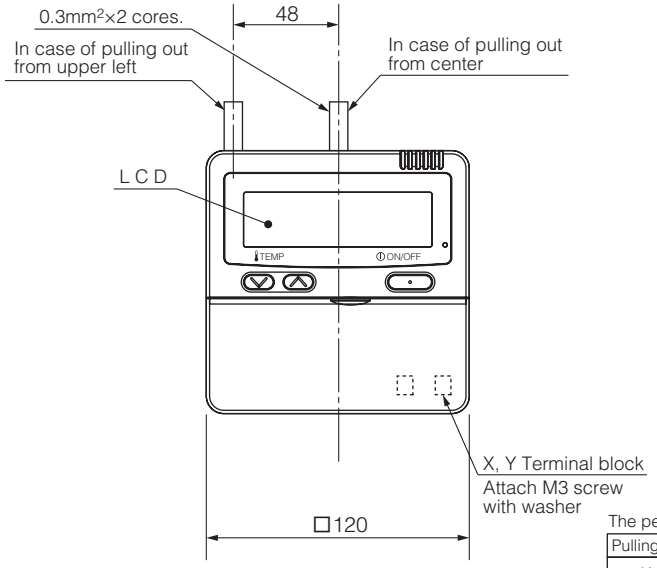
PCA001Z537 a

(3) Remote controller (Option parts)

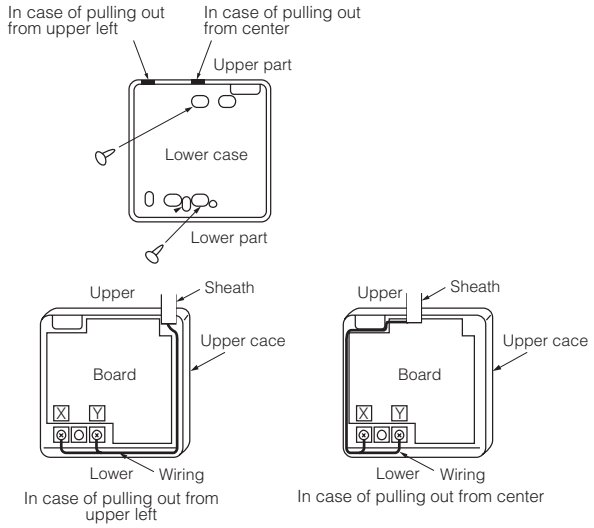
(a) wired remote controller

Model RC-E5

Exposed mounting

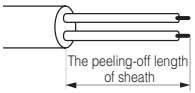


Wiring outlet
Cut off the upper thin part of remote control lower case with a nipper or knife, and grind burrs with a file etc.

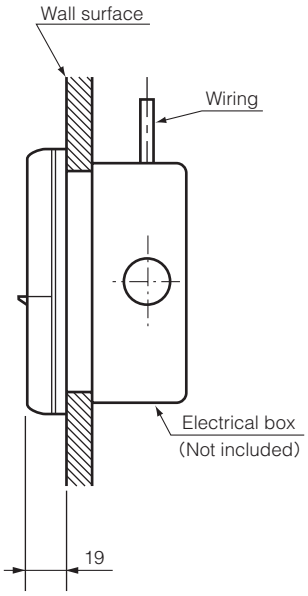


The peeling-off length of sheath

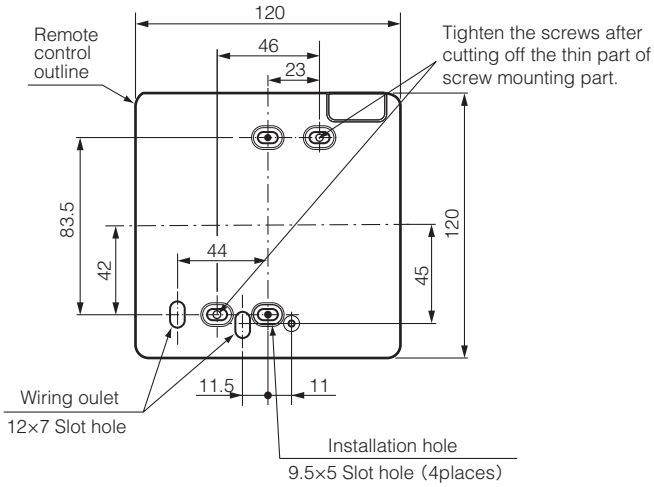
Pulling out from upper left	Pulling out from center
X wiring : 215mm Y wiring : 195mm	X wiring : 170mm Y wiring : 190mm



Embedded mounting



Remote control installation dimensions



(1) Installation screw for remote control
M4 Screw (2 pieces)

Unit:mm

Wiring specifications

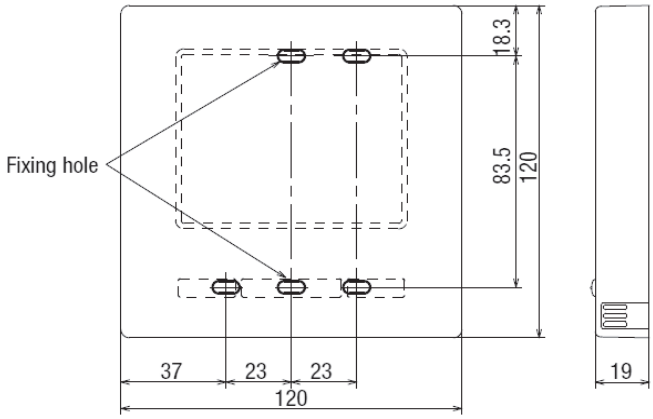
(1) If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

Length	Wiring thickness
100 to 200m	0.5mm²×2 cores
Under 300m	0.75mm²×2 cores
Under 400m	1.25mm²×2 cores
Under 600m	2.0mm²×2 cores

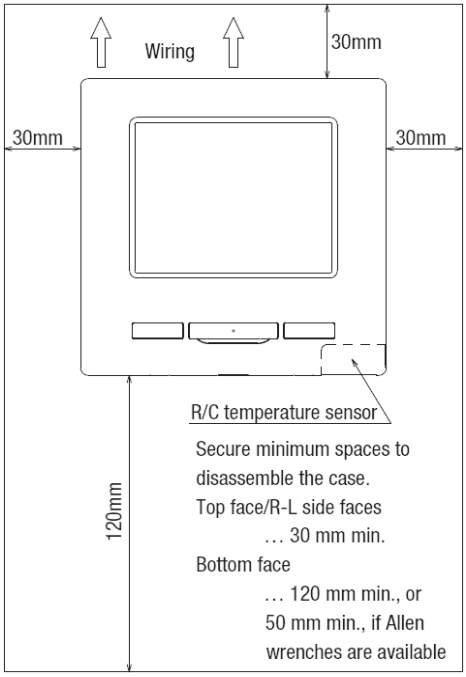
PJZ000Z274 a

Model : RC-EX1A

Dimensions (Viewed from front)



Installation space



Cautions for selecting installation place

(1) Installation surface must be flat and sufficiently strong. R/C case must not be deformed.

(2) Where the R/C can detect room temperatures accurately
This is a must when detecting room temperatures with the temperature sensor of R/C.
- Install the R/C where it can detect the average temperature in the room.
- Install the R/C sufficiently separated from a heat source.
- Install the R/C where it will not be influenced by the turbulence of air when the door is opened or closed.

Select a place where the R/C is not exposed to direct sunlight or blown by winds from the air conditioner or temperatures on the wall surface will not deviate largely from indoor air temperatures.

R/C cable : 0.3mm^2 × 2-core

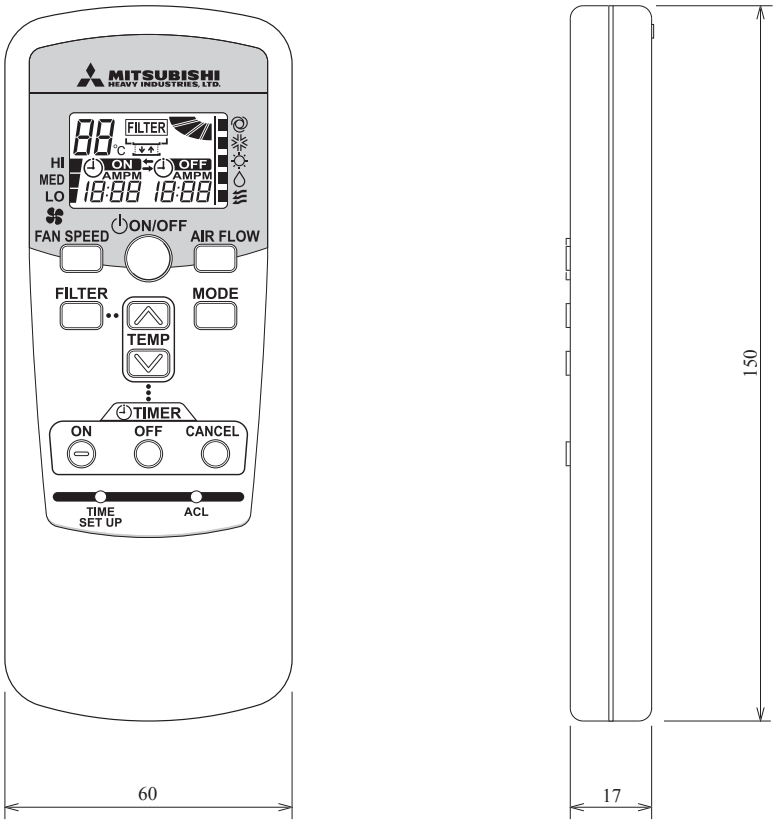
When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm^2. Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

< 200 m	0.5 mm^2 x 2-core
< 300 m	0.75 mm^2 x 2-core
< 400 m	1.25 mm^2 x 2-core
< 600 m	2.0 mm^2 x 2-core

Adapted to **RoHS** directive

PJZ000Z297 a

(b) Wireless remote controller (RCN-E1R)



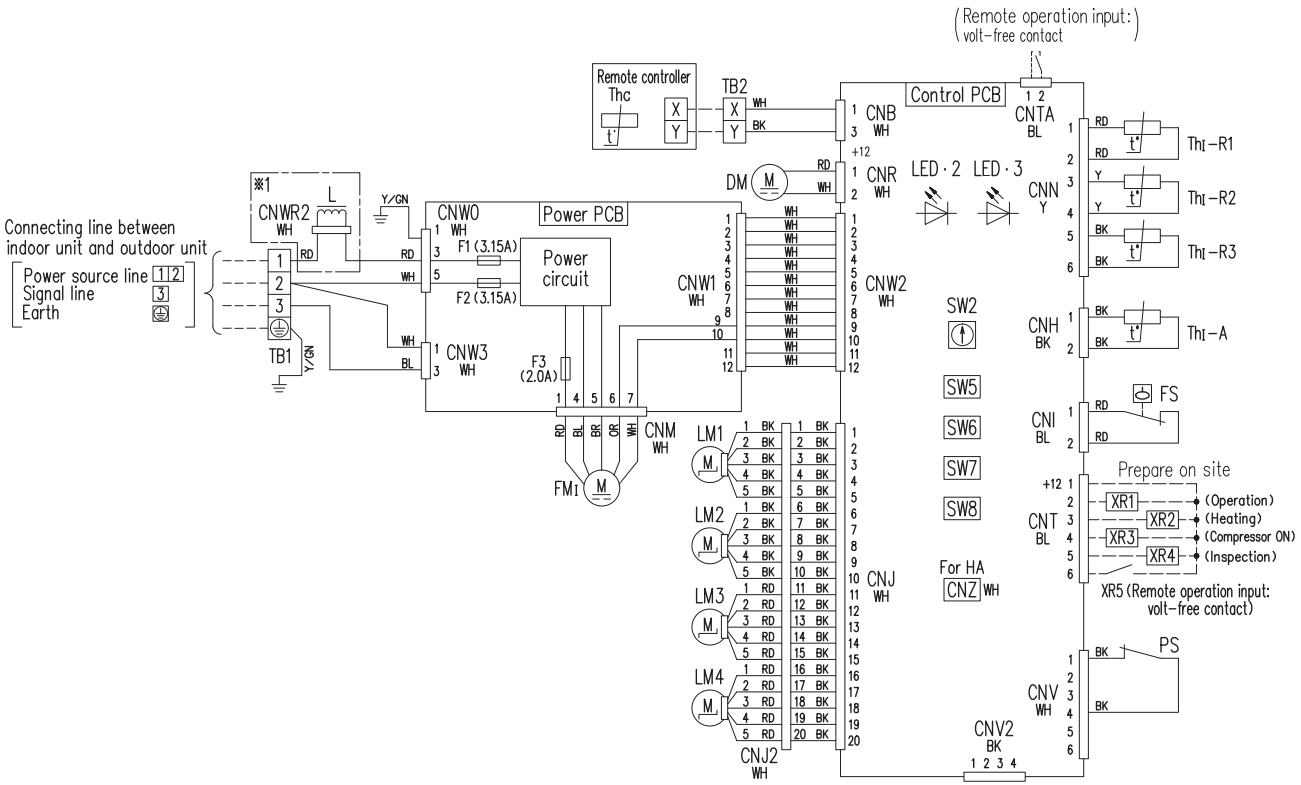
Unit: mm

1.3 ELECTRICAL WIRING

(1) Indoor unit

(a) Ceiling cassette-4way type (FDT)

Models FDT50VF, 60VF, 71VF, 100VF, 125VF, 140VF



CNB~Z	Connector
DM	Drain motor
F1~3	Fuse
FMi	Fan motor
FS	Float switch
L	Reactor
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
LM1~4	Louver motor
PS	Panel switch
SW2	Remote controller communication address
SW5	Plural units Master/Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
SW7-3	Powerful mode Valid/Invalid
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote controller)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	Y	Yellow
OR	Orange	Y/GN	Yellow/Green

Notes 1. ----indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cord (0.3mm^2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PJF000Z286 A

(b) Ceiling cassette-4 way compact type (FDTC)
Models FDTC50VF, 60VF

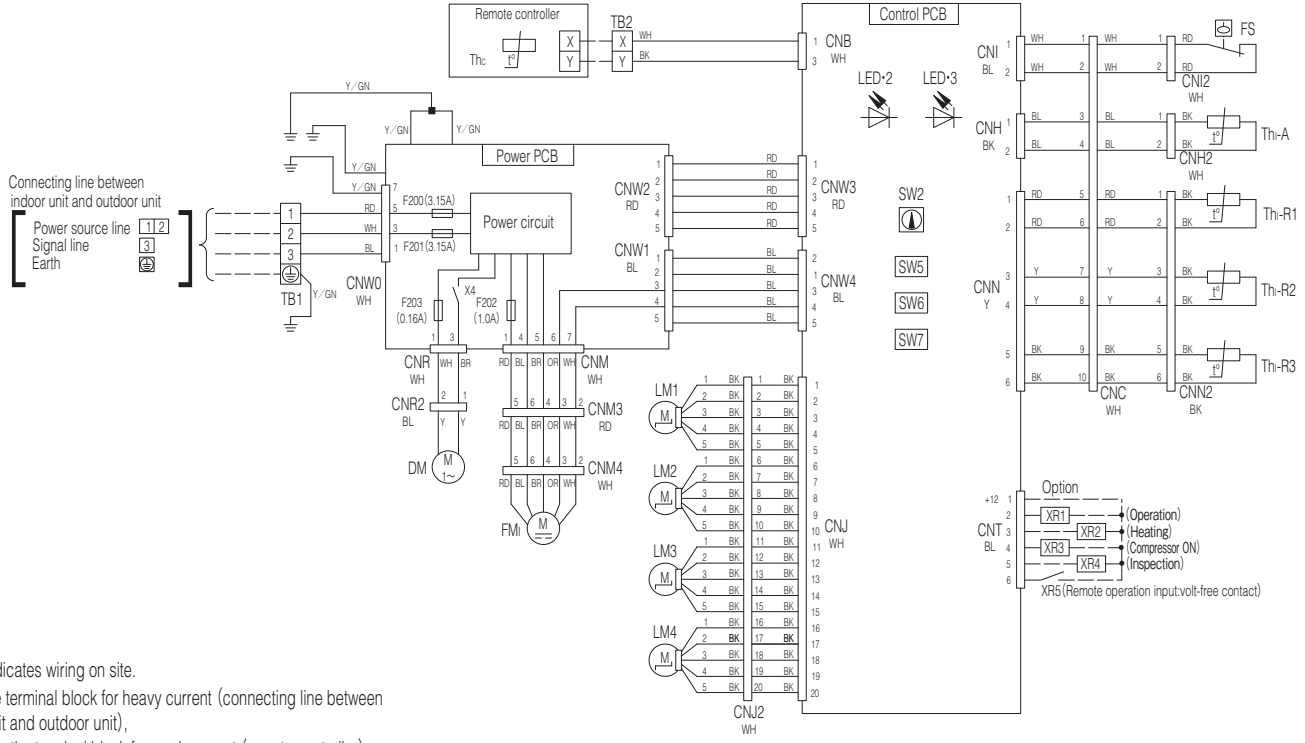
CNB~Z	Connector
DM	Drain motor
F200~203	Fuse
FMi	Fan motor
FS	Float switch
LED•2	Indication lamp (Green-Normal operation)

LED•3	Indication lamp (Red-Inspection)
LM1~4	Louver motor
SW2	Remote controller communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check,Drain motor test run

TB1	Terminal block (Power source) (□ mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote controller)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
X4	Relay for DM
■ mark	Closed-end connector

Color Marks

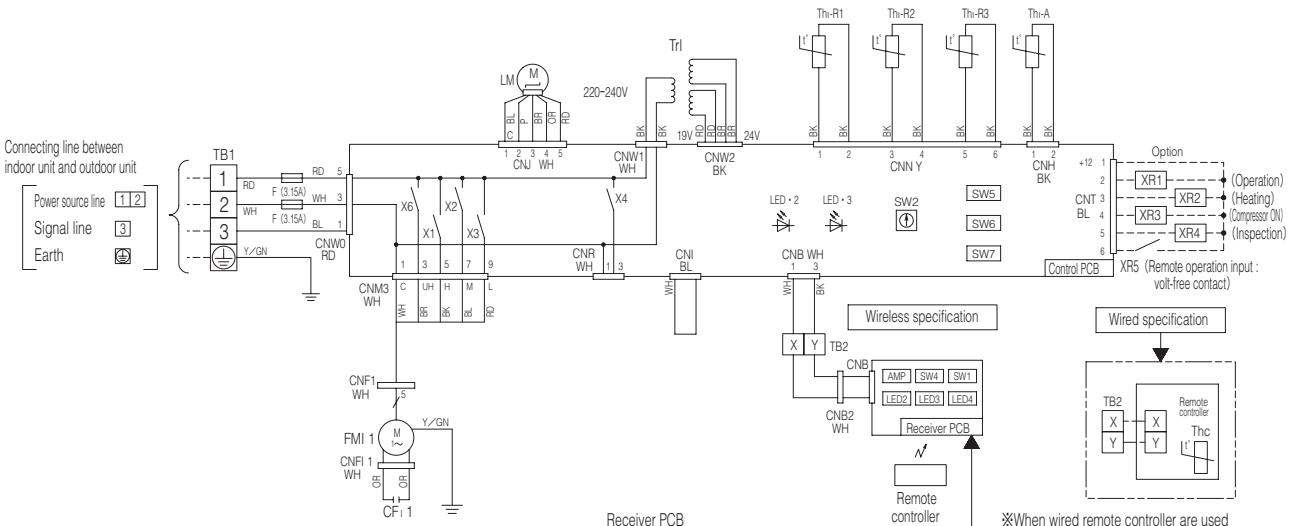
Mark	Color
BK	Black
BL	Blue
BR	Brown
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green



Notes 1. — — indicates wiring on site.
2. TB1 is the terminal block for heavy current (connecting line between indoor unit and outdoor unit), and TB2 is the terminal block for weak current (remote controller).
3. See the wiring diagram of outside unit about the line between inside unit and outside unit.
4. Use twin core cable (0.3mm^{2}X2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
5. Do not put remote controller line alongside power source line.

PJA003Z340 C

(c) Ceiling suspended type (FDEN)
Model FDEN50VF



CFI 1	Capacitor for FMI
CNB～Z	Connector
F	Fuse
FMI 1	Fan motor (with thermostat)
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
LM	Louver motor
SW2	Remote controller communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block〔Power source〕(□mark)
TB2	Terminal block〔Signal line〕(□mark)
Thc	Thermistor〔Remote controller〕
Thi -A	Thermistor〔Return air〕
Thi -R1,2,3	Thermistor〔Heat exchanger〕
TrI	Transformer
X1～3,6	Relay for FM
X4	Relay for DM

Receiver PCB

LED2	Indication lamp (Green-Normal operation)
LED3	Indication lamp (Yellow-Timer／Inspection)
LED4	7-segment display
SW1	Switches for setting
SW4	Back-up switch (Operation／Stop)

※When wired remote controller are used only (wireless type)
It is necessary to remove the line that is connected to the receiver.
Remove signal line connected to the receiver from primary side of terminal block (X,Y).

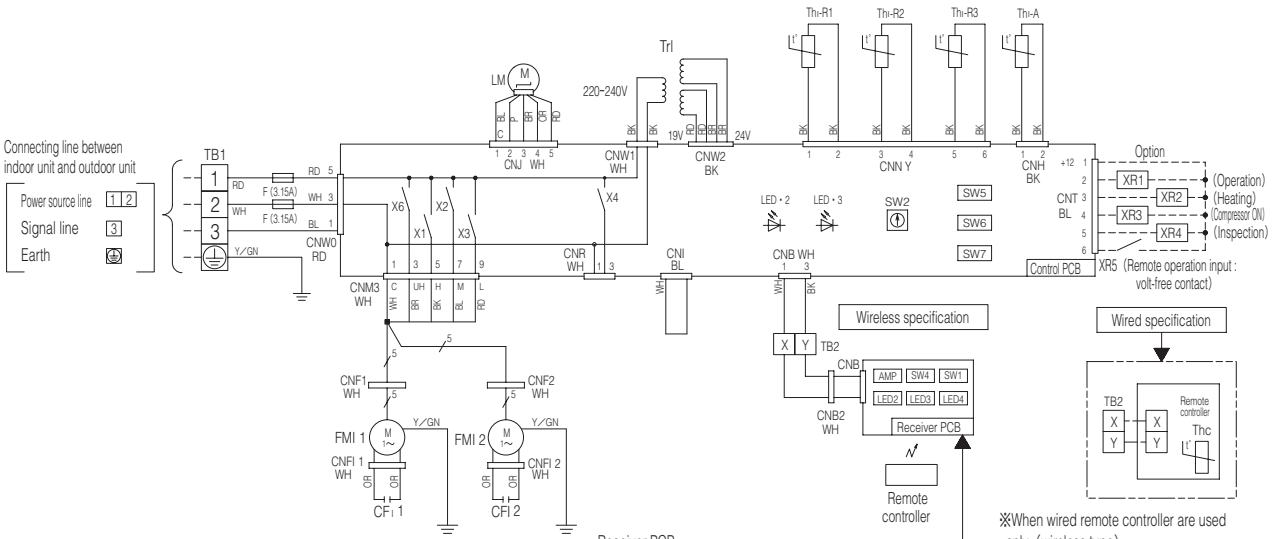
ATTENTION
① Insulate with tape the removed line.
② The LED of that removed connector will not be able to make any indication.

Notes 1. – – – · indicates wiring on site.
2. See the wiring diagram of outside unit about the line between indoor unit and outdoor unit.
3. Use twin core cable (0.3mm^{2}X2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	Y	Yellow
OR	Orange	Y／GN	Yellow／Green
P	Pink		

PFA003Z819 B



CFI 1,2	Capacitor for FMI
CNB～Z	Connector
F	Fuse
FMI 1,2	Fan motor (with thermostat)
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
LM	Louver motor
SW2	Remote controller communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block〔Power source〕(□mark)
TB2	Terminal block〔Signal line〕(□mark)
Thc	Thermistor〔Remote controller〕
Thl -A	Thermistor〔Return air〕
Thl -R1,2,3	Thermistor〔Heat exchanger〕
Trl	Transformer
X1～3,6	Relay for FM
X4	Relay for DM
■mark	Closed-end connector

Receiver PCB

LED2	Indication lamp (Green-Normal operation)
LED3	Indication lamp (Yellow-Timer／Inspection)
LED4	7-segment display
SW1	Switches for setting
SW4	Back-up switch (Operation／Stop)

※When wired remote controller are used only (wireless type)
It is necessary to remove the line that is connected to the receiver.
Remove signal line connected to the receiver from primary side of terminal block (X,Y).

ATTENTION
① Insulate with tape the removed line.
② The LED of that removed connector will not be able to make any indication.

Notes 1. – – – · indicates wiring on site.
2. See the wiring diagram of outside unit about the line between indoor unit and outdoor unit.
3. Use twin core cable (0.3mm^2 X2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	Y	Yellow
OR	Orange	Y／GN	Yellow／Green
P	Pink		

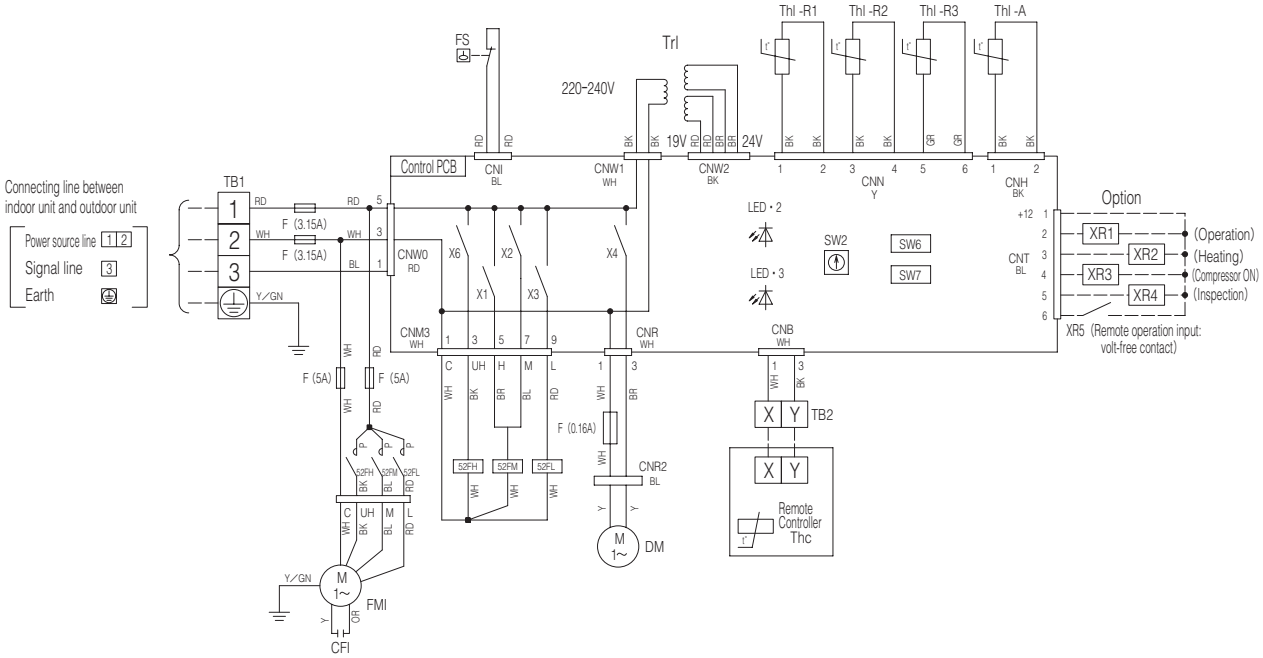
PFA003Z820 C

'12 • PAC-T-174

(d) Duct connected-High static pressure type (FDU)
Models FDU100VD, 125VD, 140VD

Color Marks

Mark	Color	Mark	Color
BK	Black	P	Pink
BL	Blue	RD	Red
BR	Brown	WH	White
GR	Gray	Y	Yellow
OR	Orange	Y/GN	Yellow/Green



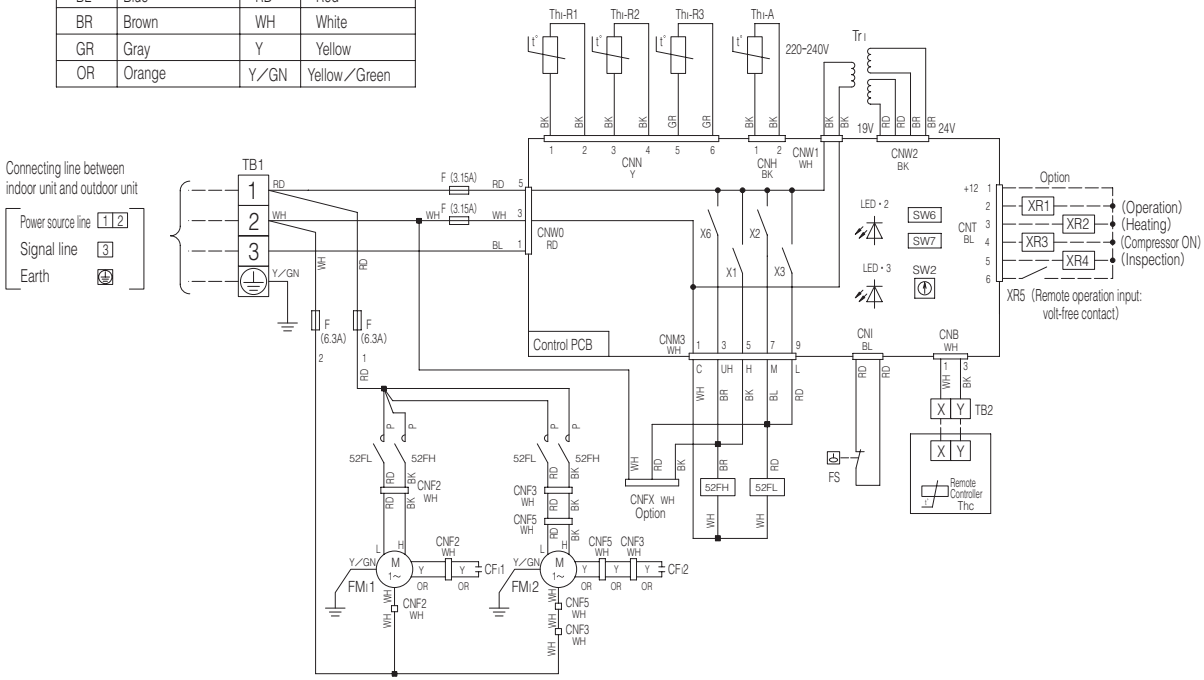
CFI	Capacitor for FMI
CNB~Z	Connector
DM	Drain motor
F	Fuse
FMI	Fan motor (with thermostat)
FS	Float switch
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote controller communication address
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote controller)
Thl -A	Thermistor (Return air)
Thl -R1,2,3	Thermistor (Heat exchanger)
Trl	Transformer
X1~3,6	Relay for FM
X4	Relay for DM
■mark	Closed-end connector
52FL,FM,FH	Electromagnetic contactor for FMI

Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm^{2}X2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PJD001Z217 B

Color Marks

Mark	Color	Mark	Color
BK	Black	P	Pink
BL	Blue	RD	Red
BR	Brown	WH	White
GR	Gray	Y	Yellow
OR	Orange	Y／GN	Yellow／Green

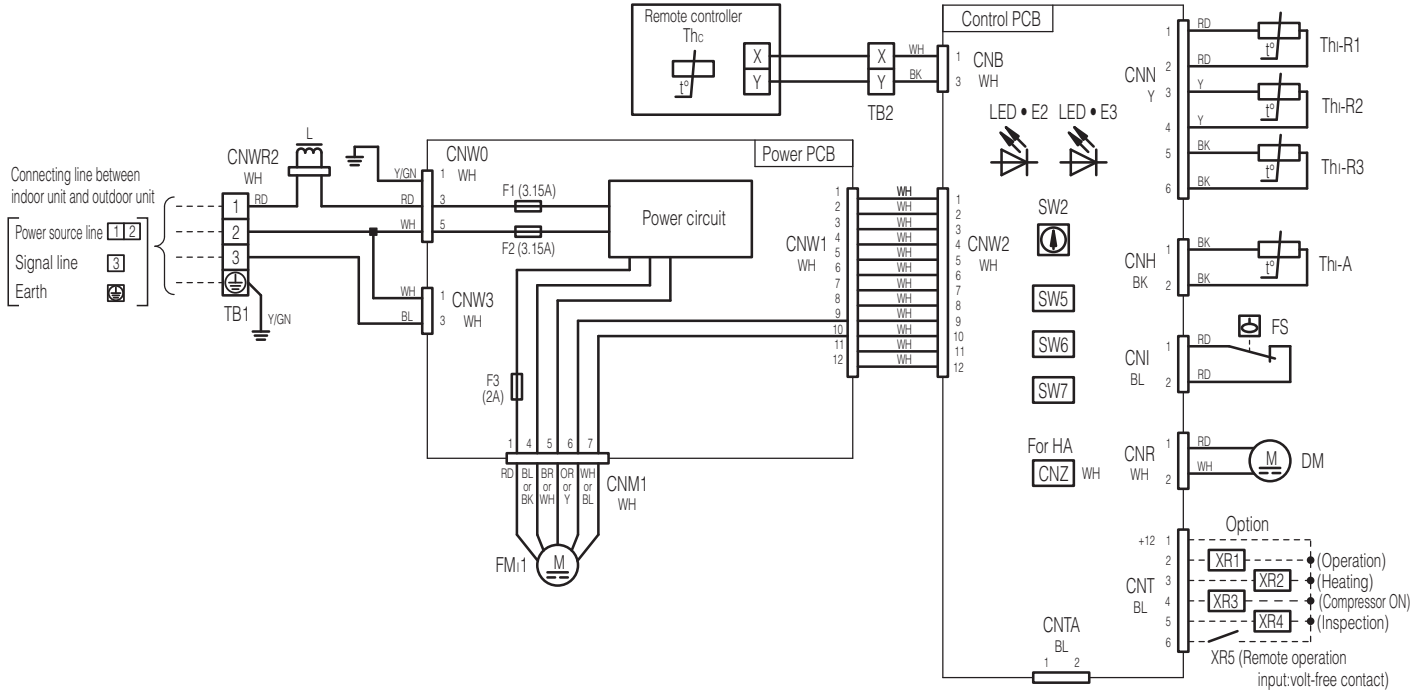


CFI 1,2	Capacitor for FMI
CNB~Z	Connector
F	Fuse
FC	Fan controller
FMI 1,2	Fan motor (with thermostat)
FS	Float switch
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote controller communication address
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote controller)
Thi -A	Thermistor (Return air)
Thi -R1,2,3	Thermistor (Heat exchanger)
Tri	Transformer
X1~3,6	Relay for FM
■mark	Closed-end connector
52FL,FH	Electromagnetic contactor for FMI

Notes 1. – – – · indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm^{2}X2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PJD001Z218 C

(e) Duct connected-Low / Middle static pressure type (FDUM)
Model FDUM50VF



CNB~Z	Connector
DM	Drain motor
F1~3	Fuse
FMi1	Fan motor (with thermostat)
FS	Float switch
L	Reactor
LED · E2	Indication lamp (Green-Normal operation)
LED · E3	Indication lamp (Red-Inspection)
SW2	Remote controller communication address
SW5	Plural units Master/Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote controller)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

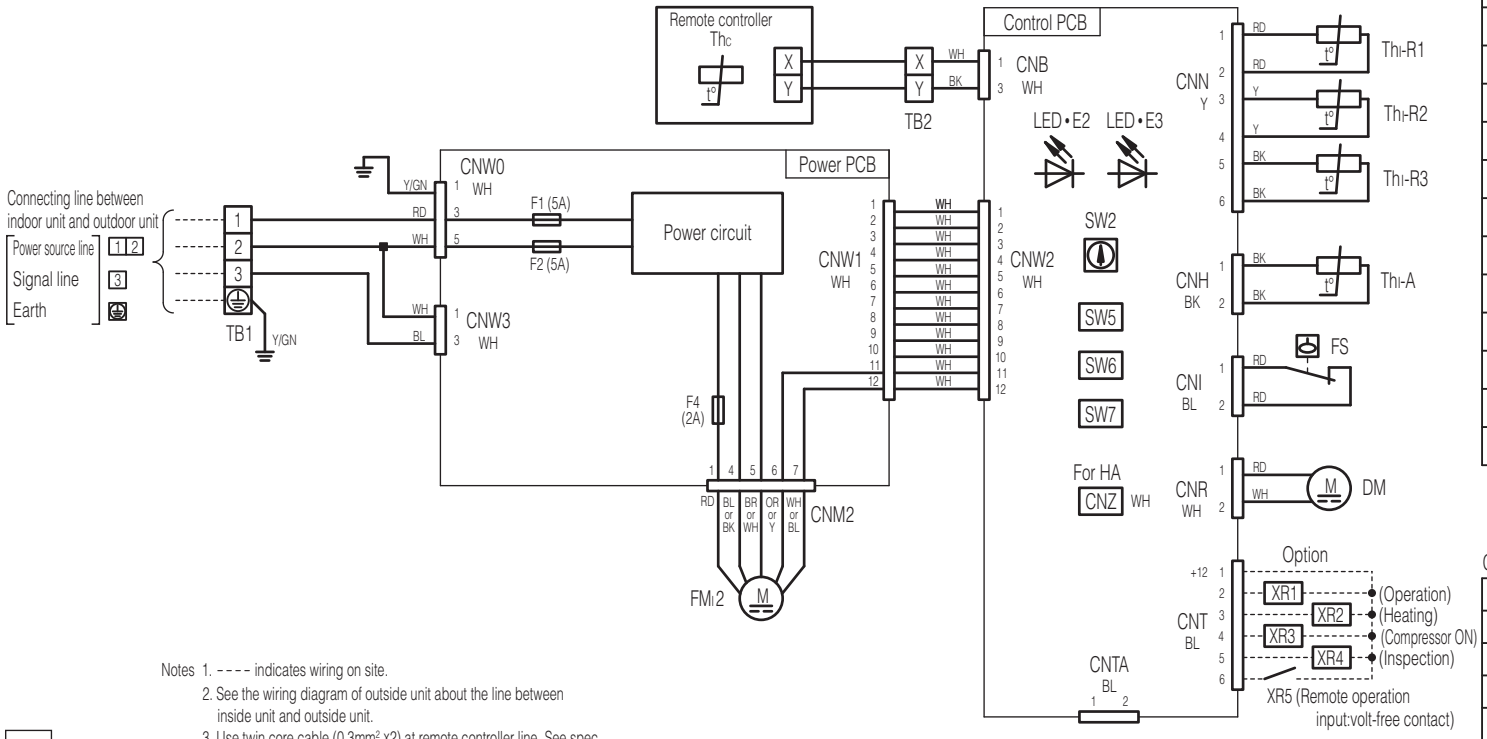
Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	Y	Yellow
OR	Orange	Y/GN	Yellow/Green

Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm² x2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PJG000Z005 A

Models FDUM60VF, 71VF



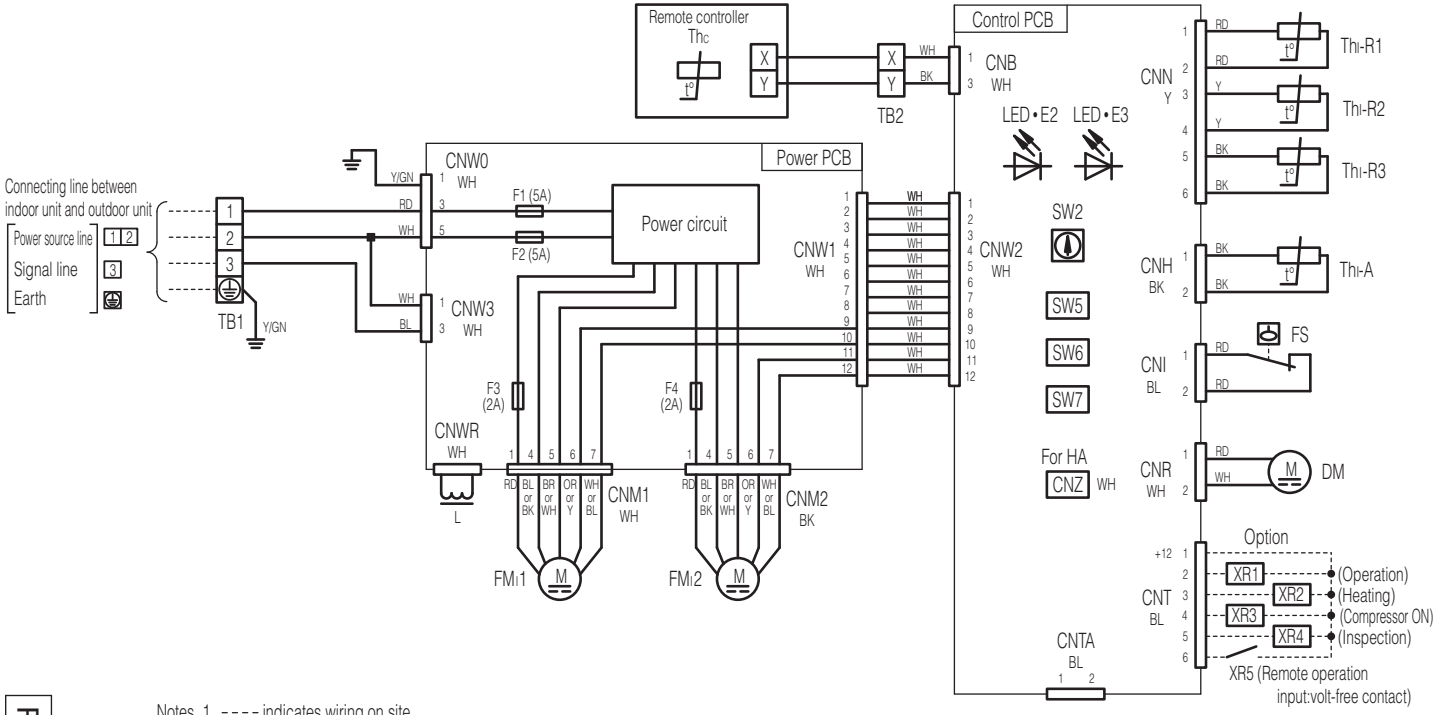
CNB~Z	Connector
DM	Drain motor
F1,2,4	Fuse
FMi2	Fan motor (with thermostat)
FS	Float switch
LED · E2	Indication lamp (Green-Normal operation)
LED · E3	Indication lamp (Red-Inspection)
SW2	Remote controller communication address
SW5	Plural units Master/Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block (Power source) (□ mark)
TB2	Terminal block (Signal line) (□ mark)
Thc	Thermistor (Remote controller)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	Y	Yellow
OR	Orange	Y/GN	Yellow/Green

Notes 1. ---- indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm² x2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PJG000Z006 A



CNB~Z	Connector
DM	Drain motor
F1~4	Fuse
FMi1,2	Fan motor (with thermostat)
FS	Float switch
L	Reactor
LED · E2	Indication lamp (Green-Normal operation)
LED · E3	Indication lamp (Red-Inspection)
SW2	Remote controller communication address
SW5	Plural units Master/Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
TB1	Terminal block (Power source) (□ mark)
TB2	Terminal block (Signal line) (□ mark)
Thc	Thermistor (Remote controller)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	Y	Yellow
OR	Orange	Y/GN	Yellow/Green

Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm² x2) at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PJG000Z007 A

(f) Floor standing type (FDF)

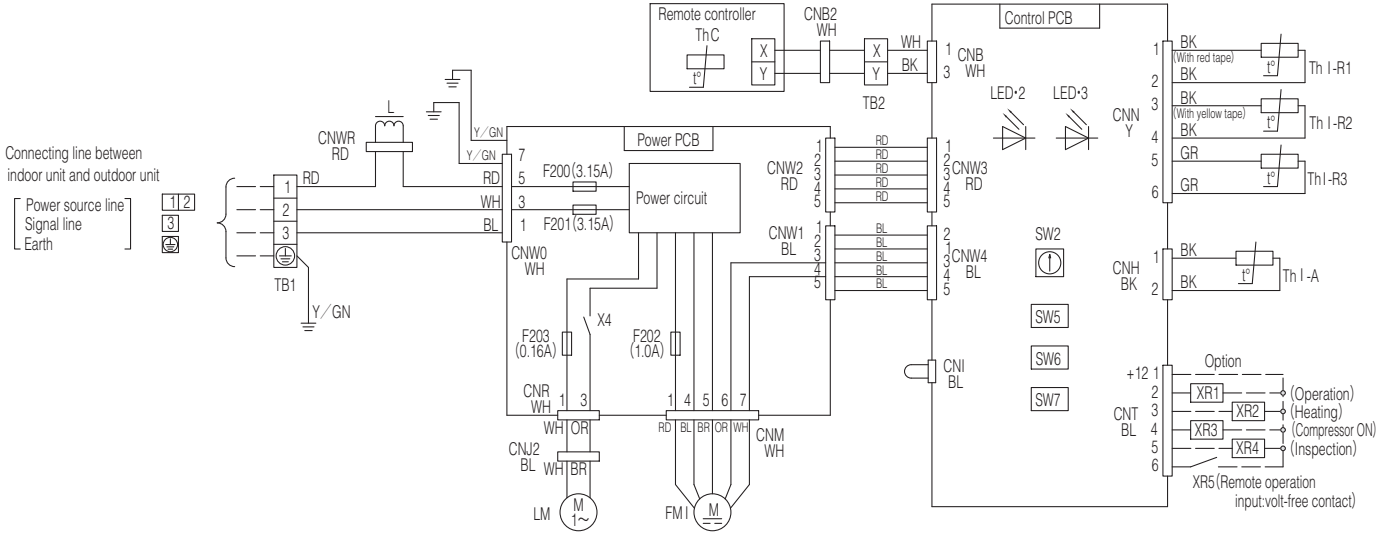
Models FDF71VD, 100VD, 125VD, 140VD

Color Marks

Mark	Color	Mark	Color	Mark	Color
BK	Black	GR	Gray	WH	White
BL	Blue	OR	Orange	Y	Yellow
BR	Brown	RD	Red	Y／GN	Yellow／Green

CNB~Z	Connector
F200~203	Fuse
FM I	Fan motor
L	Reactor
LED•2	Indication lamp (Green-Normal operation)
LED•3	Indication lamp (Red-Inspection)
LM	Louver motor
SW2	Remote controller communication address

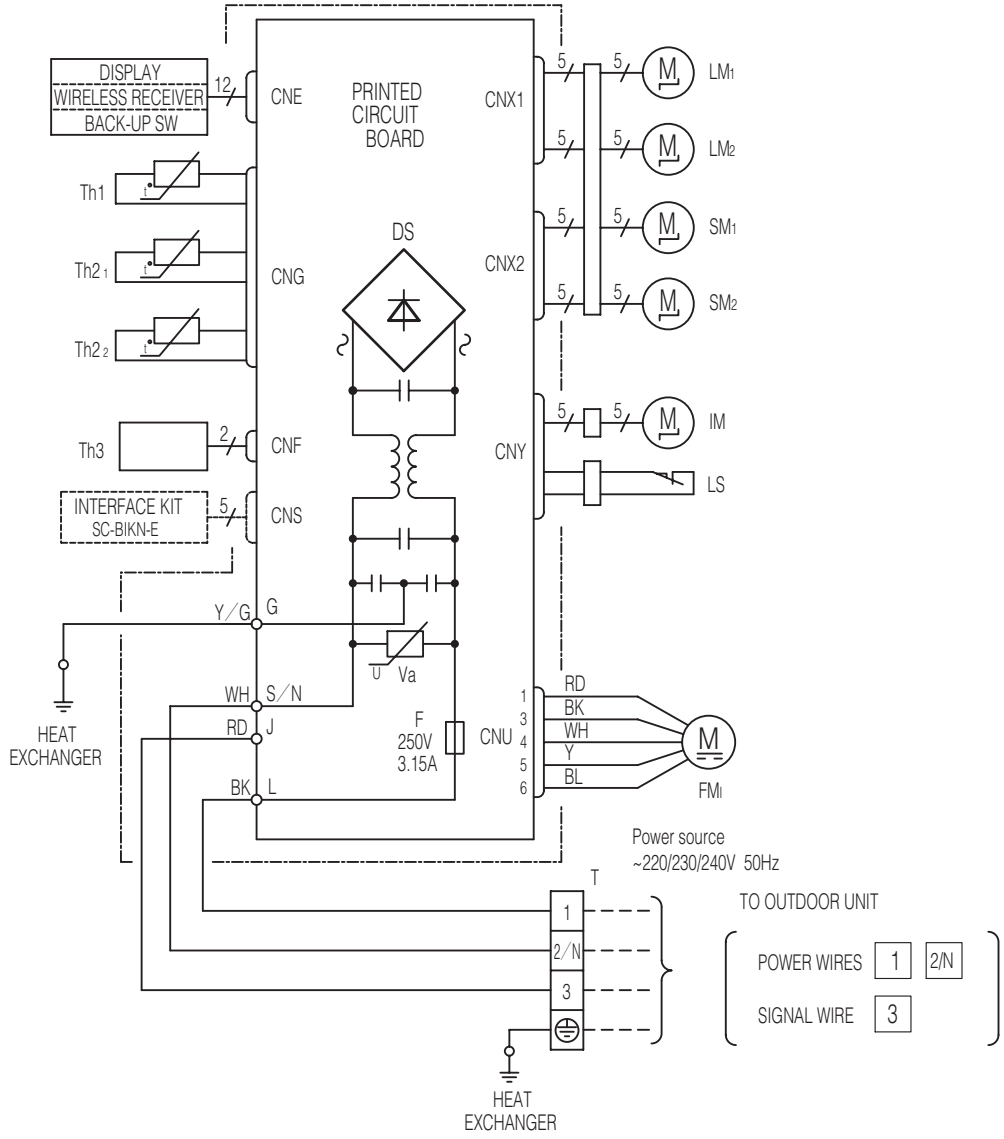
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check,Drain motor test run
TB1	Terminal block(Power source) (? mark)
TB2	Terminal block(Signal line) (□mark)
Thc	Thermistor(Remote controller)
Th I-A	Thermistor(Return air)
Th -R1,2,3	Thermistor(Heat exchanger)
X4	Relay for DM



Notes 1. — indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable(0.3mm²X2)at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.
4. Do not put remote controller line alongside power source line.

PGA000Z783

(g) Wall mounted type (SRK)
Models SRK50ZJX-S1, 60ZJX-S1



Item	Description
CNE-CNY	Connector
FM_I	Fan motor
$SM_{1,2}$	Flap motor
$LM_{1,2}$	Louver motor
IM	Inlet motor
Th1	Room temp. sensor
$Th2_{1,2}$	Heat exch. sensor
Th3	Humidity sensor
LS	Limit switch
DS	Diode stack
F	Fuse
T	Terminal block
Va	Varistor

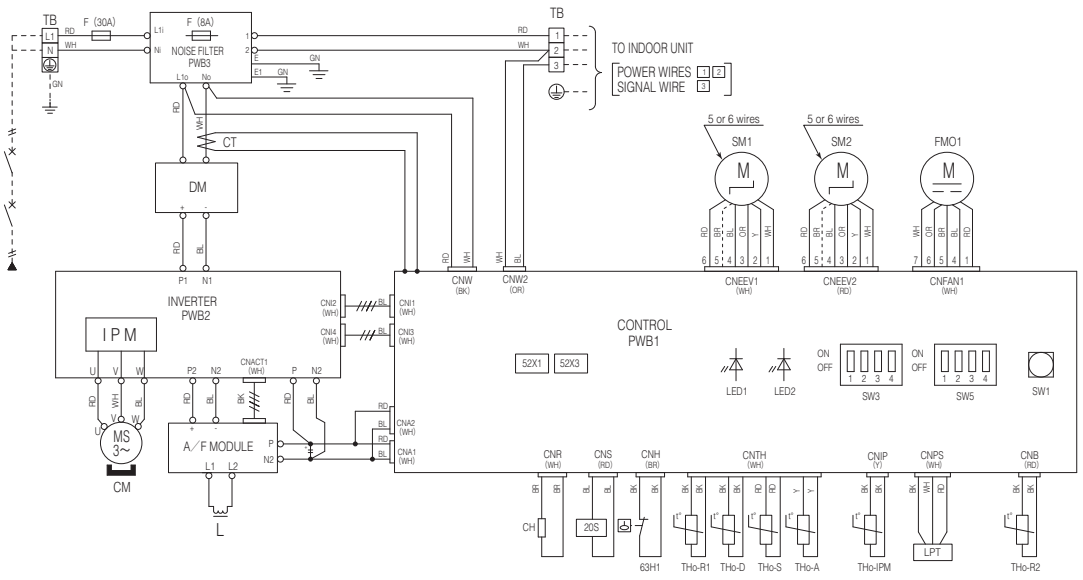
Color Marks

Mark	Color
BK	Black
BL	Blue
RD	Red
WH	White
Y	Yellow
Y/G	Yellow/Green

(2) Outdoor units

Models FDC100VN, 125VN, 140VN

POWER SOURCE 1~220-240V 50Hz／1~220V 60Hz



Mark	Color
BK	Black
BL	Blue
BR	Brown
GN	Green
GR	Gray
P	Pink
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green

Item	Description
CnA~Z	Connector
CH	Crankcase heater
CM	Compressor motor
CT	Current sensor
DM	Diode module
F	Fuse
FM01	Fan motor
IPM	Intelligent power module
L	Reactor
LED1	Indication lamp (GREEN)
LED2	Indication lamp (RED)
LPT	Low pressure sensor
SM1	Expansion valve for cooling
SM2	Expansion valve for heating
SW1	Pump down switch
SW3,5	Local setting switch
TB	Terminal block
THo-A	Thermistor (Outdoor air temp.)
THo-D	Thermistor (Discharge pipe temp.)
THo-IPM	Thermistor (IPM)
THo-R1,2	Thermistor (Heat exchanger pipe temp.)
THo-S	Thermistor (Suction pipe temp.)
20S	Solenoid valve for 4 way valve
52X1	Auxilliary relay (for CH)
52X3	Auxilliary relay (for 20S)
63H1	High pressure switch

Power cable, indoor-outdoor connecting wires

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm)
100	24	5.5	25	φ1.6mm x 3	φ1.6
125					
140					

※At the connection with the duct type indoor unit.

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm)
100	25	5.5	24	φ1.6mm x 3	φ1.6
125	27		22		
140	28	8	32		

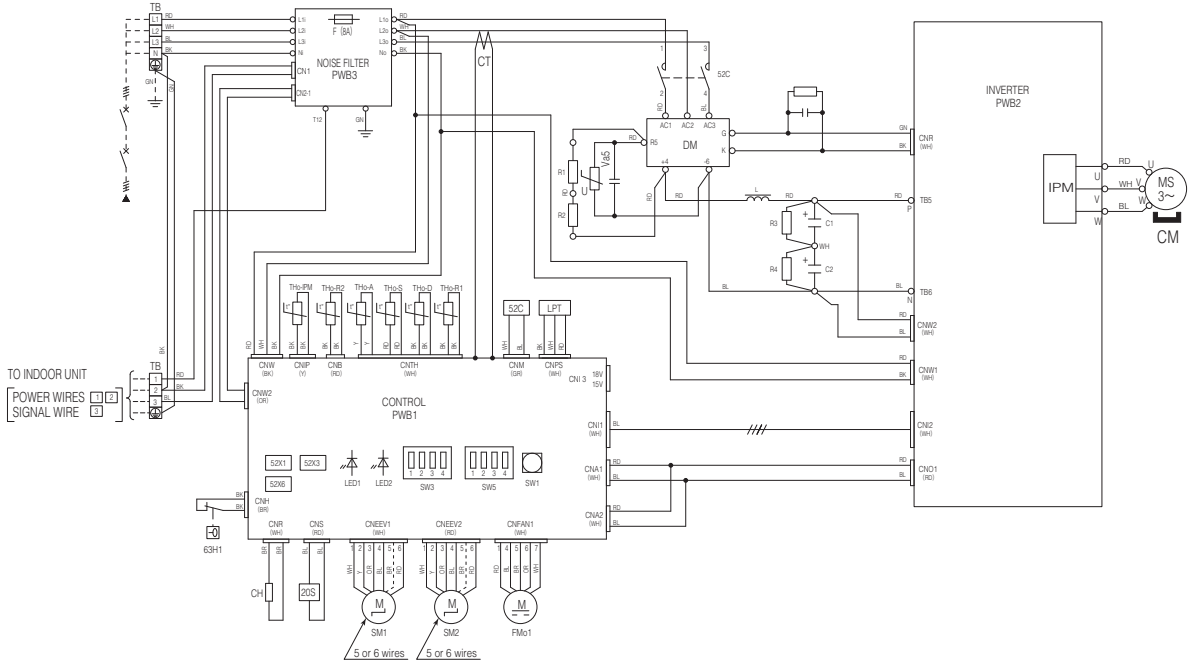
- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Local setting switch SW3 (Set up at shipment OFF)

SW3-1	Defrost control change	The defrosting operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point.
SW3-2	Snow guard fan control	When this switch is turned ON, the outdoor unit fan will run for 30 seconds in every 10 minutes, when outdoor temperature falls to 3℃ or lower and the compressor is not runnning when the unit is used in a very snowy country, set this switch to ON.
SW3-3,4	Trial operation	Method of trial operation ①Trial operation can be performed by using SW3-3,4. ②Compressor will be in the operation when SW3-3 is ON. ③Cooling trial operation will be performed when SW3-4 is OFF, and heating trial operation when SW3-4 is ON. ④Be sure to turn OFF SW3-3 after the trial operation is finished.

PCA001Z539 a

POWER SOURCE 3N~380-415V 50Hz



Mark	Color
BK	Black
BL	Blue
BR	Brown
GR	Gray
P	Pink
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green

Item	Description
CnA~Z	Connector
CH	Crankcase heater
CM	Compressor motor
CT	Current sensor
DM	Diode module
F	Fuse
FM01	Fan motor
IPM	Intelligent power module
L	Reactor
LED1	Indication lamp（GREEN）
LED2	Indication lamp（RED）
LPT	Low pressure sensor
SM1	Expansion valve for cooling
SM2	Expansion valve for heating
SW1	Pump down switch
SW3,5	Local setting switch
TB	Terminal block
THo-A	Thermistor（Outdoor air temp.）
THo-D	Thermistor（Discharger pipe temp.）
THo-IPM	Thermistor（IPM）
THo-R1,2	Thermistor（Heat exchanger pipe temp.）
THo-S	Thermistor（Suction pipe temp.）
20S	Solenoid valve for 4 way valve
52X1	Auxilliary relay（for CH）
52X3	Auxilliary relay（for 20S）
52X6	Auxilliary relay（for 52C）
63H1	High pressure switch

Power cable, indoor-outdoor connecting wires

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm)
100	15	3.5	27	φ1.6mm x 3	φ1.6
125					
140					

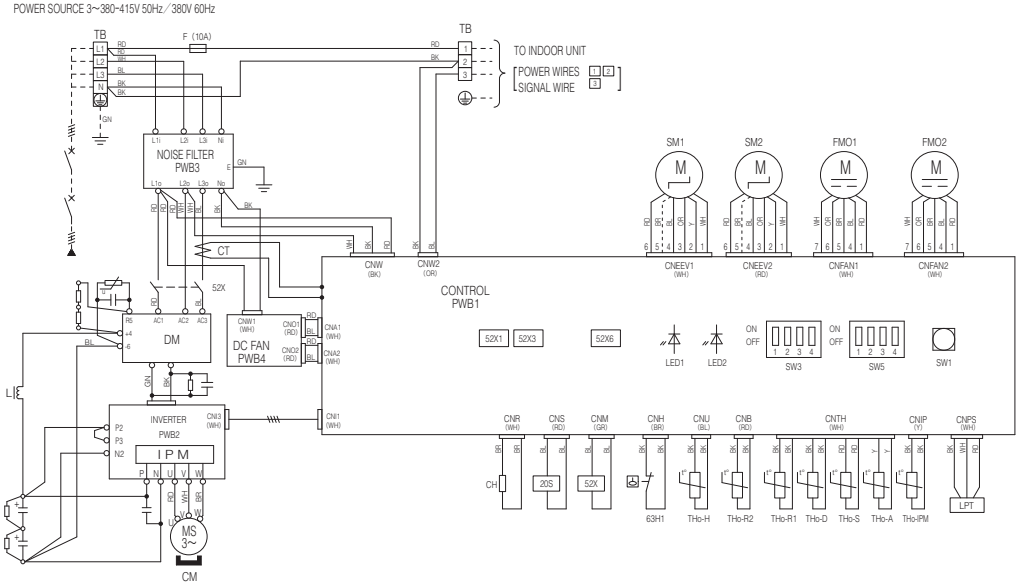
※At the connection with the duct type indoor unit.

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm)
100	16	3.5	26	φ1.6mm x 3	φ1.6
125	18		23		
140	19		21		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Local setting switch SW3（Set up at shipment OFF）

SW3-1	Defrost control change	The defrosting operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point.
SW3-2	Snow guard fan control	When this switch is turned ON, the outdoor unit fan will run for 30 seconds in every 10 minutes, when outdoor temperature falls to 3℃ or lower and the compressor is not runnning when the unit is used in a very snowy country, set this switch to ON.
SW3-3,4	Trial operation	Method of trial operation ①Trial operation can be performed by using SW3-3,4. ②Compressor will be in the operation when SW3-3 is ON. ③Cooling trial operation will be performed when SW3-4 is OFF, and heating trial operation when SW3-4 is ON. ④Be sure to turn OFF SW3-3 after the trial operation is finished.



Mark	Color
BK	Black
BL	Blue
BR	Brown
GR	Gray
P	Pink
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green

Item	Description
CnA~Z	Connector
CH	Crankcase heater
CM	Compressor motor
CT	Current sensor
DM	Diode module
F	Fuse
FM01,02	Fan motor
IPM	Intelligent power module
L	Reactor
LED1	Indication lamp (GREEN)
LED2	Indication lamp (RED)
LPT	Low pressure sensor
SM1	Expansion valve for cooling
SM2	Expansion valve for heating
SW1	Pump down switch
SW3,5	Local setting switch
TB	Terminal block
THo-A	Thermistor (Outdoor air temp.)
THo-D	Thermistor (Discharge pipe temp.)
THo-H	Thermistor (Camp.undeneth temp.)
THo-IPM	Thermistor (IPM)
THo-R1,2	Thermistor (Heat exchanger pipe temp.)
THo-S	Thermistor (Suction pipe temp.)
20S	Solenoid valve for 4 way valve
52X1	Auxilliary relay (for CH)
52X3	Auxilliary relay (for 20S)
52X6	Auxilliary relay (for 52X)
63H1	High pressure switch

Power cable, indoor-outdoor connecting wires

Model	MAX over current (A)	Power cable size $(mm)^2$	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm)
200	19	3.5	21	φ1.6mm x 3	φ1.6
250	22	5.5	31		

※At the connection with the duct type indoor unit.

Model	MAX over current (A)	Power cable size $(mm)^2$	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm)
200	24	5.5	29	φ1.6mm x 3	φ1.6
250	27		26		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Local setting switch SW3 (Set up at shipment OFF)

SW3-1	Defrost control change	The defrosting operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point.
SW3-2	Snow guard fan control	When this switch is turned ON, the outdoor unit fan will run for 30 seconds in every 10 minutes, when outdoor temperature falls to 3 or lower and the compressor is not runnning when the unit is used in a very snowy country, set this switch to ON.
SW3-3,4	Trial operation	Method of trial operation ①Trial operation can be performed by using SW3-3,4. ②Compressor will be in the operation when SW3-3 is ON. ③Cooling trial operation will be performed when SW3-4 is OFF, and heating trial operation when SW3-4 is ON. ④Be sure to turn OFF SW3-3 after the trial operation is finished.

PCA001Z541 a

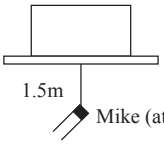
1.4 NOISE LEVEL

Notes (1) The data are based on the following conditions.
Ambient air temperature: Indoor unit 27℃WB. Outdoor unit 35℃DB.
(2) The data in the chart are measured in an anechoic room.
(3) The noise levels measured in the field are usually higher than the data because of reflection.

(1) Indoor units

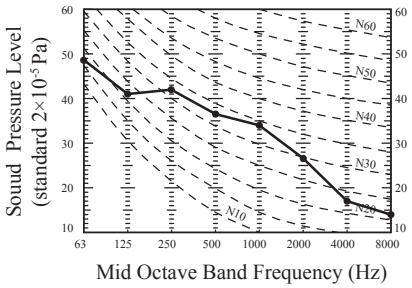
(a) Ceiling cassette-4way compact type (FDT)

Measured based on JIS B 8616
Mike position as right



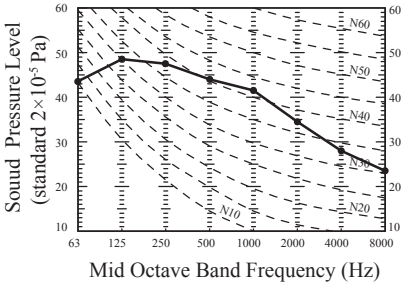
Model FDT50VF

Noise level 39 dB (A) at P-HIGH
33 dB (A) at HIGH
31 dB (A) at MEDIUM
30 dB (A) at LOW



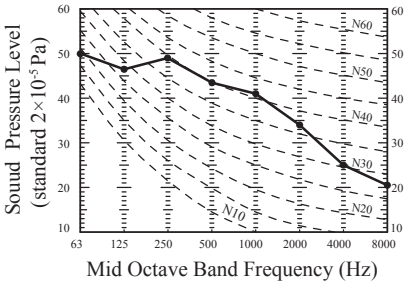
Model FDT60VF

Noise level 46 dB (A) at P-HIGH
33 dB (A) at HIGH
31 dB (A) at MEDIUM
30 dB (A) at LOW



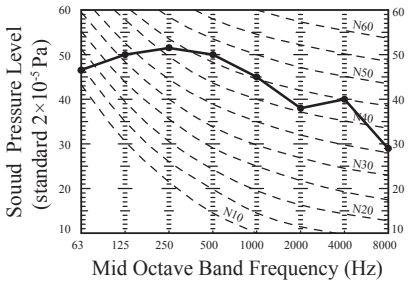
Model FDT71VF

Noise level 46 dB (A) at P-HIGH
35 dB (A) at HIGH
33 dB (A) at MEDIUM
31 dB (A) at LOW



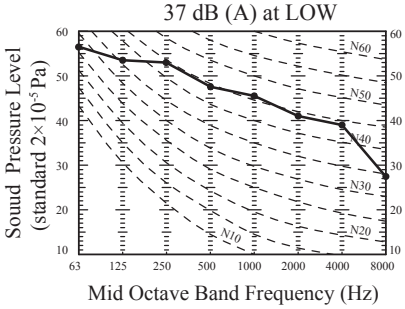
Model FDT100VF

Noise level 51 dB (A) at P-HIGH
40 dB (A) at HIGH
37 dB (A) at MEDIUM
35 dB (A) at LOW



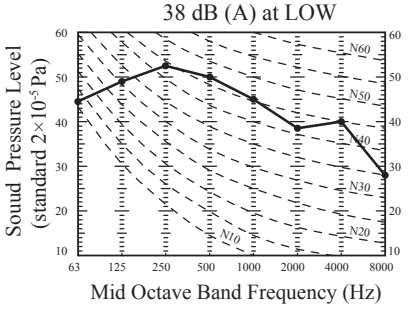
Model FDT125VF

Noise level 51 dB (A) at P-HIGH
42 dB (A) at HIGH
40 dB (A) at MEDIUM
37 dB (A) at LOW



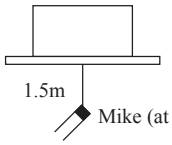
Model FDT140VF

Noise level 51 dB (A) at P-HIGH
43 dB (A) at HIGH
41 dB (A) at MEDIUM
38 dB (A) at LOW



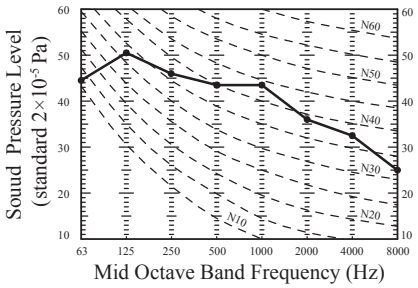
(1) Ceiling cassette-4way type (FDTC)

Measured based on JIS B 8616
Mike position as right

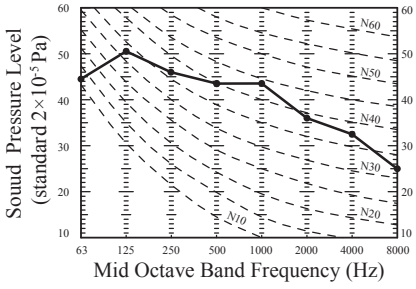


Model FDTC50VF

Cooling noise level 47 dB (A) at P-HIGH
42 dB (A) at HIGH
36 dB (A) at MEDIUM
30 dB (A) at LOW

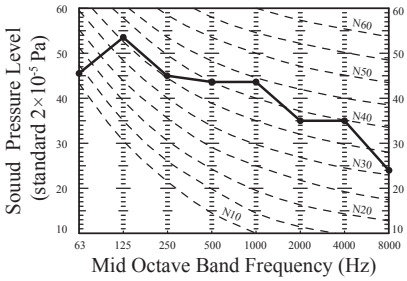


Heating noise level 47 dB (A) at P-HIGH
42 dB (A) at HIGH
36 dB (A) at MEDIUM
32 dB (A) at LOW

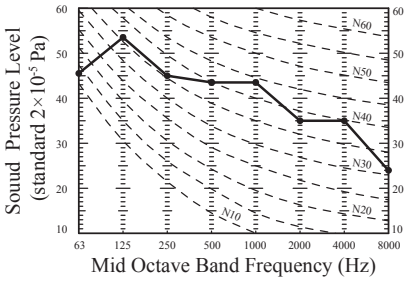


Model FDTC60VF

Cooling noise level 47 dB (A) at P-HIGH
46 dB (A) at HIGH
39 dB (A) at MEDIUM
30 dB (A) at LOW

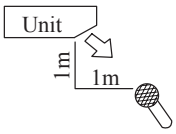


Heating noise level 47 dB (A) at P-HIGH
46 dB (A) at HIGH
39 dB (A) at MEDIUM
32 dB (A) at LOW



(c) Ceiling suspended type (FDEN)

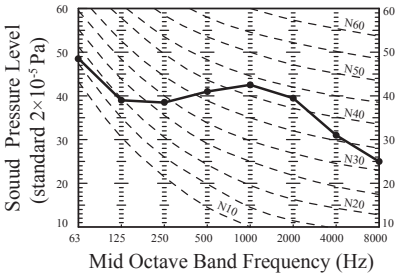
Measured based on JIS B 8616
Mike position as right



Mike (in front & below unit)

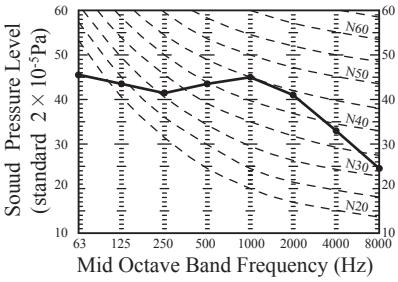
Model FDEN50VF

Noise level 46 dB (A) at P-HIGH
39 dB (A) at HIGH
38 dB (A) at MEDIUM
37 dB (A) at LOW



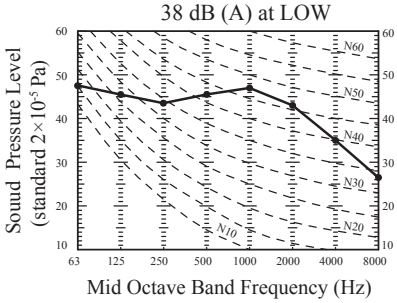
Model FDEN60VF

Noise level 48 dB (A) at P-HIGH
41 dB (A) at HIGH
39 dB (A) at MEDIUM
38 dB (A) at LOW



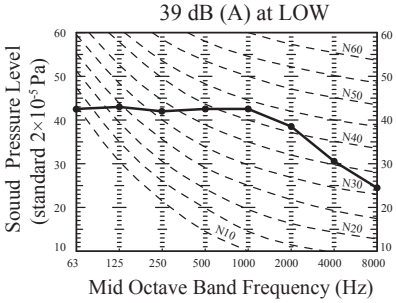
Model FDEN71VF

Noise level 50 dB (A) at P-HIGH
41 dB (A) at HIGH
39 dB (A) at MEDIUM
38 dB (A) at LOW



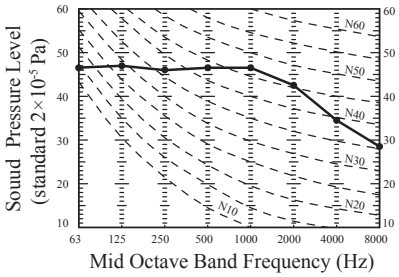
Models FDEN100VF

Noise level 46 dB (A) at P-HIGH
44 dB (A) at HIGH
41 dB (A) at MEDIUM
39 dB (A) at LOW



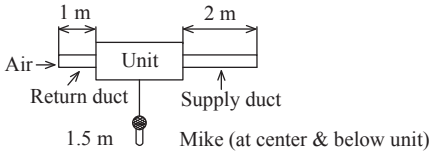
Models FDEN125VF,140VF

Noise level 50 dB (A) at P-HIGH
46 dB (A) at HIGH
44 dB (A) at MEDIUM
43 dB (A) at LOW



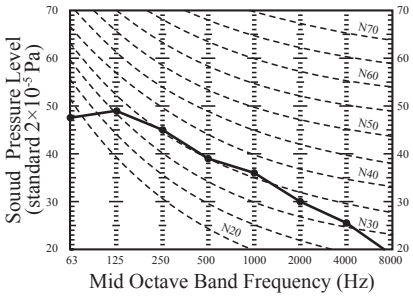
(d) Duct connected-High static pressure-type (FDU)

Measured based on JIS B 8616
Mike position as right



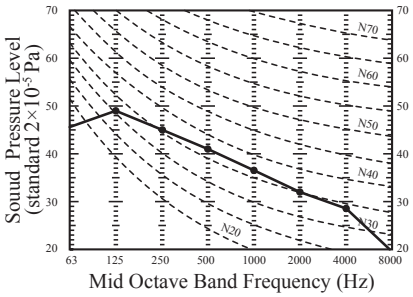
Model FDU100VD

Noise level 42 dB (A) at HIGH
37 dB (A) at LOW



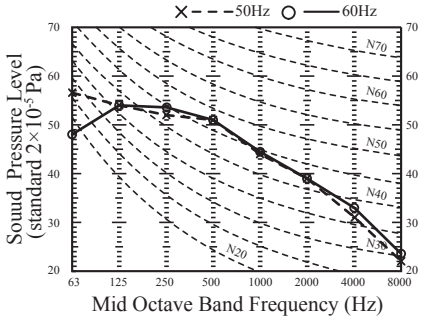
Models FDU125VD, 140VD

Noise level 43 dB (A) at HIGH
38 dB (A) at LOW



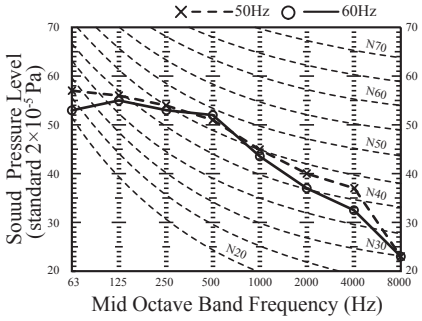
Model FDU200VF

Noise level 51 dB (A)



Model FDU250VF

Noise level 52 dB (A)



Power level

(Measurement conditions: JIS-B8616, measurement location: reverberation chamber)

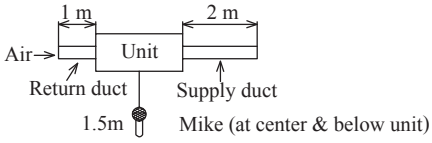
Unit: dB

Model	Air supply side	Air return side
FDU200VF	75	64
FDU250VF	76	65

Note(1) Values are for external static pressure of 200Pa.

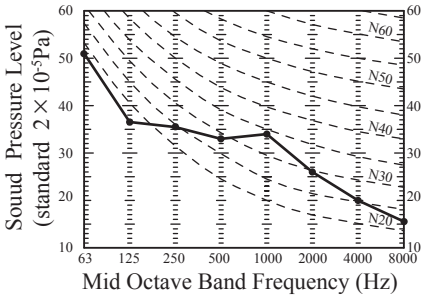
(e) Duct connected-Low / Middle static pressure type (FDUM)

Measured based on JIS B 8616
Mike position as righ



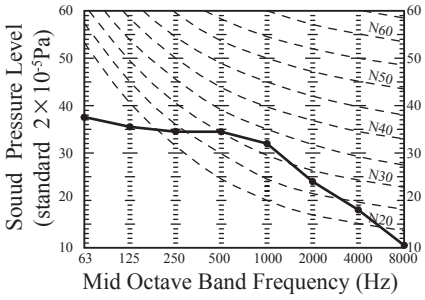
Model FDUM50VF

Noise level 37 dB (A) at P-HIGH
32 dB (A) at HIGH
29 dB (A) at MEDIUM
26 dB (A) at LOW



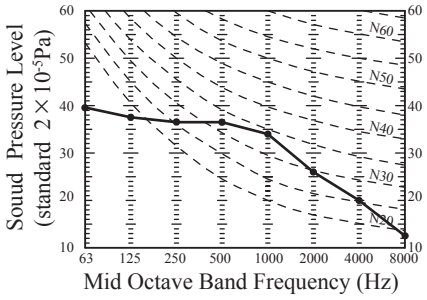
Model FDUM60VF

Noise level 36 dB (A) at P-HIGH
31 dB (A) at HIGH
28 dB (A) at MEDIUM
25 dB (A) at LOW



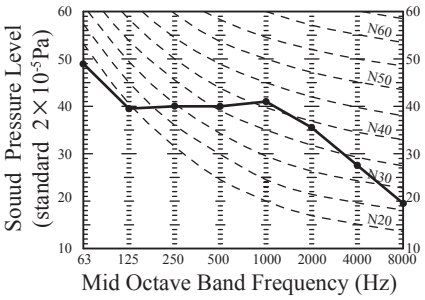
Model FDUM71VF

Noise level 38 dB (A) at P-HIGH
33 dB (A) at HIGH
29 dB (A) at MEDIUM
25 dB (A) at LOW



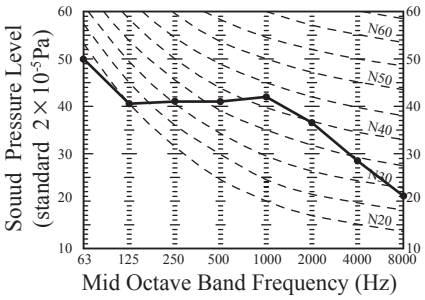
Model FDUM100VF

Noise level 44 dB (A) at P-HIGH
38 dB (A) at HIGH
36 dB (A) at MEDIUM
30 dB (A) at LOW



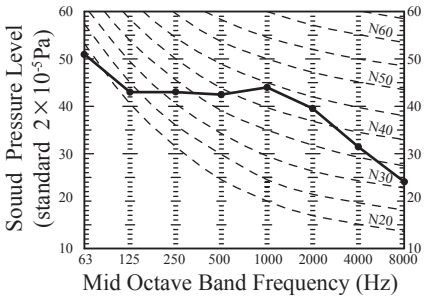
Model FDUM125VF

Noise level 45 dB (A) at P-HIGH
40 dB (A) at HIGH
34 dB (A) at MEDIUM
29 dB (A) at LOW



Model FDUM140VF

Noise level 47 dB (A) at P-HIGH
40 dB (A) at HIGH
35 dB (A) at MEDIUM
30 dB (A) at LOW



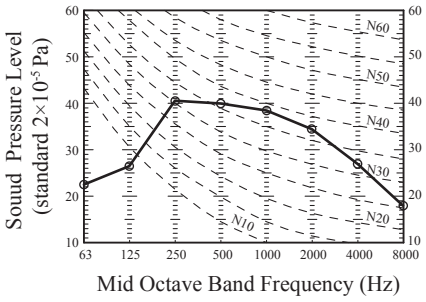
(f) Floor standing type (FDF)

Measured based on JIS B 8616
Mike position as right

Mike (1 m each at front face, forward & height)

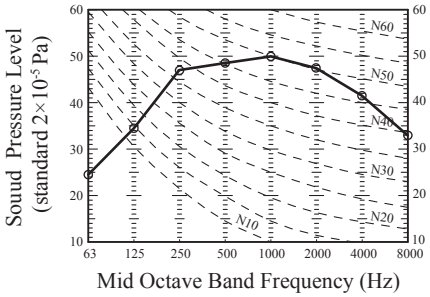
Model FDF71VD

Noise level 42 dB (A) at P-HIGH
39 dB (A) at HIGH
35 dB (A) at MEDIUM
33 dB (A) at LOW

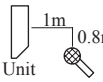


Models FDF100VD, 125VD, 140VD

Noise level 54 dB (A) at P-HIGH
50 dB (A) at HIGH
48 dB (A) at MEDIUM
44 dB (A) at LOW



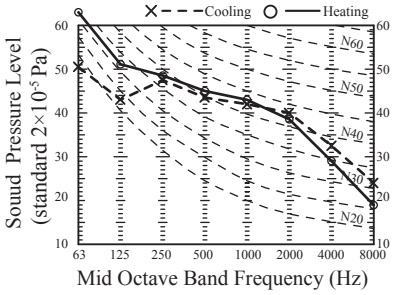
(g) Wall mounted type (SRK)



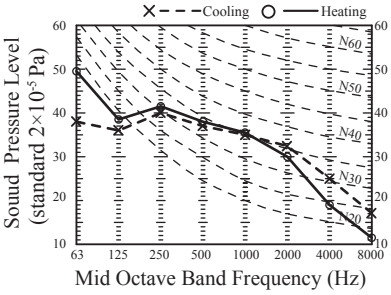
Mike position
(Center & Low points)

Model SRK50ZJX-S1

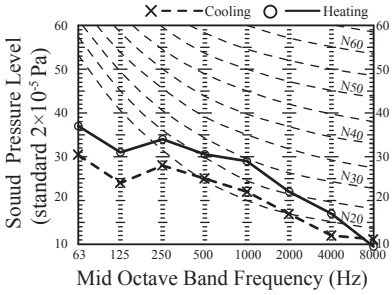
Cooling noise level 47 dB (A) at HIGH
Heating noise level 48 dB (A) at HIGH



Cooling noise level 40 dB (A) at MEDIUM
Heating noise level 40 dB (A) at MEDIUM

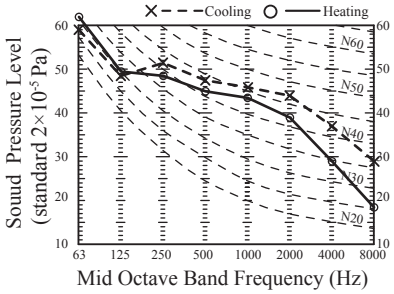


Cooling noise level 27 dB (A) at LOW
Heating noise level 33 dB (A) at LOW

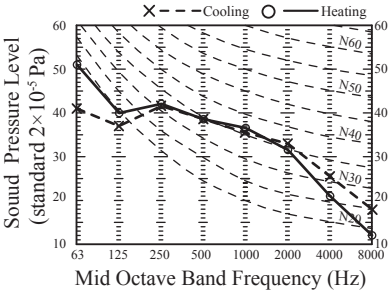


Model SRK60ZJX-S1

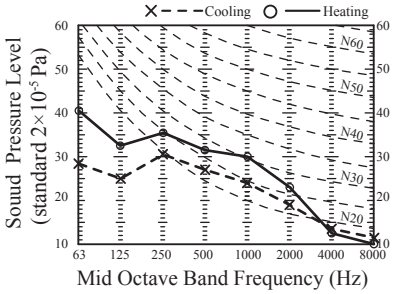
Cooling noise level 51 dB (A) at HIGH
Heating noise level 48 dB (A) at HIGH



Cooling noise level 41 dB (A) at MEDIUM
Heating noise level 41 dB (A) at MEDIUM



Cooling noise level 29 dB (A) at LOW
Heating noise level 34 dB (A) at LOW

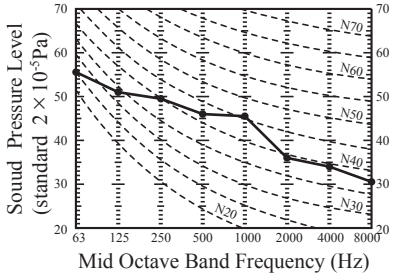


(2) Outdoor units

Measured based on JIS B 8616
Mike position: at highest noise level in position as mentioned below
Distance from front side 1m
Height 1m

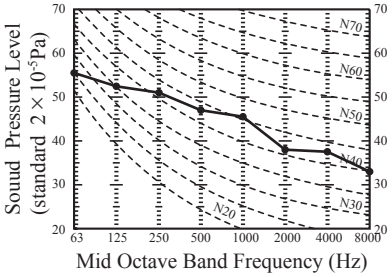
Models FDC100VN,100VS

Noise level 49 dB (A)

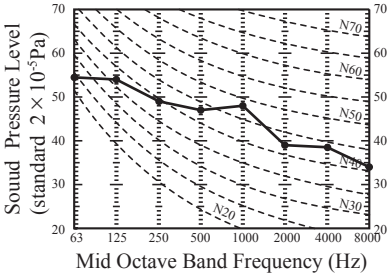


Models FDC125VN,125VS

Cooling noise level 50 dB (A)

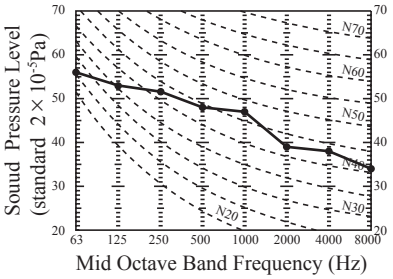


Heating noise level 51 dB (A)



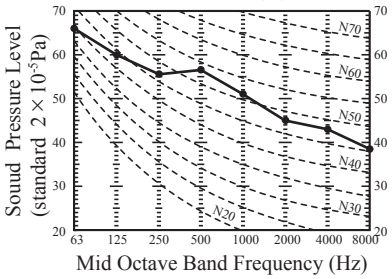
Models FDC140VN,140VS

Noiselevel 51 dB (A)



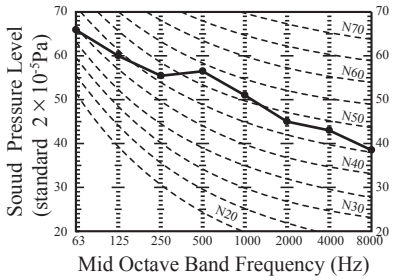
Model FDC200VS

Noise level 57 dB (A)

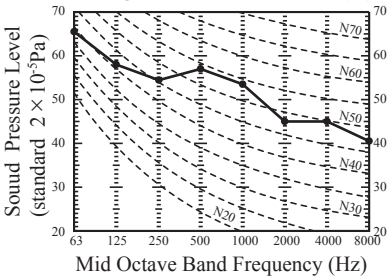


Model FDC250VS

Cooling noise level 57 dB(A)



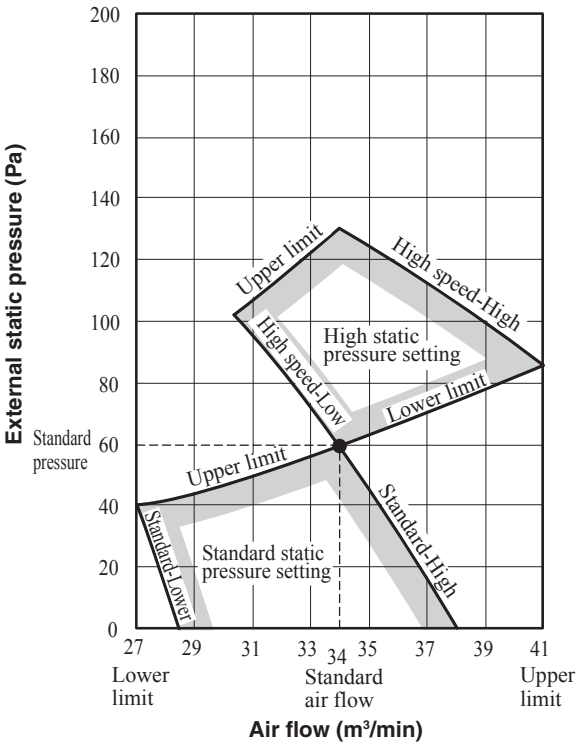
Heating noise level 58 dB (A)



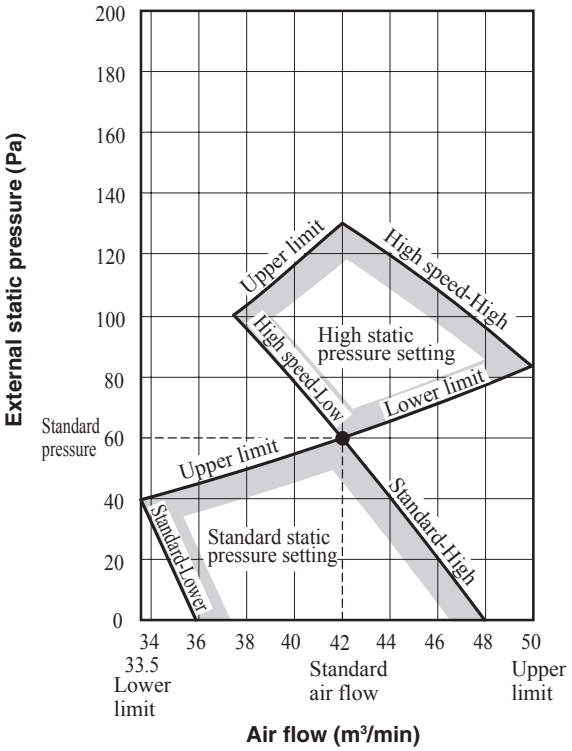
1.5 CHARACTERISTICS OF FAN

(a) Duct connected-High static pressure type (FDU)

Model FDU100VD



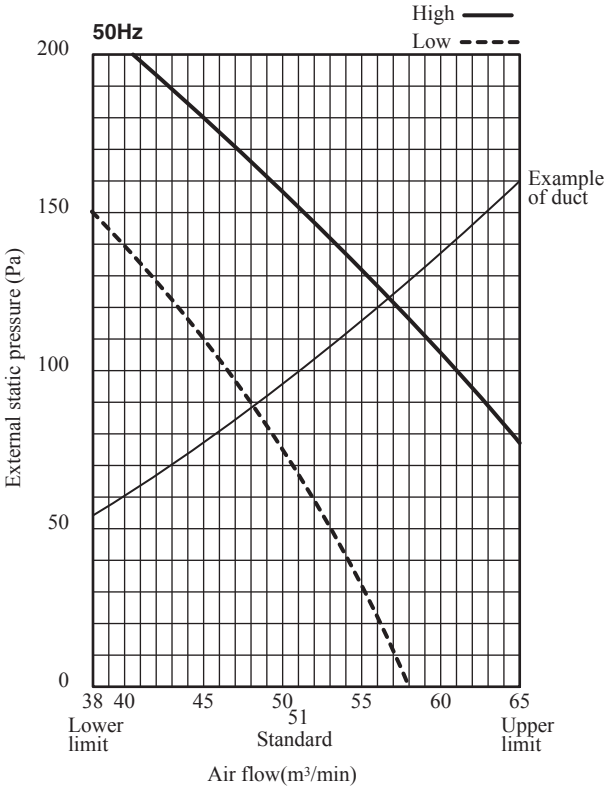
Models FDU125,140VD

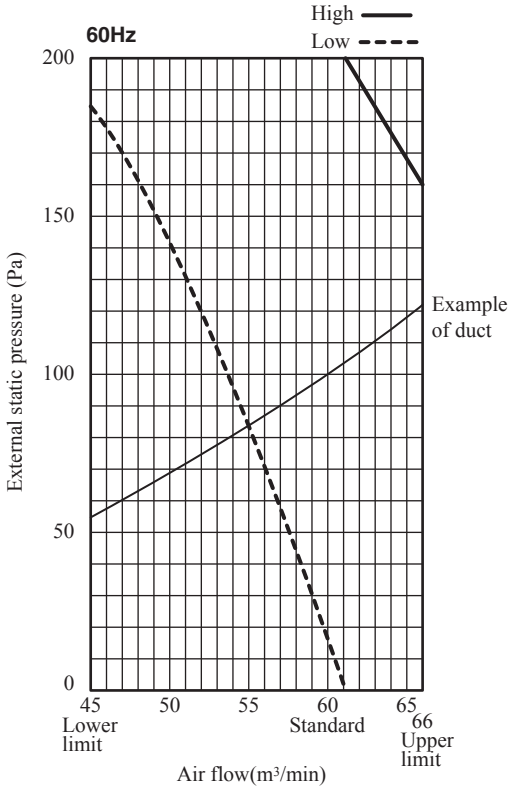


Notes 1) Factory default setting of fan speed is [STANDARD] which has standard static pressure.
If high static pressure setting is required, change setting to [HIGH SPEED 1] with remote controller on site.
(Regarding the setting method, refer to the user's manual of remote controller for detail)
2) When setting up high static pressure, do not operate the unit under the condition of 60Pa or lower of the external static pressure.
3) The fan speed of this model can be switched between two speeds.

Model FDU200VF

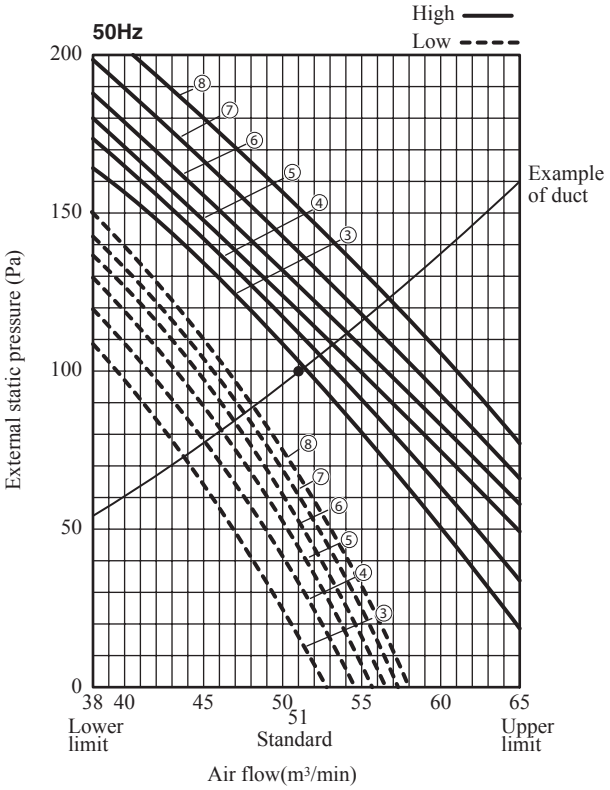
■Standard (Factory Settings)



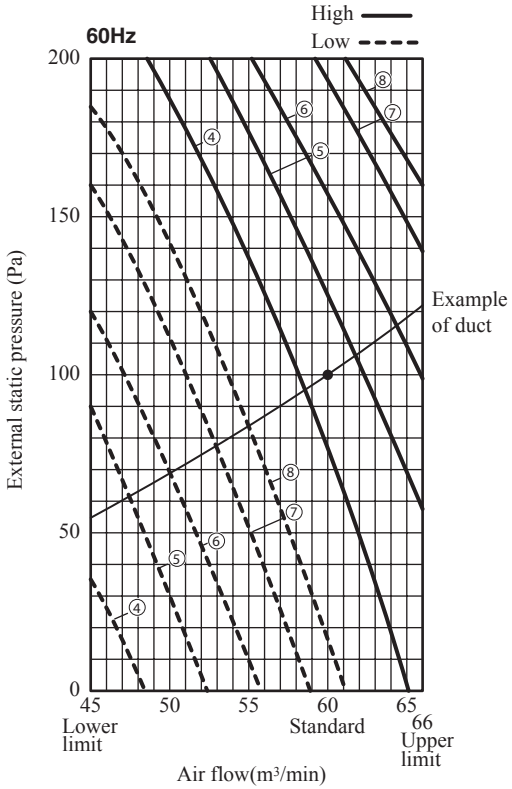


■When the fan controller kit is used (Option : Refer to page 494)

•Standard rating point rated air volume at 100Pa



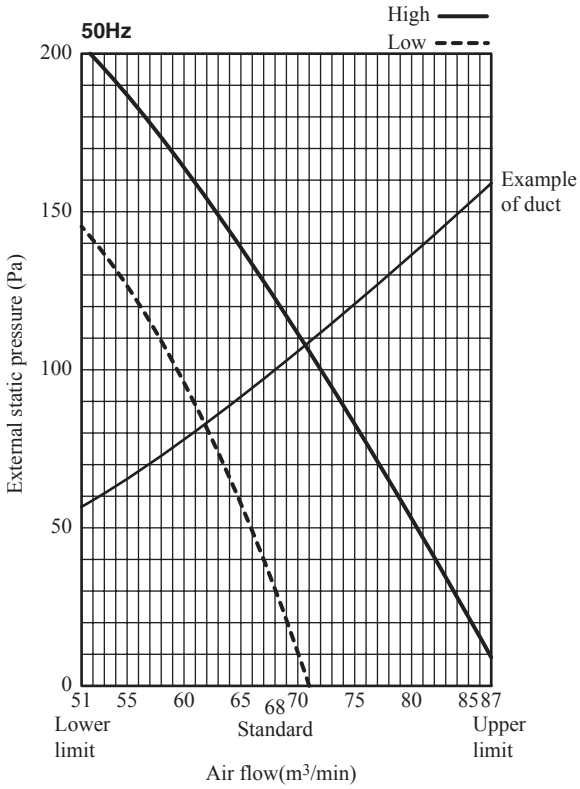
Note (1) Nos.②, ① of fan controller should not be used because the fan motor could produce electromagnetic noise.

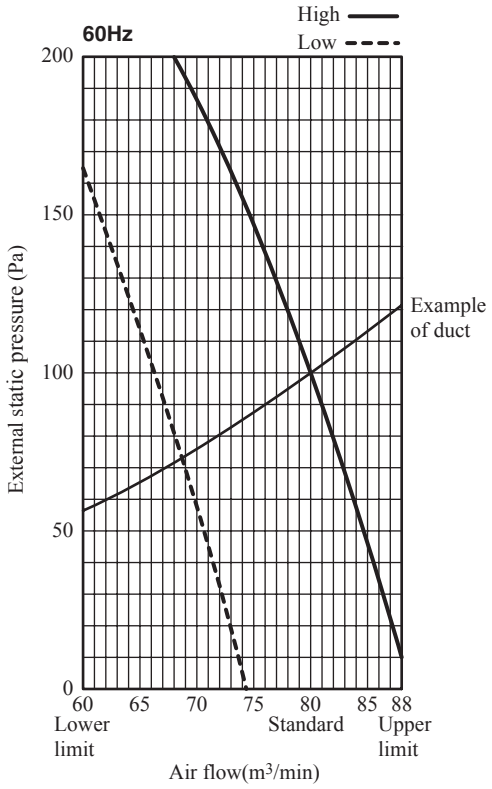


Note (1) Nos.③, ② and ① of fan controller should not be used because the fan motor could produce electromagnetic noise.

Model FDU250VF

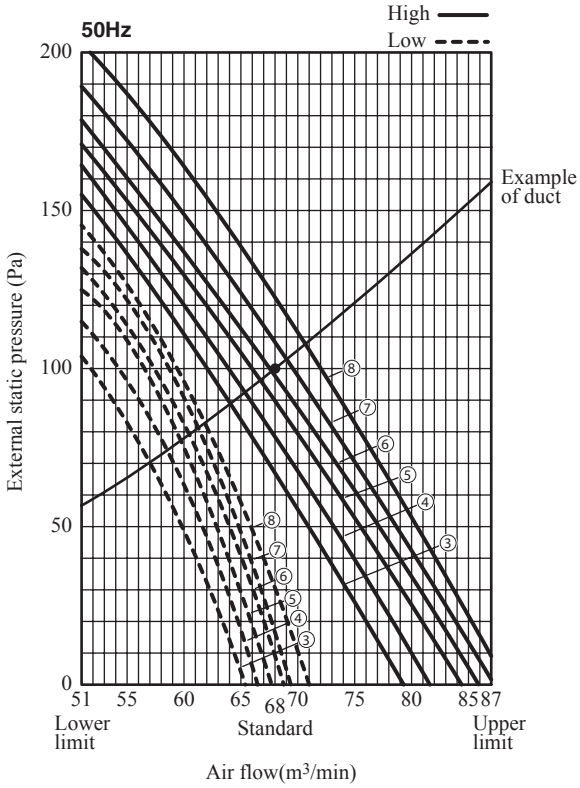
■Standard (Factory Settings)



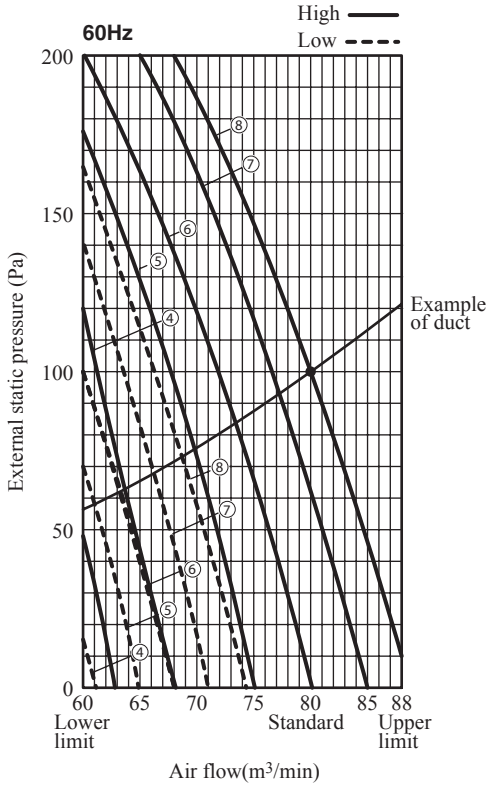


■When the fan controller kit is used (Option : Refer to page 494)

•Standard rating point rated air volume at 100Pa



Note (1) Nos.②, ① of fan controller should not be used because the fan motor could produce electromagnetic noise.



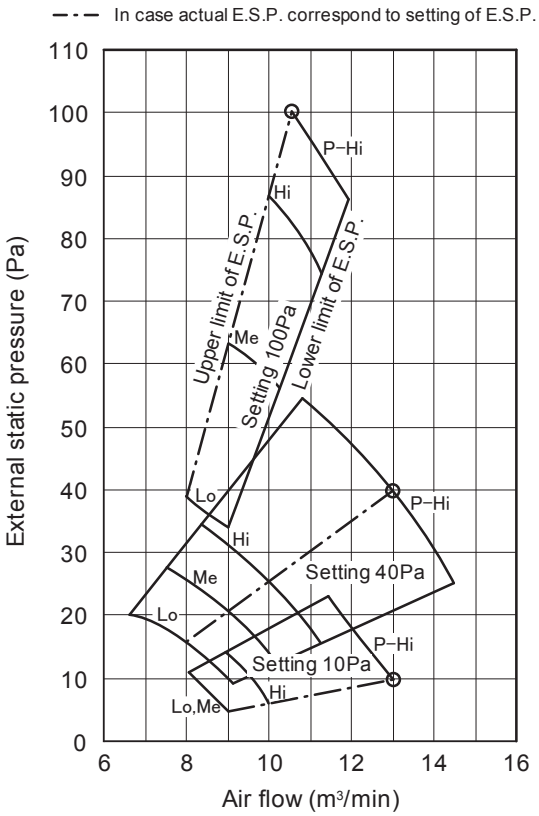
Note (1) Nos.③, ② and ① of fan controller should not be used because the fan motor could produce electromagnetic noise.

(b) Duct connected-Low / Middle static pressure type (FDUM)

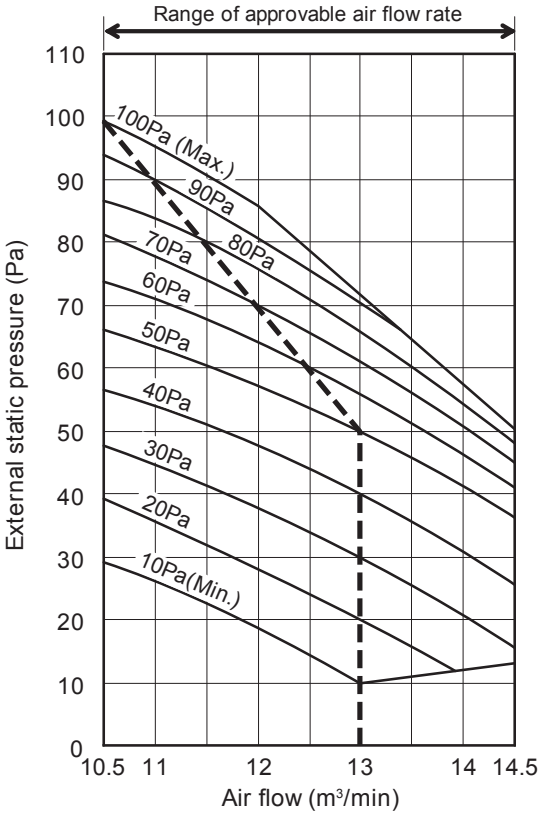
- Characteristic FAN (1) shows air flow vs. External Static Pressure (E.S.P.) range where settings of E.S.P. are maximum E.S.P. (100Pa) , rated E.S.P., and minimum E.S.P. (10Pa)
- Characteristic FAN (2) shows air flow vs. E.S.P curve when set fan tap is set P-Hi with each setting of E.S.P by remote controller.
- External Static Pressure (E.S.P.) can be set by wired remote controller.
- You can set required E.S.P. by wired remote controller which calculate it with the set air flow rate and pressure loss of the duct connected.

Model FDUM50VF

Characteristic FAN(1)

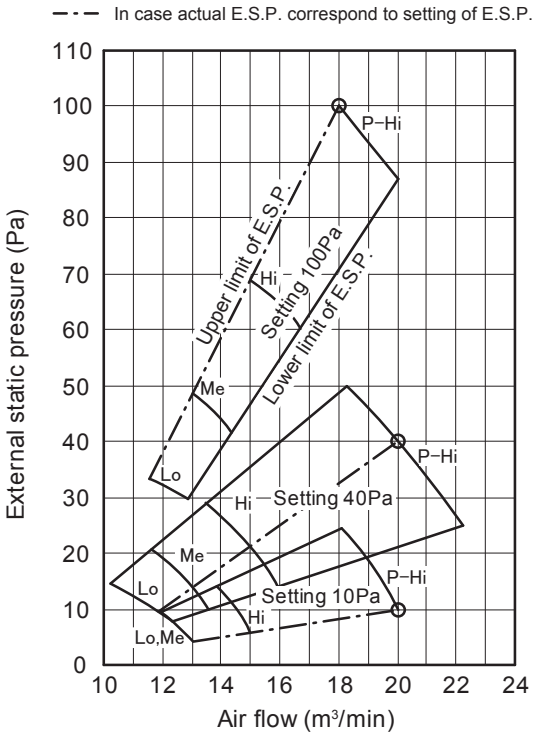


Characteristic FAN(2)

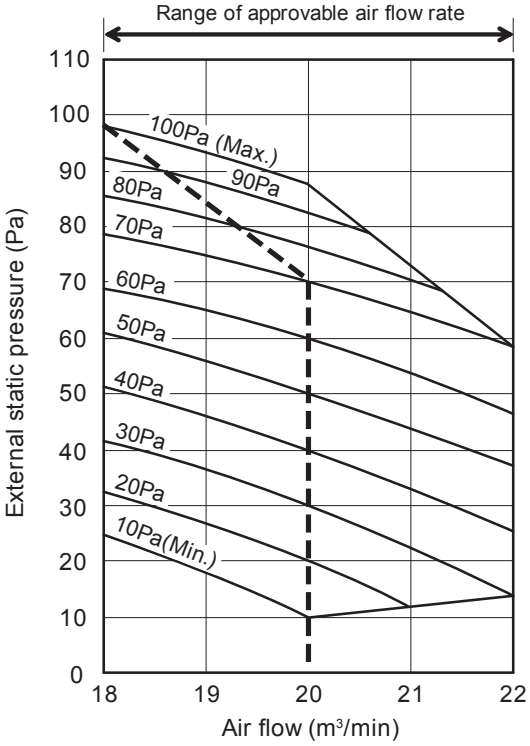


Model FDUM60VF

Characteristic FAN(1)

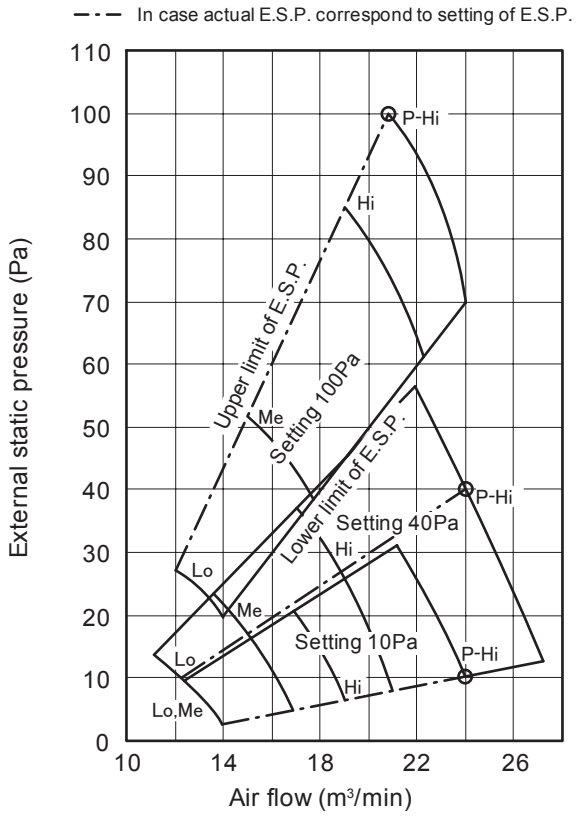


Characteristic FAN(2)

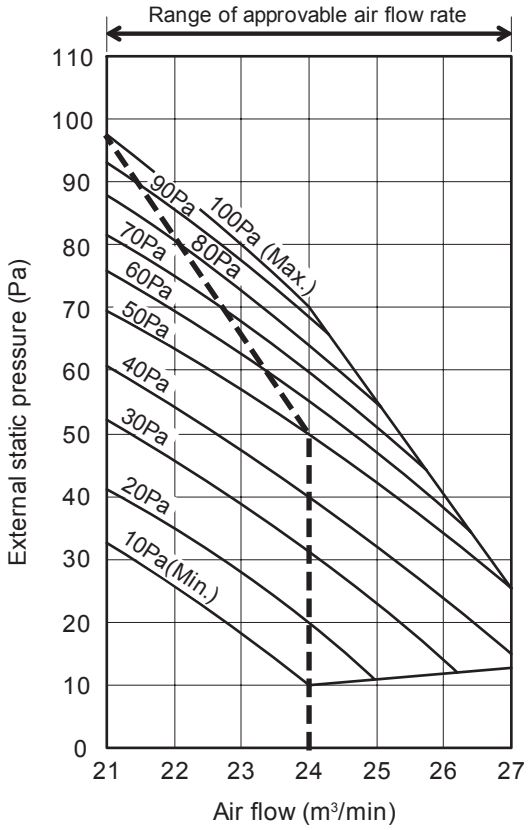


Model FDUM71VF

Characteristic FAN(1)

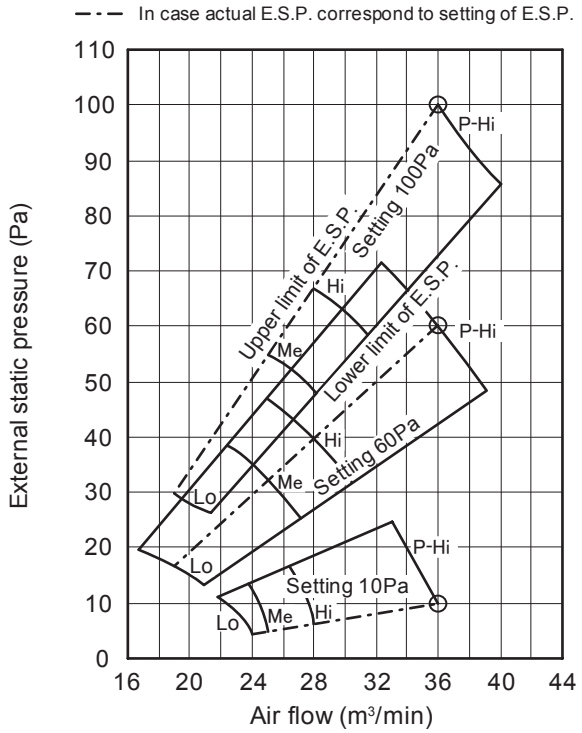


Characteristic FAN(2)

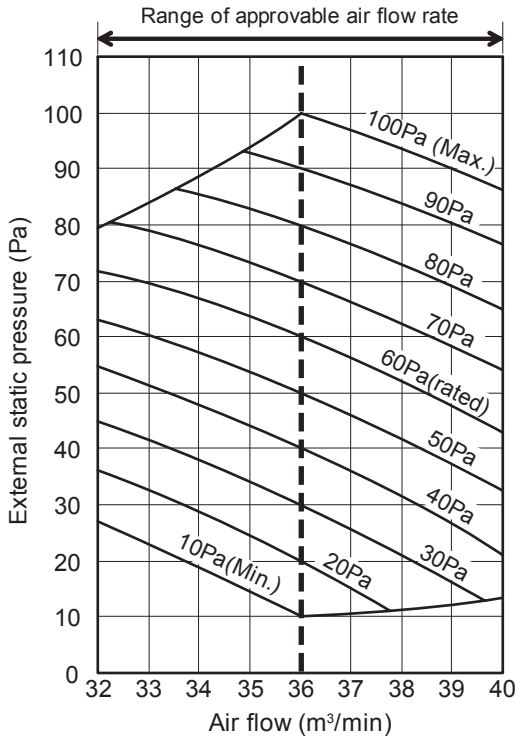


Model FDUM100VF

Characteristic FAN(1)

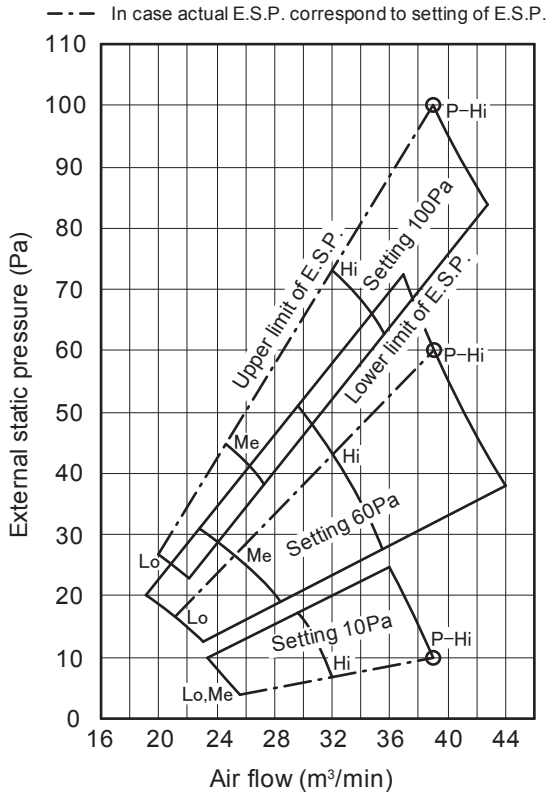


Characteristic FAN(2)

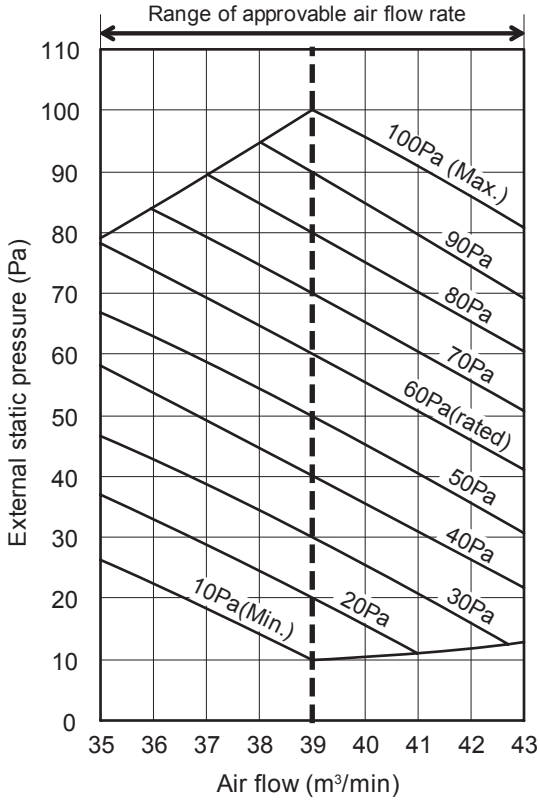


Model FDUM125VF

Characteristic FAN(1)

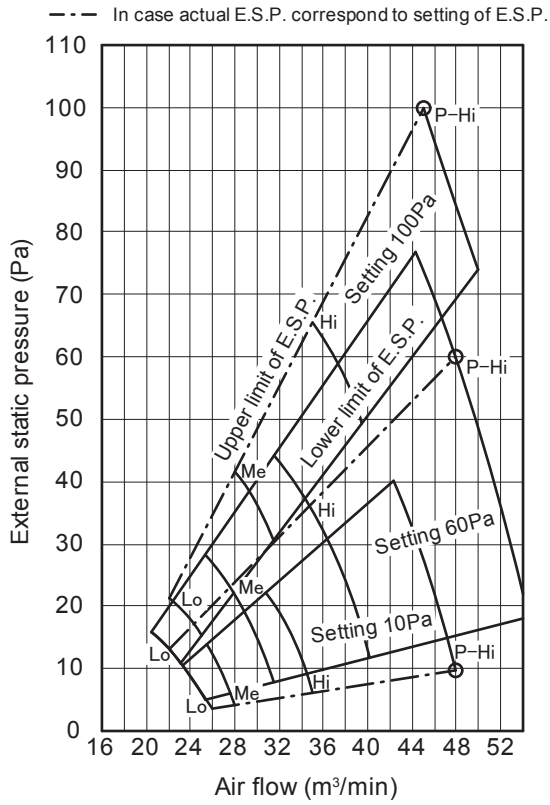


Characteristic FAN(2)

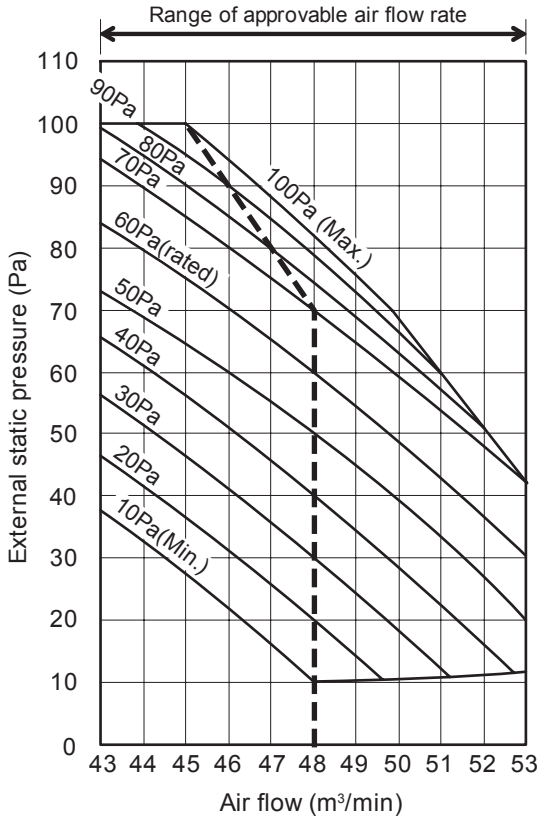


Model FDUM140VF

Characteristic FAN(1)



Characteristic FAN(2)



1.6 TEMPERATURE AND VELOCITY DISTRIBUTION

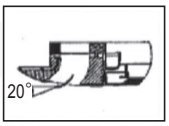
Indoor temperature
Cooling 27°CDB / 19°CWB
Heating 20°CDB
Note: These figures represent the typical main range of temperature and velocity distribution at the center of air outlet within the published conditions.
In the actual installation, they may differ from the typical figures under the influence of air temperature conditions, ceiling height, operation conditions and obstacles.

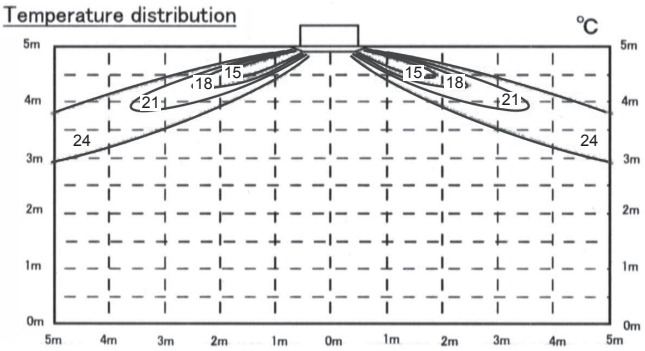
(1) Ceiling cassett-4way type (FDT)

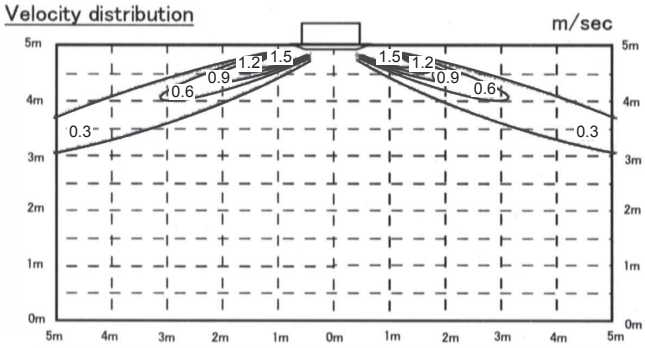
Model FDT50VF

Cooling Air flow : P-Hi

Louver position

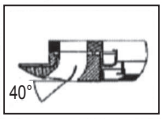


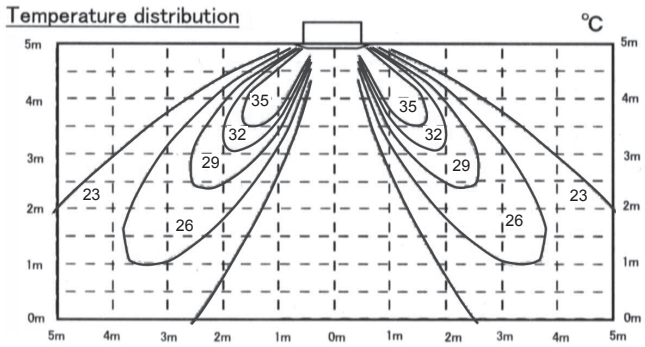


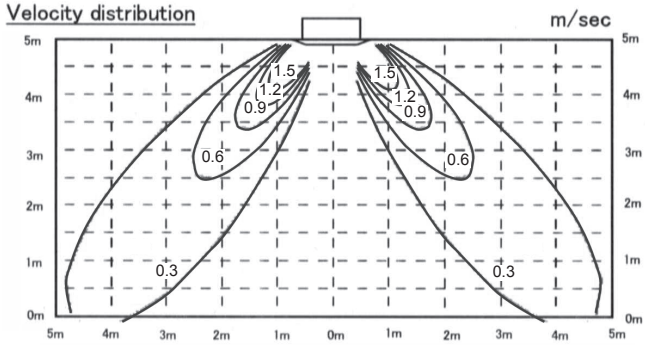


Heating Air flow : P-Hi

Louver position





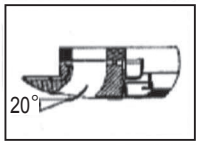


ISD09406

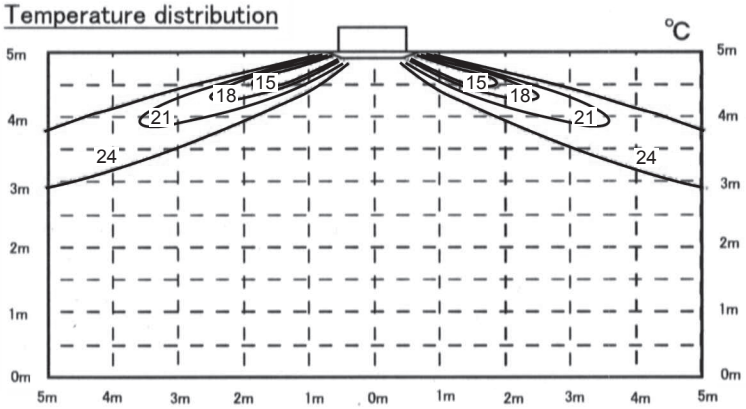
Models FDT60VF, 71VF

Cooling Air flow : P-Hi

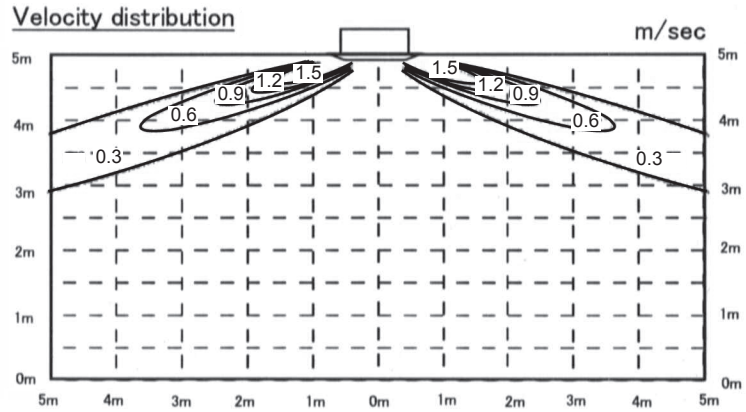
Louver position



Temperature distribution

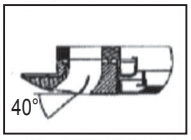


Velocity distribution

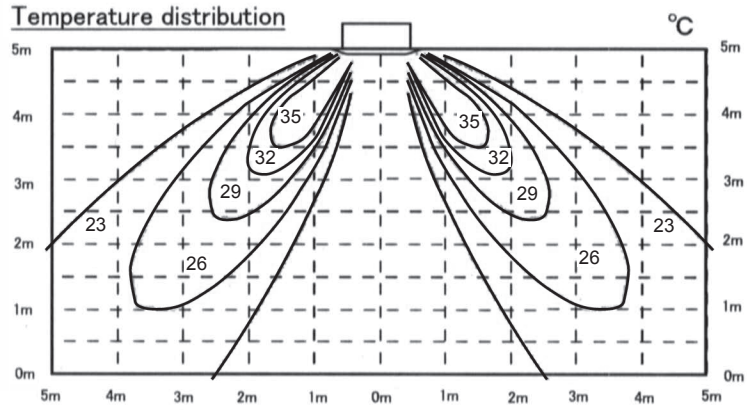


Heating Air flow : P-Hi

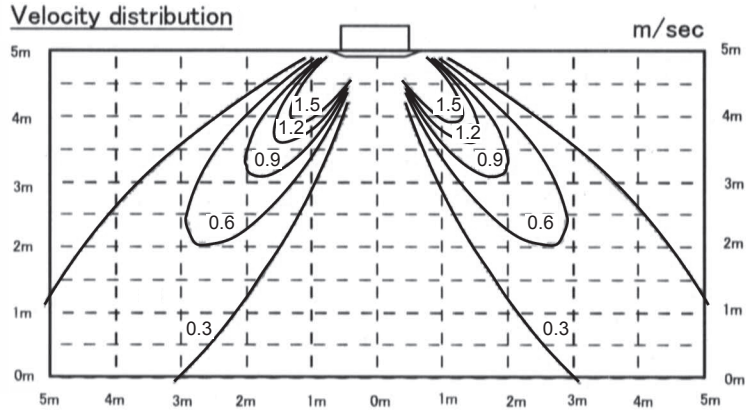
Louver position



Temperature distribution



Velocity distribution

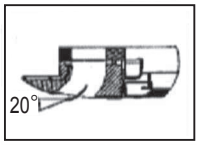


ISD09406

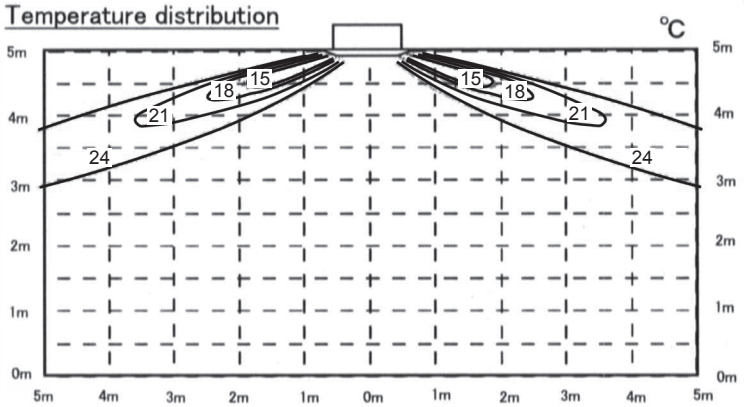
Models FDT100VF, 125VF, 140VF

Cooling Air flow : P-Hi

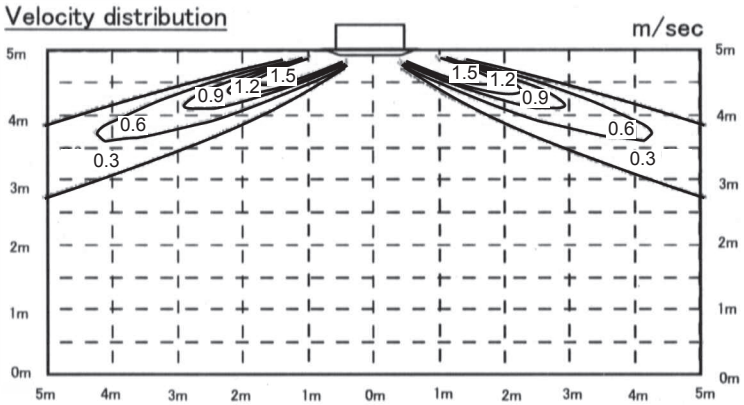
Louver position



Temperature distribution

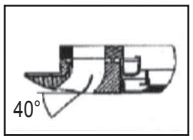


Velocity distribution

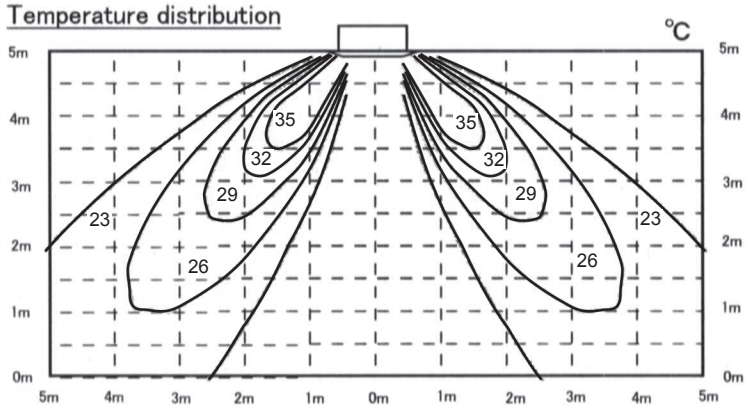


Heating Air flow : P-Hi

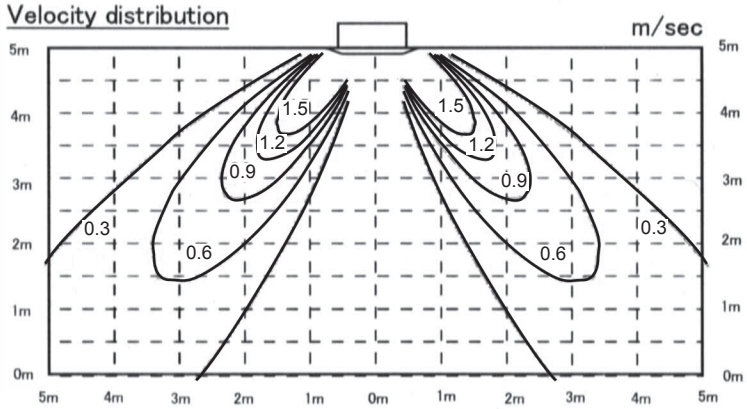
Louver position



Temperature distribution



Velocity distribution



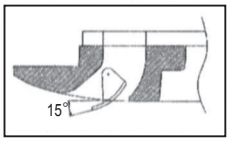
ISD09406

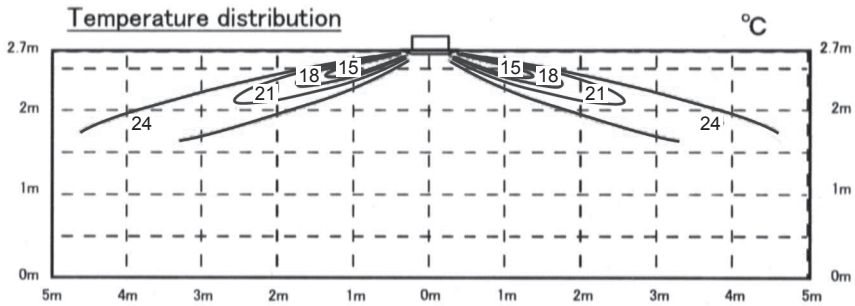
(2) Ceiling cassett-4way compact type (FDTC)

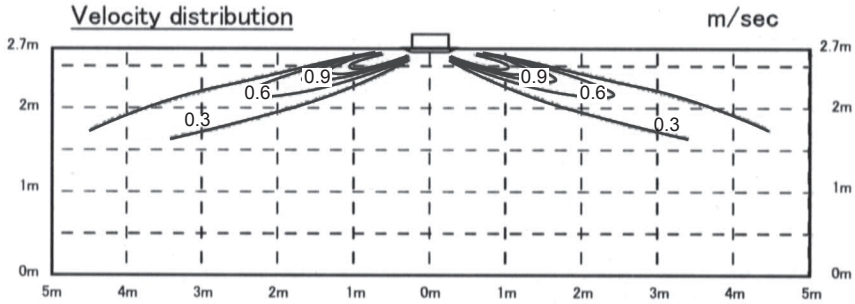
Model FDTC50VF, 60VF

Cooling Air flow : P-Hi

Louver position

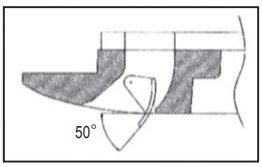


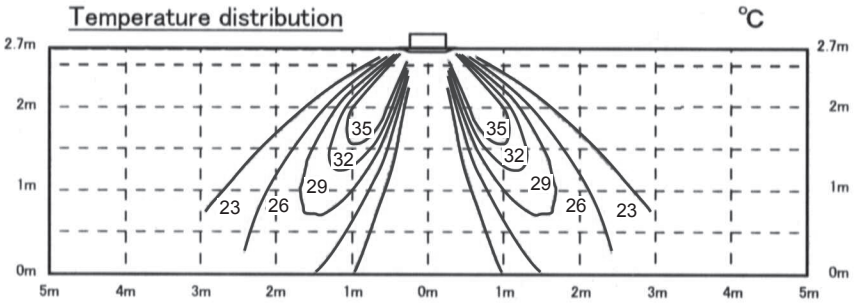


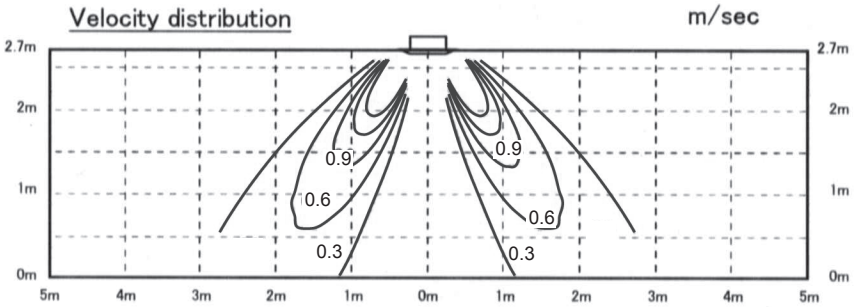


Heating Air flow : P-Hi

Louver position







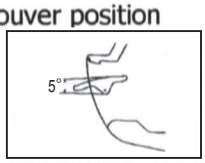
ISD09407

(3) Ceiling suspended type (FDEN)

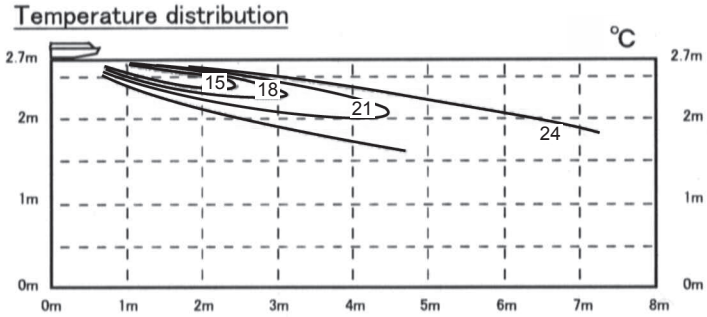
Model FDEN50VF

Cooling Air flow : P-Hi

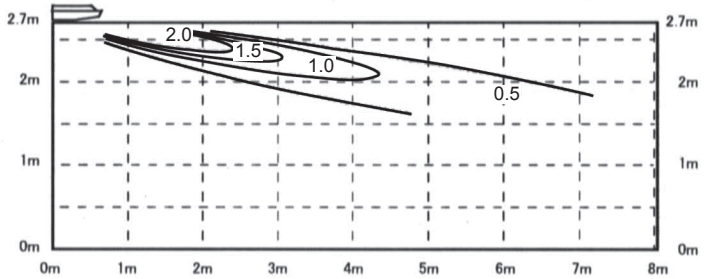
Louver position



Temperature distribution

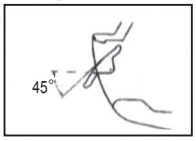


Velocity distribution

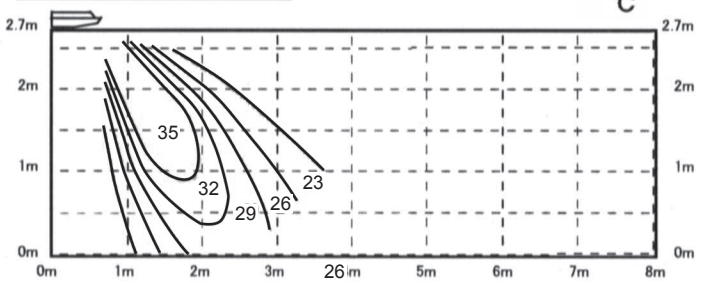


Heating Air flow : P-Hi

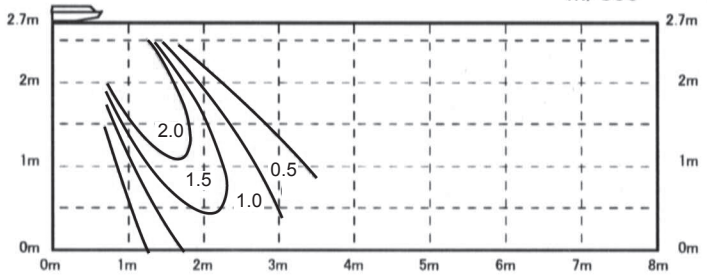
Louver position



Temperature distribution



Velocity distribution

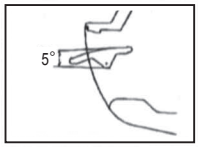


ISD09408

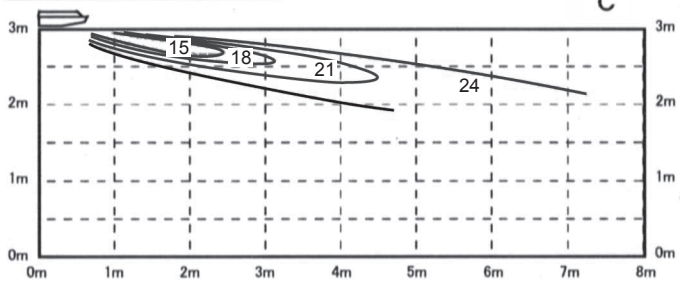
Models FDEN60VF, 71VF

Cooling Air flow : P-Hi

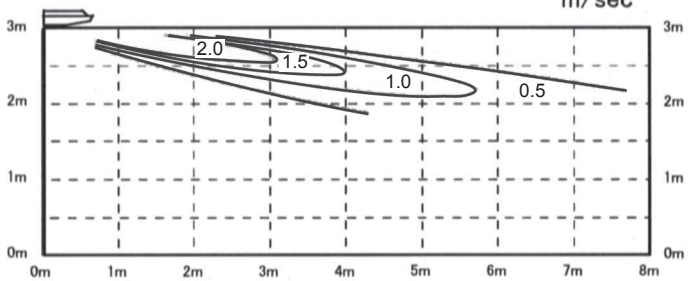
Louver position



Temperature distribution

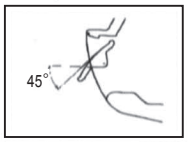


Velocity distribution

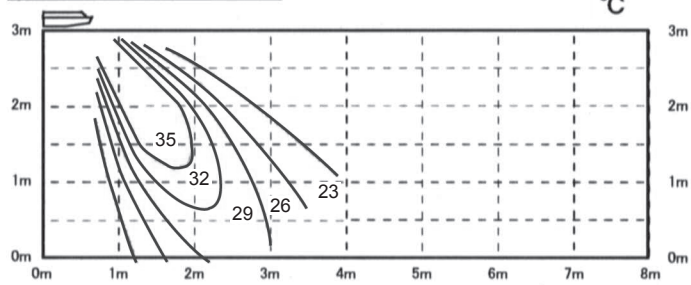


Heating Air flow : P-Hi

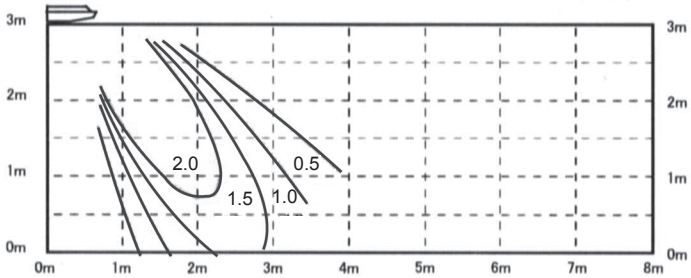
Louver position



Temperature distribution



Velocity distribution



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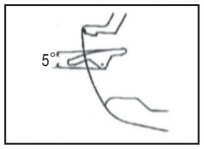
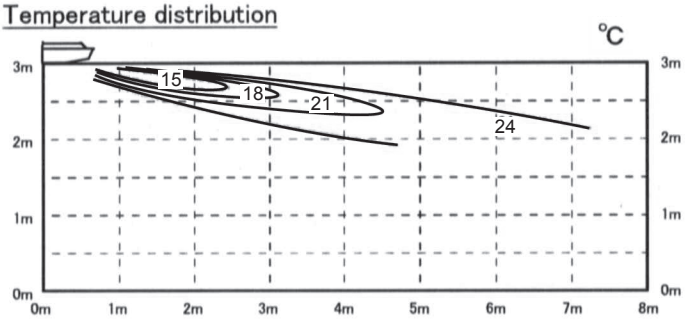
Models FDEN100VF

Cooling Air flow : P-Hi

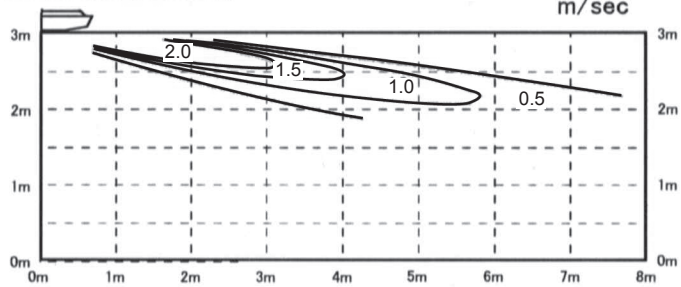
Louver position



Temperature distribution

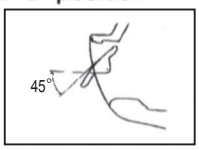


Velocity distribution

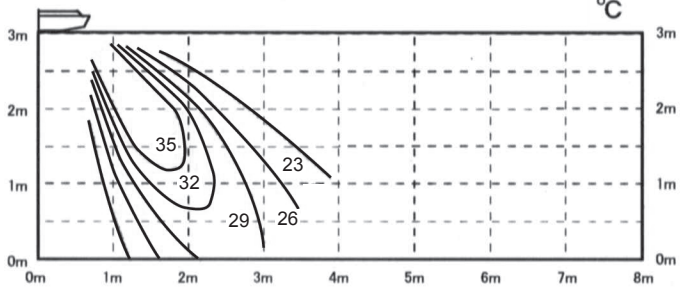


Heating Air flow : P-Hi

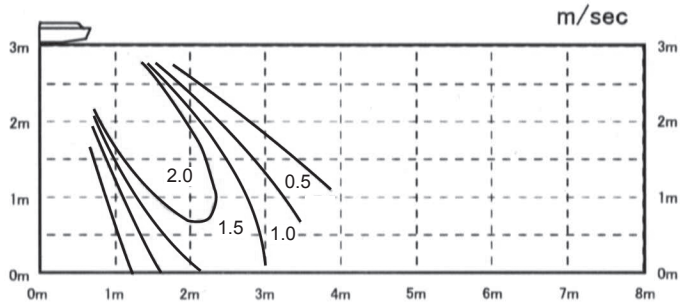
Louver position



Temperature distribution



Velocity distribution

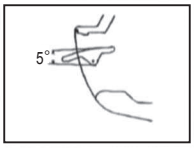


ISD09408

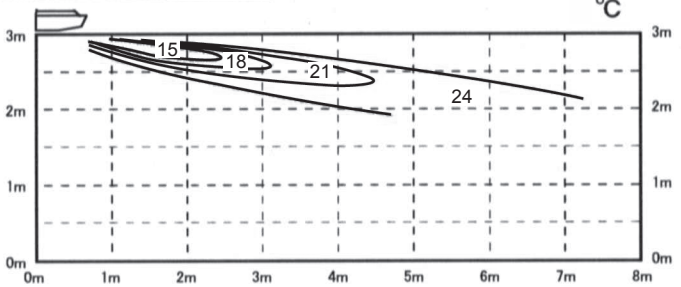
Models FDEN125VF, 140VF

Cooling Air flow : P-Hi

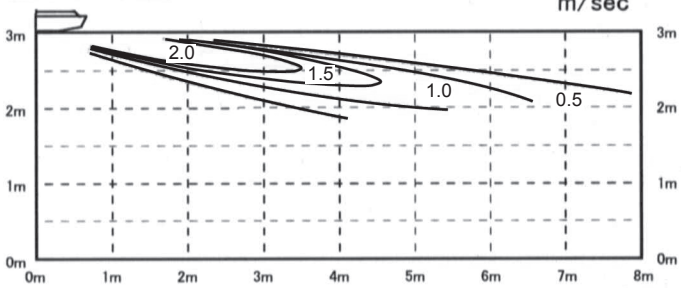
Louver position



Temperature distribution

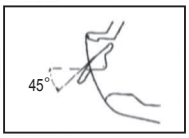


Velocity distribution

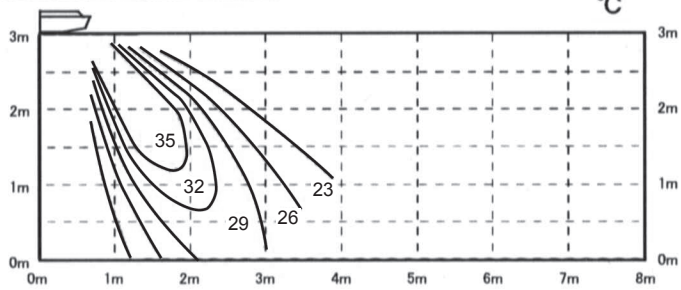


Heating Air flow : P-Hi

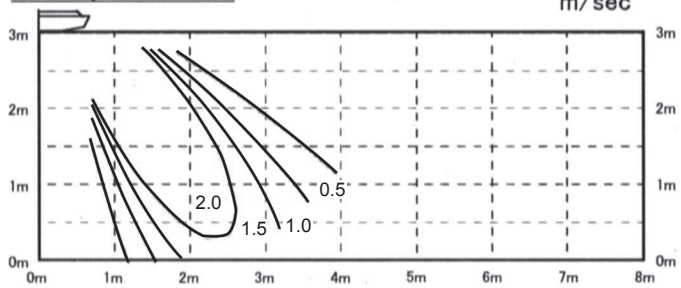
Louver position



Temperature distribution



Velocity distribution



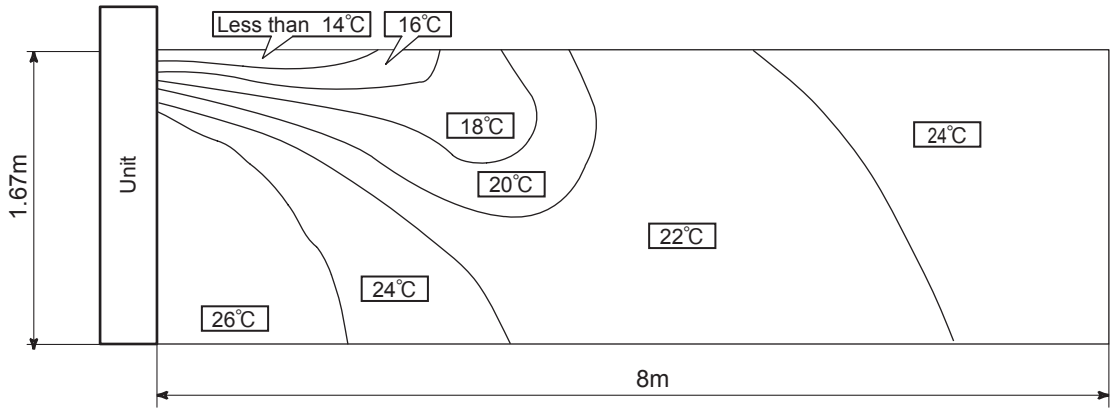
ISD09408

(4) Floor standing type (FDF)

Models FDF71VD, 100VD, 125VD, 140VD

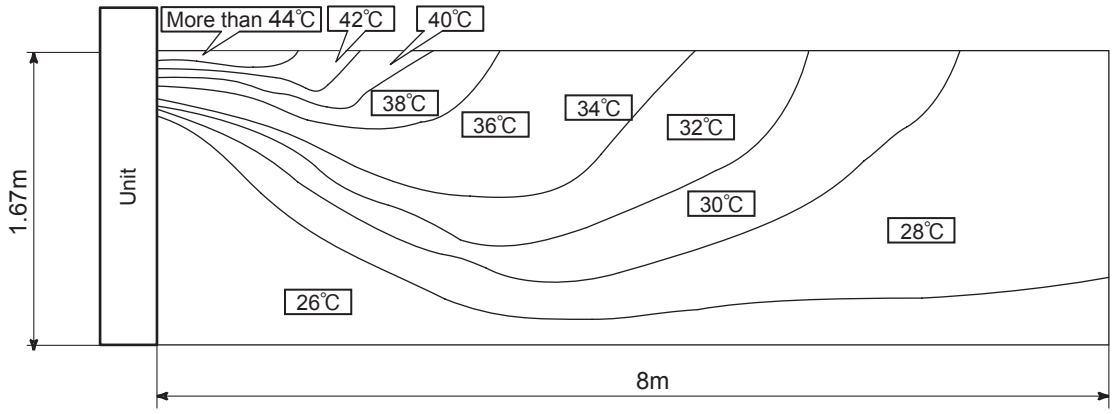
(a) Cooling Air flow:Hi (Louver position:Horizontal)

Temperature distribution



(b) Heating Air flow:Hi (Louver position:Horizontal)

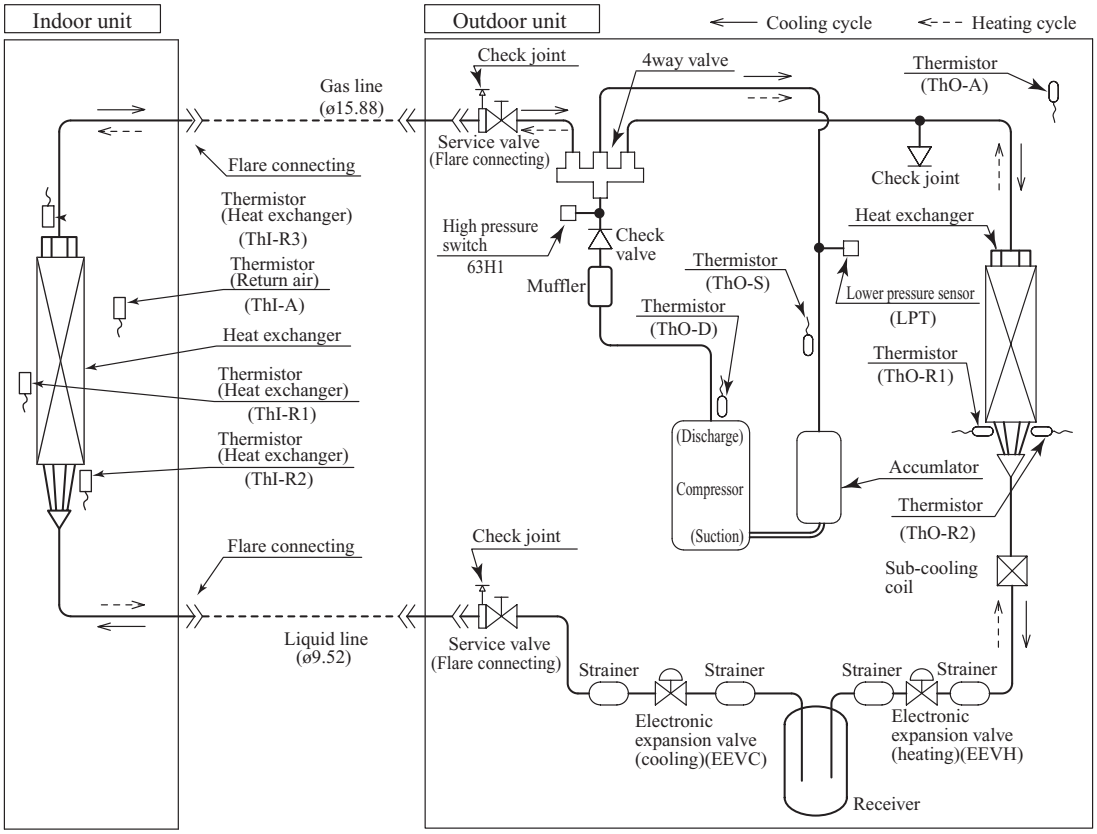
Temperature distribution



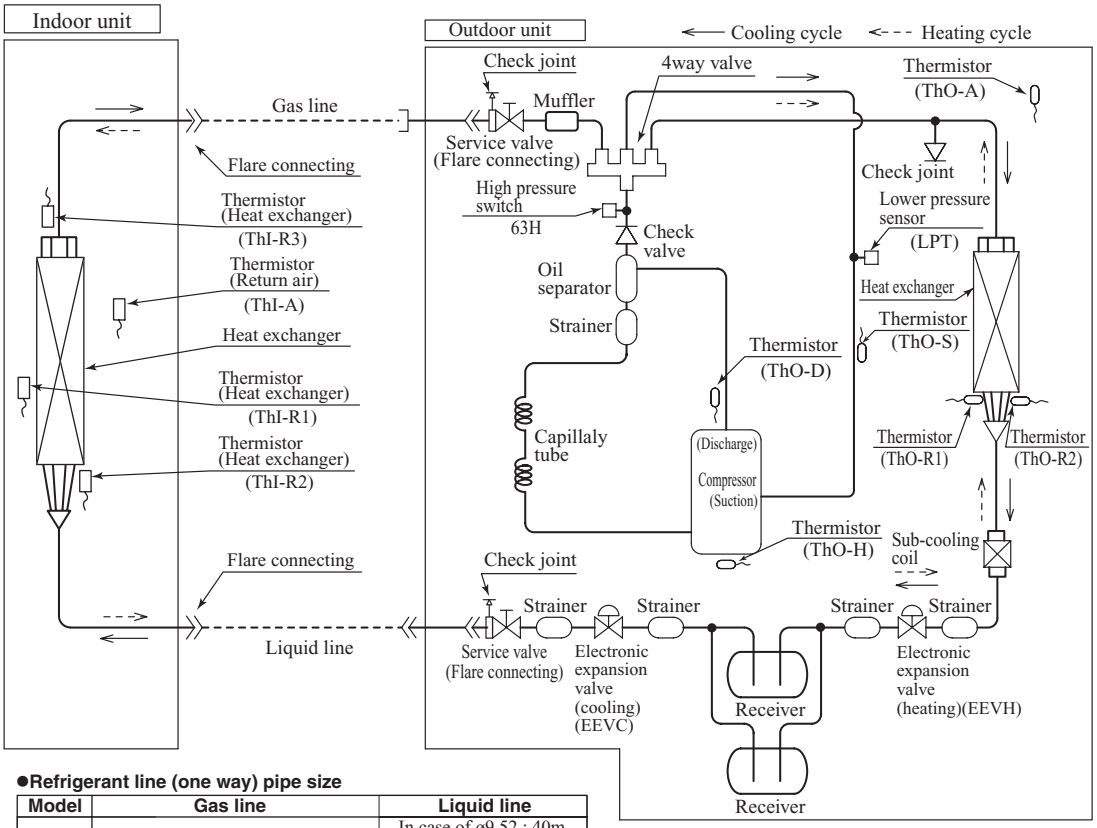
1.7 PIPING SYSTEM

(1) Single type

Models 100, 125, 140



Models 200, 250

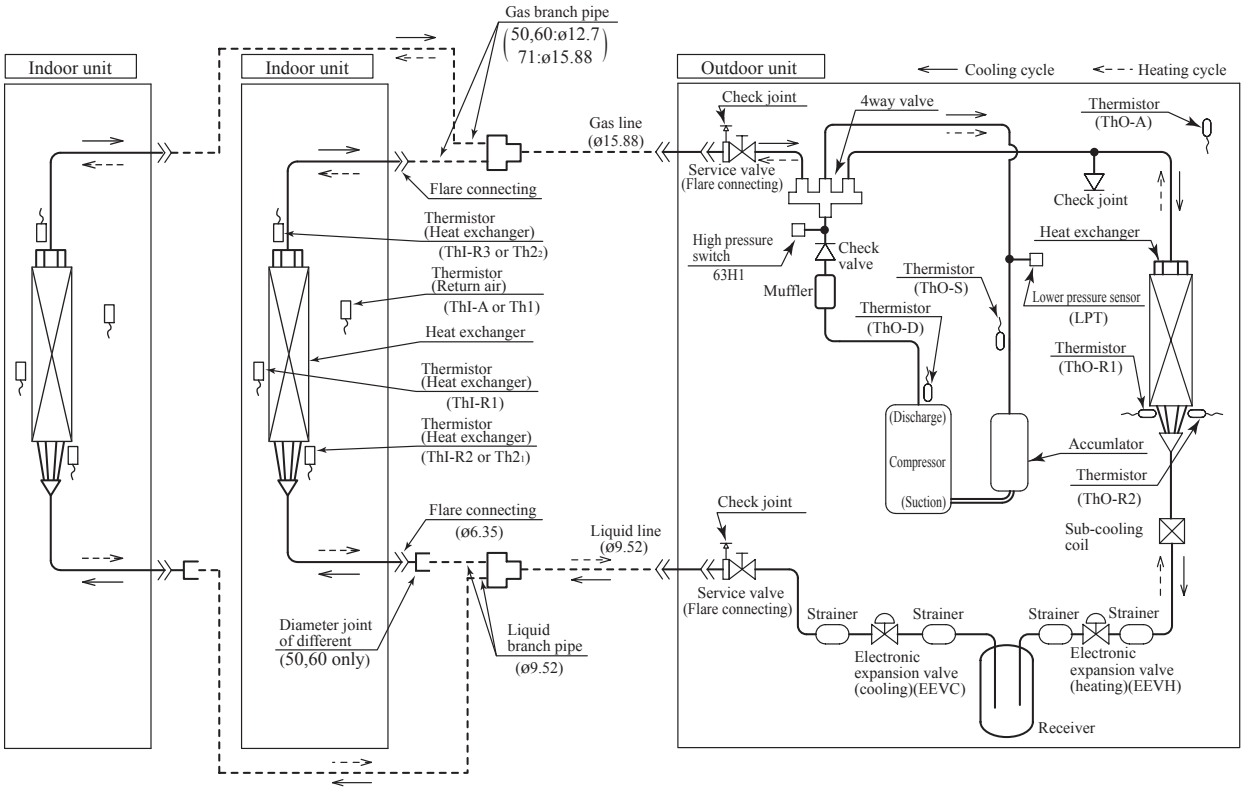


●Refrigerant line (one way) pipe size

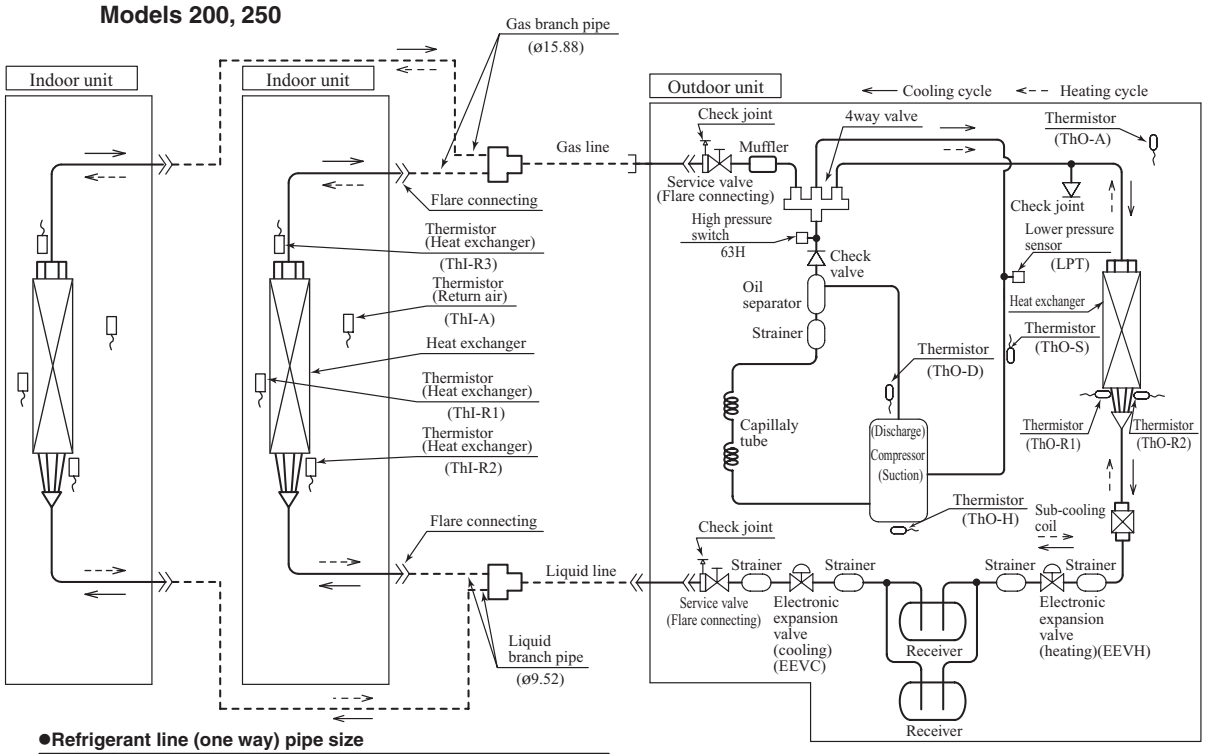
Model	Gas line	Liquid line
200	In case of ø22.22 : 35m In case of ø25.4 orø28.58 : 70m	In case of ø9.52 : 40m In case of ø12.7 : 70m
250		In case of ø12.7 : 70m

(2) Twin type

Models 100, 125, 140



Models 200, 250

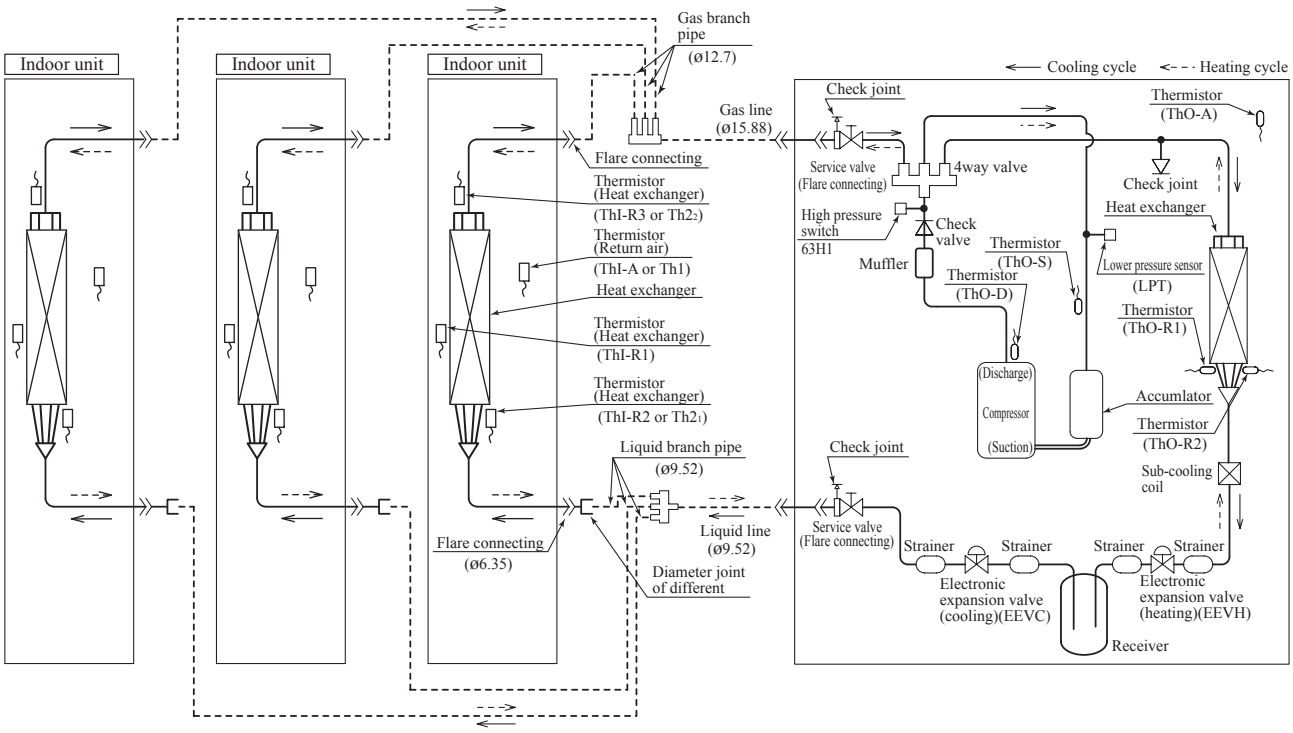


●Refrigerant line (one way) pipe size

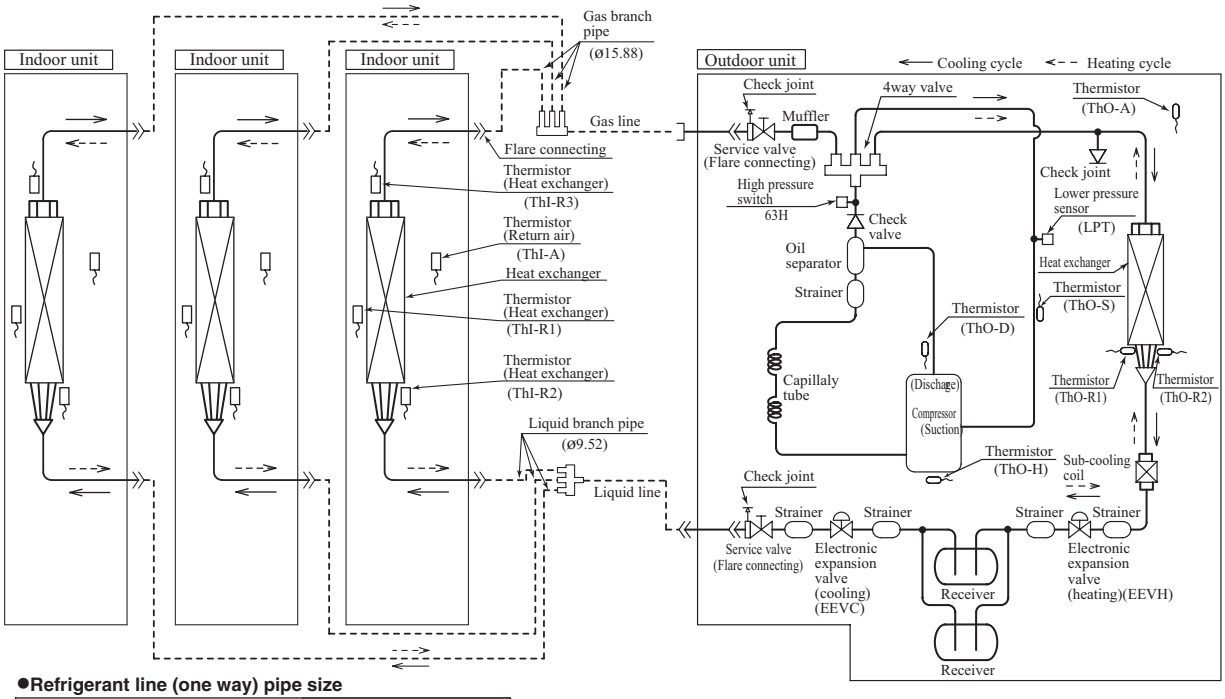
Model	Gas line	Liquid line
200	In case of ø22.22 : 35m In case of ø25.4 or ø28.58 : 70m	In case of ø9.52 : 40m In case of ø12.7 : 70m
250		In case of ø12.7 : 70m

(3) Triple type

Model 140



Model 200

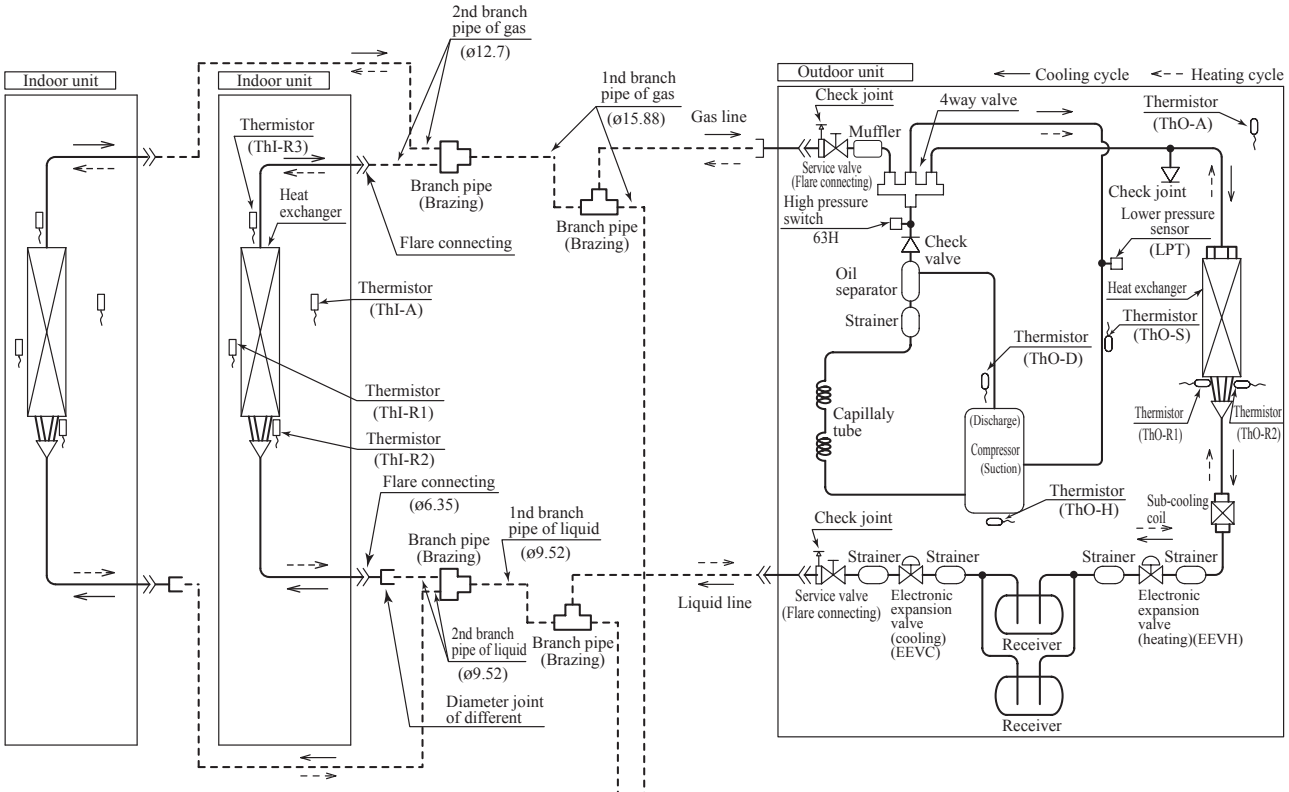


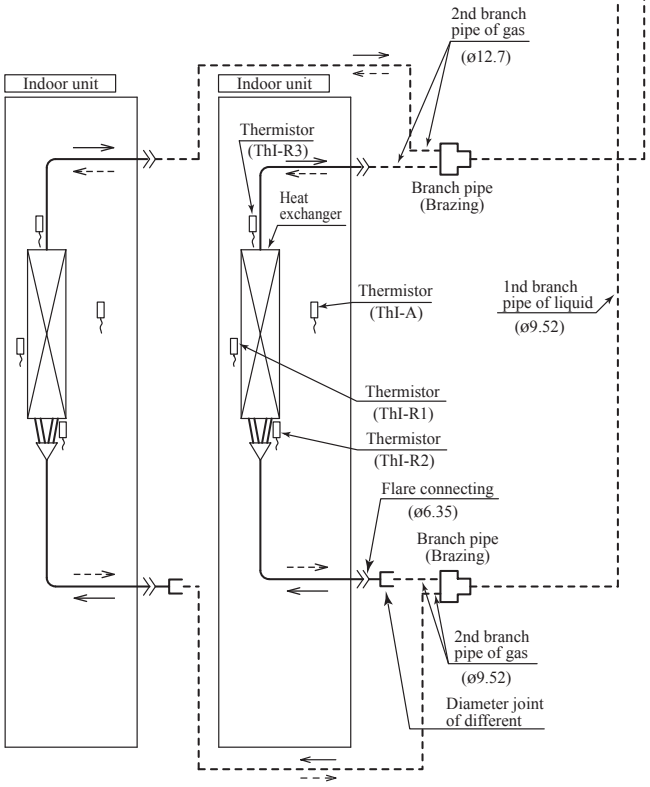
●Refrigerant line (one way) pipe size

Gas line	Liquid line
In case of ø22.22 : 35m	In case of ø9.52 : 40m
In case of ø25.4 orφ28.58 : 70m	In case of ø12.7 : 70m

(4) Double Twin type

Models 200, 250





●Refrigerant line (one way) pipe size

Model	Gas line	Liquid line
200	In case of ø22.22 : 35m In case of ø25.4 orø28.58 : 70m	In case of ø9.52 : 40m In case of ø12.7 : 70m
250		In case of ø12.7 : 70m

Preset point of the protective devices

Parts name	Mark	Equipped unit	100, 125, 140 model	200, 250 model
Thermistor (for protection over-loading in heating)	ThI-R (TH1)	Indoor unit	OFF 63˚C ON 56˚C (OFF 16˚C ON 17˚C)	
Thermistor (for frost prevention)	ThI-R (TH1)		OFF 63˚C ON 56˚C (OFF 8˚C ON 2.5˚C)	
Thermistor (for protection high pressure in cooling.)	Tho-R	Outdoor unit	OFF 51˚C ON 65˚C	
Thermistor (for detecting dis-charge pipe temp.)	Tho-D	Outdoor unit	OFF 115˚C ON 85˚C	OFF 135˚C ON 90˚C
High pressure switch (for protection)	63H1	Outdoor unit	OFF 4.15MPa ON 3.15MPa	
Low pressure sensor (for protection)	LPT	Outdoor unit	OFF 0.227MPa ON 0.079MPa	

Note (1) Values in ( ) are for the SRK models.

1.8 RANGE OF USAGE & LIMITATIONS

Operating temperature range		See next page.
		When used below -5˚C, install a snow hood (option).
Recommendable area to install		Considering to get sufficient heating capacity, the area where the averaged lowest ambient air temperature in day time during winter is above 0˚C, and it has no accumulation of snow.
Installation site		The limitations of installation space are shown in the page for exterior dimensions. Install the indoor unit at least 2.5m higher than the floor surface.
Temperature and humidity conditions surrounding the indoor unit in the ceiling (Note 2)		Model FDE Dew point temperature : 23˚C or less, relative hummdity : 80% or less Other models Dew point temperature : 28˚C or less, relative hummdity : 80% or less
Limitations on unit and piping installation		See page 154 and 155
Compressor ON-OFF cycling	Cycle Time	7 minutes or more (from OFF to OFF) or (from ON to ON)
	Stop Time	3 minutes or more
Power source	Voltage range	Rating ±10%
	Voltage drop at start-up	Min.85% of rating
	Phase-to-phase imbalance	3% or less

Note 1. Do not install the unit in places which :
1) Flammable gas may leak.
2) Carbon fiber, metal particles, powder, etc. are floating.
3) Cosmetic or special sprays are used frequently.
4) Exposed to oil splashes or steam (e.g. kitchen and machine plant).
5) Exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent).
6) Exposed to ammonia substance (e.g. organic fertilizer).
7) Matters affecting devices, such as sulfuric gas, chlorine gas, acid, alkali, etc. may generate or accumulate.
8) Chimney smoke is hanging.
9) Sucking the exhaust gas from heat exchanger.
10) Adjacent to equipment generating electromagnetic waves or high frequency waves.
11) There is light beams that affect the receiving device of indoor unit in case of the wireless specification.
12) Snow falls heavily.
13) At an elevation of 1000 meters or higher.
14) On mobile machine (e.g. vehicle, ship, etc.)
15) Splashed with water to indoor unit (e.g. laundry room).
16) Indoor units of twin, triple and double-twin specifications separately in a room with partition.

Note 2. If ambient temperature and humidity exceed the above conditions, add polyurethane foam insulation (10mm or thicker) on the outer plate of indoor unit.

Note 3. Both gas and liquid pipes need to be coverd with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.

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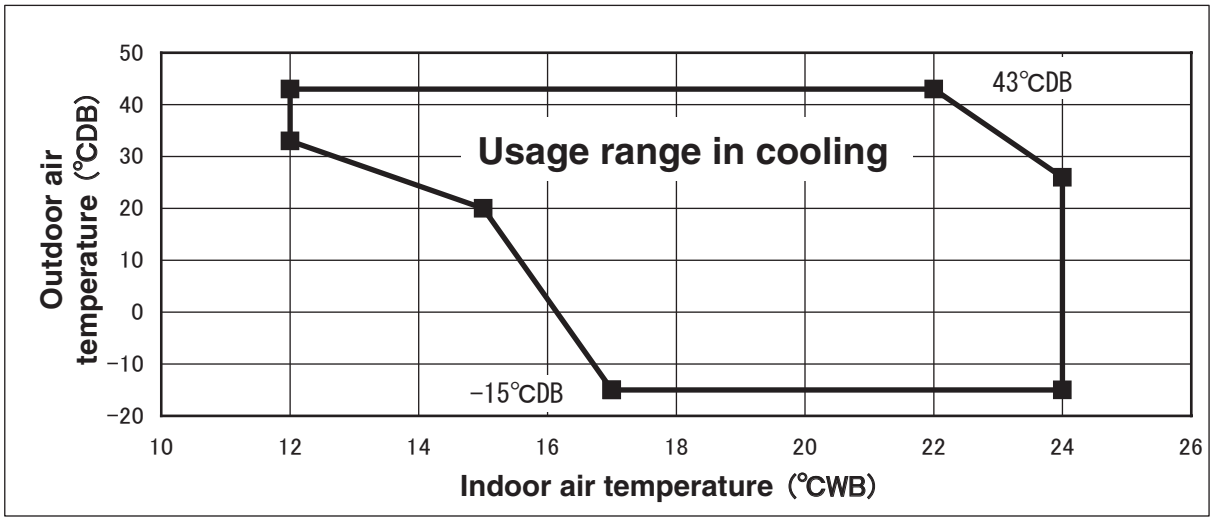
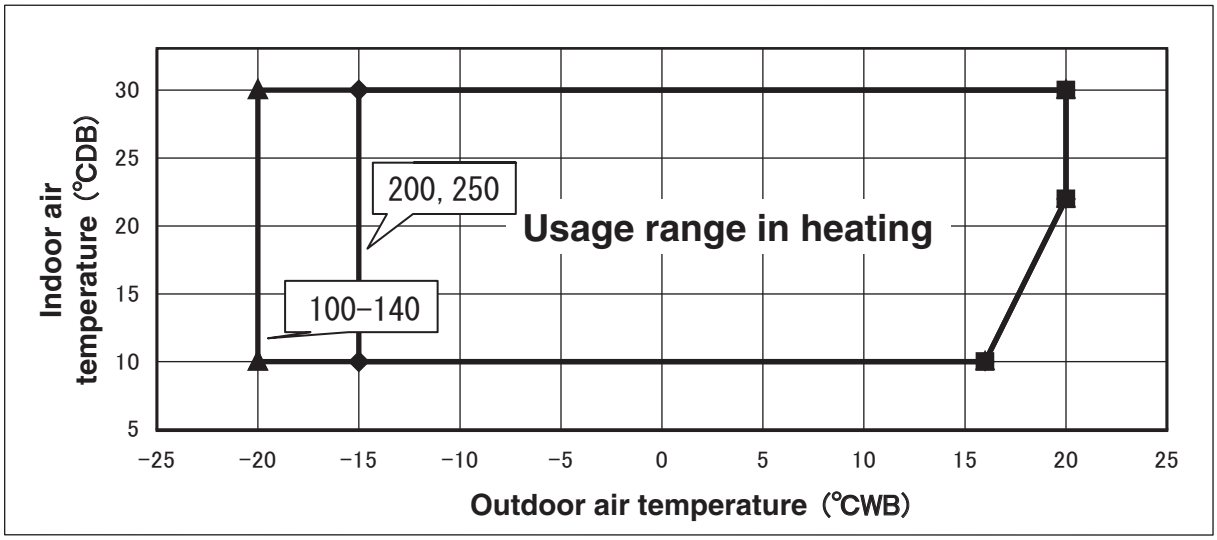
Operating temperature range

■ **Cooling**



■ **Heating**



Decline in cooling and heating capacity or operation stop may occur when the outdoor unit is installed in places where natural wind can increase or decrease its design airflow rate.

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"CAUTION" Cooling operation under low outdoor air temperature conditions
PAC models can be operated in cooling mode at low outdoor air temperature condition within above temperature range. However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]
In case of severely low temperature condition

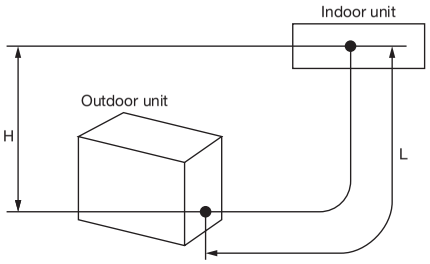
1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, mount the flex flow adapter (prepared as optional part) or like such devices onto the outdoor unit in order to divert the strong wind.

[Reason]
Under the low outdoor air temperature conditions of -5℃ or lower, the outdoor fan is controlled at lower or lowest speed by outdoor fan control, but if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop more.
This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

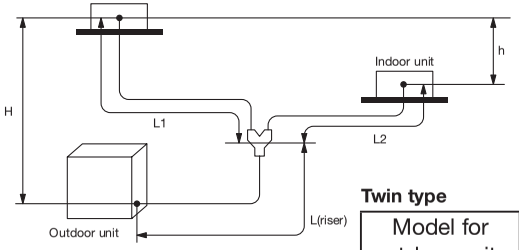
Limitation on unit and piping installation - single,twin,Double twin.

Descriptions	Model for outdoor units			Dimensional limitations	Marks appearing in the drawing		
					Single type	Twin type	Double-Twin type
One-way pipe length	100V・125V・140V			≦ 50m	L	L+L1+L2	
	200V	Liquid piping	φ9.52	≦ 40m		L+L1 L+L2	L+La+L1 L+La+L2 L+Lb+L3 L+Lb+L4
			φ12.7	≦ 70m			
	200V・250V	Cas piping	φ25.4 or φ28.58				
			φ22.22	≦ 35m			
Main pipe length	100V・125V・140V			≦ 50m		L	
	200V	Liquid piping	φ9.52	≦ 40m			L
			φ12.7	≦ 70m			
	200V・250V	Cas piping	φ25.4 or φ28.58				
			φ22.22	≦ 35m			
One-way pipe length after the first branching point	100V・125V・140V			≦ 30m			
	200V・250V						La+L1, La+L2, Lb+L3, Lb+L4
Difference of pipe length after the first branching point				≦ 10m		L1-L2 L2-L1	L1-L2, L2-L1, L3-L4, L4-L3 (L1+La)-(L3+Lb), (L1+La)-(L4+Lb) (L2+La)-(L3+Lb), (L2+La)-(L4+Lb)
Total pipe length after the second branching point				≦ 15m			L1+L2, L3+L4
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher			≦ 30m	H	H	H
	When the outdoor unit is positioned lower			≦ 15m			
Elevation difference among indoor units				≦ 0.5m		h	h1, h2, h3, h4, h5, h6

Single type



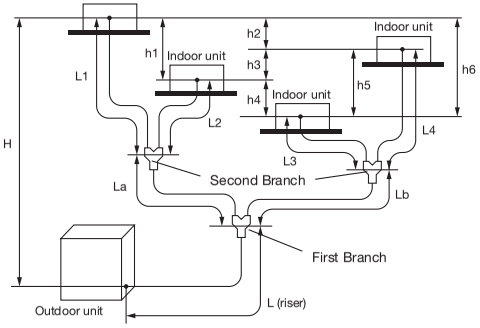
Twin type



Twin type

Model for outdoor units	Branch piping set(option)
100V・125V 140V	DIS-WA1
200V・250V	DIS-WB1

Double-Twin type



Double-Twin type

Model for outdoor units	Branch piping set(option)	
	First Branch	Second Branch
200V・250V	DIS-WB1	DIS-WA1×2

(1) A riser pipe must be part of the main.
A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.

(2) Reduce refrigerant amount by according to table below from factory charge when refrigerant piping is shorter than 3m.

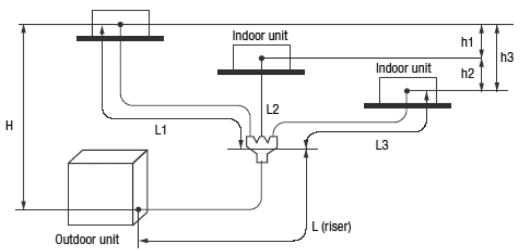
Model for outdoor units	refrigerant to be reduced
100V・125V・140V・200V・250V	-1.0kg

Limitation on unit and piping installation - triple.

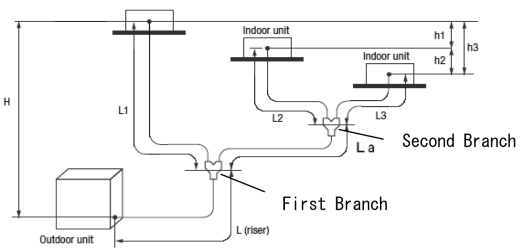
Triple type (in case of 140V・200V)	One-way pipe length difference from the first branching point to the indoor unit				Marks appearing in the drawing	
					＜ 3m	≧ 3m
Descriptions	Model for outdoor units			Dimensional limitations	Triple type A	Triple type B
One-way pipe length	140V			≦ 50m	L＋L1＋L2＋L3	L＋La＋L1＋L2＋L3 ※1
	200V	Liquid piping	φ9.52	≦ 40m	L＋L1， L＋L2， L＋L3	L＋L1 ※1
			φ12.7	≦ 70m		
		Gas piping	φ25.4 or φ28.58			
			φ22.22	≦ 35m		
Main pipe length	140V			≦ 50m	L	L
	200V	Liquid piping	φ9.52	≦ 40m		
			φ12.7	≦ 70m		
		Gas piping	φ25.4 or φ28.58			
			φ22.22	≦ 35m		
Piping length between the first branching point and the second branching point				≦ 5m		La
One-way pipe length between the first branching point and indoor units				≦ 30m	L1, L2, L3	L1 ※1
One-way pipe length from the first branching point to indoor units through the second branching point				≦ 27m		La＋L2 ， La＋L3 ※1
Piping length difference from the first branching point to indoor unit				＜ 3m	L1－L2, L1－L3, L2－L3	
				3m ≦ , ≦ 10m		L1－（La＋L2）, L1－（La＋L3） ※1
One-way pipe length difference from the second branching point to indoor unit				≦ 10m		L2－L3 , L3－L2
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher			≦ 30m	H	H
	When the outdoor unit is positioned lower			≦ 15m		
Elevation difference among indoor units				≦ 0.5m	h1, h2, h3	h1, h2, h3

Triple type (in case of 250V)	One-way pipe length difference from the first branching point to the indoor unit				Marks appearing in the drawing	
					＜ 3m	≧ 3m
Restrictions	Model for outdoor units			Dimensional restrictions	Triple type B	Prohibition of the use
One-way pipe length		Gas piping	φ22.22	≦ 35m	L＋L1, L＋La＋L2, L＋La＋L3 ※2	
			φ25.4 or φ28.58	≦ 70m		
Main pipe length		Gas piping	φ22.22	≦ 35m	L	
			φ25.4 or φ28.58	≦ 70m		
One-way pipe length between the first branching point from to the second branching point				≦ 5m	La	
One-way pipe length between the first branching point and indoor units				≦ 30m	L1, La＋L2, La＋L3 ※2	
Piping length difference from the first branching point to indoor unit				＜ 3m	L1－（La＋L2）, L1－（La＋L3） L2－L3 , L3－L2 ※2	
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher			≦ 30m	H	
	When the outdoor unit is positioned lower			≦ 15m		
Elevation difference among indoor units				≦ 0.5m	h1, h2, h3	

Triple type A



Triple type B



※1 Install the indoor units so that L＋L1 becomes the longest one-way pipe. Keep the pipe length difference between L1 and (La＋L2) or (La＋L3) within 10m.
※2 Connect the unit that is the maximum capacity with L1.

Triple type

Model for outdoor units	Branch piping set (option)		
	Type A	Type B	
	Branch pipe	First Branch	Second Branch
140V	DIS-TA1	DIS-WA1	DIS-WA1
200V・250V	DIS-TB1	DIS-WB1	DIS-WA1

(1) A riser pipe must be part of the main.
A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.
(2) Reduce refrigerant amount by 1.0kg from the factory charge when refrigerant piping is shorter than 3m.

1.9 SELECTION CHART

Correct the cooling and heating capacity in accordance with the operating conditions. The net cooling and heating capacity can be obtained in the following way.

Net capacity = Capacity shown in the capacity tables (1.9.1) × Correction factors shown in the table (1.9.2) (1.9.3) (1.9.4).

Caution: In case that the cooling operation during low outdoor air temperature below -5℃ is expected, install the outdoor unit where it is not influenced by natural wind. Otherwise protection control by low pressure will be activated much more frequently and it will cause insufficient capacity or breakdown of the compressor in worst case.

1.9.1 Capacity tables

(1) Ceiling cassette-4way type (FDT)

(a) Single type

Model FDT100VNVF Indoor unit FDT100VF Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.72	8.59	8.42	8.82	8.36	9.07	8.28	9.56	8.83	10.06	8.64
13					8.50	7.86	9.00	8.58	9.26	8.50	9.52	8.42	10.06	8.96	10.60	8.76
15					8.88	7.99	9.42	8.72	9.69	8.64	9.98	8.55	10.56	9.09	11.14	8.89
17					9.26	8.13	9.84	8.86	10.12	8.77	10.43	8.69	11.05	9.22	11.67	9.02
19					9.46	8.21	10.05	8.93	10.34	8.84	10.65	8.76	11.29	9.29	11.92	9.08
21					9.65	8.28	10.25	9.00	10.56	8.91	10.88	8.83	11.52	9.35	12.16	9.14
23					9.65	8.28	10.28	9.01	10.59	8.92	10.91	8.84	11.56	9.36	12.21	9.15
25			8.93	8.49	9.64	8.27	10.31	9.02	10.62	8.93	10.95	8.85	11.61	9.38	12.27	9.17
27			8.86	8.46	9.64	8.27	10.34	9.03	10.65	8.94	10.96	8.85	11.57	9.37		
29			8.80	8.44	9.50	8.22	10.17	8.97	10.49	8.89	10.81	8.81	11.45	9.33		
31			8.73	8.41	9.35	8.17	9.99	8.91	10.32	8.84	10.66	8.76	11.32	9.30		
33	8.22	7.78	8.58	8.35	9.21	8.11	9.82	8.85	10.16	8.78	10.51	8.71	11.19	9.26		
35	8.05	7.71	8.44	8.27	9.06	8.06	9.64	8.79	10.00	8.73	10.36	8.67	11.07	9.23		
37	7.92	7.65	8.30	8.13	8.91	8.00	9.46	8.73	9.79	8.67	10.13	8.60	10.80	9.16		
39	7.78	7.59	8.16	8.00	8.75	7.95	9.28	8.67	9.59	8.60	9.90	8.53	10.53	9.08		
41	7.64	7.49	8.02	7.86	8.60	7.89	9.09	8.61	9.38	8.54	9.68	8.46	10.26	9.01		
43	7.50	7.35	7.88	7.72	8.45	7.84	8.91	8.55	9.18	8.48	9.45	8.40	9.99	8.94		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDT100VSVF Indoor unit FDT100VF Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.72	8.59	8.42	8.82	8.36	9.07	8.28	9.56	8.83	10.06	8.64
13					8.50	7.86	9.00	8.58	9.26	8.50	9.52	8.42	10.06	8.96	10.60	8.76
15					8.88	7.99	9.42	8.72	9.69	8.64	9.98	8.55	10.56	9.09	11.14	8.89
17					9.26	8.13	9.84	8.86	10.12	8.77	10.43	8.69	11.05	9.22	11.67	9.02
19					9.46	8.21	10.05	8.93	10.34	8.84	10.65	8.76	11.29	9.29	11.92	9.08
21					9.65	8.28	10.25	9.00	10.56	8.91	10.88	8.83	11.52	9.35	12.16	9.14
23					9.65	8.28	10.28	9.01	10.59	8.92	10.91	8.84	11.56	9.36	12.21	9.15
25			8.93	8.49	9.64	8.27	10.31	9.02	10.62	8.93	10.95	8.85	11.61	9.38	12.27	9.17
27			8.86	8.46	9.64	8.27	10.34	9.03	10.65	8.94	10.96	8.85	11.57	9.37		
29			8.80	8.44	9.50	8.22	10.17	8.97	10.49	8.89	10.81	8.81	11.45	9.33		
31			8.73	8.41	9.35	8.17	9.99	8.91	10.32	8.84	10.66	8.76	11.32	9.30		
33	8.22	7.78	8.58	8.35	9.21	8.11	9.82	8.85	10.16	8.78	10.51	8.71	11.19	9.26		
35	8.05	7.71	8.44	8.27	9.06	8.06	9.64	8.79	10.00	8.73	10.36	8.67	11.07	9.23		
37	7.92	7.65	8.30	8.13	8.91	8.00	9.46	8.73	9.79	8.67	10.13	8.60	10.80	9.16		
39	7.78	7.59	8.16	8.00	8.75	7.95	9.28	8.67	9.59	8.60	9.90	8.53	10.53	9.08		
41	7.64	7.49	8.02	7.86	8.60	7.89	9.09	8.61	9.38	8.54	9.68	8.46	10.26	9.01		
43	7.50	7.35	7.88	7.72	8.45	7.84	8.91	8.55	9.18	8.48	9.45	8.40	9.99	8.94		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT125VNVF Indoor unit FDT125VF Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.86	10.74	9.60	11.03	9.53	11.34	9.46	11.96	10.01	12.57	9.83
13					10.63	9.06	11.26	9.80	11.57	9.72	11.91	9.65	12.58	10.21	13.25	10.03
15					11.10	9.25	11.78	10.00	12.11	9.92	12.47	9.85	13.20	10.41	13.92	10.23
17					11.58	9.45	12.29	10.20	12.65	10.13	13.04	10.06	13.82	10.62	14.59	10.43
19					11.82	9.55	12.56	10.30	12.92	10.23	13.32	10.16	14.11	10.71	14.90	10.52
21					12.06	9.66	12.82	10.41	13.19	10.33	13.60	10.26	14.40	10.81	15.20	10.61
23					12.06	9.66	12.85	10.42	13.23	10.35	13.64	10.28	14.45	10.83	15.27	10.64
25			11.16	9.82	12.06	9.66	12.89	10.44	13.27	10.36	13.68	10.29	14.51	10.85	15.34	10.66
27			11.08	9.78	12.05	9.65	12.92	10.45	13.31	10.38	13.69	10.29	14.47	10.83		
29			11.00	9.74	11.87	9.58	12.71	10.36	13.11	10.30	13.51	10.23	14.31	10.78		
31			10.92	9.71	11.69	9.50	12.49	10.28	12.90	10.22	13.32	10.16	14.15	10.73		
33	10.27	9.05	10.72	9.62	11.51	9.42	12.27	10.19	12.70	10.15	13.13	10.09	13.99	10.67		
35	10.07	8.95	10.55	9.54	11.33	9.35	12.06	10.11	12.50	10.07	12.94	10.02	13.83	10.62		
37	9.90	8.87	10.38	9.46	11.13	9.26	11.83	10.02	12.24	9.97	12.66	9.92	13.50	10.51		
39	9.72	8.78	10.20	9.38	10.94	9.18	11.60	9.93	11.99	9.88	12.38	9.82	13.16	10.40		
41	9.55	8.70	10.02	9.30	10.75	9.10	11.37	9.84	11.73	9.78	12.09	9.72	12.82	10.29		
43	9.38	8.62	9.85	9.23	10.56	9.03	11.14	9.75	11.47	9.69	11.81	9.62	12.48	10.18		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDT125VSVF Indoor unit FDT125VF Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.86	10.74	9.60	11.03	9.53	11.34	9.46	11.96	10.01	12.57	9.83
13					10.63	9.06	11.26	9.80	11.57	9.72	11.91	9.65	12.58	10.21	13.25	10.03
15					11.10	9.25	11.78	10.00	12.11	9.92	12.47	9.85	13.20	10.41	13.92	10.23
17					11.58	9.45	12.29	10.20	12.65	10.13	13.04	10.06	13.82	10.62	14.59	10.43
19					11.82	9.55	12.56	10.30	12.92	10.23	13.32	10.16	14.11	10.71	14.90	10.52
21					12.06	9.66	12.82	10.41	13.19	10.33	13.60	10.26	14.40	10.81	15.20	10.61
23					12.06	9.66	12.85	10.42	13.23	10.35	13.64	10.28	14.45	10.83	15.27	10.64
25			11.16	9.82	12.06	9.66	12.89	10.44	13.27	10.36	13.68	10.29	14.51	10.85	15.34	10.66
27			11.08	9.78	12.05	9.65	12.92	10.45	13.31	10.38	13.69	10.29	14.47	10.83		
29			11.00	9.74	11.87	9.58	12.71	10.36	13.11	10.30	13.51	10.23	14.31	10.78		
31			10.92	9.71	11.69	9.50	12.49	10.28	12.90	10.22	13.32	10.16	14.15	10.73		
33	10.27	9.05	10.72	9.62	11.51	9.42	12.27	10.19	12.70	10.15	13.13	10.09	13.99	10.67		
35	10.07	8.95	10.55	9.54	11.33	9.35	12.06	10.11	12.50	10.07	12.94	10.02	13.83	10.62		
37	9.90	8.87	10.38	9.46	11.13	9.26	11.83	10.02	12.24	9.97	12.66	9.92	13.50	10.51		
39	9.72	8.78	10.20	9.38	10.94	9.18	11.60	9.93	11.99	9.88	12.38	9.82	13.16	10.40		
41	9.55	8.70	10.02	9.30	10.75	9.10	11.37	9.84	11.73	9.78	12.09	9.72	12.82	10.29		
43	9.38	8.62	9.85	9.23	10.56	9.03	11.14	9.75	11.47	9.69	11.81	9.62	12.48	10.18		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT140VNVF Indoor unit FDT140VF Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.30	12.02	10.02	12.35	9.93	12.70	9.85	13.39	10.38	14.08	10.17
13					11.90	9.52	12.61	10.25	12.96	10.16	13.33	10.07	14.09	10.61	14.84	10.40
15					12.43	9.74	13.19	10.47	13.57	10.39	13.97	10.31	14.78	10.84	15.59	10.62
17					12.96	9.97	13.77	10.70	14.17	10.62	14.61	10.54	15.48	11.07	16.34	10.85
19					13.24	10.09	14.06	10.82	14.48	10.74	14.92	10.65	15.80	11.18	16.68	10.96
21					13.51	10.21	14.36	10.94	14.78	10.85	15.23	10.77	16.12	11.29	17.02	11.06
23					13.51	10.21	14.40	10.96	14.82	10.87	15.28	10.79	16.19	11.31	17.10	11.09
25			12.50	10.37	13.50	10.20	14.43	10.97	14.86	10.88	15.33	10.81	16.25	11.33	17.18	11.11
27			12.41	10.33	13.50	10.20	14.47	10.99	14.91	10.90	15.34	10.81	16.20	11.32		
29			12.32	10.29	13.29	10.11	14.23	10.89	14.68	10.81	15.13	10.73	16.02	11.25		
31			12.23	10.24	13.09	10.03	13.99	10.79	14.45	10.73	14.92	10.65	15.85	11.20		
33	11.51	9.60	12.01	10.14	12.89	9.94	13.75	10.69	14.23	10.64	14.71	10.58	15.67	11.13		
35	11.28	9.48	11.82	10.05	12.68	9.85	13.50	10.60	14.00	10.55	14.50	10.50	15.49	11.07		
37	11.08	9.39	11.62	9.96	12.47	9.76	13.25	10.50	13.71	10.44	14.18	10.38	15.12	10.95		
39	10.89	9.29	11.43	9.88	12.26	9.67	12.99	10.39	13.43	10.34	13.86	10.27	14.74	10.82		
41	10.70	9.20	11.23	9.78	12.04	9.58	12.73	10.29	13.14	10.23	13.55	10.15	14.36	10.70		
43	10.51	9.11	11.03	9.69	11.83	9.49	12.47	10.19	12.85	10.12	13.23	10.04	13.98	10.57		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDT140VSVF Indoor unit FDT140VF Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.30	12.02	10.02	12.35	9.93	12.70	9.85	13.39	10.38	14.08	10.17
13					11.90	9.52	12.61	10.25	12.96	10.16	13.33	10.07	14.09	10.61	14.84	10.40
15					12.43	9.74	13.19	10.47	13.57	10.39	13.97	10.31	14.78	10.84	15.59	10.62
17					12.96	9.97	13.77	10.70	14.17	10.62	14.61	10.54	15.48	11.07	16.34	10.85
19					13.24	10.09	14.06	10.82	14.48	10.74	14.92	10.65	15.80	11.18	16.68	10.96
21					13.51	10.21	14.36	10.94	14.78	10.85	15.23	10.77	16.12	11.29	17.02	11.06
23					13.51	10.21	14.40	10.96	14.82	10.87	15.28	10.79	16.19	11.31	17.10	11.09
25			12.50	10.37	13.50	10.20	14.43	10.97	14.86	10.88	15.33	10.81	16.25	11.33	17.18	11.11
27			12.41	10.33	13.50	10.20	14.47	10.99	14.91	10.90	15.34	10.81	16.20	11.32		
29			12.32	10.29	13.29	10.11	14.23	10.89	14.68	10.81	15.13	10.73	16.02	11.25		
31			12.23	10.24	13.09	10.03	13.99	10.79	14.45	10.73	14.92	10.65	15.85	11.20		
33	11.51	9.60	12.01	10.14	12.89	9.94	13.75	10.69	14.23	10.64	14.71	10.58	15.67	11.13		
35	11.28	9.48	11.82	10.05	12.68	9.85	13.50	10.60	14.00	10.55	14.50	10.50	15.49	11.07		
37	11.08	9.39	11.62	9.96	12.47	9.76	13.25	10.50	13.71	10.44	14.18	10.38	15.12	10.95		
39	10.89	9.29	11.43	9.88	12.26	9.67	12.99	10.39	13.43	10.34	13.86	10.27	14.74	10.82		
41	10.70	9.20	11.23	9.78	12.04	9.58	12.73	10.29	13.14	10.23	13.55	10.15	14.36	10.70		
43	10.51	9.11	11.03	9.69	11.83	9.49	12.47	10.19	12.85	10.12	13.23	10.04	13.98	10.57		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(b) Twin type

Model FDT100VNPVF Indoor unit FDT50VF (2 units) Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.94	8.59	8.42	8.82	8.62	9.07	8.53	9.56	9.11	10.06	8.89
13					8.50	8.07	9.00	8.82	9.26	8.75	9.52	8.65	10.06	9.22	10.60	9.01
15					8.88	8.19	9.42	8.97	9.69	8.87	9.98	8.78	10.56	9.35	11.14	9.12
17					9.26	8.32	9.84	9.09	10.12	9.00	10.43	8.90	11.05	9.46	11.67	9.23
19					9.46	8.39	10.05	9.16	10.34	9.06	10.65	8.96	11.29	9.52	11.92	9.29
21					9.65	8.46	10.25	9.22	10.56	9.13	10.88	9.03	11.52	9.58	12.16	9.34
23					9.65	8.46	10.28	9.23	10.59	9.13	10.91	9.03	11.56	9.59	12.21	9.35
25			8.93	8.71	9.64	8.46	10.31	9.24	10.62	9.14	10.95	9.04	11.61	9.60	12.27	9.36
27			8.86	8.68	9.64	8.46	10.34	9.25	10.65	9.15	10.96	9.05	11.57	9.59		
29			8.80	8.62	9.50	8.41	10.17	9.20	10.49	9.10	10.81	9.01	11.45	9.56		
31			8.73	8.56	9.35	8.35	9.99	9.14	10.32	9.05	10.66	8.96	11.32	9.53		
33	8.22	7.97	8.58	8.41	9.21	8.31	9.82	9.09	10.16	9.01	10.51	8.92	11.19	9.50		
35	8.05	7.89	8.44	8.27	9.06	8.26	9.64	9.03	10.00	8.96	10.36	8.88	11.07	9.47		
37	7.92	7.76	8.30	8.13	8.91	8.20	9.46	8.98	9.79	8.90	10.13	8.82	10.80	9.40		
39	7.78	7.62	8.16	8.00	8.75	8.15	9.28	8.92	9.59	8.84	9.90	8.75	10.53	9.34		
41	7.64	7.49	8.02	7.86	8.60	8.10	9.09	8.86	9.38	8.78	9.68	8.69	10.26	9.27		
43	7.50	7.35	7.88	7.72	8.45	8.05	8.91	8.73	9.18	8.72	9.45	8.63	9.99	9.21		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDT100VSPVF Indoor unit FDT50VF (2 units) Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.94	8.59	8.42	8.82	8.62	9.07	8.53	9.56	9.11	10.06	8.89
13					8.50	8.07	9.00	8.82	9.26	8.75	9.52	8.65	10.06	9.22	10.60	9.01
15					8.88	8.19	9.42	8.97	9.69	8.87	9.98	8.78	10.56	9.35	11.14	9.12
17					9.26	8.32	9.84	9.09	10.12	9.00	10.43	8.90	11.05	9.46	11.67	9.23
19					9.46	8.39	10.05	9.16	10.34	9.06	10.65	8.96	11.29	9.52	11.92	9.29
21					9.65	8.46	10.25	9.22	10.56	9.13	10.88	9.03	11.52	9.58	12.16	9.34
23					9.65	8.46	10.28	9.23	10.59	9.13	10.91	9.03	11.56	9.59	12.21	9.35
25			8.93	8.71	9.64	8.46	10.31	9.24	10.62	9.14	10.95	9.04	11.61	9.60	12.27	9.36
27			8.86	8.68	9.64	8.46	10.34	9.25	10.65	9.15	10.96	9.05	11.57	9.59		
29			8.80	8.62	9.50	8.41	10.17	9.20	10.49	9.10	10.81	9.01	11.45	9.56		
31			8.73	8.56	9.35	8.35	9.99	9.14	10.32	9.05	10.66	8.96	11.32	9.53		
33	8.22	7.97	8.58	8.41	9.21	8.31	9.82	9.09	10.16	9.01	10.51	8.92	11.19	9.50		
35	8.05	7.89	8.44	8.27	9.06	8.26	9.64	9.03	10.00	8.96	10.36	8.88	11.07	9.47		
37	7.92	7.76	8.30	8.13	8.91	8.20	9.46	8.98	9.79	8.90	10.13	8.82	10.80	9.40		
39	7.78	7.62	8.16	8.00	8.75	8.15	9.28	8.92	9.59	8.84	9.90	8.75	10.53	9.34		
41	7.64	7.49	8.02	7.86	8.60	8.10	9.09	8.86	9.38	8.78	9.68	8.69	10.26	9.27		
43	7.50	7.35	7.88	7.72	8.45	8.05	8.91	8.73	9.18	8.72	9.45	8.63	9.99	9.21		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT125VNPVF Indoor unit FDT60VF (2 units) Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.85	10.74	10.53	11.03	10.70	11.34	10.53	11.96	11.26	12.57	10.88
13					10.63	9.97	11.26	10.97	11.57	10.80	11.91	10.63	12.58	11.34	13.25	10.95
15					11.10	10.09	11.78	11.09	12.11	10.91	12.47	10.73	13.20	11.43	13.92	11.02
17					11.58	10.22	12.29	11.20	12.65	11.02	13.04	10.83	13.82	11.53	14.59	11.10
19					11.82	10.28	12.56	11.26	12.92	11.07	13.32	10.89	14.11	11.57	14.90	11.14
21					12.06	10.34	12.82	11.32	13.19	11.13	13.60	10.94	14.40	11.61	15.20	11.17
23					12.06	10.34	12.85	11.32	13.23	11.14	13.64	10.95	14.45	11.62	15.27	11.18
25			11.16	10.81	12.06	10.34	12.89	11.33	13.27	11.14	13.68	10.95	14.51	11.63	15.34	11.19
27			11.08	10.79	12.05	10.34	12.92	11.34	13.31	11.15	13.69	10.96	14.47	11.62		
29			11.00	10.76	11.87	10.29	12.71	11.29	13.11	11.11	13.51	10.92	14.31	11.60		
31			10.92	10.70	11.69	10.24	12.49	11.24	12.90	11.07	13.32	10.89	14.15	11.58		
33	10.27	9.88	10.72	10.51	11.51	10.20	12.27	11.19	12.70	11.03	13.13	10.85	13.99	11.55		
35	10.07	9.82	10.55	10.34	11.33	10.15	12.06	11.15	12.50	10.99	12.94	10.81	13.83	11.53		
37	9.90	9.70	10.38	10.17	11.13	10.10	11.83	11.10	12.24	10.93	12.66	10.76	13.50	11.48		
39	9.72	9.53	10.20	10.00	10.94	10.05	11.60	11.05	11.99	10.88	12.38	10.71	13.16	11.43		
41	9.55	9.36	10.02	9.82	10.75	10.00	11.37	11.00	11.73	10.83	12.09	10.66	12.82	11.38		
43	9.38	9.19	9.85	9.65	10.56	9.95	11.14	10.92	11.47	10.78	11.81	10.61	12.48	11.33		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDT125VSPVF Indoor unit FDT60VF (2 units) Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.85	10.74	10.53	11.03	10.70	11.34	10.53	11.96	11.26	12.57	10.88
13					10.63	9.97	11.26	10.97	11.57	10.80	11.91	10.63	12.58	11.34	13.25	10.95
15					11.10	10.09	11.78	11.09	12.11	10.91	12.47	10.73	13.20	11.43	13.92	11.02
17					11.58	10.22	12.29	11.20	12.65	11.02	13.04	10.83	13.82	11.53	14.59	11.10
19					11.82	10.28	12.56	11.26	12.92	11.07	13.32	10.89	14.11	11.57	14.90	11.14
21					12.06	10.34	12.82	11.32	13.19	11.13	13.60	10.94	14.40	11.61	15.20	11.17
23					12.06	10.34	12.85	11.32	13.23	11.14	13.64	10.95	14.45	11.62	15.27	11.18
25			11.16	10.81	12.06	10.34	12.89	11.33	13.27	11.14	13.68	10.95	14.51	11.63	15.34	11.19
27			11.08	10.79	12.05	10.34	12.92	11.34	13.31	11.15	13.69	10.96	14.47	11.62		
29			11.00	10.76	11.87	10.29	12.71	11.29	13.11	11.11	13.51	10.92	14.31	11.60		
31			10.92	10.70	11.69	10.24	12.49	11.24	12.90	11.07	13.32	10.89	14.15	11.58		
33	10.27	9.88	10.72	10.51	11.51	10.20	12.27	11.19	12.70	11.03	13.13	10.85	13.99	11.55		
35	10.07	9.82	10.55	10.34	11.33	10.15	12.06	11.15	12.50	10.99	12.94	10.81	13.83	11.53		
37	9.90	9.70	10.38	10.17	11.13	10.10	11.83	11.10	12.24	10.93	12.66	10.76	13.50	11.48		
39	9.72	9.53	10.20	10.00	10.94	10.05	11.60	11.05	11.99	10.88	12.38	10.71	13.16	11.43		
41	9.55	9.36	10.02	9.82	10.75	10.00	11.37	11.00	11.73	10.83	12.09	10.66	12.82	11.38		
43	9.38	9.19	9.85	9.65	10.56	9.95	11.14	10.92	11.47	10.78	11.81	10.61	12.48	11.33		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT140VNPVF Indoor unit FDT71VF (2 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	11.14	12.02	11.78	12.35	12.10	12.70	12.04	13.39	12.85	14.08	12.56
13					11.90	11.37	12.61	12.36	12.96	12.34	13.33	12.21	14.09	13.02	14.84	12.73
15					12.43	11.55	13.19	12.64	13.57	12.52	13.97	12.39	14.78	13.20	15.59	12.89
17					12.96	11.74	13.77	12.83	14.17	12.70	14.61	12.57	15.48	13.37	16.34	13.06
19					13.24	11.84	14.06	12.92	14.48	12.79	14.92	12.66	15.80	13.45	16.68	13.13
21					13.51	11.93	14.36	13.01	14.78	12.88	15.23	12.75	16.12	13.53	17.02	13.21
23					13.51	11.93	14.40	13.03	14.82	12.89	15.28	12.76	16.19	13.55	17.10	13.23
25			12.50	12.25	13.50	11.93	14.43	13.04	14.86	12.90	15.33	12.77	16.25	13.57	17.18	13.24
27			12.41	12.16	13.50	11.93	14.47	13.05	14.91	12.92	15.34	12.78	16.20	13.55		
29			12.32	12.07	13.29	11.85	14.23	12.97	14.68	12.85	15.13	12.72	16.02	13.51		
31			12.23	11.99	13.09	11.78	13.99	12.90	14.45	12.78	14.92	12.66	15.85	13.46		
33	11.51	11.23	12.01	11.77	12.89	11.71	13.75	12.82	14.23	12.71	14.71	12.60	15.67	13.42		
35	11.28	11.05	11.82	11.58	12.68	11.64	13.50	12.74	14.00	12.65	14.50	12.54	15.49	13.37		
37	11.08	10.86	11.62	11.39	12.47	11.57	13.25	12.66	13.71	12.56	14.18	12.45	15.12	13.28		
39	10.89	10.67	11.43	11.20	12.26	11.50	12.99	12.58	13.43	12.48	13.86	12.36	14.74	13.19		
41	10.70	10.49	11.23	11.01	12.04	11.42	12.73	12.48	13.14	12.39	13.55	12.27	14.36	13.09		
43	10.51	10.30	11.03	10.81	11.83	11.35	12.47	12.22	12.85	12.31	13.23	12.18	13.98	13.00		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDT140VSPVF Indoor unit FDT71VF (2 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	11.14	12.02	11.78	12.35	12.10	12.70	12.04	13.39	12.85	14.08	12.56
13					11.90	11.37	12.61	12.36	12.96	12.34	13.33	12.21	14.09	13.02	14.84	12.73
15					12.43	11.55	13.19	12.64	13.57	12.52	13.97	12.39	14.78	13.20	15.59	12.89
17					12.96	11.74	13.77	12.83	14.17	12.70	14.61	12.57	15.48	13.37	16.34	13.06
19					13.24	11.84	14.06	12.92	14.48	12.79	14.92	12.66	15.80	13.45	16.68	13.13
21					13.51	11.93	14.36	13.01	14.78	12.88	15.23	12.75	16.12	13.53	17.02	13.21
23					13.51	11.93	14.40	13.03	14.82	12.89	15.28	12.76	16.19	13.55	17.10	13.23
25			12.50	12.25	13.50	11.93	14.43	13.04	14.86	12.90	15.33	12.77	16.25	13.57	17.18	13.24
27			12.41	12.16	13.50	11.93	14.47	13.05	14.91	12.92	15.34	12.78	16.20	13.55		
29			12.32	12.07	13.29	11.85	14.23	12.97	14.68	12.85	15.13	12.72	16.02	13.51		
31			12.23	11.99	13.09	11.78	13.99	12.90	14.45	12.78	14.92	12.66	15.85	13.46		
33	11.51	11.23	12.01	11.77	12.89	11.71	13.75	12.82	14.23	12.71	14.71	12.60	15.67	13.42		
35	11.28	11.05	11.82	11.58	12.68	11.64	13.50	12.74	14.00	12.65	14.50	12.54	15.49	13.37		
37	11.08	10.86	11.62	11.39	12.47	11.57	13.25	12.66	13.71	12.56	14.18	12.45	15.12	13.28		
39	10.89	10.67	11.43	11.20	12.26	11.50	12.99	12.58	13.43	12.48	13.86	12.36	14.74	13.19		
41	10.70	10.49	11.23	11.01	12.04	11.42	12.73	12.48	13.14	12.39	13.55	12.27	14.36	13.09		
43	10.51	10.30	11.03	10.81	11.83	11.35	12.47	12.22	12.85	12.31	13.23	12.18	13.98	13.00		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT200VSPVF Indoor unit FDT100VF (2 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	15.85	18.41	17.29	18.94	17.13	19.50	16.97	20.63	18.05	21.76	17.66
13					17.90	16.04	18.99	17.49	19.54	17.32	20.13	17.16	21.31	18.23	22.49	17.84
15					18.43	16.23	19.57	17.68	20.14	17.51	20.75	17.35	21.98	18.42	23.21	18.01
17					18.96	16.43	20.14	17.87	20.73	17.70	21.38	17.54	22.66	18.60	23.94	18.19
19					19.35	16.57	20.56	18.01	21.16	17.84	21.81	17.67	23.12	18.73	24.42	18.31
21					19.41	16.59	20.98	18.16	21.59	17.98	22.25	17.81	23.57	18.85	24.89	18.42
23					19.31	16.56	20.86	18.12	21.47	17.94	22.12	17.77	23.43	18.82	24.73	18.38
25			17.35	16.78	19.20	16.52	20.74	18.07	21.35	17.90	21.99	17.73	23.28	18.77	24.57	18.34
27			17.28	16.75	19.10	16.48	20.62	18.03	21.22	17.86	21.83	17.68	23.04	18.71		
29			17.14	16.69	18.85	16.39	20.31	17.93	20.92	17.76	21.53	17.58	22.75	18.63		
31			16.99	16.63	18.59	16.29	20.00	17.82	20.61	17.66	21.22	17.49	22.45	18.54		
33	16.46	15.57	17.03	16.65	18.33	16.20	19.69	17.72	20.31	17.57	20.92	17.40	22.15	18.46		
35	16.14	15.43	16.76	16.42	18.08	16.10	19.38	17.62	20.00	17.47	20.62	17.31	21.85	18.38		
37	15.86	15.31	16.50	16.17	17.76	15.99	18.98	17.48	19.57	17.33	20.17	17.17	21.35	18.25		
39	15.59	15.19	16.23	15.91	17.44	15.87	18.58	17.35	19.15	17.20	19.71	17.03	20.85	18.11		
41	15.32	15.01	15.97	15.65	17.13	15.76	18.17	17.22	18.72	17.06	19.26	16.90	20.35	17.98		
43	15.04	14.74	15.70	15.39	16.81	15.64	17.77	17.08	18.29	16.93	18.81	16.77	19.85	17.84		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Model FDT250VSPVF Indoor unit FDT125VF (2 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	18.30	23.02	19.79	23.67	19.64	24.38	19.51	25.79	20.62	27.21	20.27
13					22.38	18.58	23.74	20.07	24.42	19.92	25.16	19.79	26.63	20.90	28.11	20.53
15					23.04	18.85	24.46	20.35	25.17	20.20	25.94	20.07	27.48	21.18	29.02	20.81
17					23.70	19.13	25.18	20.63	25.92	20.49	26.72	20.35	28.32	21.46	29.92	21.08
19					24.19	19.34	25.70	20.84	26.45	20.69	27.27	20.55	28.89	21.65	30.52	21.27
21					24.26	19.37	26.22	21.05	26.99	20.89	27.82	20.75	29.47	21.84	31.12	21.45
23					24.13	19.32	26.07	20.99	26.84	20.84	27.65	20.69	29.28	21.78	30.91	21.39
25			21.69	19.35	24.00	19.26	25.92	20.93	26.68	20.78	27.49	20.63	29.10	21.72	30.71	21.32
27			21.60	19.30	23.88	19.21	25.77	20.87	26.53	20.72	27.29	20.56	28.80	21.62		
29			21.42	19.22	23.56	19.07	25.39	20.72	26.15	20.57	26.91	20.42	28.43	21.50		
31			21.24	19.14	23.24	18.94	25.00	20.56	25.77	20.43	26.53	20.28	28.06	21.37		
33	20.58	18.11	21.29	19.16	22.92	18.80	24.61	20.41	25.38	20.28	26.15	20.14	27.69	21.25		
35	20.17	17.91	20.96	19.01	22.60	18.67	24.23	20.26	25.00	20.14	25.77	20.00	27.31	21.12		
37	19.83	17.75	20.62	18.86	22.20	18.50	23.73	20.07	24.47	19.94	25.21	19.80	26.69	20.92		
39	19.49	17.58	20.29	18.71	21.80	18.33	23.22	19.87	23.93	19.74	24.64	19.60	26.06	20.71		
41	19.15	17.42	19.96	18.57	21.41	18.17	22.72	19.68	23.40	19.55	24.08	19.40	25.43	20.51		
43	18.81	17.26	19.63	18.42	21.01	18.01	22.22	19.49	22.86	19.35	23.51	19.20	24.81	20.31		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(c) Triple type

Model FDT140VNTVF Indoor unit FDT50VF (3 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	11.14	12.02	11.78	12.35	12.10	12.70	12.45	13.39	13.12	14.08	13.14
13					11.90	11.66	12.61	12.36	12.96	12.70	13.33	12.72	14.09	13.60	14.84	13.29
15					12.43	11.99	13.19	12.93	13.57	13.03	13.97	12.89	14.78	13.76	15.59	13.44
17					12.96	12.17	13.77	13.34	14.17	13.20	14.61	13.07	15.48	13.93	16.34	13.60
19					13.24	12.26	14.06	13.43	14.48	13.29	14.92	13.15	15.80	14.01	16.68	13.67
21					13.51	12.36	14.36	13.52	14.78	13.38	15.23	13.24	16.12	14.09	17.02	13.74
23					13.51	12.36	14.40	13.53	14.82	13.39	15.28	13.25	16.19	14.10	17.10	13.76
25			12.50	12.25	13.50	12.35	14.43	13.54	14.86	13.40	15.33	13.26	16.25	14.12	17.18	13.78
27			12.41	12.16	13.50	12.35	14.47	13.55	14.91	13.41	15.34	13.27	16.20	14.10		
29			12.32	12.07	13.29	12.28	14.23	13.48	14.68	13.35	15.13	13.21	16.02	14.06		
31			12.23	11.99	13.09	12.21	13.99	13.41	14.45	13.28	14.92	13.15	15.85	14.02		
33	11.51	11.28	12.01	11.77	12.89	12.15	13.75	13.33	14.23	13.22	14.71	13.09	15.67	13.98		
35	11.28	11.05	11.82	11.58	12.68	12.08	13.50	13.23	14.00	13.15	14.50	13.04	15.49	13.93		
37	11.08	10.86	11.62	11.39	12.47	12.01	13.25	12.99	13.71	13.07	14.18	12.95	15.12	13.84		
39	10.89	10.67	11.43	11.20	12.26	11.94	12.99	12.73	13.43	12.99	13.86	12.86	14.74	13.75		
41	10.70	10.49	11.23	11.01	12.04	11.80	12.73	12.48	13.14	12.88	13.55	12.78	14.36	13.66		
43	10.51	10.30	11.03	10.81	11.83	11.59	12.47	12.22	12.85	12.59	13.23	12.70	13.98	13.58		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDT140VSTVF Indoor unit FDT50VF (3 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	11.14	12.02	11.78	12.35	12.10	12.70	12.45	13.39	13.12	14.08	13.14
13					11.90	11.66	12.61	12.36	12.96	12.70	13.33	12.72	14.09	13.60	14.84	13.29
15					12.43	11.99	13.19	12.93	13.57	13.03	13.97	12.89	14.78	13.76	15.59	13.44
17					12.96	12.17	13.77	13.34	14.17	13.20	14.61	13.07	15.48	13.93	16.34	13.60
19					13.24	12.26	14.06	13.43	14.48	13.29	14.92	13.15	15.80	14.01	16.68	13.67
21					13.51	12.36	14.36	13.52	14.78	13.38	15.23	13.24	16.12	14.09	17.02	13.74
23					13.51	12.36	14.40	13.53	14.82	13.39	15.28	13.25	16.19	14.10	17.10	13.76
25			12.50	12.25	13.50	12.35	14.43	13.54	14.86	13.40	15.33	13.26	16.25	14.12	17.18	13.78
27			12.41	12.16	13.50	12.35	14.47	13.55	14.91	13.41	15.34	13.27	16.20	14.10		
29			12.32	12.07	13.29	12.28	14.23	13.48	14.68	13.35	15.13	13.21	16.02	14.06		
31			12.23	11.99	13.09	12.21	13.99	13.41	14.45	13.28	14.92	13.15	15.85	14.02		
33	11.51	11.28	12.01	11.77	12.89	12.15	13.75	13.33	14.23	13.22	14.71	13.09	15.67	13.98		
35	11.28	11.05	11.82	11.58	12.68	12.08	13.50	13.23	14.00	13.15	14.50	13.04	15.49	13.93		
37	11.08	10.86	11.62	11.39	12.47	12.01	13.25	12.99	13.71	13.07	14.18	12.95	15.12	13.84		
39	10.89	10.67	11.43	11.20	12.26	11.94	12.99	12.73	13.43	12.99	13.86	12.86	14.74	13.75		
41	10.70	10.49	11.23	11.01	12.04	11.80	12.73	12.48	13.14	12.88	13.55	12.78	14.36	13.66		
43	10.51	10.30	11.03	10.81	11.83	11.59	12.47	12.22	12.85	12.59	13.23	12.70	13.98	13.58		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT200VSTVF Indoor unit FDT71VF (3 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	16.90	18.41	18.04	18.94	18.36	19.50	18.18	20.63	19.41	21.76	18.98
13					17.90	17.08	18.99	18.61	19.54	18.54	20.13	18.35	21.31	19.58	22.49	19.14
15					18.43	17.26	19.57	18.90	20.14	18.71	20.75	18.53	21.98	19.75	23.21	19.30
17					18.96	17.44	20.14	19.08	20.73	18.89	21.38	18.70	22.66	19.92	23.94	19.46
19					19.35	17.58	20.56	19.21	21.16	19.02	21.81	18.82	23.12	20.03	24.42	19.56
21					19.41	17.60	20.98	19.34	21.59	19.14	22.25	18.95	23.57	20.14	24.89	19.67
23					19.31	17.56	20.86	19.30	21.47	19.11	22.12	18.91	23.43	20.11	24.73	19.63
25			17.35	17.00	19.20	17.52	20.74	19.27	21.35	19.07	21.99	18.87	23.28	20.07	24.57	19.60
27			17.28	16.93	19.10	17.49	20.62	19.23	21.22	19.03	21.83	18.83	23.04	20.01		
29			17.14	16.80	18.85	17.40	20.31	19.13	20.92	18.94	21.53	18.74	22.75	19.94		
31			16.99	16.65	18.59	17.31	20.00	19.03	20.61	18.85	21.22	18.66	22.45	19.86		
33	16.46	16.13	17.03	16.69	18.33	17.22	19.69	18.94	20.31	18.76	20.92	18.57	22.15	19.79		
35	16.14	15.82	16.76	16.42	18.08	17.14	19.38	18.84	20.00	18.67	20.62	18.49	21.85	19.71		
37	15.86	15.54	16.50	16.17	17.76	17.03	18.98	18.60	19.57	18.54	20.17	18.36	21.35	19.59		
39	15.59	15.28	16.23	15.91	17.44	16.92	18.58	18.21	19.15	18.42	19.71	18.24	20.85	19.47		
41	15.32	15.01	15.97	15.65	17.13	16.79	18.17	17.81	18.72	18.30	19.26	18.11	20.35	19.35		
43	15.04	14.74	15.70	15.39	16.81	16.47	17.77	17.41	18.29	17.92	18.81	17.99	19.85	19.22		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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(d) Double twin type

Model FDT200VSDVF Indoor unit FDT50VF (4 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	16.26	18.41	17.80	18.94	17.61	19.50	17.43	20.63	18.57	21.76	18.13
13					17.90	16.44	18.99	17.98	19.54	17.79	20.13	17.60	21.31	18.74	22.49	18.28
15					18.43	16.62	19.57	18.16	20.14	17.96	20.75	17.77	21.98	18.90	23.21	18.44
17					18.96	16.80	20.14	18.33	20.73	18.14	21.38	17.94	22.66	19.07	23.94	18.59
19					19.35	16.93	20.56	18.46	21.16	18.26	21.81	18.06	23.12	19.18	24.42	18.70
21					19.41	16.96	20.98	18.60	21.59	18.39	22.25	18.19	23.57	19.29	24.89	18.80
23					19.31	16.92	20.86	18.56	21.47	18.35	22.12	18.15	23.43	19.26	24.73	18.77
25			17.35	17.00	19.20	16.88	20.74	18.52	21.35	18.32	21.99	18.12	23.28	19.22	24.57	18.73
27			17.28	16.93	19.10	16.85	20.62	18.48	21.22	18.28	21.83	18.07	23.04	19.16		
29			17.14	16.80	18.85	16.76	20.31	18.39	20.92	18.19	21.53	17.99	22.75	19.09		
31			16.99	16.65	18.59	16.67	20.00	18.29	20.61	18.10	21.22	17.90	22.45	19.01		
33	16.46	15.95	17.03	16.69	18.33	16.58	19.69	18.19	20.31	18.01	20.92	17.82	22.15	18.94		
35	16.14	15.82	16.76	16.42	18.08	16.50	19.38	18.10	20.00	17.92	20.62	17.73	21.85	18.87		
37	15.86	15.54	16.50	16.17	17.76	16.39	18.98	17.97	19.57	17.80	20.17	17.61	21.35	18.75		
39	15.59	15.28	16.23	15.91	17.44	16.28	18.58	17.85	19.15	17.67	19.71	17.48	20.85	18.62		
41	15.32	15.01	15.97	15.65	17.13	16.18	18.17	17.73	18.72	17.55	19.26	17.36	20.35	18.50		
43	15.04	14.74	15.70	15.39	16.81	16.07	17.77	17.41	18.29	17.43	18.81	17.24	19.85	18.39		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDT250VSDVF Indoor unit FDT60VF (4 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	20.06	23.02	22.05	23.67	21.71	24.38	21.36	25.79	22.78	27.21	21.98
13					22.38	20.23	23.74	22.21	24.42	21.86	25.16	21.50	26.63	22.90	28.11	22.08
15					23.04	20.40	24.46	22.37	25.17	22.01	25.94	21.64	27.48	23.03	29.02	22.18
17					23.70	20.57	25.18	22.53	25.92	22.16	26.72	21.79	28.32	23.15	29.92	22.29
19					24.19	20.70	25.70	22.65	26.45	22.27	27.27	21.89	28.89	23.24	30.52	22.36
21					24.26	20.72	26.22	22.77	26.99	22.38	27.82	22.00	29.47	23.33	31.12	22.43
23					24.13	20.69	26.07	22.73	26.84	22.35	27.65	21.96	29.28	23.30	30.91	22.41
25			21.69	21.26	24.00	20.65	25.92	22.70	26.68	22.32	27.49	21.93	29.10	23.27	30.71	22.38
27			21.60	21.17	23.88	20.62	25.77	22.66	26.53	22.29	27.29	21.89	28.80	23.23		
29			21.42	20.99	23.56	20.54	25.39	22.58	26.15	22.21	26.91	21.82	28.43	23.17		
31			21.24	20.82	23.24	20.45	25.00	22.49	25.77	22.13	26.53	21.75	28.06	23.11		
33	20.58	19.78	21.29	20.86	22.92	20.37	24.61	22.40	25.38	22.05	26.15	21.68	27.69	23.06		
35	20.17	19.64	20.96	20.54	22.60	20.29	24.23	22.32	25.00	21.97	25.77	21.61	27.31	23.00		
37	19.83	19.43	20.62	20.21	22.20	20.18	23.73	22.21	24.47	21.87	25.21	21.51	26.69	22.91		
39	19.49	19.10	20.29	19.88	21.80	20.08	23.22	22.10	23.93	21.76	24.64	21.40	26.06	22.82		
41	19.15	18.77	19.96	19.56	21.41	19.98	22.72	21.99	23.40	21.65	24.08	21.30	25.43	22.73		
43	18.81	18.43	19.63	19.24	21.01	19.88	22.22	21.78	22.86	21.55	23.51	21.20	24.81	22.64		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

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(2) Ceiling cassette-4way compact type (FDTC)

(a) Twin type

Model FDTC100VNPVF Indoor unit FDT50VF (2 units) Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.48	8.59	6.95	8.82	6.90	9.07	6.85	9.56	7.20	10.06	7.07
13					8.50	6.64	9.00	7.12	9.26	7.08	9.52	7.02	10.06	7.38	10.60	7.25
15					8.88	6.81	9.42	7.30	9.69	7.25	9.98	7.20	10.56	7.55	11.14	7.42
17					9.26	6.99	9.84	7.48	10.12	7.42	10.43	7.38	11.05	7.73	11.67	7.60
19					9.46	7.08	10.05	7.57	10.34	7.51	10.65	7.46	11.29	7.82	11.92	7.68
21					9.65	7.17	10.25	7.65	10.56	7.60	10.88	7.56	11.52	7.90	12.16	7.77
23					9.65	7.17	10.28	7.66	10.59	7.62	10.91	7.57	11.56	7.92	12.21	7.78
25			8.93	7.25	9.64	7.16	10.31	7.68	10.62	7.63	10.95	7.58	11.61	7.94	12.27	7.80
27			8.86	7.21	9.64	7.16	10.34	7.69	10.65	7.64	10.96	7.59	11.57	7.92		
29			8.80	7.18	9.50	7.10	10.17	7.62	10.49	7.58	10.81	7.53	11.45	7.88		
31			8.73	7.15	9.35	7.03	9.99	7.54	10.32	7.51	10.66	7.47	11.32	7.83		
33	8.22	6.72	8.58	7.08	9.21	6.96	9.82	7.47	10.16	7.44	10.51	7.41	11.19	7.78		
35	8.05	6.63	8.44	7.01	9.06	6.90	9.64	7.39	10.00	7.37	10.36	7.35	11.07	7.74		
37	7.92	6.57	8.30	6.94	8.91	6.83	9.46	7.32	9.79	7.29	10.13	7.26	10.80	7.64		
39	7.78	6.49	8.16	6.87	8.75	6.76	9.28	7.24	9.59	7.21	9.90	7.17	10.53	7.54		
41	7.64	6.42	8.02	6.81	8.60	6.69	9.09	7.16	9.38	7.12	9.68	7.08	10.26	7.45		
43	7.50	6.35	7.88	6.74	8.45	6.62	8.91	7.09	9.18	7.04	9.45	7.00	9.99	7.35		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDTC100VSPVF Indoor unit FDT50VF (2 units) Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.48	8.59	6.95	8.82	6.90	9.07	6.85	9.56	7.20	10.06	7.07
13					8.50	6.64	9.00	7.12	9.26	7.08	9.52	7.02	10.06	7.38	10.60	7.25
15					8.88	6.81	9.42	7.30	9.69	7.25	9.98	7.20	10.56	7.55	11.14	7.42
17					9.26	6.99	9.84	7.48	10.12	7.42	10.43	7.38	11.05	7.73	11.67	7.60
19					9.46	7.08	10.05	7.57	10.34	7.51	10.65	7.46	11.29	7.82	11.92	7.68
21					9.65	7.17	10.25	7.65	10.56	7.60	10.88	7.56	11.52	7.90	12.16	7.77
23					9.65	7.17	10.28	7.66	10.59	7.62	10.91	7.57	11.56	7.92	12.21	7.78
25			8.93	7.25	9.64	7.16	10.31	7.68	10.62	7.63	10.95	7.58	11.61	7.94	12.27	7.80
27			8.86	7.21	9.64	7.16	10.34	7.69	10.65	7.64	10.96	7.59	11.57	7.92		
29			8.80	7.18	9.50	7.10	10.17	7.62	10.49	7.58	10.81	7.53	11.45	7.88		
31			8.73	7.15	9.35	7.03	9.99	7.54	10.32	7.51	10.66	7.47	11.32	7.83		
33	8.22	6.72	8.58	7.08	9.21	6.96	9.82	7.47	10.16	7.44	10.51	7.41	11.19	7.78		
35	8.05	6.63	8.44	7.01	9.06	6.90	9.64	7.39	10.00	7.37	10.36	7.35	11.07	7.74		
37	7.92	6.57	8.30	6.94	8.91	6.83	9.46	7.32	9.79	7.29	10.13	7.26	10.80	7.64		
39	7.78	6.49	8.16	6.87	8.75	6.76	9.28	7.24	9.59	7.21	9.90	7.17	10.53	7.54		
41	7.64	6.42	8.02	6.81	8.60	6.69	9.09	7.16	9.38	7.12	9.68	7.08	10.26	7.45		
43	7.50	6.35	7.88	6.74	8.45	6.62	8.91	7.09	9.18	7.04	9.45	7.00	9.99	7.35		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDTC125VNPVF Indoor unit FDT60VF (2 units) Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.28	10.74	7.76	11.03	7.67	11.34	7.57	11.96	7.89	12.57	7.67
13					10.63	7.48	11.26	7.96	11.57	7.87	11.91	7.78	12.58	8.09	13.25	7.86
15					11.10	7.69	11.78	8.17	12.11	8.07	12.47	7.98	13.20	8.30	13.92	8.06
17					11.58	7.90	12.29	8.37	12.65	8.28	13.04	8.19	13.82	8.51	14.59	8.26
19					11.82	8.01	12.56	8.48	12.92	8.39	13.32	8.30	14.11	8.61	14.90	8.36
21					12.06	8.11	12.82	8.59	13.19	8.49	13.60	8.40	14.40	8.71	15.20	8.45
23					12.06	8.11	12.85	8.61	13.23	8.51	13.64	8.42	14.45	8.72	15.27	8.48
25			11.16	8.26	12.06	8.11	12.89	8.62	13.27	8.53	13.68	8.43	14.51	8.74	15.34	8.50
27			11.08	8.22	12.05	8.11	12.92	8.63	13.31	8.54	13.69	8.44	14.47	8.73		
29			11.00	8.18	11.87	8.03	12.71	8.55	13.11	8.46	13.51	8.37	14.31	8.67		
31			10.92	8.15	11.69	7.95	12.49	8.46	12.90	8.38	13.32	8.30	14.15	8.62		
33	10.27	7.71	10.72	8.05	11.51	7.87	12.27	8.37	12.70	8.30	13.13	8.22	13.99	8.56		
35	10.07	7.61	10.55	7.97	11.33	7.79	12.06	8.28	12.50	8.22	12.94	8.15	13.83	8.51		
37	9.90	7.52	10.38	7.89	11.13	7.70	11.83	8.19	12.24	8.12	12.66	8.05	13.50	8.40		
39	9.72	7.43	10.20	7.81	10.94	7.62	11.60	8.09	11.99	8.03	12.38	7.95	13.16	8.28		
41	9.55	7.35	10.02	7.72	10.75	7.54	11.37	8.00	11.73	7.93	12.09	7.84	12.82	8.17		
43	9.38	7.26	9.85	7.64	10.56	7.45	11.14	7.91	11.47	7.83	11.81	7.74	12.48	8.06		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDTC125VSPVF Indoor unit FDT60VF (2 units) Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.28	10.74	7.76	11.03	7.67	11.34	7.57	11.96	7.89	12.57	7.67
13					10.63	7.48	11.26	7.96	11.57	7.87	11.91	7.78	12.58	8.09	13.25	7.86
15					11.10	7.69	11.78	8.17	12.11	8.07	12.47	7.98	13.20	8.30	13.92	8.06
17					11.58	7.90	12.29	8.37	12.65	8.28	13.04	8.19	13.82	8.51	14.59	8.26
19					11.82	8.01	12.56	8.48	12.92	8.39	13.32	8.30	14.11	8.61	14.90	8.36
21					12.06	8.11	12.82	8.59	13.19	8.49	13.60	8.40	14.40	8.71	15.20	8.45
23					12.06	8.11	12.85	8.61	13.23	8.51	13.64	8.42	14.45	8.72	15.27	8.48
25			11.16	8.26	12.06	8.11	12.89	8.62	13.27	8.53	13.68	8.43	14.51	8.74	15.34	8.50
27			11.08	8.22	12.05	8.11	12.92	8.63	13.31	8.54	13.69	8.44	14.47	8.73		
29			11.00	8.18	11.87	8.03	12.71	8.55	13.11	8.46	13.51	8.37	14.31	8.67		
31			10.92	8.15	11.69	7.95	12.49	8.46	12.90	8.38	13.32	8.30	14.15	8.62		
33	10.27	7.71	10.72	8.05	11.51	7.87	12.27	8.37	12.70	8.30	13.13	8.22	13.99	8.56		
35	10.07	7.61	10.55	7.97	11.33	7.79	12.06	8.28	12.50	8.22	12.94	8.15	13.83	8.51		
37	9.90	7.52	10.38	7.89	11.13	7.70	11.83	8.19	12.24	8.12	12.66	8.05	13.50	8.40		
39	9.72	7.43	10.20	7.81	10.94	7.62	11.60	8.09	11.99	8.03	12.38	7.95	13.16	8.28		
41	9.55	7.35	10.02	7.72	10.75	7.54	11.37	8.00	11.73	7.93	12.09	7.84	12.82	8.17		
43	9.38	7.26	9.85	7.64	10.56	7.45	11.14	7.91	11.47	7.83	11.81	7.74	12.48	8.06		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(c) Triple type

Model FDTC140VNTVF Indoor unit FDT50VF (3 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.36	12.02	10.08	12.35	10.01	12.70	9.94	13.39	10.47	14.08	10.29
13					11.90	9.59	12.61	10.32	12.96	10.25	13.33	10.17	14.09	10.71	14.84	10.53
15					12.43	9.82	13.19	10.56	13.57	10.49	13.97	10.42	14.78	10.96	15.59	10.77
17					12.96	10.06	13.77	10.80	14.17	10.73	14.61	10.66	15.48	11.20	16.34	11.01
19					13.24	10.19	14.06	10.92	14.48	10.85	14.92	10.78	15.80	11.32	16.68	11.13
21					13.51	10.31	14.36	11.04	14.78	10.97	15.23	10.90	16.12	11.43	17.02	11.24
23					13.51	10.31	14.40	11.06	14.82	10.99	15.28	10.92	16.19	11.46	17.10	11.27
25			12.50	10.44	13.50	10.30	14.43	11.07	14.86	11.00	15.33	10.94	16.25	11.48	17.18	11.29
27			12.41	10.39	13.50	10.30	14.47	11.09	14.91	11.02	15.34	10.95	16.20	11.46		
29			12.32	10.35	13.29	10.21	14.23	10.99	14.68	10.93	15.13	10.86	16.02	11.40		
31			12.23	10.31	13.09	10.12	13.99	10.89	14.45	10.84	14.92	10.78	15.85	11.34		
33	11.51	9.66	12.01	10.20	12.89	10.03	13.75	10.79	14.23	10.75	14.71	10.70	15.67	11.27		
35	11.28	9.54	11.82	10.11	12.68	9.94	13.50	10.68	14.00	10.66	14.50	10.62	15.49	11.21		
37	11.08	9.44	11.62	10.02	12.47	9.84	13.25	10.58	13.71	10.54	14.18	10.50	15.12	11.08		
39	10.89	9.34	11.43	9.93	12.26	9.75	12.99	10.47	13.43	10.43	13.86	10.37	14.74	10.94		
41	10.70	9.25	11.23	9.83	12.04	9.65	12.73	10.37	13.14	10.32	13.55	10.26	14.36	10.81		
43	10.51	9.15	11.03	9.74	11.83	9.56	12.47	10.26	12.85	10.20	13.23	10.14	13.98	10.68		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDTC140VSTVF Indoor unit FDT50VF (3 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.36	12.02	10.08	12.35	10.01	12.70	9.94	13.39	10.47	14.08	10.29
13					11.90	9.59	12.61	10.32	12.96	10.25	13.33	10.17	14.09	10.71	14.84	10.53
15					12.43	9.82	13.19	10.56	13.57	10.49	13.97	10.42	14.78	10.96	15.59	10.77
17					12.96	10.06	13.77	10.80	14.17	10.73	14.61	10.66	15.48	11.20	16.34	11.01
19					13.24	10.19	14.06	10.92	14.48	10.85	14.92	10.78	15.80	11.32	16.68	11.13
21					13.51	10.31	14.36	11.04	14.78	10.97	15.23	10.90	16.12	11.43	17.02	11.24
23					13.51	10.31	14.40	11.06	14.82	10.99	15.28	10.92	16.19	11.46	17.10	11.27
25			12.50	10.44	13.50	10.30	14.43	11.07	14.86	11.00	15.33	10.94	16.25	11.48	17.18	11.29
27			12.41	10.39	13.50	10.30	14.47	11.09	14.91	11.02	15.34	10.95	16.20	11.46		
29			12.32	10.35	13.29	10.21	14.23	10.99	14.68	10.93	15.13	10.86	16.02	11.40		
31			12.23	10.31	13.09	10.12	13.99	10.89	14.45	10.84	14.92	10.78	15.85	11.34		
33	11.51	9.66	12.01	10.20	12.89	10.03	13.75	10.79	14.23	10.75	14.71	10.70	15.67	11.27		
35	11.28	9.54	11.82	10.11	12.68	9.94	13.50	10.68	14.00	10.66	14.50	10.62	15.49	11.21		
37	11.08	9.44	11.62	10.02	12.47	9.84	13.25	10.58	13.71	10.54	14.18	10.50	15.12	11.08		
39	10.89	9.34	11.43	9.93	12.26	9.75	12.99	10.47	13.43	10.43	13.86	10.37	14.74	10.94		
41	10.70	9.25	11.23	9.83	12.04	9.65	12.73	10.37	13.14	10.32	13.55	10.26	14.36	10.81		
43	10.51	9.15	11.03	9.74	11.83	9.56	12.47	10.26	12.85	10.20	13.23	10.14	13.98	10.68		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(c) Double twin type

Model FDTC200VSDVF Indoor unit FDT50VF (4 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	13.45	18.41	14.42	18.94	14.32	19.50	14.22	20.63	14.93	21.76	14.68
13					17.90	13.69	18.99	14.66	19.54	14.56	20.13	14.47	21.31	15.18	22.49	14.92
15					18.43	13.93	19.57	14.90	20.14	14.81	20.75	14.71	21.98	15.42	23.21	15.16
17					18.96	14.18	20.14	15.15	20.73	15.05	21.38	14.96	22.66	15.67	23.94	15.40
19					19.35	14.36	20.56	15.33	21.16	15.23	21.81	15.13	23.12	15.84	24.42	15.57
21					19.41	14.38	20.98	15.51	21.59	15.41	22.25	15.31	23.57	16.01	24.89	15.73
23					19.31	14.34	20.86	15.46	21.47	15.36	22.12	15.26	23.43	15.95	24.73	15.67
25			17.35	14.25	19.20	14.29	20.74	15.41	21.35	15.31	21.99	15.20	23.28	15.90	24.57	15.62
27			17.28	14.21	19.10	14.24	20.62	15.35	21.22	15.25	21.83	15.14	23.04	15.81		
29			17.14	14.14	18.85	14.13	20.31	15.22	20.92	15.13	21.53	15.02	22.75	15.70		
31			16.99	14.07	18.59	14.01	20.00	15.09	20.61	15.00	21.22	14.90	22.45	15.59		
33	16.46	13.45	17.03	14.09	18.33	13.89	19.69	14.96	20.31	14.88	20.92	14.78	22.15	15.48		
35	16.14	13.29	16.76	13.96	18.08	13.77	19.38	14.82	20.00	14.75	20.62	14.66	21.85	15.37		
37	15.86	13.14	16.50	13.83	17.76	13.63	18.98	14.66	19.57	14.57	20.17	14.48	21.35	15.19		
39	15.59	13.00	16.23	13.71	17.44	13.49	18.58	14.49	19.15	14.40	19.71	14.30	20.85	15.01		
41	15.32	12.86	15.97	13.58	17.13	13.35	18.17	14.32	18.72	14.23	19.26	14.13	20.35	14.83		
43	15.04	12.72	15.70	13.45	16.81	13.20	17.77	14.15	18.29	14.06	18.81	13.96	19.85	14.66		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Model FDTC250VSDVF Indoor unit FDT60VF (4 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	15.16	23.02	16.12	23.67	15.93	24.38	15.75	25.79	16.39	27.21	15.94
13					22.38	15.45	23.74	16.41	24.42	16.22	25.16	16.04	26.63	16.67	28.11	16.20
15					23.04	15.75	24.46	16.70	25.17	16.51	25.94	16.33	27.48	16.96	29.02	16.48
17					23.70	16.04	25.18	16.99	25.92	16.81	26.72	16.62	28.32	17.25	29.92	16.76
19					24.19	16.26	25.70	17.21	26.45	17.02	27.27	16.83	28.89	17.44	30.52	16.94
21					24.26	16.29	26.22	17.43	26.99	17.23	27.82	17.04	29.47	17.65	31.12	17.13
23					24.13	16.23	26.07	17.37	26.84	17.17	27.65	16.98	29.28	17.58	30.91	17.07
25			21.69	16.22	24.00	16.17	25.92	17.30	26.68	17.11	27.49	16.92	29.10	17.52	30.71	17.00
27			21.60	16.18	23.88	16.12	25.77	17.24	26.53	17.05	27.29	16.84	28.80	17.41		
29			21.42	16.09	23.56	15.98	25.39	17.08	26.15	16.90	26.91	16.69	28.43	17.28		
31			21.24	16.01	23.24	15.83	25.00	16.92	25.77	16.75	26.53	16.55	28.06	17.16		
33	20.58	15.44	21.29	16.03	22.92	15.69	24.61	16.76	25.38	16.59	26.15	16.41	27.69	17.03		
35	20.17	15.23	20.96	15.87	22.60	15.55	24.23	16.60	25.00	16.44	25.77	16.26	27.31	16.90		
37	19.83	15.06	20.62	15.71	22.20	15.38	23.73	16.40	24.47	16.24	25.21	16.06	26.69	16.69		
39	19.49	14.89	20.29	15.56	21.80	15.20	23.22	16.20	23.93	16.03	24.64	15.85	26.06	16.48		
41	19.15	14.72	19.96	15.41	21.41	15.03	22.72	16.00	23.40	15.83	24.08	15.65	25.43	16.28		
43	18.81	14.55	19.63	15.26	21.01	14.86	22.22	15.80	22.86	15.63	23.51	15.44	24.81	16.07		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(3) Ceiling susponded type (FDEN)

(a) Single type

Model FDEN100VNVF Indoor unit FDEN100VF Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.86	8.59	7.42	8.82	7.35	9.07	7.30	9.56	7.71	10.06	7.56
13					8.50	7.02	9.00	7.57	9.26	7.52	9.52	7.45	10.06	7.87	10.60	7.72
15					8.88	7.18	9.42	7.74	9.69	7.68	9.98	7.62	10.56	8.03	11.14	7.88
17					9.26	7.34	9.84	7.90	10.12	7.84	10.43	7.78	11.05	8.19	11.67	8.04
19					9.46	7.42	10.05	7.98	10.34	7.92	10.65	7.86	11.29	8.27	11.92	8.12
21					9.65	7.51	10.25	8.06	10.56	8.01	10.88	7.95	11.52	8.35	12.16	8.19
23					9.65	7.51	10.28	8.08	10.59	8.02	10.91	7.96	11.56	8.37	12.21	8.21
25			8.93	7.63	9.64	7.50	10.31	8.09	10.62	8.03	10.95	7.97	11.61	8.38	12.27	8.23
27			8.86	7.59	9.64	7.50	10.34	8.10	10.65	8.04	10.96	7.98	11.57	8.37		
29			8.80	7.57	9.50	7.44	10.17	8.03	10.49	7.98	10.81	7.92	11.45	8.33		
31			8.73	7.53	9.35	7.38	9.99	7.96	10.32	7.91	10.66	7.87	11.32	8.28		
33	8.22	7.04	8.58	7.47	9.21	7.32	9.82	7.89	10.16	7.85	10.51	7.81	11.19	8.24		
35	8.05	6.96	8.44	7.40	9.06	7.25	9.64	7.82	10.00	7.79	10.36	7.76	11.07	8.20		
37	7.92	6.90	8.30	7.34	8.91	7.19	9.46	7.75	9.79	7.71	10.13	7.67	10.80	8.11		
39	7.78	6.83	8.16	7.28	8.75	7.12	9.28	7.68	9.59	7.64	9.90	7.59	10.53	8.02		
41	7.64	6.76	8.02	7.21	8.60	7.06	9.09	7.61	9.38	7.56	9.68	7.51	10.26	7.93		
43	7.50	6.69	7.88	7.15	8.45	7.00	8.91	7.54	9.18	7.49	9.45	7.43	9.99	7.84		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDEN100VSVF Indoor unit FDEN100VF Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.86	8.59	7.42	8.82	7.35	9.07	7.30	9.56	7.71	10.06	7.56
13					8.50	7.02	9.00	7.57	9.26	7.52	9.52	7.45	10.06	7.87	10.60	7.72
15					8.88	7.18	9.42	7.74	9.69	7.68	9.98	7.62	10.56	8.03	11.14	7.88
17					9.26	7.34	9.84	7.90	10.12	7.84	10.43	7.78	11.05	8.19	11.67	8.04
19					9.46	7.42	10.05	7.98	10.34	7.92	10.65	7.86	11.29	8.27	11.92	8.12
21					9.65	7.51	10.25	8.06	10.56	8.01	10.88	7.95	11.52	8.35	12.16	8.19
23					9.65	7.51	10.28	8.08	10.59	8.02	10.91	7.96	11.56	8.37	12.21	8.21
25			8.93	7.63	9.64	7.50	10.31	8.09	10.62	8.03	10.95	7.97	11.61	8.38	12.27	8.23
27			8.86	7.59	9.64	7.50	10.34	8.10	10.65	8.04	10.96	7.98	11.57	8.37		
29			8.80	7.57	9.50	7.44	10.17	8.03	10.49	7.98	10.81	7.92	11.45	8.33		
31			8.73	7.53	9.35	7.38	9.99	7.96	10.32	7.91	10.66	7.87	11.32	8.28		
33	8.22	7.04	8.58	7.47	9.21	7.32	9.82	7.89	10.16	7.85	10.51	7.81	11.19	8.24		
35	8.05	6.96	8.44	7.40	9.06	7.25	9.64	7.82	10.00	7.79	10.36	7.76	11.07	8.20		
37	7.92	6.90	8.30	7.34	8.91	7.19	9.46	7.75	9.79	7.71	10.13	7.67	10.80	8.11		
39	7.78	6.83	8.16	7.28	8.75	7.12	9.28	7.68	9.59	7.64	9.90	7.59	10.53	8.02		
41	7.64	6.76	8.02	7.21	8.60	7.06	9.09	7.61	9.38	7.56	9.68	7.51	10.26	7.93		
43	7.50	6.69	7.88	7.15	8.45	7.00	8.91	7.54	9.18	7.49	9.45	7.43	9.99	7.84		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN125VNVF Indoor unit FDEN125VF Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.66	10.74	8.23	11.03	8.12	11.34	8.01	11.96	8.40	12.57	8.15
13					10.63	7.85	11.26	8.41	11.57	8.30	11.91	8.19	12.58	8.58	13.25	8.31
15					11.10	8.03	11.78	8.59	12.11	8.48	12.47	8.37	13.20	8.75	13.92	8.48
17					11.58	8.22	12.29	8.78	12.65	8.67	13.04	8.56	13.82	8.93	14.59	8.66
19					11.82	8.32	12.56	8.88	12.92	8.76	13.32	8.65	14.11	9.02	14.90	8.74
21					12.06	8.41	12.82	8.97	13.19	8.86	13.60	8.74	14.40	9.11	15.20	8.82
23					12.06	8.41	12.85	8.98	13.23	8.87	13.64	8.76	14.45	9.12	15.27	8.84
25			11.16	8.63	12.06	8.41	12.89	9.00	13.27	8.88	13.68	8.77	14.51	9.14	15.34	8.86
27			11.08	8.59	12.05	8.41	12.92	9.01	13.31	8.90	13.69	8.77	14.47	9.13		
29			11.00	8.56	11.87	8.34	12.71	8.93	13.11	8.83	13.51	8.71	14.31	9.08		
31			10.92	8.52	11.69	8.26	12.49	8.85	12.90	8.75	13.32	8.65	14.15	9.03		
33	10.27	8.02	10.72	8.43	11.51	8.19	12.27	8.77	12.70	8.68	13.13	8.59	13.99	8.98		
35	10.07	7.92	10.55	8.36	11.33	8.12	12.06	8.69	12.50	8.61	12.94	8.52	13.83	8.94		
37	9.90	7.84	10.38	8.29	11.13	8.04	11.83	8.61	12.24	8.53	12.66	8.43	13.50	8.84		
39	9.72	7.76	10.20	8.21	10.94	7.97	11.60	8.53	11.99	8.44	12.38	8.34	13.16	8.74		
41	9.55	7.68	10.02	8.13	10.75	7.89	11.37	8.45	11.73	8.35	12.09	8.25	12.82	8.64		
43	9.38	7.60	9.85	8.06	10.56	7.82	11.14	8.37	11.47	8.27	11.81	8.16	12.48	8.55		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDEN125VSVF Indoor unit FDEN125VF Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.66	10.74	8.23	11.03	8.12	11.34	8.01	11.96	8.40	12.57	8.15
13					10.63	7.85	11.26	8.41	11.57	8.30	11.91	8.19	12.58	8.58	13.25	8.31
15					11.10	8.03	11.78	8.59	12.11	8.48	12.47	8.37	13.20	8.75	13.92	8.48
17					11.58	8.22	12.29	8.78	12.65	8.67	13.04	8.56	13.82	8.93	14.59	8.66
19					11.82	8.32	12.56	8.88	12.92	8.76	13.32	8.65	14.11	9.02	14.90	8.74
21					12.06	8.41	12.82	8.97	13.19	8.86	13.60	8.74	14.40	9.11	15.20	8.82
23					12.06	8.41	12.85	8.98	13.23	8.87	13.64	8.76	14.45	9.12	15.27	8.84
25			11.16	8.63	12.06	8.41	12.89	9.00	13.27	8.88	13.68	8.77	14.51	9.14	15.34	8.86
27			11.08	8.59	12.05	8.41	12.92	9.01	13.31	8.90	13.69	8.77	14.47	9.13		
29			11.00	8.56	11.87	8.34	12.71	8.93	13.11	8.83	13.51	8.71	14.31	9.08		
31			10.92	8.52	11.69	8.26	12.49	8.85	12.90	8.75	13.32	8.65	14.15	9.03		
33	10.27	8.02	10.72	8.43	11.51	8.19	12.27	8.77	12.70	8.68	13.13	8.59	13.99	8.98		
35	10.07	7.92	10.55	8.36	11.33	8.12	12.06	8.69	12.50	8.61	12.94	8.52	13.83	8.94		
37	9.90	7.84	10.38	8.29	11.13	8.04	11.83	8.61	12.24	8.53	12.66	8.43	13.50	8.84		
39	9.72	7.76	10.20	8.21	10.94	7.97	11.60	8.53	11.99	8.44	12.38	8.34	13.16	8.74		
41	9.55	7.68	10.02	8.13	10.75	7.89	11.37	8.45	11.73	8.35	12.09	8.25	12.82	8.64		
43	9.38	7.60	9.85	8.06	10.56	7.82	11.14	8.37	11.47	8.27	11.81	8.16	12.48	8.55		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN140VNVF Indoor unit FDEN140VF Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	8.30	12.02	8.87	12.35	8.76	12.70	8.66	13.39	9.04	14.08	8.78
13					11.90	8.52	12.61	9.09	12.96	8.98	13.33	8.87	14.09	9.26	14.84	8.99
15					12.43	8.74	13.19	9.31	13.57	9.20	13.97	9.09	14.78	9.47	15.59	9.20
17					12.96	8.97	13.77	9.54	14.17	9.43	14.61	9.32	15.48	9.70	16.34	9.42
19					13.24	9.09	14.06	9.65	14.48	9.55	14.92	9.44	15.80	9.80	16.68	9.52
21					13.51	9.21	14.36	9.77	14.78	9.66	15.23	9.55	16.12	9.91	17.02	9.62
23					13.51	9.21	14.40	9.79	14.82	9.68	15.28	9.57	16.19	9.93	17.10	9.64
25			12.50	9.39	13.50	9.20	14.43	9.80	14.86	9.69	15.33	9.59	16.25	9.95	17.18	9.67
27			12.41	9.35	13.50	9.20	14.47	9.82	14.91	9.71	15.34	9.59	16.20	9.94		
29			12.32	9.31	13.29	9.11	14.23	9.72	14.68	9.62	15.13	9.51	16.02	9.88		
31			12.23	9.27	13.09	9.03	13.99	9.63	14.45	9.53	14.92	9.44	15.85	9.82		
33	11.51	8.76	12.01	9.17	12.89	8.94	13.75	9.53	14.23	9.45	14.71	9.36	15.67	9.76		
35	11.28	8.64	11.82	9.08	12.68	8.85	13.50	9.43	14.00	9.36	14.50	9.28	15.49	9.70		
37	11.08	8.54	11.62	8.99	12.47	8.76	13.25	9.33	13.71	9.26	14.18	9.17	15.12	9.58		
39	10.89	8.45	11.43	8.90	12.26	8.67	12.99	9.23	13.43	9.15	13.86	9.06	14.74	9.46		
41	10.70	8.36	11.23	8.81	12.04	8.58	12.73	9.13	13.14	9.05	13.55	8.95	14.36	9.34		
43	10.51	8.27	11.03	8.72	11.83	8.49	12.47	9.04	12.85	8.94	13.23	8.84	13.98	9.22		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDEN140VSVF Indoor unit FDEN140VF Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	8.30	12.02	8.87	12.35	8.76	12.70	8.66	13.39	9.04	14.08	8.78
13					11.90	8.52	12.61	9.09	12.96	8.98	13.33	8.87	14.09	9.26	14.84	8.99
15					12.43	8.74	13.19	9.31	13.57	9.20	13.97	9.09	14.78	9.47	15.59	9.20
17					12.96	8.97	13.77	9.54	14.17	9.43	14.61	9.32	15.48	9.70	16.34	9.42
19					13.24	9.09	14.06	9.65	14.48	9.55	14.92	9.44	15.80	9.80	16.68	9.52
21					13.51	9.21	14.36	9.77	14.78	9.66	15.23	9.55	16.12	9.91	17.02	9.62
23					13.51	9.21	14.40	9.79	14.82	9.68	15.28	9.57	16.19	9.93	17.10	9.64
25			12.50	9.39	13.50	9.20	14.43	9.80	14.86	9.69	15.33	9.59	16.25	9.95	17.18	9.67
27			12.41	9.35	13.50	9.20	14.47	9.82	14.91	9.71	15.34	9.59	16.20	9.94		
29			12.32	9.31	13.29	9.11	14.23	9.72	14.68	9.62	15.13	9.51	16.02	9.88		
31			12.23	9.27	13.09	9.03	13.99	9.63	14.45	9.53	14.92	9.44	15.85	9.82		
33	11.51	8.76	12.01	9.17	12.89	8.94	13.75	9.53	14.23	9.45	14.71	9.36	15.67	9.76		
35	11.28	8.64	11.82	9.08	12.68	8.85	13.50	9.43	14.00	9.36	14.50	9.28	15.49	9.70		
37	11.08	8.54	11.62	8.99	12.47	8.76	13.25	9.33	13.71	9.26	14.18	9.17	15.12	9.58		
39	10.89	8.45	11.43	8.90	12.26	8.67	12.99	9.23	13.43	9.15	13.86	9.06	14.74	9.46		
41	10.70	8.36	11.23	8.81	12.04	8.58	12.73	9.13	13.14	9.05	13.55	8.95	14.36	9.34		
43	10.51	8.27	11.03	8.72	11.83	8.49	12.47	9.04	12.85	8.94	13.23	8.84	13.98	9.22		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(b) Twin type

Model FDEN100VNPVF Indoor unit FDEN50VF (2 units) Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.22	8.59	6.66	8.82	6.60	9.07	6.55	9.56	6.86	10.06	6.74
13					8.50	6.40	9.00	6.83	9.26	6.78	9.52	6.73	10.06	7.04	10.60	6.91
15					8.88	6.57	9.42	7.01	9.69	6.96	9.98	6.91	10.56	7.23	11.14	7.09
17					9.26	6.75	9.84	7.19	10.12	7.14	10.43	7.09	11.05	7.41	11.67	7.27
19					9.46	6.84	10.05	7.28	10.34	7.23	10.65	7.18	11.29	7.50	11.92	7.36
21					9.65	6.93	10.25	7.37	10.56	7.32	10.88	7.28	11.52	7.58	12.16	7.44
23					9.65	6.93	10.28	7.38	10.59	7.34	10.91	7.29	11.56	7.60	12.21	7.46
25			8.93	7.00	9.64	6.93	10.31	7.40	10.62	7.35	10.95	7.30	11.61	7.62	12.27	7.48
27			8.86	6.97	9.64	6.93	10.34	7.41	10.65	7.36	10.96	7.31	11.57	7.60		
29			8.80	6.94	9.50	6.86	10.17	7.34	10.49	7.29	10.81	7.25	11.45	7.56		
31			8.73	6.90	9.35	6.79	9.99	7.26	10.32	7.22	10.66	7.19	11.32	7.51		
33	8.22	6.51	8.58	6.83	9.21	6.72	9.82	7.18	10.16	7.15	10.51	7.12	11.19	7.46		
35	8.05	6.42	8.44	6.76	9.06	6.65	9.64	7.10	10.00	7.09	10.36	7.06	11.07	7.41		
37	7.92	6.35	8.30	6.69	8.91	6.58	9.46	7.03	9.79	7.00	10.13	6.97	10.80	7.31		
39	7.78	6.28	8.16	6.62	8.75	6.51	9.28	6.95	9.59	6.92	9.90	6.88	10.53	7.21		
41	7.64	6.20	8.02	6.55	8.60	6.44	9.09	6.87	9.38	6.83	9.68	6.79	10.26	7.12		
43	7.50	6.13	7.88	6.48	8.45	6.37	8.91	6.79	9.18	6.75	9.45	6.70	9.99	7.02		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDEN100VSPVF Indoor unit FDEN50VF (2 units) Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.22	8.59	6.66	8.82	6.60	9.07	6.55	9.56	6.86	10.06	6.74
13					8.50	6.40	9.00	6.83	9.26	6.78	9.52	6.73	10.06	7.04	10.60	6.91
15					8.88	6.57	9.42	7.01	9.69	6.96	9.98	6.91	10.56	7.23	11.14	7.09
17					9.26	6.75	9.84	7.19	10.12	7.14	10.43	7.09	11.05	7.41	11.67	7.27
19					9.46	6.84	10.05	7.28	10.34	7.23	10.65	7.18	11.29	7.50	11.92	7.36
21					9.65	6.93	10.25	7.37	10.56	7.32	10.88	7.28	11.52	7.58	12.16	7.44
23					9.65	6.93	10.28	7.38	10.59	7.34	10.91	7.29	11.56	7.60	12.21	7.46
25			8.93	7.00	9.64	6.93	10.31	7.40	10.62	7.35	10.95	7.30	11.61	7.62	12.27	7.48
27			8.86	6.97	9.64	6.93	10.34	7.41	10.65	7.36	10.96	7.31	11.57	7.60		
29			8.80	6.94	9.50	6.86	10.17	7.34	10.49	7.29	10.81	7.25	11.45	7.56		
31			8.73	6.90	9.35	6.79	9.99	7.26	10.32	7.22	10.66	7.19	11.32	7.51		
33	8.22	6.51	8.58	6.83	9.21	6.72	9.82	7.18	10.16	7.15	10.51	7.12	11.19	7.46		
35	8.05	6.42	8.44	6.76	9.06	6.65	9.64	7.10	10.00	7.09	10.36	7.06	11.07	7.41		
37	7.92	6.35	8.30	6.69	8.91	6.58	9.46	7.03	9.79	7.00	10.13	6.97	10.80	7.31		
39	7.78	6.28	8.16	6.62	8.75	6.51	9.28	6.95	9.59	6.92	9.90	6.88	10.53	7.21		
41	7.64	6.20	8.02	6.55	8.60	6.44	9.09	6.87	9.38	6.83	9.68	6.79	10.26	7.12		
43	7.50	6.13	7.88	6.48	8.45	6.37	8.91	6.79	9.18	6.75	9.45	6.70	9.99	7.02		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN125VNPVF Indoor unit FDEN60VF (2 units) Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.18	10.74	8.84	11.03	8.73	11.34	8.62	11.96	9.09	12.57	8.83
13					10.63	8.35	11.26	9.01	11.57	8.90	11.91	8.79	12.58	9.26	13.25	9.00
15					11.10	8.53	11.78	9.19	12.11	9.08	12.47	8.97	13.20	9.43	13.92	9.16
17					11.58	8.71	12.29	9.36	12.65	9.25	13.04	9.14	13.82	9.60	14.59	9.32
19					11.82	8.81	12.56	9.46	12.92	9.34	13.32	9.23	14.11	9.68	14.90	9.40
21					12.06	8.90	12.82	9.55	13.19	9.43	13.60	9.32	14.40	9.76	15.20	9.48
23					12.06	8.90	12.85	9.56	13.23	9.45	13.64	9.34	14.45	9.78	15.27	9.50
25			11.16	9.13	12.06	8.90	12.89	9.58	13.27	9.46	13.68	9.35	14.51	9.80	15.34	9.51
27			11.08	9.10	12.05	8.90	12.92	9.59	13.31	9.47	13.69	9.35	14.47	9.78		
29			11.00	9.06	11.87	8.83	12.71	9.51	13.11	9.41	13.51	9.29	14.31	9.74		
31			10.92	9.03	11.69	8.76	12.49	9.43	12.90	9.34	13.32	9.23	14.15	9.69		
33	10.27	8.45	10.72	8.95	11.51	8.69	12.27	9.36	12.70	9.27	13.13	9.17	13.99	9.65		
35	10.07	8.36	10.55	8.88	11.33	8.62	12.06	9.28	12.50	9.20	12.94	9.11	13.83	9.60		
37	9.90	8.29	10.38	8.81	11.13	8.54	11.83	9.20	12.24	9.12	12.66	9.03	13.50	9.51		
39	9.72	8.20	10.20	8.73	10.94	8.47	11.60	9.13	11.99	9.04	12.38	8.94	13.16	9.41		
41	9.55	8.13	10.02	8.66	10.75	8.40	11.37	9.05	11.73	8.95	12.09	8.85	12.82	9.32		
43	9.38	8.05	9.85	8.59	10.56	8.33	11.14	8.97	11.47	8.87	11.81	8.76	12.48	9.23		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDEN125VSPVF Indoor unit FDEN60VF (2 units) Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.18	10.74	8.84	11.03	8.73	11.34	8.62	11.96	9.09	12.57	8.83
13					10.63	8.35	11.26	9.01	11.57	8.90	11.91	8.79	12.58	9.26	13.25	9.00
15					11.10	8.53	11.78	9.19	12.11	9.08	12.47	8.97	13.20	9.43	13.92	9.16
17					11.58	8.71	12.29	9.36	12.65	9.25	13.04	9.14	13.82	9.60	14.59	9.32
19					11.82	8.81	12.56	9.46	12.92	9.34	13.32	9.23	14.11	9.68	14.90	9.40
21					12.06	8.90	12.82	9.55	13.19	9.43	13.60	9.32	14.40	9.76	15.20	9.48
23					12.06	8.90	12.85	9.56	13.23	9.45	13.64	9.34	14.45	9.78	15.27	9.50
25			11.16	9.13	12.06	8.90	12.89	9.58	13.27	9.46	13.68	9.35	14.51	9.80	15.34	9.51
27			11.08	9.10	12.05	8.90	12.92	9.59	13.31	9.47	13.69	9.35	14.47	9.78		
29			11.00	9.06	11.87	8.83	12.71	9.51	13.11	9.41	13.51	9.29	14.31	9.74		
31			10.92	9.03	11.69	8.76	12.49	9.43	12.90	9.34	13.32	9.23	14.15	9.69		
33	10.27	8.45	10.72	8.95	11.51	8.69	12.27	9.36	12.70	9.27	13.13	9.17	13.99	9.65		
35	10.07	8.36	10.55	8.88	11.33	8.62	12.06	9.28	12.50	9.20	12.94	9.11	13.83	9.60		
37	9.90	8.29	10.38	8.81	11.13	8.54	11.83	9.20	12.24	9.12	12.66	9.03	13.50	9.51		
39	9.72	8.20	10.20	8.73	10.94	8.47	11.60	9.13	11.99	9.04	12.38	8.94	13.16	9.41		
41	9.55	8.13	10.02	8.66	10.75	8.40	11.37	9.05	11.73	8.95	12.09	8.85	12.82	9.32		
43	9.38	8.05	9.85	8.59	10.56	8.33	11.14	8.97	11.47	8.87	11.81	8.76	12.48	9.23		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN140VNPVF Indoor unit FDEN71VF (2 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.49	12.02	10.26	12.35	10.16	12.70	10.07	13.39	10.63	14.08	10.40
13					11.90	9.70	12.61	10.47	12.96	10.38	13.33	10.28	14.09	10.84	14.84	10.60
15					12.43	9.91	13.19	10.69	13.57	10.59	13.97	10.49	14.78	11.05	15.59	10.81
17					12.96	10.13	13.77	10.91	14.17	10.81	14.61	10.71	15.48	11.27	16.34	11.02
19					13.24	10.24	14.06	11.02	14.48	10.92	14.92	10.82	15.80	11.37	16.68	11.12
21					13.51	10.36	14.36	11.13	14.78	11.03	15.23	10.93	16.12	11.47	17.02	11.22
23					13.51	10.36	14.40	11.15	14.82	11.04	15.28	10.95	16.19	11.50	17.10	11.24
25			12.50	10.56	13.50	10.35	14.43	11.16	14.86	11.06	15.33	10.96	16.25	11.52	17.18	11.26
27			12.41	10.52	13.50	10.35	14.47	11.17	14.91	11.08	15.34	10.97	16.20	11.50		
29			12.32	10.48	13.29	10.27	14.23	11.08	14.68	10.99	15.13	10.89	16.02	11.44		
31			12.23	10.44	13.09	10.18	13.99	10.99	14.45	10.91	14.92	10.82	15.85	11.39		
33	11.51	9.76	12.01	10.34	12.89	10.10	13.75	10.90	14.23	10.83	14.71	10.75	15.67	11.33		
35	11.28	9.65	11.82	10.26	12.68	10.02	13.50	10.80	14.00	10.75	14.50	10.68	15.49	11.28		
37	11.08	9.56	11.62	10.17	12.47	9.93	13.25	10.71	13.71	10.64	14.18	10.57	15.12	11.16		
39	10.89	9.47	11.43	10.09	12.26	9.84	12.99	10.61	13.43	10.54	13.86	10.46	14.74	11.04		
41	10.70	9.38	11.23	10.00	12.04	9.76	12.73	10.52	13.14	10.44	13.55	10.35	14.36	10.93		
43	10.51	9.29	11.03	9.92	11.83	9.67	12.47	10.42	12.85	10.34	13.23	10.24	13.98	10.81		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDEN140VSPVF Indoor unit FDEN71VF (2 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.49	12.02	10.26	12.35	10.16	12.70	10.07	13.39	10.63	14.08	10.40
13					11.90	9.70	12.61	10.47	12.96	10.38	13.33	10.28	14.09	10.84	14.84	10.60
15					12.43	9.91	13.19	10.69	13.57	10.59	13.97	10.49	14.78	11.05	15.59	10.81
17					12.96	10.13	13.77	10.91	14.17	10.81	14.61	10.71	15.48	11.27	16.34	11.02
19					13.24	10.24	14.06	11.02	14.48	10.92	14.92	10.82	15.80	11.37	16.68	11.12
21					13.51	10.36	14.36	11.13	14.78	11.03	15.23	10.93	16.12	11.47	17.02	11.22
23					13.51	10.36	14.40	11.15	14.82	11.04	15.28	10.95	16.19	11.50	17.10	11.24
25			12.50	10.56	13.50	10.35	14.43	11.16	14.86	11.06	15.33	10.96	16.25	11.52	17.18	11.26
27			12.41	10.52	13.50	10.35	14.47	11.17	14.91	11.08	15.34	10.97	16.20	11.50		
29			12.32	10.48	13.29	10.27	14.23	11.08	14.68	10.99	15.13	10.89	16.02	11.44		
31			12.23	10.44	13.09	10.18	13.99	10.99	14.45	10.91	14.92	10.82	15.85	11.39		
33	11.51	9.76	12.01	10.34	12.89	10.10	13.75	10.90	14.23	10.83	14.71	10.75	15.67	11.33		
35	11.28	9.65	11.82	10.26	12.68	10.02	13.50	10.80	14.00	10.75	14.50	10.68	15.49	11.28		
37	11.08	9.56	11.62	10.17	12.47	9.93	13.25	10.71	13.71	10.64	14.18	10.57	15.12	11.16		
39	10.89	9.47	11.43	10.09	12.26	9.84	12.99	10.61	13.43	10.54	13.86	10.46	14.74	11.04		
41	10.70	9.38	11.23	10.00	12.04	9.76	12.73	10.52	13.14	10.44	13.55	10.35	14.36	10.93		
43	10.51	9.29	11.03	9.92	11.83	9.67	12.47	10.42	12.85	10.34	13.23	10.24	13.98	10.81		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN200VSPVF Indoor unit FDEN100VF (2 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	12.84	18.41	13.80	18.94	13.60	19.50	13.40	20.63	14.04	21.76	13.56
13					17.90	13.03	18.99	13.99	19.54	13.78	20.13	13.58	21.31	14.21	22.49	13.72
15					18.43	13.23	19.57	14.18	20.14	13.97	20.75	13.76	21.98	14.39	23.21	13.88
17					18.96	13.42	20.14	14.37	20.73	14.15	21.38	13.95	22.66	14.57	23.94	14.05
19					19.35	13.57	20.56	14.51	21.16	14.29	21.81	14.08	23.12	14.69	24.42	14.16
21					19.41	13.59	20.98	14.65	21.59	14.43	22.25	14.21	23.57	14.81	24.89	14.27
23					19.31	13.55	20.86	14.61	21.47	14.39	22.12	14.17	23.43	14.77	24.73	14.23
25			17.35	13.77	19.20	13.51	20.74	14.57	21.35	14.35	21.99	14.13	23.28	14.73	24.57	14.19
27			17.28	13.74	19.10	13.48	20.62	14.53	21.22	14.31	21.83	14.08	23.04	14.67		
29			17.14	13.68	18.85	13.38	20.31	14.42	20.92	14.21	21.53	13.99	22.75	14.59		
31			16.99	13.62	18.59	13.29	20.00	14.32	20.61	14.12	21.22	13.90	22.45	14.51		
33	16.46	12.98	17.03	13.64	18.33	13.19	19.69	14.22	20.31	14.02	20.92	13.81	22.15	14.43		
35	16.14	12.84	16.76	13.53	18.08	13.10	19.38	14.11	20.00	13.92	20.62	13.72	21.85	14.35		
37	15.86	12.72	16.50	13.43	17.76	12.98	18.98	13.98	19.57	13.79	20.17	13.59	21.35	14.22		
39	15.59	12.60	16.23	13.32	17.44	12.87	18.58	13.85	19.15	13.66	19.71	13.46	20.85	14.10		
41	15.32	12.49	15.97	13.22	17.13	12.76	18.17	13.72	18.72	13.53	19.26	13.33	20.35	13.97		
43	15.04	12.37	15.70	13.11	16.81	12.64	17.77	13.59	18.29	13.40	18.81	13.20	19.85	13.85		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Model FDEN250VSPVF Indoor unit FDEN125VF (2 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	15.36	23.02	16.42	23.67	16.17	24.38	15.92	25.79	16.62	27.21	16.02
13					22.38	15.61	23.74	16.66	24.42	16.41	25.16	16.16	26.63	16.84	28.11	16.23
15					23.04	15.86	24.46	16.91	25.17	16.65	25.94	16.40	27.48	17.07	29.02	16.44
17					23.70	16.11	25.18	17.16	25.92	16.90	26.72	16.64	28.32	17.30	29.92	16.66
19					24.19	16.30	25.70	17.34	26.45	17.08	27.27	16.81	28.89	17.46	30.52	16.81
21					24.26	16.33	26.22	17.53	26.99	17.26	27.82	16.99	29.47	17.63	31.12	16.96
23					24.13	16.28	26.07	17.48	26.84	17.21	27.65	16.94	29.28	17.57	30.91	16.90
25			21.69	16.50	24.00	16.23	25.92	17.42	26.68	17.16	27.49	16.88	29.10	17.52	30.71	16.85
27			21.60	16.46	23.88	16.18	25.77	17.37	26.53	17.10	27.29	16.82	28.80	17.44		
29			21.42	16.39	23.56	16.06	25.39	17.23	26.15	16.98	26.91	16.70	28.43	17.33		
31			21.24	16.31	23.24	15.93	25.00	17.10	25.77	16.85	26.53	16.58	28.06	17.23		
33	20.58	15.64	21.29	16.33	22.92	15.81	24.61	16.96	25.38	16.72	26.15	16.46	27.69	17.13		
35	20.17	15.45	20.96	16.20	22.60	15.69	24.23	16.83	25.00	16.60	25.77	16.34	27.31	17.03		
37	19.83	15.29	20.62	16.06	22.20	15.54	23.73	16.66	24.47	16.42	25.21	16.17	26.69	16.86		
39	19.49	15.14	20.29	15.92	21.80	15.39	23.22	16.49	23.93	16.25	24.64	16.00	26.06	16.69		
41	19.15	14.99	19.96	15.79	21.41	15.24	22.72	16.32	23.40	16.08	24.08	15.83	25.43	16.52		
43	18.81	14.84	19.63	15.65	21.01	15.10	22.22	16.15	22.86	15.91	23.51	15.66	24.81	16.36		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(c) Triple type

Model FDEN140VNTVF Indoor unit FDEN50VF (3 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	8.98	12.02	9.63	12.35	9.55	12.70	9.48	13.39	9.96	14.08	9.78
13					11.90	9.21	12.61	9.87	12.96	9.80	13.33	9.72	14.09	10.21	14.84	10.02
15					12.43	9.45	13.19	10.11	13.57	10.04	13.97	9.97	14.78	10.45	15.59	10.27
17					12.96	9.69	13.77	10.36	14.17	10.29	14.61	10.22	15.48	10.71	16.34	10.52
19					13.24	9.82	14.06	10.48	14.48	10.41	14.92	10.35	15.80	10.82	16.68	10.63
21					13.51	9.94	14.36	10.61	14.78	10.54	15.23	10.47	16.12	10.94	17.02	10.75
23					13.51	9.94	14.40	10.63	14.82	10.56	15.28	10.49	16.19	10.97	17.10	10.77
25			12.50	10.06	13.50	9.94	14.43	10.64	14.86	10.57	15.33	10.51	16.25	10.99	17.18	10.80
27			12.41	10.01	13.50	9.94	14.47	10.66	14.91	10.59	15.34	10.51	16.20	10.97		
29			12.32	9.97	13.29	9.84	14.23	10.56	14.68	10.50	15.13	10.43	16.02	10.90		
31			12.23	9.92	13.09	9.75	13.99	10.45	14.45	10.40	14.92	10.35	15.85	10.84		
33	11.51	9.33	12.01	9.82	12.89	9.66	13.75	10.35	14.23	10.31	14.71	10.26	15.67	10.78		
35	11.28	9.21	11.82	9.72	12.68	9.56	13.50	10.24	14.00	10.22	14.50	10.18	15.49	10.71		
37	11.08	9.11	11.62	9.63	12.47	9.47	13.25	10.14	13.71	10.10	14.18	10.05	15.12	10.58		
39	10.89	9.01	11.43	9.53	12.26	9.37	12.99	10.03	13.43	9.98	13.86	9.93	14.74	10.44		
41	10.70	8.91	11.23	9.44	12.04	9.27	12.73	9.92	13.14	9.87	13.55	9.81	14.36	10.30		
43	10.51	8.82	11.03	9.34	11.83	9.18	12.47	9.81	12.85	9.75	13.23	9.69	13.98	10.17		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDEN140VSTVF Indoor unit FDEN50VF (3 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	8.98	12.02	9.63	12.35	9.55	12.70	9.48	13.39	9.96	14.08	9.78
13					11.90	9.21	12.61	9.87	12.96	9.80	13.33	9.72	14.09	10.21	14.84	10.02
15					12.43	9.45	13.19	10.11	13.57	10.04	13.97	9.97	14.78	10.45	15.59	10.27
17					12.96	9.69	13.77	10.36	14.17	10.29	14.61	10.22	15.48	10.71	16.34	10.52
19					13.24	9.82	14.06	10.48	14.48	10.41	14.92	10.35	15.80	10.82	16.68	10.63
21					13.51	9.94	14.36	10.61	14.78	10.54	15.23	10.47	16.12	10.94	17.02	10.75
23					13.51	9.94	14.40	10.63	14.82	10.56	15.28	10.49	16.19	10.97	17.10	10.77
25			12.50	10.06	13.50	9.94	14.43	10.64	14.86	10.57	15.33	10.51	16.25	10.99	17.18	10.80
27			12.41	10.01	13.50	9.94	14.47	10.66	14.91	10.59	15.34	10.51	16.20	10.97		
29			12.32	9.97	13.29	9.84	14.23	10.56	14.68	10.50	15.13	10.43	16.02	10.90		
31			12.23	9.92	13.09	9.75	13.99	10.45	14.45	10.40	14.92	10.35	15.85	10.84		
33	11.51	9.33	12.01	9.82	12.89	9.66	13.75	10.35	14.23	10.31	14.71	10.26	15.67	10.78		
35	11.28	9.21	11.82	9.72	12.68	9.56	13.50	10.24	14.00	10.22	14.50	10.18	15.49	10.71		
37	11.08	9.11	11.62	9.63	12.47	9.47	13.25	10.14	13.71	10.10	14.18	10.05	15.12	10.58		
39	10.89	9.01	11.43	9.53	12.26	9.37	12.99	10.03	13.43	9.98	13.86	9.93	14.74	10.44		
41	10.70	8.91	11.23	9.44	12.04	9.27	12.73	9.92	13.14	9.87	13.55	9.81	14.36	10.30		
43	10.51	8.82	11.03	9.34	11.83	9.18	12.47	9.81	12.85	9.75	13.23	9.69	13.98	10.17		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN200VSTVF Indoor unit FDEN71VF (3 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	14.36	18.41	15.53	18.94	15.39	19.50	15.25	20.63	16.11	21.76	15.77
13					17.90	14.57	18.99	15.74	19.54	15.60	20.13	15.46	21.31	16.32	22.49	15.97
15					18.43	14.78	19.57	15.95	20.14	15.81	20.75	15.67	21.98	16.52	23.21	16.17
17					18.96	15.00	20.14	16.17	20.73	16.02	21.38	15.89	22.66	16.73	23.94	16.37
19					19.35	15.16	20.56	16.32	21.16	16.18	21.81	16.03	23.12	16.88	24.42	16.51
21					19.41	15.18	20.98	16.48	21.59	16.33	22.25	16.19	23.57	17.02	24.89	16.64
23					19.31	15.14	20.86	16.44	21.47	16.29	22.12	16.14	23.43	16.97	24.73	16.60
25			17.35	15.22	19.20	15.10	20.74	16.39	21.35	16.24	21.99	16.10	23.28	16.93	24.57	16.55
27			17.28	15.19	19.10	15.06	20.62	16.35	21.22	16.20	21.83	16.04	23.04	16.85		
29			17.14	15.13	18.85	14.95	20.31	16.23	20.92	16.09	21.53	15.94	22.75	16.76		
31			16.99	15.07	18.59	14.85	20.00	16.11	20.61	15.98	21.22	15.83	22.45	16.67		
33	16.46	14.26	17.03	15.08	18.33	14.74	19.69	16.00	20.31	15.87	20.92	15.73	22.15	16.58		
35	16.14	14.11	16.76	14.97	18.08	14.64	19.38	15.88	20.00	15.76	20.62	15.63	21.85	16.48		
37	15.86	13.98	16.50	14.86	17.76	14.51	18.98	15.73	19.57	15.61	20.17	15.48	21.35	16.33		
39	15.59	13.85	16.23	14.74	17.44	14.39	18.58	15.59	19.15	15.46	19.71	15.32	20.85	16.18		
41	15.32	13.73	15.97	14.63	17.13	14.26	18.17	15.44	18.72	15.31	19.26	15.17	20.35	16.03		
43	15.04	13.60	15.70	14.51	16.81	14.14	17.77	15.29	18.29	15.16	18.81	15.02	19.85	15.88		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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(d) Double twin type

Model FDEN200VSDVF Indoor unit FDEN50VF (4 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	12.96	18.41	13.83	18.94	13.73	19.50	13.64	20.63	14.27	21.76	14.01
13					17.90	13.21	18.99	14.08	19.54	13.98	20.13	13.89	21.31	14.52	22.49	14.26
15					18.43	13.45	19.57	14.33	20.14	14.23	20.75	14.14	21.98	14.77	23.21	14.50
17					18.96	13.70	20.14	14.58	20.73	14.48	21.38	14.40	22.66	15.03	23.94	14.76
19					19.35	13.89	20.56	14.77	21.16	14.67	21.81	14.57	23.12	15.20	24.42	14.92
21					19.41	13.92	20.98	14.96	21.59	14.85	22.25	14.75	23.57	15.37	24.89	15.09
23					19.31	13.87	20.86	14.90	21.47	14.80	22.12	14.70	23.43	15.32	24.73	15.03
25			17.35	13.75	19.20	13.82	20.74	14.85	21.35	14.75	21.99	14.65	23.28	15.26	24.57	14.98
27			17.28	13.71	19.10	13.77	20.62	14.80	21.22	14.69	21.83	14.58	23.04	15.17		
29			17.14	13.64	18.85	13.65	20.31	14.66	20.92	14.56	21.53	14.46	22.75	15.06		
31			16.99	13.57	18.59	13.53	20.00	14.52	20.61	14.43	21.22	14.33	22.45	14.95		
33	16.46	13.03	17.03	13.59	18.33	13.41	19.69	14.38	20.31	14.31	20.92	14.21	22.15	14.83		
35	16.14	12.86	16.76	13.45	18.08	13.29	19.38	14.25	20.00	14.17	20.62	14.09	21.85	14.72		
37	15.86	12.71	16.50	13.33	17.76	13.14	18.98	14.08	19.57	14.00	20.17	13.91	21.35	14.54		
39	15.59	12.57	16.23	13.19	17.44	12.99	18.58	13.90	19.15	13.82	19.71	13.72	20.85	14.35		
41	15.32	12.43	15.97	13.07	17.13	12.85	18.17	13.73	18.72	13.64	19.26	13.54	20.35	14.17		
43	15.04	12.28	15.70	12.94	16.81	12.71	17.77	13.56	18.29	13.47	18.81	13.37	19.85	13.99		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDEN250VSDVF Indoor unit FDEN60VF (4 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	16.88	23.02	18.19	23.67	17.97	24.38	17.76	25.79	18.68	27.21	18.16
13					22.38	17.13	23.74	18.44	24.42	18.22	25.16	18.00	26.63	18.91	28.11	18.38
15					23.04	17.38	24.46	18.69	25.17	18.46	25.94	18.24	27.48	19.15	29.02	18.61
17					23.70	17.64	25.18	18.94	25.92	18.71	26.72	18.49	28.32	19.39	29.92	18.83
19					24.19	17.83	25.70	19.12	26.45	18.89	27.27	18.67	28.89	19.55	30.52	18.99
21					24.26	17.85	26.22	19.31	26.99	19.08	27.82	18.84	29.47	19.72	31.12	19.14
23					24.13	17.80	26.07	19.25	26.84	19.02	27.65	18.79	29.28	19.67	30.91	19.09
25			21.69	18.00	24.00	17.75	25.92	19.20	26.68	18.97	27.49	18.74	29.10	19.61	30.71	19.04
27			21.60	17.96	23.88	17.71	25.77	19.15	26.53	18.92	27.29	18.67	28.80	19.53		
29			21.42	17.89	23.56	17.58	25.39	19.01	26.15	18.79	26.91	18.55	28.43	19.42		
31			21.24	17.81	23.24	17.46	25.00	18.87	25.77	18.66	26.53	18.43	28.06	19.32		
33	20.58	16.92	21.29	17.83	22.92	17.34	24.61	18.74	25.38	18.53	26.15	18.31	27.69	19.21		
35	20.17	16.74	20.96	17.70	22.60	17.21	24.23	18.61	25.00	18.41	25.77	18.19	27.31	19.10		
37	19.83	16.58	20.62	17.56	22.20	17.06	23.73	18.43	24.47	18.23	25.21	18.02	26.69	18.93		
39	19.49	16.43	20.29	17.42	21.80	16.91	23.22	18.26	23.93	18.06	24.64	17.84	26.06	18.76		
41	19.15	16.28	19.96	17.28	21.41	16.76	22.72	18.09	23.40	17.88	24.08	17.67	25.43	18.58		
43	18.81	16.13	19.63	17.15	21.01	16.62	22.22	17.92	22.86	17.71	23.51	17.49	24.81	18.42		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

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(4) Duct connected-High static pressure type (FDU)

(a) Single type

Model **FDU100VNVD** Indoor unit FDU100VD Outdoor unit FDC100VN
FDU100VSVD FDC100VS

Cool Mode

Outdoor air temp.	Indoor air temperature											
	23℃CDB 16℃CWB		26℃CDB 18℃CWB		27℃CDB 19℃CWB		28℃CDB 20℃CWB		31℃CDB 22℃CWB		33℃CDB 24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
20	9.98	8.22	10.55	8.73	10.84	8.64	11.15	8.55	11.78	9.02	12.41	8.81
25	9.71	8.12	10.28	8.64	10.56	8.55	10.87	8.46	11.49	8.94	12.12	8.74
30	9.44	8.01	10.00	8.54	10.28	8.45	10.59	8.37	11.21	8.86		
35	9.05	7.86	9.68	8.43	10.00	8.36	10.30	8.28	10.90	8.77		
40	8.45	7.64	9.15	8.24	9.50	8.20	9.78	8.12	10.34	8.61		
43	8.00	7.47	8.72	8.10	9.08	8.06	9.40	8.00	10.05	8.53		

Heat Mode

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-14.7	-15	6.89	6.51	6.13	5.75	5.50
-9.6	-10	7.40	7.38	7.00	6.62	6.24
-3.4	-4	7.53	7.51	7.49	7.11	6.74
1.8	1	8.55	8.52	8.06	7.45	6.99
4.9	4	10.28	10.14	9.33	8.47	7.84
7.0	6	11.35	11.27	11.20	10.92	10.40
11.2	10	12.19	12.10	12.02	11.73	10.69

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Model **FDU125VNVD** Indoor unit FDU125VD Outdoor unit FDC125VN
FDU125VSVD FDC125VS

Cool Mode

Outdoor air temp.	Indoor air temperature											
	23℃CDB 16℃CWB		26℃CDB 18℃CWB		27℃CDB 19℃CWB		28℃CDB 20℃CWB		31℃CDB 22℃CWB		33℃CDB 24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
20	12.31	10.15	12.97	10.76	13.30	10.65	13.66	10.53	14.38	11.10	15.10	10.82
25	12.05	10.05	12.71	10.67	13.03	10.55	13.39	10.44	14.11	11.02	14.83	10.75
30	11.79	9.95	12.44	10.58	12.77	10.47	13.13	10.36	13.84	10.94		
35	11.31	9.77	12.10	10.46	12.50	10.38	12.86	10.27	13.58	10.86		
40	10.56	9.48	11.44	10.23	11.88	10.17	12.23	10.08	12.93	10.68		
43	10.00	9.27	10.90	10.04	11.35	10.00	11.76	9.93	12.57	10.58		

Heat Mode

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-14.7	-15	8.62	8.14	7.67	7.19	6.88
-9.6	-10	9.25	9.22	8.75	8.28	7.81
-3.4	-4	9.41	9.39	9.36	8.89	8.42
1.8	1	10.68	10.65	10.08	9.32	8.74
4.9	4	12.85	12.68	11.74	10.58	9.80
7.0	6	14.19	14.09	14.00	13.65	13.00
11.2	10	15.16	15.06	14.97	14.66	13.36

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Model **FDU140VNVD** Indoor unit FDU140VD Outdoor unit FDC140VN
FDU140VSVD FDC140VS

Cool Mode

Outdoor air temp.	Indoor air temperature											
	23℃CDB 16℃CWB		26℃CDB 18℃CWB		27℃CDB 19℃CWB		28℃CDB 20℃CWB		31℃CDB 22℃CWB		33℃CDB 24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
20	13.11	10.47	13.91	11.10	14.31	10.99	14.62	10.85	15.23	11.35	15.85	11.02
25	12.92	10.39	13.78	11.06	14.21	10.96	14.48	10.80	15.04	11.29	15.59	10.95
30	12.73	10.32	13.65	11.01	14.10	10.92	14.35	10.76	14.84	11.23		
35	12.53	10.24	13.51	10.96	14.00	10.89	14.21	10.71	14.64	11.17		
40	11.83	9.96	12.59	10.63	12.97	10.53	13.27	10.41	13.86	10.94		
43	11.20	9.72	12.04	10.44	12.35	10.33	12.70	10.22	13.39	10.81		

Heat Mode

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-14.7	-15	9.85	9.31	8.76	8.22	7.86
-9.6	-10	10.57	10.54	10.00	9.46	8.92
-3.4	-4	10.75	10.73	10.69	10.16	9.63
1.8	1	12.21	12.17	11.52	10.65	9.99
4.9	4	14.69	14.49	13.36	12.09	11.20
7.0	6	16.18	16.09	16.00	15.60	14.86
11.2	10	17.47	17.36	17.26	16.75	15.27

PJD001Z306

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model FDU200VSVF Indoor unit FDU200VF Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	13.32	18.41	14.29	18.94	14.16	19.50	14.03	20.63	14.73	21.76	14.40
13					17.90	13.54	18.99	14.51	19.54	14.38	20.13	14.25	21.31	14.95	22.49	14.62
15					18.43	13.77	19.57	14.74	20.14	14.61	20.75	14.48	21.98	15.17	23.21	14.83
17					18.96	13.99	20.14	14.97	20.73	14.83	21.38	14.71	22.66	15.40	23.94	15.05
19					19.35	14.16	20.56	15.14	21.16	15.00	21.81	14.86	23.12	15.55	24.42	15.20
21					19.41	14.19	20.98	15.30	21.59	15.16	22.25	15.03	23.57	15.70	24.89	15.34
23					19.31	14.15	20.86	15.26	21.47	15.12	22.12	14.98	23.43	15.65	24.73	15.29
25			17.35	14.15	19.20	14.10	20.74	15.21	21.35	15.07	21.99	14.93	23.28	15.60	24.57	15.24
27			17.28	14.12	19.10	14.05	20.62	15.16	21.22	15.02	21.83	14.87	23.04	15.52		
29			17.14	14.06	18.85	13.95	20.31	15.04	20.92	14.91	21.53	14.76	22.75	15.43		
31			16.99	13.99	18.59	13.84	20.00	14.91	20.61	14.79	21.22	14.65	22.45	15.33		
33	16.46	13.35	17.03	14.01	18.33	13.72	19.69	14.79	20.31	14.67	20.92	14.54	22.15	15.23		
35	16.14	13.20	16.76	13.88	18.08	13.62	19.38	14.67	20.00	14.56	20.62	14.43	21.85	15.13		
37	15.86	13.06	16.50	13.77	17.76	13.48	18.98	14.51	19.57	14.39	20.17	14.27	21.35	14.96		
39	15.59	12.93	16.23	13.64	17.44	13.35	18.58	14.36	19.15	14.24	19.71	14.11	20.85	14.80		
41	15.32	12.80	15.97	13.53	17.13	13.22	18.17	14.20	18.72	14.08	19.26	13.95	20.35	14.64		
43	15.04	12.66	15.70	13.41	16.81	13.09	17.77	14.04	18.29	13.92	18.81	13.79	19.85	14.48		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

PJD001Z325 A

Model FDU250VSVF Indoor unit FDU250VF Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	18.50	23.02	20.07	23.67	19.89	24.38	19.71	25.79	20.87	27.21	20.43
13					22.38	18.76	23.74	20.33	24.42	20.14	25.16	19.97	26.63	21.12	28.11	20.67
15					23.04	19.02	24.46	20.59	25.17	20.40	25.94	20.22	27.48	21.37	29.02	20.92
17					23.70	19.28	25.18	20.85	25.92	20.66	26.72	20.48	28.32	21.62	29.92	21.16
19					24.19	19.48	25.70	21.04	26.45	20.85	27.27	20.66	28.89	21.79	30.52	21.32
21					24.26	19.51	26.22	21.23	26.99	21.04	27.82	20.85	29.47	21.97	31.12	21.49
23					24.13	19.46	26.07	21.17	26.84	20.98	27.65	20.79	29.28	21.91	30.91	21.43
25			21.69	19.61	24.00	19.40	25.92	21.12	26.68	20.93	27.49	20.74	29.10	21.86	30.71	21.37
27			21.60	19.57	23.88	19.36	25.77	21.06	26.53	20.87	27.29	20.67	28.80	21.77		
29			21.42	19.49	23.56	19.23	25.39	20.92	26.15	20.74	26.91	20.54	28.43	21.66		
31			21.24	19.42	23.24	19.10	25.00	20.78	25.77	20.61	26.53	20.42	28.06	21.54		
33	20.58	18.31	21.29	19.44	22.92	18.98	24.61	20.64	25.38	20.47	26.15	20.29	27.69	21.43		
35	20.17	18.13	20.96	19.30	22.60	18.85	24.23	20.50	25.00	20.34	25.77	20.17	27.31	21.32		
37	19.83	17.97	20.62	19.15	22.20	18.69	23.73	20.32	24.47	20.16	25.21	19.98	26.69	21.13		
39	19.49	17.81	20.29	19.01	21.80	18.54	23.22	20.14	23.93	19.98	24.64	19.80	26.06	20.95		
41	19.15	17.66	19.96	18.88	21.41	18.39	22.72	19.96	23.40	19.80	24.08	19.62	25.43	20.76		
43	18.81	17.51	19.63	18.74	21.01	18.23	22.22	19.79	22.86	19.61	23.51	19.43	24.81	20.58		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(5) Duct connected-Low / Middle static pressure type (FDUM)
(a) Single type

Model FDUM100VNVF Indoor unit FDUM100VF Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.88	8.59	7.50	8.82	7.38	9.07	7.26	9.56	7.69	10.06	7.42
13					8.50	6.99	9.00	7.61	9.26	7.48	9.52	7.36	10.06	7.78	10.60	7.49
15					8.88	7.10	9.42	7.71	9.69	7.58	9.98	7.45	10.56	7.87	11.14	7.57
17					9.26	7.21	9.84	7.82	10.12	7.69	10.43	7.56	11.05	7.96	11.67	7.65
19					9.46	7.27	10.05	7.88	10.34	7.74	10.65	7.60	11.29	8.01	11.92	7.69
21					9.65	7.33	10.25	7.93	10.56	7.80	10.88	7.66	11.52	8.06	12.16	7.73
23					9.65	7.33	10.28	7.94	10.59	7.80	10.91	7.66	11.56	8.06	12.21	7.74
25			8.93	7.64	9.64	7.33	10.31	7.95	10.62	7.81	10.95	7.67	11.61	8.07	12.27	7.75
27			8.86	7.62	9.64	7.33	10.34	7.95	10.65	7.82	10.96	7.68	11.57	8.06		
29			8.80	7.59	9.50	7.29	10.17	7.91	10.49	7.78	10.81	7.64	11.45	8.04		
31			8.73	7.57	9.35	7.24	9.99	7.86	10.32	7.74	10.66	7.61	11.32	8.02		
33	8.22	7.04	8.58	7.52	9.21	7.20	9.82	7.82	10.16	7.70	10.51	7.57	11.19	7.99		
35	8.05	6.98	8.44	7.47	9.06	7.15	9.64	7.77	10.00	7.66	10.36	7.54	11.07	7.97		
37	7.92	6.93	8.30	7.43	8.91	7.11	9.46	7.72	9.79	7.61	10.13	7.49	10.80	7.92		
39	7.78	6.88	8.16	7.38	8.75	7.06	9.28	7.68	9.59	7.56	9.90	7.44	10.53	7.87		
41	7.64	6.83	8.02	7.33	8.60	7.02	9.09	7.63	9.38	7.51	9.68	7.39	10.26	7.82		
43	7.50	6.77	7.88	7.29	8.45	6.97	8.91	7.58	9.18	7.46	9.45	7.34	9.99	7.77		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

PJG000Z013

Model FDUM100VSVF Indoor unit FDUM100VF Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.88	8.59	7.50	8.82	7.38	9.07	7.26	9.56	7.69	10.06	7.42
13					8.50	6.99	9.00	7.61	9.26	7.48	9.52	7.36	10.06	7.78	10.60	7.49
15					8.88	7.10	9.42	7.71	9.69	7.58	9.98	7.45	10.56	7.87	11.14	7.57
17					9.26	7.21	9.84	7.82	10.12	7.69	10.43	7.56	11.05	7.96	11.67	7.65
19					9.46	7.27	10.05	7.88	10.34	7.74	10.65	7.60	11.29	8.01	11.92	7.69
21					9.65	7.33	10.25	7.93	10.56	7.80	10.88	7.66	11.52	8.06	12.16	7.73
23					9.65	7.33	10.28	7.94	10.59	7.80	10.91	7.66	11.56	8.06	12.21	7.74
25			8.93	7.64	9.64	7.33	10.31	7.95	10.62	7.81	10.95	7.67	11.61	8.07	12.27	7.75
27			8.86	7.62	9.64	7.33	10.34	7.95	10.65	7.82	10.96	7.68	11.57	8.06		
29			8.80	7.59	9.50	7.29	10.17	7.91	10.49	7.78	10.81	7.64	11.45	8.04		
31			8.73	7.57	9.35	7.24	9.99	7.86	10.32	7.74	10.66	7.61	11.32	8.02		
33	8.22	7.04	8.58	7.52	9.21	7.20	9.82	7.82	10.16	7.70	10.51	7.57	11.19	7.99		
35	8.05	6.98	8.44	7.47	9.06	7.15	9.64	7.77	10.00	7.66	10.36	7.54	11.07	7.97		
37	7.92	6.93	8.30	7.43	8.91	7.11	9.46	7.72	9.79	7.61	10.13	7.49	10.80	7.92		
39	7.78	6.88	8.16	7.38	8.75	7.06	9.28	7.68	9.59	7.56	9.90	7.44	10.53	7.87		
41	7.64	6.83	8.02	7.33	8.60	7.02	9.09	7.63	9.38	7.51	9.68	7.39	10.26	7.82		
43	7.50	6.77	7.88	7.29	8.45	6.97	8.91	7.58	9.18	7.46	9.45	7.34	9.99	7.77		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

PJG000Z013

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

#

Model FDUM125VNVF Indoor unit FDUM125VF Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.23	10.74	10.04	11.03	9.97	11.34	9.90	11.96	10.51	12.57	10.34
13					10.63	9.44	11.26	10.24	11.57	10.17	11.91	10.11	12.58	10.72	13.25	10.55
15					11.10	9.63	11.78	10.44	12.11	10.37	12.47	10.31	13.20	10.92	13.92	10.75
17					11.58	9.84	12.29	10.64	12.65	10.58	13.04	10.52	13.82	11.13	14.59	10.96
19					11.82	9.94	12.56	10.75	12.92	10.68	13.32	10.62	14.11	11.23	14.90	11.06
21					12.06	10.04	12.82	10.86	13.19	10.79	13.60	10.73	14.40	11.33	15.20	11.15
23					12.06	10.04	12.85	10.87	13.23	10.80	13.64	10.74	14.45	11.35	15.27	11.17
25			11.16	10.20	12.06	10.04	12.89	10.88	13.27	10.82	13.68	10.76	14.51	11.37	15.34	11.20
27			11.08	10.16	12.05	10.04	12.92	10.90	13.31	10.83	13.69	10.76	14.47	11.35		
29			11.00	10.12	11.87	9.96	12.71	10.81	13.11	10.76	13.51	10.69	14.31	11.30		
31			10.92	10.09	11.69	9.88	12.49	10.72	12.90	10.67	13.32	10.62	14.15	11.24		
33	10.27	9.37	10.72	9.99	11.51	9.81	12.27	10.64	12.70	10.60	13.13	10.55	13.99	11.19		
35	10.07	9.28	10.55	9.92	11.33	9.73	12.06	10.55	12.50	10.52	12.94	10.48	13.83	11.14		
37	9.90	9.19	10.38	9.84	11.13	9.65	11.83	10.46	12.24	10.42	12.66	10.38	13.50	11.02		
39	9.72	9.11	10.20	9.76	10.94	9.57	11.60	10.37	11.99	10.33	12.38	10.28	13.16	10.91		
41	9.55	9.02	10.02	9.68	10.75	9.49	11.37	10.28	11.73	10.23	12.09	10.17	12.82	10.80		
43	9.38	8.94	9.85	9.60	10.56	9.41	11.14	10.19	11.47	10.13	11.81	10.07	12.48	10.68		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDUM125VSVF Indoor unit FDUM125VF Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.23	10.74	10.04	11.03	9.97	11.34	9.90	11.96	10.51	12.57	10.34
13					10.63	9.44	11.26	10.24	11.57	10.17	11.91	10.11	12.58	10.72	13.25	10.55
15					11.10	9.63	11.78	10.44	12.11	10.37	12.47	10.31	13.20	10.92	13.92	10.75
17					11.58	9.84	12.29	10.64	12.65	10.58	13.04	10.52	13.82	11.13	14.59	10.96
19					11.82	9.94	12.56	10.75	12.92	10.68	13.32	10.62	14.11	11.23	14.90	11.06
21					12.06	10.04	12.82	10.86	13.19	10.79	13.60	10.73	14.40	11.33	15.20	11.15
23					12.06	10.04	12.85	10.87	13.23	10.80	13.64	10.74	14.45	11.35	15.27	11.17
25			11.16	10.20	12.06	10.04	12.89	10.88	13.27	10.82	13.68	10.76	14.51	11.37	15.34	11.20
27			11.08	10.16	12.05	10.04	12.92	10.90	13.31	10.83	13.69	10.76	14.47	11.35		
29			11.00	10.12	11.87	9.96	12.71	10.81	13.11	10.76	13.51	10.69	14.31	11.30		
31			10.92	10.09	11.69	9.88	12.49	10.72	12.90	10.67	13.32	10.62	14.15	11.24		
33	10.27	9.37	10.72	9.99	11.51	9.81	12.27	10.64	12.70	10.60	13.13	10.55	13.99	11.19		
35	10.07	9.28	10.55	9.92	11.33	9.73	12.06	10.55	12.50	10.52	12.94	10.48	13.83	11.14		
37	9.90	9.19	10.38	9.84	11.13	9.65	11.83	10.46	12.24	10.42	12.66	10.38	13.50	11.02		
39	9.72	9.11	10.20	9.76	10.94	9.57	11.60	10.37	11.99	10.33	12.38	10.28	13.16	10.91		
41	9.55	9.02	10.02	9.68	10.75	9.49	11.37	10.28	11.73	10.23	12.09	10.17	12.82	10.80		
43	9.38	8.94	9.85	9.60	10.56	9.41	11.14	10.19	11.47	10.13	11.81	10.07	12.48	10.68		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

#

Model FDUM140VNVF Indoor unit FDUM140VF Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.97	12.02	10.86	12.35	10.73	12.70	10.60	13.39	11.24	14.08	10.93
13					11.90	10.15	12.61	11.04	12.96	10.90	13.33	10.77	14.09	11.41	14.84	11.09
15					12.43	10.33	13.19	11.22	13.57	11.08	13.97	10.94	14.78	11.57	15.59	11.25
17					12.96	10.51	13.77	11.40	14.17	11.26	14.61	11.12	15.48	11.75	16.34	11.41
19					13.24	10.61	14.06	11.49	14.48	11.35	14.92	11.21	15.80	11.83	16.68	11.48
21					13.51	10.71	14.36	11.59	14.78	11.44	15.23	11.30	16.12	11.91	17.02	11.56
23					13.51	10.71	14.40	11.60	14.82	11.45	15.28	11.31	16.19	11.93	17.10	11.58
25			12.50	11.04	13.50	10.71	14.43	11.61	14.86	11.47	15.33	11.33	16.25	11.94	17.18	11.59
27			12.41	11.00	13.50	10.71	14.47	11.62	14.91	11.48	15.34	11.33	16.20	11.93		
29			12.32	10.97	13.29	10.63	14.23	11.54	14.68	11.41	15.13	11.27	16.02	11.88		
31			12.23	10.93	13.09	10.56	13.99	11.47	14.45	11.34	14.92	11.21	15.85	11.84		
33	11.51	10.16	12.01	10.85	12.89	10.49	13.75	11.39	14.23	11.28	14.71	11.15	15.67	11.79		
35	11.28	10.06	11.82	10.77	12.68	10.42	13.50	11.31	14.00	11.21	14.50	11.09	15.49	11.75		
37	11.08	9.98	11.62	10.70	12.47	10.34	13.25	11.23	13.71	11.12	14.18	11.00	15.12	11.66		
39	10.89	9.90	11.43	10.62	12.26	10.27	12.99	11.15	13.43	11.04	13.86	10.91	14.74	11.56		
41	10.70	9.82	11.23	10.55	12.04	10.20	12.73	11.07	13.14	10.95	13.55	10.83	14.36	11.47		
43	10.51	9.74	11.03	10.47	11.83	10.12	12.47	10.99	12.85	10.87	13.23	10.74	13.98	11.38		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDUM140VSVF Indoor unit FDUM140VF Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.97	12.02	10.86	12.35	10.73	12.70	10.60	13.39	11.24	14.08	10.93
13					11.90	10.15	12.61	11.04	12.96	10.90	13.33	10.77	14.09	11.41	14.84	11.09
15					12.43	10.33	13.19	11.22	13.57	11.08	13.97	10.94	14.78	11.57	15.59	11.25
17					12.96	10.51	13.77	11.40	14.17	11.26	14.61	11.12	15.48	11.75	16.34	11.41
19					13.24	10.61	14.06	11.49	14.48	11.35	14.92	11.21	15.80	11.83	16.68	11.48
21					13.51	10.71	14.36	11.59	14.78	11.44	15.23	11.30	16.12	11.91	17.02	11.56
23					13.51	10.71	14.40	11.60	14.82	11.45	15.28	11.31	16.19	11.93	17.10	11.58
25			12.50	11.04	13.50	10.71	14.43	11.61	14.86	11.47	15.33	11.33	16.25	11.94	17.18	11.59
27			12.41	11.00	13.50	10.71	14.47	11.62	14.91	11.48	15.34	11.33	16.20	11.93		
29			12.32	10.97	13.29	10.63	14.23	11.54	14.68	11.41	15.13	11.27	16.02	11.88		
31			12.23	10.93	13.09	10.56	13.99	11.47	14.45	11.34	14.92	11.21	15.85	11.84		
33	11.51	10.16	12.01	10.85	12.89	10.49	13.75	11.39	14.23	11.28	14.71	11.15	15.67	11.79		
35	11.28	10.06	11.82	10.77	12.68	10.42	13.50	11.31	14.00	11.21	14.50	11.09	15.49	11.75		
37	11.08	9.98	11.62	10.70	12.47	10.34	13.25	11.23	13.71	11.12	14.18	11.00	15.12	11.66		
39	10.89	9.90	11.43	10.62	12.26	10.27	12.99	11.15	13.43	11.04	13.86	10.91	14.74	11.56		
41	10.70	9.82	11.23	10.55	12.04	10.20	12.73	11.07	13.14	10.95	13.55	10.83	14.36	11.47		
43	10.51	9.74	11.03	10.47	11.83	10.12	12.47	10.99	12.85	10.87	13.23	10.74	13.98	11.38		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b)Twin type

Model FDUM100VNPVF Indoor unit FDUM50VF (2 units) Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.73	8.59	7.25	8.82	7.20	9.07	7.15	9.56	7.54	10.06	7.41
13					8.50	6.90	9.00	7.42	9.26	7.37	9.52	7.32	10.06	7.71	10.60	7.58
15					8.88	7.06	9.42	7.59	9.69	7.54	9.98	7.49	10.56	7.89	11.14	7.76
17					9.26	7.23	9.84	7.77	10.12	7.71	10.43	7.67	11.05	8.06	11.67	7.93
19					9.46	7.32	10.05	7.85	10.34	7.80	10.65	7.75	11.29	8.15	11.92	8.01
21					9.65	7.41	10.25	7.94	10.56	7.89	10.88	7.84	11.52	8.23	12.16	8.09
23					9.65	7.41	10.28	7.95	10.59	7.90	10.91	7.85	11.56	8.24	12.21	8.11
25			8.93	7.50	9.64	7.40	10.31	7.96	10.62	7.91	10.95	7.87	11.61	8.26	12.27	8.13
27			8.86	7.47	9.64	7.40	10.34	7.98	10.65	7.93	10.96	7.87	11.57	8.25		
29			8.80	7.44	9.50	7.34	10.17	7.90	10.49	7.86	10.81	7.81	11.45	8.20		
31			8.73	7.40	9.35	7.27	9.99	7.83	10.32	7.79	10.66	7.76	11.32	8.16		
33	8.22	6.94	8.58	7.33	9.21	7.21	9.82	7.76	10.16	7.73	10.51	7.70	11.19	8.11		
35	8.05	6.85	8.44	7.27	9.06	7.14	9.64	7.68	10.00	7.66	10.36	7.64	11.07	8.07		
37	7.92	6.78	8.30	7.20	8.91	7.08	9.46	7.61	9.79	7.58	10.13	7.55	10.80	7.97		
39	7.78	6.71	8.16	7.13	8.75	7.00	9.28	7.53	9.59	7.50	9.90	7.46	10.53	7.88		
41	7.64	6.64	8.02	7.07	8.60	6.94	9.09	7.46	9.38	7.42	9.68	7.38	10.26	7.78		
43	7.50	6.57	7.88	7.00	8.45	6.87	8.91	7.38	9.18	7.34	9.45	7.29	9.99	7.69		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDUM100VSPVF Indoor unit FDUM50VF (2 units) Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.73	8.59	7.25	8.82	7.20	9.07	7.15	9.56	7.54	10.06	7.41
13					8.50	6.90	9.00	7.42	9.26	7.37	9.52	7.32	10.06	7.71	10.60	7.58
15					8.88	7.06	9.42	7.59	9.69	7.54	9.98	7.49	10.56	7.89	11.14	7.76
17					9.26	7.23	9.84	7.77	10.12	7.71	10.43	7.67	11.05	8.06	11.67	7.93
19					9.46	7.32	10.05	7.85	10.34	7.80	10.65	7.75	11.29	8.15	11.92	8.01
21					9.65	7.41	10.25	7.94	10.56	7.89	10.88	7.84	11.52	8.23	12.16	8.09
23					9.65	7.41	10.28	7.95	10.59	7.90	10.91	7.85	11.56	8.24	12.21	8.11
25			8.93	7.50	9.64	7.40	10.31	7.96	10.62	7.91	10.95	7.87	11.61	8.26	12.27	8.13
27			8.86	7.47	9.64	7.40	10.34	7.98	10.65	7.93	10.96	7.87	11.57	8.25		
29			8.80	7.44	9.50	7.34	10.17	7.90	10.49	7.86	10.81	7.81	11.45	8.20		
31			8.73	7.40	9.35	7.27	9.99	7.83	10.32	7.79	10.66	7.76	11.32	8.16		
33	8.22	6.94	8.58	7.33	9.21	7.21	9.82	7.76	10.16	7.73	10.51	7.70	11.19	8.11		
35	8.05	6.85	8.44	7.27	9.06	7.14	9.64	7.68	10.00	7.66	10.36	7.64	11.07	8.07		
37	7.92	6.78	8.30	7.20	8.91	7.08	9.46	7.61	9.79	7.58	10.13	7.55	10.80	7.97		
39	7.78	6.71	8.16	7.13	8.75	7.00	9.28	7.53	9.59	7.50	9.90	7.46	10.53	7.88		
41	7.64	6.64	8.02	7.07	8.60	6.94	9.09	7.46	9.38	7.42	9.68	7.38	10.26	7.78		
43	7.50	6.57	7.88	7.00	8.45	6.87	8.91	7.38	9.18	7.34	9.45	7.29	9.99	7.69		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM125VNPVF Indoor unit FDUM60VF (2 units) Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.91	10.74	9.69	11.03	9.59	11.34	9.50	11.96	10.07	12.57	9.84
13					10.63	9.09	11.26	9.87	11.57	9.77	11.91	9.68	12.58	10.25	13.25	10.02
15					11.10	9.27	11.78	10.05	12.11	9.95	12.47	9.86	13.20	10.42	13.92	10.19
17					11.58	9.46	12.29	10.23	12.65	10.13	13.04	10.04	13.82	10.60	14.59	10.36
19					11.82	9.55	12.56	10.33	12.92	10.23	13.32	10.13	14.11	10.69	14.90	10.45
21					12.06	9.65	12.82	10.42	13.19	10.32	13.60	10.22	14.40	10.77	15.20	10.52
23					12.06	9.65	12.85	10.43	13.23	10.33	13.64	10.24	14.45	10.79	15.27	10.54
25			11.16	9.87	12.06	9.65	12.89	10.44	13.27	10.35	13.68	10.25	14.51	10.81	15.34	10.56
27			11.08	9.84	12.05	9.64	12.92	10.46	13.31	10.36	13.69	10.25	14.47	10.80		
29			11.00	9.80	11.87	9.57	12.71	10.38	13.11	10.29	13.51	10.19	14.31	10.75		
31			10.92	9.77	11.69	9.50	12.49	10.30	12.90	10.22	13.32	10.13	14.15	10.70		
33	10.27	9.09	10.72	9.68	11.51	9.43	12.27	10.22	12.70	10.15	13.13	10.07	13.99	10.65		
35	10.07	9.00	10.55	9.61	11.33	9.36	12.06	10.15	12.50	10.08	12.94	10.01	13.83	10.61		
37	9.90	8.92	10.38	9.54	11.13	9.29	11.83	10.07	12.24	9.99	12.66	9.92	13.50	10.51		
39	9.72	8.84	10.20	9.47	10.94	9.21	11.60	9.99	11.99	9.91	12.38	9.83	13.16	10.41		
41	9.55	8.76	10.02	9.39	10.75	9.14	11.37	9.91	11.73	9.82	12.09	9.74	12.82	10.31		
43	9.38	8.69	9.85	9.32	10.56	9.07	11.14	9.83	11.47	9.74	11.81	9.65	12.48	10.22		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDUM125VSPVF Indoor unit FDUM60VF (2 units) Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.91	10.74	9.69	11.03	9.59	11.34	9.50	11.96	10.07	12.57	9.84
13					10.63	9.09	11.26	9.87	11.57	9.77	11.91	9.68	12.58	10.25	13.25	10.02
15					11.10	9.27	11.78	10.05	12.11	9.95	12.47	9.86	13.20	10.42	13.92	10.19
17					11.58	9.46	12.29	10.23	12.65	10.13	13.04	10.04	13.82	10.60	14.59	10.36
19					11.82	9.55	12.56	10.33	12.92	10.23	13.32	10.13	14.11	10.69	14.90	10.45
21					12.06	9.65	12.82	10.42	13.19	10.32	13.60	10.22	14.40	10.77	15.20	10.52
23					12.06	9.65	12.85	10.43	13.23	10.33	13.64	10.24	14.45	10.79	15.27	10.54
25			11.16	9.87	12.06	9.65	12.89	10.44	13.27	10.35	13.68	10.25	14.51	10.81	15.34	10.56
27			11.08	9.84	12.05	9.64	12.92	10.46	13.31	10.36	13.69	10.25	14.47	10.80		
29			11.00	9.80	11.87	9.57	12.71	10.38	13.11	10.29	13.51	10.19	14.31	10.75		
31			10.92	9.77	11.69	9.50	12.49	10.30	12.90	10.22	13.32	10.13	14.15	10.70		
33	10.27	9.09	10.72	9.68	11.51	9.43	12.27	10.22	12.70	10.15	13.13	10.07	13.99	10.65		
35	10.07	9.00	10.55	9.61	11.33	9.36	12.06	10.15	12.50	10.08	12.94	10.01	13.83	10.61		
37	9.90	8.92	10.38	9.54	11.13	9.29	11.83	10.07	12.24	9.99	12.66	9.92	13.50	10.51		
39	9.72	8.84	10.20	9.47	10.94	9.21	11.60	9.99	11.99	9.91	12.38	9.83	13.16	10.41		
41	9.55	8.76	10.02	9.39	10.75	9.14	11.37	9.91	11.73	9.82	12.09	9.74	12.82	10.31		
43	9.38	8.69	9.85	9.32	10.56	9.07	11.14	9.83	11.47	9.74	11.81	9.65	12.48	10.22		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM140VNPVF Indoor unit FDUM71VF (2 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	10.27	12.02	11.20	12.35	11.08	12.70	10.97	13.39	11.65	14.08	11.38
13					11.90	10.46	12.61	11.39	12.96	11.27	13.33	11.16	14.09	11.84	14.84	11.56
15					12.43	10.66	13.19	11.58	13.57	11.47	13.97	11.35	14.78	12.03	15.59	11.74
17					12.96	10.85	13.77	11.78	14.17	11.66	14.61	11.55	15.48	12.22	16.34	11.93
19					13.24	10.96	14.06	11.88	14.48	11.76	14.92	11.64	15.80	12.31	16.68	12.01
21					13.51	11.06	14.36	11.98	14.78	11.86	15.23	11.74	16.12	12.39	17.02	12.09
23					13.51	11.06	14.40	11.99	14.82	11.87	15.28	11.75	16.19	12.41	17.10	12.11
25			12.50	11.34	13.50	11.06	14.43	12.00	14.86	11.88	15.33	11.77	16.25	12.43	17.18	12.13
27			12.41	11.31	13.50	11.06	14.47	12.02	14.91	11.90	15.34	11.77	16.20	12.42		
29			12.32	11.27	13.29	10.98	14.23	11.94	14.68	11.83	15.13	11.71	16.02	12.37		
31			12.23	11.23	13.09	10.90	13.99	11.85	14.45	11.75	14.92	11.64	15.85	12.32		
33	11.51	10.43	12.01	11.14	12.89	10.83	13.75	11.77	14.23	11.68	14.71	11.58	15.67	12.27		
35	11.28	10.33	11.82	11.07	12.68	10.75	13.50	11.69	14.00	11.60	14.50	11.51	15.49	12.22		
37	11.08	10.24	11.62	10.99	12.47	10.67	13.25	11.60	13.71	11.51	14.18	11.41	15.12	12.12		
39	10.89	10.16	11.43	10.91	12.26	10.60	12.99	11.52	13.43	11.42	13.86	11.32	14.74	12.01		
41	10.70	10.07	11.23	10.83	12.04	10.52	12.73	11.43	13.14	11.33	13.55	11.22	14.36	11.91		
43	10.51	9.99	11.03	10.75	11.83	10.44	12.47	11.34	12.85	11.24	13.23	11.13	13.98	11.81		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDUM140VSPVF Indoor unit FDUM71VF (2 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	10.27	12.02	11.20	12.35	11.08	12.70	10.97	13.39	11.65	14.08	11.38
13					11.90	10.46	12.61	11.39	12.96	11.27	13.33	11.16	14.09	11.84	14.84	11.56
15					12.43	10.66	13.19	11.58	13.57	11.47	13.97	11.35	14.78	12.03	15.59	11.74
17					12.96	10.85	13.77	11.78	14.17	11.66	14.61	11.55	15.48	12.22	16.34	11.93
19					13.24	10.96	14.06	11.88	14.48	11.76	14.92	11.64	15.80	12.31	16.68	12.01
21					13.51	11.06	14.36	11.98	14.78	11.86	15.23	11.74	16.12	12.39	17.02	12.09
23					13.51	11.06	14.40	11.99	14.82	11.87	15.28	11.75	16.19	12.41	17.10	12.11
25			12.50	11.34	13.50	11.06	14.43	12.00	14.86	11.88	15.33	11.77	16.25	12.43	17.18	12.13
27			12.41	11.31	13.50	11.06	14.47	12.02	14.91	11.90	15.34	11.77	16.20	12.42		
29			12.32	11.27	13.29	10.98	14.23	11.94	14.68	11.83	15.13	11.71	16.02	12.37		
31			12.23	11.23	13.09	10.90	13.99	11.85	14.45	11.75	14.92	11.64	15.85	12.32		
33	11.51	10.43	12.01	11.14	12.89	10.83	13.75	11.77	14.23	11.68	14.71	11.58	15.67	12.27		
35	11.28	10.33	11.82	11.07	12.68	10.75	13.50	11.69	14.00	11.60	14.50	11.51	15.49	12.22		
37	11.08	10.24	11.62	10.99	12.47	10.67	13.25	11.60	13.71	11.51	14.18	11.41	15.12	12.12		
39	10.89	10.16	11.43	10.91	12.26	10.60	12.99	11.52	13.43	11.42	13.86	11.32	14.74	12.01		
41	10.70	10.07	11.23	10.83	12.04	10.52	12.73	11.43	13.14	11.33	13.55	11.22	14.36	11.91		
43	10.51	9.99	11.03	10.75	11.83	10.44	12.47	11.34	12.85	11.24	13.23	11.13	13.98	11.81		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM200VSPVF Indoor unit FDUM100VF (2 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	14.09	18.41	15.32	18.94	15.07	19.50	14.81	20.63	15.66	21.76	15.07
13					17.90	14.24	18.99	15.46	19.54	15.21	20.13	14.95	21.31	15.78	22.49	15.18
15					18.43	14.40	19.57	15.61	20.14	15.35	20.75	15.09	21.98	15.91	23.21	15.29
17					18.96	14.56	20.14	15.76	20.73	15.50	21.38	15.23	22.66	16.04	23.94	15.40
19					19.35	14.68	20.56	15.88	21.16	15.60	21.81	15.33	23.12	16.13	24.42	15.48
21					19.41	14.70	20.98	15.99	21.59	15.71	22.25	15.43	23.57	16.21	24.89	15.55
23					19.31	14.66	20.86	15.96	21.47	15.68	22.12	15.40	23.43	16.19	24.73	15.53
25			17.35	15.11	19.20	14.63	20.74	15.93	21.35	15.65	21.99	15.37	23.28	16.16	24.57	15.50
27			17.28	15.08	19.10	14.60	20.62	15.89	21.22	15.62	21.83	15.33	23.04	16.11		
29			17.14	15.03	18.85	14.53	20.31	15.81	20.92	15.54	21.53	15.26	22.75	16.05		
31			16.99	14.98	18.59	14.45	20.00	15.73	20.61	15.47	21.22	15.19	22.45	16.00		
33	16.46	14.09	17.03	15.00	18.33	14.37	19.69	15.65	20.31	15.39	20.92	15.12	22.15	15.94		
35	16.14	13.97	16.76	14.91	18.08	14.29	19.38	15.57	20.00	15.32	20.62	15.06	21.85	15.88		
37	15.86	13.87	16.50	14.82	17.76	14.20	18.98	15.46	19.57	15.21	20.17	14.96	21.35	15.79		
39	15.59	13.77	16.23	14.73	17.44	14.11	18.58	15.36	19.15	15.11	19.71	14.86	20.85	15.70		
41	15.32	13.67	15.97	14.65	17.13	14.02	18.17	15.26	18.72	15.01	19.26	14.76	20.35	15.61		
43	15.04	13.56	15.70	14.56	16.81	13.92	17.77	15.15	18.29	14.91	18.81	14.66	19.85	15.52		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	11.27	11.26	11.25	11.24	11.23
-17.7	-18	11.89	11.87	11.85	11.84	11.82
-15.7	-16	12.51	12.49	12.46	12.43	12.41
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Model FDUM250VSPVF Indoor unit FDUM125VF (2 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	19.06	23.02	20.67	23.67	20.54	24.38	20.42	25.79	21.64	27.21	21.32
13					22.38	19.34	23.74	20.96	24.42	20.82	25.16	20.70	26.63	21.92	28.11	21.59
15					23.04	19.62	24.46	21.24	25.17	21.11	25.94	20.99	27.48	22.21	29.02	21.87
17					23.70	19.91	25.18	21.53	25.92	21.40	26.72	21.27	28.32	22.50	29.92	22.16
19					24.19	20.12	25.70	21.74	26.45	21.60	27.27	21.48	28.89	22.69	30.52	22.34
21					24.26	20.15	26.22	21.94	26.99	21.81	27.82	21.68	29.47	22.89	31.12	22.53
23					24.13	20.09	26.07	21.88	26.84	21.75	27.65	21.62	29.28	22.82	30.91	22.47
25			21.69	20.10	24.00	20.03	25.92	21.82	26.68	21.69	27.49	21.56	29.10	22.76	30.71	22.40
27			21.60	20.06	23.88	19.98	25.77	21.76	26.53	21.63	27.29	21.48	28.80	22.66		
29			21.42	19.98	23.56	19.85	25.39	21.61	26.15	21.48	26.91	21.34	28.43	22.53		
31			21.24	19.90	23.24	19.71	25.00	21.46	25.77	21.34	26.53	21.20	28.06	22.41		
33	20.58	18.77	21.29	19.92	22.92	19.57	24.61	21.30	25.38	21.19	26.15	21.06	27.69	22.28		
35	20.17	18.57	20.96	19.77	22.60	19.44	24.23	21.15	25.00	21.04	25.77	20.92	27.31	22.15		
37	19.83	18.40	20.62	19.62	22.20	19.27	23.73	20.95	24.47	20.84	25.21	20.72	26.69	21.94		
39	19.49	18.24	20.29	19.47	21.80	19.10	23.22	20.75	23.93	20.64	24.64	20.51	26.06	21.73		
41	19.15	18.07	19.96	19.32	21.41	18.93	22.72	20.56	23.40	20.44	24.08	20.31	25.43	21.52		
43	18.81	17.91	19.63	19.17	21.01	18.77	22.22	20.36	22.86	20.24	23.51	20.11	24.81	21.32		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	14.09	14.07	14.06	14.05	14.04
-17.7	-18	14.87	14.84	14.81	14.79	14.77
-15.7	-16	15.64	15.61	15.57	15.54	15.51
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(c)Triple type

Model FDUM140VNTVF Indoor unit FDUM50VF (3 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.75	12.02	10.54	12.35	10.47	12.70	10.39	13.39	10.99	14.08	10.80
13					11.90	9.97	12.61	10.77	12.96	10.70	13.33	10.63	14.09	11.22	14.84	11.04
15					12.43	10.20	13.19	11.00	13.57	10.93	13.97	10.86	14.78	11.46	15.59	11.28
17					12.96	10.43	13.77	11.24	14.17	11.17	14.61	11.10	15.48	11.70	16.34	11.51
19					13.24	10.56	14.06	11.36	14.48	11.29	14.92	11.22	15.80	11.81	16.68	11.62
21					13.51	10.68	14.36	11.48	14.78	11.41	15.23	11.34	16.12	11.93	17.02	11.73
23					13.51	10.68	14.40	11.50	14.82	11.43	15.28	11.36	16.19	11.95	17.10	11.76
25			12.50	10.82	13.50	10.67	14.43	11.51	14.86	11.44	15.33	11.38	16.25	11.97	17.18	11.79
27			12.41	10.78	13.50	10.67	14.47	11.53	14.91	11.46	15.34	11.38	16.20	11.96		
29			12.32	10.74	13.29	10.58	14.23	11.43	14.68	11.37	15.13	11.30	16.02	11.89		
31			12.23	10.69	13.09	10.49	13.99	11.33	14.45	11.28	14.92	11.22	15.85	11.83		
33	11.51	9.99	12.01	10.59	12.89	10.40	13.75	11.23	14.23	11.19	14.71	11.14	15.67	11.77		
35	11.28	9.87	11.82	10.50	12.68	10.31	13.50	11.13	14.00	11.10	14.50	11.06	15.49	11.71		
37	11.08	9.77	11.62	10.41	12.47	10.22	13.25	11.03	13.71	10.99	14.18	10.94	15.12	11.58		
39	10.89	9.68	11.43	10.32	12.26	10.13	12.99	10.92	13.43	10.88	13.86	10.82	14.74	11.45		
41	10.70	9.59	11.23	10.23	12.04	10.03	12.73	10.82	13.14	10.77	13.55	10.71	14.36	11.32		
43	10.51	9.49	11.03	10.14	11.83	9.94	12.47	10.72	12.85	10.66	13.23	10.59	13.98	11.19		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDUM140VSTVF Indoor unit FDUM50VF (3 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.75	12.02	10.54	12.35	10.47	12.70	10.39	13.39	10.99	14.08	10.80
13					11.90	9.97	12.61	10.77	12.96	10.70	13.33	10.63	14.09	11.22	14.84	11.04
15					12.43	10.20	13.19	11.00	13.57	10.93	13.97	10.86	14.78	11.46	15.59	11.28
17					12.96	10.43	13.77	11.24	14.17	11.17	14.61	11.10	15.48	11.70	16.34	11.51
19					13.24	10.56	14.06	11.36	14.48	11.29	14.92	11.22	15.80	11.81	16.68	11.62
21					13.51	10.68	14.36	11.48	14.78	11.41	15.23	11.34	16.12	11.93	17.02	11.73
23					13.51	10.68	14.40	11.50	14.82	11.43	15.28	11.36	16.19	11.95	17.10	11.76
25			12.50	10.82	13.50	10.67	14.43	11.51	14.86	11.44	15.33	11.38	16.25	11.97	17.18	11.79
27			12.41	10.78	13.50	10.67	14.47	11.53	14.91	11.46	15.34	11.38	16.20	11.96		
29			12.32	10.74	13.29	10.58	14.23	11.43	14.68	11.37	15.13	11.30	16.02	11.89		
31			12.23	10.69	13.09	10.49	13.99	11.33	14.45	11.28	14.92	11.22	15.85	11.83		
33	11.51	9.99	12.01	10.59	12.89	10.40	13.75	11.23	14.23	11.19	14.71	11.14	15.67	11.77		
35	11.28	9.87	11.82	10.50	12.68	10.31	13.50	11.13	14.00	11.10	14.50	11.06	15.49	11.71		
37	11.08	9.77	11.62	10.41	12.47	10.22	13.25	11.03	13.71	10.99	14.18	10.94	15.12	11.58		
39	10.89	9.68	11.43	10.32	12.26	10.13	12.99	10.92	13.43	10.88	13.86	10.82	14.74	11.45		
41	10.70	9.59	11.23	10.23	12.04	10.03	12.73	10.82	13.14	10.77	13.55	10.71	14.36	11.32		
43	10.51	9.49	11.03	10.14	11.83	9.94	12.47	10.72	12.85	10.66	13.23	10.59	13.98	11.19		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM200VSTVF Indoor unit FDUM71VF (3 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	15.52	18.41	16.92	18.94	16.75	19.50	16.59	20.63	17.62	21.76	17.23
13					17.90	15.71	18.99	17.11	19.54	16.94	20.13	16.78	21.31	17.81	22.49	17.40
15					18.43	15.91	19.57	17.30	20.14	17.13	20.75	16.96	21.98	17.99	23.21	17.57
17					18.96	16.10	20.14	17.49	20.73	17.32	21.38	17.15	22.66	18.17	23.94	17.75
19					19.35	16.25	20.56	17.64	21.16	17.46	21.81	17.29	23.12	18.30	24.42	17.87
21					19.41	16.27	20.98	17.78	21.59	17.60	22.25	17.42	23.57	18.42	24.89	17.98
23					19.31	16.23	20.86	17.74	21.47	17.56	22.12	17.38	23.43	18.38	24.73	17.94
25			17.35	16.45	19.20	16.19	20.74	17.70	21.35	17.52	21.99	17.34	23.28	18.34	24.57	17.90
27			17.28	16.42	19.10	16.16	20.62	17.66	21.22	17.48	21.83	17.29	23.04	18.28		
29			17.14	16.36	18.85	16.06	20.31	17.55	20.92	17.38	21.53	17.20	22.75	18.20		
31			16.99	16.30	18.59	15.97	20.00	17.45	20.61	17.28	21.22	17.11	22.45	18.11		
33	16.46	15.29	17.03	16.32	18.33	15.87	19.69	17.34	20.31	17.19	20.92	17.01	22.15	18.03		
35	16.14	15.15	16.76	16.21	18.08	15.78	19.38	17.24	20.00	17.09	20.62	16.92	21.85	17.95		
37	15.86	15.03	16.50	16.11	17.76	15.66	18.98	17.11	19.57	16.95	20.17	16.79	21.35	17.82		
39	15.59	14.91	16.23	15.91	17.44	15.55	18.58	16.97	19.15	16.82	19.71	16.65	20.85	17.68		
41	15.32	14.80	15.97	15.65	17.13	15.44	18.17	16.84	18.72	16.69	19.26	16.52	20.35	17.55		
43	15.04	14.68	15.70	15.39	16.81	15.32	17.77	16.71	18.29	16.55	18.81	16.38	19.85	17.42		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	11.27	11.26	11.25	11.24	11.23
-17.7	-18	11.89	11.87	11.85	11.84	11.82
-15.7	-16	12.51	12.49	12.46	12.43	12.41
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

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#

(6) Floor standing type (FDF)
(a) Single type

Model FDF100VNVD Indoor unit FDF100VD Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18°CDB		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
	12°CWB		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22°CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.02	8.59	7.61	8.82	7.55	9.07	7.49	9.56	7.93	10.06	7.79
13					8.50	7.18	9.00	7.77	9.26	7.71	9.52	7.65	10.06	8.09	10.60	7.95
15					8.88	7.34	9.42	7.93	9.69	7.87	9.98	7.82	10.56	8.25	11.14	8.11
17					9.26	7.50	9.84	8.09	10.12	8.03	10.43	7.98	11.05	8.42	11.67	8.27
19					9.46	7.59	10.05	8.18	10.34	8.12	10.65	8.06	11.29	8.50	11.92	8.35
21					9.65	7.67	10.25	8.26	10.56	8.20	10.88	8.15	11.52	8.57	12.16	8.42
23					9.65	7.67	10.28	8.27	10.59	8.21	10.91	8.16	11.56	8.59	12.21	8.44
25			8.93	7.79	9.64	7.67	10.31	8.28	10.62	8.23	10.95	8.17	11.61	8.61	12.27	8.46
27			8.86	7.76	9.64	7.67	10.34	8.29	10.65	8.24	10.96	8.17	11.57	8.59		
29			8.80	7.73	9.50	7.61	10.17	8.22	10.49	8.18	10.81	8.12	11.45	8.55		
31			8.73	7.70	9.35	7.54	9.99	8.15	10.32	8.11	10.66	8.06	11.32	8.51		
33	8.22	7.19	8.58	7.63	9.21	7.48	9.82	8.09	10.16	8.05	10.51	8.01	11.19	8.46		
35	8.05	7.10	8.44	7.57	9.06	7.42	9.64	8.01	10.00	7.99	10.36	7.95	11.07	8.42		
37	7.92	7.04	8.30	7.50	8.91	7.35	9.46	7.94	9.79	7.91	10.13	7.87	10.80	8.33		
39	7.78	6.97	8.16	7.44	8.75	7.29	9.28	7.87	9.59	7.83	9.90	7.79	10.53	8.24		
41	7.64	6.90	8.02	7.38	8.60	7.22	9.09	7.80	9.38	7.76	9.68	7.71	10.26	8.15		
43	7.50	6.84	7.88	7.32	8.45	7.16	8.91	7.73	9.18	7.68	9.45	7.63	9.99	8.07		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDF100VSVD Indoor unit FDF100VD Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18°CDB		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
	12°CWB		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22°CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.02	8.59	7.61	8.82	7.55	9.07	7.49	9.56	7.93	10.06	7.79
13					8.50	7.18	9.00	7.77	9.26	7.71	9.52	7.65	10.06	8.09	10.60	7.95
15					8.88	7.34	9.42	7.93	9.69	7.87	9.98	7.82	10.56	8.25	11.14	8.11
17					9.26	7.50	9.84	8.09	10.12	8.03	10.43	7.98	11.05	8.42	11.67	8.27
19					9.46	7.59	10.05	8.18	10.34	8.12	10.65	8.06	11.29	8.50	11.92	8.35
21					9.65	7.67	10.25	8.26	10.56	8.20	10.88	8.15	11.52	8.57	12.16	8.42
23					9.65	7.67	10.28	8.27	10.59	8.21	10.91	8.16	11.56	8.59	12.21	8.44
25			8.93	7.79	9.64	7.67	10.31	8.28	10.62	8.23	10.95	8.17	11.61	8.61	12.27	8.46
27			8.86	7.76	9.64	7.67	10.34	8.29	10.65	8.24	10.96	8.17	11.57	8.59		
29			8.80	7.73	9.50	7.61	10.17	8.22	10.49	8.18	10.81	8.12	11.45	8.55		
31			8.73	7.70	9.35	7.54	9.99	8.15	10.32	8.11	10.66	8.06	11.32	8.51		
33	8.22	7.19	8.58	7.63	9.21	7.48	9.82	8.09	10.16	8.05	10.51	8.01	11.19	8.46		
35	8.05	7.10	8.44	7.57	9.06	7.42	9.64	8.01	10.00	7.99	10.36	7.95	11.07	8.42		
37	7.92	7.04	8.30	7.50	8.91	7.35	9.46	7.94	9.79	7.91	10.13	7.87	10.80	8.33		
39	7.78	6.97	8.16	7.44	8.75	7.29	9.28	7.87	9.59	7.83	9.90	7.79	10.53	8.24		
41	7.64	6.90	8.02	7.38	8.60	7.22	9.09	7.80	9.38	7.76	9.68	7.71	10.26	8.15		
43	7.50	6.84	7.88	7.32	8.45	7.16	8.91	7.73	9.18	7.68	9.45	7.63	9.99	8.07		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)

Model FDF125VNVD Indoor unit FDF125VD Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.89	10.74	8.45	11.03	8.38	11.34	8.32	11.96	8.72	12.57	8.55
13					10.63	8.10	11.26	8.67	11.57	8.60	11.91	8.53	12.58	8.94	13.25	8.76
15					11.10	8.31	11.78	8.88	12.11	8.81	12.47	8.75	13.20	9.16	13.92	8.98
17					11.58	8.53	12.29	9.10	12.65	9.03	13.04	8.97	13.82	9.38	14.59	9.20
19					11.82	8.64	12.56	9.21	12.92	9.14	13.32	9.08	14.11	9.49	14.90	9.30
21					12.06	8.75	12.82	9.32	13.19	9.25	13.60	9.19	14.40	9.59	15.20	9.40
23					12.06	8.75	12.85	9.34	13.23	9.27	13.64	9.20	14.45	9.61	15.27	9.43
25			11.16	8.86	12.06	8.75	12.89	9.35	13.27	9.28	13.68	9.22	14.51	9.63	15.34	9.45
27			11.08	8.82	12.05	8.74	12.92	9.37	13.31	9.30	13.69	9.22	14.47	9.62		
29			11.00	8.78	11.87	8.66	12.71	9.28	13.11	9.22	13.51	9.15	14.31	9.56		
31			10.92	8.74	11.69	8.58	12.49	9.18	12.90	9.13	13.32	9.08	14.15	9.50		
33	10.27	8.22	10.72	8.64	11.51	8.49	12.27	9.09	12.70	9.05	13.13	9.00	13.99	9.44		
35	10.07	8.12	10.55	8.56	11.33	8.41	12.06	9.00	12.50	8.97	12.94	8.93	13.83	9.38		
37	9.90	8.03	10.38	8.48	11.13	8.32	11.83	8.90	12.24	8.86	12.66	8.82	13.50	9.26		
39	9.72	7.94	10.20	8.39	10.94	8.24	11.60	8.81	11.99	8.76	12.38	8.71	13.16	9.14		
41	9.55	7.85	10.02	8.30	10.75	8.15	11.37	8.71	11.73	8.66	12.09	8.60	12.82	9.02		
43	9.38	7.76	9.85	8.22	10.56	8.07	11.14	8.62	11.47	8.56	11.81	8.49	12.48	8.90		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDF125VSVD Indoor unit FDF125VD Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.89	10.74	8.45	11.03	8.38	11.34	8.32	11.96	8.72	12.57	8.55
13					10.63	8.10	11.26	8.67	11.57	8.60	11.91	8.53	12.58	8.94	13.25	8.76
15					11.10	8.31	11.78	8.88	12.11	8.81	12.47	8.75	13.20	9.16	13.92	8.98
17					11.58	8.53	12.29	9.10	12.65	9.03	13.04	8.97	13.82	9.38	14.59	9.20
19					11.82	8.64	12.56	9.21	12.92	9.14	13.32	9.08	14.11	9.49	14.90	9.30
21					12.06	8.75	12.82	9.32	13.19	9.25	13.60	9.19	14.40	9.59	15.20	9.40
23					12.06	8.75	12.85	9.34	13.23	9.27	13.64	9.20	14.45	9.61	15.27	9.43
25			11.16	8.86	12.06	8.75	12.89	9.35	13.27	9.28	13.68	9.22	14.51	9.63	15.34	9.45
27			11.08	8.82	12.05	8.74	12.92	9.37	13.31	9.30	13.69	9.22	14.47	9.62		
29			11.00	8.78	11.87	8.66	12.71	9.28	13.11	9.22	13.51	9.15	14.31	9.56		
31			10.92	8.74	11.69	8.58	12.49	9.18	12.90	9.13	13.32	9.08	14.15	9.50		
33	10.27	8.22	10.72	8.64	11.51	8.49	12.27	9.09	12.70	9.05	13.13	9.00	13.99	9.44		
35	10.07	8.12	10.55	8.56	11.33	8.41	12.06	9.00	12.50	8.97	12.94	8.93	13.83	9.38		
37	9.90	8.03	10.38	8.48	11.13	8.32	11.83	8.90	12.24	8.86	12.66	8.82	13.50	9.26		
39	9.72	7.94	10.20	8.39	10.94	8.24	11.60	8.81	11.99	8.76	12.38	8.71	13.16	9.14		
41	9.55	7.85	10.02	8.30	10.75	8.15	11.37	8.71	11.73	8.66	12.09	8.60	12.82	9.02		
43	9.38	7.76	9.85	8.22	10.56	8.07	11.14	8.62	11.47	8.56	11.81	8.49	12.48	8.90		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)

Model FDF140VNVD Indoor unit FDF140VD Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	8.43	12.02	8.98	12.35	8.91	12.70	8.83	13.39	9.23	14.08	9.03
13					11.90	8.67	12.61	9.23	12.96	9.16	13.33	9.08	14.09	9.48	14.84	9.28
15					12.43	8.92	13.19	9.48	13.57	9.41	13.97	9.34	14.78	9.73	15.59	9.54
17					12.96	9.17	13.77	9.74	14.17	9.66	14.61	9.60	15.48	9.99	16.34	9.79
19					13.24	9.30	14.06	9.87	14.48	9.80	14.92	9.72	15.80	10.12	16.68	9.91
21					13.51	9.43	14.36	10.00	14.78	9.93	15.23	9.85	16.12	10.24	17.02	10.03
23					13.51	9.43	14.40	10.02	14.82	9.94	15.28	9.87	16.19	10.26	17.10	10.06
25			12.50	9.53	13.50	9.43	14.43	10.03	14.86	9.96	15.33	9.89	16.25	10.29	17.18	10.09
27			12.41	9.48	13.50	9.43	14.47	10.05	14.91	9.98	15.34	9.90	16.20	10.27		
29			12.32	9.44	13.29	9.33	14.23	9.94	14.68	9.88	15.13	9.81	16.02	10.20		
31			12.23	9.39	13.09	9.23	13.99	9.84	14.45	9.78	14.92	9.72	15.85	10.13		
33	11.51	8.88	12.01	9.28	12.89	9.14	13.75	9.73	14.23	9.69	14.71	9.64	15.67	10.07		
35	11.28	8.76	11.82	9.18	12.68	9.04	13.50	9.62	14.00	9.59	14.50	9.55	15.49	10.00		
37	11.08	8.65	11.62	9.08	12.47	8.94	13.25	9.51	13.71	9.47	14.18	9.42	15.12	9.86		
39	10.89	8.55	11.43	8.99	12.26	8.84	12.99	9.40	13.43	9.35	13.86	9.29	14.74	9.72		
41	10.70	8.45	11.23	8.89	12.04	8.74	12.73	9.28	13.14	9.23	13.55	9.17	14.36	9.58		
43	10.51	8.35	11.03	8.79	11.83	8.64	12.47	9.17	12.85	9.11	13.23	9.04	13.98	9.44		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDF140VSVD Indoor unit FDF140VD Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	8.43	12.02	8.98	12.35	8.91	12.70	8.83	13.39	9.23	14.08	9.03
13					11.90	8.67	12.61	9.23	12.96	9.16	13.33	9.08	14.09	9.48	14.84	9.28
15					12.43	8.92	13.19	9.48	13.57	9.41	13.97	9.34	14.78	9.73	15.59	9.54
17					12.96	9.17	13.77	9.74	14.17	9.66	14.61	9.60	15.48	9.99	16.34	9.79
19					13.24	9.30	14.06	9.87	14.48	9.80	14.92	9.72	15.80	10.12	16.68	9.91
21					13.51	9.43	14.36	10.00	14.78	9.93	15.23	9.85	16.12	10.24	17.02	10.03
23					13.51	9.43	14.40	10.02	14.82	9.94	15.28	9.87	16.19	10.26	17.10	10.06
25			12.50	9.53	13.50	9.43	14.43	10.03	14.86	9.96	15.33	9.89	16.25	10.29	17.18	10.09
27			12.41	9.48	13.50	9.43	14.47	10.05	14.91	9.98	15.34	9.90	16.20	10.27		
29			12.32	9.44	13.29	9.33	14.23	9.94	14.68	9.88	15.13	9.81	16.02	10.20		
31			12.23	9.39	13.09	9.23	13.99	9.84	14.45	9.78	14.92	9.72	15.85	10.13		
33	11.51	8.88	12.01	9.28	12.89	9.14	13.75	9.73	14.23	9.69	14.71	9.64	15.67	10.07		
35	11.28	8.76	11.82	9.18	12.68	9.04	13.50	9.62	14.00	9.59	14.50	9.55	15.49	10.00		
37	11.08	8.65	11.62	9.08	12.47	8.94	13.25	9.51	13.71	9.47	14.18	9.42	15.12	9.86		
39	10.89	8.55	11.43	8.99	12.26	8.84	12.99	9.40	13.43	9.35	13.86	9.29	14.74	9.72		
41	10.70	8.45	11.23	8.89	12.04	8.74	12.73	9.28	13.14	9.23	13.55	9.17	14.36	9.58		
43	10.51	8.35	11.03	8.79	11.83	8.64	12.47	9.17	12.85	9.11	13.23	9.04	13.98	9.44		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)

(b) Twin type

Model FDF140VNPVD Indoor unit FDF71VD (2 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18°CDB		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
	12°CWB		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22°CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.05	12.02	9.77	12.35	9.65	12.70	9.53	13.39	10.04	14.08	9.75
13					11.90	9.25	12.61	9.97	12.96	9.84	13.33	9.72	14.09	10.22	14.84	9.92
15					12.43	9.45	13.19	10.16	13.57	10.04	13.97	9.91	14.78	10.41	15.59	10.10
17					12.96	9.65	13.77	10.36	14.17	10.23	14.61	10.11	15.48	10.60	16.34	10.28
19					13.24	9.75	14.06	10.46	14.48	10.34	14.92	10.20	15.80	10.69	16.68	10.37
21					13.51	9.86	14.36	10.57	14.78	10.44	15.23	10.30	16.12	10.78	17.02	10.45
23					13.51	9.86	14.40	10.58	14.82	10.45	15.28	10.32	16.19	10.80	17.10	10.47
25			12.50	10.12	13.50	9.85	14.43	10.59	14.86	10.46	15.33	10.33	16.25	10.82	17.18	10.49
27			12.41	10.09	13.50	9.85	14.47	10.61	14.91	10.48	15.34	10.34	16.20	10.80		
29			12.32	10.05	13.29	9.77	14.23	10.52	14.68	10.40	15.13	10.27	16.02	10.75		
31			12.23	10.01	13.09	9.70	13.99	10.44	14.45	10.33	14.92	10.20	15.85	10.70		
33	11.51	9.38	12.01	9.92	12.89	9.62	13.75	10.36	14.23	10.25	14.71	10.14	15.67	10.65		
35	11.28	9.28	11.82	9.84	12.68	9.54	13.50	10.27	14.00	10.18	14.50	10.07	15.49	10.60		
37	11.08	9.19	11.62	9.76	12.47	9.46	13.25	10.18	13.71	10.08	14.18	9.97	15.12	10.50		
39	10.89	9.10	11.43	9.68	12.26	9.38	12.99	10.10	13.43	9.99	13.86	9.88	14.74	10.40		
41	10.70	9.02	11.23	9.60	12.04	9.30	12.73	10.01	13.14	9.90	13.55	9.78	14.36	10.29		
43	10.51	8.93	11.03	9.52	11.83	9.22	12.47	9.92	12.85	9.81	13.23	9.69	13.98	10.19		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model FDF140VSPVD Indoor unit FDF71VD (2 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18°CDB		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
	12°CWB		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22 °CWB		24°CWB	
°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.05	12.02	9.77	12.35	9.65	12.70	9.53	13.39	10.04	14.08	9.75
13					11.90	9.25	12.61	9.97	12.96	9.84	13.33	9.72	14.09	10.22	14.84	9.92
15					12.43	9.45	13.19	10.16	13.57	10.04	13.97	9.91	14.78	10.41	15.59	10.10
17					12.96	9.65	13.77	10.36	14.17	10.23	14.61	10.11	15.48	10.60	16.34	10.28
19					13.24	9.75	14.06	10.46	14.48	10.34	14.92	10.20	15.80	10.69	16.68	10.37
21					13.51	9.86	14.36	10.57	14.78	10.44	15.23	10.30	16.12	10.78	17.02	10.45
23					13.51	9.86	14.40	10.58	14.82	10.45	15.28	10.32	16.19	10.80	17.10	10.47
25			12.50	10.12	13.50	9.85	14.43	10.59	14.86	10.46	15.33	10.33	16.25	10.82	17.18	10.49
27			12.41	10.09	13.50	9.85	14.47	10.61	14.91	10.48	15.34	10.34	16.20	10.80		
29			12.32	10.05	13.29	9.77	14.23	10.52	14.68	10.40	15.13	10.27	16.02	10.75		
31			12.23	10.01	13.09	9.70	13.99	10.44	14.45	10.33	14.92	10.20	15.85	10.70		
33	11.51	9.38	12.01	9.92	12.89	9.62	13.75	10.36	14.23	10.25	14.71	10.14	15.67	10.65		
35	11.28	9.28	11.82	9.84	12.68	9.54	13.50	10.27	14.00	10.18	14.50	10.07	15.49	10.60		
37	11.08	9.19	11.62	9.76	12.47	9.46	13.25	10.18	13.71	10.08	14.18	9.97	15.12	10.50		
39	10.89	9.10	11.43	9.68	12.26	9.38	12.99	10.10	13.43	9.99	13.86	9.88	14.74	10.40		
41	10.70	9.02	11.23	9.60	12.04	9.30	12.73	10.01	13.14	9.90	13.55	9.78	14.36	10.29		
43	10.51	8.93	11.03	9.52	11.83	9.22	12.47	9.92	12.85	9.81	13.23	9.69	13.98	10.19		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Note(1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)

Model FDF200VSPVD Indoor unit FDF100VD (2 units) Outdoor unit FDC200VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					17.37	14.52	18.41	15.69	18.94	15.58	19.50	15.47	20.63	16.34	21.76	16.06
13					17.90	14.74	18.99	15.92	19.54	15.80	20.13	15.69	21.31	16.57	22.49	16.28
15					18.43	14.97	19.57	16.14	20.14	16.03	20.75	15.92	21.98	16.79	23.21	16.50
17					18.96	15.19	20.14	16.37	20.73	16.25	21.38	16.15	22.66	17.02	23.94	16.72
19					19.35	15.36	20.56	16.54	21.16	16.42	21.81	16.31	23.12	17.18	24.42	16.87
21					19.41	15.39	20.98	16.71	21.59	16.59	22.25	16.47	23.57	17.33	24.89	17.02
23					19.31	15.35	20.86	16.66	21.47	16.54	22.12	16.42	23.43	17.28	24.73	16.97
25			17.35	15.35	19.20	15.30	20.74	16.61	21.35	16.49	21.99	16.38	23.28	17.23	24.57	16.92
27			17.28	15.32	19.10	15.25	20.62	16.56	21.22	16.44	21.83	16.32	23.04	17.15		
29			17.14	15.25	18.85	15.15	20.31	16.44	20.92	16.33	21.53	16.21	22.75	17.05		
31			16.99	15.19	18.59	15.04	20.00	16.31	20.61	16.21	21.22	16.09	22.45	16.95		
33	16.46	14.38	17.03	15.20	18.33	14.93	19.69	16.19	20.31	16.09	20.92	15.98	22.15	16.85		
35	16.14	14.23	16.76	15.08	18.08	14.82	19.38	16.07	20.00	15.98	20.62	15.87	21.85	16.75		
37	15.86	14.09	16.50	14.96	17.76	14.68	18.98	15.91	19.57	15.81	20.17	15.71	21.35	16.58		
39	15.59	13.96	16.23	14.84	17.44	14.55	18.58	15.76	19.15	15.66	19.71	15.54	20.85	16.42		
41	15.32	13.83	15.97	14.73	17.13	14.42	18.17	15.60	18.72	15.50	19.26	15.38	20.35	16.25		
43	15.04	13.69	15.70	14.60	16.81	14.29	17.77	15.44	18.29	15.34	18.81	15.22	19.85	16.09		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	13.21	13.18	13.14	13.11	13.08
-11.5	-12	13.91	13.87	13.83	13.79	13.76
-9.5	-10	14.61	14.57	14.52	14.47	14.43
-7.5	-8	15.31	15.26	15.21	15.16	15.10
-5.5	-6	15.64	15.58	15.52	15.46	15.40
-3.0	-4	15.96	15.89	15.82	15.76	15.69
-1.0	-2	16.29	16.21	16.13	16.06	15.98
1.0	0	16.61	16.53	16.44	16.36	16.28
2.0	1	16.78	16.69	16.59	16.51	16.42
3.0	2	17.96	17.86	17.76	17.66	17.56
5.0	4	20.33	20.21	20.08	19.96	19.84
7.0	6	22.71	22.55	22.40	22.26	22.12
9.0	8	23.43	23.28	23.13	22.88	22.63
11.5	10	24.14	24.00	23.86	23.50	23.13
13.5	12	25.41	25.24	25.07	24.77	24.43
15.5	14	26.67	26.47	26.27	26.05	25.72
16.5	16	27.30	27.09	26.87	26.69	26.37

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Model FDF250VSPVD Indoor unit FDF125VD (2 units) Outdoor unit FDC250VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18℃CDB		21℃CDB		23℃CDB		26℃CDB		27℃CDB		28℃CDB		31℃CDB		33℃CDB	
	12℃CWB		14℃CWB		16℃CWB		18℃CWB		19℃CWB		20℃CWB		22℃CWB		24℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					21.71	16.40	23.02	17.54	23.67	17.40	24.38	17.28	25.79	18.10	27.21	17.76
13					22.38	16.70	23.74	17.84	24.42	17.70	25.16	17.58	26.63	18.40	28.11	18.05
15					23.04	17.00	24.46	18.14	25.17	18.01	25.94	17.88	27.48	18.70	29.02	18.35
17					23.70	17.30	25.18	18.45	25.92	18.31	26.72	18.19	28.32	19.01	29.92	18.65
19					24.19	17.53	25.70	18.67	26.45	18.53	27.27	18.40	28.89	19.22	30.52	18.85
21					24.26	17.56	26.22	18.90	26.99	18.76	27.82	18.63	29.47	19.43	31.12	19.05
23					24.13	17.50	26.07	18.83	26.84	18.69	27.65	18.56	29.28	19.36	30.91	18.98
25			21.69	17.40	24.00	17.44	25.92	18.77	26.68	18.63	27.49	18.49	29.10	19.29	30.71	18.91
27			21.60	17.36	23.88	17.38	25.77	18.70	26.53	18.57	27.29	18.41	28.80	19.18		
29			21.42	17.27	23.56	17.24	25.39	18.54	26.15	18.41	26.91	18.26	28.43	19.05		
31			21.24	17.18	23.24	17.09	25.00	18.37	25.77	18.25	26.53	18.11	28.06	18.91		
33	20.58	16.47	21.29	17.21	22.92	16.94	24.61	18.21	25.38	18.09	26.15	17.96	27.69	18.78		
35	20.17	16.25	20.96	17.05	22.60	16.80	24.23	18.05	25.00	17.94	25.77	17.81	27.31	18.64		
37	19.83	16.08	20.62	16.88	22.20	16.62	23.73	17.84	24.47	17.72	25.21	17.60	26.69	18.42		
39	19.49	15.90	20.29	16.73	21.80	16.44	23.22	17.62	23.93	17.51	24.64	17.38	26.06	18.20		
41	19.15	15.73	19.96	16.57	21.41	16.27	22.72	17.42	23.40	17.29	24.08	17.16	25.43	17.97		
43	18.81	15.56	19.63	16.41	21.01	16.09	22.22	17.21	22.86	17.08	23.51	16.94	24.81	17.76		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	16.52	16.47	16.43	16.39	16.35
-11.5	-12	17.39	17.34	17.29	17.24	17.19
-9.5	-10	18.26	18.21	18.15	18.09	18.04
-7.5	-8	19.14	19.07	19.01	18.94	18.88
-5.5	-6	19.55	19.47	19.40	19.32	19.24
-3.0	-4	19.95	19.87	19.78	19.70	19.61
-1.0	-2	20.36	20.26	20.17	20.07	19.98
1.0	0	20.77	20.66	20.55	20.45	20.35
2.0	1	20.97	20.86	20.74	20.64	20.53
3.0	2	22.45	22.32	22.19	22.07	21.95
5.0	4	25.42	25.26	25.10	24.95	24.80
7.0	6	28.38	28.19	28.00	27.82	27.65
9.0	8	29.28	29.10	28.91	28.60	28.28
11.5	10	30.18	30.00	29.83	29.37	28.91
13.5	12	31.76	31.55	31.33	30.97	30.53
15.5	14	33.34	33.09	32.84	32.57	32.15
16.5	16	34.13	33.86	33.59	33.37	32.96

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Note(1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows
TC :Total cooling capacity (kW)
SHC :Sensible heat capacity (kW)

(7) Wall mounted type (SRK)

(a) Twin type

Model SRK100VNPZJX Indoor unit SRK50ZJX-S1 (2 units) Outdoor unit FDC100VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.78	8.59	7.32	8.82	7.26	9.07	7.21	9.56	7.61	10.06	7.47
13					8.50	6.94	9.00	7.48	9.26	7.43	9.52	7.37	10.06	7.77	10.60	7.63
15					8.88	7.11	9.42	7.65	9.69	7.59	9.98	7.54	10.56	7.94	11.14	7.80
17					9.26	7.27	9.84	7.82	10.12	7.76	10.43	7.71	11.05	8.11	11.67	7.97
19					9.46	7.36	10.05	7.90	10.34	7.85	10.65	7.79	11.29	8.19	11.92	8.04
21					9.65	7.44	10.25	7.99	10.56	7.93	10.88	7.88	11.52	8.27	12.16	8.12
23					9.65	7.44	10.28	8.00	10.59	7.94	10.91	7.89	11.56	8.29	12.21	8.14
25			8.93	7.55	9.64	7.44	10.31	8.01	10.62	7.96	10.95	7.90	11.61	8.30	12.27	8.16
27			8.86	7.52	9.64	7.44	10.34	8.02	10.65	7.97	10.96	7.91	11.57	8.29		
29			8.80	7.49	9.50	7.38	10.17	7.95	10.49	7.91	10.81	7.85	11.45	8.25		
31			8.73	7.46	9.35	7.31	9.99	7.88	10.32	7.84	10.66	7.79	11.32	8.20		
33	8.22	6.98	8.58	7.39	9.21	7.25	9.82	7.81	10.16	7.78	10.51	7.74	11.19	8.16		
35	8.05	6.89	8.44	7.32	9.06	7.18	9.64	7.74	10.00	7.71	10.36	7.68	11.07	8.12		
37	7.92	6.83	8.30	7.26	8.91	7.12	9.46	7.67	9.79	7.63	10.13	7.60	10.80	8.02		
39	7.78	6.76	8.16	7.19	8.75	7.05	9.28	7.59	9.59	7.56	9.90	7.51	10.53	7.93		
41	7.64	6.69	8.02	7.13	8.60	6.99	9.09	7.52	9.38	7.48	9.68	7.43	10.26	7.84		
43	7.50	6.62	7.88	7.07	8.45	6.92	8.91	7.45	9.18	7.40	9.45	7.35	9.99	7.75		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model SRK100VSPZJX Indoor unit SRK50ZJX-S1 (2 units) Outdoor unit FDC100VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.78	8.59	7.32	8.82	7.26	9.07	7.21	9.56	7.61	10.06	7.47
13					8.50	6.94	9.00	7.48	9.26	7.43	9.52	7.37	10.06	7.77	10.60	7.63
15					8.88	7.11	9.42	7.65	9.69	7.59	9.98	7.54	10.56	7.94	11.14	7.80
17					9.26	7.27	9.84	7.82	10.12	7.76	10.43	7.71	11.05	8.11	11.67	7.97
19					9.46	7.36	10.05	7.90	10.34	7.85	10.65	7.79	11.29	8.19	11.92	8.04
21					9.65	7.44	10.25	7.99	10.56	7.93	10.88	7.88	11.52	8.27	12.16	8.12
23					9.65	7.44	10.28	8.00	10.59	7.94	10.91	7.89	11.56	8.29	12.21	8.14
25			8.93	7.55	9.64	7.44	10.31	8.01	10.62	7.96	10.95	7.90	11.61	8.30	12.27	8.16
27			8.86	7.52	9.64	7.44	10.34	8.02	10.65	7.97	10.96	7.91	11.57	8.29		
29			8.80	7.49	9.50	7.38	10.17	7.95	10.49	7.91	10.81	7.85	11.45	8.25		
31			8.73	7.46	9.35	7.31	9.99	7.88	10.32	7.84	10.66	7.79	11.32	8.20		
33	8.22	6.98	8.58	7.39	9.21	7.25	9.82	7.81	10.16	7.78	10.51	7.74	11.19	8.16		
35	8.05	6.89	8.44	7.32	9.06	7.18	9.64	7.74	10.00	7.71	10.36	7.68	11.07	8.12		
37	7.92	6.83	8.30	7.26	8.91	7.12	9.46	7.67	9.79	7.63	10.13	7.60	10.80	8.02		
39	7.78	6.76	8.16	7.19	8.75	7.05	9.28	7.59	9.59	7.56	9.90	7.51	10.53	7.93		
41	7.64	6.69	8.02	7.13	8.60	6.99	9.09	7.52	9.38	7.48	9.68	7.43	10.26	7.84		
43	7.50	6.62	7.88	7.07	8.45	6.92	8.91	7.45	9.18	7.40	9.45	7.35	9.99	7.75		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	5.64	5.62	5.60	5.58	5.56
-17.7	-18	5.97	5.95	5.92	5.90	5.87
-15.7	-16	6.30	6.27	6.25	6.22	6.19
-13.5	-14	6.66	6.63	6.60	6.57	6.54
-11.5	-12	7.03	6.99	6.96	6.93	6.90
-9.5	-10	7.39	7.36	7.32	7.29	7.25
-7.5	-8	7.75	7.72	7.68	7.64	7.60
-5.5	-6	7.92	7.88	7.85	7.80	7.76
-3.0	-4	8.10	8.05	8.01	7.97	7.92
-1.0	-2	8.27	8.22	8.18	8.13	8.08
1.0	0	8.44	8.39	8.34	8.29	8.24
2.0	1	8.52	8.47	8.42	8.37	8.32
3.0	2	9.08	9.03	8.98	8.94	8.90
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

Model SRK125VNPZJX Indoor unit SRK60ZJX-S1 (2 units) Outdoor unit FDC125VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.69	10.74	8.24	11.03	8.16	11.34	8.08	11.96	8.46	12.57	8.26
13					10.63	7.90	11.26	8.44	11.57	8.36	11.91	8.28	12.58	8.66	13.25	8.46
15					11.10	8.10	11.78	8.65	12.11	8.57	12.47	8.49	13.20	8.87	13.92	8.66
17					11.58	8.31	12.29	8.86	12.65	8.78	13.04	8.70	13.82	9.08	14.59	8.87
19					11.82	8.42	12.56	8.97	12.92	8.88	13.32	8.80	14.11	9.18	14.90	8.97
21					12.06	8.53	12.82	9.08	13.19	8.99	13.60	8.91	14.40	9.28	15.20	9.06
23					12.06	8.53	12.85	9.09	13.23	9.01	13.64	8.93	14.45	9.30	15.27	9.08
25			11.16	8.66	12.06	8.53	12.89	9.11	13.27	9.02	13.68	8.94	14.51	9.32	15.34	9.11
27			11.08	8.62	12.05	8.52	12.92	9.12	13.31	9.04	13.69	8.95	14.47	9.31		
29			11.00	8.59	11.87	8.44	12.71	9.03	13.11	8.96	13.51	8.88	14.31	9.25		
31			10.92	8.55	11.69	8.36	12.49	8.94	12.90	8.87	13.32	8.80	14.15	9.20		
33	10.27	8.06	10.72	8.45	11.51	8.28	12.27	8.85	12.70	8.80	13.13	8.73	13.99	9.14		
35	10.07	7.95	10.55	8.37	11.33	8.20	12.06	8.76	12.50	8.72	12.94	8.66	13.83	9.08		
37	9.90	7.87	10.38	8.29	11.13	8.12	11.83	8.67	12.24	8.62	12.66	8.56	13.50	8.97		
39	9.72	7.78	10.20	8.21	10.94	8.03	11.60	8.58	11.99	8.52	12.38	8.45	13.16	8.86		
41	9.55	7.69	10.02	8.13	10.75	7.95	11.37	8.49	11.73	8.42	12.09	8.35	12.82	8.74		
43	9.38	7.61	9.85	8.05	10.56	7.87	11.14	8.39	11.47	8.32	11.81	8.24	12.48	8.63		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model SRK125VSPZJX Indoor unit SRK60ZJX-S1 (2 units) Outdoor unit FDC125VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.69	10.74	8.24	11.03	8.16	11.34	8.08	11.96	8.46	12.57	8.26
13					10.63	7.90	11.26	8.44	11.57	8.36	11.91	8.28	12.58	8.66	13.25	8.46
15					11.10	8.10	11.78	8.65	12.11	8.57	12.47	8.49	13.20	8.87	13.92	8.66
17					11.58	8.31	12.29	8.86	12.65	8.78	13.04	8.70	13.82	9.08	14.59	8.87
19					11.82	8.42	12.56	8.97	12.92	8.88	13.32	8.80	14.11	9.18	14.90	8.97
21					12.06	8.53	12.82	9.08	13.19	8.99	13.60	8.91	14.40	9.28	15.20	9.06
23					12.06	8.53	12.85	9.09	13.23	9.01	13.64	8.93	14.45	9.30	15.27	9.08
25			11.16	8.66	12.06	8.53	12.89	9.11	13.27	9.02	13.68	8.94	14.51	9.32	15.34	9.11
27			11.08	8.62	12.05	8.52	12.92	9.12	13.31	9.04	13.69	8.95	14.47	9.31		
29			11.00	8.59	11.87	8.44	12.71	9.03	13.11	8.96	13.51	8.88	14.31	9.25		
31			10.92	8.55	11.69	8.36	12.49	8.94	12.90	8.87	13.32	8.80	14.15	9.20		
33	10.27	8.06	10.72	8.45	11.51	8.28	12.27	8.85	12.70	8.80	13.13	8.73	13.99	9.14		
35	10.07	7.95	10.55	8.37	11.33	8.20	12.06	8.76	12.50	8.72	12.94	8.66	13.83	9.08		
37	9.90	7.87	10.38	8.29	11.13	8.12	11.83	8.67	12.24	8.62	12.66	8.56	13.50	8.97		
39	9.72	7.78	10.20	8.21	10.94	8.03	11.60	8.58	11.99	8.52	12.38	8.45	13.16	8.86		
41	9.55	7.69	10.02	8.13	10.75	7.95	11.37	8.49	11.73	8.42	12.09	8.35	12.82	8.74		
43	9.38	7.61	9.85	8.05	10.56	7.87	11.14	8.39	11.47	8.32	11.81	8.24	12.48	8.63		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	7.06	7.03	7.00	6.97	6.95
-17.7	-18	7.46	7.43	7.41	7.37	7.34
-15.7	-16	7.87	7.84	7.81	7.77	7.74
-13.5	-14	8.33	8.29	8.26	8.22	8.18
-11.5	-12	8.78	8.74	8.70	8.66	8.62
-9.5	-10	9.24	9.19	9.15	9.11	9.06
-7.5	-8	9.69	9.65	9.60	9.55	9.50
-5.5	-6	9.91	9.86	9.81	9.75	9.70
-3.0	-4	10.12	10.07	10.01	9.96	9.90
-1.0	-2	10.33	10.28	10.22	10.16	10.10
1.0	0	10.55	10.49	10.43	10.36	10.30
2.0	1	10.65	10.59	10.53	10.47	10.40
3.0	2	11.36	11.29	11.22	11.18	11.13
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

(b) Triple type

Model SRK140VNTZJX Indoor unit SRK50ZJX-S1 (3 units) Outdoor unit FDC140VN

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.84	12.02	10.65	12.35	10.57	12.70	10.49	13.39	11.10	14.08	10.90
13					11.90	10.06	12.61	10.88	12.96	10.80	13.33	10.72	14.09	11.33	14.84	11.13
15					12.43	10.28	13.19	11.10	13.57	11.02	13.97	10.95	14.78	11.56	15.59	11.36
17					12.96	10.51	13.77	11.33	14.17	11.25	14.61	11.18	15.48	11.79	16.34	11.59
19					13.24	10.63	14.06	11.45	14.48	11.37	14.92	11.29	15.80	11.90	16.68	11.69
21					13.51	10.74	14.36	11.57	14.78	11.49	15.23	11.41	16.12	12.01	17.02	11.80
23					13.51	10.74	14.40	11.58	14.82	11.50	15.28	11.43	16.19	12.03	17.10	11.82
25			12.50	10.91	13.50	10.74	14.43	11.59	14.86	11.52	15.33	11.44	16.25	12.05	17.18	11.85
27			12.41	10.87	13.50	10.74	14.47	11.61	14.91	11.54	15.34	11.45	16.20	12.03		
29			12.32	10.83	13.29	10.65	14.23	11.51	14.68	11.45	15.13	11.37	16.02	11.97		
31			12.23	10.79	13.09	10.56	13.99	11.42	14.45	11.36	14.92	11.29	15.85	11.92		
33	11.51	10.06	12.01	10.68	12.89	10.48	13.75	11.32	14.23	11.27	14.71	11.22	15.67	11.85		
35	11.28	9.95	11.82	10.60	12.68	10.39	13.50	11.22	14.00	11.19	14.50	11.14	15.49	11.79		
37	11.08	9.85	11.62	10.51	12.47	10.30	13.25	11.13	13.71	11.08	14.18	11.02	15.12	11.67		
39	10.89	9.76	11.43	10.42	12.26	10.21	12.99	11.02	13.43	10.97	13.86	10.91	14.74	11.54		
41	10.70	9.67	11.23	10.33	12.04	10.12	12.73	10.92	13.14	10.86	13.55	10.79	14.36	11.42		
43	10.51	9.58	11.03	10.24	11.83	10.03	12.47	10.82	12.85	10.75	13.23	10.68	13.98	11.29		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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Model SRK140VSTZJX Indoor unit SRK50ZJX-S1 (3 units) Outdoor unit FDC140VS

Cool Mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 DB		21 DB		23 DB		26 DB		27 DB		28 DB		31 DB		33 DB	
	12 WB		14 WB		16 WB		18 WB		19 WB		20 WB		22 WB		24 WB	
DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.37	9.84	12.02	10.65	12.35	10.57	12.70	10.49	13.39	11.10	14.08	10.90
13					11.90	10.06	12.61	10.88	12.96	10.80	13.33	10.72	14.09	11.33	14.84	11.13
15					12.43	10.28	13.19	11.10	13.57	11.02	13.97	10.95	14.78	11.56	15.59	11.36
17					12.96	10.51	13.77	11.33	14.17	11.25	14.61	11.18	15.48	11.79	16.34	11.59
19					13.24	10.63	14.06	11.45	14.48	11.37	14.92	11.29	15.80	11.90	16.68	11.69
21					13.51	10.74	14.36	11.57	14.78	11.49	15.23	11.41	16.12	12.01	17.02	11.80
23					13.51	10.74	14.40	11.58	14.82	11.50	15.28	11.43	16.19	12.03	17.10	11.82
25			12.50	10.91	13.50	10.74	14.43	11.59	14.86	11.52	15.33	11.44	16.25	12.05	17.18	11.85
27			12.41	10.87	13.50	10.74	14.47	11.61	14.91	11.54	15.34	11.45	16.20	12.03		
29			12.32	10.83	13.29	10.65	14.23	11.51	14.68	11.45	15.13	11.37	16.02	11.97		
31			12.23	10.79	13.09	10.56	13.99	11.42	14.45	11.36	14.92	11.29	15.85	11.92		
33	11.51	10.06	12.01	10.68	12.89	10.48	13.75	11.32	14.23	11.27	14.71	11.22	15.67	11.85		
35	11.28	9.95	11.82	10.60	12.68	10.39	13.50	11.22	14.00	11.19	14.50	11.14	15.49	11.79		
37	11.08	9.85	11.62	10.51	12.47	10.30	13.25	11.13	13.71	11.08	14.18	11.02	15.12	11.67		
39	10.89	9.76	11.43	10.42	12.26	10.21	12.99	11.02	13.43	10.97	13.86	10.91	14.74	11.54		
41	10.70	9.67	11.23	10.33	12.04	10.12	12.73	10.92	13.14	10.86	13.55	10.79	14.36	11.42		
43	10.51	9.58	11.03	10.24	11.83	10.03	12.47	10.82	12.85	10.75	13.23	10.68	13.98	11.29		

Heat Mode (kW)

Outdoor air temp.		Indoor air temperature DB				
DB	WB	16	18	20	22	24
-19.8	-20	8.06	8.03	8.00	7.97	7.94
-17.7	-18	8.53	8.50	8.46	8.43	8.39
-15.7	-16	9.00	8.96	8.92	8.88	8.85
-13.5	-14	9.52	9.48	9.43	9.39	9.35
-11.5	-12	10.04	9.99	9.95	9.90	9.85
-9.5	-10	10.56	10.51	10.46	10.41	10.36
-7.5	-8	11.08	11.02	10.97	10.91	10.86
-5.5	-6	11.32	11.26	11.21	11.15	11.09
-3.0	-4	11.56	11.50	11.44	11.38	11.31
-1.0	-2	11.81	11.75	11.68	11.61	11.54
1.0	0	12.05	11.99	11.92	11.84	11.77
2.0	1	12.18	12.11	12.04	11.96	11.89
3.0	2	12.98	12.90	12.83	12.77	12.72
5.0	4	14.58	14.50	14.41	14.40	14.38
7.0	6	16.19	16.09	16.00	16.02	16.05
9.0	8	16.83	16.73	16.63	16.59	16.55
11.5	10	17.46	17.37	17.27	17.17	17.06
13.5	12	18.44	18.33	18.22	18.08	18.00
15.5	14	19.41	19.29	19.17	18.99	18.95
16.5	16	19.90	19.77	19.64	19.45	19.42

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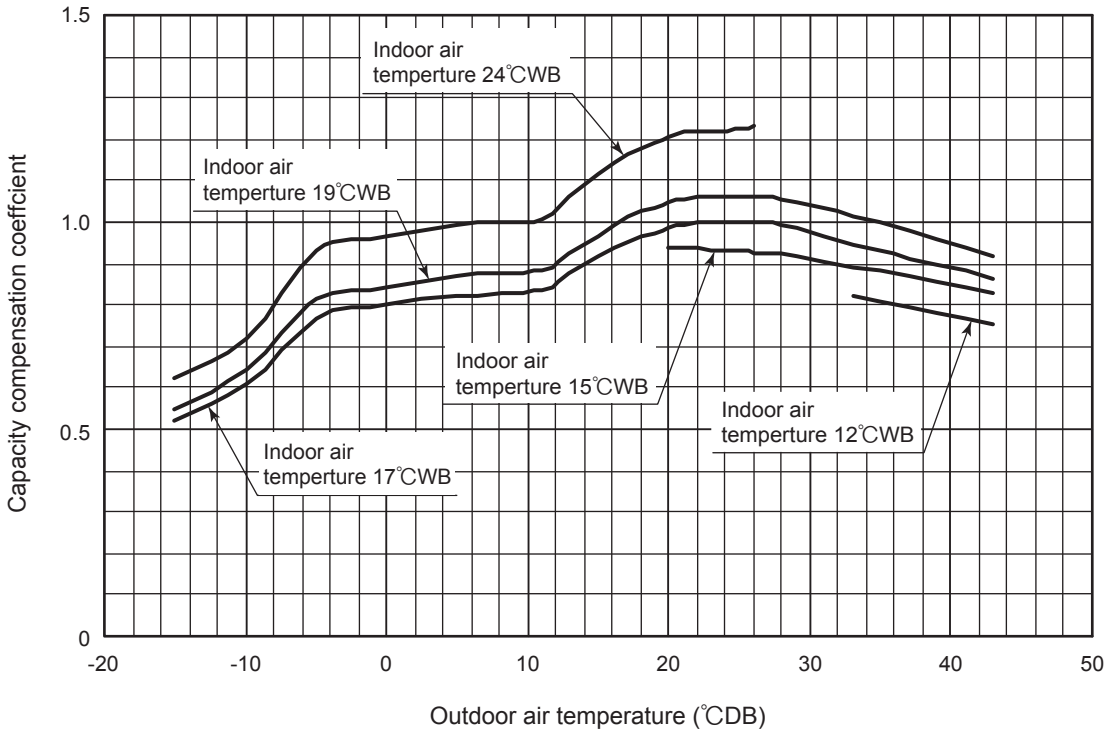
Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7.5m
Level difference of Zero.
(3) Symbols are as follows.
TC : Total cooling capacity
SHC : Sensible heat capacity

[References data]

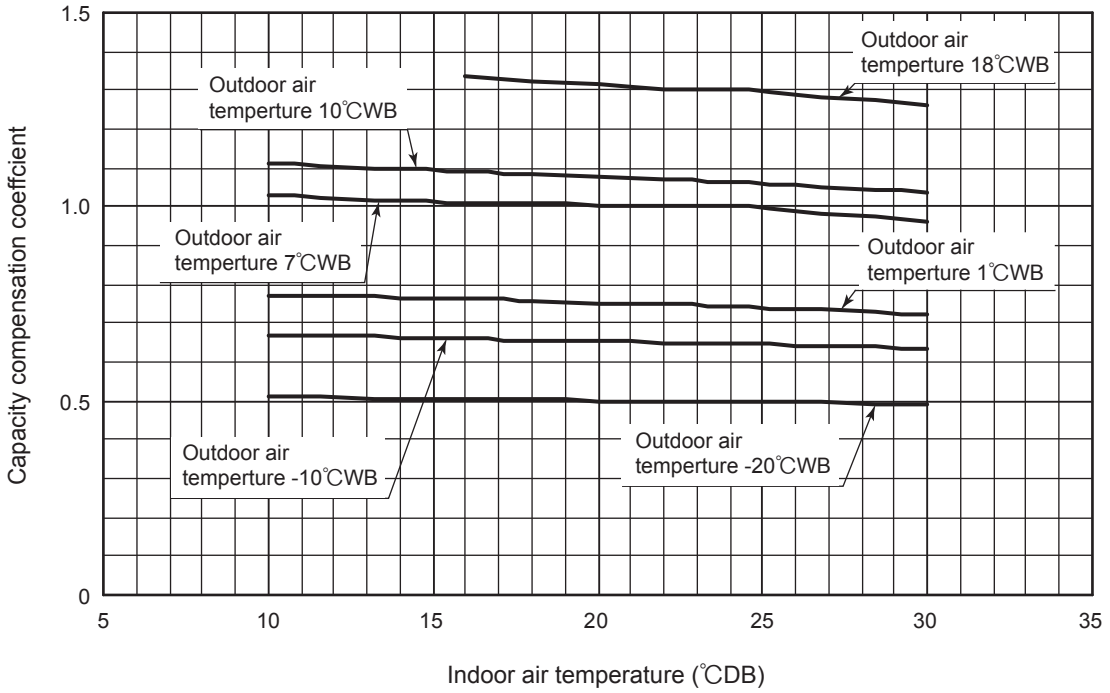
Capacity variation against outdoor and indoor temperature at rated capacity condition.

(I) **Models FDC100, 125, 140VN, 100, 125, 140VS**

① **Cooling**

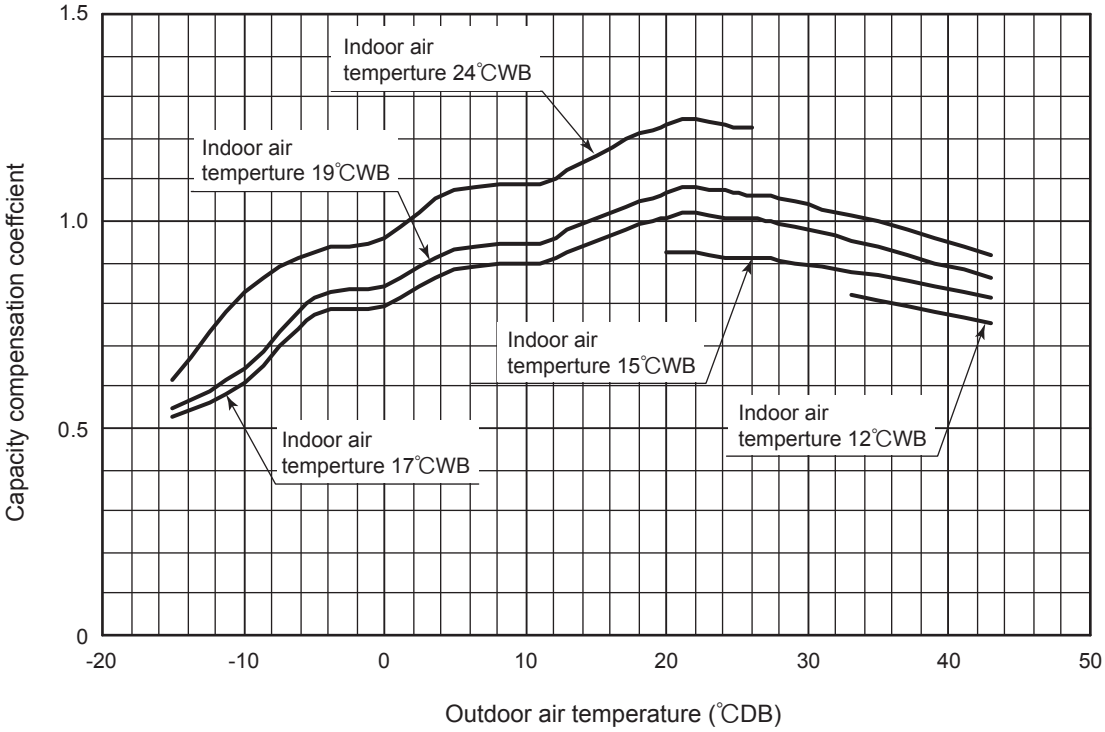


② **Heating**

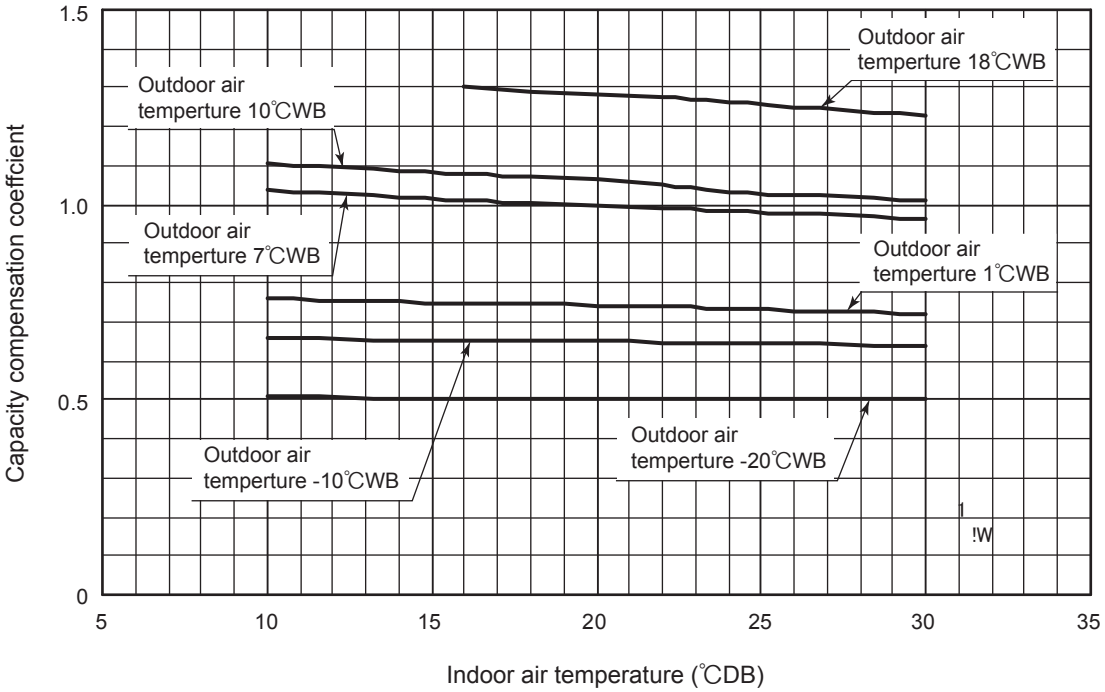


(Ⅱ) Model FDC200VS

① Cooling

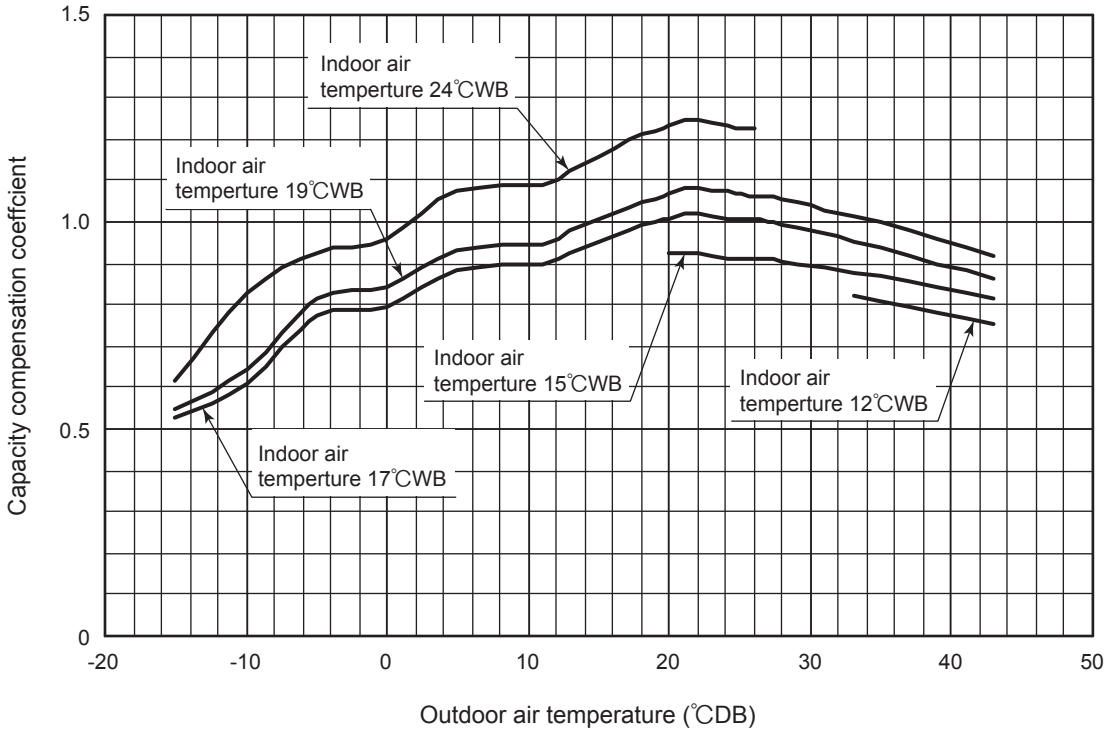


② Heating

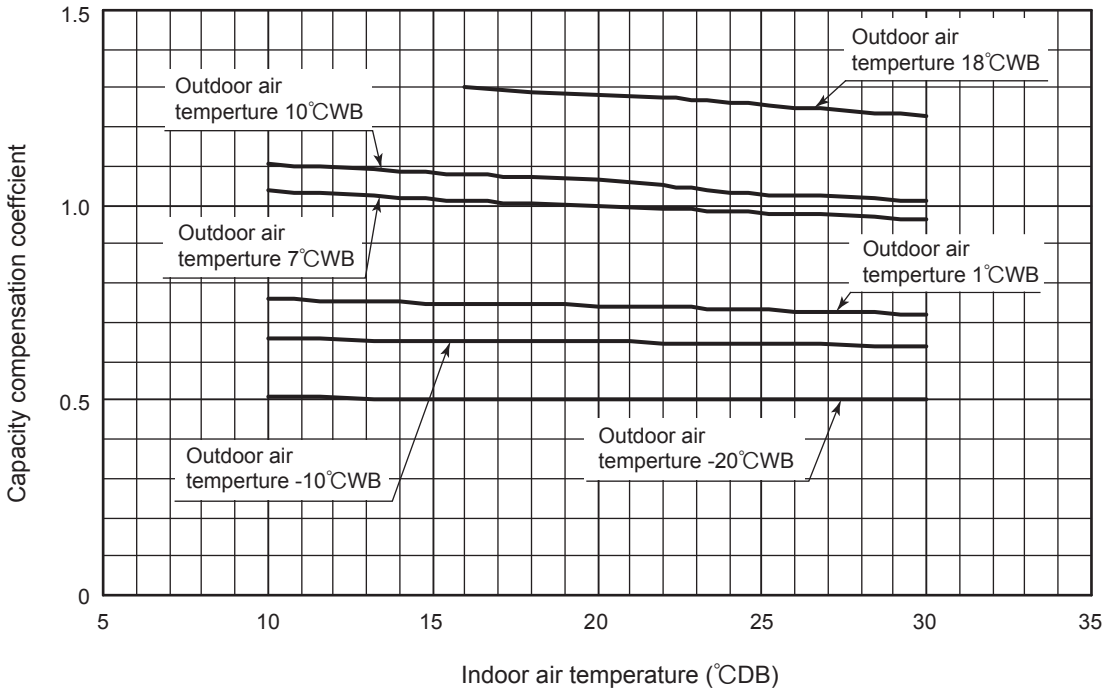


(Ⅲ) Model FDC250VS

① Cooling



② Heating



1.9.2 Correction of cooling and heating capacity in relation to air flow rate control (fan speed)

Fan speed	P-Hi or Hi[1]	Me	Lo
Coefficient	1.00	0.97	0.95

Note (1) FDU and SRK models only

1.9.3 Correction of cooling and heating capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling and heating capacity in relation to the one way equivalent piping length between the indoor and outdoor units.

Models 100 ~ 140

Equivalent piping length [1](m)			7.5	10	15	20	25	30	35	40	45	50	55
Heating			1	1	1	1	1	0.998	0.998	0.993	0.993	0.988	0.988
Cooling	100 model	ϕ 15.88	1	0.991	0.978	0.964	0.951	0.937	0.924	0.910	0.897	0.883	0.870
	125 model		1	0.986	0.968	0.950	0.932	0.914	0.896	0.878	0.860	0.842	0.824
	140 model		1	0.985	0.966	0.946	0.927	0.907	0.888	0.868	0.849	0.829	0.810
	100 model	ϕ 19.05	1.016	1.013	1.007	1.002	0.996	0.991	0.985	0.980	0.974	0.969	0.963
	125 model		1.022	1.018	1.009	1.001	0.992	0.984	0.975	0.967	0.958	0.950	0.941
	140 model		1.026	1.021	1.011	1.002	0.992	0.983	0.973	0.964	0.954	0.945	0.935

Note (1) Calculate the equivalent length using the following formula.
However, install the piping so that the piping length is within +5 m of the limit length (actual length) for the respective types.

Models 200, 250

Equivalent piping length [1] (m)			7.5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
Heating			1	0.998	0.995	0.991	0.988	0.984	0.981	0.977	0.974	0.970	0.967	0.963	0.960	0.956	0.953
Cooling	200 model	ϕ 25.4	1.007	1.005	1.002	0.998	0.995	0.991	0.988	0.984	0.981	0.977	0.974	0.970	0.967	0.963	0.960
	250 model		1.012	1.008	1.002	0.996	0.990	0.984	0.978	0.972	0.966	0.960	0.953	0.947	0.941	0.935	0.929
	200 model	ϕ 22.22	1	0.997	0.991	0.984	0.978	0.971	0.965	–	–	–	–	–	–	–	–
	250 model		1	0.995	0.985	0.975	0.965	0.954	0.944	–	–	–	–	–	–	–	–
	200 model	ϕ 28.58	1.010	1.009	1.007	1.005	1.003	1.001	0.999	0.997	0.995	0.993	0.991	0.989	0.987	0.985	0.983
	250 model		1.016	1.015	1.011	1.008	1.004	1.001	0.997	0.994	0.990	0.987	0.983	0.980	0.976	0.973	0.969

Note (1) Calculate the equivalent length using the following formula.
However, install the piping so that the piping length is within +5 m of the limit length (actual length) for the respective types.

• Equivalent Length =Actual Length + (Equivalent bend length x number of bends in the piping.)
Equivalent length per bend.

Gas Pipe Diameter (mm)	ϕ 12.7	ϕ 15.88	ϕ 19.05	ϕ 22.22	ϕ 25.4	ϕ 28.58
Equivalent Bend Length	0.20	0.25	0.30	0.35	0.40	0.45

1.9.4 Height difference between the indoor unit and outdoor unit

When the outdoor unit is located below indoor units in cooling mode, or when the outdoor unit is located above indoor units in heating mode, the correction coefficient mentioned in the below table should be subtracted from the value in the above table.

Height difference between the indoor unit and outdoor unit in the vertical height difference	5m	10m	15m	20m	25m	30m
Adjustment coefficient	0.99	0.98	0.97	0.96	0.95	0.94

Piping length limitations

Item \ Model	100, 125, 140	200, 250
Max. one way piping length	50m	70m
Max. vertical height difference	Outdoor unit is higher 30m Outdoor unit is lower 15m	

Note (1) Values in the table indicate the one way piping length between the indoor and outdoor units.

How to obtain the cooling and heating capacity

Example : The net cooling capacity of the model FDUM100VNVF with the air flow "P-High", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0℃ and outdoor dry-bulb temperature 35℃ is

Net cooling capacity = 10.0 × 1.00 × 0.978 × 0.99 ≒ 9.7kW

- 10.0: Net cooling total capacity of FDUM100VNVF (Outdoor temp. : 35℃DB Indoor temp. : 19℃WB) shown in table 1.9.1
- 1.00: Air flow : P-Hi shown in table 1.9.2
- 0.978: Piping length :15m (Gas pipe size is ϕ15.88) shown in table 1.9.3
- 0.99: Height diff. :5m (Outdoor unit : below) shown in table 1.9.4

1.10 APPLICATION DATA

1.10.1 Installation of indoor unit

(1) Ceiling cassette-4way type (FDT)

PJF012D016C D

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 244. For remote controller installation, refer to page 259. For wireless kit installation, refer to page 478. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 273.
This unit always be used with the panel.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Before installation

- Install correctly according to the installation manual.
- Confirm the following points:
  - ○Unit type/Power supply specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For unit hanging		For refrigerant pipe			For drain pipe			
Flat washer (M10)	Level gauge	Pipe cover(big)	Pipe cover (small)	Strap	Pipe cover(big)	Pipe cover(small)	Drain hose	Hose clamp
8	1	1	1	4	1	1	1	1
For unit hanging	For unit hanging and adjustment	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting

②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.
- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.
  This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above.
  If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote controller and the air conditioner might not work properly.)

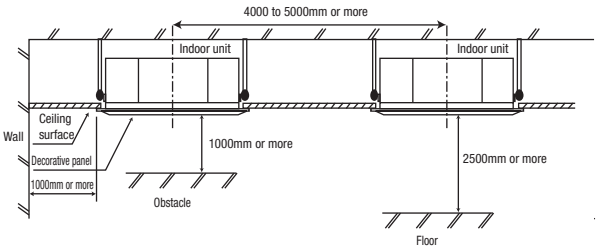
②Check if the place where the air conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

③If there are 2 units of wireless type, keep them away for more than 6m to avoid malfunction due to cross communication.

④When plural indoor units are installed nearby, keep them away for more than 4 to 5m.

Space for installation and service

- When it is not possible to keep enough space between indoor unit and wall or between indoor units, close the air supply port where it is not possible to keep space and confirm there is no short circuit of airflow.
- Install the indoor unit at a height of more than 2.5m above the floor.



Where there are pipe joints on the way of embedded piping, provide adequate openings for inspection of the joints.

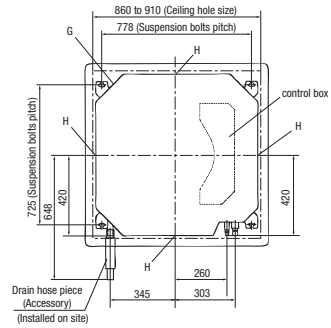
Set blow-out pattern

- Select the most proper number of blow-out air supply port direction from 4 way, 3 way or 2 way according to the shape of the room and installation position. (1 way is not available.)
- If it is necessary to change the number of air supply port, prepare the covering materials.
- Instruct the user not to use low fan speed when 2way or 3way air supply is used.
- Do not use 2way air supply port under high temperature and humidity environment. (Otherwise it could cause condensation and leakage of water.)
- It is possible to set the airflow direction port by port independently. Refer to tne user's manual for details.

③Preparation before installation

- If suspension bolt becomes longer, do reinforcement of earthquake resistant.
  - ○For grid ceiling
    When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
  - ○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
    When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
- Prepare four (4) sets of suspension bolt, nut and spring washer (M10 or M8) on site.

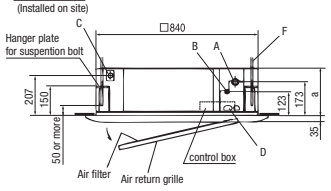
Ceiling opening, Suspension bolts pitch, Pipe position

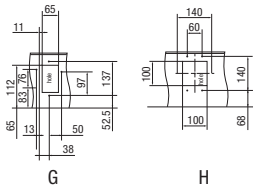


(mm)

Series	Type	a
Single Split (PAC) series	40 to 71 type	246
	100 to 140 type	298
VRF (KX) series	28 to 71 type	246
	90 to 160 type	298

Symbol	
A	Gas piping
B	Liquid piping
C	Drain piping
D	Hole for wiring
F	Suspension bolts
G	Outside air opening for ducting
H	Air outlet opening for ducting

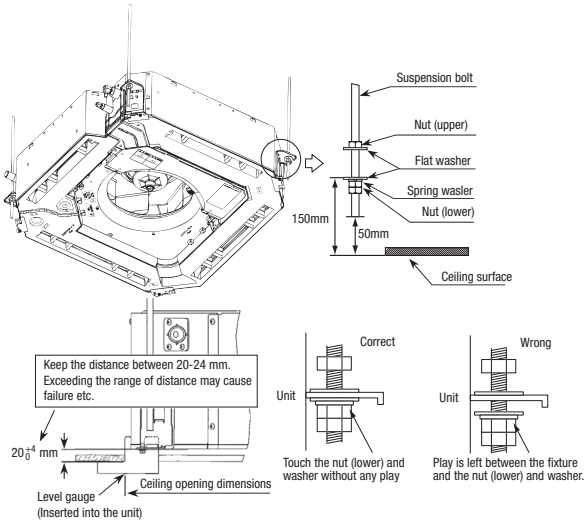




④Installation of indoor unit

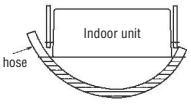
Work procedure

1. Prepare a ceiling hole with the size of from 860mm × 860mm to 910mm × 910mm referring to the template attached in the package.
2. Arrange the suspension bolt at the right position (725mm×778mm).
3. Make sure to use four suspension bolts and fix them so as to be able to hold 500N load.
4. Ensure that the lower end of the suspension bolt should be 50mm above the ceiling plane. Temporarily put the four lower nuts 150mm above the ceiling plane and the upper nuts on distant place from the lower nuts in order not to obstruct hanging the indoor unit or adjust the indoor unit position, and then hang the indoor unit.
5. Adjust the indoor unit position after hanging it by inserting the level gauge attached on the package into the air supply port and checking if the gap between the ceiling plane and the indoor unit is appropriate. In order to adjust the indoor unit position, adjust the lower nuts while the upper nuts are put on distant place. Confirm there is no backlash between the hanger plate for suspension bolt and the lower nut and washer.



④Installation of indoor unit (continued)

6. Make sure to install the indoor unit horizontally. Confirm the levelness of the indoor unit with a level gauge or transparent hose filled with water. Keep the height difference at both ends of the indoor unit within 3mm.
7. Tighten four upper nuts and fix the unit after height and levelness adjustment.



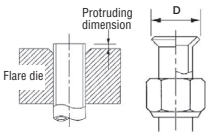
Caution

- Do not adjust the height by adjusting upper nuts. It will cause unexpected stress on the indoor unit and it will lead to deformation of the unit, failure of attaching a panel, and generating noise from the fan.
- Make sure to install the indoor unit horizontally and set the gap between the unit underside and the ceiling plane properly. Improper installation may cause air leakage, dew condensation, water leakage and noise.
- Even after decorative panel attached, still the unit height can be adjusted finely. Refer to the installation manual for decorative panel for details.
- Make sure there is no gap between decoration panel and ceiling surface, and between decoration panel and the indoor unit. The gap may cause air leakage, dew condensation and water leakage.
- In case decorative panel is not installed at the same time, or ceiling material is installed after the unit installed, put the cardboard template for installation attached on the package (packing material of cardboard box) on the bottom of the unit in order to avoid dust coming into the indoor unit.

⑤Refrigerant pipe

Caution

- Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
  Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
  1) In case of reuse: Do not use old flare nut, but use the one attached to the unit or compatible with JIS B 8607, Class 2.
  2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N·m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0 ~ 0.5	0.7 ~ 1.3	8.9 ~ 9.1	14 ~ 18
9.52	0.8			12.8 ~ 13.2	32 ~ 42
12.7	0.8			16.2 ~ 16.6	49 ~ 61
15.88	1			19.3 ~ 19.7	68 ~ 72
19.05	1.2			23.6 ~ 24.0	100 ~ 120

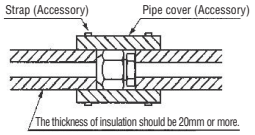
- Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- Use special tools for R410 refrigerant.

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   (Gas may come out at this time, but it is not abnormal.)
   - Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
   ※Do a flare connection as follows:
   - Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   - When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table below. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   - Make sure to insulate both gas pipes and liquid pipes completely.
     ※Incomplete insulation may cause dew condensation or water dropping.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

⑤Refrigerant pipe (continued)

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion. Refrigerating machine oil may be applied to the internal surface of flare only.



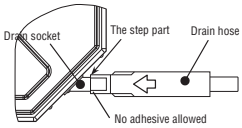
⑥Drain pipe

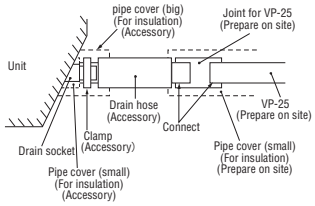
Caution

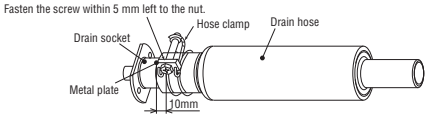
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

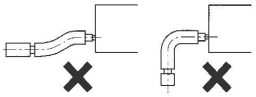
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   - Do not apply adhesives on this end.



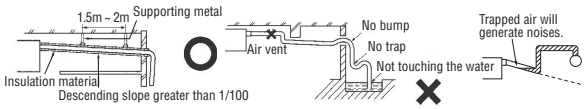




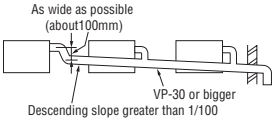
2. Prepare a joint for connecting VP-25 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP-25 pipe (prepare on site).
   ※As for drain pipe, apply VP-25 made of rigid PVC which is on the market.
   - Make sure that the adhesive will not get into the supplied drain hose.
     It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   - The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - Do nt set up air vent.



- When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP-30 or bigger size for main drain pipe.

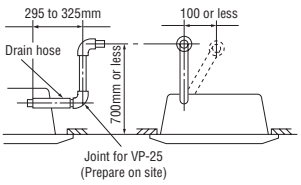


4. Insulate the drain pipe.
   - Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

⑥Drain pipe (continued)

Drain up

- The position for drain pipe outlet can be raised up to 700mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



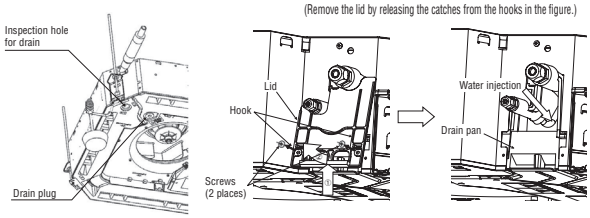
Drain test

- After installation of drain pipe, make sure that drain system work in good condition and no water leakage from joint and drain pan. Check if the motor sound of drain pump is normal or not.
- Do drain test even if installation of heating season.
- For new building cases, make sure to complete the test before hanging the ceiling.

1. Fill water of approx. 1,000 cc in the drain pan of the main unit. Take care not to wet electrical equipment such as the drain pump, etc.
   Inject water through the blow outlet using a feed water pump, or the like, or through the refrigerant pipe joint.

●When injecting water through the blow outlet

●When removing the lid to inject water through the refrigerant joint
(1) Remove screws at 2 places.
(2) While pressing the lid in the direction ①, pull and remove the lid in the direction ②.
(Remove the lid by releasing the catches from the hooks in the figure.)



2. Make sure that water is drained out properly and there is no water leakage from any joints of the drain pipe at the test.
   Confirm that the water is properly drained out while the drain motor is operating. At the drain socket (transparent), it is possible to check if the water is drained out properly.
3. Unplug the drain plug on the indoor unit to remove remaining water on the drain pan after the test, and re-plug it. And insulate the drain pipe properly finally.

Drain pump operation

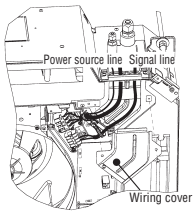
○In case electrical wiring work finished
Drain pump can be operated by remote controller (wired).
For the operation method, refer to Operation for drain pump in the installation manual for wiring work.

○In case electrical wiring work not finished
Drain pump will run continuously when the dip switch"SW7-1" on the indoor unit PCB is turned ON, the Connector CNB is disconnected, and then the power supply (230VAC on the terminal block ① and ②) is turned ON.
Make sure to turn OFF "SW7-1" and reconnect the Connector CNB after the test.

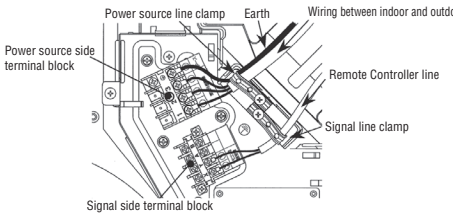
⑦Wiring-out position and wiring connection

- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- Be sure to do D type earth work.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (3 screws) and the wiring cover (2 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamps.
4. Install the removed parts back to original place.

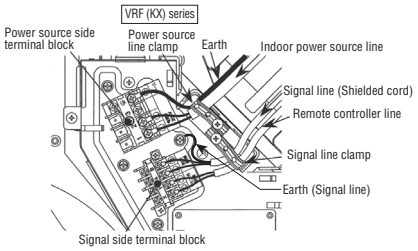


Single Split (PAC) series



⑦Wiring-out position and wiring connection (continued)

VRF (KX) series



⑧Panel installation

- Attach the panel on the indoor unit after electrical wiring work.
- Refer to attached manual for panel installation for details.

⑨Check list after installation

- Check the following items after all installation work completed.

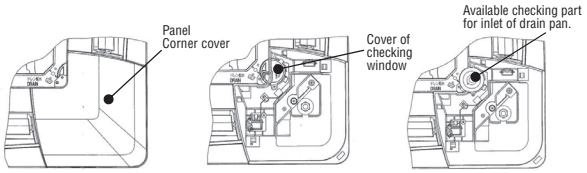
Check if;	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	

⑩How to check the dirt of drain pan (Maintenance)

The method of checking the dirt of drain pan

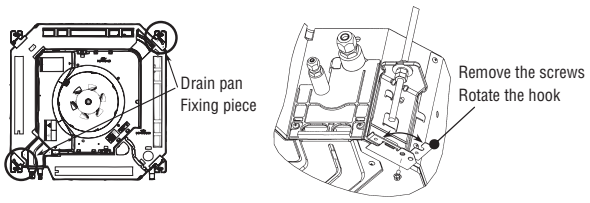
- It is possible to check the dirt for inlet of drain pan without detaching the panel.
  (Inspection is not possible when the high efficient filter and option spacer is installed.)

1. Open the air return grille and remove the panel corner cover on drain pan side.
2. Remove the cover of inspection window. (1screw)
3. Check the drain pan from the inspection window.
   If the drain pan is very dirty, remove the drain pan and clean it.
4. After checking of the dirty of drain pan, restore the cover of the inspection window securely. Improper restoration of the cover may cause dew condensation and water leakage.



Attention for removing drain pan

- The fixing components have been attached the with drain pan. Pay attention to these components during installation and removing. Take off the hanging hook after removing four screws. During the installation of drain pan, fix the drain pan firmly by using four screws after hanging it up with the fixing hook.



PANEL INSTALLATION MANUAL

PJF012D003C F

Read this manual together with the indoor unit's installation manual.

⚠ WARNING

- **Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal. Loose connection or hold will cause abnormal heat generation or fire.**
- **Make sure the power supply is turned off when electric wiring work. Otherwise, electric shock, malfunction and improper running may occur.**

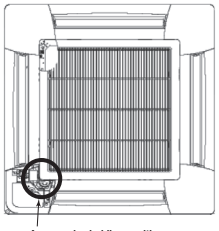
① Before installation

- Follow installation manual carefully, and install the panel properly.
- Check the following items.
  - ○ Accessories

Accessories

Bolt		4 pieces	For panel installation
Strap		4 pieces	For avoiding the corner panel from falling
Screw		4 pieces	For fixing the corner panel

Note: Accessories are laid in the position removing the corner panel.

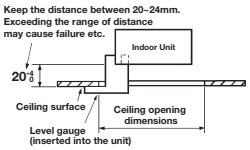


② Checking the indoor unit installation position

- Read this manual together with the air conditioner installation manual carefully.
- Check if the opening size for the indoor unit is correct with the level gauge supplied in the indoor unit.
- Check if the gap between the ceiling plane and the indoor unit is correct by inserting the level gauge into the air outlet port of the indoor unit. (See below drawing)
- Adjust the installation elevation if necessary.

Caution

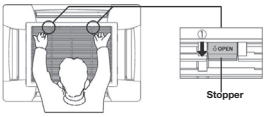
If there is a height difference beyond the design limit between the installation level of the indoor unit and the ceiling plane, the panel may be subject to excessive stress during installation, it may cause distortion and damage.



- The installation level of the indoor unit can be adjusted finely from the opening provided on the corner, even after panel is attached. (Refer to ⑥ Attaching the panel for details.)

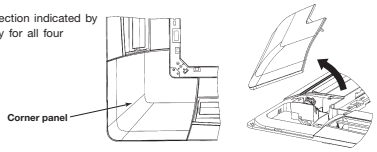
③ Removing the air return grille

1. Hold the stoppers on the air return grille (2 places) toward OPEN direction, open the air return grille.
2. Remove the hooks of the air return grille from the decorative panel while it is in the open position.



④ Removing a corner panel

- Pull the corner panel toward the direction indicated by the arrow and remove it. (Same way for all four corner panels)



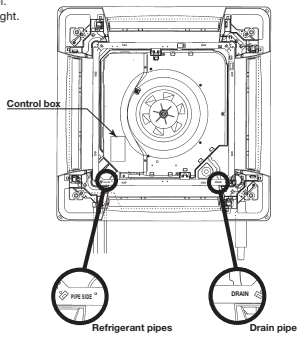
⑤ Orientation of the panel installation

Take note that there is an orientation to install the panel.

- Attach the panel with the orientation shown on the right.
- Align the "PIPE SIDE" mark (on the panel) with the refrigerant pipes on the indoor unit.
- Align the "DRAIN" mark (on the panel) with the drain pipe on the indoor unit.

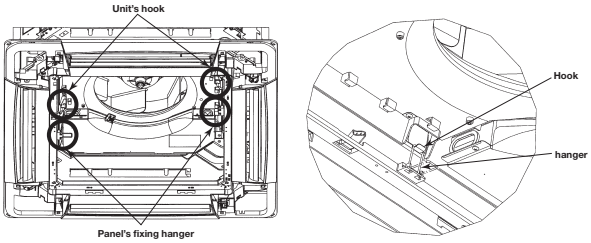
CAUTION

In case the orientation of the panel is not correct, it will lead to air leakage and also it is not possible to connect the louver motor wiring.



⑥ Attaching the panel

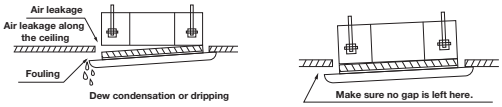
1. Temporary attaching
   - Lift up the hanger (2 places) on the panel for temporary support.
   - Hang the panel on the hook on the indoor unit.



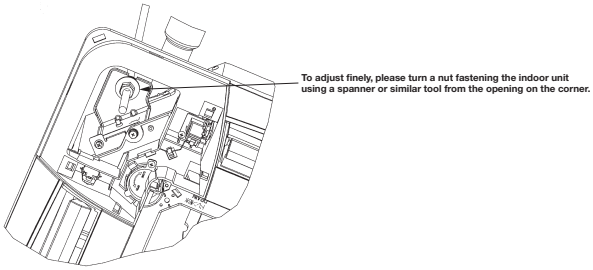
2. Fix the panel on the indoor unit
   - Fasten the panel on the indoor unit with the four bolts supplied with the panel.

Caution

- Improperly tightened hanging bolts can cause the problems listed below, so make sure that you have tightened them securely.
- If there is a gap remaining between the ceiling and the decorative panel even after the hanging bolts are tightened, adjust the installation level of the indoor unit again.



- It is possible to adjust the installation height of the indoor unit with the panel attached as long as there is no influence on the drain pipe inclination and/or the indoor unit levelness.

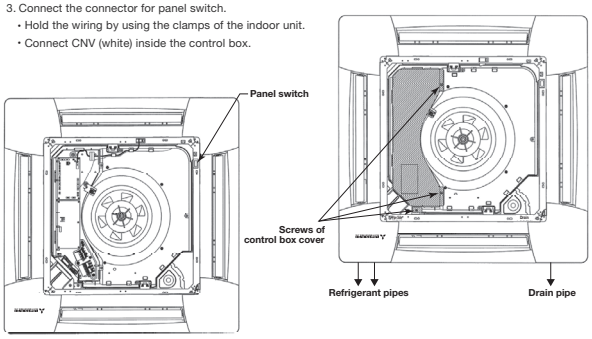


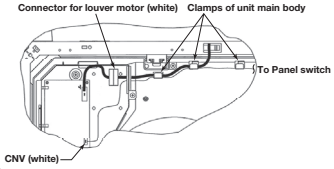
Caution

Make sure there is no stress given on the panel when adjusting the height of the indoor unit to avoid unexpected distortion. It may cause the distortion of panel or failing to close the air return grille.

⑦ Electrical wiring

1. After removing three screws of control box, detach the cover of control box (the hatched part).
2. Connect the connector for louver motor (white 20P).
   - Hold the wiring by using the clamps of the indoor unit.
   - Hold the connector inside the control box.
3. Connect the connector for panel switch.
   - Hold the wiring by using the clamps of the indoor unit.
   - Connect CNV (white) inside the control box.



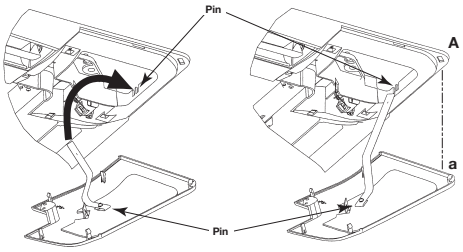


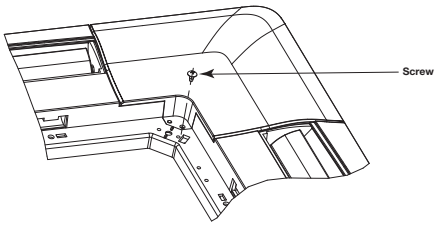
CAUTION

- If the air return grill is opened, the panel switch is turned off so that the air-conditioner cannot be operated any more.
- To start the air conditioner, close the air return grill.

⑧ Attaching a corner panel

1. To avoid unexpected falling of the corner panel, put the strap onto the corner panel's pin with turning the strap up.
2. Then hang the strap of a corner panel onto the decorative panel's pin.
3. First insert the part "a" of a corner panel into the part "A" of the decorative panel, and then engage four hooks.





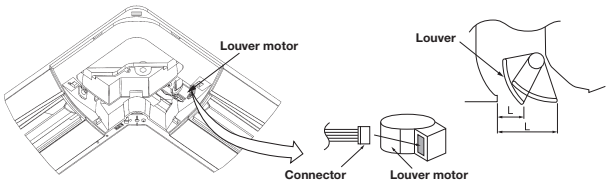
4. Fix with screw.

⑨ How to set the airflow direction

It is possible to change the movable range of the louver on the air outlet from the wired remote controller. Once the top and bottom position is set, the louver will swing within the range between the top and the bottom when swing operation is chosen. It is also possible to apply different setting to each louver.

For the setting method of the louver's operating range, refer to the instruction manual of the wired remote controller.

If it is necessary to fix the louver position manually, follow the procedure mentioned below.
1. Shut off the main power switch.
2. Unplug the connector of the louver motor which you want to fix the position. Make sure to insulate unplugged connectors electrically with a vinyl tape.
3. Adjust the louver position slowly by hand so as to be within the applicable range mentioned below table.



<Range of louver setting>

Vertical airflow direction	Horizontal 0°	Downwards 45°
Dimension L (mm)	43	26

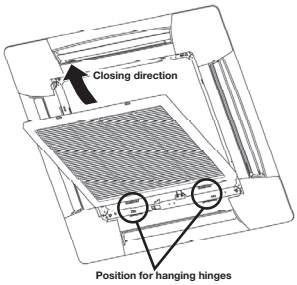
※It can be set between 26~43mm freely.

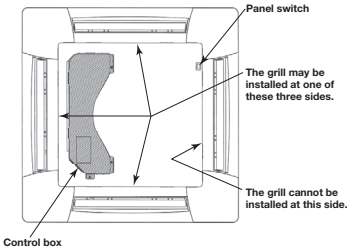
Caution
- Any automatic control or operation from the remote controller will be disabled on the louver whose position is fixed in the above way.
- Do not set a louver beyond the specified range. Failure to observe this instruction may result in dripping, dew condensation, the fouling of the ceiling and the malfunctioning of the unit.

⑩ Attaching the air return grille

To attach the air return grille, follow the procedure described in ③ Removing the air return grille in the reverse order.
1. Hang the hooks of the air return grille in the hole of the panel. (The hooks of the grille can be hanged in three side of the panel as following.)
2. After the grille is hanged, close the grille while the stoppers on the grille (2 places) are kept pressed to "OPEN" direction. When the grille comes to the original position, release the stoppers to hold the grille. Make sure to hear the sound of "CLICK" in both stoppers.

<Installation>



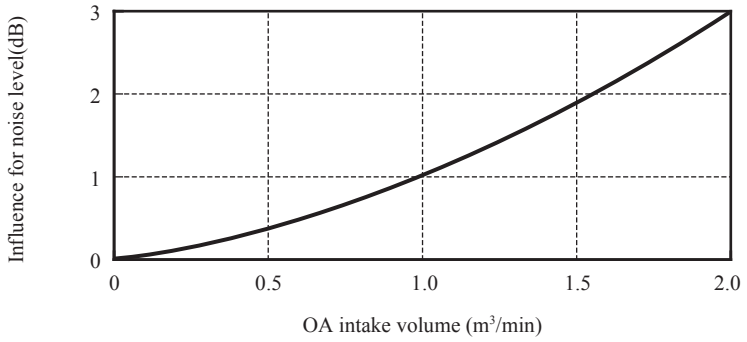


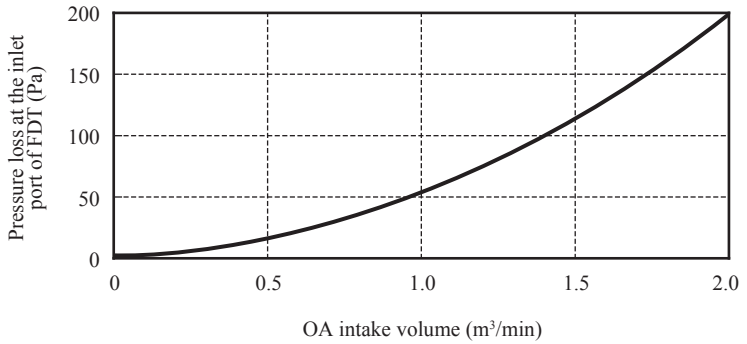
Caution
- Attaching the air return grille from the hinge side.
- Be careful in air return grille attaching, unstable attaching may cause grille falling.
- Repair or replace the distorted, broken stopper at once, or the grille falling may occur.

OUTDOOR AIR (OA) INTAKE FOR FDT

If it is required to intake OA through FDT unit, make sure to check following points carefully in order to conform to the requirement of customer.
If the OA intake volume through FDT unit is not satisfied with the required ventilation air volume, consider to install an indepemdent ventilation system.

1) Be sure to calculate cooling/heating load considering the ventilation heat load and to decide the air-conditioning system.
2) Be sure the OA intake volume to FDT unit should not exceed 20% of the Supply Air (SA) volume of FDT unit and it should be less than $2m^3$/min.
3) Be sure to decide the OA intake volume considering the mixed air temperature will be within the usage temperature range of FDT unit.
   Especially in following case, please consider to intake OA after processing OA or reducing the OA intake volume.
4) Be sure to equip a suitable filter for OA intaken in order to protect the dust.
   (Because OA does not pass through the filter equipped on FDT unit)
5) Be sure to insulate OA duct.
   (If not, it may have dew condensation.)
6) Be sure to interlock the booster fan for OA with the fan of FDT unit by using CNT connector.
   (If not, the dust trapped on the filter of FDT unit may be blown out to the room by the OA being intaken during the fan of FDT unit stopping)
7) Be sure to select a suitable booster fan for OA considering the pressure loss in the OA duct and the pressure loss at the inlet port of FDT with following diagram.
   (Please take into consideration the noise level as well)





<Selection of booster fan>

Booster fan should have a static pressure calculated with following formula

Static pressure of booster fan

= the pressure loss at the inlet port of FDT (from above diagram)

+ Pressure loss in the OA duct (In case of ϕ100 duct, 5Pa/m is required)

Select the booster fan from the fan characteristic diagram

(2) Ceiling cassette-4way compact type (FDTC)

PJA012D786

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 244. For remote controller installation, refer to page 259. For wireless kit installation, refer to page 480. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 273.
This unit must always be used with the panel.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown as follows:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
  If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accidents.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

① Before installation

- Install correctly according to the installation manual.
- Confirm the following points:
  - ○ Unit type/Power supply specification ○ Pipes/Wires/Small parts ○ Accessory items

Accessory itme

For unit hanging		For refrigerant pipe			For draom pipe			
Flat washer (M10)	Level gauge (Insulation)	Pipe cover(big)	Pipe cover (small)	Strap	Pipe cover(big)	Pipe cover(small)	Drain hose	Hose clamp
8	4	1	1	4	1	1	1	1
For unit hanging	For adjustment in hoisting in the unit's main body	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting

② Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.
- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.
  This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above.
  If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote controller and the air conditioner might not work properly.)

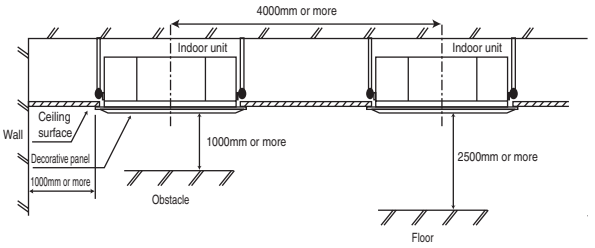
② Check if the place where the air conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

③ If there are 2 units of wireless type, keep them away for more than 5m to avoid malfunction due to cross communication.

④ When plural indoor units are installed nearby, keep them away for more than 4m.

Space for installation and service

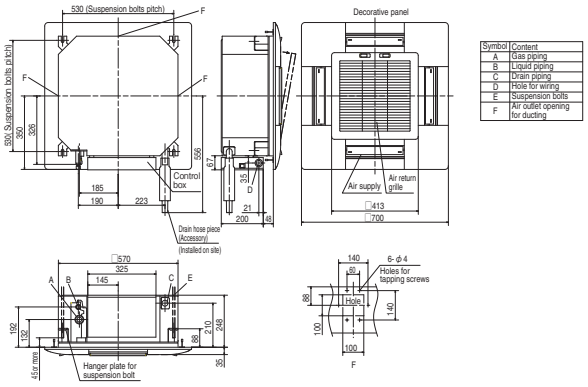
- When it is not possible to keep enough space between indoor unit and wall or between indoor units, close the air supply port where it is not possible to keep space and confirm there is no short circuit of airflow.
- Install the indoor unit at a height of more than 2.5m above the floor.



③ Preparation before installation

- If suspension bolt becomes longer, do reinforcement of earthquake resistant.
  - ○ For grid ceiling
    When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
  - ○ In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
    When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
- Prepare four (4) sets of suspension bolt, nut and spring washer (M10 or M8) on site.

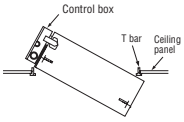
Ceiling opening, Suspension bolts pitch, Pipe position



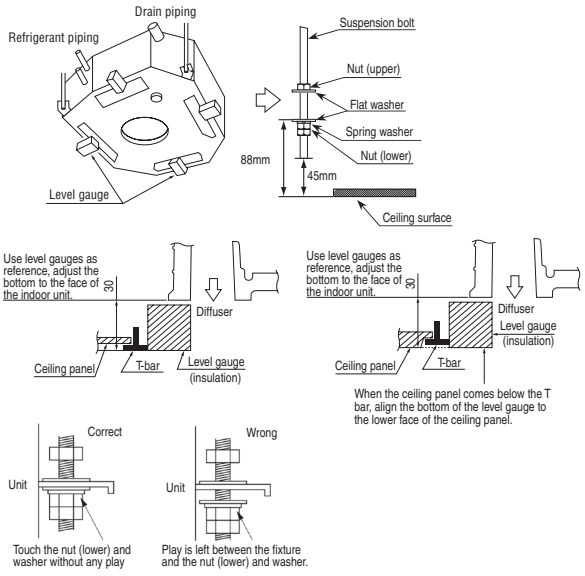
④ Installation of indoor unit

Work procedure

1. This units is designed for 2 x 2 grid ceiling.
   If necessary, please detach the T bar temporarily before you install it.
   If it is installed on a ceiling other than 2 x 2 grid ceiling, provide an inspection port on the control box side.
2. Arrange the suspension bolt at the right position (530mm×530mm).
3. Make sure to use four suspension bolts and fix them so as to be able to hold 500N load.
4. Ensure that the lower end of the suspension bolt should be 45mm above the ceiling plane.
   Temporarily put the four lower nuts 88mm above the ceiling plane and the upper nuts on distant place from the lower nuts in order not to obstruct hanging the indoor unit or adjust the indoor unit position, and then hang the indoor unit.

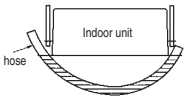


5. Adjust the indoor unit position after hanging it by inserting the level gauge attached on the package into the air supply port and checking if the gap between the ceiling plane and the indoor unit is appropriate. In order to adjust the indoor unit position, adjust the lower nuts while the upper nuts are put on distant place. Confirm there is no backlash between the hanger plate for suspension bolt and the lower nut and washer.



④ Installation of indoor unit (continued)

6. Make sure to install the indoor unit horizontally. Confirm the levelness of the indoor unit with a level gauge or transparent hose filled with water. Keep the height difference at both ends of the indoor unit within 3mm.
7. Tighten four upper nuts and fix the unit after height and levelness adjustment.



Caution

- Do not adjust the height by adjusting upper nuts. It will cause unexpected stress on the indoor unit and it will lead to deformation of the unit, failure of attaching a panel, and generating noise from the fan.
- Make sure to install the indoor unit horizontally and set the gap between the unit underside and the ceiling plane properly. Improper installation may cause air leakage, dew condensation, water leakage and noise.
- Even after decorative panel attached, still the unit height can be adjusted finely. Refer to the installation manual for decorative panel for details.
- Make sure there is no gap between decoration panel and ceiling surface, and between decoration panel and the indoor unit. The gap may cause air leakage, dew condensation and water leakage.
- In case decorative panel is not installed at the same time, or ceiling material is installed after the unit installed, put the cardboard template for installation attached on the package (packing material of cardboard box) on the bottom of the unit in order to avoid dust coming into the indoor unit.

⑤ Refrigerant pipe

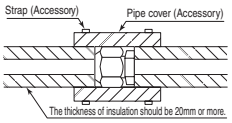
Caution

- Use the new refrigerant pipe.
  When re-using the existing pipe system for R22 or R407C, pay attention to the following items.
  - Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.
  - Do not use thin-walled pipes.
- Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- Use special tools for R410 refrigerant.

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   (Gas may come out at this time, but it is not abnormal.)
   - Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※ Bend the pipe with as big radius as possible and do not bend the pipe repeatedly. In addition, do not twist and crush the pipes.
   ※ Do a flare connection as follows:
   - Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   - When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table below. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   - Make sure to insulate both gas pipes and liquid pipes completely.
     ※ Incomplete insulation may cause dew condensation or water dropping.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Pipe diameter	Tightening torque N·m
ϕ 6.35	14 to 18
ϕ 9.52	34 to 42
ϕ 12.7	49 to 61
ϕ 15.88	68 to 82
ϕ 19.05	100 to 120



⑥ Drain pipe

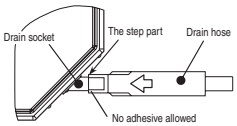
Caution

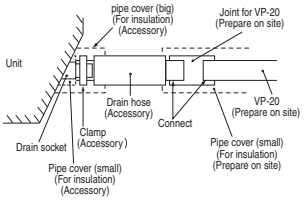
- Install the drain pipe according to the installation manual in order to drain properly.
  Imperfection in draining may cause flood indoors and wetting the household goods etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

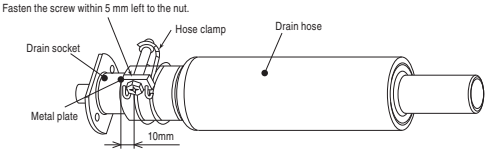
⑥ Drain pipe (continued)

Work procedure

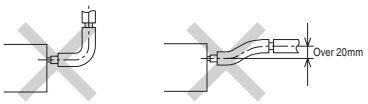
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   - Do not apply adhesives on this end.



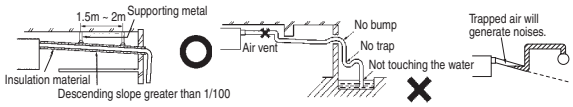




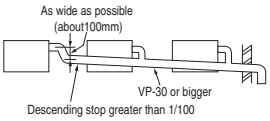
2. Prepare a joint for connecting VP-20 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP-20 pipe (prepare on site).
   ※ As for drain pipe, apply VP-20 made of rigid PVC which is on the market.
   - Make sure that the adhesive will not get into the supplied drain hose.
     It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   - Do not bend or make an excess offset on the drain hose as shown in the picture.
     Bend or excess offset will cause drain leakage.



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - Do not set up air vent.



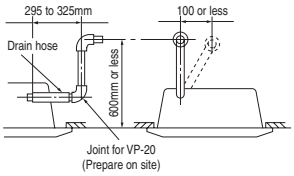
   - When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP-30 or bigger size for main drain pipe.



4. Insulate the drain pipe.
   - Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※ After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

Drain up

- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.

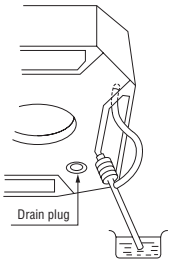


⑥ Drain pipe (continued)

Drain test

- After installation of drain pipe, make sure that drain system work in good condition and no water leakage from joint and drain pan. Check if the motor sound of drain pump is normal or not.
- Do drain test even if installation of heating season.
- For new building cases, make sure to complete the test before hanging the ceiling.

1. Pour water of about 1000cc into the drain pan in the indoor unit by pump so as not to get the electrical component wet.
2. Make sure that water is drained out properly and there is no water leakage from any joints of the drain pipe at the test.
   Confirm that the water is properly drained out while the drain motor is operating. At the drain socket (transparent), it is possible to check if the water is drained out properly.
3. Unplug the drain plug on the indoor unit to remove remaining water on the drain pan after the test, and re-plug it. And insulate the drain pipe properly finally.



Drain pump operation

○ In case electrical wiring work finished
Drain pump can be operated by remote controller (wired).
For the operation method, refer to Operation for drain pump in the installation manual for wiring work.

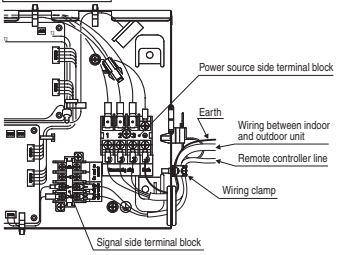
○ In case electrical wiring work not finished
Drain pump will run continuously when the dip switch"SW7-1" on the indoor unit PCB is turned ON, the Connector CNB is disconnected, and then the power supply (220-240VAC on the terminal block [① and ②] or [Ⓛ and Ⓝ]) is turned ON.
Make sure to turn OFF "SW7-1" and reconnect the Connector CNB after the test.

⑦ Wiring-out position and wiring connection

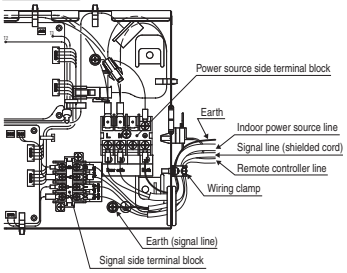
- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country. Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- Be sure to do D type earth work.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (1 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamp.
4. Install a lid of the control box back to original place.

Single split (PAC) series



VRF (KX) series



⑧ Panel installation

- After wiring work finished, install the panel on the indoor unit.
- Refer to attached panel installation manual for details. (see next page)

Accessory items

1	Hook		1 piece	For fixing temporarily
2	Chain		2 pieces	
3	Bolt		4 pieces	For installing the panel
4	Screw		1 piece	For attaching a hook
5	Screw		2 pieces	For attaching a chain

- Attach the panel on the indoor unit after electrical wiring work.
- Refer to attached manual for panel installation for details. (See next page)

⑨ Check list after installation

- Check the following items after all installation work completed.

Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	

PANEL INSTALLATION MANUAL

PJA012D783 a

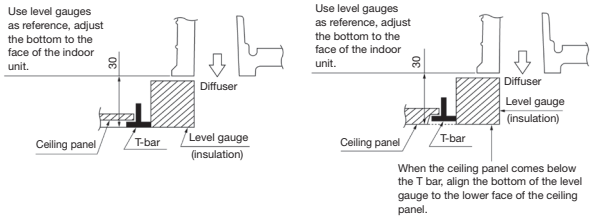
Please read this manual together with the indoor unit's installation manual.

⚠ WARNING

- **Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.**
  Loose connection or hold will cause abnormal heat generation or fire.
- **Make sure the power supply is turned off when electric wiring work.**
  Otherwise, electric shock, malfunction and improper running may occur.

① Checking the indoor unit installation position

- Read this manual together with the air conditioner installation manual carefully.
- Check if the gap between the ceiling plane and the indoor unit is correct by inserting the level gauge into the air outlet port of the indoor unit. (See below drawing)
- Adjust the installation elevation if necessary.
- Remove the level gauge before you attach the panel.

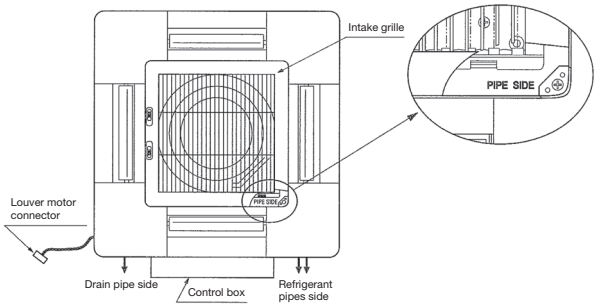


② Orientation of the panel and return air grille installation

1. Take note that there is an orientation to install the panel.
   - Attach the panel with the orientation shown on the below.
   - Align the "PIPE SIDE" mark (on the panel) with the refrigerant pipes on the indoor unit.
2. The intake grille can also be attached in a rotated position by 90 degrees.

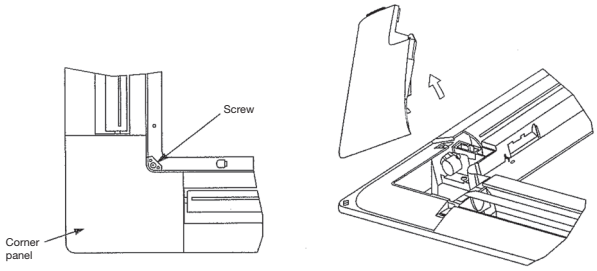
Caution

· In case the orientation of the panel is not correct, it will lead to air leakage and also it is not possible to connect the louver motor wiring.



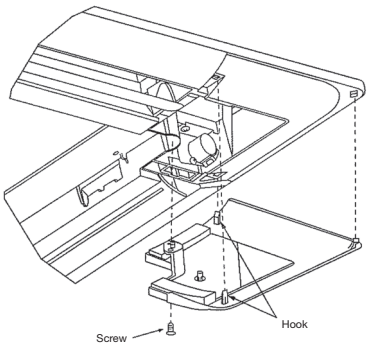
③ Removing a corner panel

- Unscrew the screw from the corner area, pull the corner panel toward the direction indicated by the arrow mark.



④ Attaching a corner panel

- First insert the part "a" of a corner panel into the part "A" of the cover panel, engage two hooks and tighten the screw.



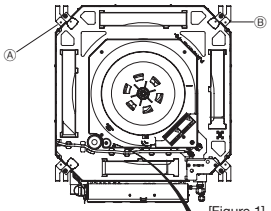
⑤ Panel installation

- Install the panel on the unit after completing the electrical wiring.

Accessories

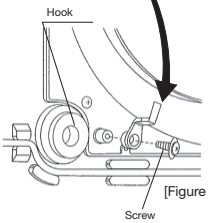
1	Hook		1 piece	For fixing temporarily
2	Chain		2 pieces	
3	Screw		4 pieces	For hoisting the panel
4	Screw		1 piece	For attaching a hook
5	Screw		2 pieces	For attaching a chain

1. Screw in two bolts out of the four supplied with the panel by about slightly less than 5mm. (● mark ⒶⒷ) [Figure 1]



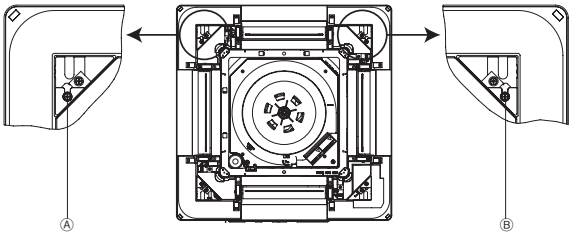
[Figure 1]

2. Attach the hook supplied with the panel to the main body with the hook fixing screw (1 screw). [Figure 2]
3. Open the intake grille.
4. Please remove the screw of a corner panel and remove a corner panel. (four places)



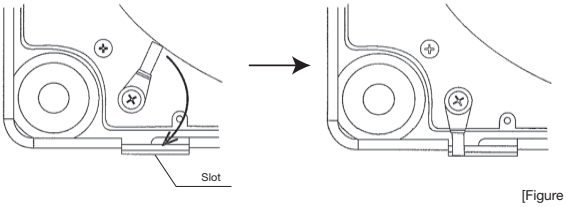
[Figure 2]

5. A panel is hooked on two bolts (● mark ⒶⒷ). [Figure 3]



[Figure 3]

6. Please rotate a hook, put in the slot on the panel, and carry out fixing the panel temporarily. [Figure 4]

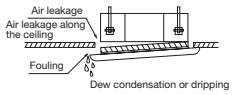


[Figure 4]

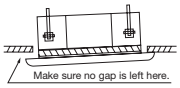
7. Tighten the two bolts used for fixing the panel temporarily and the other two.

Caution

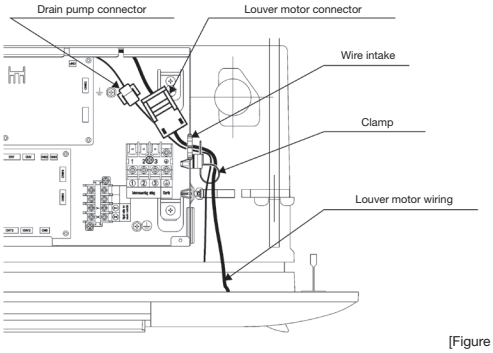
- Improperly tightened hanging bolts can cause the problems listed below, so make sure that you have tightened them securely.



- If there is a gap remaining between the ceiling and the decorative panel even after the hanging bolts are tightened, adjust the installation level of the indoor unit again.

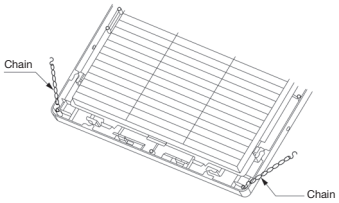


8. Please open the lid of a control box.
9. Like drain pump wiring, please band together by the clamp and put in louver motor wiring into a control box. [Figure 5]
10. Please connect a louver motor connector. [Figure 5]



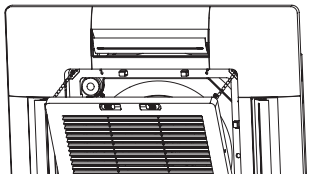
[Figure 5]

11. Attach two chains to the intake grille with two screws. [Figure 6]



[Figure 6]

12. Replace the corner panels. Please also close a chain with a screw together then. [Figure 7]
13. Close the intake grill.



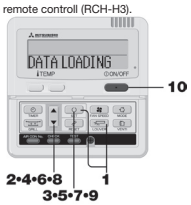
[Figure 7]

Caution

Make sure there is no stress given on the panel when adjusting the height of the indoor unit to avoid unexpected distortion. It may cause the distortion of panel or failing to close the air return grille.

⑦ How to set the airflow direction

It is possible to change the movable range of the louver on the air outlet from the wired remote controller. Once the top and bottom position is set, the louver will swing within the range between the top and the bottom when swing operation is chosen. It is also possible to apply different setting to each louver.
Note: This function is not able to be set with wireless remote controll or simple remote controll (RCH-H3).



1 Stop the air conditioner and press SET button and LOUVER button simultaneously for three seconds or more.
The following is displayed if the number of the indoor units connected to the remote controller is one. Go to step **4**.

"DATA LOADING "
↓
"No.1 ▲"

The following is displayed if the number of the indoor units connected to the remote controller are more than one

"SELECT I/U"
↓
"I/U000 ▲"

2 Press ▲ or ▼ button. (selection of indoor unit)
Select the indoor unit of which the louver is set.
[EXAMPLE]
"I/U000 ▲"⇔"I/U001 ⇕"⇔"I/U002 ⇕"⇔
"I/U003 ⇕"

3 Press SET button. (determination of indoor unit)
Selected indoor unit is fixed.
[EXAMPLE]
"I/U001 " (displayed for two seconds)
↓
"DATA LOADING "
↓
"No.1 ▲"

4 Press ▲ or ▼ button. (selection of louver No.)
Select the louver No. to be set according to the right figure.
[EXAMPLE]
"No.1 ▲"⇔"No.2 ⇕"⇔"No.3 ⇕"⇔
"No.4 ▼"

5 Press SET button. (Determination of louver No.)
The louver No. to be set is confirmed and the display shows the upper limit of the movable range.
[EXAMPLE] If No.1 louver is selected,
"No.1 UPPER2 ⇕" ← current upper limit position

6 Press ▲ or ▼ button. (selection of upper limit position)
Select the upper limit of louver movable range.
"position 1" is the most horizontal, and "position 6" is the most downward.
"position --" is to return to the factory setting. If you need to change the setting to the default setting, use "position --".

"No.1 UPPER1 ▼" (the most horizontal)
⇔"No.1 UPPER2 ⇕"
⇔"No.1 UPPER3 ⇕"
⇔"No.1 UPPER4 ⇕"
⇔"No.1 UPPER5 ⇕"
⇔"No.1 UPPER6 ▲" (the most downwards)
⇔"No.1 UPPER-- ▲" (return to the default setting)

7 Press SET button. (Fixing of the upper limit position)
The upper limit position is fixed and the setting position is displayed for two seconds. Then proceed to lower limit position selection display.
[EXAMPLE]
No.1 UPPER2 (displayed for two seconds)
↓
No.1 LOWER5 ⇕ (shows current setting)

8 Press ▲ or ▼ button. (Selection of lower limit position)
Select the lower limit position of louver.
"position 1" is the most horizontal, and "position 6" is the most downwards.
"position --" is to return to the factory setting. If you need to change the setting to the default setting, use "position --".

No.1 LOWER1 ▼ (the most horizontal)
No.1 LOWER2 ⇕
No.1 LOWER3 ⇕
No.1 LOWER4 ⇕
No.1 LOWER5 ⇕
No.1 LOWER6 ⇕ (the most downwards)
No.1 LOWER-- ▲ (return to the default setting)

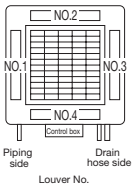
9 Press SET button. (Fixing of the lower limit position)
Upper limit position and lower limit position are fixed, and the set positions are displayed for two seconds, then setting is completed.
- After the setting is completed, the louver which was set moves from the original position to the lower limit position, and goes back to the original position again. (This operation is not performed if the indoor unit and/or indoor unit fan is in operation.)

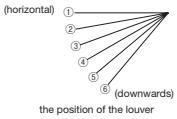
[EXAMPLE]
No.1 U2 L6 (displayed for two seconds)
SET COMPLETE
No.1 ▲

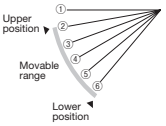
10 Press ON/OFF button.
Louver adjusting mode ends and returns to the original display.
For setting the swing range of other louvers, return to 1 and proceed same procedure respectively.

NOTICE

- In case the louver No to be set is uncertain, set any louver temporarily.
The louver will swing once when the setting is completed and it is possible to confirm the louver No and the position.
After that, choose the correct louver No and set the top and bottom position.







Caution

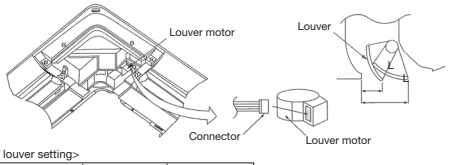
If the upper limit position number and the lower limit position number are set to the same position, the louver is fixed at that position auto swing does not function.

ATTENTION

If you press RESET button during settings, the display will return to previous display.
If you press ON/OFF button during settings, the mode will be ended and return to original display, and the settings that have not been completed will become invalid.

When plural remote controllers are connected, louver setting operation cannot be set by slave remote controller.

If it is necessary to fix the louver position manually, follow the procedure mentioned below.
1. Shut off the main power switch.
2. Unplug the connector of the louver motor which you want to fix the position.
Make sure to insulate unplugged connectors electrically with a vinyl tape.
3. Adjust the louver position slowly by hand so as to be within the applicable range mentioned below table.



<Range of louver setting>

Vertical airflow direction	Horizontal 23°	Downwards 50°
Dimension L (mm)	40	24

※It can be set between 24~40mm freely.

Caution

- Any automatic control or operation from the remote controller will be disabled on the louver whose position is fixed in the above way.
- Do not set a louver beyond the specified range. Failure to observe this instruction may result in dripping, dew condensation, the fouling of the ceiling and the malfunctioning of the unit.

PFA012D621B b

(3) Ceiling suspended type (FDEN)

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 244. For remote controller installation, refer to page 259. For wireless kit installation, refer to page 482. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to the page 273.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING: Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown as follows:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
  If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accidents.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure, electric shock and fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause fire and electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

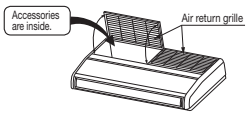
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Before installation

- Install correctly according to the installation manual.
- Confirm the following points:
  - ○Unit type/Power supply specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For unit hanging		For refrigerant pipe			For drain pipe					For air return grille
Flat washer (M10)	Paper pattern	Pipe cover (large)	Pipe cover (small)	Strap	Drain hose (with clamp)	Hose clamp	Fixing bracket	Screw	Heavy insulation	Screw
8	1	1	1	4	1	1	1	2	1	4
For unit hanging	For unit hanging and adjustment	For heat insulation of gas pipe	For heat insulation of liquid pipe	For fixing of pipe cover	For drain pipe connection	For drain hose mounting	For fixing of drain hose	For installing of fixing bracket	For drain hose	For fixing air return grille



②Selection of installation location for the indoor unit

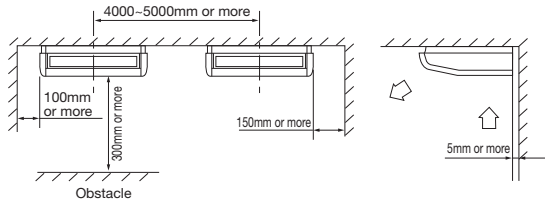
① Select the suitable areas to install the unit under approval of the user.
- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 23°C and relative humidity is lower than 80%. This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote controller and the air conditioner might not work properly.)

② Check if the place where the air conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

③ If there are 2 units of wireless type, keep them away for more than 6m to avoid malfunction due to cross communication.

④ When plural indoor units are installed nearby, keep them away for more than 4 to 5m.

Space for installation and service



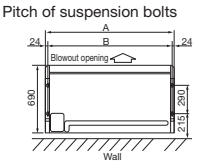
③Preparation before installation

- If suspension bolt becomes longer, do reinforcement of earthquake resistant.
  - ○ For grid ceiling
    When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
  - ○ In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
    When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
- Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

③Preparation before installation (continued)

Pitch of suspension bolts and pipe position

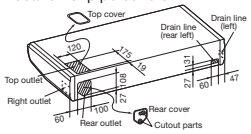
Pitch of suspension bolts



(mm)

Series	type	A	B
Single Split (PAC) series	40 to 50type	1070	1022
	60 to 71type	1320	1272
	100 to 140type	1620	1572
VRF (KX) series	36 to 56type	1070	1022
	71type	1320	1272
	112 to 140type	1620	1572

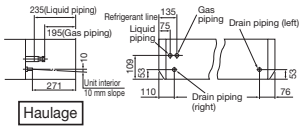
Location of pipe outlets



※The outlet through which the pipings are taken out is available in three directions.
※Pipes can be taken out in 3 directions (rear, right or top).
- Cut out holes using nippers, etc.
- Cut out holes to take out pipes along the cutoff line on the rear cover.
- Cut out the top face cover aligning to the piping position.
- When taking pipe out to right-hand side, cut out a hole along the groove at the inside of side panel.
- After installing pipes and wires, seal clearances around pipes and wires with putty, etc. to shut off dust.

Make sure to install the covers at rear and top in order to protect the inside of unit from intrusion of dust or protect wires from damages by sharp edges. When taking them out to the right-hand side, remove burrs or sharp edges from the cutout.

Pipe position

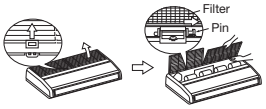


Haulage

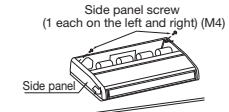
- Move the box as close to the installation area as possible packed.
- If it must be unpacked, wrap the unit with a nylon sling, and be careful not to damage the unit.
- If you need to lay the unit on a floor after unpacking, always put it with the intake grille facing upward.

Preparation before instalation

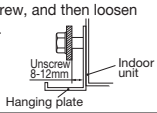
1. Remove the air return grille.
Slide stoppers (4 places) of the catches, then pull out the pins (4 or 6 places).

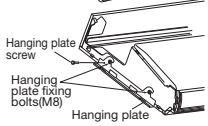


2. Remove the side panel.
Remove the screw and detach the side panel by sliding it toward the direction indicated by the arrow mark.



3. Remove the hanging plate.
Remove the screw, and then loosen the fixing bolts.





④Remote controller

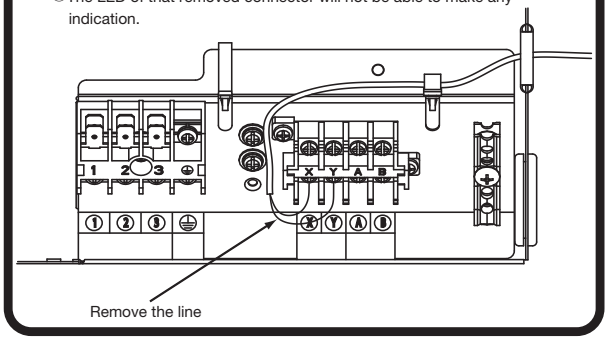
Installation of remote controller

Up to two receiver or wired remote controller can be installed in one indoor unit group.

- When both wired and wireless remote controller are used
  It is necessary to set wired or wireless remote controller as slave.
  (For the method of changing the setting, refer to the installtion manual attached to remote controller or wireless kit.)
- When wired remote controller are used only (wireless type)
  It is necessary to remove the line that is connected to the receiver.
  Remove signal line connected to the receiver from primary side of terminal block (X, Y).

ATTENTION

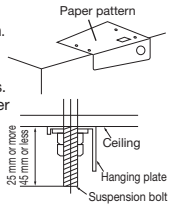
①Insulate with tape the removed line.
②The LED of that removed connector will not be able to make any indication.



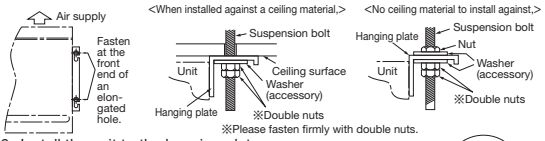
⑤Installation of indoor unit

Work procedure

1. Select the suspension bolt locations and the pipe hole location.
   (1) Use enclosed paper pattern as a reference, and drill the holes for the suspension bolts and pipe.
   ※Decide the locations based on direct measurements.
   (2) Once the locations are properly placed, the paper pattern can be removed.
2. Install the suspension bolts in place.
3. Fix with 4 suspension bolts, which can endure load of 500N.
4. Check the measurements given at the right figure for the length of the suspension bolts.



5. Fasten the hanging plate onto the suspension bolts.

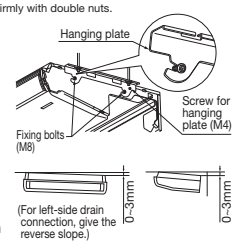


※Please fasten firmly with double nuts.

6. Install the unit to the hanging plate.
   (1) Slide the unit in from front side to get it hanged on the hanging plate with the bolts.
   (2) Fasten the four fixing bolts (M8: 2 each on the left and right sides) firmly.
   (3) Fasten the two screws (M4: 1 each on the left and right sides).

⚠**WARNINIG** : Hang a side panel on from the panel side to the rear side and then fasten it securely onto the indoor unit with screws.

※To ensure smooth drain flow, install the unit with a descending slope toward the drain outlet.



⚠ **CAUTION** : Do not give the reversed slope, which may cause water leaks.

⑥Refrigerant pipe

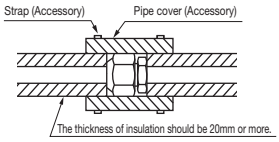
Caution

- Use the new refrigerant pipe.
  When re-using the existing pipe system for R22 or R407C, pay attention to the following items.
  ・Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.
  ・Do not use thin-walled pipes.
- Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation. In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- Use special tools for R410 refrigerant.

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
   - Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ・When taking out the pipe to rear or top, install it together with the electric wire⑧, passing them through the attached cover.
   ・Seal clearances with putty, etc. to shut off dust.
   ※Bend the pipe with as big radius as possible and do not bend the pipe repeatedly. In addition, do not twist and crush the pipes.
   ※Do a flare connection as follows:
   - Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   - When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table below. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   - Make sure to insulate both gas pipes and liquid pipes completely.
   ※Incomplete insulation may cause dew condensation or water dropping.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

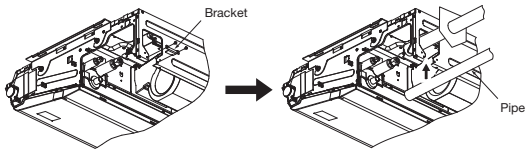
Pipe diameter	Tightening torque N·m
ø 6.35	14 to 18
ø 9.52	34 to 42
ø 12.7	49 to 61
ø 15.88	68 to 82
ø 19.05	100 to 120



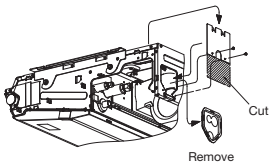
⑥Refrigerant pipe (continued)

The pipe can be connected from three different directions. (back, reight, top)

- When the pipe is routed through the back.
  If the bracket is removed, piping work will become easy.
  ※After piping, reinstall the removed bracket.



- When the pipe is routed through the back.
  Cut the removed top cover, and install to the rear panel instead of rear cover.



⑦Drain pipe

The drain pipes may face out towards the back to the left, or to the right side.

Caution

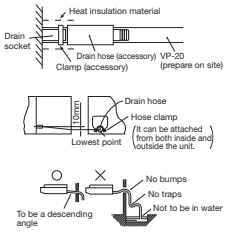
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful andinflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

1. Insert drain hose completely to the base, and tighten the drain hose clamp securely. (adhesive must not be used.)
   ※When plumbing on the left side, move the rubber plug and the cylindrical insulating materials by the pipe connecting hole on the left side of the unit to the right side.

⚠ Beware of a possible outflow of water that may occur upon removal of a drain plug.

2. Fix the drain hose at the lowest point with a hose clamp supplied as an accessory.
   ※Give a drain hose a gradient of 10mm as illustrated in the right drawing by laying it without leaving a slack.
   - Take head of electrical cables so that they may not run beneath the drain hose.



⚠ A drain hose must be clamped down with a hose clamp. There is a possibility that drain water overflows.

3. Connect VP-20(prepare on site) to drain hose. (adhesive must not be used.)
   ※ Use commercially available rigid PVC general pipe VP-20 for drain pipe.
4. Do not to make the up-down bending and trap in the mid-way while assuming that the drain pipes is downhill. (more than 1/100)
   - Never set up air vent.
5. Insulate the drain pipe.
   - Insulate the drain hose clamp with the heat insulation supplied as accessories.
   - When the unit is installed in a humid place, consider precautions against dew condensation such as heat insulation for the drain pipe.

Drain test

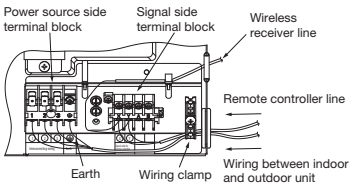
- After installation of drain pipe, make sure that drain system work in good condition and no water leakage from joint and drain pan.
- Do drain test even if installation of heating season.

⑧Wiring-out position and wiring connection

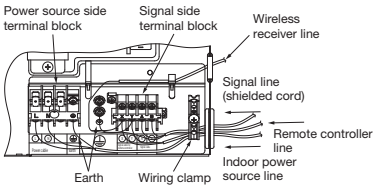
- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- Be sure to do D type earth work.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the electrical box (2 screws).
2. Hold each wiring inside the unit and connect to a terminal block surely.
3. Fix the wiring by clamps.
4. Install the removed parts back to original place.

Single split (PAC) series



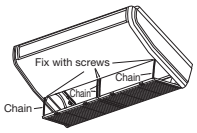
VRF(KX) series

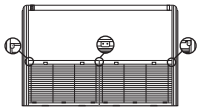


⑨Attaching the air return grille

- The air return grille must be attached when electrical cabling work is completed.

1. Fix the chains tied to the air return grille onto the indoor unit with screws supplied as accessories (4 pieces).
2. Close the air return grille.
   This completes the unit installtion work.





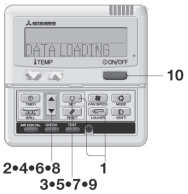
⑩Check list after installation

- Check the following items after all installation work completed.

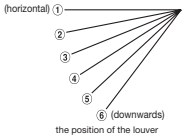
Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	

⑪How to set the airflow direction

It is possible to change the movable range of the louver on the air outlet from the wired remote controller. Once the top and bottom position is set, the louver will swing within the range between the top and the bottom when swing operation is chosen. It is also possible to apply different setting to each louver.
Note:This function is not able to be set with wireless remote controller or simple remote controll (RCH-H3).



1. Stop the air conditioner and press SET button and LOUVER button simultaneously for three seconds or more.
   - The following is displayed if the number of the indoor units connected to the remote controller is one. Go to step 4.
     "DATA LOADING"
     ↓
     "No.1"
   - The following is displayed if the number of the indoor units connected to the remote controller are more than one.
     "SELECT I/U"
     ↓
     "I/U000"
2. Press ▲or▼button.(selection of indoor unit)●Select the indoor unit of which the louver is set.
   [EXAMPLE]
   "I/U000" ▲"⇔"I/U001 ⇕"⇔"I/U002 ⇕"⇔
   "I/U003" ⇕"
3. Press SET button.(determination of indoor unit) ●Selected indoor unit is fixed.
   [EXAMPLE]
   "I/U001" (displayed for two seconds)
   ↓
   "DATA LOADING"
   ↓
   "No.1" ▲"
4. Press▲or▼button.(selection of louver No.) ●Select the louver No. to be set according to the right figure.
   [EXAMPLE]
   "No.1" ▲"⇔"No.2 ⇕"⇔"No.3 ⇕"⇔
   "No.4" ▼"
5. Press SET button.(Determination of louver No.)
   ●The louver No. to be set is confirmed and the display shows the upper limit of the movable range.
   [EXAMPLE] If No.1 louver is selected,
   "No.1 UPPER2" ⇕" ←current upper limit position
6. Press ▲or▼button.(selection of upper limit position)
   - Select the upper limit of louver movable range.
     "position 1" is the most horizontal, and "position 6" is the most downward.
     "position --" is to return to the factory setting.
     If you need to change the setting to the default setting, use "position --".

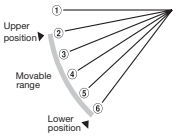


"No.1 UPPER1" ▼"(the most horizotal)
⇔"No.1 UPPER2 ⇕"
⇔"No.1 UPPER3 ⇕"
⇔"No.1 UPPER4 ⇕"
⇔"No.1 UPPER5 ⇕"
⇔"No.1 UPPER6 ▲"(the most downwards)
⇔"No.1 UPPER-- ▲"(return to the default setting)

7. Press SET button.(Fixing of the upper limit position)
   ●The upper limit position is fixed and the setting position is displayed for two seconds. Then proceed to lower limit position selection display.
   [EXAMPLE]
   No.1 UPPER2 (displayed for two seconds)
   ↓
   No.1 LOWER5 ⇕ (shows current setting)
8. Press ▲or ▼button.(Selection of lower limit position)
   ●Select the lower limit position of louver.
   "position 1" is the most horizontal, and "position 6 "is the most downwards.
   "position --" is to return to the factory setting. If you need to change the setting to the default setting, use "position --".

No.1 LOWER1 ▼ (the most horizontal)
No.1 LOWER2 ⇕
No.1 LOWER3 ⇕
No.1 LOWER4 ⇕
No.1 LOWER5 ⇕
No.1 LOWER6 ⇕ (the most downwards)
No.1 LOWER-- ▲ (return to the default setting)

9. Press SET button.(Fixing of the lower limit position)
   ●Upper limit position and lower limit position are fixed, and the set positions are displayed for two seconds, then setting is completed.
   - After the setting is completed, the louver which was set moves from the original position to the lower limit position, and goes back to the original position again. (This operation is not performed if the indoor unit and/or indoor unit fan is in operation.)



   [Example]
   No.1 U2 L6 (displayed for two seconds)
   SET COMPLETE
   No.1 ▲
10. Press ON/OFF button.
    ●Louver adjusting mode ends and returns to the original display.

Caution

If the upper limit position number and the lower limit position number are set to the same position, the louver is fixed at that position auto swing does not funtion.

ATTENTION

If you press RESET button during settings, the display will return to previous display.If you press ON/OFF button during settings, the mode will be ended and return to original display, and the settings that have not been completed will become invalid.

When plural remote controllers are connected, louver setting operation cannot be set by slave remote controller.

(4) Duct connected-High static pressure type (FDU)

PJD012D052 A

(a) Models FDU100-140

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 244. For remote controller installation, refer to 259. For wireless kit installation, refer to page 486. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 273.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

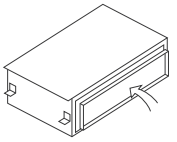
○This model is middle static ducted type air conditioning unit. Therefore, do not use this model for direct blow type air conditioning unit.

①Before installation

●Install correctly according to the installation manual.
●Confirm the following points:
○Unit type/Power supply specification
○Pipes/Wires/Small parts
○Accessory items

Accessory item

For refrigerant pipe		
Pipe cover(big)	Pipe cover (small)	Strap
1	1	4
For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing



Accessory parts are stored inside this suction side.

For drain pipe			
Pipe cover(big)	Pipe cover(small)	Drain hose	Hose clamp
1	1	1	1
For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting

②Selection of installation location for the indoor unit

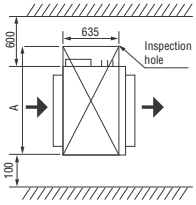
① Select the suitable areas to install the unit under approval of the user.
・Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
・Areas where there is enough space to install and service.
・Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
・Areas where there is no obstruction of airflow on both air return grille and air supply port.
・Areas where fire alarm will not be accidentally activated by the air conditioner.
・Areas where the supply air does not short-circuit.
・Areas where it is not influenced by draft air.
・Areas not exposed to direct sunlight.
・Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.
This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above.
If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
・Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
・Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
・Areas where there is no influence by the heat which cookware generates.
・Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
・Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
(A beam from lighting device sometimes affects the infrared receiver for the wireless remote controller and the air conditioner might not work properly.)

②Check if the place where the air conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

Space for installation and service

●Make installation altitude over 2.5m.
(Indoor Unit)

Installation Space



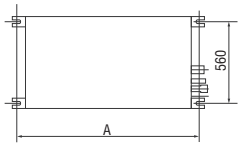
UNIT: mm

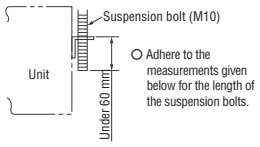
Multi type	71	90, 112, 140
Single type	71	100, 125, 140
A	1200	1720

③Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.
○For grid ceiling
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Suspension Bolt Location



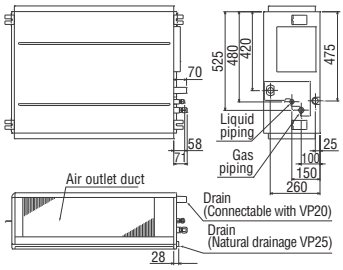


UNIT: mm

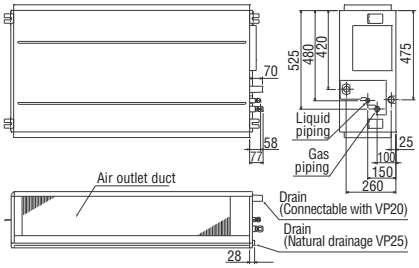
Multi type	71	90, 112, 140
Single type	71	100, 125, 140
A	986	1406

Pipe locations UNIT: mm

Multi type	71
Single type	71



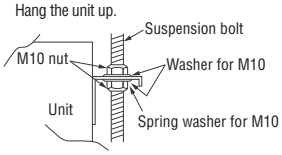
Multi type	90, 112, 140
Single type	100, 125, 140



④Installation of indoor unit

Installation

[Hanging]
Hang the unit up.

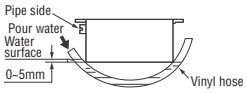


If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

Adjustment for horizontality

○Either use a level vial, or adjust the level according to the method below.

●Adjust so the bottom side of the unit will be leveled with the water surface as illustrated below.



Let the pipe side be slightly sloped.

○If the unit is not leveled, it may cause malfunctions or inoperation of the float switch.

⑤Duct Work

A corrugated board (for preventing sputtering) is attached to the main body of the air conditioner (on the outlet port). Do not remove it until connecting the duct.

①●The air conditioner main unit does not have an air filter. Incorporate it into the easy-to-clean suction grille.

②Blowout duct

●The ducts should be at their minimum lengths.

●Keep the bends to a minimum. (The bending radius should be as large as possible.)

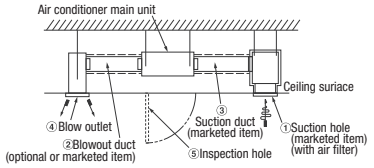
●Conduct the duct work before ceiling attachment.

③Suction duct

●Make sure to insulate the duct to prevent dewing on it.

④Location and form of blow outlet should be selected so that air from the outlet will be distributed all over the room, and equipped with a device to control air volume.

⑤Make sure provide an inspection hole on the ceiling. It is indispensable to service elecric equipment, motor, functional components and cleaning of heat exchanger.



Bad example of duct work

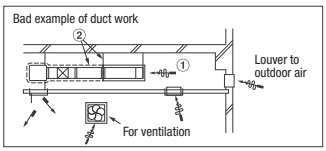
①If a duct is not provided at the suction side but it is substituted with the space over the ceiling, humidity in the space will increase by the influence of capacity of ventilation fan, strength of wind blowing against the out door air louver, weather (rainy day) and others.

a)Moisture in air is likely to condense over the external plates of the unit and to drip on the ceiling. Unit should be operated under the conditions as listed in the above table and within the limitation of wind volume. When the building is a concrete structure, especially immediately after the construction, humidity tends to rise even if the space over the ceiling is not substituted in place of a duct. In such occasion, it is necessary to insulate the entire unit with glass wool (25mm). (Use a wire net or equivalent to hold the glass wool in place.)

b)It may run out the allowable limit of unit operation (Example: When outdoor air temperature is 35°C DB, suction air temperature is 27°C WB) and it could result in such troubles as compressor overload, etc..

c)There is a possibility that the blow air volume may exceed the allowable range of operation due to the capacity of ventilation fan or strength of wind blowing against external air louver so that drainage from be heat exchanger may fall to reach the drain pan but leak outside (Example: drip on to the ceiling) with consequential water leakage in the room.

②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.



⑥Refrigerant pipe

Caution

●Use the new refrigerant pipe.
When re-using the existing pipe system for R22 or R407C, pay attention to the following items.
・Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.
・Do not use thin-walled pipes.

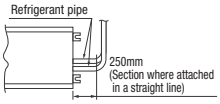
●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation. In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.

●Do not use any refrigerant other than R410A.
Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.

●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.

●Use special tools for R410 refrigerant.

Piping work



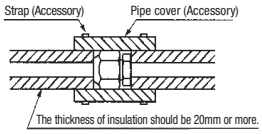
When conducting piping work, make sure to allow the pipes to be aligned in a straight line for at least 250 mm, as shown in the left illustration. (This is necessary for the drain pump to function)

⑥Refrigerant pipe (continued)

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   (Gas may come out at this time, but it is not abnormal.)
   ● Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※Bend the pipe with as big radius as possible and do not bend the pipe repeatedly. In addition, do not twist and crush the pipes.
   ※Do a flare connection as follows:
   ● Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   ● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table below. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   ●Make sure to insulate both gas pipes and liquid pipes completely.
   ※Incomplete insulation may cause dew condensation or water dropping.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Pipe diameter	Tightening torque N·m
ϕ 6.35	14 to 18
ϕ 9.52	34 to 42
ϕ 12.7	49 to 61
ϕ 15.88	68 to 82
ϕ 19.05	100 to 120



⑦Drain pipe

Caution

● Install the drain pipe according to the installation manual in order to drain properly.
Imperfection in draining may cause flood indoors and wetting the household goods, etc.

● Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.

● Connect the pipe securely to avoid water leakage from the joint.

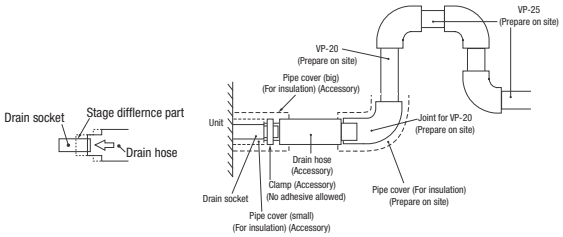
● Insulate the pipe properly to avoid condensation drop.

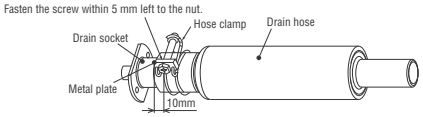
● Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.

● Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

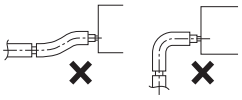
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   ●Do not apply adhesives on this end.
   ●Do not use acetone-based adhesives to connect to the drain socket.



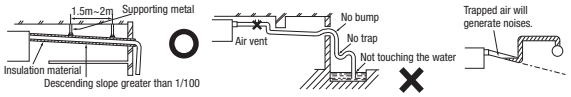


⑦Drain pipe (continued)

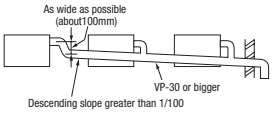
2. Prepare a joint for connecting VP-20 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP-20 pipe (prepare on site).
   ※As for drain pipe, apply VP-20 made of rigid PVC which is on the market.
   - ●When installing drain pipe, use VP-20 for the pipe goes up the closest to the unit, and VP-25 or higher number product for farther pipes.
   - ●Make sure that the adhesive will not get into the supplied drain hose.
     It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   - ●The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - ●Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - ●Do not set up air vent.



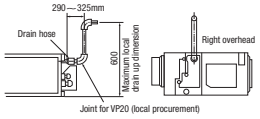
   - ●When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP-30 or bigger size for main drain pipe.



4. Insulate the drain pipe.
   - ●Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※ After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

Drain up

- ● The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



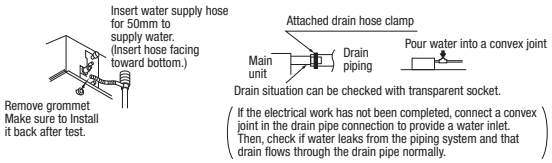
Otherwise, the construction point makes it same as drain pipe construction.

Drain test

1. Conduct a drain test after completion of the electrical work.
2. During the trail, make sure that drain flows properly through the piping and that no water leaks from connections.
3. In case of a new building, conduct the test before it is furnished with the ceiling.
4. Be sure to conduct this test even when the unit is installed in the heating season.

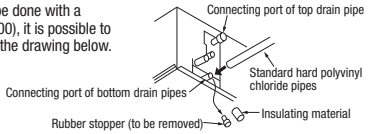
Procedures

1. Supply about 1000 cc of water to the unit through the air outlet by using a feed water pump.
2. Check the drain while cooling operation.



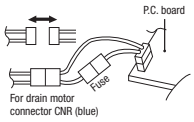
Outline of bottom drain piping work

- ● If the bottom drain piping can be done with a descending gradient (1/50-1/100), it is possible to connect the pipes as shown in the drawing below.



Uncoupling the drain motor connector

- ● Uncouple the connector CNR for the drain motor as illustrated in the drawing on the right.



(Note: If the unit is run with the connector coupled, drain water will be discharged from the upper drain pipe joint, causing a water leak.)

⑦Drain pipe (continued)

Drain pump operation

○In case electrical wiring work finished

Drain pump can be operated by remote controller (wired).

For the operation method, refer to Operation for drain pump in the installation manual for wiring work.

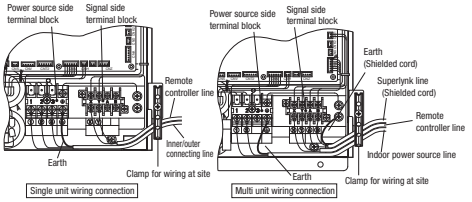
○In case electrical wiring work not finished

Drain pump will run continuously when the dip switch "SW7-1" on the indoor unit PCB is turned ON, the Connector CNB is disconnected, and then the power supply (230VAC on the terminal block ① and ②) is turned ON. Make sure to turn OFF "SW7-1" and reconnect the Connector CNB after the test.

⑧Wiring-out position and wiring connection

- ● Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- ● Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- ● Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- ● Be sure to do D type earth work.
- ● For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (2 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamps.
4. Install the removed parts back to original place.



⑨Check list after installation

●Check the following items after all installation work completed.

Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	

⑩Tap selection on blower unit (when the high peformance filter is used)

The fan tap's factory setting is "Standard." If you want to change it to the high static-pressure setting, you can avail yourself of the following two methods. Use one of the two methods to set the fan tap.

Make sure to perform the functional setting with remote controller.

Select [I/U FUNCTION] in the functional setting mode, and change the function number [02] [FAN SPEED SET].

For operation method, refer to the user's manual of the remote controller.

Function number A	Functional content B	Setting content C	Default setting
02	Fan Speed Set	Standard	○
		High Speed 1	

UNIT: Pa

Static Pressure	Standard Tap	60
	High Speed 1 Tap	130

⚠ CAUTION

If the external static pressure is 60Pa or less, do not set the fan speed to High speed 1. If High speed 1 setting is done, air outlet speed from indoor unit will increase and waterdrop may be blown out and wet the ceiling or the furniture.

PJD012D053

(b) Models FDU200, 250

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 248. For remote controller installation, refer to page 259. For wireless kit installation, refer to page 486. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 273.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

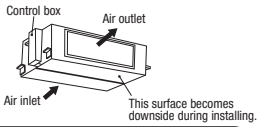
- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

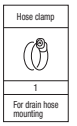
○This model is high static ducted type air conditioning unit. Therefore, do not use this model for direct blow type air conditioning unit.



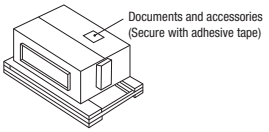
①Before installation

●Install correctly according to the installation manual.
●Confirm the following points:
○Unit type/Power supply specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item



Accessories storage position (during packing)



②Selection of installation location for the indoor unit

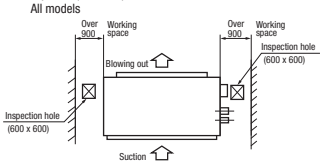
① Select the suitable areas to install the unit under approval of the user.
- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%. This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above. If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation. (A beam from lighting device sometimes affects the infrared receiver for the wireless remote controller and the air conditioner might not work properly.)

②Check if the place where the air conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

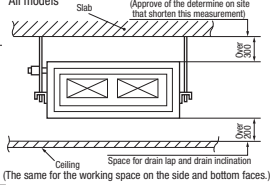
Space for installation and service

●Make installation altitude over 2.5m.

Top view (Unit: mm)
All models

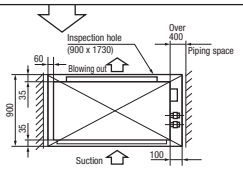


Frontal view (Unit: mm)
All models



If the conditions shown in the left hand side cannot be met, the following method is also possible.

Top view (Unit: mm)
All models
The frontal view is as the left hand illustration.



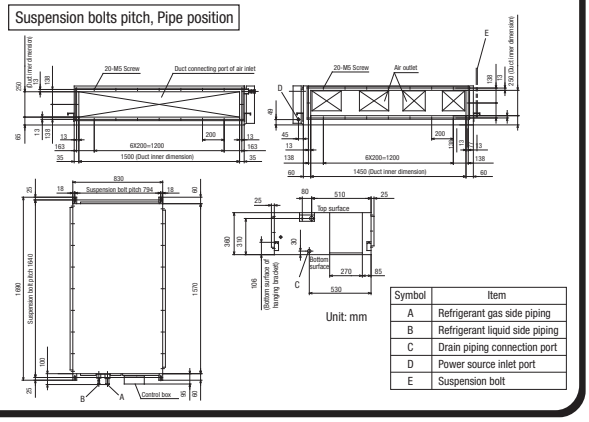
Air Conditions and Airflow Limits

Single	Multi	Airflow m³/min			Temperature of the blow-in air of the indoor unit		Air temperature surrounding the indoor unit
		Rating	Lower limit	Upper limit	Cooler	Heater	
200	224	51	38	65	Upper limit 26°C WB When outdoor temperature is 35°C Lower limit 16°C WB When outdoor temperature is 15°C	Upper limit 27°C DB Outdoor temperature is below 20°C WB Lower limit 10°C DB Outdoor temperature is above 10°C WB	Dew point temperature below 28°C
250	280	68	51	87	Refer to the technical document published by our company for more details.		

③Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.
○For grid ceiling
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Suspension bolts pitch, Pipe position

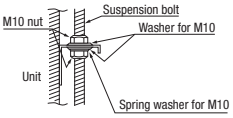


Symbol	Item
A	Refrigerant gas side piping
B	Refrigerant liquid side piping
C	Drain piping connection port
D	Power source inlet port
E	Suspension bolt

④Installation of indoor unit

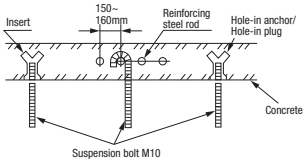
Installation

[Hanging]
○Hang the unit up.



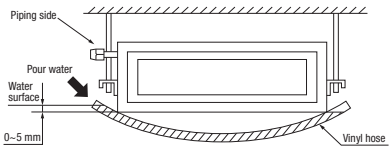
○If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

[Method for Fixing the Suspension Bolt]
○Secure the suspension bolt with one of the methods shown in the following illustration.



Horizontal Adjustment

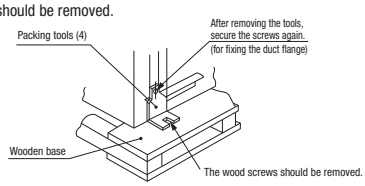
○Use a level vial or adjust the level as shown in the following illustration.



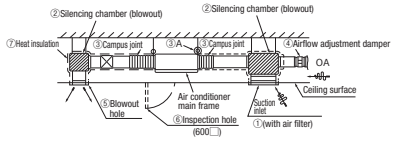
Set the pipe side slightly lower than the other side.

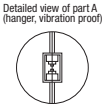
○If it is not horizontal, the float switch malfunctions or does not function.

(Packing Tools)
The packing tools (4) are not necessary.
Packing tools (4) should be removed.



⑤Duck work





①Air filters are not provided with the main frame of the air conditioner. Assemble on to the suction grill which can be cleaned easily.

②Fit the silencing chamber according to the noise level tolerance inside the installation room. If it is particularly necessary to keep the noise level low, further silencing devices is required (always install them in offices, and conference rooms).

③In order to keep the vibration from transferring to the ceiling and the slab, use a campus joint for the duct and a vibration proof rubber for the main frame.

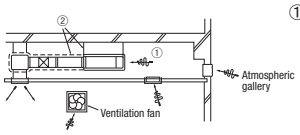
④Attach an airflow adjustment damper to the connection point of the OA duct so airflow adjustment may be possible after installation.

⑤For the blowing outlet, select a shape and location where air may circulate, and a structure where airflow may be controlled.

⑥An inspection hole must be made in the ceiling surface. This is necessary for the repair and maintenance of the electrical parts, motor and functional parts, as well as for cleaning the heat exchanger.

⑦Insulation must be performed for the duct to prevent water condensation on the duct. The thickness of the insulating material is 65 mm (JISA 9501).

A bad example of duct work



①If the suction duct is not used, and the attic is used as a suction duct, the attic will become extremely humid depending on the performance of the ventilation fan, the strength of wind blowing to the atmospheric gallery and the climate (e.g., rainy days).

a. Condensation occurs on the outer board of the unit and water may fall on the ceiling. Use the unit according to the air conditions in the above table and airflow limits. In concrete constructions, high humidity can occur in new constructions even when the attic is not used as a suction duct. In this case, insulate the entire unit with glass wool (25 mm) (use a metal net to hold the wool).

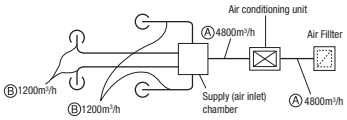
b. Operation of the unit may exceed its limits (for example, when the temperature of the suction air is 24 °C with the outdoor temperature of 35 °C DB). In such a cases, problems such as an overload of the compressor may occur.

c. The volume of the air blowing in may increase due to the performance of the ventilation fan and the wind strength blowing against the atmospheric gallery. The air usage limit may be exceeded, and the water from the heat exchanger will not be able to drain to the drain pan. Instead it will drain outside and cause a water leak (to the ceiling).

②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.

Simple setting method for duct measurement

The following shows the method when duct is used at one side of 250mm as 1Pa/m by frictional resistance per the unit length of the duct, and in case of 250 type (single unit)/280 type (multi unit) , 60Hz rating airflow for a example.



	Airflow	Duct (mm x mm)
Ⓐ	4800m³/h (80m³/min)	250 x 950
Ⓑ	1200m³/h (20m³/min)	250 x 310

○Calculation of duct resistance
(Simplified calculate as following table)

Straight piping port	Calculate at 1Pa per 1m length to 1Pa/m
Bending port	Calculate at 3 to 4 m straight pipe per 1 piece of binding pipe
Air outlet port	Calculate at 25Pa
Chamber	Calculate at 50Pa per 1 piece
Air inlet grille (with filter)	Calculate at 40Pa per 1 piece

[Simplified duct dimension selection table] 1Pa/m

Duct type / Item / Airflow	Quadrangle duct Dimensions
m³/h (m³/min)	(mm×mm)
100	250× 60
200	250× 90
300	250× 120
400	250× 140
450 (7.5)	250× 160
500	250× 170
600 (10)	250× 190
800	250× 230
1,000	250× 270
Ⓑ 1,200 (20)	250× 310
1,400	250× 350
1,600	250× 390
1,800 (30)	250× 430
2,000	250× 470
2,400 (40)	250× 560
3,000 (50)	250× 650
3,500	250× 740
4,000	250× 830
4,500	250× 920
Ⓐ 4,800 (80)	250× 950
5,000	250×1000
5,500	250×1090
6,000 (100)	250×1180

⑥Refrigerant pipe

Caution

●Use the new refrigerant pipe.
When re-using the existing pipe system for R22 or R407C, pay attention to the following items.
・Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.
・Do not use thin-walled pipes.

●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation. In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.

●Do not use any refrigerant other than R410A.
Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.

●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.

●Use special tools for R410 refrigerant.

●The indoor unit pipes allow the maintenance panel to be removed. Therefore, regardless of the piping direction, there should be a straight section of 400 mm or more.

Work procedure

1. When brazing work, perform it while cool down around the brazing port with wet towels to prevent the overheating.
2. After check the gas leak test, install the heat insulation (prepare on site) to the brazing port of the indoor unit.
   ●Be sure to perform the heat insulation both of gas side piping with liquid side piping.
   ※If heat insulation does not install to the pipes, dew condensation may occurs and it may cause the water leakage.
   The thickness of the heat insulation should be more than 20mm.
3. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Single unit			Multi unit			
Type 200	Liquid piping	ϕ 9.52	Type 224	Liquid piping	ϕ 9.52	Flaring
	Gas piping	ϕ 25.4		Gas piping	ϕ 19.05	Flaring
Type 250	Liquid piping	ϕ 12.7	Type 280	Liquid piping	ϕ 9.52	Flaring
	Gas piping	ϕ 25.4		Gas piping	ϕ 22.22	Flaring

⑦Drain pipe

Caution

● Install the drain pipe according to the installation manual in order to drain properly.
Imperfection in draining may cause flood indoors and wetting the household goods, etc.

● Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.

● Connect the pipe securely to avoid water leakage from the joint.

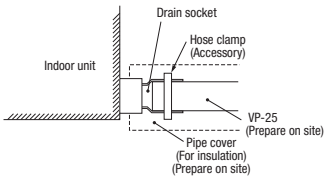
● Insulate the pipe properly to avoid condensation drop.

● Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.

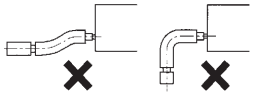
● Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

1. Insert the supplied drain hose (the end made of soft PVC) to the step of the drain socket on the indoor unit and fix it securely with the clamp.
   ●Do not apply adhesives on this end.

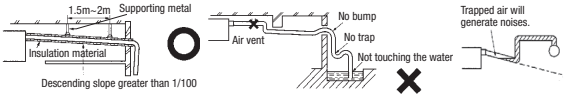


2. Prepare a joint for connecting VP-25 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP-25 pipe (prepare on site).
   ※As for drain pipe, apply VP-25 made of rigid PVC which is on the market.
   ●Make sure that the adhesive will not get into the supplied drain hose.
   It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   ●The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.

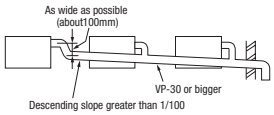


⑦Drain pipe (continued)

3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - ●Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - ●Do not set up air vent.



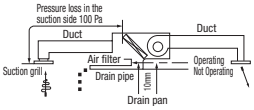
- ●When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP-30 or bigger size for main drain pipe.



4. Insulate the drain pipe.
   - ●Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※ After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

Caution

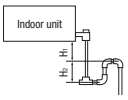
When the duct is connected and the blowing device is operated, the pressure inside the unit becomes negative to the atmospheric pressure.



Example: As shown in the above illustration, if the pressure loss of the suction grill, air filter, and the suction side of the duct is 100 Pa, the drain water level during operation is 10mm higher than when it is not operating.

Fixing Traps

The pressure loss varies depending on the clogging in the air filter. Therefore, make one trap (during the piping work) to prevent water from remaining in the drain pan. It is necessary to make a trap with a structure that allows cleaning. Use the T joint as demonstrated in the left illustration. Also, set the trap height as shown in the left illustration. Arrange the trap near to the unit.



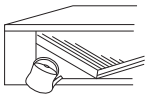
- ●Make one trap along the drain pipe as the left illustration.

H1 = 100 mm or the static pressure of the blowing device
H2 = 1/2 H1 or 50 ～ 100 mm

Drain test

Upon completion of drain piping, check by running water through it.

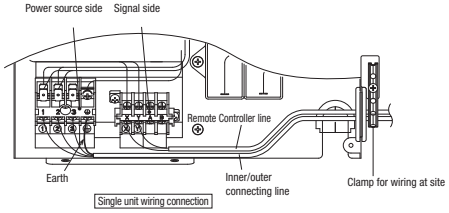
- ○Remove the side panel and gradually pour 1000 cc of water into the drain pan. Ensure that the water drains smoothly.
  Also, ensure that there are no water leaks from the connections and joints.

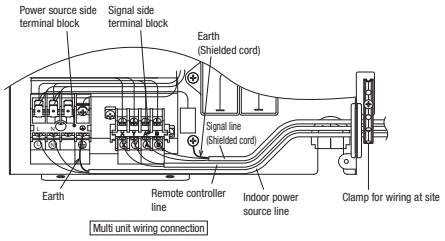


⑧Wiring-out position and wiring connection

- ● Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- ● Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- ● Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- ● Be sure to do D type earth work.
- ● For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (2 screws) and a hook which is located on top of it.
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamps.
4. Install the removed parts back to original place.





⑨Check list after installation

●Check the following items after all installation work completed.

Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	

PJG012D001C B

(5) Duct connected-Low / Middle static pressure type (FDUM)

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 252. For remote controller installation, refer to page 259. For wireless kit installation, refer to page 486. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 273.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING: Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  · Places where flammable gas could leak.
  · Places where carbon fiber, metal powder or any powder is floated.
  · Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  · Places exposed to oil mist or steam directly.
  · On vehicles and ships
  · Places where machinery which generates high harmonics is used.
  · Places where cosmetics or special sprays are frequently used.
  · Highly salted area such as beach.
  · Heavy snow area
  · Places where the system is affected by smoke from a chimney.
  · Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  · Locations with any obstacles which can prevent inlet and outlet air of the unit
  · Locations where vibration can be amplified due to insufficient strength of structure.
  · Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  · Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  · Locations where drainage cannot run off safely.
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

○This model is middle static ducted type air conditioning unit. Therefore, do not use this model for direct blow type air conditioning unit.

①Before installation

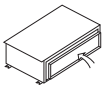
●Install correctly according to the installation manual.

●Confirm the following points:

○Unit type/Power supply specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For hanging	For refrigerant pipe			For drain pipe			
Flat washer (M10)	Pipe cover (big)	Pipe cover (small)	Strap	Pipe cover (big)	Pipe cover (small)	Drain hose	Hose clamp
8	1	1	4	1	1	1	1
For unit hanging	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting



Accessory parts are stored inside this suction side.

②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.

- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.
  This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above.
  If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote controller and the air conditioner might not work properly.)

② Check if the place where the air conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

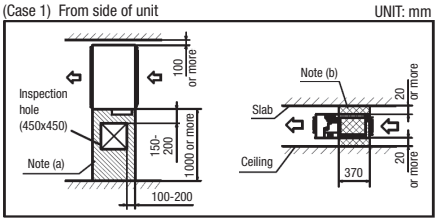
Space for installation and service

●Make installation altitude over 2.5m.

(Indoor Unit)

Select either of two cases to keep space for installation and services.

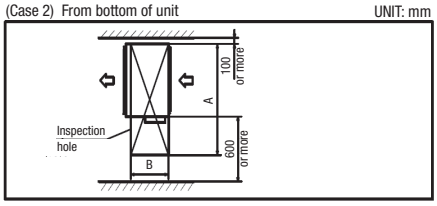
(Case 1) From side of unit UNIT: mm



Notes (a) There must not be obstacle to draw out fan motor. (marked area)

(b) Install refrigerant pipe, drain pipe, and wiring so as not to cross marked area.

(Case 2) From bottom of unit UNIT: mm



(Size of inspection hole) UNIT: mm

Single type	50	60-71	100-140
Multi type	22-56	71-90	112-160
A	1100	1300	1720
B	620		725

③Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.

○For grid ceiling

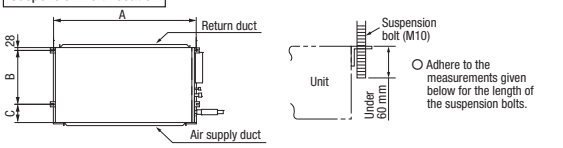
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.

○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.

When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.

●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Suspension Bolt Location

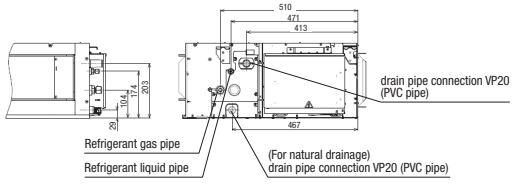


UNIT: mm

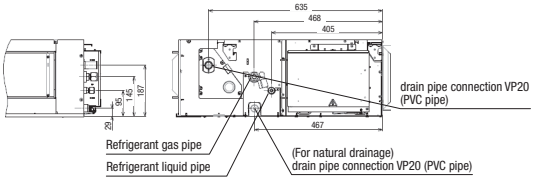
Multi type	22-56	71, 90	112-160
Single type	50	60, 71	100-140
A	786	986	1404
B	472	472	530
C	135	135	180

Pipe locations UNIT: mm

Multi type	22-90
Single type	50-71



Multi type	112-160
Single type	100-140

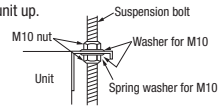


④Installation of indoor unit

Installation

[Hanging]

Hang the unit up.

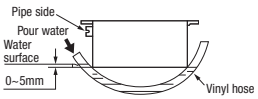


If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

Adjustment for horizontality

○Either use a level vial, or adjust the level according to the method below.

●Adjust so the bottom side of the unit will be leveled with the water surface as illustrated below.



Let the pipe side be slightly sloped.

○If the unit is not leveled, it may cause malfunctions or inoperation of the float switch.

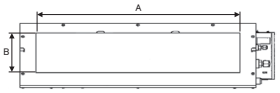
⑤Duct Work

①A corrugated board (for preventing sputtering) is attached to the main body of the air conditioner (on the outlet port). Do not remove it until connecting the duct.
- ●An air filter can be provided on the main body of the air conditioner (on the inlet port). Remove it when connecting the duct on the inlet port.

②Blowout duct
- ●Use rectangular duct to connect with unit.
  Duct size for each unit is as shown below.

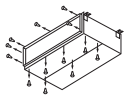
UNIT: mm

Single type	50	60-71	100-140
Multi type	22-56	71-90	112-140
A	682	882	1202
B	172	172	172

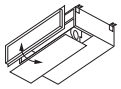


- ●Duct should be at their minimum length.
- ●We recommend to use sound and heat insulated duct to prevent it from condensation.
- ●Connect duct to unit before ceiling attachment.

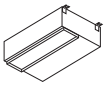
③Inlet port
- ●When shipped the inlet port lies on the back.
- ●When connecting the duct to the inlet port, remove the air filter if it is fitted to the inlet port.
- ●When placing the inlet port to carry out suction from the bottom side, use the following procedure to replace the suction duct joint and the bottom plate.



●Remove the screws which fasten the bottom plate and the duct joint on the nlet port side of the unit.



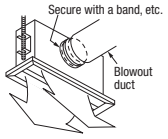
●Replace the removed bottom plate and duct joint.



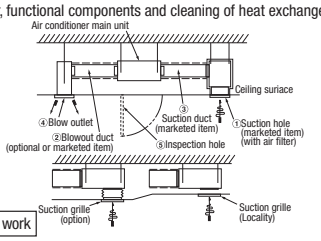
●Fit the duct join with a screw; fit the bottom plate.

- ●Make sure to insulate the duct to prevent dewing on it.

④Install the specific blowout duct in a location where the air will circulate to the entire room.
- ●Conduct the installation of the specific blowout hole and the connection of the duct before attaching them to the ceiling.
- ●Insulate the area where the duct is secured by a band for dew condensation prevention.



⑤Make sure provide an inspection hole on the ceiling. It is indispensable to service electric equipment, motor, functional components and cleaning of heat exchanger.



Bad example of duct work

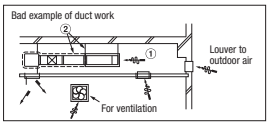
①If a duct is not provided at the suction side but it is substituted with the space over the ceiling, humidity in the space will increase by the influence of capacity of ventilation fan, strength of wind blowing against the out door air louver, weather (rainy day) and others.

a)Moisture in air is likely to condense over the external plates of the unit and to drip on the ceiling. Unit should be operated under the conditions as listed in the above table and within the limitation of wind volume. When the building is a concrete structure, especially immediately after the construction, humidity tends to rise even if the space over the ceiling is not substituted in place of a duct. In such occasion, it is necessary to insulate the entire unit with glass wool (25mm). (Use a wire net or equivalent to hold the glass wool in place.)

b)It may run out the allowable limit of unit operation (Example: When outdoor air temperature is 35°C DB, suction air temperature is 27°C WB) and it could result in such troubles as compressor overload, etc..

c)There is a possibility that the blow air volume may exceed the allowable range of operation due to the capacity of ventilation fan or strength of wind blowing against external air louver so that drainage from be heat exchanger may fall to reach the drain pan but leak outside (Example: drip on to the ceiling) with consequential water leakage in the room.

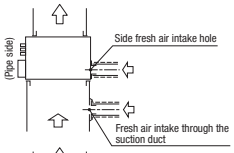
②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.



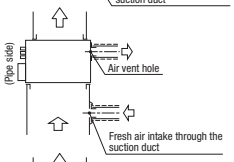
⑤Duct Work (continued)

Connecting the air intake/vent ducts

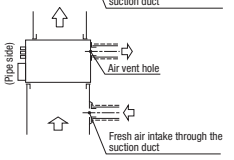
①Fresh Air Intake
[for air intake duct only]
○Use the side fresh air intake hole, or supply through a part of the suction duct.



[for simultaneous air intake/vent]
○Intake air through the suction duct.
(the side cannot be used)



②Air Vent
○Use the side air vent hole.
(always use together with the air intake)



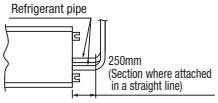
○Insulate the duct to protect it from dew condensation.

⑥Refrigerant pipe

Caution

- ●Use the new refrigerant pipe.
  When re-using the existing pipe system for R22 or R407C, pay attention to the following items.
  - ・Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.
  - ・Do not use thin-walled pipes.
- ●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- ●Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- ●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- ●Use special tools for R410A refrigerant.

Piping work

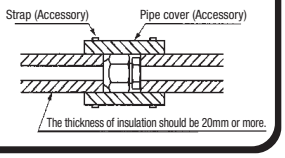


When conducting piping work, make sure to allow the pipes to be aligned in a straight line for at least 250 mm, as shown in the left illustration. (This is necessary for the drain pump to function)

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
   - ● Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※Bend the pipe with as big radius as possible and do not bend the pipe repeatedly. In addition, do not twist and crush the pipes.
   ※Do a flare connection as follows:
   - ● Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   - ● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table below. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   - ●Make sure to insulate both gas pipes and liquid pipes completely.
     ※Incomplete insulation may cause dew condensation or water dropping.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Pipe diameter	Tightening torque N·m
ϕ 6.35	14 to 18
ϕ 9.52	34 to 42
ϕ 12.7	49 to 61
ϕ 15.88	68 to 82
ϕ 19.05	100 to 120



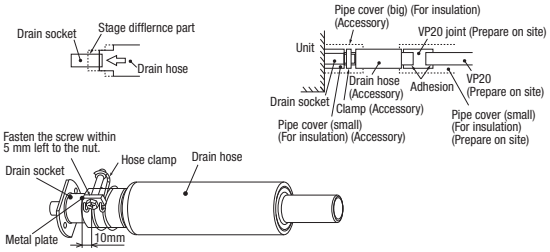
⑦Drain pipe

Caution

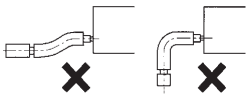
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

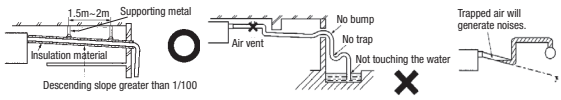
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   - Do not apply adhesives on this end.
   - Do not use acetone-based adhesives to connect to the drain socket.



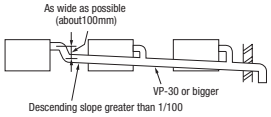
2. Prepare a joint for connecting VP-20 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP-20 pipe (prepare on site).
   ※As for drain pipe, apply VP-20 made of rigid PVC which is on the market.
   - Make sure that the adhesive will not get into the supplied drain hose. It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   - The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - Do not set up air vent.



- When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP-30 or bigger size for main drain pipe.

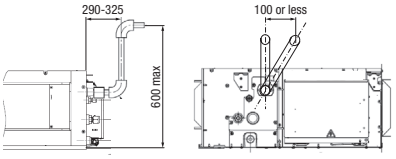


4. Insulate the drain pipe.
   - Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

⑦Drain pipe (continued)

Drain up

- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



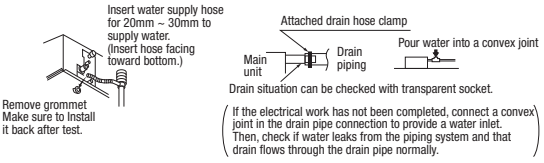
Otherwise, the construction point makes it same as drain pipe construction.

Drain test

1. Conduct a drain test after completion of the electrical work.
2. During the trail, make sure that drain flows properly through the piping and that no water leaks from connections.
3. In case of a new building, conduct the test before it is furnished with the ceiling.
4. Be sure to conduct this test even when the unit is installed in the heating season.

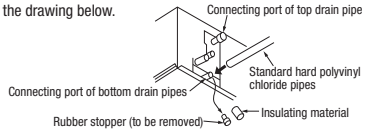
Procedures

1. Supply about 1000 cc of water to the unit through the air outlet by using a feed water pump.
2. Check the drain while cooling operation.



Outline of bottom drain piping work

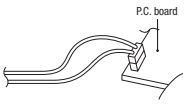
- If the bottom drain piping can be done with a descending gradient (1/50-1/100), it is possible to connect the pipes as shown in the drawing below.



Uncoupling the drain motor connector

- Uncouple the connector CNR for the drain motor as illustrated in the drawing on the right.

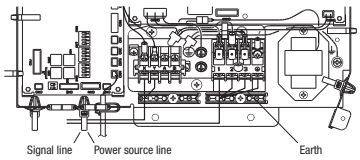
(Note: If the unit is run with the connector coupled, drain water will be discharged from the upper drain pipe joint, causing a water leak.)



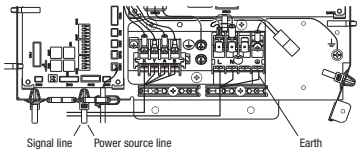
⑧Wiring-out position and wiring connection

- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (2 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamps.
4. Install the removed parts back to original place.



Single unit wiring connection



Multi unit wiring connection

⑨External static pressure setting

You can set External Static Pressure (E.S.P.) by either method of MANUAL SETTING or AUTOMATIC SETTING by remote controller.
Indoor unit will control fan-speed to keep rated air flow volume at each fan speed setting (Lo-Uhi)

1. MANUAL SETTING
   You can set required E.S.P. by wired remote controller that calculated with the set air flow rate and pressure loss of the duct connected.
   Select No.1-10 (10Pa-100Pa) from following table according to calculation result.
   Refer to technical manual for details of air flow characteristic.

Setting No.	1	2	3	4	5	6	7	8	9	10
External Static Pressure (Pa)	10	20	30	40	50	60	70	80	90	100

※ When you set No.11-19 by remote controller, unit will control fan-speed with setting of No.10 Factory default is at No.5.

- How to set E.S.P by wired remote controller
  ① Push "◆" marked button(E.S.P button).
  ② Select indoor unit No. by using ⬍ button.
  ③ Select setting No. by using ⬍ button and set E.S.P. by ⊙ button.
  See detailed procedure in technical manual.

Notice
You can NOT set E.S.P by wireless remote controller.

Caution
Be sure to set E.S.P. according to actual duct connected.
Wrong settings causes excessive air flow volume or water drop blown out.

2. AUTOMATIC SETTING
   Indoor unit will recognize E.S.P. by itself automatically and select appropriate fan speed No.1-10.

- How to start automatic setting
  ①, ②Same setting as MANUAL SETTING.
  ③ Select [AUT] by using ⬍ button and press button ⊙.
  ② After setting E.S.P. at "AUT", operate unit in FAN mode with certain fan speed (Lo-Uhi).

⑨External static pressure setting (continued)

Indoor unit fan will run automatically and recognize E.S.P. by itself.
The operation for automatic E.S.P recognition will last about 6 minutes, and it will be stopped after recognition is completed.

Caution
- Be sure to execute AUTOMATIC SETTING by remote controller AFTER ducting work is completed. When duct specification is changed after AUTOMATIC SETTING, be sure to execute AUTOMATIC SETTING again after power resetting and turning on again.
- Be sure to execute AUTOMATIC SETTING before trial cooling operation.
  (See ELECTRICAL WIRING WORK INSTRUCTION about trial cooling operation)
- Before AUTOMATIC SETTING, be sure to check that return air filter in duct is installed and damper is opened.
  Wrong procedure causes excessive air flow or water drop blown out.

Notice
- During operation for automatic recognition (the Auto Operation), fan rotates with certain speeds regardless of set fan speed by remote controller.
- When duct is set with low static pressure (around 10-50Pa), even if indoor unit operate with higher air flow volume than rated one, but it is not abnormal.
- When you changed operation mode or stop operation with ON/OFF button during Auto Operation, the Auto operation will be canceled.
- In such case, be sure to execute AUTOMATIC SETTING again according to above procedure.

⑩Check list after installation

- Check the following items after all installation work completed.

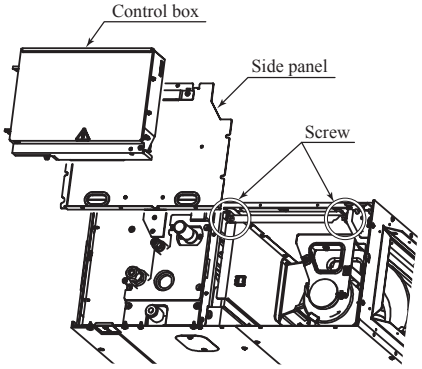
Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
No mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	
Is setting of E.S.P finished?	Excessive air flow, water drop blow out	

(2) Replacement procedure of the fan unit

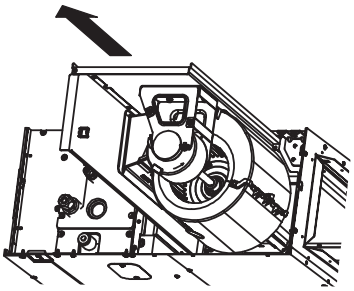
Notes(1) The unit is a heavy item. It must be supported securely and handled with care not to drop when it is necessary to replace.
(2) For the maintenance space, refer to page 230.

(a) Model FDUM50VF

1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) in the figure.

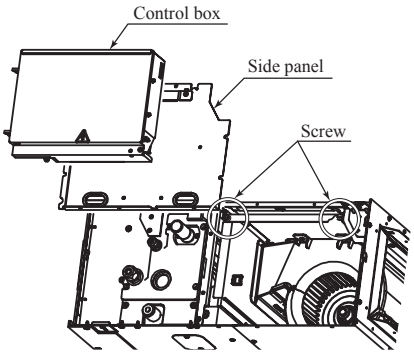


2) Take out the fan unit in the arrow direction.

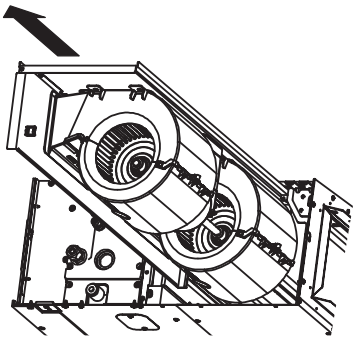


(b) Models FDUM60VF, 71VF

1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) in the figure.

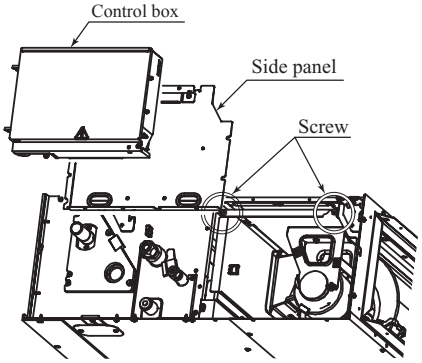


2) Take out the fan unit in the arrow direction.

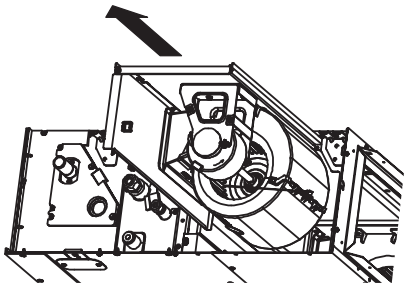


(c) Models FDUM100VF, 125VF, 140VF

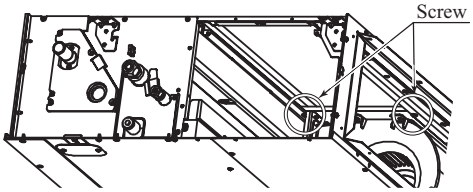
1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) from the unit located at the near side.



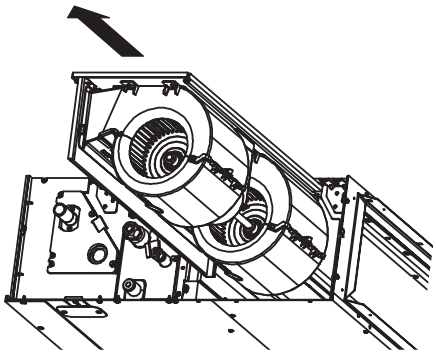
2) Take out the fan unit located at the near side in the arrow direction.



3) Remove the screws marked in the circles (2 places) from the fan unit located at the far side.



4) Take out the fan unit in the arrow direction.



PGA012D404

(6) Floor standing type (FDF)

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 255. For remote controller installation, refer to page 259. For wireless kit installation, refer to page 486. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to Page 273.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Imperfect earth work (grounding) could cause an electric shock or fire if some trouble or earth leakage occurs.
- **Earth leakage breaker must be installed.**
  Unless the earth leakage circuit breaker is provided, if could cause a fire or electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote controller at the direct sunlight.**
  It could cause breakdown or deformation of the remote controller.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Before installation

○ Install the unit properly according to this instruction manual.
○ Is it in accordance with the construction plan?

Model and power supply specification

Check.

Pipes, wires and small parts

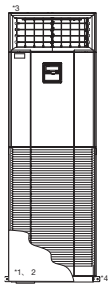
Accessory

(1) **For heat insulation of flare nut** *1

1	Pipe cover		1 pc	For gas side
2	Pipe cover		1 pc	For liquid side
3	Strap		4 pcs	

(2) **For installation** Note) Nos. 1 and 5 are used also as hardware for packing.

1	Fall-prevention fitting		1 pc	*3
2	Wood screw		2 pcs	For No. 1
3	Washer		2 pcs	For No. 2 wood screw
4	Rubber bushing		1 pc	For refrigerant and drain pipes
5	L fitting		2 pcs	*4



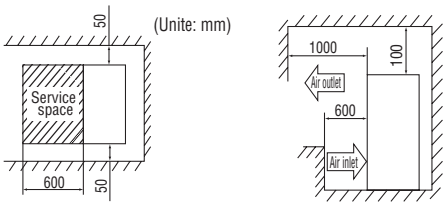
Where the accessories are put in

*1. Open the air inlet grill and Nos. (1) will be found in the unit.
*2. Nos. (2)-2-4 will be found at the same place as 1.
*3. Fall-prevention fitting is mounting on the top panel of the unit.
*4. L-fittings are mounted on the bottom part of the unit.

②Selection of installation place for the indoor unit

(Indoor unit)

Installation space Minimum required spaces are shown as follows.



• Secure sufficient spaces for inspection and maintenance.

⚠WARNING

• Install the unit securely on a floor that can endure its weight sufficiently Insufficient strength or incorrect installation could result in injuries if the unit falls.

ATTENTION: Select a place for installation where the following conditions are fulfilled with customer's consent.
• Where cool or hot air can be blown sufficiently and widely.
• Where the piping and wiring work to outdoor unit can be done easily.
• Where drainage water can run off completely.
• Where the installation floor is strong enough.
• Where the unit its protected from direct exposure to sunlight.
• Where there is no obstacle at he air inlet and air outlet.
• Where the fire alarm apparatus will not be activated by malfunction. Where There is no risk for short-circuit of air.

③Carrying-in and installation of the unit

Carrying-in

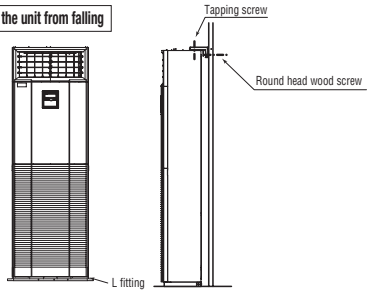
Carry with the front face at top.

ATTENTION:
• Carry in the unit kept in a package as near as possible to the installation place.
• When it is necessary to unpack the unit before carrying in, sufficient care must be taken not to damage it by using nylon slings or the like.
Note) Do not hold on the air inlet grill, air outlet louver or other sections made of plastics.
• When placing the unit on the floor after unpacking, be sure to have its front face at the top.

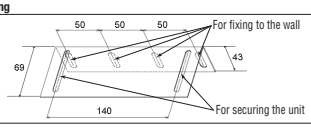
③Carrying-in and installation of the unit (Continued)

ATTENTION:
• Be sure to fix the unit with L-fittings and the fall-prevention fitting.
・Since the unit is tall, secure the unit no sooner than setting it in place.

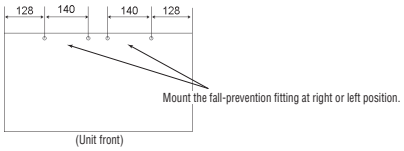
Procedure for preventing the unit from falling



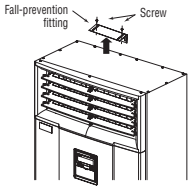
Fall-prevention fitting



Top panel

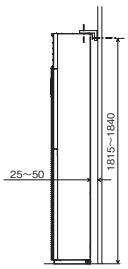
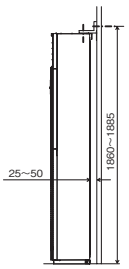


(1) Fixing the unit with the fall-prevention fitting



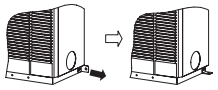
①Loosen screws (2 pcs) and remove the fall-prevention fitting.
②Select a position to fix the fall-prevention fitting as illustrated and fix it to the top of unit and the wall.
・The fixing positon of the fall-prevention fitting is as illastrated below.

Fixing position (Fall-prevention fitting)

Fitting facing upward	Fitting facing downward
	

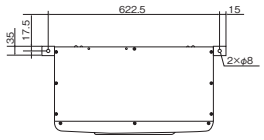
• Dimensions indicate the allowance for adjustment between the unit and the wall or floor.
• Fix the longer side of fitting to the unit.
• When the fitting is faced downward, fix it to the wall first.

(2) Fixing the unit with the L-fittings



①Remove the L-fittings mounted on the unit with screws.
②Turn over the L-fitting and fix it to the unit and either the floor or the wall as illustrated.
・Fixing position of the L-fittings are as illustrated below.

Fixing position (L fitting)



ATTENTION:
• Install the unit on the level.
Inclination must be less than 1°in fore-aft and right-left directions.

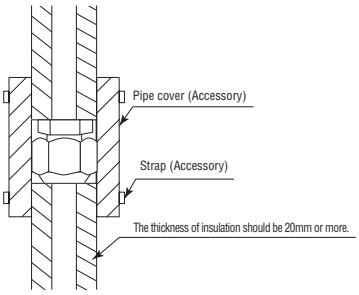
④Refrigerant piping

Caution

- ●Use the new refrigerant pipe.
  When re-using the existing pipe system for R22 or R407C, pay attention to the following items.
  - ・Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.
  - ・Do not use thin-walled pipes.
- ●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- ●Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And if air getting into refrigerant circuit, it may cause anomaously high pres and may result in burst, etc.
- ●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- ●Use special tools for R410 refrigerant.

Work procedure

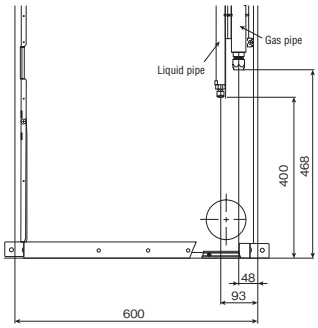
1. Remove the flare nuts and flare caps from the pipes of the indoor unit.
   ※ Make sure to loosen the flare nut by holding the flared male fitting with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   (Gas may come out a little at this time, but it is no anomaly.)
   ● Pay attention that the flare nut may pop out.
   (Because it is sometimes pressurized in the indoor unit)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigrant pipes to the indoor unit.
   ※Bend the pipe with as big radius as possible and do not bend the pipe repeatedly. In addition, do not twist and crush the pipes.
   ※Do a flare connection as follows:
   ● Make sure to loosen the flare nut by holding the flared male fitting with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   ● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it with a spanner within the specified torque mentioned in the table below.
   Make sure to hold the flared male fitting on the indoor unit side with another spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   ●Make sure to insulate both gas pipes and liquid pipes completely.
   ※Incomplete insulation may cause dew condensation and dew dropping.
4. Refrigerant is pre-charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.



Pipe diameter	Tightening torque N·m
ϕ 6.35	14 to 18
ϕ 9.52	34 to 42
ϕ 12.7	49 to 61
ϕ 15.88	68 to 82
ϕ 19.05	100 to 120

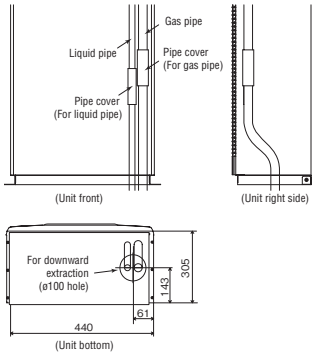
④Refrigerant piping (Continued)

◆ **Pipe and wire extracting position**

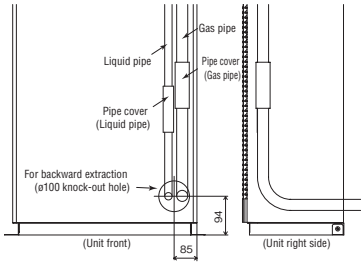


ATTENTION:
- Do not cut off the flange at the hole on the base plate for the downward extraction.

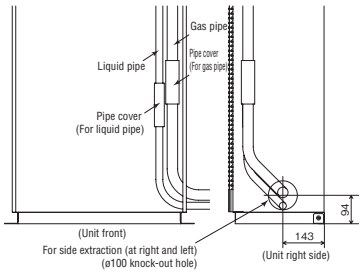
Downward extraction



Backward extraction



Sideward extraction



⑤Drain pipe

⚠WARNING

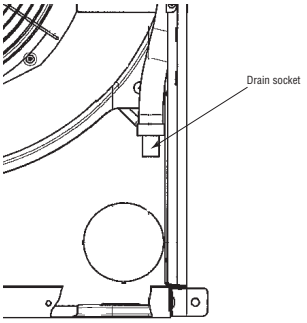
- Do not insert the drain pipe directly in the drain ditch where toxic gases such as sulffuric gas are produced.
  Toxic gas may flow into the room.

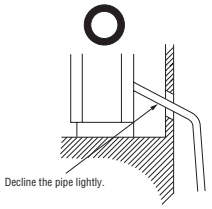
⚠CAUTION

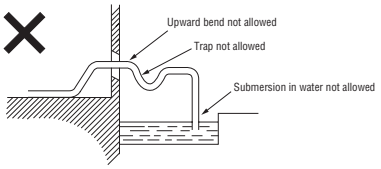
- Install the drain pipe properly according to the installation manu And insulate it to prevent from dew condensation.
  Improper installation of drain pipe may cause damage of furniture drainage water leaked or dew condensation.

Procedure

1. Connect the drain socket to the drain pipe (PV-20) provided at site and fix the joint with adhesive tape, or the like.
2. When the pipe provided at site runs through a room, insulate the pipe with a commercial insulator (Polyethylene foam: Specific gravity 0.03, thickness 15 mm or more) to prevent dewing.







ATTENTION:

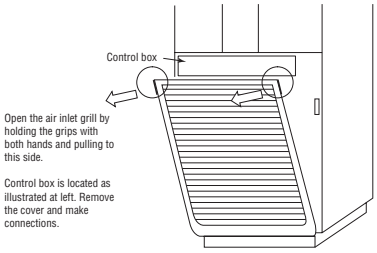
- Insulate the drain pipe to prevent dewing. (Especially in room and unit)
- Incline the drain pipe downward to the outlet (1/50 – 1/100). Upward bend or trap is not allowed on the way.
- Use a commercial hard polyvinyl chloride pipe, PV-20, for the drain pipe.

<Use of adhesive agent is prohibited.>

⑥Wire extracting position and wire connecton

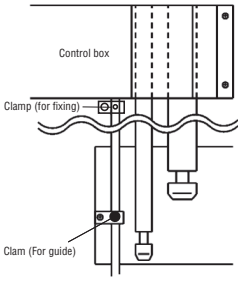
Control box position and power cable connection

- Electric work must be made by qualified electricians according to the "Engineering standards concerning electric equipment", "Extension wiring regulations" and the electric wiring work manual. Be sure to use dedicated electric circuits.
- Make sure to use specified wires for wiring, and connect them securely. Clamp the wires to protect the terminal connection from external force.
- Make sure to protect the unit with the D-type grounding work.
- For details of wiring work, refer to the attached electric wiring work manual.

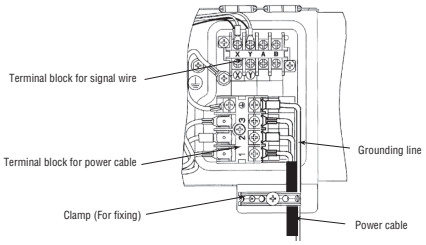


Procedure

①Remove the control box cover (fixed with a screw).
②Introduce wires in the unit and connect securely on the terminals.
③Fix each wire with a clamp (for fixing).
④Install removed parts as they were.



- Make sure to pass the power cable through the clamp (for guide).



⑦Check list after installation

- Check the following items after all installation work completed.

Check if;	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for gas leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks airflow on air inlet and outlet?	Insufficient capacity	

RKY012A007B C

(7) Wall mounted type (SRK)

- **This installation manual illustrates the method of installing an indoor unit.**
- **For electrical wiring work, please see instructions set out on the backside.**
- **For outdoor unit installation and refrigerant piping, please refer to page 273.**
- **A wired remote control unit is supplied separately as an optional part.**
- **When install the unit, be sure to check whether the selection of installation place, power supply specifications, usage limitation (piping length, height differences between indoor and outdoor units, power supply voltage and etc.) and installation spaces.**

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION.
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.
- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.
- For installing qualified personnel, take precautions in respect to themselves by using suitable protective clothing, groves, etc., and then perform the installation works.
- Please pay attention not to fall down the tools, etc. when installing the unit at the high position.
- If unusual noise can be heard during operation, consult the dealer.

The meanings of "Marks" used here are shown as follows:

⊘	Never do it under any circumstances.	❗ ⏚	Always do it according to the instruction.

⚠ WARNING

- **Installation must be carried out by the qualified installer.**
  If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.
- **Install the system in full accordance with the installation manual.**
  Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
- **Be sure to use only for household and residence.**
  If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction.
- **Use the original accessories and the specified components for installation.**
  If parts other than those prescribed by us are used, It may cause water leaks, electric shocks, fire and personal injury.
- **Install the unit in a location with good support.**
  Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.
- **Ventilate the working area well in the event of refrigerant leakage during installation.**
  If the refrigerant comes into contact with naked flames, poisonous gas is produced.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
  If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.
- **After completed installation, check that no refrigerant leaks from the system.**
  If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
- **Use the prescribed pipes, flare nuts and tools for R410A.**
  Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.
- **Tighten the flare nut by torque wrench with specified method.**
  If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.
- **The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.**
  Power supply with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.
- **Be sure to shut off the power before starting electrical work.**
  Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
- **Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.**
  Unconformable cables can cause electric leak, anomalous heat production or fire.
- **This appliance must be connected to main power supply by means of a circuit breaker or switch (fuse:16A) with a contact separation of at least 3mm.**
- **When plugging this appliance, a plug conforming to the norm IEC60884-1 must be used.**
- **Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.**
  Loose connections or cable mountings can cause anomalous heat production or fire.
- **Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.**
  Incorrect installation may result in overheating and fire.
- **Be sure to switch off the power supply in the event of installation, inspection or servicing.**
  If the power supply is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.
- **Be sure to wear protective goggles and gloves while at work.**
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.

- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulphide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.**
  If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.
- **Do not processing, splice the power cord, or share a socket with other power plugs.**
  This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.
- **Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it.**
  This may cause fire or heating.

⚠ WARNING

- **Do not vent R410A into the atmosphere : R410A is a fluorinated greenhouse gas, covered by the Kyoto Protocol with Groval Warming Potential (GWP)=1975.**
- **Do not run the unit with removed panels or protections.**
  Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
- **Do not perform any change of protective device itself or its setup condition.**
  The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.

⚠ CAUTION

- **Carry out the electrical work for ground lead with care.**
  Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.

- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations.**
  The isolator should be locked in OFF state in accordance with EN60204-1.
- **Be sure to install indoor unit properly according to the installation manual in order to run off the drainage smoothly.**
  Improper installation of indoor unit can cause dropping water into the room and damaging personal property.
- **Install the drainage pipe to run off drainage securely according to the installation manual.**
  Incorrect installation of the drainage pipe can cause dropping water into the room and damaging personal property.
- **Be sure to install the drainage pipe with descending slope of 1/100 or more, and not to make traps and air-bleedings.**
  Check if the drainage runs off securely during commissioning and ensure the space for inspection and maintenance.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **For installation work, be careful not to get injured with the heat exchanger, piping flare portion or screws etc.**
- **Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them.**
  Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.
- **When perform the air conditioner operation (cooling or drying operation) in which ventilator is installed in the room. In this case, using the air conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example; Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.**
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.

- **Do not install the unit in the locations listed below.**
  - Locations where carbon fiber, metal powder or any powder is floating.
  - Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.
  - Vehicles and ships.
  - Locations where cosmetic or special sprays are often used.
  - Locations with direct exposure of oil mist and steam such as kitchen and machine plant.
  - Locations where any machines which generate high frequency harmonics are used.
  - Locations with salty atmospheres such as coastlines.
  - Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual).
  - Locations where the unit is exposed to chimney smoke.
  - Locations at high altitude (more than 1000m high).
  - Locations with ammonic atmospheres.
  - Locations where heat radiation from other heat source can affect the unit.
  - Locations without good air circulation.
  - Locations with any obstacles which can prevent inlet and outlet air of the unit.
  - Locations where short circuit of air can occur (in case of multiple units installation).
  - Locations where strong air blows against the air outlet of outdoor unit.
  - Locations where something located above the unit could fall.

  It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation).**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit.
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit).
  - Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 5m).
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc.
- **Do not install the unit near the location where leakage of combustible gases can occur.**
  If leaked gases accumulate around the unit, it can cause fire.
- **Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**
  Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.
- **Do not use the indoor unit at the place where water splashes may occur such as in laundries.**
  Since the indoor unit is not waterproof, it can cause electric shocks and fire.
- **Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.**
  Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- **Do not place any variables which will be damaged by getting wet under the indoor unit.**
  When the relative humidity is higher than 80% or drainage pipe is clogged, condensation or drainage water can drop and it can cause the damage of valuables.
- **Do not install the remote control at the direct sunlight.**
  It can cause malfunction or deformation of the remote control.
- **Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
  It can cause the damage of the items.
- **Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.**
  Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- **Do not touch any buttons with wet hands.**
  It can cause electric shocks.
- **Do not touch any refrigerant pipes with your hands when the system is in operation.**
  During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.

BEFORE INSTALLATION

○ Before installation check that the power supply matches the air conditioner.

Standard accessories (Installation kit) Accessories for indoor unit		Q'ty
①	Installation board (Attached to the rear of the indoor unit)	1
②	Wireless remote control	1
③	Remote control holder	1
④	Tapping screws (for installation board 4dia. by 25mm)	4
⑤	Wood screw (for remote control switch holder 3.5(mm). by 16mm)	2
⑥	Battery [R03(AAA,Micro) 1.5V]	2
⑦	Air-cleaning filters	2
⑧	Filter holders (Attached to the front panel of indoor unit)	2
⑨	Insulation (#486 50 x 100 t3)	1

Option parts		Q'ty
ⓐ	Sealing plate	1
ⓑ	Sleeve	1
ⓒ	Inclination plate	1
ⓓ	Putty	1
ⓔ	Drain hose (extention hose)	1
ⓕ	Piping cover (for insulation of connection piping)	1

Necessary tools for the installation work		
1	Plus headed driver	
2	Knife	
3	Saw	
4	Tape measure	
5	Hammer	
6	Spanner wrench	
7	Torque wrench	(14.0 ~ 61.0N·m / 1.4 ~ 6.1kgf·m)
8	Hole core drill (65mm in diameter)	
9	Wrench key (Hexagon) [4m/m]	
10	Flaring tool set	(Designed specifically for R410A)
11	Gas leak detector	(Designed specifically for R410A)
12	Gauge for projection adjustment (Used when flare is made by using conventional flare tool)	
13	Pipe bender	

SELECTION OF INSTALLATION LOCATION

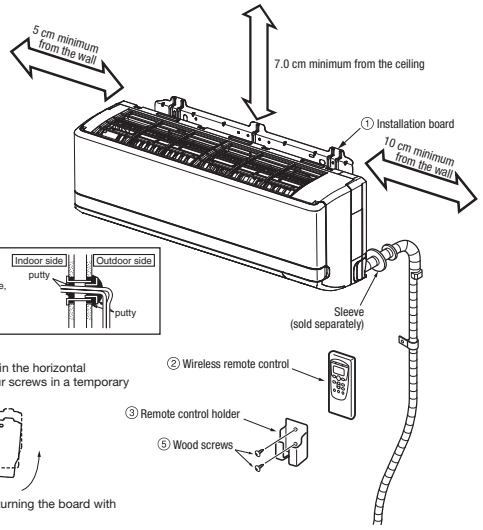
(Install at location that meets the following conditions, after getting approval from the customer)

Indoor unit

○ Where there is no obstructions to the air flow and where the cooled and heated air can be evenly distributed.
○ A solid place where the unit or the wall will not vibrate.
○ A place where there will be enough space for servicing. (Where space mentioned below can be secured)
○ Where wiring and the piping work will be easy to conduct.
○ The place where receiving part is not exposed to the direct rays of the sun or the strong rays of the street lighting.
○ A place where it can be easily drained.
○ A place separated at least 1m away from the television or the radio. (To prevent interference to images and sounds.)
○ Places where this unit is not affected by the high frequency equipment or electric equipment.
○ Avoid installing this unit in place where there is much oil mist.
○ Places where there is no electric equipment or household under the installing unit.

Wireless remote control

○ A place where the air conditioner can be received the signal surely during operating the wireless remote control.
○ Places where there is no affected by the TV and radio etc.
○ Do not place where exposed to direct sunlight or near heat devices such as a stove.

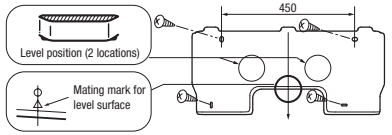


⚠ **CAUTION**
Completely seal the hole on the wall with putty. Otherwise, furniture, or other, may be wetted by leaked water or dewing.

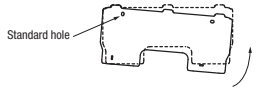
INSTALLATION OF INDOOR UNIT

Installation of Installation board

Look for the inside wall structures (Intersediats support or pillar and finally install the unit after level surface has been checked.)

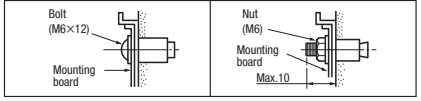


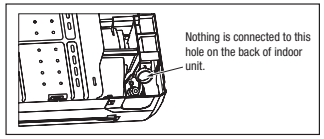
○Adjustment of the installation board in the horizontal direction is to be conducted with four screws in a temporary tightened state.



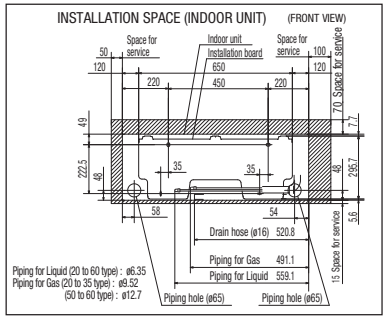
○Adjust so the board will be level by turning the board with the standard hole as the center.

Fixing on concrete wall	
Use of nut anchor	Use of bolt anchor



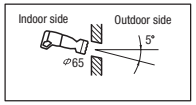


Relation between setting plate and indoor unit

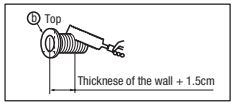


Drilling of holes and fixture of sleeve (Option parts)

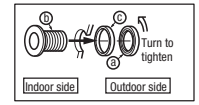
When drilling the wall that contains a metal lath, wire lath or metal plate, be sure to use pipe hole sleeve sold separately.

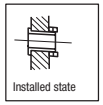


○ Drill a hole with whole core drill.



○ In case of rear piping draw out, cut off the lower and the right side portions of the sleeve collar.



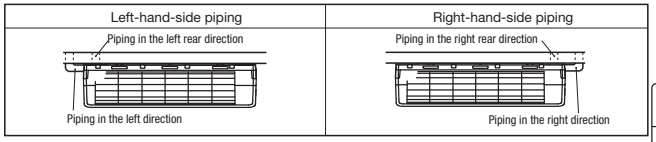


Installing the support of piping

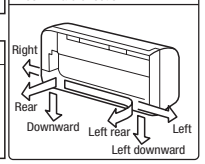
● Matters of special notice when piping from left or central/rear of tha unit.

[Top view]

Left-hand-side piping	Right-hand-side piping

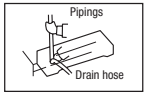


Piping is possible in the rear, left, left rear, left downward, right or downward direction.

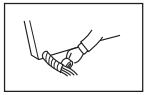


In case of piping in the right rear direction

Shaping of pipings	Taping of the exterior



○ Hold the bottom of the piping and fix direction before stretching it and shaping it.

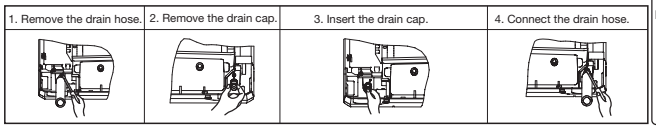


○ Tape only the portion that goes through the wall.
○ Always tape the wiring with the piping.

Sufficient care must be taken not to damage the panel when connecting pipes.

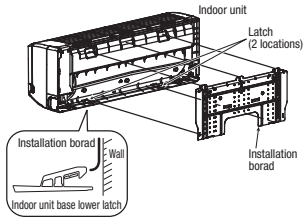
[Drain hose changing procedures]

1. Remove the drain hose.	2. Remove the drain cap.	3. Insert the drain cap.	4. Connect the drain hose.



○ Remove the screw and drain hose, making it rotate.
○ Remove it with hand or pilers.
○ Insert the drain cap which was removed at procedure "2" securely using a hexagonal wrench etc.
Note: Be careful that If it is not Inserted securely, water leakage may occur.
○ Insert the drain hose securely, making rotate. And install the screw.
Note: Be careful that If it is not Inserted securely, water leakage may occur.

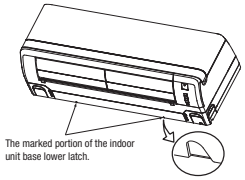
Fixing of indoor unit



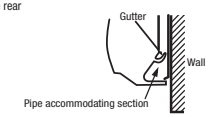
Installation Steps
①Pass the pipe through the hole in the wall, and hook the upper part of the indoor unit to the installation board.
②Gently push the lower part to secure the unit.

● How to remove the indoor unit from the installation board

① Push up at the marked portion of the indoor unit base lower latch, and slightly pull it toward you. (both right and left hand sides) (The indoor unit base lower latch can be removed from the installation board)
② Push up the indoor unit upward. So the indoor unit will be removed from the installation board.



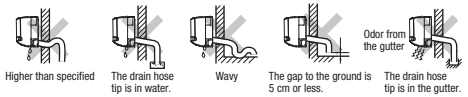
Since this air conditioner has been designed to collect dew drops on the rear surface to the drain pan, do not attach the power cord above the gutter.



Drainage

○ Arrange the drain hose in a downward angle
○ Avoid the following drain piping.

⚠CAUTION Go through all installation steps and check if the drainage is all right. Otherwise water leak may occur.

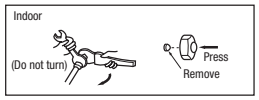


○ Pour water to the drain pan located under the heat exchanger, and ensure that the water is discharged outdoor.
○ When the extended drain hose is indoor, securely insulate it with a heat insulator available in the market.

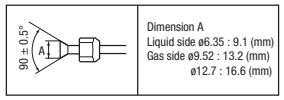
CONNECTION OF REFRIGERANT PIPINGS

Preparation

Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.



○ Remove the flared nuts. (on both liquid and gas sides)



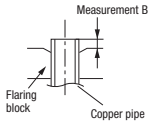
Dimension A
Liquid side ø6.35 : 9.1 (mm)
Gas side ø9.52 : 13.2 (mm)
ø12.7 : 16.6 (mm)

○ Install the removed flared nuts to the pipes to be connected, then flared the pipes.

⚠CAUTION

Do not apply refrigerating machine oil to the flared surface.

● Flaring work



Copper pipe diameter	Measurement B (mm)		
	Clutch type flare tool for R410A	Conventional (R22) flare tool	
		Clutch type	Wing nut type
ø6.35	0.0 - 0.5	1.0 - 1.5	1.5 - 2.0
ø9.52	0.0 - 0.5	1.0 - 1.5	1.5 - 2.0
ø12.7	0.0 - 0.5	1.0 - 1.5	2.0 - 2.5

Use a flare tool designed for R410A or a conventional flare tool.
Please note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use.
If a coventional flare tool is used, please use a copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.

⚠CAUTION

Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may checkdepending.

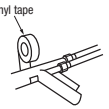
Connection

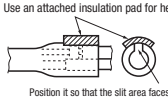
Indoor

○ Connect the pipes on both liquid and gas sides.
○ Tighten the nuts to the following torque.
Liquid side (ø6.35) : 14.0 - 18.0 N·m (1.4 - 1.8 kgf·m)
Gas side (ø9.52) : 34.0 - 42.0 N·m (3.4 - 4.2 kgf·m)
(ø12.7) : 49.0 - 61.0 N·m (4.9 - 6.1 kgf·m)

Insulation of the connection portion

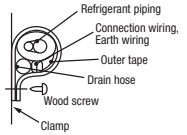
Cover the coupling with insulator and then cover it with tapes.





● Cover the indoor unit's flare-connected joints, after they are checked for a gas leak, with an indoor unit heat insulating material and then wrap them with a tape with an attached insulation pad placed over the heat insulating material's slit area.

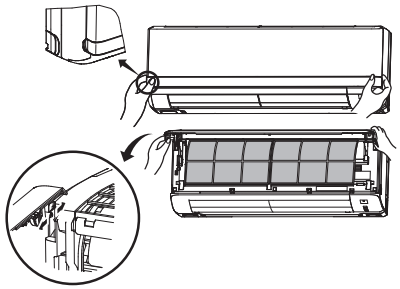
Finishing work and fixing



Cover the exterior portion with outer tape and shape the piping so it will match the contours of the route that the piping to take.
Also fix the wiring and pipings to the wall with clamps.

Open/close and detachment/attachment of the air inlet panel

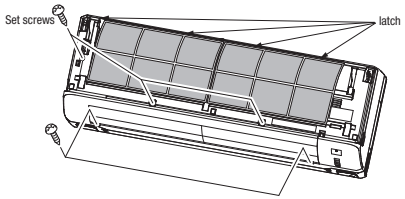
○ To open, pull the panel at both ends of lower part and release latches, then pull up the panel until you feel resistance.
(The panel stops at approx. 60° open position)
○ To close, hold the panel at both ends of lower part to lower downward and push it slightly until the latch works.
○ To remove, pull up the panel to the position shown in right illustration and pull it toward you.
○ To install, insert the panel arm into the slot on the front panel from the position shown in right illustration, hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch warks.



How to remove and fit the front panel

○ Removing
① Remove the air inlet panel.
② Remove the 5 set screws.
③ Remove the 4 latches in the upper section.
④ Move the lower part of the panel forward and push upwards to remove.

○ Fitting
① Do remove the air filter.
② Cover the body with the front panel.
③ Fit the 4 latches in the upper section.
④ Tighten the 5 set screws.
⑤ Fit the air filter.
⑥ Fit the air inlet panel.



ELECTRICAL WIRING WORK

Preparation of indoor unit

Mounting of connecting wires

① Open the air inlet panel.
② Remove the service panel.
③ Remove the wiring clamp
④ Connect the connecting wire securely to the terminal block.
  1) Connect the connection wire securely to the terminal block. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
  2) Take care not to confuse the terminal numbers for indoor and outdoor connections.
  3) Fix the connection wire using the wiring clamp.
⑤ Fix the connecting wire by wiring clamp.
⑥ Attach the service panel.
⑦ Close the air inlet panel.

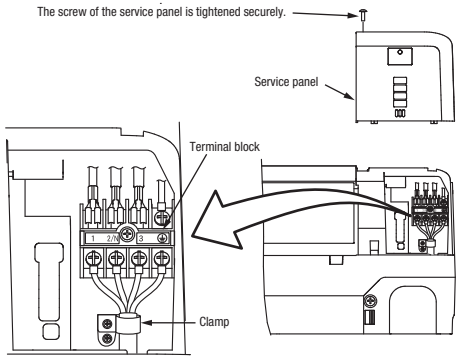
⚠CAUTION

In case of faulty wiring connection, the indoor unit stops, and then the run lamp turns on and the timer lamp blinks.

Use cables for interconnection wiring to avoid loosening of the wires.
CENELEC code for cables Required field cables.

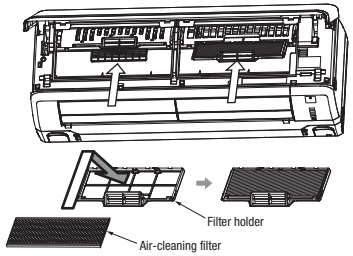
H05RNR4G1.5 (example) or 245IEC57

H	Harmonized cable type
05	300/500 volts
R	Natural-and/or synth, rubber wire insulation
N	Polychloroprene rubber conductors insulation
R	Stranded core
4or5	Number of conductors
G	One conductor of the cable is the earth conductor (yellow/green)
1.5	Section of copper wire (mm²)



Installing the air-cleaning filters

1. Open the air inlet panel and remove the air filters.
2. Install the filter holders, with the air-cleaning filters installed in the holders. In the air conditioner.
   • Each air-cleaning filter can be installed in the left or right filter holder.
3. Install the air filters and close the inlet panel.



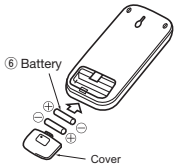
INSTALLATION OF REMOTE CONTROL SWITCH

Mounting method of battery

○Uncover the wireless remote control, and mount the batteries [R03(AAA,Micro),×2 pieces] in the body regularly.
(Fit the poles with the indication marks, ⊕ & ⊖ without fall)

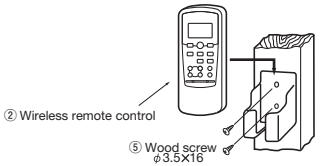
⚠ CAUTION

Do not use new and old batteries together.



Fixing to pillar or wall

○Conventionally, operate the remote control switch by holding in your hand.
○Avoid installing it on a clay wall etc.



INSTALLATION TEST CHECK POINTS

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. At the same time, explain to the customer how to use the unit and how to take care of the unit following the user's manual.

After installation

- [ ] The power supply voltage is correct as the rating.
- [ ] No gas leaks from the joints of the operational valve.
- [ ] Power cables and crossover wires are securely fixed to the terminal board.
- [ ] The screw of the service panel is tightened securely.
- [ ] Operational valve is fully open.
- [ ] The pipe joints for indoor and outdoor pipes have been insulated.

Test run

- [ ] Air conditioning operation is normal.
- [ ] No abnormal noise.
- [ ] Water drains smoothly.
- [ ] Protective functions are not working.
- [ ] The remote control is normal.
- [ ] Operation of the unit has been explained to the customer.

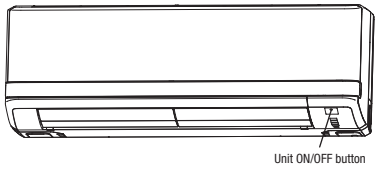
(Three-minutes restart preventive timer)
When the air conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3 minutes.
This is to protect the unit and it is not a malfunction.

HOW TO RELOCATE OR DISPOSE OF THE UNIT

○ In order to protect the environment, be sure to pump down (recovery of refrigerant).
○ Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit when the pipes are removed from the unit.

<How to pump down>
① Connect charge hose to service port of outdoor unit.
② Liquid side : Close the liquid valve with hexagon wrench key.
  Gas side : Fully open the gas valve
  Carry out cooling operation . (If indoor temperature is low, operate forced cooling operation.)
③ After low pressure gauge become 0.01MPa, stop cooling operation and close the gas valve.

● Forced cooling operation
Turn on a power supply again after a while after turn off a power supply.
Then press continually the ON/OFF button 5 seconds or more.



CONCERNING TERMINAL CONNECTION FOR AN INTERFACE

① Remove the front panel and lid of control.
② There is a terminal (respectively marked with CNS) for the indoor control board.
In connecting an interface, connect to the respective terminal securely with the connection harness supplied with an optional "Interface connection kit SC-BIKN-E" and fasten the connection harness onto the indoor control box with the clamp supplied with the kit.
For more details, please refer to the user's manual of your "Interface connection kit SC-BIKN-E".

(8) Effective range of cool/hot wind (Reference)

(a) FDT series

Guideline for ceiling height

Fan Speed Setting	Model			
	FDT40VF50VF60VF	FDT71VF	FDT100VF	FDT125VF,140VF
Hi	2.7m	3.0m	3.2m	3.6m
PHi	3.5m	3.8m	4.3m	4.5m

Notes (1) If the ceiling height is over 3m, please consider to add circulators.
This table shows reference values in case of four outlet.
If you shut some outlets, they are different.
Fan speed setting can be changed by using a wired remote controller.

(b) FDEN series

Model	Effective range
FDEN40VF, 50VF	7.5m
FDEN60VF, 71VF	8.0m
FDEN100VF, 125VF, 140VF	9.0m

[Conditions]
1. Height of unit: 2.4 – 3.0 (m) above floor level
2. Fan speed : Hi
3. Location: Free space without obstacles
4. The effective range means the horizontal distance for wind to reach the floor.
5. Wind speed at the effective range: 0.5 m/s

(c) FDF series

Model	Effective range
FDF71VD	5m
FDF100VD, 125VD, 140VD	8m

[Conditions]
1. Fan speed : Hi
2. Location: Free space without obstacles
3. The effective range means the horizontal distance for the wind to reach the floor.
4. Wind speed at the effective range: 0.5 m/s

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1.10.2 Electric wiring work installation

(1) FDT, FDTC, FDEN, FDU100-140 Series

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**
  ⚠WARNING **: Wrong installation would cause serious consequences such as injuries or death.**
  ⚠CAUTION **: Wrong installation might cause serious consequences depending on circumstances.**
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Use the genuine optional parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire.
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Electrical Wiring Connection

- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor Unit.
- Set earth of D-type.
- Keep "remote controller line" and "power source line" away from each other on constructing of unit outside.
- Run the lines (power source, remote controller and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Do not add cord in the middle of line route (of power source, remote controller and "between indoor and outdoor unit") on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication. (In the case that it is necessary to set connecting point on the way, perform thorough waterproof measurement.)
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Connection of the line ("Between indoor and outdoor unit", Earth and Remote controller)

①Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line. Furthermore, connect earth line to earth position of terminal block of power source.

②Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.

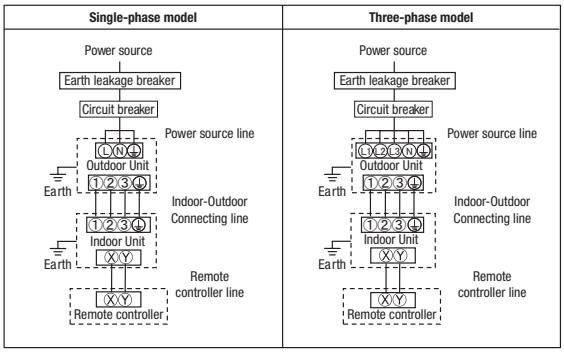
③If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.

④Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations.
The isolator should be set in the box with key to prevent touching by another person when servicing.

Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power souce line to inside unit.
※As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.

②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.



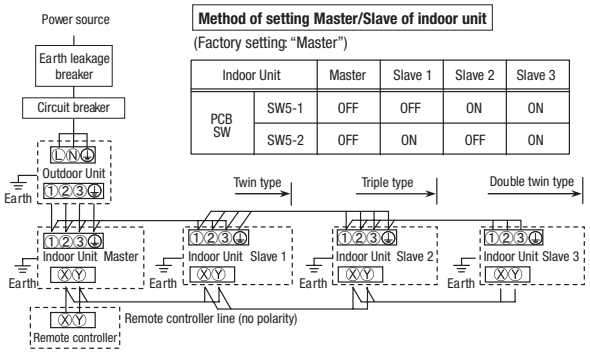
Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and "ⓧ and ⓨ" between master and slave indoor units.

②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).

③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.

④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of indoor unit
(Factory setting: "Master")

Indoor Unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

②Remote Control, Wiring and functions

●DO NOT install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

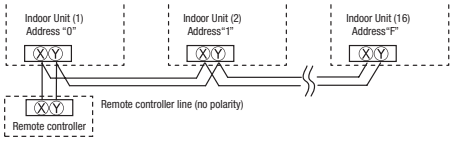
Installation and wiring of remote controller

①Install remote controller referring to the attached installation manual.
②Wiring of remote controller should use 0.3mm^2 ×2 core wires or cables.
The insulation thickness is 1mm or more. (on-site configuration)
③Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m ..... 0.5mm^2 × 2 cores
Under 300m ..... 0.75mm^2 × 2 cores
Under 400m ..... 1.25mm^2 × 2 cores
Under 600m ..... 2.0mm^2 × 2 cores
④Avoid using multi-core cables to prevent malfunction.
⑤Keep remote controller line away from earth (frame or any metal of building).
⑥Make sure to connect remote controller line to the remote controller and terminal block of indoor unit. (No polarity)

Control plural indoor units by a single remote controller.

①A remote controller can control plural indoor units (Up to 16).
In above setting, all plural indoor units will operate under same mode and temperature setting.
②Connect all indoor units with 2 core remote controller line.
③Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.

After a unit is energized, it is possible to display an indoor unit address by pressing AIR CON NO. button on the remote control unit. Press the ▲ or ▼ button to make sure that all indoor units connected are displayed in order.



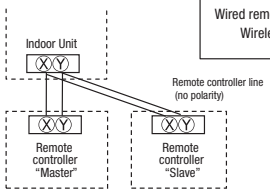
Confirming method of indoor units

When indoor unit address number is displayed on remote controller, pushing the (MODE) button to make the indoor unit with that number blow air (Display example:" I/U001 ≋ ")
Push the (MODE) button again to stop the operation.
However, this operation is invalid on the air-conditioning running.

Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)
The air conditioner operation follows the last operation of the remote controller regardless of the master/slave setting of it.
Acceptable combination is "two (2) wired remote controllers", "one (1) wired remote controller and one (1) wireless kit" or "two (2) wireless kits".
Set SW1 (wired remote controller) or SW1-2 (wireless kit) to "Slave" for the slave remote control unit. It was factory set to "Master" for shipment.
Note:The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.

Switch	setting	contents
Wired remote controller: SW1 Wireless kit: SW1-2	M	Master remote controller
	S	Slave remote controller



③Trial operation

The method of trial cooling operation

Operate the remote control unit as follows.
1. Starting a cooling test run.
①Start the system by pressing the ON/OFF button.
②Select " (Cool)" with the (MODE) button.
③Press the TEST button for 3 seconds or longer.
The screen display will switch to TEST RUN ▼ "
④When the (SET) button is pressed while " TEST RUN ▼ " is indicated, a cooling test run will start.
The screen display will switch to TEST RUN ".
2. Ending a cooling test run.
Pressing the ON/OFF button, the (TEMP) button or (MODE) button will end a cooling test run. (Cooling test run will end after 30 minutes pass.)
" TEST RUN " shown on the screen will go off.

Checking operation data

Operation data can be checked with remote control unit operation.
1. Press the CHECK button.
The display change " OPER DATA ▼"
2. Press the (SET) button while OPER DATA ▼ " is displayed.
3. When only one indoor unit is connected to remote controller, " DATA LOADING" is displayed (blinking indication during data loading).
Next, operation data of the indoor unit will be displayed. Skip to step 7.
4. When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
[Example]:
SELECT I/U " (blinking 1 seconds)
I/U000 ▲ " blinking.
5. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
6. Determine the indoor unit number with the (SET) button.
(The indoor unit number changes from blinking indication to continuous indication)
I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
↓
" DATA LOADING " (A blinking indication appears while data loaded.)
Next, the operation data of the indoor unit is indicated.
7. Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
The items displayed are in the above table.
※Depending on models, the items that do not have corresponding data are not displayed.
8. To display the data of a different indoor unit, press the AIR CON NO. button, which allows you to go back to the indoor unit selection screen.
9. Pressing the ON/OFF button will stop displaying data.
Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.
◎If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

Number	Data Item	
01		(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR___℃	(Return Air Temperature)
04	SENSOR___℃	(Remote Controller Thermistor Temperature)
05	THI-R1___℃	(Indoor Unit Heat Exchanger Thermistor / U Bend)
06	THI-R2___℃	(Indoor Unit Heat Exchanger Thermistor /Capillary)
07	THI-R3___℃	(Indoor Unit Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED___	(Indoor Unit Fan Speed)
09	DEMAND___Hz	(Frequency Requirements)
10	ANSWER___Hz	(Response Frequency)
11	I/U EEV____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN___H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR___℃	(Outdoor Air Temperature)
22	THO-R1___℃	(Outdoor Unit Heat Exchanger Thermistor)
23	THO-R2___℃	(Outdoor Unit Heat Exchanger Thermistor)
24	COMP___Hz	(Compressor Frequency)
25	HP___MPa	(High Pressure)
26	LP____MPa	(Low Pressure)
27	Td___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM___℃	(Comp Bottom Temperature)
29	CT___AMP	(Current)
30	TARGET SH___℃	(Target Super Heat)
31	SH___℃	(Super Heat)
32	TDSH___℃	(Discharge Pipe Super Heat)
33	PROTECTION No.__	(Protection State No. of The Compressor)
34	O/U FANSPEED____	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN___H	(Total Running Hours of The Compressor)
38	O/U EEV1____P	(Pulse of The Outdoor Unit Expansion Valve EEV)
39	O/U EEV2____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

※Depending on outdoor unit model, there are data not shown.

Trail operation of drain pump

Drain pump operation from remote control unit is possible. Operate a remote control unit by following the steps described below.
1. To start a forced drain pump operation.
①Press the TEST button for three seconds or longer.
The display will change " TEST RUN ▼ "
②Press the ▼ button once and cause " DRAIN PUMP " to be displayed.
③When the (SET) button is pressed, a drain pump operation will start.
Display: " TO STOP "
2. To cancel a drain pump operation.
①If either (SET) or ON/OFF button is pressed, a forced drain pump operation will stop. The air conditioning system will become OFF.

◎If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

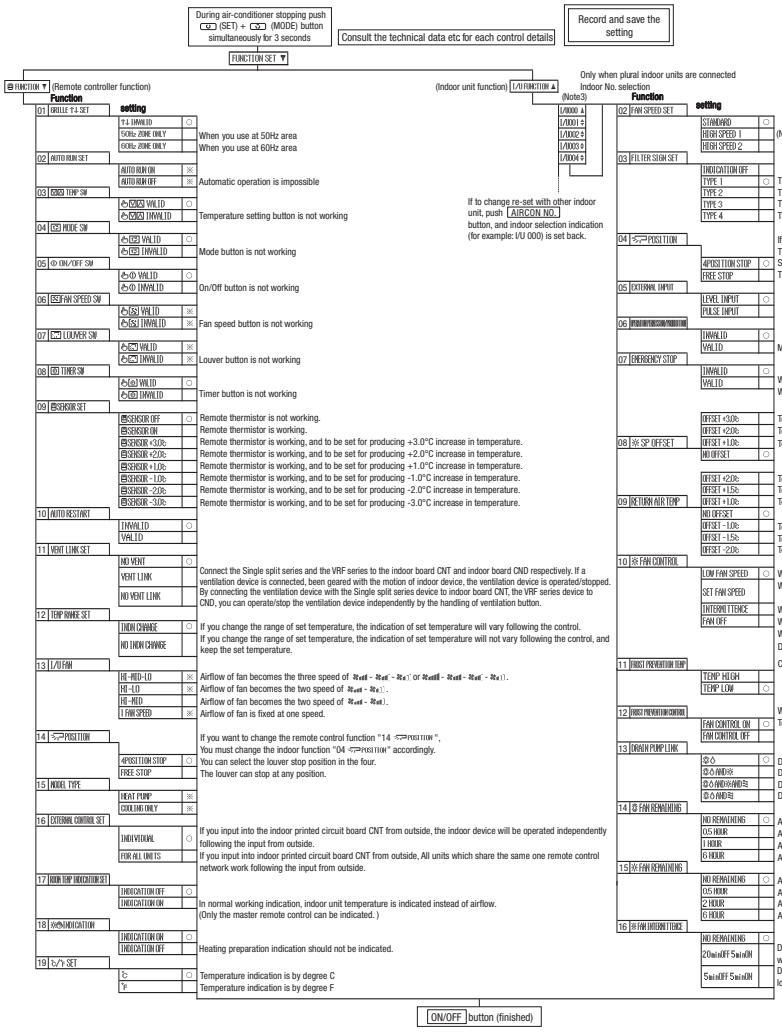
④ Function Setting by Remote Controller

The functional setting

● The initial function setting for typical using is performed automatically for a remote control unit and an indoor unit by the door unit connected, when remote controller and inside unit are connected.
As long as they are used in a typical manner, there will be no need to change the initial settings.
If you would like to change the initial setting marked " ◯ ", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.
As for detail of setting, refer to the installation manual of remote controller.

[Flow of function setting]

Start : While indoor unit do not operate, press " ○ " (SET) and " ◇ " (MODE) button for 3 seconds at the same time.
Finalize : Press " ○ " (SET) button.
Reset : Press " ✐ " (RESET) button.
Select : Press ▲ ▼ button.
End : Press ⏻ON/OFF button.
It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
" ◯ " : Initial settings
" ※ " : Automatic criterion
As for detail, refer to the installation manual of remote controller.



Note 1: The initial setting marked " ※ " is decided by connected indoor and outdoor unit, and is automatically defined as following table.

Function No.	Item	Default	Model
Function 02 of remote controller	AUTO RUN SET	AUTO RUN ON	"Auto-RUN" mode selectable indoor unit.
		AUTO RUN OFF	Indoor unit without "Auto-RUN" mode
Function 06 of remote controller	FAN SPEED SW	VALID	Indoor unit with two or three step of air flow setting
		INVALID	Indoor unit with only one of air flow setting
Function 07 of remote controller	LOUVER SW	VALID	Indoor unit with automatically swing louver
		INVALID	Indoor unit without automatically swing louver
Function 13 of remote controller	I/U FAN	HI-MED-LO	Indoor unit with three step of air flow setting
		HI-LO	Indoor unit with two step of air flow setting
		HI-MED	
		1 FAN SPEED	Indoor unit with only one of air flow setting
Function 15 of remote controller	MODEL TYPE	HEAT PUMP	Heat pump unite
		COOLING ONLY	Exclusive cooling unite

Note 2: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting				
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FAN SPEED SET	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me	
	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi	

Initial function setting of some indoor unit is "HIGH SPEED"

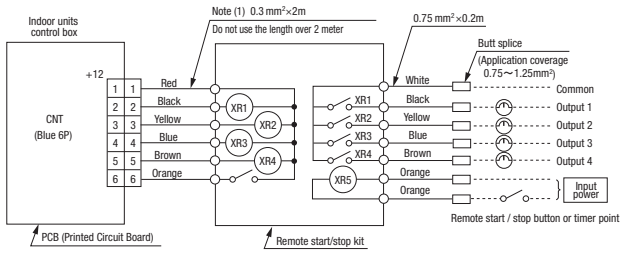
Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

⑤Control mode switching

●The control content of indoor units can be switched in following way. (▭ is the default setting)

Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7 －1	ON	Operation check, Drain motor test run
	OFF	Normal operation

⑥Function of CNT connector of indoor printed circuit board



●CNT connector (local) vendor model
Connector : Made by molex 5264 - 06
Terminals : Made by molex 5263T

●Function

Output 1	Operation output (there is output when unit is in operation.)
Output 2	Heating output (there is output when operation MODE is HEATING.)
Output 3	Compressor ON output (there is output when compressor is in operation.)
Output 4	Inspection output (there is output when unit is stopped by error.)
Input 5	Remote operation input (Volt-free contact) (Inputted to operate unit)

⑦Troubleshooting

The operation data is saved when the situation of abnormal operation happen, and the data can be confirmed by remote controller.

[Operating procedure]

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Once, press the ▼ button, and the display change
   ERROR DATA ▲ ".
3. Press the (SET) button and abnormal operation data mode is started.
4. When only one indoor unit is connected to remote controller, following is displayed.
   ①The case that there is history of abnormal operation.
   →Error code and " DATA LOADING " is displayed.
   [Example]: [E8] (ERROR CODE)
   " DATA LOADING " is displayed (blinking indication during data loading).
   Next, the abnormal operation data of the indoor unit will be displayed.
   Skip to step 8.
   ②The case that there is not history of abnormal operation.
   → " NO ERROR " is displayed for 3 seconds and this mode is closed.
5. When plural indoor units is connected, following is displayed.
   ①The case that there is history of abnormal operation.
   →Error code and the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ▲ " blinking
   ②The case that there is not history of abnormal operation.
   →Only address number is displayed.
6. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
7. Determine the indoor unit number with the (SET) button.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ▲ " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   [E8] " DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the abnormal operation data is indicated.
   If the indoor unit doing normal operation is selected, NO ERROR " is displayed for 3 seconds and address of indoor unit is displayed.
8. By the ▲ ▼ button, the abnormal operation data is displayed.
   Displayed data item is based on ③ Trial operation .
   ※Depending on models, the items that do not have corresponding data are not displayed.
9. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit slection screen.
10. Pressing the ①ON/OFF button will stop displaying data.

Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote controllers are connected to one (1) indoor unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

Error Code of indoor unit

Display on remote controller	LED on indoor circuit board		Content
	red (checking)	green (normal)	
Off	Off	Continuous blinking	Normal
	Off	Off	Fault on power, indoor power off or lack phase
E1	Off	Continuous blinking	Fault on the transmission between indoor circuit board and remote control
	Not sure	Not sure	Indoor computer abnormal
E5	Blinking twice	Continuous blinking	Fault on outdoor-indoor transmission
E6	Blinking once	Continuous blinking	Indoor heat exchange sensor interrupted or short-circuit
E7	Blinking once	Continuous blinking	Indoor air inhaling sensor broken or short-circuit
E8	Blinking once	Continuous blinking	The temperature of heat exchange abnormal
E9	Blinking once	Continuous blinking	Float SW actions (only with FS)
E10	Off	Continuous blinking	Excess number of remote controller connections
E14	Blinking for three times	Continuous blinking	The communication fault for master/slave indoor units
E16	Blinking once	Continuous blinking	Fan motor abnormal
E19	Blinking once	Continuous blinking	Configuration fault on running checking model
E28	Off	Continuous blinking	Remote controller sensor interrupted
Over E30	Off	Continuous blinking	Outdoor unit checking (outdoor circuit board LED checking)

(2) FDU200, 250 Series

PSB012D999

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**

  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.

  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances. Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**

  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Use the genuine optional parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire.
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

Control mode switching

- The control content of indoor units can be switched in following way. (▭ is the default setting)

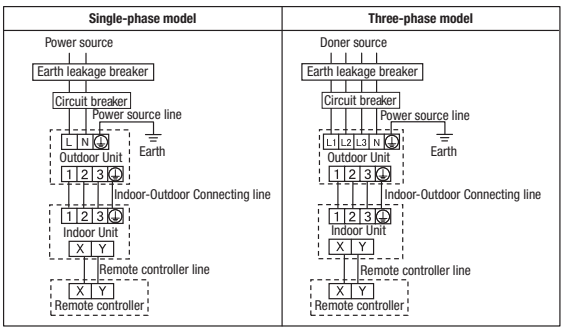
Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7 －1	ON	Operation check, Drain motor test run
	OFF	Normal operation

①Electrical Wiring Connection

- Electrical wiring work must be performed by an electlician an qualified by a local power provider. These wiring specifications are determined on the assumption that the following instructions are observed:
  ① Do not use cords other than copper ones.
  Do not use any supply line lighter than one specified in parentheses for each type below.
  –braided cord (code designation 60245 IEC 51), if allowed in the relevant part 2;
  –ordinary tough rubber sheathed cord (code designation 60245 IEC 53);
  –flat twin tinsel cord (code designation 60227 IEC 41);
  –ordinary polyvinyl chloride sheathed cord (code designation 60227 IEC 53);
  ② Connect the power supply to the outdoor unit.
  ③ Pay extra attention so as not to confuse signal line and power source line connection, because an error in their connection can be burn all the boards at once.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Provide a dedicated branching circuit and never share a branching circuit with other equipment. If shared, disconnection at the circuit breaker may occur, which can cause secondary damage.
- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor Unit.
- Set earth of D-type.
- Do not add cord in the middle of line (of indoor power source, remote controller and signal) route on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication.
  (In the case that it is necessary to set connecting point on the signal line way, perform thorough waterproof measurement.)
- Run the lines (power source, remote controller and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Keep "remote controller line" and "power source line" away from each other on constructing of unit outside.
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Connection of the line ("Between indoor and outdoor unit", Earth and Remote controller)
  ① Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
  In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line.
  Furthermore, connect earth line to earth position of terminal block of power source.
  ② Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.
  ③ If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.
  ④ Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations.
  The isolator should be set in the box with key to prevent touching by another person when servicing.

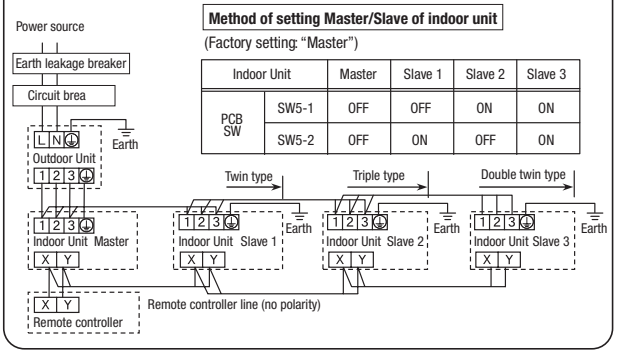
Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power souce line to inside unit.
※As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.
②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.



Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and " Ⓧ and Ⓨ " between master and slave indoor units.
②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of indoor unit

(Factory setting: "Master")

Indoor Unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

②Remote Control, Wiring and functions

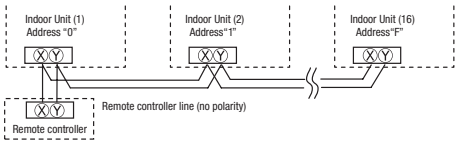
●DO NOT install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

Installation and wiring of remote controller

①Install remote controller referring to the attached installation manual.
②Wiring of remote controller should use 0.3mm^2 ×2 core wires or cables.
The insulation thickness is 1mm or more. (on-site configuration)
③Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m ..... 0.5mm^2 × 2 cores
Under 300m ..... 0.75mm^2 × 2 cores
Under 400m ..... 1.25mm^2 × 2 cores
Under 600m ..... 2.0mm^2 × 2 cores
④Avoid using multi-core cables to prevent malfunction.
⑤Keep remote controller line away from earth (frame or any metal of building).
⑥Make sure to connect remote controller line to the remote controller and terminal block of indoor unit. (No polarity)

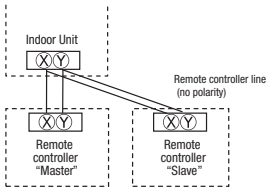
Control plural indoor units by a single remote controller.

①A remote controller can control plural indoor units (Up to 16).
In above setting, all plural indoor units will operate under same mode and temperature setting.
②Connect all indoor units with 2 core remote controller line.
③Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.



Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)
The air conditioner operation follows the last operation of the remote controller regardless of the master/slave setting of it.
Acceptable combination is "two (2) wired remote controllers", "one (1) wired remote controller and one (1) wireless kit" or "two (2) wireless kits".
Set one to "Master" and the other to "Slave".
Note:The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.



③Operation and confirmation from remote controller

Operation from RC-EX1A	Operation from RC-E4, RC-E5

1 Check the number of units connected in the remote control system.
It checks sub units of twin, triple or W-twin connection.

"Menu"⇒"Next"⇒"Service & Maintenance"⇒ "Input password"⇒"IU address"	Press AIR CON NO button to display the IU address. Press the ▼ or ▲ button and check addresses of connected indoor units one by one.

2 Check if each unit is connected properly in the remote control system.
It cannot check main and sub units of twin, triple or W-twin connection.

When the operation is stopped, "Menu"⇒ "Next"⇒"Service & Maintenance"⇒ "Input password"⇒"IU address"⇒"check run mode"	If AIR CON NO. button is pressed when the operation is stopped, the indoor unit address is displayed. If you select one of addresses for connected indoor units by pressing the ▼ or ▲ button and press the (MODE) button, the unit starts to blow air.

3 Setting main/slave remote controllers

"Menu"⇒"Next"⇒"R/C function settings"⇒ "Input password"⇒"Main/Sub of R/C"	Set SW1 to "Slave" for the slave remote control unit.

4 Checking operation data

"Menu"⇒"Next"⇒"Service & Maintenance"⇒ "Input password"⇒"Operation data"	Press the CHECK button. ⇒ "OPER DATA ▼" is displayed. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Press the "SELECT I/U" button. ⇒ Select one of addresses for connected indoor units by pressing the ▲ or ▼ button. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Select data by pressing the ▲ or ▼ button.

5 Checking inspection display

"Menu"⇒"Next"⇒"Service & Maintenance"⇒ "Input password"⇒"Inspection display"	Press the CHECK button. ⇒ ▼ button. ⇒ ERR DATA.⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Data.

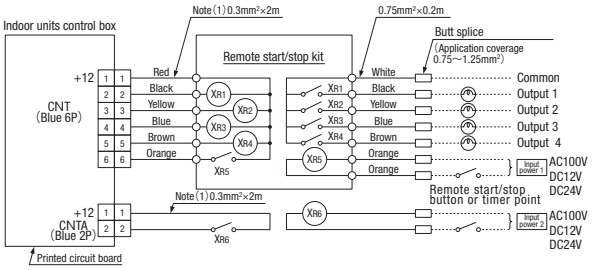
6 Cooling test run from remote controller

"Menu"⇒"Next"⇒"Installation settings"⇒ "Input password"⇒"Test run"⇒ "Cooling test run"⇒"Start"	①Start the system by pressing the ON/OFF button. ②Select " (Cool)" with the (MODE) button. ③Press the TEST button for 3 seconds or longer. The screen display will switch TEST RUN ▼ " ④When the (SET) button is pressed while " TEST RUN ▼" is indicated, a cooling test run will start. The screen display will switch TEST RUN ".

7 Trial operation of drain pump from remote controller

"Menu"⇒"Next"⇒"Installation settings"⇒ "Input password"⇒"Test run"⇒ "Drain pump test run"⇒"Run"	①Press the TEST button for three seconds or longer. The display will change " TEST RUN ▼ " ②Press the ▼ button once and cause " DRAIN PUMP " to be displayed. ③When the (SET) button is pressed, a drain pump operation will start. Display: " TO STOP "

④ Function of CNT connector of indoor printed circuit board



Note (1): Do not use the length over 2 meter

●CNT connector (local) vendor model
Connector : Made by molex 5264-06
Terminals : Made by molex 5263 T

●Function

Output 1	Air conditioner operation output (When the air conditioner ON: X_{R1} = ON)	
Output 2	Heating output	
Output 3	Thermostat ON output (When the thermostat ON: X_{R3} = ON)	
Output 4	Air conditioner check ON (When checking air conditioner: X_{R4} = ON)	
Input	At shipping	X_{R5} OFF ⇒ ON: Air conditioner operates.
		X_{R5} ON ⇒ OFF: Air conditioner stops.
	*Functions and controls may vary depending on the switching at site.	
Input 2 (FDT etc.)	At shipping	X_{R6} OFF ⇒ ON: Air conditioner operates.
		X_{R6} ON ⇒ OFF: Air conditioner stops.
	*Functions and controls may vary depending on the switching at site.	

* Refer to I/U settings.

●CNTA connector is installed on FDT, etc. Refer to the spec. drawings.
CNTA connector (local) vendor model
Connector : Made by JST XAP02V-1-E
Terminals : Made by JST SXA-01T-P0.6

⑥ Operation and setting from remote controller

A: Refer to the instruction manual for RC-EX series.
B: Refer to the installation manual for RC-EX series.
C: Loading a utility software vie Internet
○: Nearly same function setting and operations are possible.
△: Similar function setting and operations are possible.

	Setting & display item	Description	RC-EX series	RC-E4 RC-E5
1. Remote Controller network				
1	Control plural indoor units by a single remote controller	A remote controller can control plural indoor units up to 16 (in one group of remote controller network). An address is set to each indoor unit.	○	○
2	Master/slave setting of remote controllers	A maximum of two remote controllers (include option wireless) can be connected to one indoor unit. Set one to "Master" and the other to "Slave".	B	○
2. TOP screen, Switch manipulation			A	
1	Menu	"Control", "Settings", or "Details" can be selected. (3.-19.)	A	
2	Operation mode	"Cooling", "Heating", "Fan", "Dry" or "Auto" can be set.	A	○
3	Set temp.	"Set temperature" can be set by 0.5℃ interval.	A	○
4	Air flow direction	"Air flow direction". [Individual flap control setting] can be set.	A	○
5	Fan speed	"Fan speed" can be set.	A	○
6	Timer setting	"Timer operation" can be set.	A	○
7	ON/OFF	"On/Off operation of the system" can be done.	A	○
8	High power SW	"High power operation" or "Normal operation" can be selected.	A	
9	Energy-saving SW	"Energy-saving operation" or "Normal operation" can be selected.	A	
3. Energy-saving settin			A	
1	Auto OFF timer [Administrator password]	For preventing the timer from keeping ON, set hours to stop operation automatically with this timer. ・The selectable range of setting time is from 30 to 240 minutes (10minutes interval) ・When setting is "Valid", this timer will activate whenever the ON timer is set.	A	△
2	Peak-cut timer [Administrator password]	Power consumption can be reduced by restricting the maximum capacity. Set the [Start time], the [End time] and the capacity limit % (Peak-cut %). ・4-operation patterns per day can be set at maximum. ・The setting time can be changed by 5-minutes interval. ・The selectable range of capacity limit % (Peak-cut %) is from 0% to 40-80% (20% interval). ・Holiday setting is available.	A	
3	Automatic temp. set back [Administrator password]	After the elapse of the set time period, the current set temp. will be set back to the [Set back temp.] ・The setting can be done in cooling and heating mode respectively. ・The selectable range of the set time is from 20 min. to 120 min. (10 min. interval). ・Set the [Set back temp.] by 1℃ interval.	A	△
4. Individual flap control setting			A	
	Individual flap control setting	The moving range (the positions of upper limit and lower limit) of the flap for individual air outlet port can be set.	A	○
5. Ventilation				
1	External ventilation (In combination with ventilator)	On/Off operation of the external ventilator can be done. ・The settings of [Interlock] with AC (air-conditioner), [Single operation] of ventilator or operation [invalid] of ventilation can be done through [Ventilation settings] in the [Remote controller] menu.	A	○
6. Filter sign reset			A	○
1	Filter sign reset	The filter sign can be reset.	B	
2	Setting next cleaning date	The next cleaning date can be set.	A	
7. Initial settings				
1	Clock setting	The current date and time can be set or revised.	A	△
2	Date and time display	[Display] or [Hide] the date and/or time can be set, and the [12H] or [24H] display can be set.	A	
3	Summer time	When select [Valid], the +1hour adjustment of current time can be set.When select [Invalid], the [Summer time] adjustment can be reset.	A	
4	Contrast	The contrast of LCD can be adjusted higher or lower.	A	
5	Backlight	Switching on/off a light can be set and the period of the lighting time can be set within the range of 5sec-90sec (5sec interval).	A	
6	Controller sound	It can set with or without [Controller sound (beep sound)] at touching panel.	A	
8. Timer settings			A	
1	Set On timer by hour	The period of time to start operation after stopping can be set. ・The period of set time can be set within the range of 1hour-12hours (1hr interval). ・The operation mode, set temp and fan speed at starting operation can be set.	A	△
2	Set Off timer by hour	The period of time to stop operation after starting can be set. ・The period of set time can be set within the range of 1hour-12hours (1hr interval).	A	△
3	Set On timer by clock	The clock time to start operation can be set. ・The set clock time can be set by 5 minutes interval. ・[Once (one time only)] or [Everyday] operation can be switched. ・The operation mode, set temp and fan speed at starting operation can be set.	A	△
4	Set Off timer by clock	The clock time to stop operation can be set. ・The set clock time can be set by 5 minutes interval. ・[Once (one time only)] or [Everyday] operation can be switched.	A	△
5	Confirmation of timer settings	Status of timer settings can be seen.	A	
9. Weekly timer				
1	Weekly timer [Administrator password]	On timer and Off timer on weekly basis can be set. ・8-operation patterns per day can be set at a maximum. ・The setting clock time can be set by 5 minutes interval. ・Holiday setting is available. ・The operation mode, set temp and fan speed at starting operation can be set.	A	△ △ △
10. Home leave mode				
1	Home leave mode [Administrator password]	When leaving home for a long period like a vacation leave, the unit can be operated to maintain the room temperature not to be hotter in summer or not to be colder in winter. ・The judgment to switch the operation mode (Cooling⇔Heating) is done by the both factors of the set temp. and outdoor air temp. ・The set temp. and fan speed can be set.	A	

⑥ Operation and setting from remote controller (continued)

	Setting & display item	Description	RC-EX series	RC-E4 RC-E5
11.	Administrator settings	[Administrator password]	A	
1	Enable/Disable setting	・Enable/Disable setting of operation can be set. [On/Off] [Change set temp.] [Change operation mode] [Change air flow direction] [Individual flap control setting][Fan speed] [High power operation] [Energy-saving operation] [Timer settings] [Weekly timer setting] ・Request for administrator password can be set. [Individual flap control setting][Weekly timer][Energy-saving setting][Home leave mode][Administrator settings]	A	△
2	Silent mode timer	The period of time to operate the outdoor unit by prioritizing the quietness can be set. ・The [Start time] and the [End time] for operating outdoor unit in silent mode can be set. ・The period of the operation time can be set once a day by 5 minutes interval.	A	△
3	Setting temp. range	The upper/lower limit of indoor temp. setting range can be set. ・The limitation of indoor temp. setting range can be set for each operation mode in cooling and heating.	A	△
4	Temp. increment setting	The temp increment setting can be changed by 0.5℃ or 1.0℃.	A	
5	RC display setting	Register [Room name] [Name of I/U] Display [indoor temp.] or not. Display [inspection code] or not. Display [Heating stand-by] [Defrost operation] [Auto cooling/heating] or not	A	 ○ △ ○
6	Change administrator password	The administrator password can be changed. (Default setting is "0000") The administrator password can be reset.	A B	
12.	Installer settings	[Service password]	B	
1	Installation date	The [Installation date] can be registered. ・When registering the [Installation date], the [Next service date] is displayed automatically. (For changing the [Next service date]. please refer the item of [Service & Maintenance].)	B	
2	Service contact	The [Service contact] can be registered and can be displayed on the RC. ・The [Contact company] can be registered within 10 characters. ・The [Contact phone] can be registered within 13 digits.	B	
3	Test run	On/Off operation of the test run can be done.	B	
	Cooling test run	The [Cooling test run] can be done at 5℃ of set temp. for 30 minutes.		○
	Drain pump test run	Only the drain pump can be operated.		○
	Compressor Hz fixed operation	The [Test run] operation can be done with fixed compressor Hz set by installer.		○
4	Static pressure adjustment	In case of combination with only the ducted indoor unit which has a function of static pressure adjustment, the static pressure is adjustable.	B	
5	Change auto-address	The set address of each indoor unit decided by auto-address setting method can be changed to any other address. (For multiple KX units only)	B	△
6	Address setting of Main IU	Main indoor unit address can be set. ・Only the Main indoor unit can change operation mode and the Sub indoor units dominated by the Main indoor unit shall follow. ・The Main indoor unit can domain 10 indoor units at a maximum.	B	△
13.	RC function settings	[Service password]	B	
1	Main/Sub RC setting	The setting of [Main/Sub RC] can be changed.	B	○
2	RC sensor	The offset value of [RC sensor] sensing temp. can be set respectively in heating and cooling.	B	○
3	9 RC sensor adjustment	The offset value of [RC sensor] sensing temp. can be set respectively in heating and cooling. ・The setting range of offset value is ±3℃ both in cooling and heating.	B	△
4	12 Operation mode	The [Valid/Invalid] setting of [Auto][Cooling][Heating] and [Dry] can be done respectively.	B	○
5	13 Fan speed	The setting of [Fan speed] can be done from following patterns.・1-speed, 2-speeds (Hi-Me), 2-speeds (Hi-Lo), 3-speeds, 4-speeds.	B	○
6	14 External input	The applicable range ([Individual] or [All units]) of CnT input to the multiple indoor units connected in one control system. ・[Individual] : Only the unit received CnT input signal.・[All units] : All the units connected to one control system received CnT input signal.	B	○
7	15 Ventilation setting	The setting of [Invalid] operation of ventilator, [Interlock] with AC or [Independent] of ventilator can be selected. ・When setting [Interlock], the operation of external ventilator is interlocked with the operation of AC ・When setting [Independent], only the operation of external ventilator is available.	B	○
8	16 Flap control	The [Flap control] method can be switched to[Stop at fixed position] or [Stop at any position]・[Stop at fixed position] : Stop the flap at a certain position among the designated 4 positions.・[Stop at any position] : Stop the flap at any arbitrary position just after the stopping command from RC was sent.	B	○
9	17 Auto-restart	The operation control method after recovery of power blackout happened during operation can be set.	B	○
10	18 Auto temp. setting	[Valid] or [Invalid] of [Auto temp. setting] can be selected.	B	
11	19 Auto fan speed setting	[Valid] or [Invalid] of [Auto fan speed setting] can be selected.	B	
14.	I/U settings	[Service password]	B	
1	High ceiling	The fan tap of indoor fan can be changed. ・[Standard] [High ceiling 1] [High ceiling 2] can be selected.	B	○
2	Filter sign	The setting of filter sign display timer can be done from following patterns.	B	○
3	External input 1	The content of control by external input can be changed.・The selectable contents of control are [On/Off] [Permission/Prohibition] [Cooling/heating] [Emergency stop]	B	○
4	External input 1 signal	The type of external input signal ([Level input]/[Pulse input]) can be changed.	B	○
5	External input 2	・The selectable contents of control are [On/Off] [Permission/Prohibition] [Cooling/heating] [Emergency stop]	B	
6	External input 2 signal	The type of external input signal ([Level input]/[Pulse input]) can be changed.	B	
7	Heating thermo-off temp. adjust.	The judgment temp. of heating thermo-off can be adjusted within the range from 0 to +3℃ (1℃ interval)	B	△
8	Return air sensor adjust.	The sensing temp. of return air temp. sensor built in the indoor unit can be adjusted within the range of ±2℃.	B	△
9	Fan control in heating thermo OFF	The fan control method at heating thermo-off can be changed.・The selectable fan control methods are [Low] [Set fan speed] [Intermittent] [Stop].	B	○
10	Anti-frost temp.	The judgment temp. of anti-frost control for the indoor unit in cooling can be changed to [Temp. High] or [Temp. Low].	B	○
11	Anti-frost control	When the anti-frost control of indoor unit in cooling is activated, the fan speed can be changed.	B	○
12	Drain pump operation	In any operation mode in addition to cooling and dry mode, the setting of drain pump operation can be done.	B	○
13	Residual fan operation in cooling	The time period of residual fan operation after stopping or thermo-off in cooling mode can be set.	B	○
14	Residual fan operation in heating	The time period of residual fan operation after stopping or thermo-off in heating mode can be set.	B	○
15	Intermittent fan operation in heating	The fan operation rule following the residual fan operation after stopping or thermo-off in heating mode can be set.	B	○
16	Fan circulator operation	In case that the fan is operated as the circulator, the fan control rule can be set.	B	
17	Control pressure adjust. (For OA processing unit only)	When only the OA processing units are operated, control pressure value can be changed.	B	○
18	Auto operation mode	The [Auto rule selection] for switching the operation mode automatically can be selected from 3 patterns.	B	
19	Thermo. rule setting	When selecting [Outdoor air temp. control], the judgment temp can be offset by outdoor temp..	B	
20	Auto fan speed control	Under the [Auto fan speed control] mode, the switching range of fan speed can be selected from following 2 patterns [Auto 1] [Auto 2]. ・[Auto 1] : Hi ⇔Me⇔Lo・[Auto 2] : P-hi⇔Hi⇔Me⇔Lo	B	
15.	Service & Maintenance	[Service password]	B	
1	IU address No.	Max. 16 indoor units can be connected to one remote controller, and all address No. of the connected indoor units can be displayed. ・The indoor unit conforming to the address No. can be identified by selecting the address No. and tapping [Check] to operate the indoor fan.	B	○
2	Next service date	The [Next service date] can be registered.・The [Next service date] and [Service contact] is displayed on the [Periodical check] message screen.	AB	
3	Operation data	Total 39 items of [Operation data] for indoor unit and outdoor unit can be displayed.	B	○
4	Error history	[Date and time of error occurred] [I/U address] [Error code] for Max. 16 latest cases of error history can be displayed.	B	△
	Display anomaly data	The operation data just before the latest error stop can be displayed.	B	
	Reset periodical check	The timer for the periodical check can be reset.	B	○
5	Saving I/U settings	The I/U settings memorized in the indoor PCB connected to the remote controller can be saved in the memory of the remote controller.	B	
6	Special settings	[Erase I/U address] [CPU reset] [Initializing] [Touch panel calibration]	B	△
16.	Inspection		A	△
	Confirmation of Inspection	The address No, of anomalous indoor/outdoor unit and error code are displayed.		
17.	PC connection		C	
	USB connection	Weekly timer setting and etc., can be set from PC.		

PSB012D994

(8) FDUM Series

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Use the genuine optional parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire.
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire.
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Electrical Wiring Connection

- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor Unit.
- Set earth of D-type.
- Keep "remote controller line" and "power source line" away from each other on constructing of unit outside.
- Run the lines (power source, remote controller and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Do not add cord in the middle of line route (of power source, remote controller and "between indoor and outdoor unit") on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication. (In the case that it is necessary to set connecting point on the way, perform thorough waterproof measurement.)
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Connection of the line ("Between indoor and outdoor unit", Earth and Remote controller)

①Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line. Furthermore, connect earth line to earth position of terminal block of power source.

②Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.

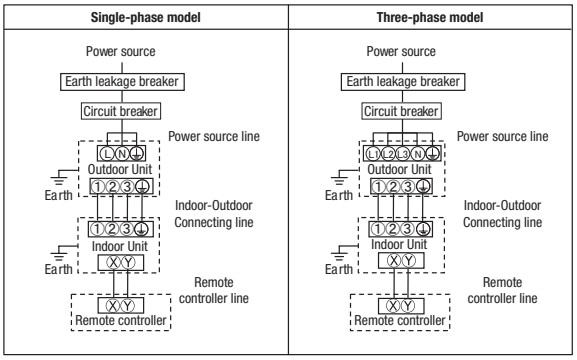
③If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.

④Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations.
The isolator should be set in the box with key to prevent touching by another person when servicing.

Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power souce line to inside unit.
※As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.

②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.



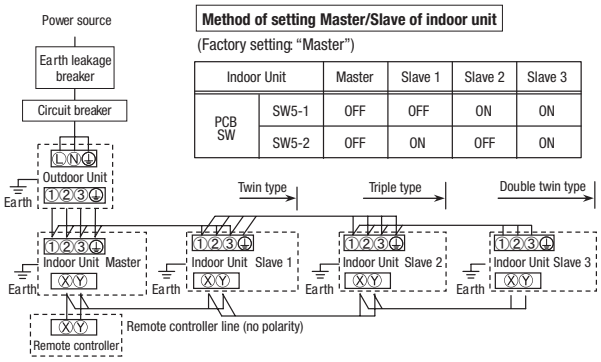
Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and " Ⓧ and Ⓨ " between master and slave indoor units.

②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).

③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.

④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of indoor unit
(Factory setting: "Master")

Indoor Unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

②Remote Control, Wiring and functions

●DO NOT install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

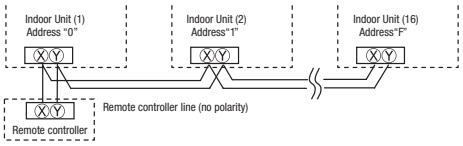
Installation and wiring of remote controller

①Install remote controller referring to the attached installation manual.
②Wiring of remote controller should use 0.3mm^2 ×2 core wires or cables.
The insulation thickness is 1mm or more. (on-site configuration)
③Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m ..... 0.5mm^2 × 2 cores
Under 300m ..... 0.75mm^2 × 2 cores
Under 400m ..... 1.25mm^2 × 2 cores
Under 600m ..... 2.0mm^2 × 2 cores
④Avoid using multi-core cables to prevent malfunction.
⑤Keep remote controller line away from earth (frame or any metal of building).
⑥Make sure to connect remote controller line to the remote controller and terminal block of indoor unit. (No polarity)

Control plural indoor units by a single remote controller.

①A remote controller can control plural indoor units (Up to 16).
In above setting, all plural indoor units will operate under same mode and temperature setting.
②Connect all indoor units with 2 core remote controller line.
③Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.

After a unit is energized, it is possible to display an indoor unit address by pressing AIR CON NO. button on the remote control unit. Press the ▲ or ▼ button to make sure that all indoor units connected are displayed in order.



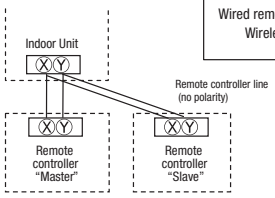
Confirming method of indoor units

When indoor unit address number is displayed on remote controller, pushing the (MODE) button to make the indoor unit with that number blow air (Display example:" I/U001 ")
Push the (MODE) button again to stop the operation.
However, this operation is invalid on the air-conditioning running.

Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)
The air conditioner operation follows the last operation of the remote controller regardless of the master/slave setting of it.
Acceptable combination is "two (2) wired remote controllers", "one (1) wired remote controller and one (1) wireless kit" or "two (2) wireless kits".
Set SW1 (wired remote controller) or SW1-2 (wireless kit) to "Slave" for the slave remote control unit. It was factory set to "Master" for shipment.
Note:The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.

Switch	setting	contents
Wired remote controller: SW1 Wireless kit: SW1-2	M	Master remote controller
	S	Slave remote controller



③Trial operation

The method of trial cooling operation

Operate the remote control unit as follows.
1. Starting a cooling test run.
①Start the system by pressing the ON/OFF button.
②Select " (Cool)" with the (MODE) button.
③Press the TEST button for 3 seconds or longer.
The screen display will switch to: " TEST RUN "
④When the (SET) button is pressed while " TEST RUN " is indicated, a cooling test run will start.
The screen display will switch to " TEST RUN ".
2. Ending a cooling test run.
Pressing the ON/OFF button, the (TEMP) button or (MODE) button will end a cooling test run. (Cooling test run will end after 30 minutes pass.)
" TEST RUN " shown on the screen will go off.

Checking operation data

Operation data can be checked with remote control unit operation.
1. Press the CHECK button.
The display change " OPER DATA "
2. Press the (SET) button while " OPER DATA " is displayed.
3. When only one indoor unit is connected to remote controller, " DATA LOADING" is displayed (blinking indication during data loading).
Next, operation data of the indoor unit will be displayed. Skip to step 7.
4. When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
[Example]:
"SELECT I/U" (blinking 1 seconds)→
"I/U000 " blinking.
5. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
6. Determine the indoor unit number with the (SET) button.
(The indoor unit number changes from blinking indication to continuous indication)
" I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
↓
" DATA LOADING " (A blinking indication appears while data loaded.)
Next, the operation data of the indoor unit is indicated.
7. Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
The items displayed are in the above table.
※Depending on models, the items that do not have corresponding data are not displayed.
8. To display the data of a different indoor unit, press the AIR CON NO. button, which allows you to go back to the indoor unit selection screen.
9. Pressing the ON/OFF button will stop displaying data.
Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.
◎If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

Number	Data Item	
01		(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Controller Thermistor Temperature)
05	THI-R1 ___℃	(Indoor Unit Heat Exchanger Thermistor / U Bend)
06	THI-R2 ___℃	(Indoor Unit Heat Exchanger Thermistor /Capillary)
07	THI-R3 ___℃	(Indoor Unit Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED ___	(Indoor Unit Fan Speed)
09	DEMAND ___Hz	(Frequency Requirements)
10	ANSWER ___Hz	(Response Frequency)
11	I/U EEV ____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN ___H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR ___℃	(Outdoor Air Temperature)
22	THO-R1 ___℃	(Outdoor Unit Heat Exchanger Thermistor)
23	THO-R2 ___℃	(Outdoor Unit Heat Exchanger Thermistor)
24	COMP ___Hz	(Compressor Frequency)
25	HP ____MPa	(High Pressure)
26	LP ____MPa	(Low Pressure)
27	Td ___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM ___℃	(Comp Bottom Temperature)
29	CT ___AMP	(Current)
30	TARGET SH ___℃	(Target Super Heat)
31	SH ___℃	(Super Heat)
32	TDSH ___℃	(Discharge Pipe Super Heat)
33	PROTECTION No. ___	(Protection State No. of The Compressor)
34	O/U FANSPEED ___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN ___H	(Total Running Hours of The Compressor)
38	O/U EEV1 ___ P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2 ___ P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

※Depending on outdoor unit model, there are data not shown.

Trail operation of drain pump

Drain pump operation from remote control unit is possible. Operate a remote control unit by following the steps described below.
1. To start a forced drain pump operation.
①Press the TEST button for three seconds or longer.
The display will change " TEST RUN "
②Press the ▼ button once and cause " DRAIN PUMP " to be displayed.
③When the (SET) button is pressed, a drain pump operation will start.
Display: " TO STOP "
2. To cancel a drain pump operation.
①If either (SET) or ON/OFF button is pressed, a forced drain pump operation will stop. The air conditioning system will become OFF.

◎If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

④Function Setting by Remote Controller

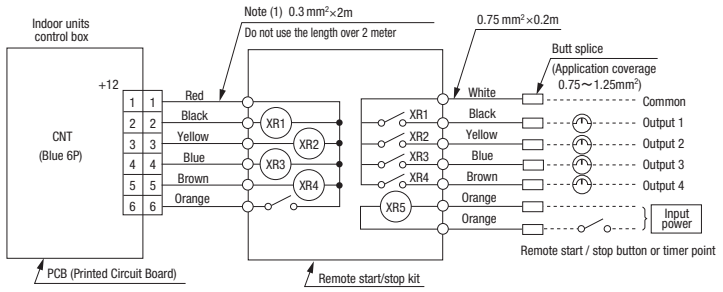
Refer to page 246.

⑤Control mode switching

●The control content of indoor units can be switched in following way. (▭ is the default setting)

Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7－1	ON	Operation check, Drain motor test run
	OFF	Normal operation

⑥Function of CNT connector of indoor printed circuit board



●CNT connector (local) vendor model
Connector : Made by molex 5264 - 06
Terminals : Made by molex 5263T

●Function

Output 1	Operation output (there is output when unit is in operation.)
Output 2	Heating output (there is output when operation MODE is HEATING.)
Output 3	Compressor ON output (there is output when compressor is in operation.)
Output 4	Inspection output (there is output when unit is stopped by error.)
Input 5	Remote operation input (Volt-free contact) (Inputted to operate unit)

⑦Troubleshooting

The operation data is saved when the situation of abnormal operation happen, and the data can be confirmed by remote controller.

[Operating procedure]

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Once, press the ▼ button, and the display change
   ERROR DATA ♟ ".
3. Press the ○ (SET) button and abnormal operation data mode is started.
4. When only one indoor unit is connected to remote controller, following is displayed.
   ①The case that there is history of abnormal operation.
   →Error code and " DATA LOADING " is displayed.
   [Example]: [E8] (ERROR CODE)
   " DATA LOADING " is displayed (blinking indication during data loading).
   Next, the abnormal operation data of the indoor unit will be displayed.
   Skip to step 8.
   ②The case that there is not history of abnormal operation.
   → " NO ERROR " is displayed for 3 seconds and this mode is closed.
5. When plural indoor units is connected, following is displayed.
   ①The case that there is history of abnormal operation.
   →Error code and the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ♟ " blinking
   ②The case that there is not history of abnormal operation.
   →Only address number is displayed.
6. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
7. Determine the indoor unit number with the ○ (SET) button.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ♟ " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   [E8] "DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the abnormal operation data is indicated.
   If the indoor unit doing normal operation is selected, NO ERROR " is displayed for 3 seconds and address of indoor unit is displayed.
8. By the ▲ ▼ button, the abnormal operation data is displayed.
   Displayed data item is based on ③ Trial operation .
   ※Depending on models, the items that do not have corresponding data are not displayed.
9. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit slection screen.
10. Pressing the ⏻ON/OFF button will stop displaying data.

Pressing the ⟋ (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote controllers are connected to one (1) indoor unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

Error Code of indoor unit

Display on remote controller	LED on indoor circuit board		Content
	red (checking)	green (normal)	
Off	Off	Continuous blinking	Normal
	Off	Off	Fault on power, indoor power off or lack phase
E1	Off	Continuous blinking	Fault on the transmission between indoor circuit board and remote control
	Not sure	Not sure	Indoor computer abnormal
E5	Blinking twice	Continuous blinking	Fault on outdoor-indoor transmission
E6	Blinking once	Continuous blinking	Indoor heat exchange sensor interrupted or short-circuit
E7	Blinking once	Continuous blinking	Indoor air inhaling sensor broken or short-circuit
E8	Blinking once	Continuous blinking	The temperature of heat exchange abnormal
E9	Blinking once	Continuous blinking	Float SW actions (only with FS)
	Blinking twice	Continuous blinking	Drain pump over current
E10	Off	Continuous blinking	Excess number of remote controller connections
E14	Blinking for three times	Continuous blinking	The communication fault for master/slave indoor units
E16	Blinking once	Continuous blinking	Fan motor (1) abnormal
	Blinking twice	Continuous blinking	Fan motor (2) abnormal
E19	Blinking once	Continuous blinking	Configuration fault on running checking model
E20	Blinking once	Continuous blinking	Fan motor (1) abnormal rotation
	Blinking twice	Continuous blinking	Fan motor (2) abnormal rotation
E28	Off	Continuous blinking	Remote controller sensor interrupted
Over E30	Off	Continuous blinking	Outdoor unit checking (outdoor circuit board LED checking)

PGA012D405

(4) FDF Series

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**

  ⚠WARNING **: Wrong installation would cause serious consequences such as injuries or death.**

  ⚠CAUTION **: Wrong installation might cause serious consequences depending on circumstances.**

  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**

  ⃠ Never do it under any circumstances. | ❶ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Use the genuine optional parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire.
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

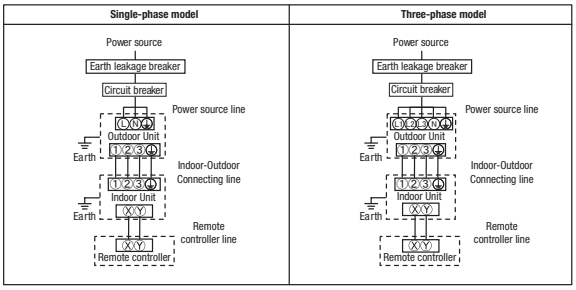
①Electrical Wiring Connection

- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor Unit.
- Set earth of D-type.
- Keep "remote controller line" and "power source line" away from each other on constructing of unit outside.
- Run the lines (power source, remote controller and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Do not add cord in the middle of line route (of power source, remote controller and "between indoor and outdoor unit") on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication. (In the case that it is necessary to set connecting point on the way, perform thorough waterproof measurement.)
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Connection of the line ("Between indoor and outdoor unit", Earth and Remote controller)

①Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line. Furthermore, connect earth line to earth position of terminal block of power source.
②Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.
③If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.
④Install the local switch near the unit.

Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power souce line to inside unit.
※ As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.
②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.

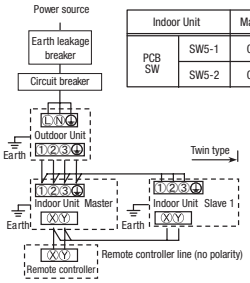


Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and "ⓧand Ⓨ" between master and slave indoor units.
②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.

Method of setting Master/Slave of indoor unit

(Factory setting: "Master")



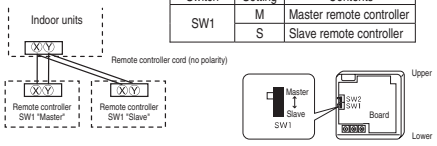
Indoor Unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

Switch and wiring specification

Refer to the installation manual attached to the outdoor unit.

②Wiring for the remote controller

- For each indoor unit, one more remote controller can be connected in addition to the one which is built in the main unit.



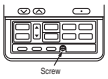
Switch	Setting	Contents
SW1	M	Master remote controller
	S	Slave remote controller

Set SW1 to "Slave" for the slave remote controller. It was factory set to "Master" for shipment.
Note: The setting "Remote controller thermistor enabled" is only selectable with the master remote controller in the position where you want to check room temperature.
The air conditioner operation follows the last operation of the remote controller regardless of the master/ slave setting of it.

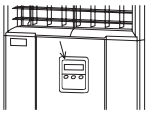
* When setting the remote controller built in the main unit to the "Slave":
Remove the cover and change the setting of switch as follows.

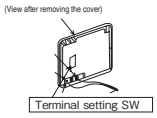
②Wiring for the remote controller (Continued)

① Open the remote controller cover and remove the screw without fail.



② Remove the upper case of remote controller. Attach a flat head screwdriver at the upper part of remote controller and pry lightly. It will come off easily.
Use some cushion to protect the center panel.





③Function Setting by Remote Controller

Installation and wiring of remote controller

①Wiring of remote controller should use 0.3mm² × 2 core wires or cables. (on-site configuration)
②Maximum prolongation of remote controller wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

100 - 200m·····0.5mm² × 2 cores
Under 300m ·····0.75mm² × 2 cores
Under 400m ·····1.25mm² × 2 cores
Under 500m ·····2.0mm² × 2 cores

The indication when power source is supplied

When power source is turned on, the following is displayed on the remote controller until the communication between the remote controller and indoor unit settled.

Master remote controller : " WAIT M"
Slave remote controller : " WAIT S"

At the same time, a mark or a number will be displayed for two seconds first.
This is the software's administration number of the remote controller, not an error cord.

06 AC
WAIT M

※The left mark is only an example. Other marks may appear.

When remote controller cannot communicate with the indoor unit for half an hour, the below indication willappear.
Check wiring of the indoor unit and the outdoor unit etc.

INSPECT I/U

How to set function

1. Stop air-conditioner and press (SET) (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼" will be displayed.

FUNCTION SET ▼

2. Press (SET) button.

3. Make sure which do you want to set, "FUNCTION ▼" (remote controller function) or "I/U FUNCTION ▲" (indoor unit function).

4. Press or button.
Selecct "FUNCTION ▼" (remote controller function) or "I/U FUNCTION ▲" (indoor unit function).

FUNCTION ▼

5. Press (SET) button.

I/U FUNCTION ▲

6.【On the occasion of remote controller function selection】

① "DATA LOADING" (Indication with blinking) → Display is changed to "01 GRILLE ↑↓SET".

② Press ▲ or ▼ button.
"No. and function"are indicated by turns on the remote controller function table, then you can select from them.
(For example)

02 ← Function No.
AUTO RUN SET ← Function

③ Press (SET) button.
The current setting of selected function is indicated.
(for example) "AUTO RUN ON" ← If "02 AUTO RUN SET" is selected

02
AUTO RUN ON ← Setting

④ Press ▲ or ▼ button.
Select the setting.

02 AUTO RUN ON ↔ 02 UTO RUN OFF A

⑤ Press (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, Set as the same procedure if you want to set continuously ,and if to finish, go to 7.

02
SET COMPLETE

【On the occasion of indoor unit function selection】

① "DATA LOADING" (Blinking for 2 to 23 seconds to read the data)
↓
Indication is changed to "02 FAN SPEED SET". Go to ②.

[Note]
(1) If plural indoor units are connected to a remote controller,
the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.

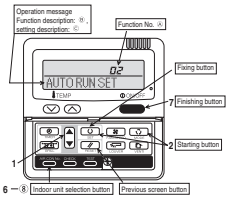
I/U000 ▲

(2) Press ▲ or ▼ button.
Select the number of the indoor unit you are to set
If you select "ALL UNIT ▼", you can set the same setting with all unites.

(3) Press (SET) button.

② Press ▲ or ▼ button.
"No. and function" are indicated by turns on the indoor unit function table, then you can select from them.
(For example)

02 ← Function No.
FAN SPEED SET ← Function



③Function Setting by Remote Controller (Continued)

③ Press (SET) button.
The current setting of selected function is indicated.
(For example) "STANDARD" ← If "02 FAN SPEED SET" is selected.

02
STANDARD ← Setting

④ Press ▲ or ▼ button.
Select the setting.

⑤ Press (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7.

02
SET COMPLETE

※ When plural indoor units are connected to a remote controller, press the AIRCON NO. button, which allows you to go back to the indoor unit selection screen. (example "I/U 000 ▲")

7. Press ON/OFF button.
Setting is finished.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.
- Setting is memorized in the controller and it is saved independently of power failure.

【How to check the current setting】
When you select from "No. and funcion" and press set button by the previous operation, the "Setting" displayed first is the current setting.
(But, if you select "ALL UNIT ▼", the setting of the lowest number indoor unit is displayed.)

The functional setting

●The initial function setting for typical using is performed automatically by the indoor unit connected, when remote controller and indoor unit are connected.
As long as they are used in a typical manner, there will be no need to change the initial settings.
If you would like to change the initial setting marked " ○", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.

Sequence of the function setting is as follows.

The range of temperature setting

When shipped, the range of set temperature differs depending on the operation mode as below.
Heating : 16~30ûC (55~86ûF)
Except heating (cooling, fan, dry, automatic) : 18~30ûC (62~86ûF)

●Upper limit and lower limit of set temperature can be changed with remote controller.
Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30ûC (68 to 86ûF).
Lower limit setting: valid except heating (automatic, cooling, fan, dry) Possible to set in the range of 18 to 26ûC (62 to 79ûF).
When you set upper and lower limit by this function, control as below.

1. When ⑫TEMP RANGE SET, remote controller function of function setting mode is "INDN CHANGE" (factory setting),
【If upper limit value is set】
During heating, you cannot set the value exceeding the upper limit.

【If lower limit value is set】
During operation mode except heating, you cannot set the value below the lower limit.

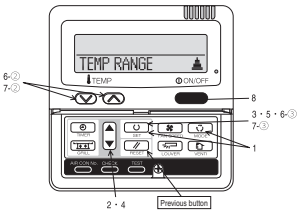
2. When ⑫TEMP RANGE SET, remote controller function of function setting mode is "NO INDN CHANGE"
【If upper limit value is set】
During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit.
But, the indication is the same as the temperature set.

【If lower limit value is set】
During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit.
But, the indication is the same as the temperature set.

●How to set upper and lower limit value

1. Stop the air-conditioner, and press (SET) and (MODE) button at the same time for over three seconds .
The indication changes to "FUNCTION SET ▼".
2. Press ▼ button once, and change to the "TEMP RANGE ▲ " indication.
3. Press (SET) button, and enter the temperature range setting mode.
4. Select "UPPER LIMIT ▼" or "LOWER LIMIT ▲" by using ▲ ▼ button.
5. Press (SET) button to fix.
6. When "UPPER LIMIT ▼" is selected (valid during heating)
① Indication: " ∨ ∧ SET UP" → "UPPER 30ûC ∨ "
② Select the upper limit value with temperature setting button ∨ ∧. Indication example: "UPPER 26ûC ∨ ∧" (blinking)
③ Press (SET) button to fix. Indication example: "UPPER 26ûC" (Displayed for two seconds)
After the fixed upper limit value displayed for two seconds, the indication will return to "UPPER LIMIT ▼".
7. When "LOWER LIMIT ▲" is selected (valid during cooling, dry, fan, automatic)
① Indication: " ∨ ∧ SET UP" → "LOWER 18ûC ∧ "
② Select the lower limit value with temperature setting button ∨ ∧. Indication example: "LOWER 24ûC ∨ ∧" (blinking)
③ Press (SET) button to fix. Indication for example: "LOWER 24ûC" (Displayed for two seconds)
After the fixed lower limit value displayed for two seconds, the indication will return to "LOWER LIMIT ▼".
8. Press ON/OFF button to finish.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.



Note 1: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting			
		[illegible]	[illegible]	[illegible]	[illegible]
FAN SPEED SET	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me
	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi

Initial function setting of some indoor unit is "HIGH SPEED"

Note 2: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

③Function Setting by Remote Controller (Continued)

[Flow of function setting]

Start : While indoor unit do not operate, press " (SET button) " (SET) and " (MODE button) " (MODE) button for 3 seconds at the same time.
Finalize : Press " (SET button) " (SET) button.
Reset : Press " (RESET button) " (RESET) button.
Select : Press ▲ ▼ button.
End : Press ⓘON/OFF button.

It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
" ○ " : Initial settings
" ※ " : Automatic criterion
As for detail, refer to the installation manual of remote controller.

During air-conditioner stopping push (SET) + (MODE) button simultaneously for 3 seconds → FUNCTION SET ▼

Consult the technical data etc for each control details

Record and save the setting

FUNCTION ▼ (Remote controller function)

Function	setting		
01 GRILLE ↑↓ SET	↑↓ INVALID	○	
	50Hz ZONE ONLY		When you use at 50Hz area
	60Hz ZONE ONLY		When you use at 60Hz area
02 AUTO RUN SET	AUTO RUN ON	★	
	AUTO RUN OFF	○	Automatic operation is impossible
03 TEMP SW	VALID	○	
	INVALID		Temperature setting button is not working
04 MODE SW	VALID	○	
	INVALID		Mode button is not working
05 ON/OFF SW	VALID	○	
	INVALID		On/Off button is not working
06 FAN SPEED SW	VALID	※	
	INVALID	※	Fan speed button is not working
07 LOUVER SW	VALID	○	
	INVALID	★	Louver button is not working
08 TIMER SW	VALID	○	
	INVALID		Timer button is not working
09 SENSOR SET	SENSOR OFF	○	Remote thermistor is not working.
	SENSOR ON		Remote thermistor is working.
	SENSOR +3.0℃		Remote thermistor is working, and to be set for producing +3.0°C increase in temperature.
	SENSOR +2.0℃		Remote thermistor is working, and to be set for producing +2.0°C increase in temperature.
	SENSOR +1.0℃		Remote thermistor is working, and to be set for producing +1.0°C increase in temperature.
	SENSOR -1.0℃		Remote thermistor is working, and to be set for producing -1.0°C increase in temperature.
	SENSOR -2.0℃		Remote thermistor is working, and to be set for producing -2.0°C increase in temperature.
	SENSOR -3.0℃		Remote thermistor is working, and to be set for producing -3.0°C increase in temperature.
10 AUTO RESTART	INVALID	○	
	VALID		
11 VENT LINK SET	NO VENT	○	
	VENT LINK		Connect the Single split series and the VRF series to the indoor board CNT and indoor board CND respectively. If a ventilation device is connected, been geared with the motion of indoor device, the ventilation device is operated/stopped.
	NO VENT LINK		By connecting the ventilation device with the Single split series device to indoor board CNT, the VRF series device to CND, you can operate/stop the ventilation device independently by the handling of ventilation button.
12 TEMP RANGE SET	INDN CHANGE	○	If you change the range of set temperature, the indication of set temperature will vary following the control.
	NO INDN CHANGE		If you change the range of set temperature, the indication of set temperature will not vary following the control, and keep the set temperature.
13 I/U FAN	HI-MID-LO	○	Airflow of fan becomes the three speed of (fan speed icons) or (fan speed icons).
	HI-LO	★	
	HI-MID	★	
	1 FAN SPEED	★	
14 POSITION	4POSITION STOP	★	
	FREE STOP	○	The louver can stop at any position.
15 MODEL TYPE	HEAT PUMP	※	
	COOLING ONLY	※	
16 EXTERNAL CONTROL SET	INDIVIDUAL	○	If you input into the indoor printed circuit board CNT from outside, the indoor device will be operated independently following the input from outside.
	FOR ALL UNITS		If you input into indoor printed circuit board CNT from outside, All units which share the same one remote control network work following the input from outside.
17 ROOM TEMP INDICATION SET	INDICATION OFF	○	
	INDICATION ON		In normal working indication, indoor unit temperature is indicated instead of airflow. (Only the master remote control can be indicated.)
18 INDICATION	INDICATION ON	○	
	INDICATION OFF		Heating preparation indication should not be indicated.
19 ℃/℉ SET	℃	○	Temperature indication is by degree C
	℉		Temperature indication is by degree F

I/U FUNCTION ▲ (Indoor unit function)

Only when plural indoor units are connected
Indoor No. selection (Note3): I/U000 ▲, I/U001 ⇕, I/U002 ⇕, I/U003 ⇕, I/U004 ⇕

If to change re-set with other indoor unit, push AIRCON NO. button, and indoor selection indication (for example: I/U 000) is set back.

Function	setting		
02 FAN SPEED SET	STANDARD	※	
	HIGH SPEED 1	※	(Note2)
	HIGH SPEED 2		
03 FILTER SIGN SET	INDICATION OFF		
	TYPE 1	○	The filter sign is indicated after running for 180 hours.
	TYPE 2		The filter sign is indicated after running for 600 hours.
	TYPE 3		The filter sign is indicated after running for 1000 hours.
	TYPE 4		The filter sign is indicated after running for 1000 hours, then it will be stopped by compulsion after 24 hours.
04 POSITION	4POSITION STOP	★	
	FREE STOP	○	The louver can stop at any positon.
05 EXTERNAL INPUT	LEVEL INPUT	○	
	PULSE INPUT		
06 OPERATION PERMISSION/PROHIBITION	INVALID	○	
	VALID		Make permission/prohibition control of function be in effect.
07 EMERGENCY STOP	INVALID	○	
	VALID		With the VRF series, it is used to stop all indoor units connected with the same outdoor unit immediately. When stop signal is inputed from remote on-off terminal "CNT-6", all indoor units are stopped immediately.
08 SP OFFSET	OFFSET +3.0℃		To be reset for producing +3.0°C increase in temperature during heating.
	OFFSET +2.0℃		To be reset for producing +2.0°C increase in temperature during heating.
	OFFSET +1.0℃		To be reset for producing +1.0°C increase in temperature during heating.
	NO OFFSET	○	
09 RETURN AIR TEMP	OFFSET +2.0℃		To be reset producing +2.0°C increase in return air temperature of indoor unit.
	OFFSET +1.5℃		To be reset producing +1.5°C increase in return air temperature of indoor unit.
	OFFSET +1.0℃		To be reset producing +1.0°C increase in return air temperature of indoor unit.
	NO OFFSET	○	
	OFFSET -1.0℃		To be reset producing -1.0°C increase in return air temperature of indoor unit.
	OFFSET -1.5℃		To be reset producing -1.5°C increase in return air temperature of indoor unit.
	OFFSET -2.0℃		To be reset producing -2.0°C increase in return air temperature of indoor unit.
10 FAN CONTROL	LOW FAN SPEED	○	When heating thermostat is off, to be operated with low fan speed. (or with ultra low fan speed in case of some models)
	SET FAN SPEED		When heating thermostat is off, to be operated with set fan speed.
	INTERMITTENCE		When heating thermostat is off, to be operated intermittently.
	FAN OFF		When heating thermostat is off, the fan stops. When the remote thermistor is working, "FAN OFF" is set automatically. Do not set when the indoor unit's thermistor is working.
11 FROST PREVENTION TEMP			Change of indoor heat exchanger temperature to start frost prevention control.
	TEMP HIGH		
	TEMP LOW	○	
12 FROST PREVENTION CONTROL			Working only with the single split series.
	FAN CONTROL ON	○	To control frost prevention, the indoor fan tap is raised.
	FAN CONTROL OFF		
13 DRAIN PUMP LINK	(cool)(dry)	○	Drain pump is on during cooling and dry.
	(cool)(dry) AND (heat)		Drain pump is on during cooling, dry and heating.
	(cool)(dry) AND (heat) AND (fan)		Drain pump is on during cooling, dry, heating and fan.
	(cool)(dry) AND (fan)		Drain pump is on during cooling, dry and fan.
14 FAN REMAINING (cool)	NO REMAINING	○	After cooling is stopped the fan does not perform extra operation.
	0.5 HOUR		After cooling is stopped the fan perform extra operation for half an hour.
	1 HOUR		After cooling is stopped the fan perform extra operation for an hour.
	6 HOUR		After cooling is stopped the fan perform extra operation for six hours.
15 FAN REMAINING (heat)	NO REMAINING	○	After heating is stopped or heating thermostat is off, the fan does not perform extra operation.
	0.5 HOUR		After heating is stopped or heating thermostat is off,the fan perform extra operation for half an hour.
	2 HOUR		After heating is stopped or heating thermostat is off,the fan perform extra operation for two hours.
	6 HOUR		After heating is stopped or heating thermostat is off, the fan perform extra operation for six hours.
16 FAN INTERMITTENCE	NO REMAINING	○	
	20minOFF 5minON		During heating is stopped or heating thermostat is off, the fan perform intermittent operation for five minutes after twenty minutes' off with low airflow.
	5minOFF 5minON		During heating is stopped or heating thermostat is off, the fan perform intermittent operation for five minutes after five minutes' off with low airflow.

ON/OFF button (finished)

Items marked with ★ are not available on the floor standing FDF.
Do not change the initial setting

④Trial operation

The method of trial cooling operation

Operate the remote control unit as follows.

1. Starting a cooling test run.

①Start the system by pressing the ⓘON/OFF button.

②Select " ❄ (Cool)" with the (MODE) button.

③Press the TEST button for 3 seconds or longer.
The screen display will switch to" ❄ TEST RUN ▼ "

④When the (SET) button is pressed while " ❄ TEST RUN ▼ " is indicated, a cooling test run will start.
The screen display will switch to" ❄ TEST RUN ".

2. Ending a cooling test run.

Pressing the ⓘON/OFF button, the (TEMP) button or (MODE) button will end a cooling test run. (Cooling test run will end after 30 minutes pass.)
" ❄ TEST RUN " shown on the screen will go off.

④Trial operation (Continued)

Checking operation data

Operation data can be checked with remote control unit operation.

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Press the (SET) button while
   OPER DATA ▼ " is displayed.
3. When only one indoor unit is connected to remote controller, " DATA LOADING " is displayed (blinking indication during data loading).
   Next, operation data of the indoor unit will be displayed. Skip to step 7.
4. When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]:
   SELECT I/U " (blinking 1 seconds)→
   I/U000 ♟ " blinking.
5. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
6. Determine the indoor unit number with the (SET) button.
   (The indoor unit number changes from blinking indication to continuous indication)
   I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   " DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the operation data of the indoor unit is indicated.
7. Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
   The items displayed are in the above table.
   ※Depending on models, the items that do not have corresponding data are not displayed.
8. To display the data of a different indoor unit, press the AIR CON NO. button, which allows you to go back to the indoor unit selection screen.
9. Pressing the ON/OFF button will stop displaying data.
   Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

Number	Data Item	
01		(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Controller Thermistor Temperature)
05	THI-R1 ___℃	(Indoor Unit Heat Exchanger Thermistor / U Bend)
06	THI-R2 ___℃	(Indoor Unit Heat Exchanger Thermistor /Capillary)
07	THI-R3 ___℃	(Indoor Unit Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED ___	(Indoor Unit Fan Speed)
09	DEMAND ___Hz	(Frequency Requirements)
10	ANSWER ___Hz	(Response Frequency)
11	I/U EEV ____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN ___H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR ___℃	(Outdoor Air Temperature)
22	THO-R1 ___℃	(Outdoor Unit Heat Exchanger Thermistor)
23	THO-R2 ___℃	(Outdoor Unit Heat Exchanger Thermistor)
24	COMP ___Hz	(Compressor Frequency)
25	HP ___MPa	(High Pressure)
26	LP ___MPa	(Low Pressure)
27	Td ___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM ___℃	(Comp Bottom Temperature)
29	CT ___AMP	(Current)
30	TARGET SH ___℃	(Target Super Heat)
31	SH ___℃	(Super Heat)
32	TDSH ___℃	(Discharge Pipe Super Heat)
33	PROTECTION No. __	(Protection State No. of The Compressor)
34	O/U FANSPEED ___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN ___H	(Total Running Hours of The Compressor)
38	O/U EEV1 ____P	(Pulse of The Outdoor Unit Expansion Valve EEV1)
39	O/U EEV2 ____P	(Pulse of The Outdoor Unit Expansion Valve EEV2)

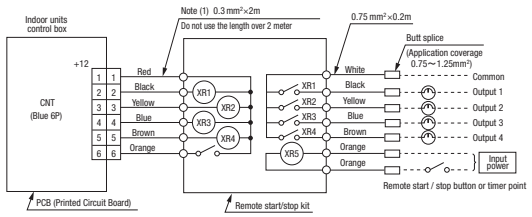
※Depending on outdoor unit model, there are data not shown.

⑤Control mode switching

●The control content of indoor units can be switched in following way.
(is the default setting)

Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7－1	ON	Operation check, Drain motor test run
	OFF	Normal operation

⑥Function of CNT connector of indoor printed circuit board



●CNT connector (local) vendor model
Connector : Made by molex 5264 - 06
Terminals : Made by molex 5263T

●Function

Output 1	Operation output (there is output when unit is in operation.)
Output 2	Heating output (there is output when operation MODE is HEATING.)
Output 3	Compressor ON output (there is output when compressor is in operation.)
Output 4	Inspection output (there is output when unit is stopped by error.)
Input 5	Remote operation input (Volt-free contact) (Inputted to operate unit)

⑦Troubleshooting

The operation data is saved when the situation of abnormal operation happen, and the data can be confirmed by remote controller.

Error Code of indoor unit

Display on remote controller	LED on indoor circuit board		Content
	red (checking)	green (normal)	
Off	Off	Continuous blinking	Normal
	Off	Off	Fault on power, indoor power off or lack phase
E1	Off	Continuous blinking	Fault on the transmission between indoor circuit board and remote control
	Not sure	Not sure	Indoor computer abnormal
E5	Blinking twice	Continuous blinking	Fault on outdoor-indoor transmission
E6	Blinking once	Continuous blinking	Indoor heat exchange sensor interrupted or short-circuit
E7	Blinking once	Continuous blinking	Indoor air inhaling sensor broken or short-circuit
E8	Blinking once	Continuous blinking	The temperature of heat exchange abnormal
E9	Blinking once	Continuous blinking	Float SW actions (only with FS)
E10	Off	Continuous blinking	Excess number of remote controller connections
E14	Blinking for three times	Continuous blinking	The communication fault for master/slave indoor units
E16	Blinking once	Continuous blinking	Fan motor abnormal
E19	Blinking once	Continuous blinking	Configuration fault on running checking model
E28	Off	Continuous blinking	Remote controller sensor interrupted
Over E30	Off	Continuous blinking	Outdoor unit checking (outdoor circuit board LED checking)

[Operating procedure]

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Once, press the ▼ button, and the display change
   ERROR DATA ♟ ".
3. Press the (SET) button and abnormal operation data mode is started.
4. When only one indoor unit is connected to remote controller, following is displayed.
   ①The case that there is history of abnormal operation.
   → Error code and " DATA LOADING " is displayed.
   [Example]: [E8] (ERROR CODE)
   " DATA LOADING" is displayed (blinking indication during data loading).
   Next, the abnormal operation data of the indoor unit will be displayed. Skip to step 8.
   ②The case that there is not history of abnormal operation.
   → " NO ERROR " is displayed for 3 seconds and this mode is closed.
5. When plural indoor units is connected, following is displayed.
   ①The case that there is history of abnormal operation.
   →Error code and the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ♟ " blinking
   ②The case that there is not history of abnormal operation.
   →Only address number is displayed.
6. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
7. Determine the indoor unit number with the (SET) button.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ♟ " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   [E8] " DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the abnormal operation data is indicated.
   If the indoor unit doing normal operation is selected, " NO ERROR " is displayed for 3 seconds and address of indoor unit is displayed.
8. By the ▲ ▼ button, the abnormal operation data is displayed.
   Displayed data item is based on ③ Trial operation .
   ※Depending on models, the items that do not have corresponding data are not displayed.
9. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit slection screen.
10. Pressing the ON/OFF button will stop displaying data.

Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote controllers are connected to one (1) indoor unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

1.10.3 Installation of wired remote controller (option)

PJA012D730

(1) Model RC-E5

Read together with indoor unit's installation manual.

⚠WARNING

- Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connection or hold will cause abnormal heat generation or fire.
- Make sure the power supply is turned off when electric wiring work.
  Otherwise, electric shock, malfunction and improper running may occur.

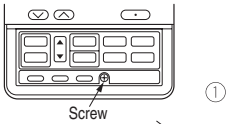
⚠CAUTION

- DO NOT install the remote controller at the following places in order to avoid malfunction.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
- DO NOT leave the remote controller without the upper case.
  In case the upper cace needs to be detached, protect the remote controller with a packaging box or bag in order to keep it away from water and dust.

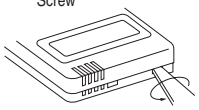
Accessories	Remote controller, wood screw (ø3.5×16) 2 pieces
Prepare on site	Remote controller cord (2 cores) the insulation thickness in 1mm or more. [In case of embedding cord] Erectrical box, M4 screw (2 pieces) [In case of exposing cord] Cord clamp (if needed)

Installation procedure

① Open the cover of remote controller , and remove the screw under the buttons without fail.

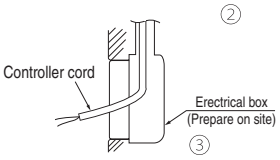


② Remove the upper case of remote controller.
Insert a flat-blade screwdriver into the dented part of the upper part of the remote controller, and wrench slightly.

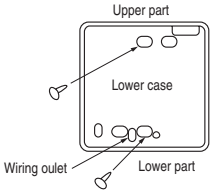


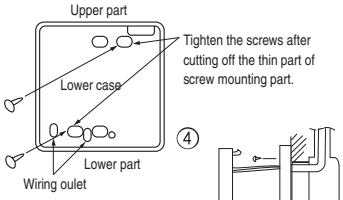
[In case of embedding cord]

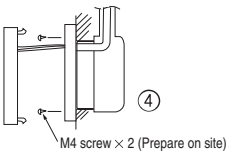
③ Embed the erectrical box and remote controller cord beforehand.



④ Prepare two M4 screws (recommended length is 12-16mm) on site, and install the lower case to erectrical box.
Choose either of the following two positions in fixing it with screws.

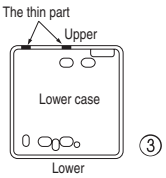






⑤ Connect the remote controller cord to the terminal block.
Connect the terminal of remote controller (X,Y) with the terminal of indoor unit (X,Y). (X and Y are no polarity)

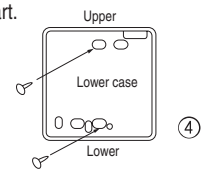
⑥ Install the upper case as before so as not to catch up the remote controller cord, and tighten with the screws.



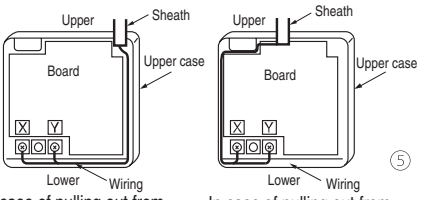
[In case of exposing cord]

③ You can pull out the remote controller cord from left upper part or center upper part.
Cut off the upper thin part of remote controller lower case with a nipper or knife, and grind burrs with a file etc.

④ Install the lower case to the flat wall with attached two wooden screws.



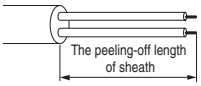
⑤ Connect the remote controller cord to the terminal block.
Connect the terminal of remote controller (X,Y) with the terminal of indoor unit (X,Y).
(X and Y are no polarity)
Wiring route is as shown in the right diagram depending on the pulling out direction.



In case of pulling out from upper left
In case of pulling out from upper center

The wiring inside the remote controller case should be within 0.3mm^2 (recommended) to 0.5mm^2.
The sheath should be peeled off inside the remote controller case.
The peeling-off length of each wire is as below.

Pulling out from upper left	Pulling out from upper center
X wiring : 215mm Y wiring : 195mm	X wiring : 170mm Y wiring : 190mm



⑥ Install the upper case as before so as not to catch up the remote controller cord, and tighten with the screws.
⑦ In case of exposing cord, fix the cord on the wall with cord clamp so as not to slack.

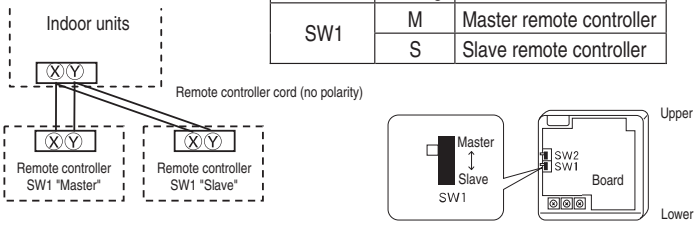
Installation and wiring of remote controller

① Wiring of remote controller should use 0.3mm^2 × 2 core wires or cables. (on-site configuration)
② Maximum prolongation of remote controller wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m·····0.5mm^2 × 2 cores
Under 300m·····0.75mm^2 × 2 cores
Under 400m·····1.25mm^2 × 2 cores
Under 500m·····2.0mm^2 × 2 cores

Master/ slave setting when more than one remote controllers are used

A maximum of two remote controllers can be connected to one indoor unit (or one group of indoor units.)

Switch	Setting	Contents
SW1	M	Master remote controller
	S	Slave remote controller

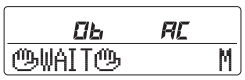


Set SW1 to "Slave" for the slave remote controller. It was factory set to "Master" for shipment.
Note: The setting "Remote controller thermistor enabled" is only selectable with the master remote controller in the position where you want to check room temperature.
The air conditioner operation follows the last operation of the remote controller regardless of the master/ slave setting of it.

The indication when power source is supplied

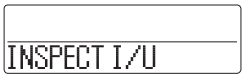
When power source is turned on, the following is displayed on the remote controller until the communication between the remote controller and indoor unit settled.
Master remote controller : "WAIT M"
Slave remote controller : "WAIT S"

At the same time, a mark or a number will be displayed for two seconds first.
This is the software's administration number of the remote controller, not an error cord.



※ The left mark is only an example. Other marks may appear.

When remote controller cannot communicate with the indoor unit for half an hour, the below indication will appear.
Check wiring of the indoor unit and the outdoor unit etc.



The range of temperature setting

When shipped, the range of set temperature differs depending on the operation mode as below.

Heating : 16~30˚C (55~86˚F)

Except heating (cooling, fan, dry, automatic) : 18~30˚C (62~86˚F)

●Upper limit and lower limit of set temperature can be changed with remote controller.

Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30˚C (68 to 86˚F).

Lower limit setting: valid except heating (automatic, cooling, fan, dry) Possible to set in the range of 18 to 26°C (62 to 79°F).

When you set upper and lower limit by this function, control as below.

1. When ⑫TEMP RANGE SET, remote controller function of function setting mode is "INDN CHANGE" (factory setting),

   【If upper limit value is set】

   During heating, you cannot set the value exceeding the upper limit.

   【If lower limit value is set 】

   During operation mode except heating, you cannot set the value below the lower limit.

2. When ⑫TEMP RANGE SET, remote controller function of function setting mode is "NO INDN CHANGE"

   【If upper limit value is set】

   During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

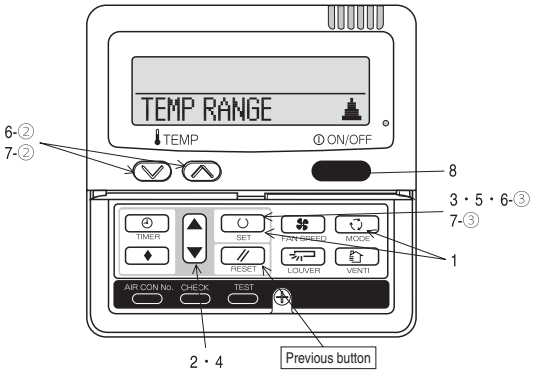
   【If lower limit value is set 】

   During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

●How to set upper and lower limit value

1. Stop the air-conditioner, and press (SET) and (MODE) button at the same time for over three seconds .
   The indication changes to "FUNCTION SET ▼".
2. Press ▼ button once, and change to the "TEMP RANGE ▲ " indication.
3. Press (SET) button, and enter the temperature range setting mode.
4. Select "UPPER LIMIT ▼" or "LOWER LIMIT ▲" by using ▲ ▼ button.
5. Press (SET) button to fix.
6. When "UPPER LIMIT ▼" is selected (valid during heating)
   ① Indication: " ∨ ∧ SET UP" → "UPPER 30˚C ∨"
   ② Select the upper limit value with temperature setting button ∨ ∧. Indication example: "UPPER 26˚C ∨ ∧" (blinking)
   ③ Press (SET) button to fix. Indication example: "UPPER 26˚C" (Displayed for two seconds)
   After the fixed upper limit value displayed for two seconds, the indication will return to "UPPER LIMIT ▼".
7. When "LOWER LIMIT ▲" is selected (valid during cooling, dry, fan, automatic)
   ① Indication: " ∨ ∧ SET UP" → "LOWER 18˚C ∧"
   ② Select the lower limit value with temperature setting button ∨ ∧. Indication example: "LOWER 24˚C ∨ ∧" (blinking)
   ③ Press (SET) button to fix. Indication for example: "LOWER 24˚C" (Displayed for two seconds)
   After the fixed lower limit value displayed for two seconds, the indication will return to "LOWER LIMIT ▼".
8. Press ON/OFF button to finish.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.



The functional setting

●The initial function setting for typical using is performed automatically by the indoor unit connected, when remote controller and indoor unit are connected.
As long as they are used in a typical manner, there will be no need to change the initial settings.
If you would like to change the initial setting marked "○", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.

[Flow of function setting]

Start : Stop air-conditioner and press "○" (SET) and "⟲" (MODE) buttons at the same time for over three seconds.
Finalize : Press "○" (SET) button.
Reset : Press "⊘" (RESET) button.
Select : Press ▲ ▼ button.
End : Press ON/OFF button.
It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
"○" : Initial settings
"※" : Automatic criterion

Record and keep the setting

Consult the technical data etc. for each control details

Stop air-conditioner and press ○ (SET) + ⟲ (MODE) buttons at the same time for over three seconds.

FUNCTION SET ▼

To next page

FUNCTION ▼ (Remote controller function)

	Function	setting		
01	ESP SET	ESP VALID	○	Validate setting of ESP:External Static Pressure
		ESP INVALID		Invalidate setting of ESP
02	AUTO RUN SET			
		AUTO RUN ON	※	
		AUTO RUN OFF	※	Automatical operation is impossible
03	TEMP SW			
		VALID	○	
		INVALID		Temperature setting button is not working
04	MODE SW			
		VALID	○	
		INVALID		Mode button is not working
05	ON/OFF SW			
		VALID	○	
		INVALID		On/Off button is not working
06	FAN SPEED SW			
		VALID	※	
		INVALID	※	Fan speed button is not working
07	LOUVER SW			
		VALID	※	
		INVALID	※	Louver button is not working
08	TIMER SW			
		VALID	○	
		INVALID		Timer button is not working
* 09	SENSOR SET			
		SENSOR OFF	○	Remote thermistor is not working.
		SENSOR ON		Remote thermistor is working.
		SENSOR +3.0℃		Remote thermistor is working, and to be set for producing +3.0˚C increase in temperature.
		SENSOR +2.0℃		Remote thermistor is working, and to be set for producing +2.0˚C increase in temperature.
		SENSOR +1.0℃		Remote thermistor is working, and to be set for producing +1.0˚C increase in temperature.
		SENSOR -1.0℃		Remote thermistor is working, and to be set for producing -1.0˚C increase in temperature.
		SENSOR -2.0℃		Remote thermistor is working, and to be set for producing -2.0˚C increase in temperature.
		SENSOR -3.0℃		Remote thermistor is working, and to be set for producing -3.0˚C increase in temperature.
10	AUTO RESTART			
		INVALID	○	
		VALID		
* 11	VENT LINK SET			
		NO VENT	○	
		VENT LINK		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit board), the operation of ventilation device is linked with the operation of indoor unit.
		NO VENT LINK		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit board), you can operate /stop the ventilation device independently by (VENT) button.
12	TEMP RANGE SET			
		INDN CHANGE	○	If you change the range of set temperature, the indication of set temperature will vary following the control.
		NO INDN CHANGE		If you change the range of set temperature, the indication of set temperature will not vary following the control, and keep the set temperature.
13	I/U FAN			
		HI-MID-LO	※	Airflow of fan becomes of - - or the four speed of - - - .
		HI-LO	※	Airflow of fan becomes of - .
		HI-MID		Airflow of fan becomes of - .
		1 FAN SPEED	※	Airflow of fan is fixed at one speed.
14	POSITION			If you change the remote controller function "14 POSITION", you must change the indoor function "04 POSITION" accordingly.
		4POSITION STOP	○	You can select the louver stop position in the four.
		FREE STOP		The louver can stop at any position.
15	MODEL TYPE			
		HEAT PUMP	※	
		COOLING ONLY	※	
16	EXTERNAL CONTROL SET			
		INDIVIDUAL	○	If you input signal into CNT of the indoor printed circuit board from external, the indoor unit will be operated independently according to the input from external.
		FOR ALL UNITS		If you input into CNT of the indoor printed circuit board from external, all units which connect to the same remote controller are operated according to the input from external.
17	ROOM TEMP INDICATION SET			
		INDICATION OFF	○	
		INDICATION ON		In normal working indication, indoor unit temperature is indicated instead of airflow. (Only the master remote controller can be indicated.)
18	INDICATION			
		INDICATION ON	○	
		INDICATION OFF		Heating preparation indication should not be indicated.
19	℃/℉ SET			
		℃	○	Temperature indication is by degree C
		℉		Temperature indication is by degree F

To next page

Note (1)*The mark cannot use SRK series.

ON/OFF button (finished)

Note 1: The initial setting marked "※" is decided by connected indoor and outdoor unit, and is automatically defined as following table.

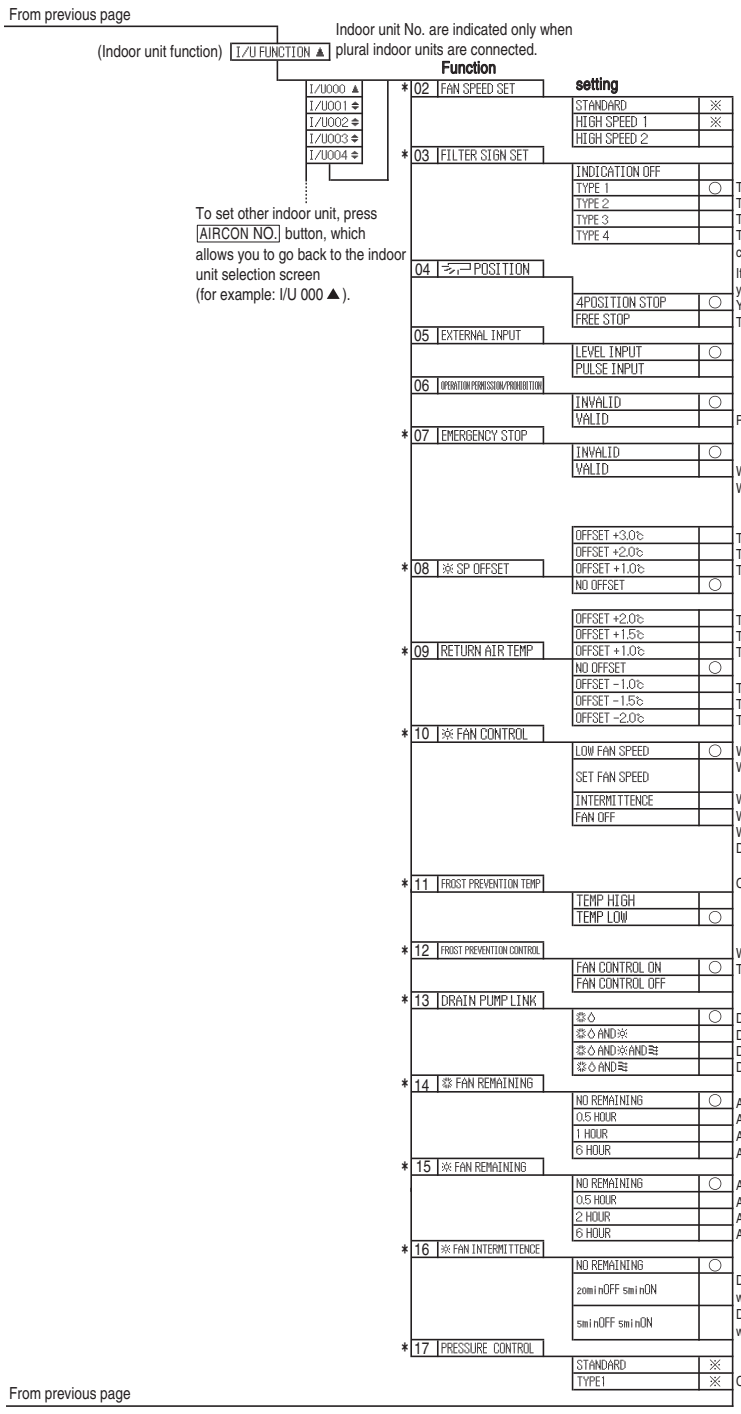
Function No.	Item	Default	Model
Remote controller function02	AUTO RUN SET	AUTO RUN ON	"Auto-RUN" mode selectable indoor unit.
		AUTO RUN OFF	Indoor unit without "Auto-RUN" mode
Remote controller function06	FAN SPEED SW	VALID	Indoor unit with two or three step of air flow setting
		INVALID	Indoor unit with only one of air flow setting
Remote controller function07	LOUVER SW	VALID	Indoor unit with automatically swing louver
		INVALID	Indoor unit without automatically swing louver
Remote controller function13	I/U FAN	HI-MID-LO	Indoor unit with three step of air flow setting
		HI-LO	Indoor unit with two step of air flow setting
		HI-MID	
		1 FAN SPEED	Indoor unit with only one of air flow setting
Remote controller function15	MODEL TYPE	HEAT PUMP	Heat pump unit
		COOLING ONLY	Exclusive cooling unit

Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

Note2: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting			
		- - -	- -	-	-
FAN SPEED SET	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me
	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi

Initial function setting of some indoor unit is "HIGH SPEED".
4 speed is not able to be set with wireless remote controller.



How to set function

1. **Stop air-conditioner and press (SET) (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼" will be displayed.**

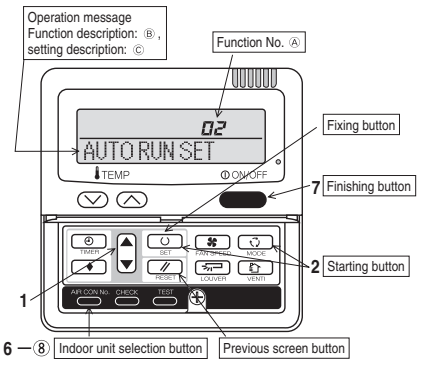
   FUNCTION SET ▼

2. **Press (SET) button.**
3. **Make sure which do you want to set, "FUNCTION ▼" (remote controller function) or "I/U FUNCTION ▲" (indoor unit function).**
4. **Press ▲ or ▼ button.**
   Selecct "FUNCTION ▼" (remote controller function) or "I/U FUNCTION ▲" (indoor unit function).

   FUNCTION ▼

   I/U FUNCTION ▲

5. **Press (SET) button.**



6. **【On the occasion of remote controller function selection】**

① "DATA LOADING" (Indication with blinking)
↓
Display is changed to "01 ESP SET".

② Press ▲ or ▼ button.
"No. and function"are indicated by turns on the remote controller function table, then you can select from them.
(For example)

02 ← Function No.
AUTO RUN SET ← Function

③ Press (SET) button.
The current setting of selected function is indicated.
(for example) "AUTO RUN ON" ← If "02 AUTO RUN SET" is selected

02
AUTO RUN ON ← Setting

④ Press ▲ or ▼ button.
Select the setting.

02
AUTO RUN ON
↕
02
AUTO RUN OFF

⑤ Press (SET)
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, Set as the same procedure if you want to set continuously ,and if to finish, go to 7.

02
SET COMPLETE

7. **Press ON/OFF button.**
   Setting is finished.

【On the occasion of indoor unit function selection】

① "DATA LOADING" (Blinking for 2 to 23 seconds to read the data)
↓
Indication is changed to "02 FAN SPEED SET".
Go to ②.

[Note]

(1) If plural indoor units are connected to a remote controller, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.

I/U000 ▲

(2) Press ▲ or ▼ button.
Select the number of the indoor unit you are to set
If you select "ALL UNIT ▼", you can set the same setting with all unites.

(3) Press (SET) button.

② Press ▲ or ▼ button.
"No. and function" are indicated by turns on the indoor unit function table, then you can select from them.
(For example)

02 ← Function No.
FAN SPEED SET ← Function

③ Press (SET) button.
The current setting of selected function is indicated.
(For example) "STANDARD" ← If "02 FAN SPEED SET" is selected.

02
STANDARD ← Setting

④ Press ▲ or ▼ button.
Select the setting.

⑤ Press (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7.

02
SET COMPLETE

※ When plural indoor units are connected to a remote controller, press the AIRCON NO. button, which allows you to go back to the indoor unit selection screen. (example "I/U 000 ▲")

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.
- Setting is memorized in the controller and it is saved independently of power failure.

【How to check the current setting】

When you select from "No. and funcion" and press set button by the previous operation, the "Setting" displayed first is the current setting.
(But, if you select "ALL UNIT ▼ ", the setting of the lowest number indoor unit is displayed.)

(2) Model RC-EX1A

PJZ012D077 a

eco touch REMOTE CONTROL RC-EX1A
INSTALLATION MANUAL

1 . Safety Precautions

This installation manual describes the installation methods and precautions related to the remote control. Use this manual together with the user's manuals for the indoor unit, outdoor unit and other optional equipment. Please read this manual carefully before starting the installation work to install the unit properly.

Safety precautions

●Please read this manual carefully before starting installation work to install the unit properly.
Every one of the followings is important information to be observed strictly.

⚠WARNING	Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc..
⚠CAUTION	Failure to follow these instructions properly may cause injury or property damage.

It could have serious consequences depending on the circumstances.

●The following pictograms are used in the text.

⃠	Never do.	❗	Always follow the instructions given.

●Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, the "Installation Manual" should be given to a new owner.

⚠WARNING

Ask a professional contractor to carry out installation work according to the installation manual.
Improper installation work may result in electric shocks, fire or break-down.

Shut OFF the main power supply before starting electrical work.
Otherwise, it could result in electric shocks, break-down or malfunction.

Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.
If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of significant deterioration of its performance or corrosion.

Do not install the unit where water vapor is generated excessively or condensation occurs.
It could cause electric shocks, fire or break-down.

Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.
Improper connections or fixing could cause heat generation, fire, etc.

Seal the inlet hole for remote control cable with putty.
If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.

It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.
The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.

⚠ CAUTION

Do not install the remote control at following places.

It could cause break-down or deformation of remote control.

(1) Where it is exposed to direct sunlight
(2) Near the equipment to generate heat
(3) Where the surface is not flat

Do not leave the remote control with its upper case removed.

When the upper case is removed, put it in a packing box or packing bag to protect internal PCBs or other parts from dust, moisture, etc.

2 . Accessories & Prepare on site

Accessories	R/C main unit, wood screw (ø3.5 x 16) 2 pcs User's Manual, Installation Manual

Parts procured at site

Item name	Q'ty	Remark
Switch box For 1 piece or 2 pieces (JIS C8340 or equivalent)	1	These are not required when installing directly on a wall.
Thin wall steel pipe for electric appliance (JIS C8305 or equivalent)	As required	
Lock nut, bushing (JIS C8330 or equivalent)	As required	
Lacing (JIS C8425 or equivalent)	As required	Necessary to run R/C cable on the wall.
Putty	Suitably	For sealing gaps
Molly anchor	As required	
R/C cable (0.3 mm^2 x 2 pcs)	As required	See right table when longer than 100 m

When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm^2 . Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

< 200 m	0.5 mm^2 x 2-core
< 300 m	0.75 mm^2 x 2-core
< 400 m	1.25 mm^2 x 2-core
< 600 m	2.0 mm^2 x 2-core

3. Remote control installation procedure

Determine where to install the remote control

Installation "Using a switch box"
"Installed directly on a wall"
Wiring direction "Backward"
"Upper center", "Upper left"

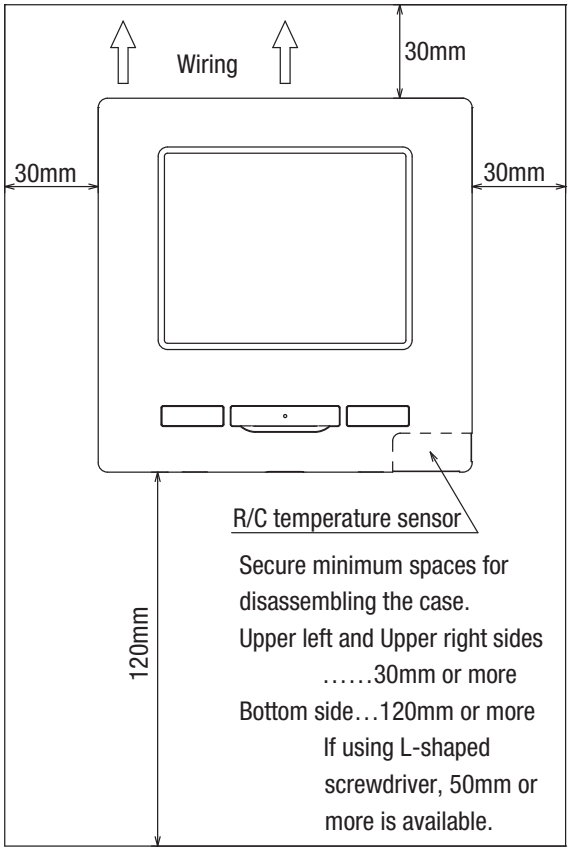
Cautions for selecting installation place

(1) Installation surface must be flat and sufficiently strong. R/C case must not be deformed.

(2) Where the R/C can detect room temperatures accurately. This is a must when detecting room temperatures with the temperature sensor of R/C.
- · Install the R/C where it can detect the average temperature in the room.
- · Install the R/C separated from a heat source sufficiently.
- · Install the R/C where it will not be influenced by the turbulence of air when the door is opened or closed.

Select a place where the R/C is not exposed to direct sunlight or blown by winds from the air conditioner or temperatures on the wall surface will not deviate largely from actual room temperature.

Installation space



Request

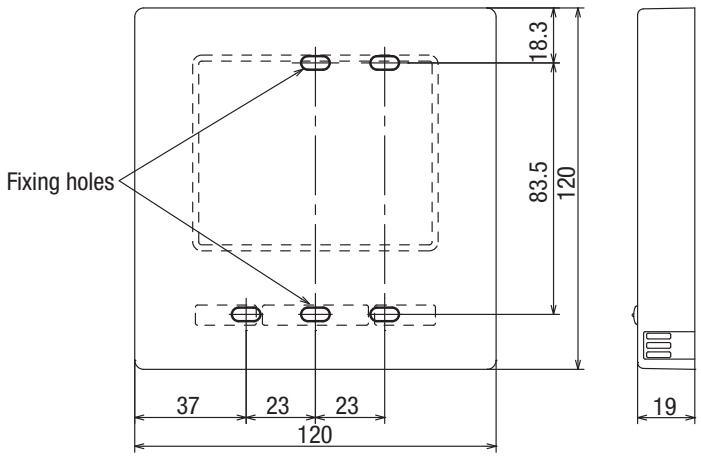
Be sure not to install R/C at a place where temperatures around the installation surface of R/C may differ largely from actual room temperature.
Difference between detected temperature and actual room temperature could cause troubles.
The correction for detected temperature by the R/C cannot offset such temperature difference because it corrects the detected temperatures itself.

Request

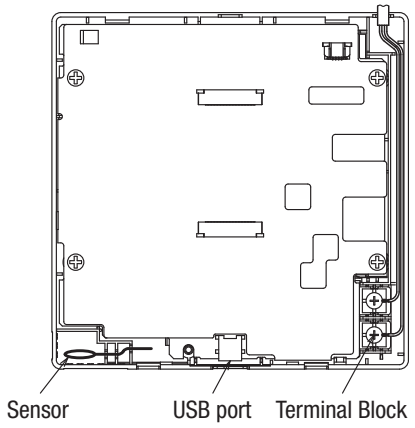
Do not install the R/C at a place where it is exposed to direct sunlight or where surrounding air temperature exceeds 40°C or drops below 0°C.
It could cause discoloration, deformation, malfunction or breakdown.

Installation procedure

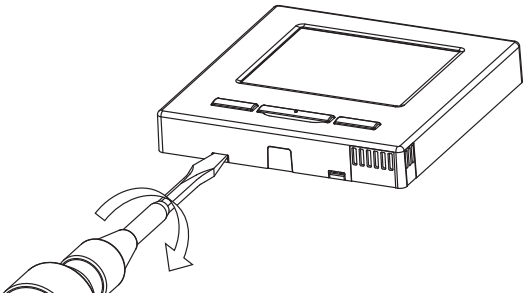
Dimensions (Viewed from front)



PCB side (Viewed from rear)



① To remove the upper case from the bottom cases of R/C
· Insert the tip of flat head screwdriver or the like in the recess at the lower part of R/C and twist it lightly to remove.

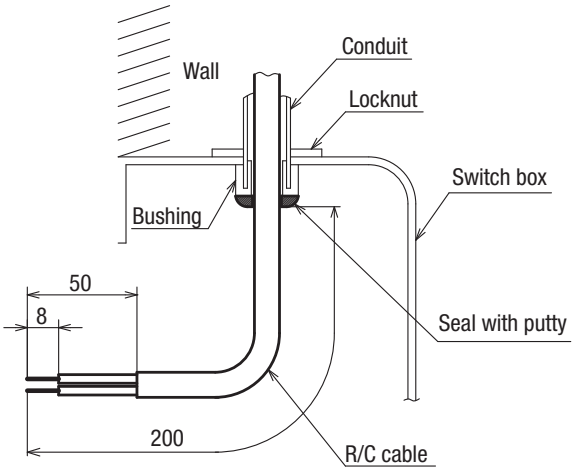


Take care to protect the removed upper case from moisture or dust.

② Connect wires from X and Y terminals of R/C to X and Y terminals of indoor unit.
R/C wires (X, Y) have no polarity.

In case of embedding wiring (When the wiring is retrieved "Backward")

③ Embed the switch box and the R/C wires beforehand.

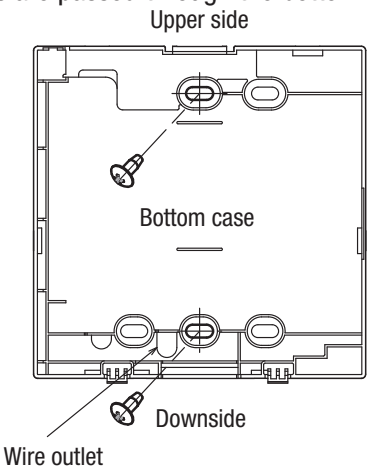


Seal the inlet hole for the R/C wiring with putty.

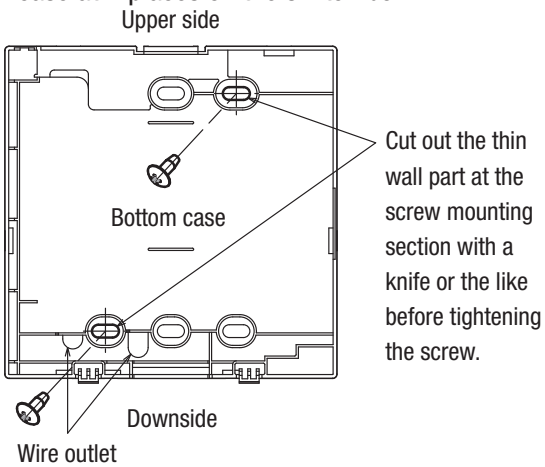
● If dust or insect enters, it could cause electric shocks, fire or breakdown.

④ When wires are passed through the bottom case, fix the bottom case at 2 places on the switch box.

Switch box for 1 pc



Switch box for 2 pcs



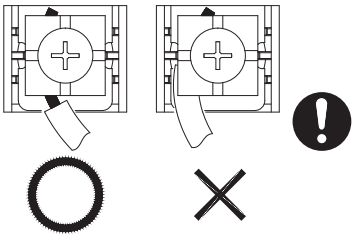
⑤ When fixing the bottom case diagonally at 2 places, cut out the thin wall section on the case.

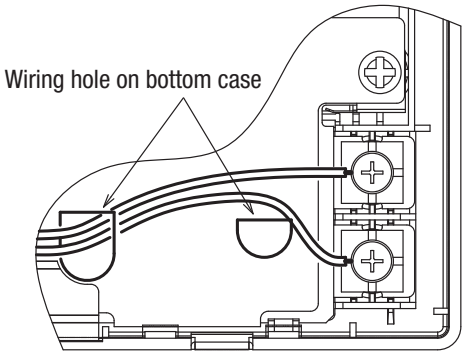
⑥ Fix wires such that the wires will run around the terminal screws on the top case of R/C.

Cautions for wire connection

Use wires of no larger than 0.5 mm^2 for wiring running through the remote control case, Take care not to pinch the sheath.

Tighten by hand (0.7 N·m or less) the wire connection. If the wire is connected using an electric driver, it may cause failure or deformation.

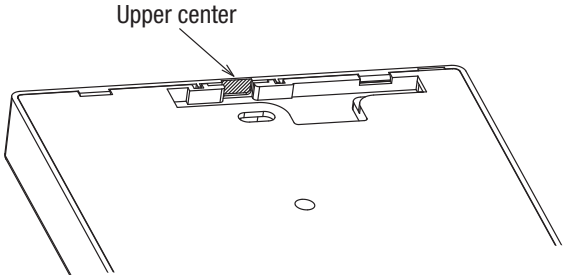




⑦ Install the upper case with care not to pinch wires of R/C.

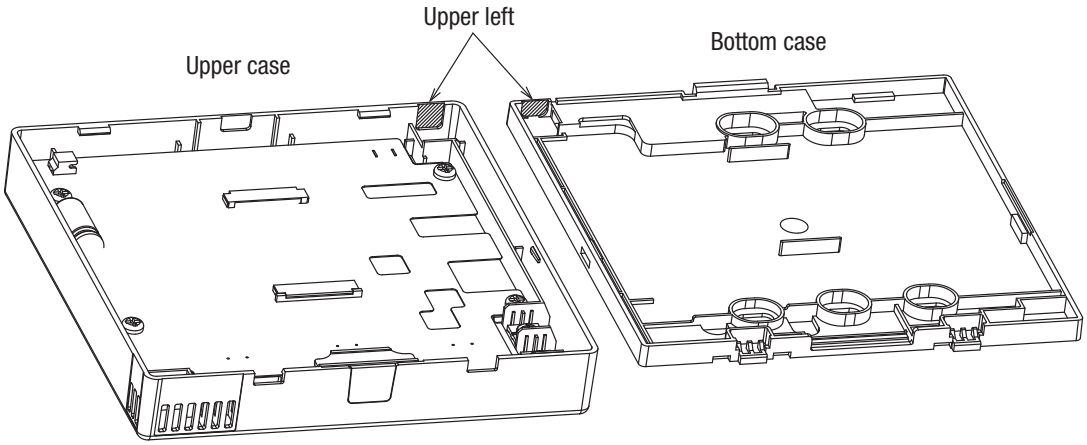
In case of exposing wiring (When the wiring is taken out from the “upper center” or “upper left” of R/C)

③ Cut out the thin wall sections on the cases for the size of wire.



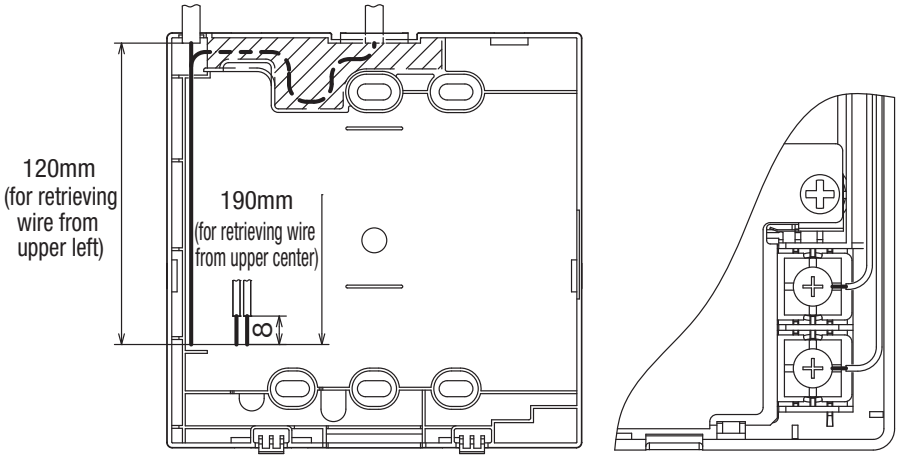
When taking the wiring out from the upper center, open a hole before separating the upper and bottom cases. This will reduce risk of damaging the PCB and facilitate subsequent work.

When taking the wiring out from the upper left, take care not to damage the PCB and not to leave any chips of cut thin wall inside.



If the hole is cut too large, moisture, dust or insects may enter.
Seal gaps with putty or the like.

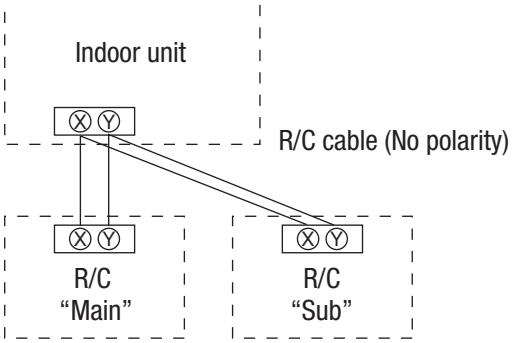
④ Fix the bottom R/C case on a flat surface with wood screws.
⑤ In case of the upper center, pass the wiring behind the bottom case. (Hatched section)
⑥ Fix wires such that the wires will run around the terminal screw of the top case of R/C.
⑦ Install the top case with care not to pinch wires of R/C.



Main/Sub setting when more than one remote control are used

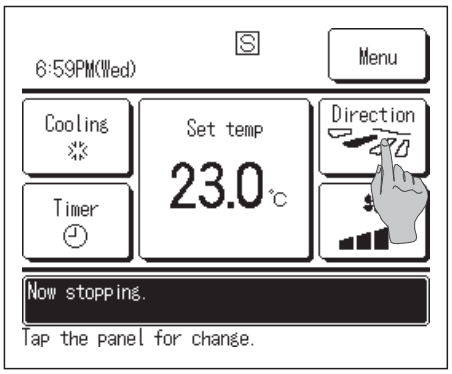
Main-Sub setting for use of two or more R/Cs

Up to two units of R/C can be used at the maximum for 1 indoor unit or 1 group.
One is main R/C and the other is sub R/C.
Operating range is different depending on the main or sub R/C.



Set the "Main" and "Sub" as described at Section 7 of installation manual attached to the remote control.

R/C function	Main	Sub
Run/Stop, setting temperature, fan speed and flap direction operations	○	○
High power and energy-saving operations	○	○
Energy-saving setting	○	—
R/C sensor	○	—
Test run menu operation	○	—
Room temperature range setting	○	—
Indoor unit settings	○	—
Individual flap control	○	—
Operation data display	○	—
Error history display	○	○



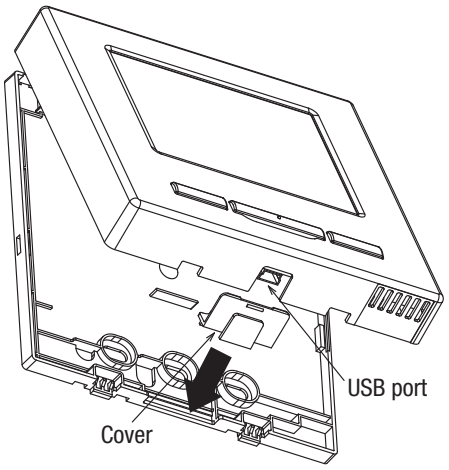
Note: Connection to personal computer

It can be set from a personal computer via the USB port (mini-B).
Connect after removing the cover for USB port of upper case.

Replace the cover after use.
If dust, insect, etc. enters, it could cause electric shocks or breakdown.

Special software is necessary for the connection.
For details, view the web site or refer to the engineering data.

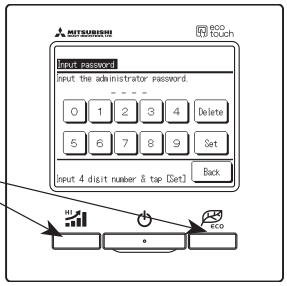
Do not connect to a personal computer without using the special software.
Do not connect the personal computer to the USB simultaneously with other USB devices.
It could cause malfunction or breakdown of R/C or personal computer.



Note: Initializing of password

Administrator password (for daily setting items) and service password (for installation, test run and maintenance) are used.

- The administrator password at factory default is “0000”. This setting can be changed (Refer to User's Manual). When the administrator password is forgotten, it can be initialized, if the [Highpower] and the [Energy-saving] buttons are pushed simultaneously for 5 seconds on the administrator password input screen.
- Service password is “9999”, which cannot be changed.
  When the administrator password is input, the service password is also accepted.



Note: Combination of R/C and indoor unit

(1) It can be used as the combination of Main and Sub with RC-E3 to -E5 type of wireless R/C (optional part).
(2) It can be combined with FD-V or FD-KX E6 type and later types of indoor units
(3) In cases of combination with FD-V or FD-KX E6 type unit, there are some controlling items which cannot be used.
If operating such items, the message “Invalid request” is displayed.

For details, refer to the installation manual attached to the remote control.

Inverter driven single split PAC
100V・125V・140V
Designed for R410A refrigerant

1.10.4 Installation of outdoor unit

(1) Models FDC100-140VN, 100-140VS

◎This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 204.
◎Read this manual carefully before you set to installation work and carry it out according to the instructions contained in this manual.

PRECAUTIONS FOR SAFETY

- When installing the equipment, carefully read the Precautions for safety and make sure that safety is maintained.
- The safety items contain important information regarding safety. Be sure to follow them. The symbols used and their meanings are as follows.

  ⚠ WARNING : Improper installation could result in serious accident causing death or serious injury.

  ⚠ CAUTION : Improper installation could result in serious accident.
- After installation, along with confirming that no abnormalities were seen from the operation test. Explain operating methods as well as maintenance methods to the user of this equipment, based on the owner's manual.
- For 3phase power source outdoor unit, EN61000-3-2 and EN60555-3 are not applicable as consent by the utility company or notification to the utility company is given before usage.
- 3phase power source unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a house-hold appliance it could cause electromagnetic interference.
- 5 and 6 HP units of single phase power source are equipment complying with IEC 61000-3-12.
- Ask the customer to keep this manual together with the operation manual.

Check before installation work

[Accessory]

Edging		1 piece	knock-out hole protection

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

⚠ WARNING

- Ask your dealer or a specialized service provider to install the unit. Improper installation work performed on the part of a user can result in water leaks, electric shocks and/or a fire.
- Carry out installation work properly in accordance with this installation manual. Improper installation work could result in water leaks, electric shocks, or a fire.
- When installing a unit in a small room, it is necessary to take appropriate precautions so that a refrigerant leak, if occurs, may not cause a buildup in excess of the concentration limit. For information on such precautions to prevent an excessive buildup, contact your dealer. If refrigerant leaks and builds up beyond the concentration limit, it can cause a lack-of-oxygen accident.
- Install the unit securely onto a structure that can withstand its weight with a good safety margin. Installation onto a structure that is not strong enough can cause an accident such as a fall or drop of the unit.
- Install the unit according to the installation instructions so that it can withstand strong winds, such as typhoons, and earthquakes. Improper installation work can cause an accident such as a fall of the unit.
- Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
- In wiring, ensure solid cable connection using the specified cables and fasten cables securely so that the terminal block may not be subject to external force working through cables. Improper connection or fastening can cause heat generation and a resultant fire.
- In wiring, arrange cables suitably so that they may be contained neatly in place and then attach a lid and/or a service panel securely. Improper installation can cause heat generation and a resultant fire.
- Prevent any substance other than the specified refrigerant (R410A) such as air from entering the refrigerant cycle in installing or moving the air conditioning system. Contamination by air or a foreign substance can cause an abnormal pressure buildup inside the refrigerant cycle and a resultant explosion and personal injury.
- Use only parts supplied with the unit and specified supply parts for installation. The use of parts other than those approved by the manufacturer may cause a fall of the unit, water leaks, a fire, electric shocks, refrigerant leaks, performance degradation or control failures.
- Do not lay drain piping into a sewer where a toxic gas such as sulfuric gas is generated. There is a danger that a toxic gas will flow back into the room.
- If refrigerant gas leaks during installation work, ventilate the room. Refrigerant gas, if it comes into contact with bare fire, can cause the generation of a toxic gas.
- When installation work is completed, check the system for refrigerant gas leaks. If refrigerant gas leaks indoors and comes into contact with bare fire such as that of a fan heater, stove or cooking stove, it can cause the generation of a toxic gas.
- Sling the unit at the specified points with ropes properly rated for its weight in hoisting it for haulage. An improper hauling method can cause a fall of the unit resulting in death or serious personal injury.
- Always turn off power before you work inside the unit such as for installation or servicing. A failure to observe this instruction can cause a danger of receiving electric shocks.
- Do not open the operation valves (both liquid and gas valves) until refrigerant piping work, an air-tightness test and an air purge are completed. When refrigerant gas leaks during piping work, stop brazing pipes and ventilate the room. Refrigerant gas, when it comes into contact with bare fire, can cause the generation of a toxic gas.

⚠ CAUTION

- Ground the unit. Do not connect the ground wire to gas piping, water piping, a lightning rod, or telephone ground wires. Improper grounding can result in electric shocks or fire when any trouble or earth leakage occurs.
- Be sure to install an earth leakage breaker. A failure to install an earth leakage breaker may result in the outbreak of fire or electric shocks.
- Do not install the unit in an area where a danger of flammable gas leaks exists. If a flammable gas does leak and build up around the unit, it can cause a fire.
- Install drain piping in accordance with the installation manual to ensure proper drainage and keep its temperature to prevent dew condensation. Improper piping work can cause water leaks and a soaking of household effects.
- Do not install the outdoor unit where winds from its fan blow directly onto a plant, etc. Winds can affect adversely to the plant, etc.
- Secure a space for inspection and maintenance as specified in the manual. An insufficient space can result in an accident such as a fall from the installation point and a resultant personal injury.
- When the outdoor unit is installed on a roof top or at an elevated point, provide permanent ladders and handrails along the access route and fences and handrails around the outdoor unit.
- In tightening a flare nut, use double spanners and observe the specified tightening torque. Care must be taken so as not to over-tighten a nut and damage the flare part. (Refer to the tightening torque) A loose or damaged flare part can cause a refrigerant gas leak and a resultant lack-of-oxygen accident.
- Dress the refrigerant piping with a heat insulation material for prevention of dew condensation. Improper heat insulation to prevent dew condensation can cause leaking or dripping water and a resultant soaking of household effects.
- When refrigerant piping work is completed, check it for air tightness with nitrogen gas and make sure that it does not have any leak. A refrigerant gas leak in a narrow room beyond the concentration limit can cause a lack-of-oxygen accident.

Notabilia as a unit designed for R410A

- Do not use any refrigerant other than R410A. R410A will rise to pressure about 1.6 times higher than that of a conventional refrigerant. A cylinder containing R410A has a pink indication mark on the top.
- A unit designed for R410A has adopted a different size indoor unit operation valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedicated R410A tools listed in the table on the right before installing or servicing this unit.
- Do not use a charge cylinder. The use of a charge cylinder will cause the refrigerant composition to change, which results in performance degradation.
- In charging refrigerant, always take it out from a cylinder in the liquid phase.
- All indoor units must be models designed exclusively for R410A. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

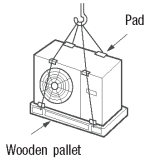
	Dedicated R410A tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

⚠CAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.

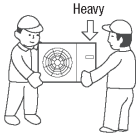
1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.
- When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes lifting it.



2) Portage

- The right hand side of the unit as viewed from the front (diffuser side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.



3) Selection of installation location for the outdoor unit

Be sure to select a suitable installation place in consideration of following conditions.

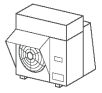
- ○ A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.
- ○ A place where it can be free from possibility of bothering neighbors due to noise or exhaust air from the unit
- ○ A place where the unit is not exposed to oil splashes.
- ○ A place where it can be free from danger of flammable gas leakage.
- ○ A place where drain water can be disposed without any trouble.
- ○ A place where the unit will not be affected by heat radiation from other heat source.
- ○ A place where snow will not accumulate.
- ○ A place where the unit can be kept away 5m or more from TV set and/or radio receiver in order to avoid any radio or TV interference.
- ○ A place where good air circulation can be secured, and enough service space can be secured for maintenance and service of the unit safely.
- ○ A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.
- ○ A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (including ammonia), which can harm the unit, will not be generated and not remain.
- ○ A place where strong wind will not blow against the outlet air blow of the unit.

4) Caution about selection of installation location

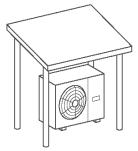
(1) If the unit is installed in the area where the snow will accumulate, following measures are required.
The bottom plate of unit and intake, outlet may be blocked by snow.

1. Install the unit on the base so that the bottom is higher than snow cover surface.

2. Provide a snow hood to the outdoor unit on site. Regarding outline of a snow hood, refer to our technical manual.



3. Install the unit under eaves or providen the roof on site.

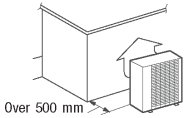


Since drain water generated by defrost control may freeze, following measures are required.

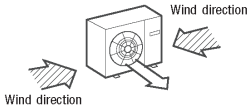
- Don't execute drain piping work by using a drain elbow and drain grommets (optional parts). [Refer to Drain piping work.]
- Recommend setting Defrost Control (SW3-1) and Snow Guard Fan Control (SW3-2). [Refer to Setting SW3-1, SW3-2.]

(2) If the unit can be affected by strong wind, following measures are required.
Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

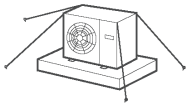
1. Install the outlet air blow side of the unit to face a wall of building, or provide a fence or a windbreak screen.



2. Install the outlet air blow side of the unit in a position perpendicular to the direction of wind.



3. The unit should be installed on the stable and level foundation. If the foundation is not level, tie down the unit with wires.

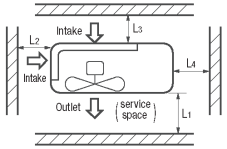


5) Installation space

- Walls surrounding the unit in the four sides are not acceptable.
- There must be a 1-meter or larger space in the above.
- Where a danger of short-circuiting exists, install guide louvers.
- When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
- Where piling snow can bury the outdoor unit, provide proper snow guards.
- A barrier wall placed in front of the exhaust diffuser must not be higher than the unit.

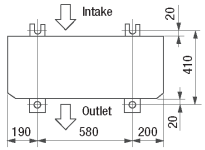
(mm)

Size \ Example installation	100V~140V		
	I	II	III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	5	5	5

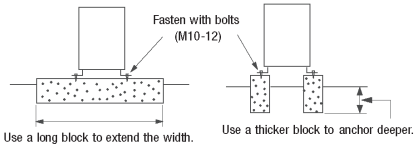


6) Installation

① Anchor bolt fixed position



② Notabilia for installation



- In installing the unit, fix the unit's legs with bolts specified on the left.
- The protrusion of an anchor bolt on the front side must be kept within 15 mm.
- Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
- Refer to the left illustrations for information regarding concrete foundations.
- Install the unit in a level area. (With a gradient of 5 mm or less.)
  Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

7) To run the unit for a cooling operation, when the outdoor temperature is –5°C or lower.

- When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site.
  So that strong wind will not blow against the outdoor heat exchanger directly.
  Regarding outline of a snow hood, refer to our technical manual.

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

- Check the following points in light of the indoor unit specifications and the installation site.
- Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.

Descriptions	One-way pipe length difference from the first branching point to the indoor unit		Marks appearting in the drawing			
					< 3m	≧ 3m
	Model for outdoor units	Dimensional limitations	Single type	Twin type	Triple type A	Triple type B
One-way pipe length of refrigerant piping	100V,125V	≦ 50m	L	L+L1+L2	—	—
	140V				L+L1+L2+L3	L+La+L1+L2+L3
Main pipe length	100V,125V	≦ 50m	—	L	—	—
	140V				L	L
One-way pipe length between the first branching point from to the second branching point	140V	≦ 5m	—	—	—	La
One-way pipe length after the first branching point	100V,125V	≦ 30m	—	L1, L2	—	—
	140V				L1, L2, L3	L1 (1)
One-way pipe length after the first branching point and second branching point	140V	≦ 27m	—	—	—	La+L2, La+L3 (1)
One-way pipe length difference from the first branching point to the indoor unit	Twin type	≦ 10m	—	| L1—L2 |	—	—
	Triple type 140V	≦ 3m			| L1—L2 | , | L2—L3 | , | L3—L1 |	
		≦ 10m			—	L—(La+L2), L1—(La+L3) (1)
One-way pipe length difference from the second branching point to the indoor unit	140V	≦ 10m	—	—	—	| L2—L3 |
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher,	≦ 30m	H	H	H	H
	When the outdoor unit is positioned lower,	≦ 15m				
Elevation difference between indoor units		≦ 0.5m	—	h	h1, h2, h3	h1, h2, h3

⚠CAUTION

- The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size. For more information, see " 6. UTILIZATION OF EXISTING PIPING."
- With the triple pipe connection, the way of use is different when the difference of one-way pipe length after the first branching point is 3m to 10m. For details, refer to the above table and right figure.

Note (1) Install the indoor units so that L + L1 becomes the longest one-way pipe.
Keep the pipe length difference between L1 and (La + L2) or (La + L3) within 10m.

2) Determination of pipe size

- Determine refrigerant pipe size pursuant to the following guidelines based on the indoor unit specifications.

		Model 100V		Model 125V				Model 140V	
		Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
Outdoor unit connected		ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52
		Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
Refrigerant piping (branch pipeL)		ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52
In the case of a single type	Indoor unit connected	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	—		ϕ15.88	ϕ9.52
	Capacity of indoor unit	Model 100V, Model VA40		Model 125V, Model VA50				Model 140V, Model VA60	
In the case of a twin type	Branching pipe set	DIS-WA1		DIS-WA1		DIS-WA1		DIS-WA1	
	Refrigerant piping (branch pipe L1,L2)	ϕ12.7	ϕ9.52	ϕ12.7	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52
	Indoor unit connected	ϕ12.7	ϕ6.35	ϕ12.7	ϕ6.35	ϕ15.88	ϕ6.35	ϕ15.88	ϕ9.52
	Capacity of indoor unit	Model 50V×2, Model VA20×2		Model 60V×2		Model VA25×2		Model 71V×2, Model 30V×2	
In the case of a triple type A	Branching pipe set	—		—		—		DIS-TA1	
	Refrigerant piping (branch pipe L1,L2,L3)							ϕ12.7	ϕ9.52
	Indoor unit connected							ϕ12.7	ϕ6.35
	Capacity of indoor unit							Model 50Vx3, Model VA20x3	
In the case of a triple type B	Branching pipe set	—		—		—		DIS-WA1	
	Refrigerant piping (branch pipe La)							ϕ15.88	ϕ9.52
	Refrigerant piping (branch pipe L1)							ϕ12.7	ϕ9.52
	Indoor unit connected							DIS-WA1	
	Refrigerant piping (branch pipe L2,L3)							ϕ12.7	ϕ9.52
	Indoor unit connected							ϕ12.7	ϕ6.35
	Capacity of indoor unit							Model 50V×3, Model VA20×3	

⚠CAUTION

- When the 50V or 60V model is connected as an indoor unit, always use a ϕ9.52 liquid pipe for the branch (branching pipe – indoor unit) and a different diameter joint supplied with the branching pipe set for connection with the indoor unit (ϕ6.35 on the liquid pipe side).
  If a ϕ6.35 pipe is used for connection with a branching pipe, a refrigerant distribution disorder may occur, causing one of the indoor units to fall short of the rated capacity.
- A riser pipe must be a part of the main. A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.
  A branching part must be dressed with a heat-insulation material supplied as an accessory.
- For the details of installation work required at and near a branching area, see the installation manual supplied with your branching pipe set.

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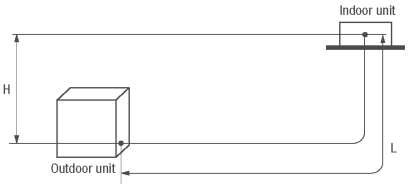

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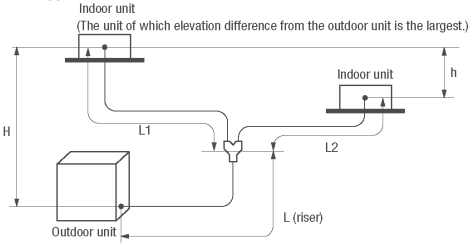

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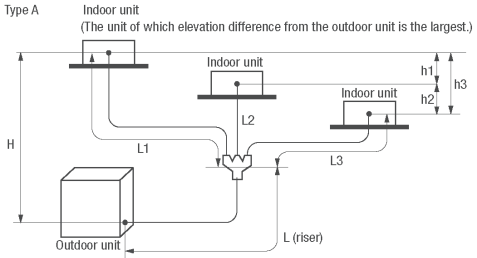

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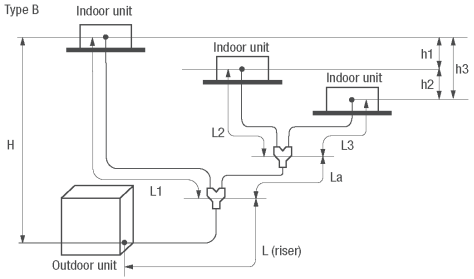
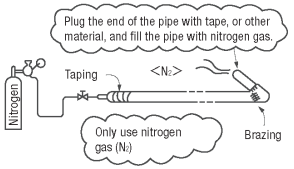
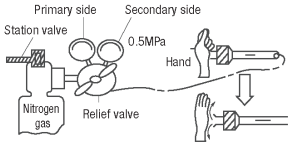


About brazing

Brazing must be performed under a nitrogen gas flow.

Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clogging.





3) Refrigerant pipe wall thickness and material

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.
- This unit uses R410A. Always use 1/2H pipes having a 1.0mm or thicker wall for ϕ19.05 or larger pipes, because O-type pipes do not meet the pressure resistance requirement.

Pipe diameter [mm]	6.35	9.52	12.7	15.88	22.22	25.4	28.58
Minimum pipe wall thickness [mm]	0.8	0.8	0.8	1.0	1.0	1.0	1.0
Pipe material*	O-type pipe	O-type pipe	O-type pipe	O-type pipe	1/2H-type pipe	1/2H-type pipe	1/2H-type pipe

*Phosphorus deoxidized seamless copper pipe C1220T, JIS H3300

NOTE

- Select pipes having a wall thickness larger than the specified minimum pipe thickness.

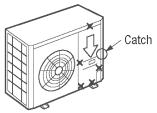
4) On-site piping work

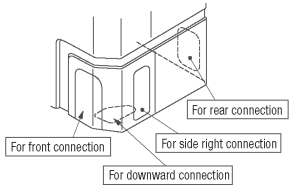
⚠IMPORTANT

- Take care so that installed pipes may not touch components within a unit. If touching with an internal component, it will generate abnormal sounds and/or vibrations.

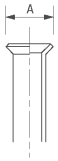
How to remove the service panel

First remove the five screws (✕ mark) of the service panel and push it down into the direction of the arrow mark and then remove it by pulling it toward you.



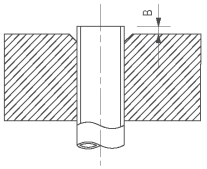


- The pipe can be laid in any of the following directions: side right, front, rear and downward.
- Remove a knock-out plate provided on the pipe penetration to open a minimum necessary area and attach an edging material supplied as an accessory by cutting it to an appropriate length before laying a pipe.
- Carry out the on site piping work with the operation valve fully closed.
- Give sufficient protection to a pipe end (compressed and blazed, or with an adhesive tape) so that water or foreign matters may not enter the piping.
- Bend a pipe to a radius as large as practical.(R100～R150) Do not bend a pipe repeatedly to correct its form.
- Flare connection is used between the unit and refrigerant pipe. Flare a pipe after engaging a flare nut onto it. Flare dimensions for R410A are different from those for conventional R407C. Although we recommend the use of flaring tools designed specifically for R410A, conventional flaring tools can also be used by adjusting the measurement of protrusion B with a protrusion control gauge.



Flared pipe end: A (mm)

Copper pipe outer diameter	A $^{0}_{-0.4}$
ϕ6.35	9.1
ϕ9.52	13.2
ϕ12.7	16.6
ϕ15.88	19.7



Copper pipe protrusion for flaring: B (mm)

Copper pipe outer diameter	In the case of a rigid (clutch) type	
	With an R410A tool	With a conventional tool
ϕ6.35	0～0.5	0.7～1.3
ϕ9.52		
ϕ12.7		
ϕ15.88		

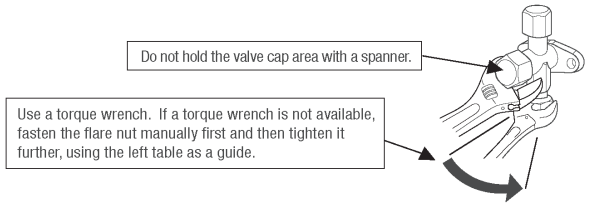
- Tighten a flare joint securely with a double spanner.

⚠ CAUTION

Do not apply force beyond proper fastening torque in tightening the flare nut.

Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque.

Operation valve size (mm)	Tightening torque (N-m)	Tightening angle (°)	Recommended length of a tool handle (mm)
ϕ6.35 (1/4")	14～18	45～60	150
ϕ9.52 (3/8")	34～42	30～45	200
ϕ12.7 (1/2")	49～61	30～45	250
ϕ15.88 (5/8")	68～82	15～20	300

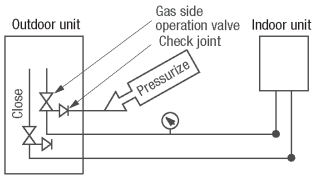


5) Air tightness test

① Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the operation valve's check joint equipped on the outdoor unit side. While conducting a test, keep the operation valve shut all the time.

a) Raise the pressure to 0.5 MPa, and then stop. Leave it for five minutes to see if the pressure drops.
b) Then raise the pressure to 1.5 MPa, and stop. Leave it for five more minutes to see if the pressure drops.
c) Then raise the pressure to the specified level (4.15 MPa), and record the ambient temperature and the pressure.
d) If no pressure drop is observed with an installation pressurized to the specified level and left for about one day, it is acceptable. When the ambient Temperature fall 1℃, the pressure also fall approximately 0.01 MPa. The pressure, if changed, should be compensated for.
e) If a pressure drop is observed in checking e) and a) – d), a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair, conduct an air-tightness test again.

② In conducting an air-tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances.



6) Evacuation

<Work flow> When the system has remaining moisture inside or a leaky point, the vacuum gauge indicator will rise.
Check the system for a leaky point and then draw air to create a vacuum again.

Run the vacuum pump for at least one hour after the vacuum gauge shows -101kPa or lower. (-755mmHg or lower)

Confirm that the vacuum gauge indicator does not rise even if the system is left for one hour or more.

Airtighteness test completed
↓
Vacuuming begins
↓
Vacuuming completed
↓
Vacuum gauge check
↓
Fill refrigerant

Pay attention to the following points in addition to the above for the R410A and compatible machines.

○To prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).
○Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.

7) Additional refrigerant charge

(1) Calculate a required refrigerant charge volume from the following table.

<Single type>

Item / Capacity	Standard refrigerant charge volume (kg)	Pipe length for standard refrigerant charge volume (m)	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
Model 100V	2.0	0	0.06	3.8	30
Model 125V					
Model 140V					

<Twin, triple, W-twin type>

Item / Capacity	Standard refrigerant charge volume (kg)	Pipe length for standard refrigerant charge volume (m)	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe)		Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
			Main pipe	Branch pipe		
Model 100V	2.0	0	0.06		3.8	30
Model 125V						
Model 140V						

- ●A standard refrigerant charge volume means a refrigerant charge volume for an installation with 0m long refrigerant piping.
- ●This unit contains factory charged refrigerant covering 30m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 30m refrigerant piping. When refrigerant piping exceeds 30m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 30m.
- ●When refrigerant piping is shorter than 3m, reduce refrigerant by 1kg from the factory charged volume and adjust to 2.8kg.
- ●If an existing pipe system is used, a required refrigerant charge volume will vary depending on the liquid pipe size. For further information, see "6. UTILIZATION OF EXISTING PIPING."

Formula to calculate the volume of additional refrigerant required

Model 100～140V	Additional charge volume (kg) = { Main pipe length (m) – Length covered without additional charge 30 (m) } x 0.06 (kg/m) + Total length of branch pipes (m) x 0.06 (kg/m)

*When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.

- ●**To charge refrigerant again, recover refrigerant from the system first and then charge the volume calculated from the above table (Standard refrigerant charge volume + branch pipes charge volume)**

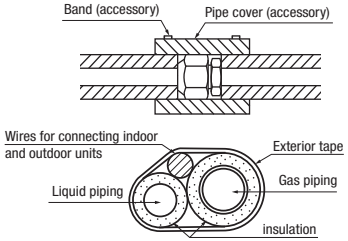
(2) Charging refrigerant

- ●Since R410A refrigerant must be charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
- ●Charge refrigerant always from the liquid side service port with the operation valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid-phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gasify upon entering the unit.
- ●In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.
- ●When refrigerant is charged with the unit being run, complete a charge operation within 30 minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the back side of the service panel.

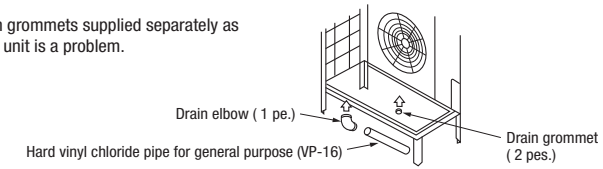
8) Heating and condensation prevention

(1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.
(2) Use a heat insulating material that can withstand 120℃ or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.
- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.
- All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.
- Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).
- Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.
- Although it is verified in a test that this air conditioning unit shows satisfactory performance under JIS condensation test conditions, **both gas and liquid pipes need to be dressed with 20 mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.**



3. DRAIN PIPING WORK

- ●Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a problem.



○ There are 3 drain holes provided on the bottom plate of an outdoor unit to discharge condensed water.
○ When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or concrete blocks.
○ Connect a drain elbow as shown in the illustration and close the other two drain holes with grommets.

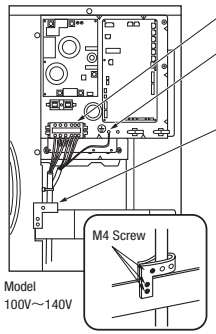
4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country. Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.

- Do not use any supply cord lighter than one specified in parentheses for each type below.
  - braided cord (code designation 60245 IEC 51),
  - ordinary tough rubber sheathed cord (code designation 60245 IEC 53)
  - flat twin tinsel cord (code designation 60227 IEC 41);

  Do not use anything lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC57) for supply cords of parts of appliances for outdoor use.
- Ground the unit. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire. If impropery grounded, an electric shock or malfunction may result.
- A grounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.
- The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an acccident such as an electric shock or a fire.
- Do not turn on the power until the electrical work is completeted .
- Do not use a condensive capacitor for power factor improvement under any circumstances. (It dose not improve power factor, while it can cause an abnormal overheat accident)
- For power supply cables, use conduits.
- Do not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.
- Fasten cables so that may not touch the piping, etc.
- When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)
- Always use a three-core cable for an indoor-outdoor connecting cable. Never use a shield cable.

- Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
- In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
- Grounding terminals are provided in the control box.



Power source, signal line and ground terminal block

Grounding terminal

○Do not connect to the grounding wire from another unit, but install a dedicated wire up to the grounding wire from the distribution board.

Wiring clamp

○Fasten cables and protect the terminal connection from external force.

Wiring diagram

○It is attached on the back side of the service panel.

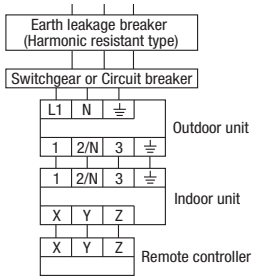
Outgoing cable direction

○As like the refrigerant pipe, it can be let out in any of the following directions: side right, front, rear and downward.

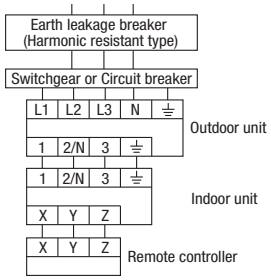
Power cable, indoor-outdoor connecting wires

- Always perform grounding system installation work with the power cord unplugged.

⚠ CAUTION Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.



Model 100VN ~ 140VN



Model 100VS ~ 140VS

Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
100VN	Single phase 3 wire 220-240V 50Hz 220V 60Hz	5.5	24	25	φ1.6mm	φ1.6mm x 3
125VN						
140VN						
100VS	3 phase 4 wire 380-415V 50Hz 380V 60Hz	3.5	15	27		
125VS						
140VS						

※At the connection with the duct type indoor unit.

Model	Power source	Power cable thickness (mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
100VN	Single phase 3 wire 220-240V 50Hz 220V 60Hz	5.5	25	24	φ1.6mm	φ1.6mm x 3
125VN			27	22		
140VN		8	28	32		
100VS	3 phase 4 wire 380-415V 50Hz 380V 60Hz	3.5	16	26		
125VS			18	23		
140VS			19	21		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear or Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

5. TEST RUN

⚠ WARNING

- Before conduct a test run, do not fail to make sure that the operation valves are closed.
- Turn on power 6 hours prior to a test run to energize the crank case heater.
- In case of the first operation after turning on power, even if the unit does not move for 30 minutes, it is not a breakdown.
- Always give a 3-minute or longer interval before you start the unit again whenever it is stopped.

} A failure to observe these instructions can result in a compressor breakdown.

- Removing the service panel will expose high-voltage live parts and high-temperature parts, which are quite dangerous.
  Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

⚠ CAUTION

- When you operate switches (SW3, SW5) for on-site setting, be careful not to touch a live part.
- You cannot check discharge pressure from the liquid operation valve charge port.
- The 4-way valve (20S) is energized during a heating operation.
- When power supply is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off. If this procedure is not observed in turning on power again, "Communication error between outdoor and indoor unit" may occur.

1) Test run method

(1) A test run can be initiated from an outdoor unit by using SW3-3 and SW3-4 for on-site setting.
(2) Switching SW3-3 to ON will start the compressor.
(3) The unit will start a cooling operation, when SW3-4 is OFF, or a heating operation, when SW3-4 is ON.
(4) **Do not fail to switch SW3-3 to OFF when a test run is completed.**

SW-3-3	SW-3-4	
ON	OFF	Cooling during a test run
	ON	Heating during a test run
OFF	—	Normal or After the test operation

2) Checking the state of the unit in operation

Use check joints provided on the piping before and after the four-way valve installed inside the outdoor unit for checking discharge pressure and suction pressure.
As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or heating operation has been selected.

	Check joint of the pipe	Charge port of the gas operation valve
Cooling operation	Discharge pressure (High pressure)	Suction pressure (Low pressure)
Heating operation	Suction pressure (Low pressure)	Discharge pressure (High pressure)

3) Setting SW3-1, SW3-2, on-site

(1) Defrost control switching (SW3-1)
- ·When this switch is turned ON, the unit will run in the defrost mode more frequently.
- ·Set this switch to ON, when installed in a region where outdoor temperature falls below zero during the season the unit is run for a heating operation.

(2) Snow guard fan control (SW3-2)
- ·When this switch is turned on, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3℃ or lower and the compressor is not running.
- ·When the unit is used in a very snowy country, set this switch to ON.

4) Failure diagnosis in a test run

Error indicated on the remote control unit	Printed circuit board LED(The cycles of 5 seconds)		Failure event	Action
	Red LED	Green LED		
E34	Blinking once	Blinking continuously	Open phase	Check power cables for loose contact or disconnection
E40	Blinking once	Blinking continuously	63H1 actuation or operation with operation valves shut (occurs mainly during a heating operation)	1. Check whether the operation valves are open. 2. If an error has been canceled when 3 minutes have elapsed since a compressor stop, you can restart the unit by effecting Check Reset from the remote control unit.
E49	Blinking once	Blinking continuously	Low pressure error or operation with operation valves shut (occurs mainly during a cooling operation)	

- If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

5) The state of the electronic expansion valve.

The following table illustrates the steady states of the electronic expansion valve.

	When power is turned on	When the unit comes to a normal stop		When the unit comes to an abnormal stop	
		During a cooling operation	During a heating operation	During a cooling operation	During a heating operation
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position
Valve for a heating operation	Full open position	Full open position	Complete shut position	Full open position	Full open position

6) Heed the following on the first operation after turning on the circuit breaker.

This outdoor unit may start in the standby mode (waiting for a compressor startup), which can continue up to 30 minutes, to prevent the oil level in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure.

Items to checkbefore a test run

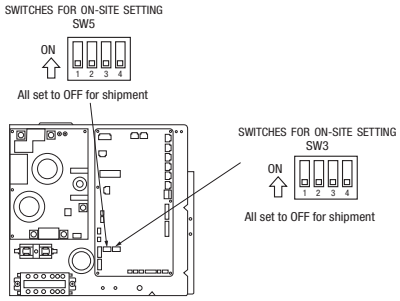
- When you leave the outdoor unit with power supplied to it, be sure to close the panel.

Item No.used in the installation manual	Item	Check item	Check
2	Refrigerant plumbing	If brazed, was it brazed under a nitrogen gas flow?	
		Were air-tightness test and vacuum extraction surely performed?	
		Are heat insulation materials installed on both liquid and gas pipes?	
		Are operation valves surely opened for both liquid and gas systems?	
		Have you recorded the additional refrigerant charge volume and refrigerant pipe length on the panel's label?	
4	Electric wiring	Is the unit free of cabling errors such as uncompleted connection, an absent or reversed phase?	
		Are properly rated electrical equipments used for circuit breakers and cables?	
		Doesn't cabling cross-connect between units, where more than one unit are installed?	
		Aren't indoor-outdoor signal wires connected to remote control wires?	
		Do indoor-outdoor connecting cables connect between the same terminal numbers?	
		Are either VCT cabtyre cables or WF flat cables used for indoor-outdoor connecting cables?	
		Does grounding satisfy the D type grounding (type III grounding) requirements?	
		Is the unit grounded with a dedicated grounding wire not connected to another unit's grounding wire?	
		Are cables free of loose screws at their connection points?	
		Are cables held down with cable clamps so that no external force works onto terminal connections?	
—	Indoor unit	Is indoor unit installation work completed?	
		Where a face cover should be attached onto an indoor unit, is the face cover attached to the indoor unit?	

Test run procedure

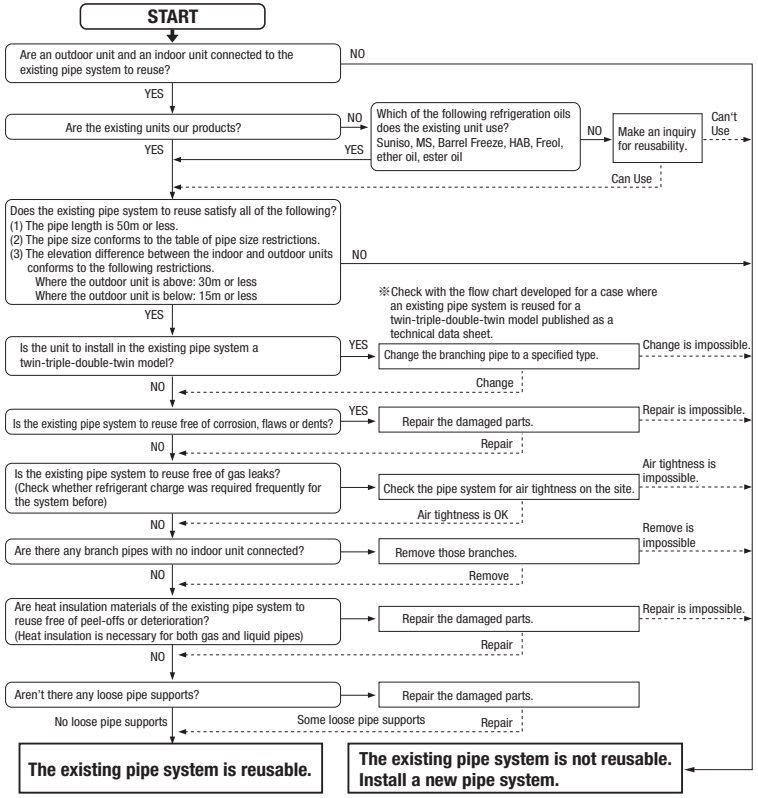
- Always carry out a test run and check the following in order as listed.

Turn	The contents of operation	Check
①	Open the gas side operation valve fully.	
②	Open the liquid side operation valve fully.	
③	Close the panel.	
④	Where a remote control unit is used for unit setup on the installation site, follow instructions for unit setup on the installation site with a remote control unit.	
⑤	SW3-3 ON / SW3-4 OFF: the unit will start a cooling operation.	
	SW3-3 ON / SW3-4 ON: the unit will start a heating operation.	
⑥	When the unit starts operation, press the wind direction button provided on the remote control unit to check its operation.	
⑦	Place your hand before the indoor unit's diffuser to check whether cold (warm) winds come out in a cooling (heating) operation.	
⑧	Make sure that a red LED is not blinking.	
⑨	When you complete the test run, do not forget to turn SW3-3 to the OFF position.	
⑩	Where options are used, check their operation according to the respective instruction manuals.	



6. UTILIZATION OF EXISTING PIPING.

Check whether an existing pipe system is reusable or not by using the following flow chart.



⚠ WARNING <Where the existing unit can be run for a cooling operation.>

Carry out the following steps with the excising unit (in the order of (1), (2), (3) and (4))

(1) Run the unit for 30 minutes for a cooling operation.
(2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
(3) Close the liquid side operation valve of the outdoor unit and pump down (refrigerant recovery)
(4) Blow with nitrogen gas. ※ If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.
- For the flare nut, do not use the old one, but use the one supplied with the outdoor unit. Process a flare to the dimensions specified for R410A.
- **Turn on-site setting switch SW5-1** to the ON position. (Where the gas pipe size is φ19.05)

<Where the existing unit cannot be run for a cooling operation.>

Wash the pipe system or install a new pipe system.
- If you choose to wash the pipe system, contact our distributor in the area.

<Table of pipe size restrictions>

◎:Standard pipe size ○:Usable
△:Restricted to shorter pipe length limits

Additional charging amount of refrigerant per 1m		0.06kg/m		0.08kg/m	
Pipe size	Liquid pipe	φ9.52	φ9.52	φ12.7	φ12.7
	Gas pipe	φ15.88	φ19.05	φ15.88	φ19.05
100V	Usability	◎	○※1	△	△※1
	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15
125V	Usability	◎	○※1	△	△※1
	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15
140V	Usability	◎	○※1	△	△※1
	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15

※1 Because of its insufficient pressure resistance, **turn the dip switch SW5-1** provided on the outdoor unit board to the ON position for φ19.05 × t1.0.
(In the case of a twin-triple-double-twin model, this also applies to the case where φ19.05 × t1.0 is used in a pipe system after the first branching point.
However, you need not turn the dip switch SW5-1 to the ON position, if 1/2H pipes or pipes having 1.2 or thicker walls are used.

※2 When the main pipe length exceeds 40m, a significant capacity drop may be experienced due to pressure loss in the liquid pipe system. Use φ12.7 for the liquid main.

※3 Keep the total pipe length, not one-way pipe length, below the specified maximum pipe length.

- When refrigerant piping is shoter than 3m, reduce refrigerant by 1kg from factory charged volume and adjust to 2.8kg.
- Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

<Pipe system after the branching pipe>

◎:Standard pipe size ○:Usable ×:Not usable

- Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

			After 1st branch ※4			After 2nd branch		
Additional charging amount of refrigerant per 1m			0.06kg/m			0.06kg/m		
Pipe size	Liquid pipe		φ9.52			φ9.52		
	Gas pipe		φ12.7	φ15.88	φ19.05※1	φ12.7	φ15.88	φ19.05※1
Model	Combination type	Combination of capacity						
100V	Twin	50+50	◎	○	×	—	—	—
125V	Twin	60+60	◎	○	×	—	—	—
140V	Twin	71+71	×	◎	○	—	—	—
	Triple A	50+50+50	◎	○	×	—	—	—
	Triple B	50+50+50	×	◎※5	○※5	◎	○	×

※4 Piping size after branch should be equal or smaller than main pipe size.
※5 Piping size from first branch to indoor unit should be φ9.52 (Liquid) / φ12.7 (Gas).

<The model types of existing units of which branching pipes are reusable.>

Models later than Type 8.
- FDC ＊＊＊ 8 □ □ □
- FDCP ＊＊＊ 8 □ □ □

The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R410A.

- ＊＊＊ are numbers representing horsepower. □□□ is an alphanumeric letter.

Formula to calculate additional charge volume

Additional charge volume (kg) = {Main pipe length (m) − Length covered without additional charge shown in the table (m)} × Additional charge volume per meter of pipe shown in the table (kg/m) + Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (kg/m)

※ If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.
Example) When an 140V (single installation) is installed in a 20m long existing pipe system (liquid φ12.7, gas φ19.05), the quantity of refrigerant to charge additionally should be (20m-15m) x 0.08kg/m = 0.4 kg.

(2) Models FDC200, 250VS

Inverter driven single split PAC
200V·250V
Designed for R410A refrigerant

◎This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 204.
◎When install the unit, be sure to check whether the selection of installation place, power supply specifications, usage limitation (piping length, height differences between indoor and outdoor units, power supply voltage and etc.) and installation spaces

SAFETY PRECAUTIONS

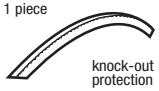
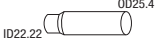
- We recommend you to read this "SAFETY PRECAUTIONS" carefully before the installation work in order to gain full advantage of the functions of the unit and to avoid malfunction due to mishandling.
- The precautions described below are divided into ⚠WARNING and ⚠CAUTION. The matters with possibilities leading to serious consequences such as death or serious personal injury due to erroneous handling are listed in the ⚠WARNING and the matters with possibilities leading to personal injury or damage of the unit due to erroneous handling including probability leading to serious consequences in some cases are listed in ⚠CAUTION. **These are very important precautions for safety. Be sure to observe all of them without fail.**
- The meaning of "Marks" used here are as shown below.

⊘	Never do it under any circumstance.	❗ ⏚	Always do it according to the instruction

- For this outdoor unit, EN61000-3-2 is not applicable if consent by the utility company or nortification to the utility company is given before usage.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.
- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user

Check before installation work

[Accessory]

Edging	Accessory pipe	
1 piece	1 piece	1 piece
 knock-out hole protection	ID22.22 Accessory pipe A	 OD25.4 ID22.22 Accessory pipe B

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

⚠ WARNING

❗

- **Installation must be carried out by the qualified installer.**
  If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction.
- **Install the system in full accordance with the instruction manual.**
  Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
- **Use the original accessories and the specified components for installation.**
  If parts other than those prescribed by us are used, It may cause fall of the unit, water leaks, electric shocks, fire, refrigerant leak, substandard performance, control failure and personal injury.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage accordance with ISO5149.**
  Consult the expert about prevention measures. If the density of refrigerant exceeds the limit in the event of leakage, lack of oxygen can occur, which can cause serious accidents.
- **Ventilate the working area well in the event of refrigerant leakage during installation.**
  If the refrigerant comes into contact with naked flames, poisonous gas is produced.
- **After completed installation, check that no refrigerant leaks from the system.**
  If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
- **Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid jolting out of alignment, be sure to hang up the unit at 4-point support.**
  An improper manner of portage such as 3-point support can cause death or serious personal injury due to falling of the unit
- **Install the unit in a location with good support.**
  Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.
- **Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds.**
  Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.
- **The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.**
  Power supply with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire,
- **Be sure to shut off the power before starting electrical work.**
  Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
- **Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.**
  Unconformable cables can cause electric leak, anomalous heat production or fire.
- **Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.**
  Loose connections or cable mountings can cause anomalous heat production or fire.
- **Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.**
  Incorrect installation may result in overheating and fire.

❗

- **Do not perform brazing work in the airtight room**
  It can cause lack of oxygen.
- **Use the prescribed pipes, flare nuts and tools for R410A.**
  Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.
- **Tighten the flare nut by using double spanners and torque wrench according to prescribed method. Be sure not to tighten the flare nut too much.**
  Loose flare connection or damage on the flare part by tightening with excess torque can cause burst or refrigerant leaks which may result in lack of oxygen.
- **Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation.**
  If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, you may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalously high pressure in the refrigerant
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not perform any change of protective device itself or its setup condition**
  The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.
- **Be sure to switch off the power supply in the event of installation, inspection or servicing.**
  If the power supply is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.
- **Consult the dealer or an expert regarding removal of the unit.**
  Incorrect installation can cause water leaks, electric shocks or fire.
- **Stop the compressor before closing valve and disconnecting refrigerant pipes in case of pump down operation.**
  If disconnecting refrigerant pipes in state of opening service valves before compressor stopping, you may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked, which can cause burst or personal injury due to anomalously high pressure in the refrigerant circuit

⊘

- **Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.**
  If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.
- **Do not run the unit with removed panels or protections**
  Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
- **Be sure to fix up the service panels.**
  Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water.
- **Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair.**
  If you repair or modify the unit, it can cause water leaks, electric shocks or fire.

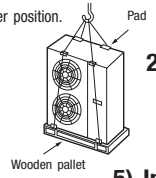
Notabilia as a unit designed for R410A

- Do not use any refrigerant other than R410A. R410A will rise to pressure about 1.6 times higher than that of a conventional refrigerant. A cylinder containing R410A has a pink indication mark on the top.
- A unit designed for R410A has adopted a different size indoor unit operation valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedicated R410A tools listed in the table on the right before installing or servicing this unit.
- Do not use a charge cylinder. The use of a charge cylinder will cause the refrigerant composition to change, which results in performance degradation.
- In charging refrigerant, always take it out from a cylinder in the liquid phase.
- All indoor units must be models designed exclusively for R410A. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

	Dedicated R410A tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

⚠CAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.

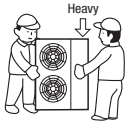


1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.
- When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes lifting it.

2) Portage

- The right hand side of the unit as viewed from the front (diffuser side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.



3) Selection of installation location for the outdoor unit

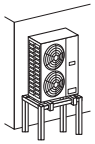
Be sure to select a suitable installation place in consideration of following conditions.

- ○ A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.
- ○ A place where it can be free from possibility of bothering neighbors due to noise or exhaust air from the unit
- ○ A place where the unit is not exposed to oil splashes.
- ○ A place where it can be free from danger of flammable gas leakage.
- ○ A place where drain water can be disposed without any trouble.
- ○ A place where the unit will not be affected by heat radiation from other heat source.
- ○ A place where snow will not accumulate.
- ○ A place where the unit can be kept away 5m or more from TV set and/or radio receiver in order to avoid any radio or TV interference.
- ○ A place where good air circulation can be secured, and enough service space can be secured for maintenance and service of the unit safely.
- ○ A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.
- ○ A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (including ammonia), which can harm the unit, will not be generated and not remain.
- ○ A place where strong wind will not blow against the outlet air blow of the unit

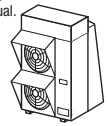
4) Caution about selection of installation location

(1) If the unit is installed in the area where the snow will accumulate, following measures are required.
The bottom plate of unit and intake, outlet may be blocked by snow.

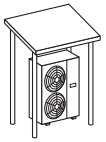
1.Install the unit on the base so that the bottom is higher than snow cover surface.



2.Provide a snow hood to the outdoor unit on site. Regarding outline of a snow hood, refer to our technical manual.



3.Install the unit under eaves or provide the roof on site.

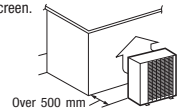


Since drain water generated by defrost control may freeze, following measures are required.

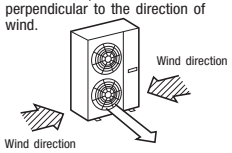
- Don't execute drain piping work by using a drain elbow and drain grommets (optional parts). [Refer to Drain piping work.]
- Recommend setting Defrost Control (SW3-1) and Snow Guard Fan Control (SW3-2). [Refer to Setting SW3-1, SW3-2.]

(2) If the unit can be affected by strong wind, following measures are required.
Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

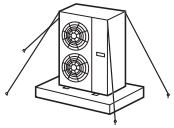
1.Install the outlet air blow side of the unit to face a wall of building, or provide a fence or a windbreak screen.



2.Install the outlet air blow side of the unit in a position perpendicular to the direction of wind.



3.The unit should be installed on the stable and level foundation. If the foundation is not level, tie down the unit with wires.

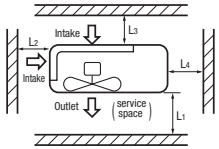


5) Installation space

- Walls surrounding the unit in the four sides are not acceptable.
- There must be a 1-meter or larger space in the above.
- Where a danger of short-circuiting exists, install guide louvers.
- When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
- Where piling snow can bury the outdoor unit, provide proper snow guards.
- A barrier wall placed in front of the exhaust diffuser must not be higher than the unit.

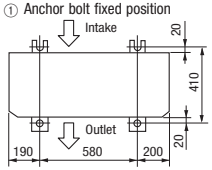
(mm)

Size \ Example installation	200V, 250V I	200V, 250V II	200V, 250V III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	5	5	5

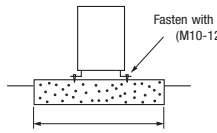


6) Installation

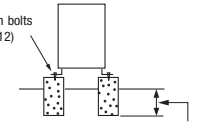
① Anchor bolt fixed position



② Notabilia for installation



Use a long block to extend the width.



Use a thicker block to anchor deeper.

- In installing the unit, fix the unit's legs with bolts specified on the left.
- The protrusion of an anchor bolt on the front side must be kept within 15 mm.
- Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
- Refer to the left illustrations for information regarding concrete foundations.
- Install the unit in a level area. (With a gradient of 5 mm or less.)
  Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

7) To run the unit for a cooling operation, when the outdoor temperature is –5°C or lower.

- When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site.
  So that strong wind will not blow against the outdoor heat exchanger directly. Regarding outline of a snow hood, refer to our technical manual.

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

- Check the following points in light of the indoor unit specifications and the installation site.
- Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.

Restrictions				Marks appearing in the drawing				
	One-way pipe length difference from the first branching point to the indoor unit					< 3m	≧ 3m	
	Model for outdoor units		Dimensional restrictions	Single type	Twin type	Triple type A	Triple type B	W-twin type
One-way pipe length of refrigerant piping	200V	Liquid Piping	φ9.52	≦ 40m	L	L+L1 L+L2	L+L1 (1)	L+La+L1, L+La+L2 L+Lb+L3, L+Lb+L4
			φ12.7	≦ 70m				
	200V-250V	Gas piping	φ25.4 or φ28.58			L+L1, L+L2, L+L3	Prohibitation of the use	
			φ22.22	≦ 35m		L+L1, L+La+L2, L+La+L3 (2) (type B)		
Main pipe length	200V	Liquid Piping	φ9.52	≦ 40m	—	L	L	L
			φ12.7	≦ 70m			L+L1 (1)	
	200V-250V	Gas piping	φ25.4 or φ28.58				Prohibitation of the use	
			φ22.22	≦ 35m				
One-way pipe length between the first branching point from to the second branching point	200V			≦ 5m	—	—	—	La	—
	250V					La	Prohibitation of the use	
One-way pipe length after the first branching point	200V			≦ 30m	—	—	L1, L2, L3	L1 (1)	La+L1, L+La+L2 Lb+L3, Lb+L4
	250V					L1, La+L2, L+La+L3 (2) (type B)	Prohibitation of the use	
One-way pipe length after the first branching point and second branching point	200V			≦ 27m	—	—	—	La+L2, La+L3 (1)	—
One-way pipe length difference from the first branching point to the indoor unit	Twin type			≦ 10m	—	| L1—L2 |	—	—	—
	Triple type	200V		≦ 3m			| L1—L2 | , | L2—L3 | , | L3—L1 |	—	
				≦ 10m			—	L1—(La+L2), L1—(La+L3) (1)	
		250V		≦ 3m			| L1—(La+L2) | , | L1—(La+L3) | , | L2—L3 | (2) (type B)	Prohibitation of the use	
	W-twin type	200V-250V		≦ 10m			—	—	| L1—L2 | , | L3—L4 | | (L1+La)—(L3+Lb) | , | (L1+La)—(L4+Lb) | | (L2+La)—(L3+Lb) | , | (L2+La)—(L4+Lb) |
One-way pipe length difference from the second branching point to the indoor unit	200V			≦ 10m	—	—	—	| L2—L3 |	| L1—L2 | , | L3—L4 |
Total pipe length after the second branching point				≦ 15m	—	—	—	—	L1+L2, L3+L4
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher,			≦ 30m	H	H	H	H	H
	When the outdoor unit is positioned lower,			≦ 15m					
Elevation difference between indoor units				≦ 0.5m	—	h	h1, h2, h3	h1, h2, h3	h1, h2, h3, h4, h5, h6

⚠CAUTION

- For model 200V, **always use φ12.7mm liquid pipes**, when the length of the main "L" exceeds 40m. If φ9.52mm pipes are used in an installation having over 40m piping, they can cause performance degradation and/or water leaks from an indoor unit.
- The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size. For more information, see " 6. UTILIZATION OF EXISTING PIPING."
- With the triple pipe connection, the way of use is different when the difference of one-way pipe length after the first branching point is 3m to 10m. For details, refer to theabove table and right figure.

Note (1) Install the indoor units so that L + L1 becomes the longest one-way pipe.
Keep the pipe length difference between L1 and (La + L2) or (La + L3) within 10m.
Note (2) Connect the unit that is the maximum capacity with L1.

2) Determination of pipe size

- Determine refrigerant pipe size pursuant to the following guidelines based on the indoor unit specifications.

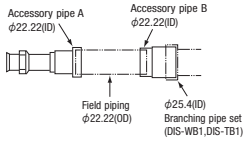
		Model 200V		Model 250V					
		Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
Outdoor unit connected		φ22.22	φ9.52	φ22.22	φ12.7	φ22.22	φ12.7	φ22.22	φ12.7
		Brazing	Flare	Brazing	Flare	Brazing	Flare	Brazing	Flare
Refrigerant piping (branch pipeL)		φ22.22	φ9.52 or φ12.7	φ22.22	φ12.7	φ22.22	φ12.7	φ22.22	φ12.7
In the case of asingle type	Indoor unit connected	φ25.4	φ9.52	φ25.4	φ12.7	—		—	
	Capacity of indoor unit	Model 200V, Model VA80		Model 250V, Model VA100					
In the case of atwin type	Branching pipe set	DIS-WB1		DIS-WB1		—		—	
	Refrigerant piping (branch pipe L1,L2)	φ15.88	φ9.52	φ15.88	φ9.52				
	Indoor unit connected	φ15.88	φ9.52	φ15.88	φ9.52				
	Capacity of indoor unit	Model 100V×2, Model VA40×2		Model 125V×2, Model VA50×2					
In the case of a triple type A	Branching pipe set	DIS-TB1		—		—		—	
	Refrigerant piping (branch pipe L1,L2,L3)	φ15.88	φ9.52						
	Indoor unit connected	φ15.88	φ9.52						
	Capacity of indoor unit	Model 71V×3, Model VA30×3							
In the case of a triple type B	Branching pipe set	DIS-WB1		DIS-WB1		DIS-WB1		DIS-WB1	
	Refrigerant piping (branch pipe La,L1)	φ15.88	φ9.52	φ15.88	φ9.52	φ15.88	φ9.52	φ15.88	φ9.52
	Branching pipe set	DIS-WA1		DIS-WA1		DIS-WA1		DIS-WA1	
	Refrigerant piping (branch pipe L2,L3)	φ15.88	φ9.52	φ12.7	φ9.52	φ15.88	φ9.52	φ15.88	φ9.52
	Indoor unit connected	φ15.88	φ9.52	φ12.7	φ6.35	φ15.88	φ9.52	φ15.88	φ6.35
	Capacity of indoor unit	Model 71V×3, Model VA30×3		Model 60V×2+ Model 125V		Model 71V×2+Model 100V Model VA30×2+Model VA40		Model VA25×2+Model VA50	
In the case of a W-twin type	Branching pipe set	DIS-WA1		DIS-WB1		DIS-WB1		—	
	Refrigerant piping (branch pipe La,Lb)	φ15.88	φ9.52	φ15.88	φ9.52	φ15.88	φ9.52		
	Branching pipe set	DIS-WA1 × 2		DIS-WA1 × 2		DIS-WA1 × 2			
	Refrigerant piping (branch pipe L1,L2,L3,L4)	φ12.7	φ9.52	φ12.7	φ9.52	φ12.7	φ9.52		
	Indoor unit connected	φ12.7	φ6.35	φ12.7	φ6.35	φ12.7	φ6.35		
	Capacity of indoor unit	Model 50V×4, Model VA20×4		Model 60V×4		Model VA25×4			

⚠CAUTION

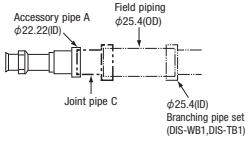
- When the model 50V or model 60V model is connected as an indoor unit, always use a φ9.52 liquid pipe for the branch (branching pipe – indoor unit) and a different diameter joint supplied with the branching pipe set for connection with the indoor unit (φ6.35 on the liquid pipe side).
  If a φ6.35 pipe is used for connection with a branching pipe, a refrigerant distribution disorder may occur, causing one of the indoor units to fall short of the rated capacity.
- A riser pipe must be a part of the main. A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.
  A branching part must be dressed with a heat-insulation material supplied as an accessory.
- For the details of installation work required at and near a branching area, see the installation manual supplied with your branching pipe set.

3) How to use pipe reducer.

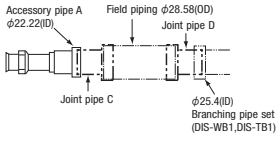
- φ22.22(OD) size of the refrigerant gas pipe can be used by using accessory pipe A,B.



- φ25.4(OD) size of the refrigerant gas pipe can be used by using accessory pipe A and joint pipe C.
  Ready joint C yourself. Need not accessory pipe B.



- φ28.58(OD) size of the refrigerant gas pipe can be used by using accessory pipe A and joint pipe C,D.
  Ready joint C and D yourself.



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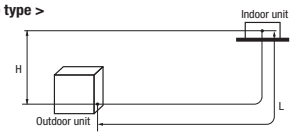

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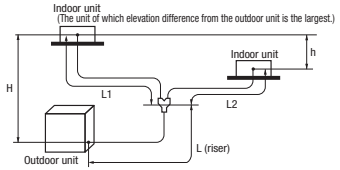
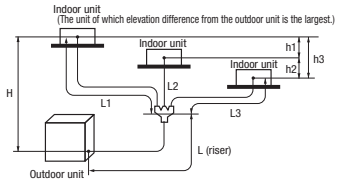
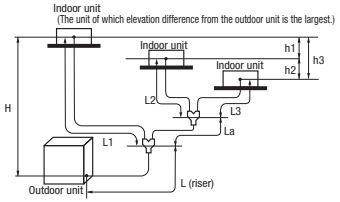


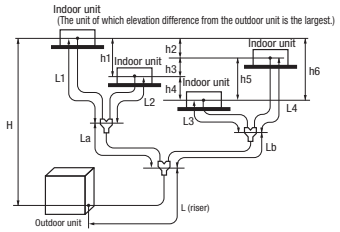
< Triple type >
Type A



< Triple type >
Type B



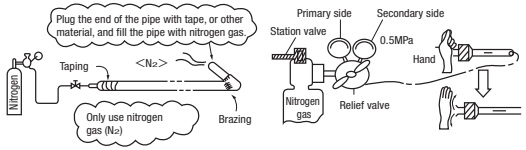
< W-twin type >



About brazing

Brazing must be performed under a nitrogen gas flow.

Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clogging.



4) Refrigerant pipe wall thickness and material

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.
- This unit uses R410A. Always use 1/2H pipes having a 1.0mm or thicker wall for ϕ19.05 or larger pipes, because O-type pipes do not meet the pressure resistance requirement.

Pipe diameter [mm]	6.35	9.52	12.7	15.88	22.22	25.4	28.58
Minimum pipe wall thickness [mm]	0.8	0.8	0.8	1.0	1.0	1.0	1.0
Pipe material*	O-type pipe	O-type pipe	O-type pipe	O-type pipe	1/2H-type pipe	1/2H-type pipe	1/2H-type pipe

*Phosphorus deoxidized seamless copper pipe C1220T, JIS H3300

NOTE

- Select pipes having a wall thickness larger than the specified minimum pipe thickness.

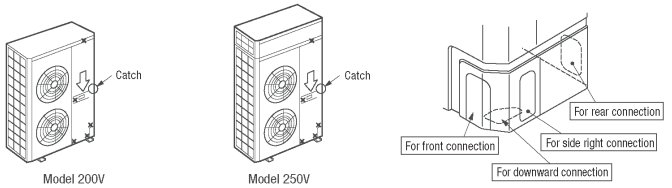
5) On-site piping work

⚠IMPORTANT

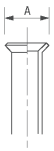
- Take care so that installed pipes may not touch components within a unit. If touching with an internal component, it will generate abnormal sounds and/or vibrations.

How to remove the service panel

First remove the five screws (✕ mark) of the service panel and push it down into the direction of the arrow mark and then remove it by pulling it toward you.

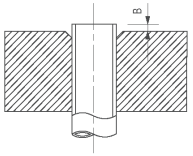


- The pipe can be laid in any of the following directions: side right, front, rear and downward.
- Remove a knock-out plate provided on the pipe penetration to open a minimum necessary area and attach an edging material supplied as an accessory by cutting it to an appropriate length before laying a pipe.
- Carry out the on site piping work with the operation valve fully closed.
- Give sufficient protection to a pipe end (compressed and blazed, or with an adhesive tape) so that water or foreign matters may not enter the piping.
- Bend a pipe to a radius as large as practical.(R100～R150) Do not bend a pipe repeatedly to correct its form.
- Flare connection is used between the unit and refrigerant pipe. Flare a pipe after engaging a flare nut onto it. Flare dimensions for R410A are different from those for conventional R407C. Although we recommend the use of flaring tools designed specifically for R410A, conventional flaring tools can also be used by adjusting the measurement of protrusion B with a protrusion control gauge.
- Use accessory pipes.
  For detailed installation procedures, consult with the installation manual attached to your accessory pipe.
- The pipe should be anchored every 1.5m or less to isolate the vibration.
- Tighten a flare joint securely with a double spanner.



Flared pipe end: A (mm)

Copper pipe outer diameter	A $^{0}_{-0.4}$
ϕ6.35	9.1
ϕ9.52	13.2
ϕ12.7	16.6
ϕ15.88	19.7



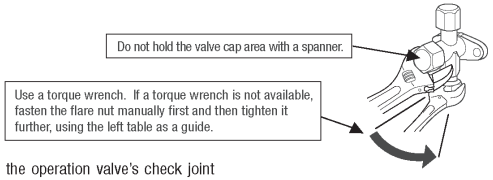
Copper pipe protrusion for flaring: B (mm)

Copper pipe outer diameter	In the case of a rigid (clutch) type	
	With an R410A tool	With a conventional tool
ϕ6.35	0～0.5	0.7～1.3
ϕ9.52		
ϕ12.7		
ϕ15.88		

⚠CAUTION **Do not apply force beyond proper fastening torque in tightening the flare nut.**

Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque.

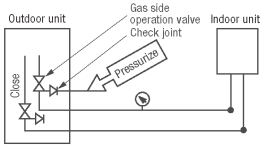
Operation valve size (mm)	Tightening torque (N-m)	Tightening angle (°)	Recommended length of a tool handle (mm)
ϕ6.35 (1/4")	14～18	45～60	150
ϕ9.52 (3/8")	34～42	30～45	200
ϕ12.7 (1/2")	49～61	30～45	250
ϕ15.88(5/8")	68～82	15～20	300
ϕ19.05(3/4")	100～120	15～20	450



6) Air tightness test

① Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the operation valve's check joint equipped on the outdoor unit side. While conducting a test, keep the operation valve shut all the time.
a) Raise the pressure to 0.5 MPa, and then stop. Leave it for five minutes to see if the pressure drops.
b) Then raise the pressure to 1.5 MPa, and stop. Leave it for five more minutes to see if the pressure drops.
c) Then raise the pressure to the specified level (4.15 MPa), and record the ambient temperature and the pressure.
d) If no pressure drop is observed with an installation pressurized to the specified level and left for about one day, it is acceptable. When the ambient Temperature fall 1℃, the pressure also fall approximately 0.01 MPa. The pressure, if changed, should be compensated for.
e) If a pressure drop is observed in checking e) and a) – d), a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair, conduct an air-tightness test again.

② In conducting an air-tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances.



7) Evacuation

<Work flow>

When the system has remaining moisture inside or a leaky point, the vacuum gauge indicator will rise.
Check the system for a leaky point and then draw air to create a vacuum again.

Run the vacuum pump for at least one hour after the vacuum gauge shows -101kPa or lower. (-755mmHg or lower)

Confirm that the vacuum gauge indicator does not rise even if the system is left for one hour or more.

Airtighteness test completed → Vacuuming begins → Vacuuming completed → Vacuum gauge check → Fill refrigerant

Pay attention to the following points in addition to the above for the R410A and compatible machines.

- To prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).
- Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.

8) Additional refrigerant charge

(1) Calculate a required refrigerant charge volume from the following table.

<Single type>

Capacity \ Item	Standard refrigerant charge volume (kg)	Pipe length for standard refrigerant charge volume (m)	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
Model 200V	3.6	0	0.06 (Liquid piping ϕ9.52)	5.4	30
			0.12 (Liquid piping ϕ12.7)		
Model 250V			0.12	7.2	

<Twin, triple, W-twin type>

Capacity \ Item	Standard refrigerant charge volume (kg)	Pipe length for standard refrigerant charge volume (m)	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe)		Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
			Main pipe	Branch pipe		
Model V200	3.6	0	0.06		5.4	30
Model V250			0.12	0.06	7.2	

- A standard refrigerant charge volume means a refrigerant charge volume for an installation with 0m long refrigerant piping.
- This unit contains factory charged refrigerant covering 30m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 30m refrigerant piping. When refrigerant piping exceeds 30m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 30m.
- **When refrigerant piping is shoter than 3m, reduce refrigerant by 1kg from factory charged volume and adjust to 4.4kg(Model 200V) or 6.2kg(Model 250V).**
- If an existing pipe system is used, a required refrigerant charge volume will vary depending on the liquid pipe size. For further information, see " 6. UTILIZATION OF EXISTING PIPING."

Formula to calculate the volume of additional refrigerant required

Model 200V	In the case of ϕ9.52mm liquid piping	Additional charge volume (kg) = { Main pipe length (m) – Length covered without additional charge 30 (m) } x 0.06 (kg/m) + Total length of branch pipes (m) x 0.06 (kg/m)
	In the case of ϕ12.7mm liquid piping	Additional charge volume (kg) = { Main pipe length (m) – Length covered without additional charge 30 (m) } x 0.12 (kg/m) + Total length of branch pipes (m) x 0.06 (kg/m)
Model 250V		

*When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.

- **To charge refrigerant again, recover refrigerant from the system first and then charge the volume calculated from the above table (Standard refrigerant charge volume + branch pipes charge volume)**

(2) Charging refrigerant

- Since R410A refrigerant must be charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
- Charge refrigerant always from the liquid side service port with the operation valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid-phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gasify upon entering the unit.
- In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.
- When refrigerant is charged with the unit being run, complete a charge operation within 30 minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

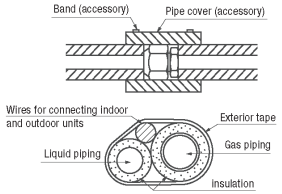
NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the back side of the service panel.

9) Heating and condensation prevention

(1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.

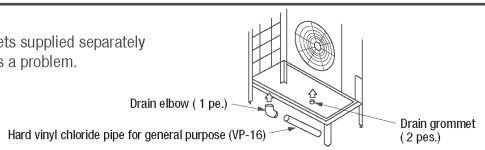
(2) Use a heat insulating material that can withstand 120℃ or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.

- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.
- All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.
- Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).
- Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.
- Although it is verified in a test that this air conditioning unit shows satisfactory performance under JIS condensation test conditions, **both gas and liquid pipes need to be dressed with 20 mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.**



3. DRAIN PIPING WORK

- Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a problem.



○ There are 3 drain holes provided on the bottom plate of an outdoor unit to discharge condensed water.
○ When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or concrete blocks.
○ Connect a drain elbow as shown in the illustration and close the other two drain holes with grommets.

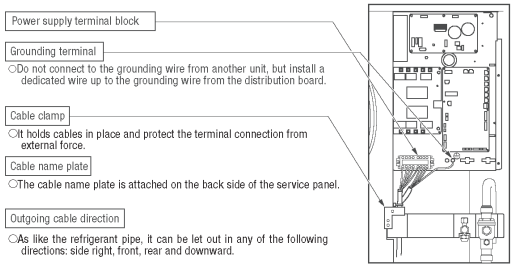
4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country.
Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.

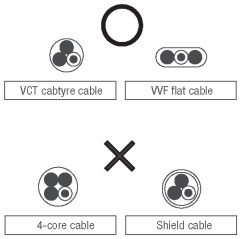
- Do not use any supply cord lighter than one specified in parentheses for each type below.
  - braided cord (code designation 60245 IEC 51),
  - ordinary tough rubber sheathed cord (code designation 60245 IEC 53)
  - flat twin tinsel cord (code designation 60227 IEC 41);

  Do not use anything lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC57) for supply cords of parts of appliances for outdoor use.
- Ground the unit. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire. If impropery grounded, an electric shock or malfunction may result.
- A grounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.
- The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an acccident such as an electric shock or a fire.
- Do not turn on the power until the electrical work is completeted .
- Do not use a condensive capacitor for power factor improvement under any circumstances. (It dose not improve power factor, while it can cause an abnormal overheat accident)
- For power supply cables, use conduits.
- Do not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.
- Fasten cables so that may not touch the piping, etc.
- When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)
- Always use a three-core cable for an indoor-outdoor connecting cable. Never use a shield cable.

- Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
- In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
- Grounding terminals are provided in the control box.



Model 200V, 250V

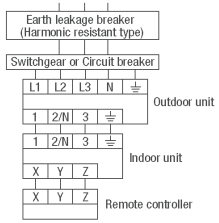


Power cable, indoor-outdoor connecting wires

- Always perform grounding system installation work with the power cord unplugged.

⚠ CAUTION

Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.



Model 200V, 250V

Model	Power source	Power cable thickness (mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
200V	3 phase 4 wire 380-415V 50Hz 380V 60Hz	3.5	19	21	ϕ1.6mm	ϕ1.6mm x 3
250V		5.5	22	31		

Model	Power source	Power cable thickness (mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
200V	3 phase 4 wire 380-415V 50Hz 380V 60Hz	5.5	24	29	ϕ1.6mm	ϕ1.6mm x 3
250V			27	26		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear or Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

5. TEST RUN

⚠ WARNING

- Before conduct a test run, do not fail to make sure that the operation valves are closed.
- Turn on power 6 hours prior to a test run to energize the crank case heater.
- Always give a 3-minute or longer interval before you start the unit again whenever it is stopped.

} A failure to observe these instructions can result in a compressor breakdown.

- Removing the service panel will expose high-voltage live parts and high-temperature parts, which are quite dangerous. Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

⚠ CAUTION

- When you operate switches (SW3, SW5) for on-site setting, be careful not to touch a live part.
- You cannot check discharge pressure from the liquid operation valve charge port.
- The 4-way valve (20S) is energized during a heating operation.
- When power supply is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off. If this procedure is not observed in turning on power again, "Communication error between outdoor and indoor unit" may occur.

1) Test run method

(1) A test run can be initiated from an outdoor unit by using SW3-3 and SW3-4 for on-site setting.
(2) Switching SW3-3 to ON will start the compressor.
(3) The unit will start a cooling operation, when SW3-4 is OFF, or a heating operation, when SW3-4 is ON.
(4) **Do not fail to switch SW3-3 to OFF when a test run is completed.**

SW-3-3	SW-3-4	
ON	OFF	Cooling during a test run
	ON	Heating during a test run
OFF	—	Normal or After the test operation

2) Checking the state of the unit in operation

Use check joints provided on the piping before and after the four-way valve installed inside the outdoor unit for checking discharge pressure and suction pressure.
As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or heating operation has been selected.

	Check joint of the pipe	Charge port of the gas operation valve
Cooling operation	Discharge pressure (High pressure)	Suction pressure (Low pressure)
Heating operation	Suction pressure (Low pressure)	Discharge pressure (High pressure)

3) Setting SW3-1, SW3-2, J7 on-site

(1) Defrost control switching (SW3-1)
- ·When this switch is turned ON, the unit will run in the defrost mode more frequently.
- ·Set this switch to ON, when installed in a region where outdoor temperature falls below zero during the season the unit is run for a heating operation.

(2) Snow guard fan control (SW3-2)
- ·When this switch is turned on, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3℃ or lower and the compressor is not running.
- ·When the unit is used in a very snowy country, set this switch to ON.

(3) Higth pressure control (J7)
- ·When the option parts that change air flow from outlet are used, cut (open) J7. Cut the jumper wire into two parts and ensure that they are kept isolated from each other.

4) Failure diagnosis in a test run

Error indicated on the remote control unit	Printed circuit board LED(The cycles of 5 seconds)		Failure event	Action
	Red LED	Green LED		
E34	Blinking once	Blinking continuously	Open phase	Check power cables for loose contact or disconnection
E40	Blinking once	Blinking continuously	63H1 actuation or operation with operation valves shut (occurs mainly during a heating operation)	1. Check whether the operation valves are open. 2. If an error has been canceled when 3 minutes have elapsed since a compressor stop, you can restart the unit by effecting Check Reset from the remote control unit.
E49	Blinking once	Blinking continuously	Low pressure error or operation with operation valves shut (occurs mainly during a cooling operation)	

- If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

5) The state of the electronic expansion valve.

The following table illustrates the steady states of the electronic expansion valve.

	When power is turned on	When the unit comes to a normal stop		When the unit comes to an abnormal stop	
		During a cooling operation	During a heating operation	During a cooling operation	During a heating operation
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position
Valve for a heating operation	Full open position	Full open position	Complete shut position	Full open position	Full open position

6) Heed the following on the first operation after turning on the circuit breaker.

This outdoor unit may start in the standby mode (waiting for a compressor startup), which can continue up to 30 minutes, to prevent the oil level in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure.

Items to checkbefore a test run

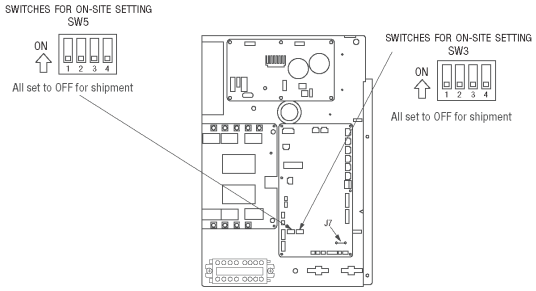
- When you leave the outdoor unit with power supplied to it, be sure to close the panel.

Item No.used in the installation manual	Item	Check item	Check
2	Refrigerant plumbing	If brazed, was it brazed under a nitrogen gas flow?	
		Were air-tightness test and vacuum extraction surely performed?	
		Are heat insulation materials installed on both liquid and gas pipes?	
		Are operation valves surely opened for both liquid and gas systems?	
		Have you recorded the additional refrigerant charge volume and refrigerant pipe length on the panel's label?	
4	Electric wiring	Is the unit free of cabling errors such as uncompleted connection, an absent or reversed phase?	
		Are properly rated electrical equipments used for circuit breakers and cables?	
		Doesn't cabling cross-connect between units, where more than one unit are installed?	
		Aren't indoor-outdoor signal wires connected to remote control wires?	
		Do indoor-outdoor connecting cables connect between the same terminal numbers?	
		Are either VCT cabtyre cables or WF flat cables used for indoor-outdoor connecting cables?	
		Does grounding satisfy the D type grounding (type III grounding) requirements?	
		Is the unit grounded with a dedicated grounding wire not connected to another unit's grounding wire?	
		Are cables free of loose screws at their connection points?	
		Are cables held down with cable clamps so that no external force works onto terminal connections?	
—	Indoor unit	Is indoor unit installation work completed?	
		Where a face cover should be attached onto an indoor unit, is the face cover attached to the indoor unit?	

Test run procedure

- Always carry out a test run and check the following in order as listed.

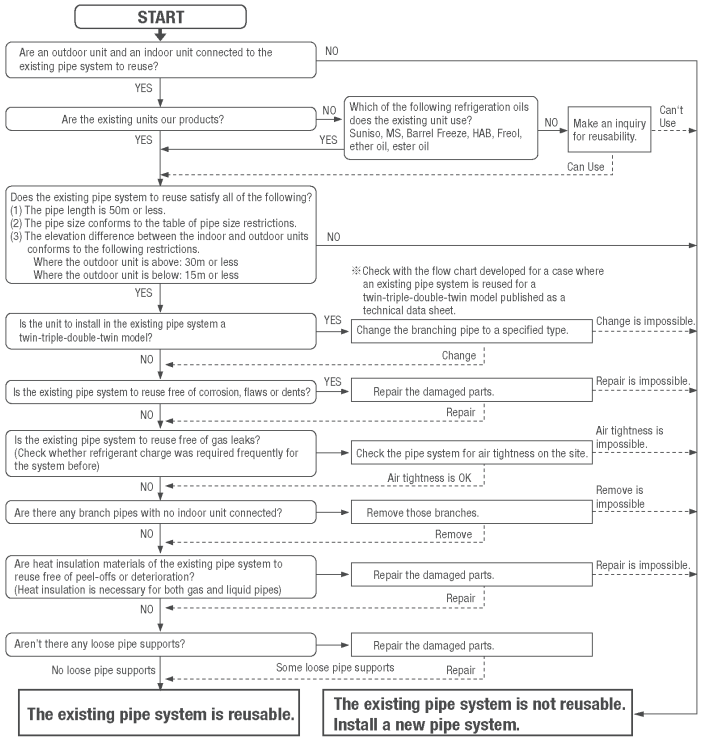
Turn	The contents of operation	Check
①	Open the gas side operation valve fully.	
②	Open the liquid side operation valve fully.	
③	Close the panel.	
④	Where a remote control unit is used for unit setup on the installation site, please follow instructions for unit setup on the installation site with a remote control unit.	
⑤	SW3-3 ON / SW3-4 OFF: the unit will start a cooling operation.	
	SW3-3 ON / SW3-4 ON: the unit will start a heating operation.	
⑥	When the unit starts operation, press the wind direction button provided on the remote control unit to check its operation.	
⑦	Place your hand before the indoor unit's diffuser to check whether cold (warm) winds come out in a cooling (heating) operation.	
⑧	Make sure that a red LED is not blinking.	
⑨	When you complete the test run, do not forget to turn SW3-3 to the OFF position.	
⑩	Where options are used, check their operation according to the respective instruction manuals.	



Model 200V, 250V

6. UTILIZATION OF EXISTING PIPING.

Check whether an existing pipe system is reusable or not by using the following flow chart.



⚠ WARNING <Where the existing unit can be run for a cooling operation.>

Carry out the following steps with the excising unit (in the order of (1), (2), (3) and (4))

(1) Run the unit for 30 minutes for a cooling operation.
(2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
(3) Close the liquid side operation valve of the outdoor unit and pump down (refrigerant recovery)
(4) Blow with nitrogen gas. ※ If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.
- For the flare nut, do not use the old one, but use the one supplied with the outdoor unit. Process a flare to the dimensions specified for R410A.
- **Turn on-site setting switch SW5-1** to the ON position. (Where the gas pipe size is φ19.05)

<Where the existing unit cannot be run for a cooling operation.>

Wash the pipe system or install a new pipe system.
- If you choose to wash the pipe system, contact our distributor in the area.

<Table of pipe size restrictions> ◎:Standard pipe size ○:Usable △:Restricted to shorter pipe length limits
Cool↓: Cooling capacity drop ×:Not usable

Additional charging amount of refrigerant per 1m		0.06kg/m			0.12kg/m			0.2kg/m		
Pipe size	Liquid pipe	φ9.52	φ9.52	φ9.52	φ12.7	φ12.7	φ12.7	φ15.88	φ15.88	φ15.88
	Gas pipe	φ22.22	φ25.4※2	φ28.6※2	φ22.22	φ25.4	φ28.6	φ22.22	φ25.4	φ28.6
200V	Usability	◎	○	○	◎	△※3	△※3	△※3	△※3	×
	Maximum one-way pipe length	35	70	70	35	70	70	24	24	×
	Length covered without additional charge	30	30	30	30	15	15	9	9	×
250V	Usability	×	×	×	◎	○	○	△※3	△※3	△※3
	Maximum one-way pipe length	×	×	×	35	70	70	40	40	40
	Length covered without additional charge	×	×	×	30	30	25	18	18	13

※1 Because of its insufficient pressure resistance, **turn the dip switch SW5-1** provided on the outdoor unit board to the ON position for φ19.05 × t1.0.
(In the case of a twin-triple-double-twin model, this also applies to the case where φ19.05 × t1.0 is used in a pipe system after the first branching point.
However, you need not turn the dip switch SW5-1 to the ON position, if 1/2H pipes or pipes having 1.2 or thicker walls are used.
※2 When the main pipe length exceeds 40m, a significant capacity drop may be experienced due to pressure loss in the liquid pipe system. Use φ12.7 for the liquid main.
※3 Keep the total pipe length, not one-way pipe length, below the specified maximum pipe length.

- **When refrigerant piping is shoter than 3m, reduce refrigerant by 1kg from factory charged volume and djust to 4.4kg(Model 200V) or 6.2kg(Model 250V).**
- Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

<Pipe system after the branching pipe> ◎:Standard pipe size ○:Usable ×:Not usable —: Outside of an object

- Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

			After 1st branch ※4			After 2nd branch		
Additional charging amount of refrigerant per 1m			0.06kg/m			0.06kg/m		
Pipe size	Liquid pipe		φ9.52			φ9.52		
	Gas pipe		φ12.7	φ15.88	φ19.05※1	φ12.7	φ15.88	φ19.05※1
Model	Combination type	Combination of capacity						
200V	Twin	100+100	×	◎	○	—	—	—
	Triple A	71+71+71	×	◎	○	—	—	—
	Triple B	71+71+71	×	◎	○※5	×	◎	○
	Double twin	50+50+50+50	×	◎	○	◎	○	×
250V	Twin	125+125	×	◎	○	—	—	—
	Triple A	—	—	—	—	—	—	—
	Triple B	60+60+125	×	◎	○※5	◎	×	×
	Triple B	71+71+100	×	◎	○※5	×	◎	×
	Double twin	60+60+60+60	×	◎	○	◎	○	×

※4 Piping size after branch should be equal or smaller than main pipe size.
※5 Piping size from first branch to indoor unit should be φ9.52 (Liquid) / φ15.88 (Gas).

<The model types of existing units of which branching pipes are reusable.>

Models later than Type 8.
- FDC ＊＊＊8 □ □ □
- FDCP ＊＊＊8 □ □ □

The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R410A.

- ＊＊＊ are numbers representing horsepower. □□□ is an alphanumeric letter.

Formula to calculate additional charge volume

Additional charge volume (kg) = {Main pipe length (m) − Length covered without additional charge shown in the table (m)} × Additional charge volume per meter of pipe shown in the table (kg/m) + Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (kg/m)

※ If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.

Example) When an 250V (twin installation) is installed in a 40m long existing pipe system (main pipe length 30m, liquid φ15.88, gas φ25.4; pipe length after branching pipe 5m x 2, liquid φ9.52, gas φ15.88), the quantity of refrigerant to charge additionally should be (30m-18m) x 0.2kg/m + 5m x 2 x 0.06kg/m = 3.0 kg.

PSB012D917C F

(3) Method for connecting the accessory pipe (Models FDC200,250)

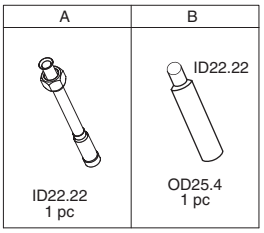
Be sure to use the accessory pipe to connect the operation valve on the gas side with the field pipe.

① Referring to Table ① and Table ②, prepare the straight pipe and the elbow in the field, which are used in the construction examples Ⓐ ~ Ⓓ applicable to the connecting direction.

② Firstly, use the accessory pipe to assemble the connecting pipe assembly outside the outdoor unit.
As shown in the figures of construction examples Ⓐ ~ Ⓓ applicable to the connecting direction(chain double dashed line), braze the accessory pipe and the parts prepared in the above ①.

③ After assembly of the connecting pipe, connect it to the service valve on the gas side inside the outdoor unit.
Tighten the flare nut with appropriate torque.

④ After connection of the connecting pipe assembly to the service valve on the gas side, braze the connecting pipe assembly and the field pipe.



Appropriate torque	
φ19.05	100~120N·m

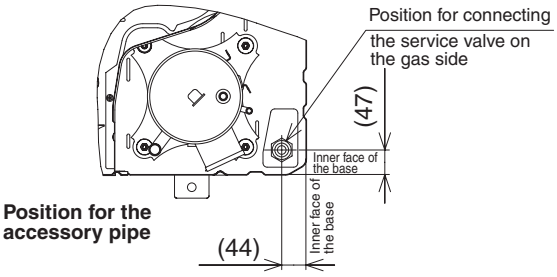


Table ① Parts used for the connecting pipe assembly

No.	Name	Qty.	Remarks
1	Accessory pipe A	1	Accessories
2	Straight pipe ①	1	Procured in the field
3	Straight pipe ②	1 or 0	Procured in the field (Not required for downward direction)
4	Elbow	1 or 0	Procured in the field (Not required for downward direction)

Table ② Length of the straight pipe (prepared in the field)

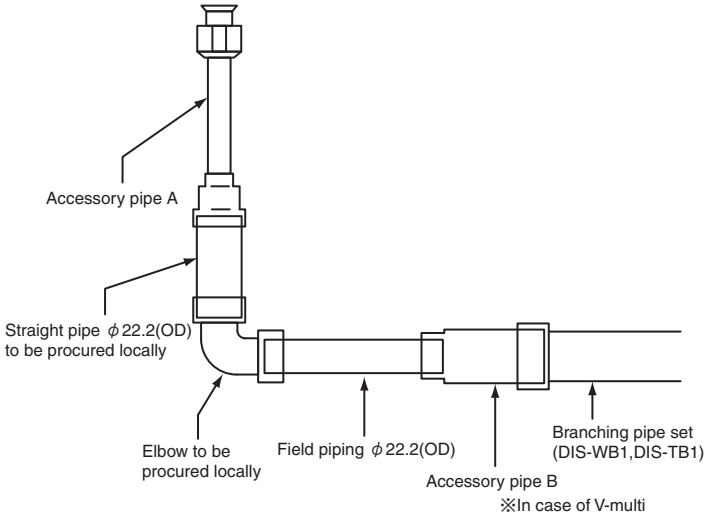
	Pipe size	Ⓐ Downward	Ⓑ Forward	Ⓒ Rightward	Ⓓ Backward
Straight pipe①	φ22.22×t1.6	above 415mm	185~235mm	185~235mm	185~235mm
Straight pipe②	φ22.22×t1.6	–	above 125mm	above 125mm	above 405mm

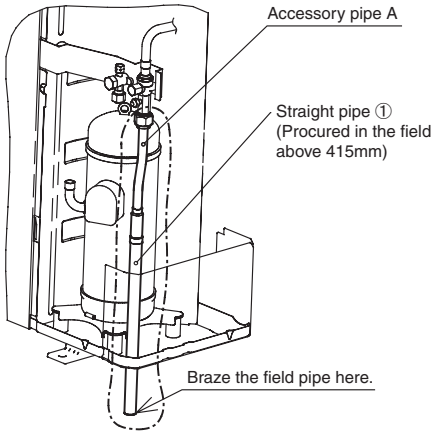
- Be sure to use pipes of 1/2H material, and wall thickness above 1mm. (Pressure resistance of O-type pipe is not enough)
- Switch ON SW5-1 on the control PCB, if O-type pipe must be used and bent with the bender.
  During heating operation, the high-pressure protection may be actuated under the condition lower than the normal pressure, and the heating capacity may decrease.

About brazing

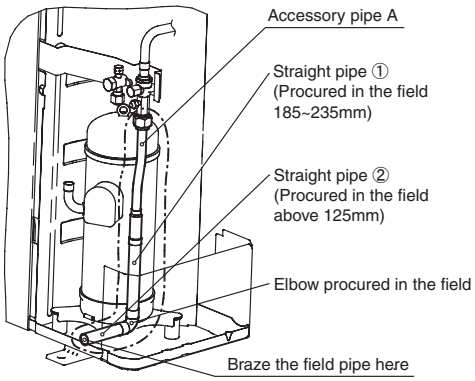
- **Be sure to braze while supplying nitrogen gas.**
  If no nitrogen gas is supplied, a large amount of impurity (oxidized fi lm) will be generated, which may clog the capillary tube and the expansion valve, resulting in fatal malfunction.

- Branching pipe set can be used by using the accessory pipe B. When φ22.22(OD) size of the indoor unitgas pipe is used, the accessory pipe B is unnecessary.

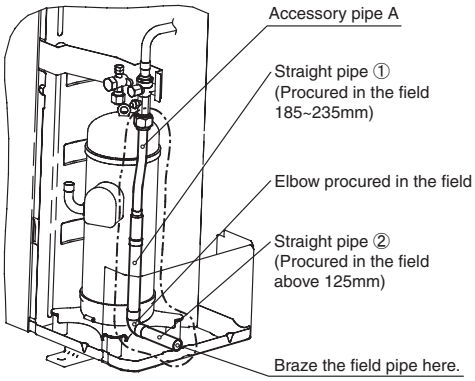




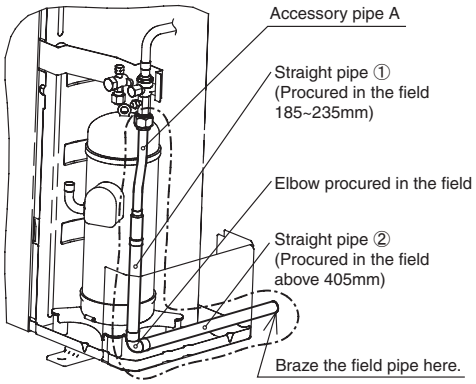
Construction example Ⓐ
(Downward)



Construction example Ⓑ
(Forward)



Construction example Ⓒ
(Rightward)



Construction example Ⓓ
(Backward)

1.10.5 Instructions for branching pipe set (DIS-WA1, WB1, TA1, TB1)

For R410A

PSB012D865 g

⚠ WARNING / CAUTION

- This set is for R410A refrigerant.
- Select a branching pipe set correctly rated for the combined total capacity of connected indoor units and install it according to this manual.
  An improperly installed branching pipe set can cause degraded performance or an abnormal unit stop.
- Provide good heat insulation to the pipes by following instructions contained in this manual.
  Improper heat insulation can result in degraded performance or a water leak accident from condensation.
- Please make sure that only parts supplied as accessories or the manufacturer's approved parts are used in installing the unit, because a leak of refrigerant can result in a lack-of-oxygen accident, if it reaches a concentration beyond the tolerable limit.

This manual explains how to use a branching pipe set that is indispensable in connecting pipes for a twin/triple/W-twin configuration installation (system). For the details of piping work, unit installation work and electrical installation work, please refer to the installation manuals and installation guides supplied with your outdoor and indoor units.

1. Branching pipe set specifications

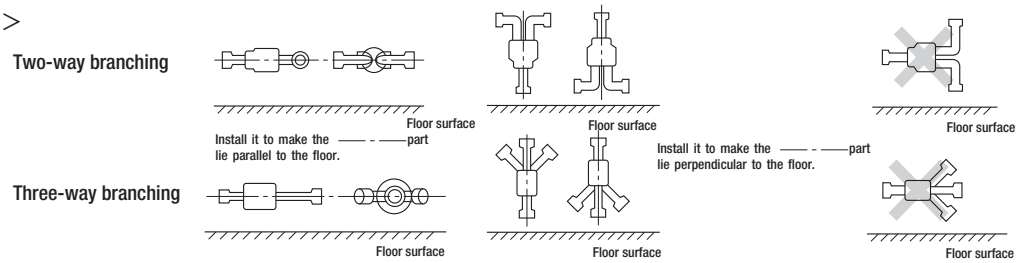
(1) Please make sure that you have chosen the right branching pipe set and the specifications of the parts contained in it by checking with the table below.
(2) Connect pipes as illustrated in the table below. The pipe from an outdoor unit must be brazed to the pipe connection port "①" and the pipes from indoor units to "②," "③" and "④."

Branching pipe set type	Supported outdoor/indoor unit combinations		Part lists			
	Outdoor unit model	Indoor unit model	Branching pipe set for a liquid pipe	Branching pipe set for a gas pipe	Different diameter pipe joint	Heat insulation material
DIS-WA1 (Two-way branching set)	3HP	1.5HP+1.5HP	ID9.52 ① ② ③ ID9.52 ID9.52 1 piece	ID15.88 ① ② ③ ID15.88 ID15.88 1 piece	Joint A ID9.52 2 pieces Flare joint (for indoor unit side connection) Joint B OD15.88 ID12.7 2 pieces	One each for liquid and gas
	4HP	2HP+2HP				
		1.5HP+2.5HP				
	5HP	2.5HP+2.5HP				
		2HP+3HP				
	6HP	3HP+3HP				
		2HP+4HP				
DIS-WB1 (Two-way branching set)	8HP	4HP+4HP	ID9.52 ① ② ③ ID12.7 ID9.52 1 piece	ID15.88 ① ② ③ ID25.4 ID15.88 1 piece	Joint C OD12.7 ID9.52 1 piece	One each for liquid and gas
		3HP+5HP				
	10HP	5HP+5HP				
DIS-TA1 (Three-way branching set)	6HP	2HP+2HP+2HP	ID9.52 ① ② ③ ④ ID9.52 1 piece	ID12.7 ① ② ③ ④ ID15.88 1 piece	Joint A ID9.52 3 pieces Flare joint (for indoor unit side connection)	One each for liquid and gas
DIS-TB1 (Three-way branching set)	8HP	3HP+3HP+3HP	ID9.52 ① ② ③ ④ ID9.52 1 piece	ID15.88 ① ② ③ ④ ID25.4 1 piece	Joint A ID9.52 2 pieces Flare joint (for indoor unit side connection) Joint B OD15.88 ID12.7 1 piece Joint D ID12.7 OD9.52 1 piece	One each for liquid and gas

(3) To connect pipes for a Double Twin installation (involving 4 indoor units), please see 2-7. "Double Twin configuration."
(4) A branching pipe set must always be installed into the posture as illustrated in the drawing below.

ID stands for inner diameter and OD, outer diameter.

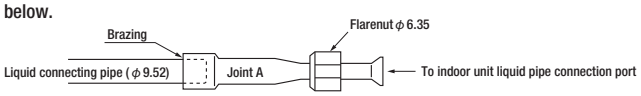
<Posture to install into>



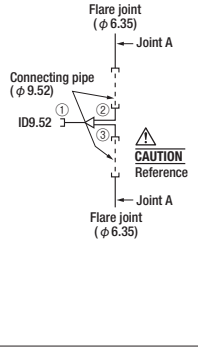
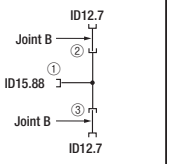
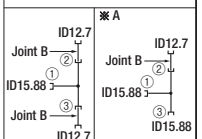
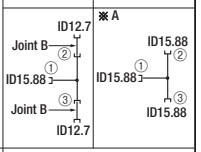
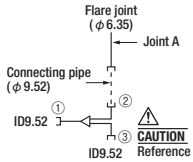
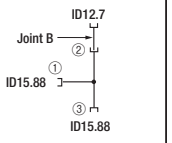
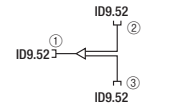
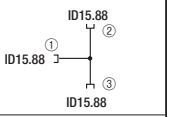
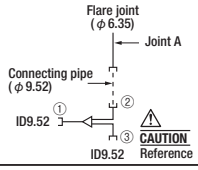
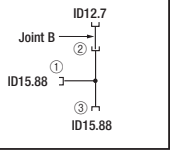
2. Pipe connecting procedure

Braze the different diameter pipe joint found in the set matching the connected outdoor and indoor unit capacities according to the instructions set out below.

⚠ CAUTION In connecting an indoor unit of which capacity is 1.5HP, 2HP or 2.5HP, always use a φ9.52 liquid pipe to connect to the branching pipe (branching pipe – indoor unit).
In connecting to an indoor unit (liquid pipe side: φ6.35), use the different diameter pipe joint A supplied with the set and follow the procedure set out below.

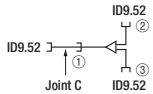
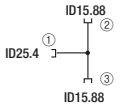
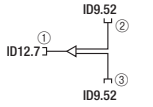
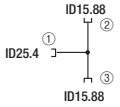


2-1 DIS-WA1

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
3HP	1.5HP+1.5HP		
4HP	2HP+2HP		
	1.5HP+2.5HP		
5HP	2.5HP+2.5HP		
	2HP+3HP		
6HP	3HP+3HP		
	2HP+4HP		

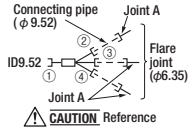
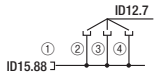
Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like ※A

2-2 DIS-WB1

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
8HP	3HP+5HP		
	4HP+4HP		
10HP	5HP+5HP		

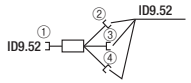
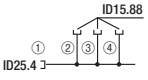
2-3 DIS-TA1

Applicable to the difference in length of pipes after the branch being less than 3 m
* Connection is not allowed when the difference in length of pipes is larger than 3 m.

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
6HP	2HP+2HP+2HP		

2-4 DIS-TB1

Applicable to the difference in length of pipes after the branch being less than 3 m
* Connection is not allowed when the difference in length of pipes is larger than 3 m.

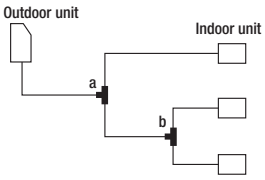
Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
8HP	3HP+3HP+3HP		

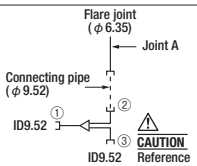
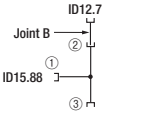
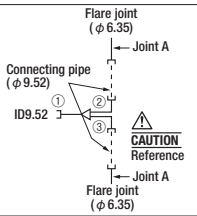
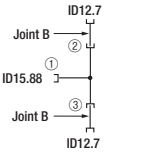
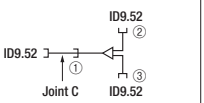
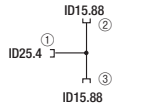
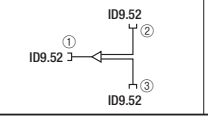
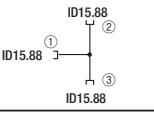
▷ OLD Model list

model name
FDTA251R
FDENA251R
FDKNA251R
FDURA251R
FDUMA252R

2-5. Triple type for same model/same capacity or different model/same capacity

When the difference in length of pipes after the branch is longer than 3 m and shorter than 10 m

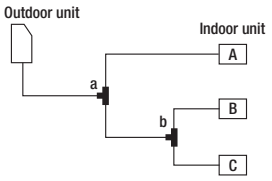


Outdoor unit model	Indoor unit model	Branching pipe	Branching pipe set type	Liquid branching pipe	Gas branching pipe
6HP	2HP+2HP+2HP	a	DIS-WA1		
		b			
8HP	3HP+3HP+3HP	a	DIS-WB1		
		b	DIS-WA1		

2-6. Triple type for same model/different capacity or different model/different capacity

Applicable to the difference in length of pipes after the branch being less than 3 m

* Connection is not allowed when the difference in length of pipes is larger than 3 m.



Connecting position

Outdoor unit model	Indoor unit model	A	B	C
10HP	2.5HP+2.5HP+5HP	5HP	2.5HP	2.5HP
	3HP+3HP+4HP	4HP	3HP	3HP

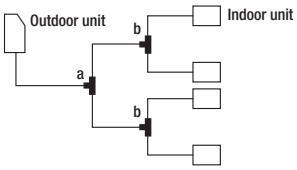
Outdoor unit model	Indoor unit model	Branching pipe	Branching pipe set type	Liquid branching pipe	Gas branching pipe
10HP	2.5HP+2.5HP+5HP	a	DIS-WB1	① ID12.7 ② ID9.52 ③ ID9.52	① ID25.4 ② ID15.88 ③ ID15.88
		b	DIS-WA1	Flare joint (φ6.35) Joint A; Connecting pipe (φ9.52); ② ID9.52 ①③; ⚠ CAUTION Reference; Joint A Flare joint (φ6.35)	ID12.7 Joint B ① ② ID15.88 ③ Joint B ID12.7; ※A ① ② ID15.88 ① ID15.88 ③ ID15.88
10HP	3HP+3HP+4HP	a	DIS-WB1	① ID12.7 ② ID9.52 ③ ID9.52	① ID25.4 ② ID15.88 ③ ID15.88
		b	DIS-WA1	① ID9.52 ② ID9.52 ③ ID9.52	① ID15.88 ② ID15.88 ③ ID15.88

Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like※ A.

2-7. Double Twin type

Pipes should be connected as follows for a Double Twin installation (4 connected indoor units. The capacity of an outdoor unit available for this configuration is either 8HP or 10HP only):

Outdoor unit capacity	Indoor unit capacity
8HP	2HP×4 units
10HP	2.5HP×4 units



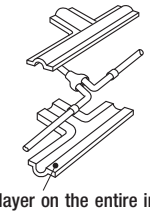
Branching pipe	Branching pipe set type	Outdoor unit model	Liquid branching pipe	Gas branching pipe
a	DIS-WB1	8HP	① ID9.52 ② ID9.52 ③ ID9.52 Joint C	① ID25.4 ② ID15.88 ③ ID15.88
		10HP	① ID12.7 ② ID9.52 ③ ID9.52	
b	DIS-WA1	8HP	Flare joint (φ6.35) Joint A; Connecting pipe (φ9.52); ② ID9.52 ①③; ⚠ CAUTION Reference; Joint A Flare joint (φ6.35)	ID12.7 Joint B ① ② ID15.88 ③ Joint B ID12.7; ※A ① ② ID15.88 ① ID15.88 ③ ID15.88; ID12.7 Joint B ① ② ID15.88 ③ Joint B ID12.7
		10HP		

Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like※ A.

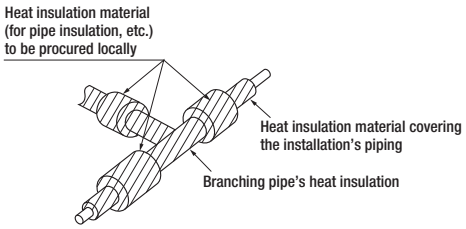
3. Heat insulation work

(1) Condensation can also occur on liquid pipes with this model. Please provide good heat insulation to both liquid and gas pipes.

(2) For the heat insulation of a branching pipe, always use the heat insulation material supplied with the set and provide heat insulation according to the instructions set out below.



1. It has an adhesive layer on the entire inner face. Remove a separator and wrap it around the branching pipe.



2. Apply a heat insulation material (to be procured locally) to the joint between the branching pipe's heat insulation and the heat insulation material covering the installation's piping as described above and wrap a tape over the gap shown as a hatched (///) area to complete dressing of the piping.

1.11 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

1.11.1 Remote controller

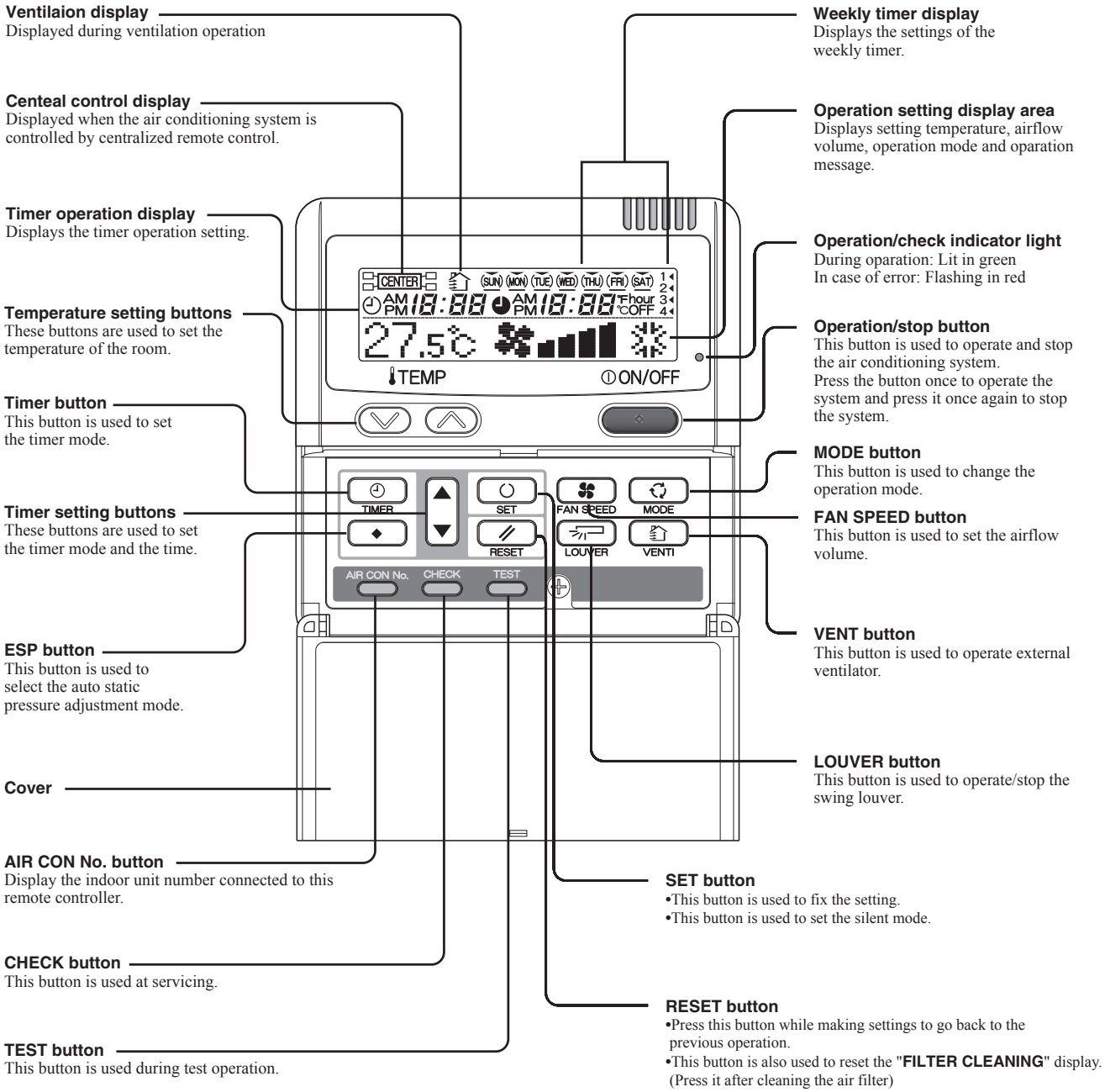
(1) Wired remote controller

Model RC-E5

The figure below shows the remote controller with the cover opened. Note that all the items that may be displayed in the liquid crystal display area are shown in the figure for the sake of explanation

Characters displayed with dots in the liquid crystal display area are abbreviated.

The figure below shows the remote control with the cover opened.



∗ All displays are described in the liguid crystal display for explanation.

Model RC-EX1A

All icons are shown for the sake of explanation.

⑦ **Clock, R/C name display**
Displays the current time and the name of R/C

⑪ **Change set temp button**
Displays the temperature which is set currently.Tap this button to change the set temperature.

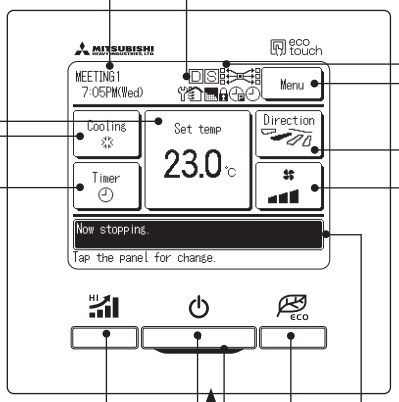
⑩ **Change operation mode button**
Displays the operation mode which is selected currently. Tap this button to change the operation mode.

⑭ **Timer button**
Displays simplified contents of the timer which is set currently.
(When two or more timers are set, contents of the timer which will be operated immediately after is displayed.)
Tap this button to set the timer.

② **switch (High Power switch)**
Pushing this button starts the high power operation.

① **switch (Run/Stop switch)**
One push on the button starts operation and another push stops operation.

⑥ **USB port (mini-B)**
USB connector (mini-B) allows connecting to a personal computer.
For operating methods, refer to the instruction manual attached to the software for personal computer (eco-touch remote control RC-EX1, utility software).



⑤ **LCD display (With backlight)**
A tap on the LCD lights the backlight.
The backlight turns off automatically if there is no operation for certain period of time.
Lighting period of the backlight lighting can be changed.
If the backlight is ON setting, when the screen is tapped while the backlight is turned off, the backlight only is turned on.(Operations with switches ①,② and ③ are excluded.)

⑧ **Icon display**
Each icon is displayed when one of following settings is going on.(It is referring to the following figure for details.)

⑨ **Menu button**
When setting or changing other than the following ⑩-⑭, tapthemenubutton.When menu items are displayed, select one and set.

⑫ **Flap direction button**
Displays the flap direction which is selected currently.
Tap this button to change the flap direction.

⑬ **Fan speed change button**
Displays the fan speed which is selected currently.
Tap this button to change the fan speed.

⑮ **Message display**
Status of air conditioner operation and messages of the R/C operations etc.are displayed.

③ **switch (Energy Saving switch)**
Pushing this button starts the energy-saving operation.

④ **Operation lamp**
This lamp lights in green (yellow-green) during operation. It changes to red if any error occurs.

Touch panel system, which is operated by tapping the LCD screen with a finger, is employed for any operations other than the ① Run/Stop, ② High power and ③ Energy-saving switches.

⑧ Icon display
Each icon is displayed when one of following settings is going on.

When the demand control is effective.

When setting is made from the sub R/C.

When the central control (Optional) is running.

When the periodical inspection is necessary.

During the ventilation operation

When ”filter sign” is up.

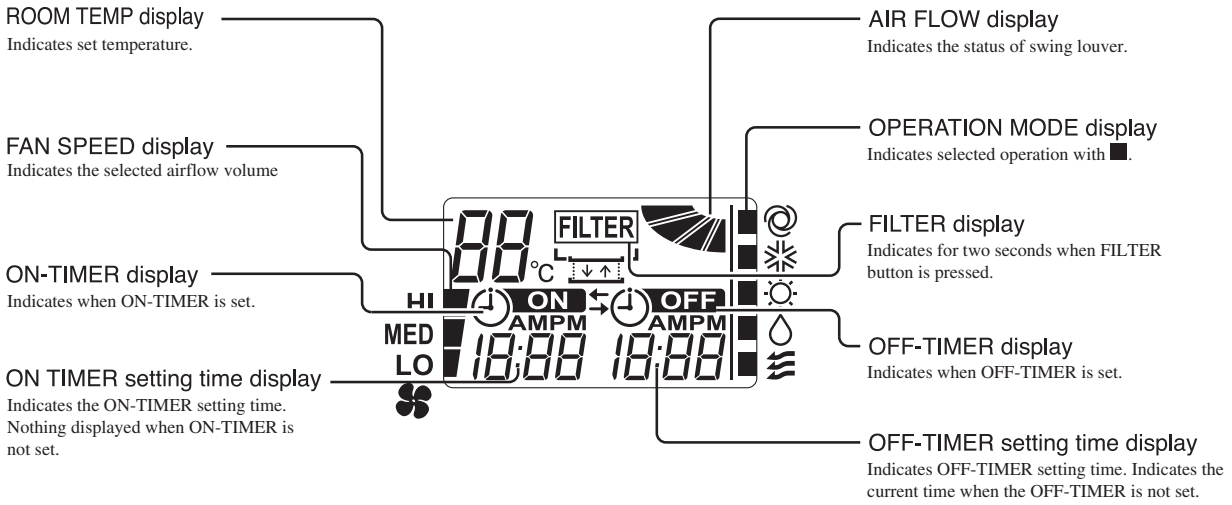
When the Permission/ Prohibition setting is made.

When the weekly timer is set.

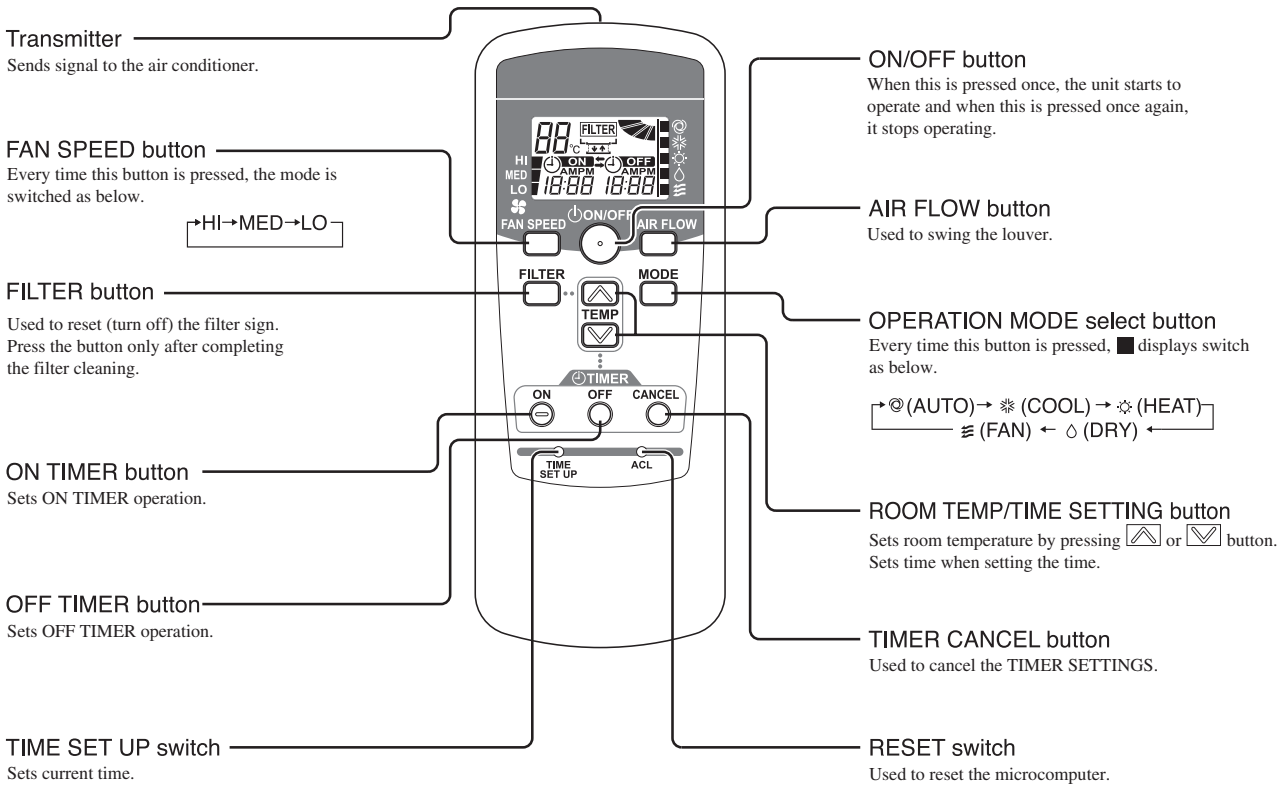
When the peak-cut timer is set

(2) Wireless remote controller

Indication section



Operation section



* All displays are described in the liquid crystal display for explanation

1.11.2 Operation control function by the wired remote controller

Model RC-E5

(1) Switching sequence of the operation mode switches of remote controller

(2) CPU reset

This functions when "CHECK" and "ESP" buttons on the remote controller are pressed simultaneously. Operation is same as that of the power supply reset.

(3) Power failure compensation function (Electric power supply failure)

- This becomes effective if "Power failure compensation effective" is selected with the setting of remote controller function.
- Since it memorizes always the condition of remote controller, it starts operation according to the contents of memory no sooner than normal state is recovered after the power failure. Although the auto swing stop position and the timer mode are cancelled, the weekly timer setting is restored with the holiday setting for all weekdays.
  After recovering from the power failure, it readjusts the clock and resets the holiday setting for each weekday so that the setting of weekly timer becomes effective.
- Content memorized with the power failure compensation are as follows.

Note (1) Items⑥, ⑦ and ⑧ are memorized regardless whether the power failure compensation is effective or not while the setting of silent mode is cancelled regardless whether the power failure compensation is effective or not.

① At power failure – Operating/stopped
If it had been operating under the off timer mode, sleep timer mode, the state of stop is memorized. (Although the timer mode is cancelled at the recovery from power failure, the setting of weekly timer is changed to the holiday setting for all weekdays.)

② Operation mode

③ Airflow volume mode

④ Room temperature setting

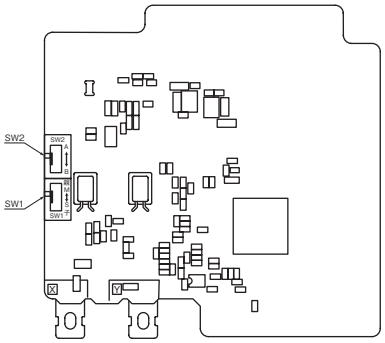
⑤ Louver auto swing/stop
However, the stop position (4-position) is cancelled so that it returns to Position (1).

⑥ "Remote controller function items" which have been set with the remote controller function setting ("Indoor function items" are saved in the memory of indoor unit.)

⑦ Upper limit value and lower limit value which have been set with the temperature setting control

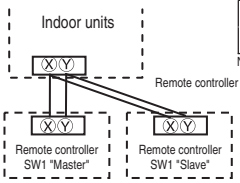
⑧ Sleep timer and weekly timer settings (Other timer settings are not memorized.)

[Parts layout on remote controller PCB]



Master/ slave setting when more than one remote controllers are used

A maximum of two remote controllers can be connected to one indoor unit (or one group of indoor units.)



Switch	Setting	Contents
SW1	M	Master remote controller
	S	Slave remote controller

Note (1) Don't change SW2 because it is not used normally.

Caution

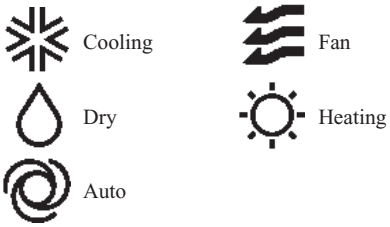
When using multiple remote controllers, the following dispiays or settings cannot be done with the slave remote controller. It is available only with the master remote controller.

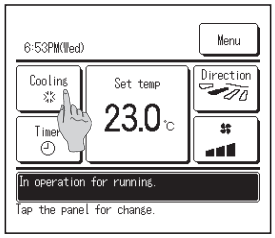
①Louver position setting (set upper or lower limit of swinging range)
②Setting indoor unit functions
③Setting temperature range
④Operation data display
⑤Error data display
⑥Silent mode setting
⑦Test operation of drain pump
⑧Remote controller sensor setting

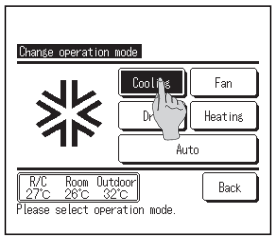
Model RC-EX1A

(1) Switching sequence of the operation mode switches of remote controller

(a) Tap the change operation mode button on the TOP screen.
(b) When the change operation mode screen is displayed, tap the button of desired mode.
(c) When the operation mode is selected, the display returns to the TOP screen.
Icons displayed have the following meanings.



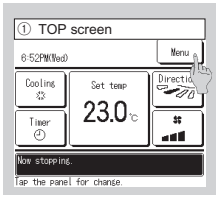




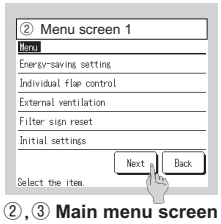
Notes(1) Operation modes which cannot be selected depending on combinations of IU and OU are not displayed.
(2) When the Auto is selected, the cooling and heating switching operation is performed automatically according to indoor and outdoor temperatures.

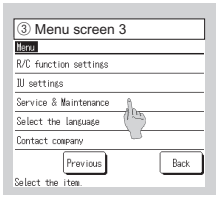
(2) CPU reset

Reset CPU from the remote controller as follows.

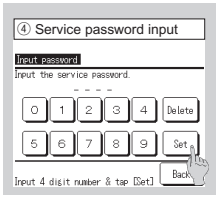


①Tap the Menu button on the TOP screen.

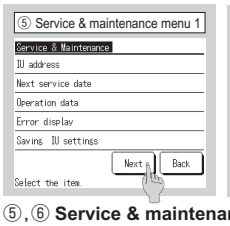


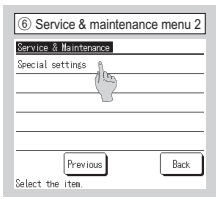


②,③ Main menu screen is displayed.
Tap the "Service & Maintenance" on the menu screen.

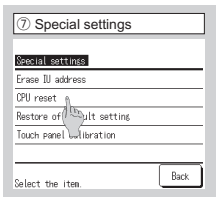


④Display the service password input screen.
Entertheservicepassword(4-digit number).
Refer to Installation manual.

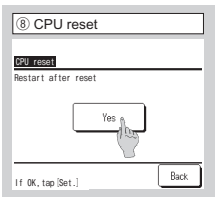




⑤,⑥ Service & maintenance menus are displayed.



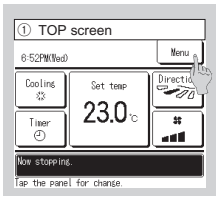
⑦ Special settings
CPU reset : Microcomputers of IU and OUconnected are reset (State of restoration after power failure).



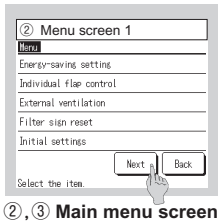
⑧ CPU reset
All microcomputers on the R/C operated, other R/Cs, IUs and OUs are reset (State of restoration after power failure).
Tap [Yes] to reset CPU

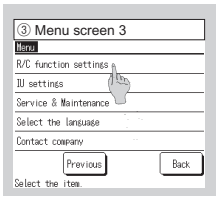
(3) Power failure compensation function (Electric power supply failure)

Enable the Auto-restart function from the remote controller as follows.

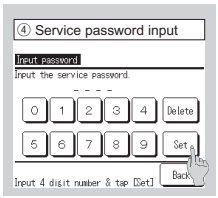


①Tap the Menu button on the TOP screen.

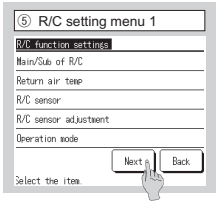


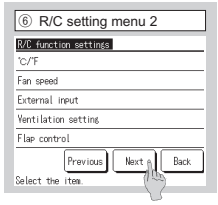


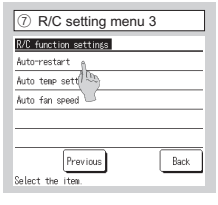
②,③ Main menu screen is displayed.
Tap the "Service & Maintenance" on the menu screen.



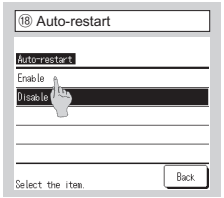
④Display the service password input screen.
Entertheservicepassword(4-digit number).
Refer to Installation manual.







⑤,⑥,⑦ Display the R/C setting menu screens.



Enable : It returns to the state be fore the supply power failure as soon as the power is restored (After the end of the primary control at the power on).
Disable : It stops after the restoration of power supply, regardless the state of operation before the power failure.

⑱ Auto-restart
Set the state of operation to be started when the power supply is restored after a power failure.

- Since it memorizes always the condition of remote controller, it starts operation according to the contents of memory no sooner than normal state is recovered after the power failure. Although the auto swing stop position and the timer mode are cancelled, the weekly timer setting is restored with the holiday setting for all weekdays.
  After recovering from the power failure, it readjusts the clock and resets the holiday setting for each weekday so that the setting of weekly timer becomes effective.
- Content memorized with the power failure compensation are as follows.

Note (1) Items⑥, ⑦ and ⑧ are memorized regardless whether the power failure compensation is effective or not while the setting of silent mode is cancelled regardless whether the power failure compensation is effective or not.

① At power failure – Operating/stopped
If it had been operating under the off timer mode, sleep timer mode, the state of stop is memorized. (Although the timer mode is cancelled at the recovery from power failure, the setting of weekly timer is changed to the holiday setting for all weekdays.)

② Operation mode

③ Airflow volume mode

④ Room temperature setting

⑤ Louver auto swing/stop
However, the stop position (4-position) is cancelled so that it returns to Position (1).

⑥ “Remote controller function items” which have been set with the remote controller function setting (“Indoor function items” are saved in the memory of indoor unit.)

⑦ Upper limit value and lower limit value which have been set with the temperature setting control

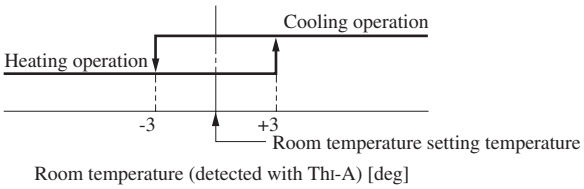
⑧ Sleep timer and weekly timer settings (Other timer settings are not memorized.)

1.11.3 Operation control function by the indoor controller

(Ⅰ) FDT, FDTC, FDEN, FDU, FDUM, FDF series

(1) Auto operation

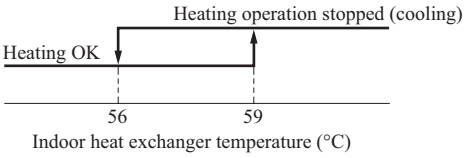
(a) If "Auto" mode is selected by the remote controller, the heating and the cooling are automatically switched according to the difference between outdoor air temperature and setting temperature and the difference between setting temperature and return air temperature. (When the switching of cooling mode ↔ heating mode takes place within 3 minutes, the compressor does not operate for 3 minutes by the control of 3-minute timer.) This will facilitate the cooling/heating switching operation in intermediate seasons and the adaptation to unmanned operation at stores, etc (ATM corner of bank).



Notes (1) Temperature range of switching cooling/heating mode can be changed by RC-EX1A from ±1.0 ～ ±4.0.

(2) Room temperature control during auto cooling/auto heating is performed according to the room temperature setting temperature. (DIFF: ±1 deg)

(3) If the indoor heat exchanger temperature rises to 59°C or higher during heating operation, it is switched automatically to cooling operation. In addition, for 1 hour after this switching, the heating operation is not performed, regardless of the temperature shown at right.



(b) In cases of VF series only, the following automatic controls are performed other than (a) above.

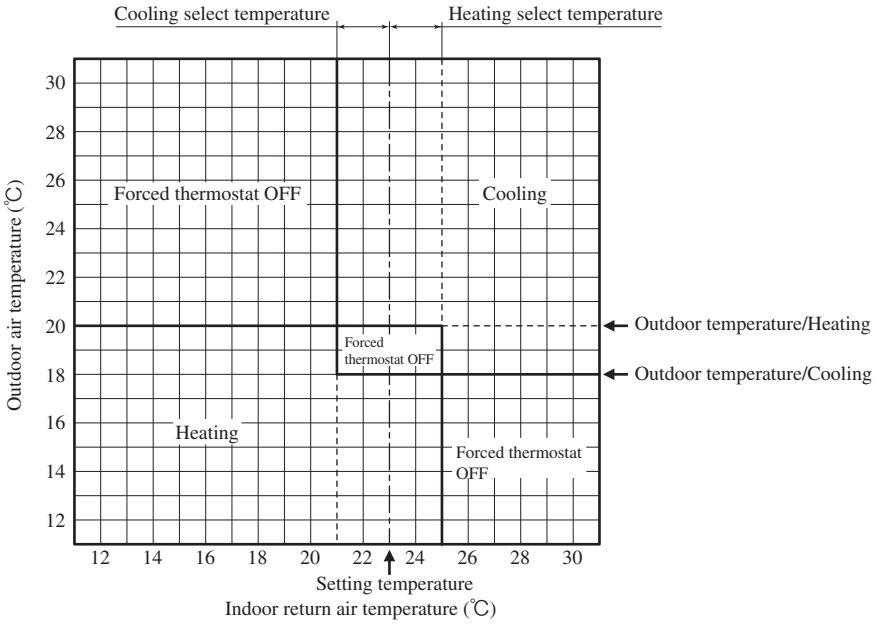
① Cooling or heating operation mode is judged according to the conditions of the "Judgment based on Setting temperature + Cooling select temperature and Indoor return air temperature" and the "Judgment based on Outdoor temperature".

・In "Setting temperature - Cooling select temperature < Indoor return air temperature" and "Outdoor temperature/Cooling < Outdoor return air temperature" ⇒ Operation mode: Cooling

・"Setting temperature + Heating select temperature > Indoor return air temperature" and "Outdoor temperature/Heating > Outdoor air temperature" ⇒ Operation mode: Heating

・The outdoor air temperature of the above judgment conditions is sampled at every 10 minutes.

・In the range where the above cooling and heating zones are overlapped ⇒ Forced thermostat OFF



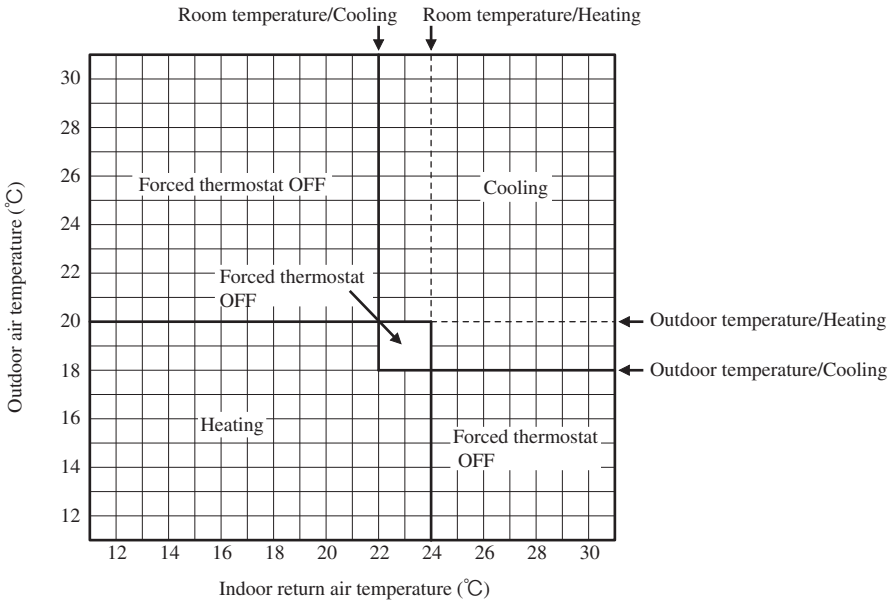
② Regardless of the setting temperature, the cooling or heating operation mode is judged according to the "Judgment based on Room temperature/Cooling or Heating and Outdoor temperature/Cooling or Heating".

・In case of "Room temperature/Cooling < Indoor return air temperature" and "Outdoor temperature/Cooling < Outdoor air temperature" ⇒ Operation mode: Cooling

・In case of "Room temperature/Heating > Indoor return air temperature" and "Outdoor temperature /Heating > Outdoor air temperature" ⇒ Operation mode: Heating

・The outdoor air temperature of the above judgment conditions is sampled at every 10 minutes.

・In the range where the above cooling and heating zones are overlapped ⇒ Forced thermostat OFF



(2) Operations of functional items during cooling/heating

Operation / Functional item	Cooling		Fan	Heating			Dehumidify
	Thermostat ON	Thermostat OFF		Thermostat ON	Thermostat OFF	Hot start (Defrost)	
Compressor	○	×	×	○	×	○	○/×
4-way valve	×	×	×	○	○	○(×)	×
Outdoor unit fan	○	×	×	○	×	○(×)	○/×
Indoor unit fan	○	○	○	○/×	○/×	○/×	○/×
Drain pump (3)	○	×(2)	×(2)	○/×(2)			Thermostat ON: ○ Thermostat OFF: ×(2)

Note (1) ○: Operation ×: Stop ○/×: Turned ON/OFF by the control other than the room temperature control.
(2) ON during the drain motor delay control.
(3) Drain pump ON setting may be selected with the indoor unit function setting of the wired remote controller.

(3) Dehumidifying operation

Return air temperature thermistor [Thi-A (by the remote controller when the remote controller thermistor is enabled)] controls the indoor temperature environment simultaneously.

(a) Operation is started in the cooling mode. When the difference between the return air temperature and the setting temperature is 2°C or less, the indoor unit fan tap is brought down by one tap. That tap is retained for 3 minutes after changing the indoor unit fan tap.

(b) If the return air temperature exceeds the setting temperature by 3°C during dehumidifying operation, the indoor unit fan tap is raised. That tap is retained for 3 minutes after changing the indoor unit fan tap.

(c) If the thermostat OFF is established during the above control, the indoor unit fan tap at the thermostat ON is retained so far as the thermostat is turned OFF.

(4) Timer operation

(a) RC-EX5

(i) Sleep timer

Set the duration of time from the present to the time to turn off the air-conditioner.

It can be selected from 10 steps in the range from "OFF 1 hour later" to "OFF 10 hours later". After the sleep timer setting, the remaining time is displayed with progress of time in the unit of hour.

(ii) OFF timer

Time to turn OFF the air-conditioner can be set in the unit of 10 minutes.

(iii) ON timer

Time to turn ON the air-conditioner can be set. Indoor temperature can be set simultaneously.

(iv) Weekly timer

Timer operation (ON timer, OFF timer) can be set up to 4 times a day for each weekday.

(v) Timer operations which can be set in combination

Item \ Item	Timer	OFF timer	ON timer	Weekly timer
Timer		×	○	×
OFF timer	×		○	×
ON timer	○	○		×
Weekly timer	×	×	×	

Note (1) ○: Allowed ×: Not

(2) Since the ON timer, sleep timer and OFF timer are set in parallel, when the times to turn ON and OFF the airconditioner are duplicated, the setting of the OFF timer has priority.

(b) RC-EX1A

(i) Sleep timer

Set the time from the start to stop of operation. The time can be selected in the range from 30 to 240 minutes (in the unit of 10-minute).

Note (1) Enable the "Sleep timer" setting from the remote controller. If the setting is enabled, the timer operates at every time.

(ii) Set OFF timer by hour

Set the time to stop the unit after operation, in the range from 1 to 12 hours (in the unit of hour).

(iii) Set ON timer by hour

Set the time to start the unit after the stop of operation, in the range from 1 to 12 hours (in the unit of hour). It is allowed also to set simultaneously the indoor temperature, operation mode, air flow rate and warm-up enabled/disabled.

(iv) Set ON timer by clock

Set the time to start operation. The time can be set in the unit of 5-minute. This setting can be activated only once or at every time. It is allowed also to set simultaneously the indoor temperature, operation mode, air flow rate and warm-up enabled/disabled.

Note (1) It is necessary to set the clock to use this timer.

(v) Set OFF timer by clock

Set the time to stop operation. The time can be set in the unit of 5-minute. This setting can be activated only once or at every time.

Note (1) It is necessary to set the clock to use this timer.

(vi) Weekly timer

Set the ON or OFF timer for a week. Up to 8 patterns can be set for a day. The day-off setting is provided for holidays and non-business days.

Note (1) It is necessary to set the clock to use the weekly timer.

(vii) Combination of patterns which can be set for the timer operations

	Sleep time	Set OFF timer by hour	Set ON timer by hour	Set OFF timer by clock	Set ON timer by clock	Weekly timer
Sleep time		×	×	○	○	○
Set OFF timer by hour	×		×	×	×	×
Set ON timer by hour	×	×		×	×	×
Set OFF timer by clock	○	×	×		○	×
Set ON timer by clock	○	×	×	○		×
Weekly timer	○	×	×	×	×	

Note (1) ○: Allowed ×: Not

(5) Remote controller display during the operation stop

When the operation is stopped (the power supply is turned ON), it displays preferentially the "Room temperature", "Center/Remote", "Filter sign", "Inspection" and "Timer operation".

(6) Hot start (Cold draft prevention at heating)

(a) Operating conditions

When either one of following conditions is met, the hot start control is performed.

(i) From stop to heating operation

(ii) From cooling to heating operation

(iii) Form heating thermostat OFF to ON

(iv) After completing the defrost control (only on units with thermostat ON)

(b) Contents of operation

(i) Indoor fan motor control at hot start

1) Within 7 minutes after starting heating operation, the fan mode is determined depending on the condition of thermostat (fan control with heating thermostat OFF).

a) Thermostat OFF

① Operates according to the fan control setting at heating thermostat OFF.

② Even if it changes from thermostat OFF to ON, the fan continues to operate with the fan control at thermostat OFF till the heat exchanger thermistor (ThI-R1 or R2, whichever higher) detects 35°C or higher.

③ When the heat exchanger thermistor (ThI-R1 or R2, whichever higher) detects 35°C or higher, the fan operates with the set airflow volume.

b) Thermostat ON

① When the heat exchanger thermistor (ThI-R1 or R2, whichever higher) detects 25°C or lower, the fan is turned OFF and does not operate.

② When the heat exchanger thermistor (ThI-R1 or R2, whichever higher) detects 25°C or higher, the fan operates with the fan control at heating thermostat OFF.

③ When the heat exchanger thermistor (ThI-R1 or R2, whichever higher) detects 35°C or higher, the fan operates with the set airflow volume.

c) If the fan control at heating thermostat OFF is set at the "Set airflow volume" (from the remote controller), the fan operates with the set airflow volume regardless of the thermostat ON/OFF.

2) Once the fan motor is changed from OFF to ON during the thermostat ON, the indoor fan motor is not turned OFF even if the heat exchanger thermistor detects lower than 25°C.

Note (1) When the defrost control signal is received, it complies with the fan control during defrosting.

3) Once the hot start is completed, it will not restart even if the temperature on the heat exchanger thermistor drops.

(ii) During the hot start, the louver is kept at the horizontal position.

(iii) When the fan motor is turned OFF for 7 minutes continuously after defrosting, the fan motor is turned ON regardless of the temperatures detected with the indoor heat exchanger thermistors (ThI-R1, R2).

(c) Ending condition

(i) If one of following conditions is met during the hot start control, this control is terminated, and the fan is operated with the set airflow volume.

1) Heat exchanger thermistor (ThI-R1 or R2, whichever higher) detects 35°C or higher.

2) It has elapsed 7 minutes after starting the hot start control.

(7) Hot keep

Hot keep control is performed at the start of the defrost control.

(a) Control

1) When the indoor heat exchanger temperature (detected with Thı-R1 or R2) drops to 35°C or lower, the speed of indoor fan is changed to the lower tap at each setting.

2) During the hot keep, the louver is kept at the horizontal position.

(b) Ending condition

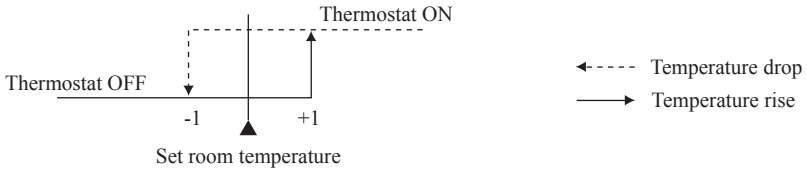
When the indoor fan is at the lower tap at each setting, it returns to the set airflow volume as the indoor heat exchanger temperature rises to 45°C or higher.

(8) Thermostat operation

(a) Cooling

1) Thermostat is operated with the room temperature control.

2) Thermostat is turned ON or OFF relative to the set room temperature as shown below.

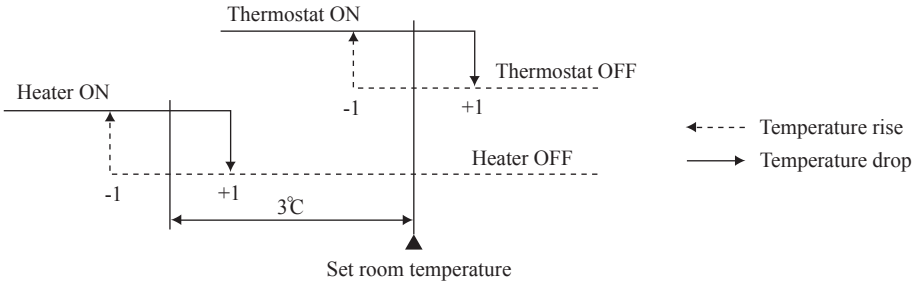


3) Thermostat is turned ON when the room temperature is in the range of -1 < Set temperature < +1 at the start of cooling operation (including from heating to cooling).

(b) Heating

1) Thermostat is operated with the room temperature control.

2) Thermostat is turned ON or OFF relative to the set room temperature as shown below.



3) Thermostat is turned ON when the room temperature is in the range of -1 < Set point < +1 at the start of cooling operation (including from cooling to heating).

(c) Fan control during heating thermostat OFF

1) Following fan controls during the heating thermostat OFF can be selected with the indoor function setting of the wired remote controller.

① Low fan speed (Factory default), ② Set fan speed, ③ Intermittence, ④ Fan OFF

2) When the "Low fan speed (Factory default)" is selected, the following taps are used for the indoor fans.

・ For DC motor : ULo tap

3) When the "Set fan speed" is selected, it is operated with the set fan speed also in the thermostat OFF condition.

4) If the "Intermittence" is selected, following controls are performed:

a) If the thermostat is turned OFF during the heating operation, the indoor unit moves to the hot control and turns OFF the indoor fan if the heat exchanger thermistors (both ThI-R1 and R2) detect 25°C or lower.

b) Indoor fan OFF is fixed for 5 minutes. After the 5 minutes, the indoor fan is operated at ULo for 2 minutes. In the meantime the louver is controlled at level.

c) After operating at ULo for 2 minutes, the indoor fan moves to the state of a) above.

d) If the thermostat is turned ON, it moves to the hot start control.

e) When the heating thermostat is turned OFF, the remote controller displays the temperature detected at the fan stop and revises the temperature later when the indoor fan changes from ULo to stop.

The remote controller uses the operation data display function to display temperatures and updates values of temperature even when the indoor fan is turned OFF.

f) When the defrosting starts while the heating thermostat is turned OFF or the thermostat is turned OFF during defrosting, the indoor fan is turned OFF. (Hot keep or hot start control takes priority.) However, the suction temperature is updated at every 7-minute.

g) When the heating thermostat is turned ON or the operation is changed to another mode (including stop), this control is stopped immediately, and the operating condition is restored.

5) When the "Fan OFF" is selected, the fan on the indoor unit of which the thermostat has been turned OFF, is turned OFF.

(9) Filter sign

As the operation time (Total ON time of ON/OFF switch) accumulates to 180 hours (1), "FILTER CLEANING" is displayed on the remote controller. (This is displayed when the unit is in trouble and under the centralized control, regardless of ON/OFF)

Note (1) Time setting for the filter sign can be made as shown below using the indoor function of wired remote controller "FILTER SIGN SET". (It is set at 1 at the shipping from factory.)

Filter sign setting	Function
TYPE 1	Setting time: 180 hrs (Factory default)
TYPE 2	Setting time: 600 hrs
TYPE 3	Setting time: 1,000 hrs
TYPE 4	Setting time: 1,000 hrs (Unit stop) (2)

(2) After the setting time has elapsed, the "FILTER CLEANING" is displayed and, after operating for 24 hours further (counted also during the stop), the unit stops.

(10) Compressor inching prevention control

(a) 3-minute timer

When the compressor has been stopped by the thermostat, remote controller operation switch or anomalous condition, its restart will be inhibited for 3 minutes. However, the 3-minute timer is invalidated at the power on the electric power source for the unit.

(b) 3-minute forced operation timer

1) Compressor will not stop for 3 minutes after the compressor ON. However, it stops immediately when the unit is stopped by means of the ON/OFF switch or by when the thermister turned OFF the change of operation mode.
2) If the thermostat is turned OFF during the forced operation control of heating compressor, the louver position (with the auto swing) is returned to the level position.

Note (1) The compressor stops when it has entered the protective control.

(11) Drain pump control

(a) This control is operated when the inverter frequency is other than 0 Hz during the cooling operation and automatic cooling and dehumidifying operations.

(b) Drain pump ON condition continues for 5 minutes even when it enters the OFF range according to 1) above after turning the drain pump ON, and then stops. The 5-minute delay continues also in the event of anomalous stop.

(c) The drain pump is operated with the 5-minute delay operation when the compressor is changed from ON to OFF.

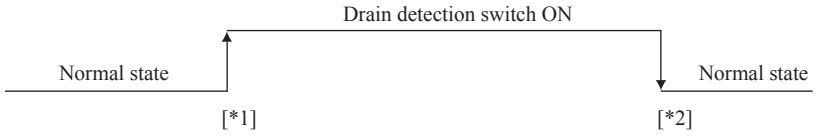
(d) Even in conditions other than the above (such as heating, fan, stop, cooling thermostat OFF), the drain pump control is performed by the drain detection.

(e) Following settings can be made using the indoor function setting of the wired remote controller.

1) ❄♢ : Drain pump is run during cooling and dry.
2) ❄♢AND☼ : Drain pump is run during cooling, dry and heating.
3) ❄♢AND☼AND☰ : Drain pump is run during cooling, dry, heating and fan.
4) ❄♢AND☰ : Drain pump is run during cooling, dry and fan.

(12) Drain motor (DM) control

(a) Drain detection switch is turned ON or OFF with the float switch (FS) and the timer.



[＊1] Drain detection switch is turned "ON" when the float switch "Open" is detected for 3 seconds continuously in the drain detectable space.

[＊2] Drain detection switch is turned "OFF" when the float switch "Close" is detected for 10 seconds continuously.

1) It detects always from 30 seconds after turning the power ON.

a) There is no detection of anomalous draining for 10 seconds after turning the drain pump OFF.

b) Turning the drain detection switch "ON" causes to turn ON the drain pump forcibly.

c) Turning the drain detection switch "OFF" releases the forced drain pump ON condition.

(b) Indoor unit performs the control A or B depending on each operating condition.

	Indoor unit operation mode				
	Stop (1)	Cooling	Dehumidifying	Fan (2)	Heating
Compressor ON		Control A			
Compressor OFF	Control B				

Note (1) Including the stop from the cooling, dehumidifying, fan and heating, and the anomalous stop
(2) Including the "Fan" operation according to the mismatch of operation modes

1) Control A

a) If the float switch detects any anomalous draining condition, the unit stops with the anomalous stop (displays E9) and the drain pump starts. After detecting the anomalous condition, the drain motor continues to be ON.

b) It keeps operating while the float switch is detecting the anomalous condition.

2) Control B

If the float switch detects any anomalous drain condition, the drain motor is turned ON for 5 minutes, and at 10 seconds after the drain motor OFF it checks the float switch. If it is normal, the unit is stopped under the normal mode or, if there is any anomalous condition, E9 is displayed and the drain motor is turned ON. (The ON condition is maintained during the drain detection.)

(13) Operation check/drain pump test run operation mode

(a) If the power is turned on by the dip switch (SW7-1) on the indoor PCB when electric power source is supplied, it enters the mode of operation check/drain pump test run. It is ineffective (prohibited) to change the switch after turning power on.

(b) When the communication with the remote controller has been established within 60 seconds after turning power on by the dip switch (SW7-1) ON, it enters the operation check mode. Unless the remote controller communication is established, it enters the drain pump test run mode.

Note (1) To select the drain pump test run mode, disconnect the remote controller connector (CNB) on the indoor PCB to shut down the remote controller communication.

(c) Operation check mode

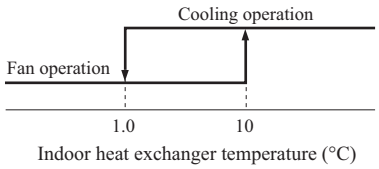
There is no communication with the outdoor unit but it allows performing operation in respective modes by operating the remote controller.

(d) Drain pump test run mode

As the drain pump test run is established, the drain pump only operates and during the operation protective functions by the microcomputer of indoor unit become ineffective.

(14) Cooling, dehumidifying frost protection

(a) To prevent frosting during cooling mode or dehumidifying mode operation, the of compressor speed is reduced if the indoor heat exchanger temperature (detected with Thi-R) drops to 1.0 °C or lower at 4 minutes after the start of compressor operation. If the indoor unit heat exchanger temperature is 1.0 °C or lower after 1 minutes, the compressor speed is reduced further. If it becomes 2.5 °C or higher, the control terminates. When the indoor heat exchanger temperature has become as show below after reducing the compressor speed, it is switched to the fan operation. For the selection of indoor fan speed, refer to item 2).



(b) Selection of indoor fan speed

If it enters the frost prevention control during cooling operation (excluding dehumidifying), the indoor unit fan speed is switched.

1) When the indoor return air detection temperature (detected with Thi-A) is 23°C or higher and the indoor heat exchanger temperature (detected with Thi-R) detects the compressor frequency drop start temperature A°C+1°C, of indoor unit fan speed is increased by 20rpm.

2) If the phenomenon of 1) above is detected again after the acceleration of indoor unit fan, indoor unit fan speed is increased further by 20rpm.

Note (1) Indoor unit fan speed can be increased by up to 2 taps.

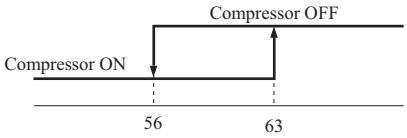
• Compressor frequency drop start temperature

Item \ Symbol	A
Temperature - Low (Factory default)	1.0
Temperature - High	2.5

Note (1) Frost prevention temperature setting can be selected with the indoor unit function setting of the wired remote controller.

(15) Heating overload protection

(a) If the indoor heat exchanger temperature (detected with Thı-R) at 63°C or higher is detected for 2 seconds continuously, the compressor stops. When the compressor is restarted after a 3-minute delay, if a temperature at 63°C or higher is detected for 2 seconds continuously within 60 minutes after initial detection and if this is detected 5 times consecutively, the compressor stops with the anomalous stop (E8). Anomalous stop occurs also when the indoor heat exchanger temperature at 63°C or higher is detected for 6 minutes continuously.



(b) Indoor unit fan speed selection
If, after second detection of heating overload protection up to fourth, the indoor fan is set at Me and Lo taps when the compressor is turned ON, the indoor fan speed is increased by 1 tap.

(16) Anomalous fan motor

(a) After starting the fan motor, if the fan motor speed is 200rpm or less is detected for 30 seconds continuously and 4 times within 60 minutes, then fan motor stops with the anomalous stop (E16).

(b) If the fan motor fails to reach at -50 rpm less than the required speed, it stops with the anomalous stop (E20).

(17) Plural unit control – Control of 16 units group by one remote controller

(a) Function

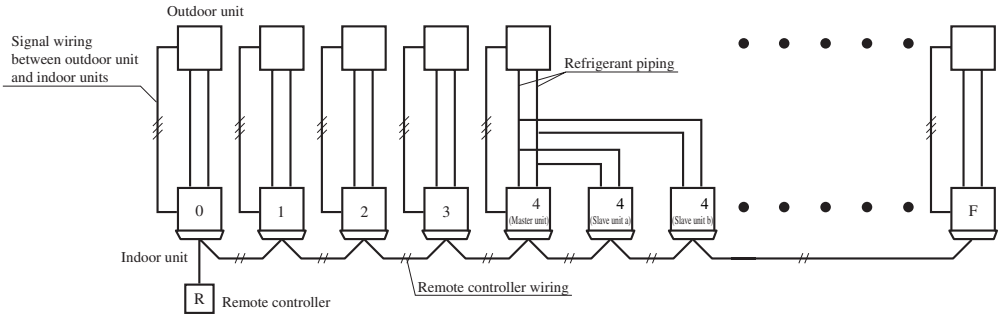
One remote controller switch can control a group of multiple number of unit (Max. 16 indoor units). "Operation mode" which is set by the remote controller switch can operate or stop all units in the group one after another in the order of unit No.[(1)]. Thermostat and protective function of each unit function independently.

Note (1) Unit No. is set by SW2 on the indoor unit control PCB. Unit No. setting by SW2 is necessary for the indoor unit only. In cases of the twin and triple specification, it is necessary set for the master and the slave units. This can be selected by SW5. (All are set for the master unit at the shipping from factory.)

SW2: For setting of 0 – 9, A – F
SW5: For setting of master and slave units
(See table shown at right.)

SW5 setting

Switch / Unit	SW5-1	SW5-2
Master unit	OFF	OFF
Slave unit a	OFF	ON
Slave unit b	ON	OFF



(2) Unit No. may be set at random unless duplicated, it should be better to set orderly like 0, 1, 2…, F to avoid mistake.

(b) Display to the remote controller

1) Center or each remote controller basis, heating preparation: the youngest unit No. among the operating units in the remote mode (or the center mode unless the remote mode is available) is displayed.
2) Inspection display, filter sign: Any of unit that starts initially is displayed.
3) Confirmation of connected units

a) In case of RC-E5 remote controller
Pressing "AIR CON No." button on the remote controller displays the indoor unit address. If "▲" "▼" button is pressed at the next, it is displayed orderly starting from the unit of youngest No.

b) In case of RC-EX1A remote controller
If you touch the buttons in the order of "Menu" → "Next" → "Service & Maintenance" → "IU address" on the TOP screen of remote controller, the indoor units which are connected are displayed.

#

4) In case of anomaly
   a) If any anomaly occurs on a unit in a group (a protective function operates), that unit stops with the anomalous stop but any other normal units continue to run as they are.
   b) Signal wiring procedure
      Signal wiring between indoor and outdoor units should be made on each unit same as the normal wiring. For the group control, lay connect with sires wiring between rooms using terminal blocks (X, Y) of remote controller.
      Connect the remote controller communication wire separately from the power supply wire or wires of other electric devices (AC220V or higher).

(18) High ceiling control

When sufficient air flow rate cannot be obtained from the indoor unit which is installed at a room with high ceiling, the air flow rate can be increased by changing the fan tap. To change the fan tap, use the indoor unit function "FAN SPEED SET" on the wired remote controller.

Fan tap		Indoor unit airflow setting			
		- - -	- -	- -	-
FAN SPEED SET	STANDARD	PHi - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me
	HIGH SPEED1, 2	PHi - PHi - Hi - Me	PHi - Hi - Me	PHi - Me	PHi - Hi

Notes (1) Factory default is Standard.
(2) At the hot-start and heating thermostat OFF, or other, the indoor unit fan is operated at the low speed tap of each setting.
(3) This function is not able to be set with wireless remote controls or simple remote control (RCH-E3)

(19) Abnormal temperature thermistor (return air/indoor heat exchanger) wire/short-circuit detection

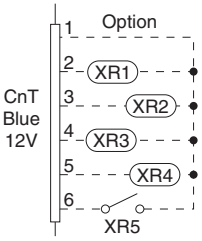
(a) Broken wire detection
When the return air temperature thermistor detects -20°C or lower or the heat exchanger temperature thermistor detect -40°C or lower for 5 seconds continuously, the compressor stops. After a 3-minute delay, the compressor restarts but, if it is detected again within 60 minutes after the initial detection for 6 minutes continuously, stops again (the return air temperature thermistor: E7, the heat exchanger temperature thermistor: E6).

(b) Short-circuit detection
If the heat exchanger temperature thermistor detects 70°C or higher for 5 seconds continuously at 2 minutes and 20 seconds after the compressor ON during cooling operation, the compressor stops (E6).

(20) External input/output control (CnT or CnTA)

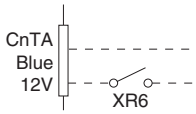
Be sure to connect the wired remote controller to the indoor unit. Without wired remote controller remote operation by CnT is not possible to perform.

・All model



①Operation output (CnT-2: XR1)
②Heating output (CnT-3: XR2)
③Thermostat ON output (CnT-4: XR3)
④Error output (CnT-5: XR4)
⑤Remote operation input (CnT-6: Volt-free contact)

・FDT, FDUM only



Note (1) CnTA function can be changed by RC-EX1A.

■ Priority order for combinations of CnT and CnTA input.

		CnTA						
		① Operation stop level	② Operation stop pulse	③ Operation permission/prohibition	④ Operation permission/prohibition pulse	⑤ Cooling/heating selection level	⑥ Cooling/heating selection pulse	⑦ Emergency stop
CnT	① Operation stop level	CnT ①	CnT ①	CnT ① +CnTA ②	CnT ①	CnT ① /CnTA ⑤	CnT ① /CnTA ⑥	CnT ① <CnTA ⑦
	② Operation stop pulse	CnT ②	CnT ②	CnT ② +CnTA ③	CnT ②	CnT ② /CnTA ⑤	CnT ② /CnTA ⑥	CnT ② <CnTA ⑦
	③ Operation permission/prohibition level	CnT ③ >CnTA ①	CnT ③ >CnTA ②	CnT ③ +CnTA ③	CnT ③	CnT ③ /CnTA ⑤	CnT ③ /CnTA ⑥	CnT ③ <CnTA ⑦
	④ Operation permission/prohibition pulse	CnT ④	CnT ④	CnT ④ +CnTA ③※	CnT ④	CnT ④ /CnTA ⑤	CnT ④ /CnTA ⑥	CnT ④ <CnTA ⑦
	⑤ Cooling/heating selection level	CnT ⑤ /CnTA ①	CnT ⑤ /CnTA ②	CnT ⑤ /CnTA ③	CnT ⑤ /CnTA ④	CnT ⑤	CnT ⑤	CnT ⑤ /CnTA ⑦
	⑥ Cooling/heating selection pulse	CnT ⑥ /CnTA ①	CnT ⑥ /CnTA ②	CnT ⑥ /CnTA ③	CnT ⑥ /CnTA ④	CnT ⑥	CnT ⑥	CnT ⑥ /CnTA ⑦

Note (1) Following operation commands are accepted when the operation prohibition is set with CnTA as indicated with *.
Individual operation command from remote controller, test run command from outdoor unit and operation command from optional device, CNT input.

Reference: Explanation on the codes and the combinations of codes in the table above
1. In case of CnT "Number", the CnT "Number" is adopted and CnTA is invalidated.
2. In case of CnTA "Number", the CnTA "Number" is adopted and CnT is invalidated.
3. In case of CnT "Number"/CnTA "Number", the CnT "Number" and the CnTA "Number" become independent functions each other.
4. In case of CnT "Number" + CnTA "Number", the CnT "Number" and the CnTA "Number" become competing functions each other.
5. In case of CnT "Number" > CnTA "Number", the function of CnT "Number" supersedes that of CnTA "Number".
6. In case of CnT "Number" < CnTA "Number", the function of CnTA "Number" supersedes that of CnT "Number".

(The "Number" above means ① - ⑦ in the table.)

(a) Output for external control (remote display)

Following output connectors (CnT) are provided on the indoor control PCB for monitoring operation status.

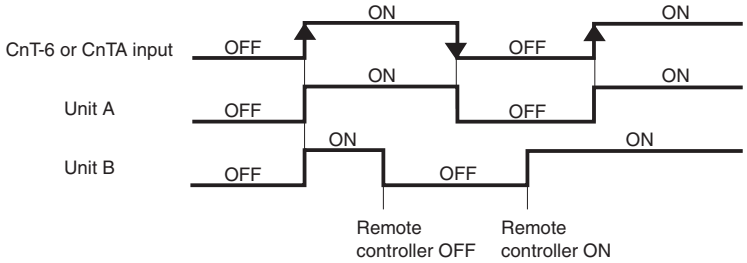
① **Operation output:** Outputs DC12V signal for driving relay during operation
② **Heating output:** Outputs DC12V signal for driving relay during heating operation
③ **Thermostat ON output:** Outputs DC12V signal for driving relay when compressor is operating.
④ **Error output:** Outputs DC12V signal for driving relay when anomalous condition occurs.

(b) Remote operation input

Remote operation input connector (CnT-6 or CnTA) is provided on the indoor control PCB.
However remote operation by CnT-6 or CnTA is not effective, when "Center mode" is selected by center controller.
In case of plural unit (twin, triple, double twin), remote operation input to CnT-6 or CnTA on the slave indoor unit is invalid.
Only the "LEVEL INPUT" is acceptable for external input, however when the indoor function setting of "Level input (Factory default)" or "Pulse input" is selected by the function for "External input" of the wired remote controller, operation status will be changed as follows.

1) In case of "Level input" setting (Factory default)

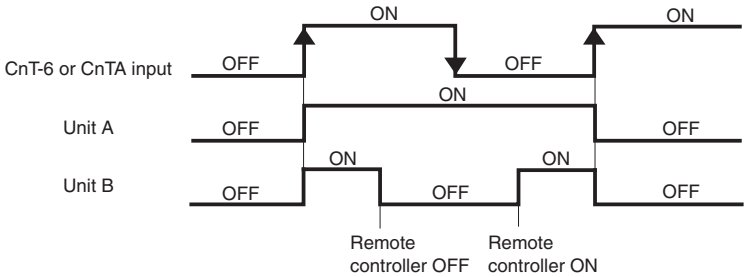
Input signal to CnT-6 or CnTA is OFF→ON …… unit ON
Input signal to CnT-6 or CnTA is ON→OFF …… unit OFF
Operation is not inverted.



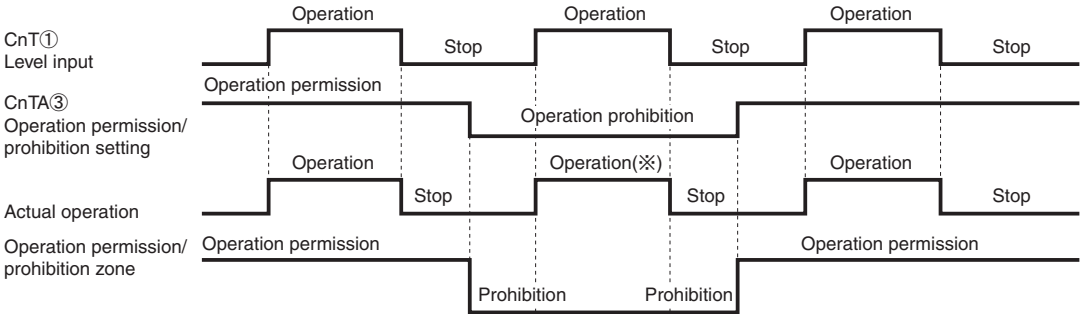
Note: The latest operation has priority
It is available to operate/stop by remote controller or center controller

2) In case of "Pulse input" setting (Local setting)

It is effective only when the input signal to CnT-6 or CnTA is changed OFF→ON, and at that time unit operation [ON/OFF] is inverted.

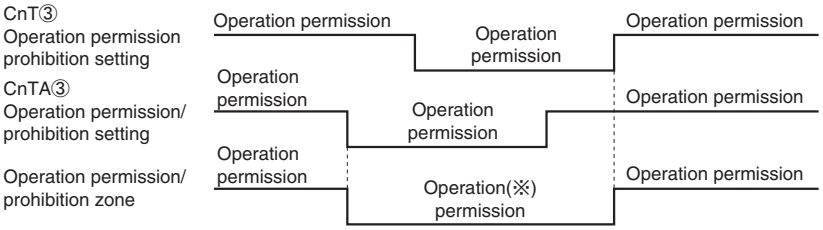


3) In case of CnT ① Operation stop level > CnTA ③ Operation permission/prohibition level



(※) CnT level input supersedes CnTA operation prohibition.

4) In case of CnT ③ Operation permission/prohibition level + CnTA ③ Operation permission/prohibition level

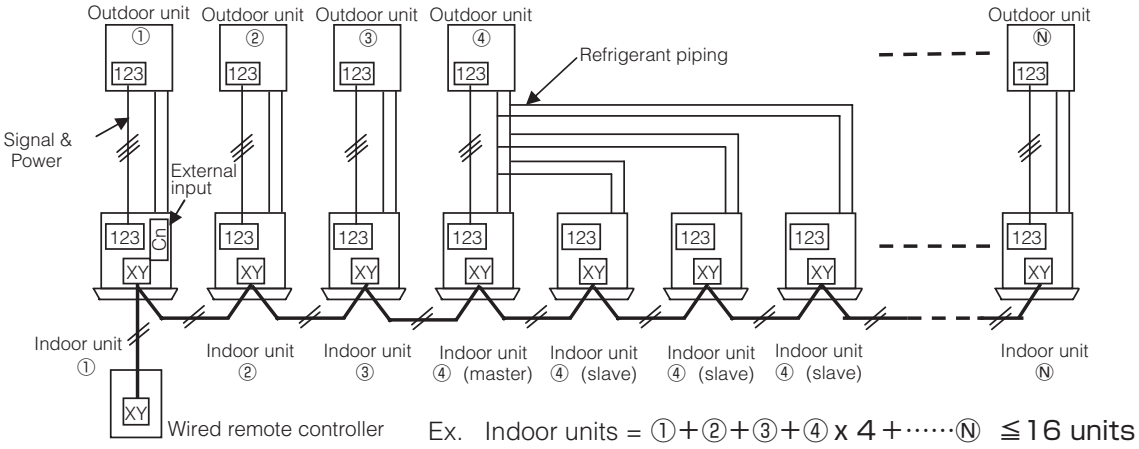


(※) Operation prohibition zone is determined by the OR judgment between CnT Operation prohibition zone and CnTA Operawtion prohibition zone.

(c) Remote operation

1) In case of multiple units (Max. 16 indoor units group) are connected to one wired remote controller

When the indoor function setting of wired remote controller for "External control set" is changed from "Individual (Factory default)" to " For all units", all units connected in one wired remote controller system can be controlled by external operation input.



	Individual operation (Factory default)		All units operation (Local setting)	
	ON	OFF	ON	OFF
CnT-6 or CnTA	Only the unit directly connected to the remote controller can be operated.	Only the unit directly connected to the remote controller can be stopped opeartion.	All units in one remote controller system can be operated.	All units in one remote controller system can be stopped operation.
	Unit ① only	Unit ① only	Units ①－Ⓝ	Units ①－Ⓝ

When more than one indoor unit (Max. 16 indoor units) are connected in one wired remote controller system:

(1) With the factory default, external input to CnT-6 or CnTA is effective for only the unit ①.

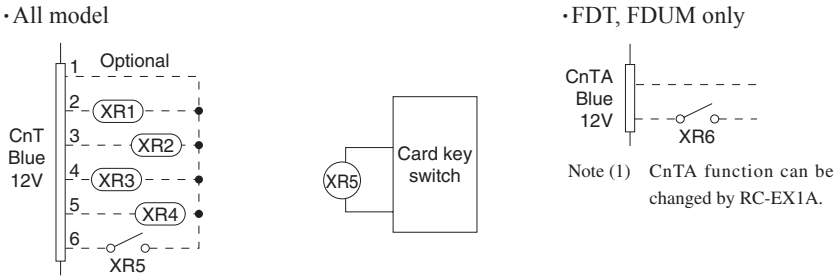
(2) When setting "For all unit" (Local setting), all units in one remote controller system can be controlled by external input to CnT-6 or CnTA on the indoor unit ①.

(3) External input to CnT-6 or CnTA on the other indoor unit than the unit ① is not effective.

(21) Operation permission/prohibition

(In case of adopting card key switches or commercially available timers)

When the indoor function setting of wired remote controller for "Operation permission/prohibition" is changed from "Invalid (Factory default)" to " Valid", following control becomes effective.



	Normal operation (Factory default)		Operation permission/prohibition mode "Valid" (Local setting)	
CnT-6 or CnTA	ON	OFF	ON	OFF
	Operation	Stop	Operation permission*1	Operation prohibition (Unit stops)

*1 **Only the "LEVEL INPUT" is acceptable for external input**, however when the indoor function setting of "Level input (Factory default)" or "Pulse input" is selected by the function for "External input" of the wired remote controller, operation status will be changed as follows.

In case of "Level input" setting	In case of "Pulse input" setting
Unit operation from the wired remote controller becomes available*(1)	Unit starts operation *(2)

*(1) In case that "Operation permission/prohibition mode" setting is "Valid" and "External input" setting is "Level input (Factory default)";

① When card key switch is ON (CnT-6 or CnTA ON: Operation permission), start/stop operation of the unit from the wired remote controller becomes available.

② When card key switch is OFF (CnT-6 or CnTA OFF: Operation prohibition), the unit stops operation in conjunction with OFF signal, and start/stop operation of the unit from the wired remote controller becomes not available.

*(2) In case that "Operation permission/prohibition mode" setting is "Valid" and "External input" setting is "Pulse input (Local setting)";

① When card key switch is ON (Operation permission), the unit starts operation in conjunction with ON signal. and also start/stop operation of the unit from the wired remote controller becomes available.

② When card key switch is OFF (Operation prohibition), the unit stops operation in conjunction with OFF signal, and start/stop operation of the unit from the wired remote controller becomes not available.

(3) This function is invalid only at "Center mode" setting done by central controller.

(22) Selection of cooling/heating external input function

(i) When "External input 1 setting: Cooling/heating" is set for the indoor unit function from remote controller, the cooling or heating is selected with CnT-6 or CnTA.

(ii) When the External input 1 method selection: Level input is set for the indoor unit function:

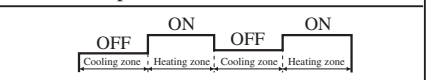
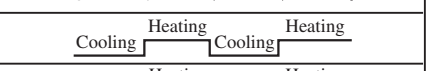
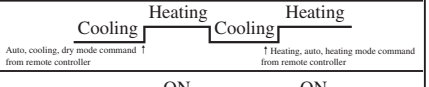
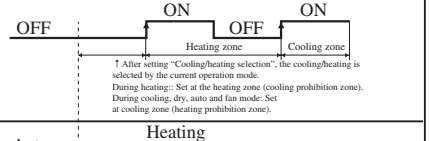
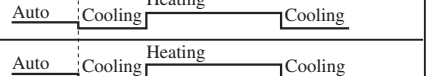
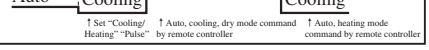
・ CnT-6 or CnTA: OPEN → Cooling operation mode

・ CnT-6 or CnTA: CLOSE → Heating operation mode

(iii) When the External input 1 method selection: Pulse input is set for the indoor unit function:
If the external input is changed OPEN → CLOSE, operation modes are inverted (Cooling → Heating or Heating → Cooling).

(iv) If the cooling/heating selection signal is given by the external input, the operation mode is transmitted to the remote controller.

■ Selection of cooling/heating external input function

External input selection	External input method	Operation	
External input selection Cooling/heating selection	⑤ Level	External terminal input (CnT or CnTA)	
		Cooling/heating	
		Cooling/heating (Competitive)	
	⑥ Pulse	External terminal input (CnT or CnTA)	
		Cooling/heating	
		Cooling/heating (Competitive)	

Notes (1) Regarding the priority order for combinations of CnT and CnTA, refer to Page 307.

(23) Fan control at heating startup

(a) Start conditions

At the start of heating operation, if the difference of setting temperature and return air temperature is 5°C or higher after the end of hot start control, this control is performed.

(b) Contents of control

1) Sampling is made at each minute and, when the indoor unit heat exchanger temperature (detected with Thı-R) is 37°C or higher, present number of revolutions of indoor unit fan speed is increased by $10min^{-1}$.

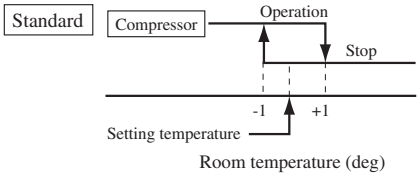
2) If the indoor unit heat exchanger temperature drops below 37°C at next sampling, present number of revolutions of indoor unit fan speed is reduced by $10min^{-1}$.

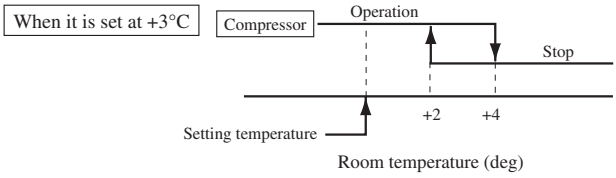
(c) End conditions

Indoor fan speed is reduced to the setting airflow volume when the compressor OFF is established and at 30 minutes after the start of heating operation.

(24) Room temperature detection temperature compensation during heating

With the standard specification, the compressor is turned ON/OFF with the thermostat setting temperature. When the thermostat is likely to turn OFF earlier because the unit is installed at the ceiling where warm air tends to accumulate, the setting can be changed with the wired remote controller indoor unit function "☼SP OFFSET". The compressor and the heater are turned ON/OFF at one of the setting temperature +3, +2 or +1°C in order to improve the feeling of heating. The setting temperature, however, has the upper limit of 30°C.





(25) Return air temperature compensation

This is the function to compensate the deviation between the detection temperature by the return air temperature thermistor and the measured temperature after installing the unit.

1) It is adjustable in the unit of 0.5°C with the wired remote controller indoor unit function "RETURN AIR TEMP".

• +1.0°C, +1.5°C, +2.0°C • -1.0°C, -1.5°C, -2.0°C

2) Compensated temperature is transmitted to the remote controller and the compressor to control them.

Note (1) The detection temperature compensation is effective on the indoor unit thermistor only.

(26) High power operation (RC-EX1A only)

It operates at with the set temp. fixed at 16°C for cooling, 30°C for heating and maximum indoor fan speed for 15 minutes maximum.

(27) Energy-saving operation (RC-EX1A only)

It operates with the setting temperature fixed at 28°C for cooling, 22°C for heating or 25°C for auto. (Maximum capacity is restricted at 80%.)

(28) Warm-up control (RC-EX1A only)

Operation will be started 5 to 60 minutes before use according to the forecast made by the microcomputer which calculates when the operation should be started in order to warm up the indoor temperature near the setting temperature at the setting time of operation start.

(29) Home leave mode (RC-EX1A only)

When the unit is not used for a long period of time, the room temperature is maintained at a moderate leval, avoiding extremely hot or cool temperature.

(a) Cooling or heating is operated according to the outdoor temperature (factory setting 35°C for cooling, 0°C for heating) and the set temp. (factory setting 33°C for cooling, 10°C for heating)

(b) Set temp and indoor fan speed can be set by RC-EX1A.

(30) Auto temp. setting (RC-EX1A only)

Setting temperature is adjusted automatically at the adequate temperature the center set temp. is 24°C by correcting the outdoor air temperature.

(31) Fan circulator operation (RC-EX1A only)

When the fan is used for circulation, the unit is operated as follows depending on the setting with the remote controller.

1) If the invalid is selected with the remote controller, the fan is operated continuously during the fan operation. (mormal fan mode)
2) If the valid is selected with the remote controller, the fan is operated or stopped when on the difference of the remote controller temperature sensor and the indoor unit return air temperature sensor becomes bigger than 3°C.

(32) The operation judgment is executed every 5 minutes (RC-EX1A only)

Setting temperature Ts is changed according to outdoor temperature
This control is valid with cooling and heating mode. (NOT auto mode)

1) Operate 5 minutes forcedly.
2) Setting temperature is adjusted every 10 minutes.
   (a) Cooling mode.
      Ts = outdoor temperature − offset value
   (b) Heating mode.
      Ts = outdoor temperature − offset value
3) If the return air temperature lower than 18°C or return air temperature becomes lower than 25°C, unit goes thermo OFF.

(33) Auto fan speed control (RC-EX1A only)

In order to reach the room temperature to the set temperature as quickly as possible, the airflow rate is increased when the set temperature of thermostat differs largely from the return air temperature. According to temperature difference between set temperature and return air temperature, indoor fan tap are controlled automatically.

・ Auto 1: Changes the indoor unit fan tap within the range of Hi ↔ Me ↔ Lo.
・ Auto 2: Changes the indoor unit fan tap within the range of PHi ↔ Hi ↔ Me ↔ Lo.

(34) IU overload alarm (RC-EX1A only)

When the indoor air temperature becomes higher or lower than the temperature set with the remote controller by more than 5 to 10℃ at 30 minutes after starting operation, the signal is transmitted to the external output (CNT). Receipt of the signal by the external output is indicated by lighting an LED or other prepared onsite.

(Ⅱ) SRK Series

(1) Unit ON/OFF button

If the remote control is malfunctioning, this button may be used to turn the unit on and off.

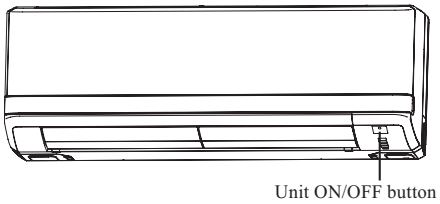
(a) Operation

Push the button once to place the unit in the automatic mode. Push it once more to turn the unit off.

(b) Details of operation

The unit will go into the automatic mode in which it automatically determines, from room temperature (as detected by sensor), whether to go into the cooling, thermal dry or heating modes.

Function / Operation mode	Roon temperature setting	Fan speed	Swing contral	Timer switch
Cooling	About 24ºC	Auto	Auto	Continuous
Thermal dry	About 25ºC			
Heating	About 26ºC			



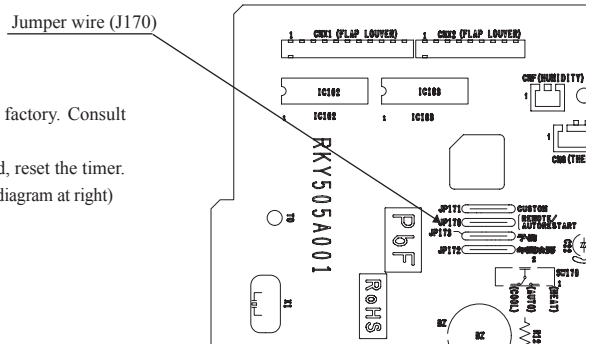
(2) Auto restart function

(a) Auto restart function records the operational status of the air-conditioner immediately prior to be switched off by a power cut, and then automatically resumes operations after the power has been restored.

(b) The following settings will be cancelled:

- Timer settings

Notes (1) Auto restart function is set at on when the air-conditioner is shipped from the factory. Consult with your dealer if this function needs to be switched off.
(2) When power failure occurs, the timer setting is cancelled. Once power is resumed, reset the timer.
(3) If the jumper wire (J170) "AUTO RESTART" is cut, auto restart is disabled. (See the diagram at right)



(3) Auto swing control

(a) Louver control

1) Press the "LOUVER" button to operate the swing louver when the air conditioner is operating.
"AUTO" is displayed for 3 seconds and then the swing louver moves up and down continuously.

2) To fix the swing louver at a position, press one time the "LOUVER" button while the swing louver is moving so that four stop positions are displayed one after another per second.
When a desired stop position is displayed, press the "LOUVER" button again. The display stops, changes to show the "STOP 1" for 5 seconds and then the swing louver stops.

(b) Automatic louver level setting during heating

At the hot start with the heating thermostat OFF, regardless whether the auto swing switch is operated or not (auto swing or louver stop), the louver takes the level position (In order to prevent the cold start). The louver position display LCD continues to show the display which has been shown before entering this control.

(c) Louver-free stop control

When the louver-free stop has been selected with the indoor function of wired remote controller "POSITION", the louver motor stops when it receives the stop signal from the remote controller. If the auto swing signal is received from the remote controller, the auto swing will start from the position where it was before the stop.

Note (1) When the indoor function of wired remote controller "Louver control setting" has been switched, switch also the remote control function "POSITION" in the same way.

(4) Timer operation

(a) Timer
Set the duration of time from the present to the time to turn off the air-conditioner.
It can be selected from 10 steps in the range from "OFF 1 hour later" to "OFF 10 hours later". After the clock timer setting, the remaining time is displayed with progress of time in the unit of hour.

(b) OFF timer
Time to turn OFF the air-conditioner can be set in the unit of 10 minutes.

(c) ON timer
Time to turn ON the air-conditioner can be set. Indoor temperature can be set simultaneously.

(d) Weekly timer
Timer operation (ON timer, OFF timer) can be set up to 4 times a day for each weekday.

(e) Timer operations which can be set in combination

Item \ Item	Timer	OFF timer	ON timer	Weekly timer
Timer		×	○	×
OFF timer	×		○	×
ON timer	○	○		×
Weekly timer	×	×	×	

Note (1) ○: Allowed ×: Not

(5) Remote controller display during the operation stop

When the operation is stopped (the power supply is turned ON), it displays preferentially the "Room temperature", "Center/Remote", "Filter sign", "Inspection" and "Timer operation".

(6) Outline of heating or cooling operation

(a) Operation of major functional components in heating mode

	Heating		
	Thermostat ON	**Thermostat OFF**	**Failure**
Compressor	ON	OFF	OFF
Indoor fan motor	ON	ON(HOT KEEP)	OFF
Outdoor fan motor	ON	OFF	OFF
4-way valve	ON	ON	OFF (3 minutes ON)

(b) Operation of major functional components in Cooling mode

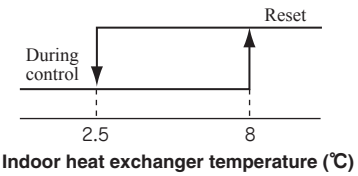
	Cooling		
	Thermostat ON	**Thermostat OFF**	**Failure**
Compressor	ON	OFF	OFF
Indoor fan motor	ON	ON	OFF
Outdoor fan motor	ON	OFF	OFF (few minutes ON)
4-way valve	OFF	OFF	OFF

(7) Frost prevention control

(a) Operating conditions
1) More than 8 minutes after starting the compressor.
2) Indoor heat exchanger temperature (detected with Th2) is lower than 2.5℃

(b) Contents of frosting operation

Function \ Control	During this control	Reset
Compressor ON/OFF command	Forced stop	Operation command
Indoor fan motor	Depending on the airflow setting with the remote controller	



(c) Resetting condition: Indoor heat exchanger temperature (Th2) is higher than 8℃.

(8) Indoor fan motor protection

When the air conditioner is operating and the indoor fan motor is turned ON, if the indoor fan motor has operated at 300 rpm or under for more than 30 seconds, the unit enters first in the stop mode and then stops the entire system.

(9) Serial signal transmission error protection

(a) Purpose: Prevents malfunction resulting from error on the indoor ↔ outdoor signals.

(b) Detail of operation: If the compressor is operating and a serial signal cannot be received from the indoor control with outdoor control having serial signals continues for 7 minute and 35 seconds, the compressor is stopped. After the compressor has been stopped, it will be restarted after the compressor start delay if a serial signal can be received again from the indoor control.

(10) Plural unit control – Control of 16 units group by one remote controller

(a) Function

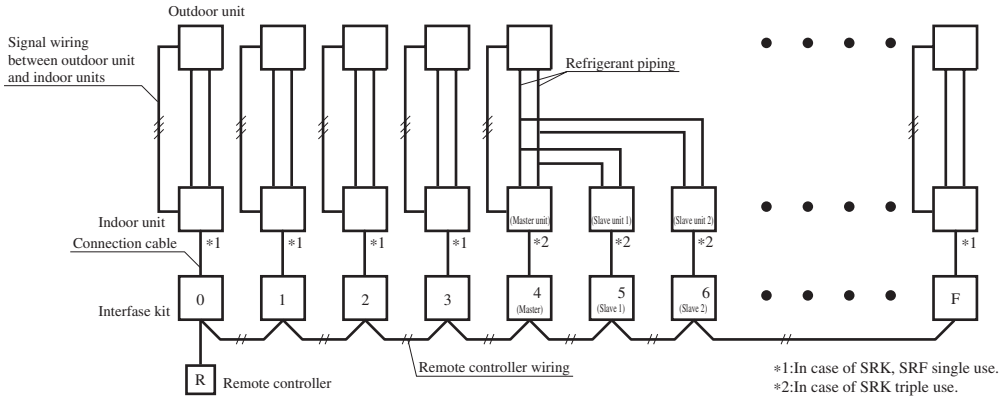
One remote controller switch can control a group of multiple number of unit (Max. 16 indoor units). "Operation mode" which is set by the remote controller switch can operate or stop all units in the group one after another in the order of unit No.(1). Thermostat and protective function of each unit function independently.

Note (1) Unit No. is set by SW1 on the interface PCB. Unit No. setting by SW1 is necessary for the interface only. In cases of the twin and triple specification, it is necessary set for the master and the slave units. This can be selected by SW3. (All are set for the master unit at the shipping from factory.)

SW1: For setting of 0 – 9, A – F
SW3: For setting of master and slave units
(See table shown at right.)

SW3 setting (For interface PCB)

Switch / Unit	SW3-1	SW3-2
Master	OFF	OFF
Slave1	OFF	ON
Slave2	ON	OFF



(2) Unit No. may be set at random unless duplicated, it should be better to set orderly like 0, 1, 2…, F to avoid mistake.

(b) Display to the remote controller

1) Center or each remote controller basis, heating preparation: the youngest unit No. among the operating units in the remote mode (or the center mode unless the remote mode is available) is displayed.
2) Inspection display: Any of unit that starts initially is displayed.
3) Confirmation of connected units
Pressing "AIR CON No." button on the remote controller displays the indoor unit address. If "▲" "▼" button is pressed at the next, it is displayed orderly starting from the unit of youngest No.

4) In case of anomaly
   a) If any anomaly occurs on a unit in a group (a protective function operates), that unit stops with the anomalous stop but any other normal units continue to run as they are.
   b) Signal wiring procedure
      Signal wiring between indoor and outdoor units should be made on each unit same as the normal wiring. For the group control, lay connect with sires wiring between rooms using terminal blocks (X, Y) of interface kit.
      Connect the remote controller communication wire separately from the power supply wire or wires of other electric devices (AC220V or higher).

(11) Filter sign

As the operation time (Total ON time of ON/OFF switch) accumulates to 180 hours (1), "Filter cleaning" is displayed on the remote controller. (This is displayed when the unit is in trouble and under the centralized control, regardless of ON/OFF)

Note (1)Time setting for the filter sign can be made as shown below using the indoor function of wired remote controller "FILTER SIGN SET". (It is set at 1 at the shipping from factory.)

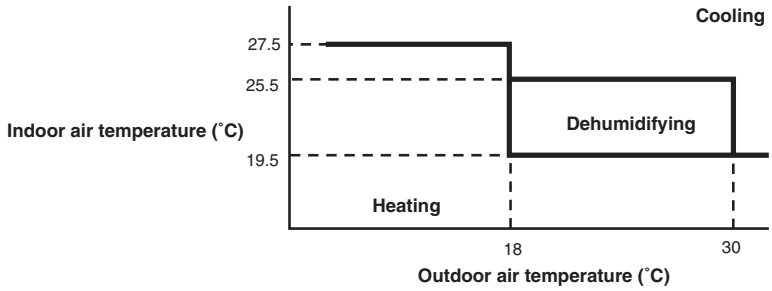
Filter sign setting	Function
Setting 1	Setting time: 180 hrs (Factory default)
Setting 2	Setting time: 600 hrs
Setting 3	Setting time: 1,000 hrs
Setting 4	Setting time: 1,000 hrs (Unit stop) (2)

(2) After the setting time has elapsed, the "FILTER CLEANING" is displayed and, after operating for 24 hours further (counted also during the stop), the unit stops.

(12) Outline of automatic operation

(a) Determination of operation mode

The unit checks the indoor air temperature and the outdoor air temperature, determines the operation mode, and then begins in the automatic operation.



(b) The unit checks the temperature every hour after the start of operation and, if the result of check is not same as the previous operation mode, changes the operation mode.

(c) When the unit is started again within one hour after the stop of automatic operation or when the automatic operation is selected during heating, cooling or dehumidifying operation, the unit is operated in the previous operation mode.

1.11.4 Operation control function by the outdoor controller

(1) Determination of compressor speed (frequency)

Required frequency

(a) Cooling/dehumidifying operation

Unit: rps

Model		100	125	140	200	250
Max. required frequency	Usual operation	90	105	105	100	120
	Silent mode, outdoor temperature ≦ 15°C	60	80	85	70	80
Min. required frequency		20	20	20	30	30

(b) Heating operation

Unit: rps

Model		100	125	140	200	250
Max. required frequency	Usual operation	90	105	110	100	120
	Silent mode	60	80	85	70	80
Min. required frequency		20	20	20	30	30

(c) If the indoor unit fan speed becomes "Me" or "Lo", Max required frequentcy goes down accordingly depending on indoor unit model.

(d) Max. required frequency under high outdoor air temperature in cooling mode
Maximum required frequency is selected according to the outdoor air temperature (Tho-A).

Unit: rps

Model		100	125	140	200	250
Max. required frequency	Outdoor air temperature is 40°C or higher	75	90	96	75	98
	Outdoor air temperature is 46°C or higher	75	75	75	66	66

(e) Max. required frequency under outdoor air temperature in heating mode
Maximum required frequency is selected according to the outdoor air temperature (Tho-A).

Unit: rps

Model		100	125	140	200	250
Max. required frequency	Outdoor air temperature is 18°C or higher	60	80	85	70	80

(f) Selection of max. required frequency by heat exchanger temperature
1) Maximum required frequency is selected according to the outdoor unit heat exchanger temperature (Tho-R) during cooling/dehumidifying or according to the indoor unit heat exchanger temperature (Thı-R) during heating mode.
2) When there are 3 indoor unit heat exchanger temperatures (Thı-R), whichever the highest applies,

Unit: rps

Model			100	125	140	200	250
Max. required frequency	Cooling/ dehumidifying	Outdoor unit heat exchanger temperature is 56°C or higher	90	100	100	100	120
	Heating	Indoor unit heat exchanger temperature is 56°C or higher	90	100	100	100	120

Note (1) Value in ( ) are for the 3 phase models.

(g) When any of the controls from (a) to (f) above may duplicate, whichever the smallest value among duplicated controls is taken as the maximum required frequency.

(h) During heating, it is operated with the maximum required frequency until the indoor unit heat exchanger temperature becomes 40°C or higher.

(2) Compressor start control

(a) Compressor starts upon receipt of the thermostat ON signal from the indoor unit.

(b) However, at initial start after turning the power supply breaker, it may enter the standby state for maximum 30 minutes (" ✋ PREPARATION" is displayed on the remote controller) in order to prevent the oil loss in the compressor.
If the cooling/dehumidifying/heating operation is selected from the remote controller when the outdoor unit is in the standby state, " ✋ PREPARATION" is displayed for 3 seconds on the remote controller.

(3) Compressor soft start control

(a) Compressor protection start I

[Control condition] Normally, the compressor operation frequency is raised in this start pattern.

[Control contents] a) Starts with the compressor's target frequency at **A** rps.
However, when the ambient air temperature (Tho-A) is 35°C or higher during cooling/dehumidifying or the indoor return air temperature (ThI-A) is 25°C or higher during heating, it starts at **C** rps.

b) At 30 seconds after the start of compressor, its target frequency changes to **B** rps and the compressor is operated for 2 - 4 minutes with its operation frequency fixed at **B** rps.

Model	Operation mode	A rps	B rps	C rps
100-140	Cooling/Dehumidifying	55	55	30
	Heating	55	55	30
200, 250	Cooling/Dehumidifying	55	55	30
	Heating	55	55	30

(b) Compressor protection start III

[Control condition] Number of compressor starts is only 1 counted after the power supply breaker ON.

[Control contents] Operates by selecting one of following start patterns according to the operation mode and the outdoor air temperature (Tho-A).

1) Low frequency operation control during cooling/dehumidifying

[Control condition] Upon establishing the conditions of compressor protection start III, the low frequency operation control is performed during cooling/dehumidifying.

[Control contents] ① Starts with the compressor's target frequency at **A** rps. When the outdoor air temperature (Tho-A) is 35°C or higher, it starts at **C** rps.
② At 30 seconds after the compressor start, the compressor's target frequency is changed to **B** rps and the compressor's operation frequency is fixed for 10 minutes.

Model	Operation mode	A rps	B rps	C rps
100-140	Cooling/Dehumidifying	55	55	30
200, 250	Cooling/Dehumidifying	55	30	30

2) Low frequency operation control during heating

[Control condition] When the conditions of compressor protection start III are established and one of following conditions ① and ② is satisfied, the low number of revolutions operation control is performed during heating.
① At 30 minutes or more after turning the power supply breaker on
② Compressor underneath temperature (Tho-H) is 4°C or higher and the difference from the outdoor air temperature (Tho-A) becomes 4°C or higher. [model 200, 250 only]

[Control contents] ① Starts the compressor with its target frequency at **A** rps. However, when the indoor unit return air temperature (ThI-A) is 25°C or higher, it start at **C** rps.
② At 30 seconds after the start of compressor, the compressor's target frequency is changed to **B** rps and the compressor's operation frequency is fixed for 10 minutes.

Model	Operation mode	A rps	B rps	C rps
100-140	Heating	55	55	30
200, 250	Heating	55	30	30

(4) Outdoor unit fan control

(a) Outdoor unit fan tap and fan motor speed

Unit: min^{-1}

Model	Mode	Fan motor tap						
100-140		① speed	② speed	③ speed	④ speed	⑤ speed	⑥ speed	⑦ speed
	Cooling/Dehumidifying	200	350	600	740	820	870	910 (950)(2)
	Heating	200	350	600	740	820	870	910 (950)(2)
200, 250		① speed	② speed	③ speed	④ speed	⑤ speed	⑥ speed	⑦ speed
	Cooling/Dehumidifying	200	370	560 (600)(3)	820	850	910	950
	Heating	200	370	560 (600)(3)	820	850	910	950

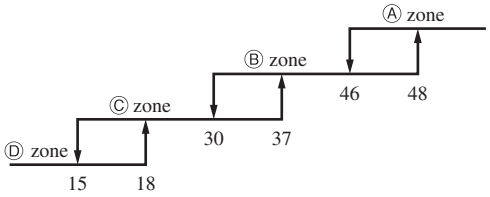
Notes (1) Fan motor speed for model 200 and 250 are same for both top and bottom lines
(2) Value in ( ) are for the model 125, 140.
(3) Value in ( ) are for the model 250.

(b) Fan tap control during Cooling/Defumidifying operation

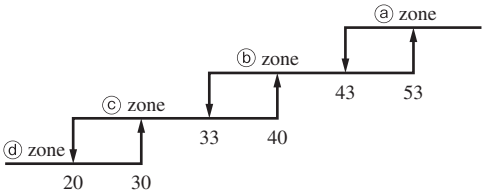
Fan taps are selected depending on the outdoor unit heat exchanger temperature (Tho-R1, R2) and the outdoor air temperature (Tho-A).
Note (1) It is detected by Tho-R1 or R2, whichever the higher.

	Ⓐ zone	Ⓑ zone	Ⓒ zone	Ⓓ zone
ⓐ zone	Tap 5	Tap 5	Tap 5	Tap 4
ⓑ zone	Tap 5	Tap 5	Tap 4(1)	Tap 3
ⓒ zone	Tap 4	Tap 4(1)	Tap 3	Tap 2
ⓓ zone	Tap 3	Tap 3	Tap 2	Tap 1

Note (1) If the "silent mode start" signal is received from the remote controller, the speed changes from Tap 4 to Tap 3.



Outdoor air temp. (˚C)



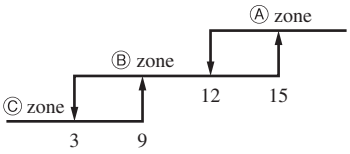
Outdoor unit heat exchanger temp. (˚C)

(c) Fan tap control during heating operation

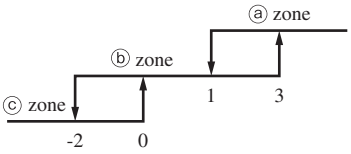
Fan taps are selected depending on the outdoor unit heat exchanger temperature (Tho-R1, R2) and the outdoor air temperature (Tho-A).
Note (1) It is detected by Tho-R1 or R2, whichever the lower.

	Ⓐ zone	Ⓑ zone	Ⓒ zone
ⓐ zone	Tap 3	Tap 3	Tap 4
ⓑ zone	Tap 3	Tap 4(1)	Tap 5
ⓒ zone	Tap 4	Tap 5	Tap 6

Note (1) If the "silent mode start" signal is received from the remote controller, the speed changes from Tap 4 to Tap 3.



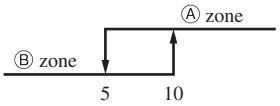
Outdoor air temp. (˚C)



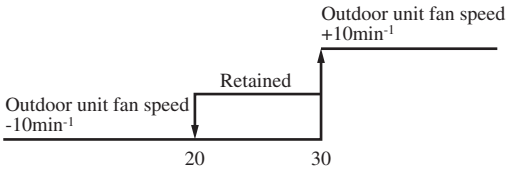
Outdoor unit heat exchanger temp. (˚C)

(d) Outdoor unit fan control at cooling low outdoor air

1) When all the following conditions are established after the start of compressor, the following control is implemented. If the outdoor air temperature (Tho-A) is in the zone Ⓑ in the cooling/dehumidifying mode, it has elapsed 20 seconds from the start of outdoor unit fan and the outdoor unit fan is at the tap 1 speed, the outdoor unit fan speed is controlled according to the outdoor unit heat exchanger temperature (Tho-R1, R2).
Note (1) It is detected with Tho-R1 or R2, whichever the higher.



Outdoor air temp. (˚C)



Outdoor unit heat exchanger temp. (˚C)

2) The outdoor unit heat exchanger temperature is detected always and, when the number of revolutions of the outdoor fan speed has been increased or decreased, there is no change of fan speed for 20 seconds.
3) Rage of the outdoor unit fan speed under this control is as follows.
   a) Lower limit: 130rpm
   b) Upper limit: 500rpm
4) As any of the following conditions is established, this control terminates.
   a) When the outdoor air temperature is in the zone Ⓐ and the outdoor unit heat exchanger temperature at 30°C or higher is established for 40 seconds or more continuously.
   b) When the outdoor fan speed is 500rpm and the outdoor unit heat exchanger temperature at 30°C or higher is established for 40 seconds or more continuously.
   c) When the outdoor unit heat changer temperature at 45°C or higher is established for 40 seconds or more.

(e) Outdoor unit fan control by the power transistor radiator fin temperature

When all the following conditions are established later than 3 minutes after the start of compressor, the following control is implemented.

1) Cooling/dehumidifying
   a) Outdoor air temperature Tho-A ≧ 33°C
   b) Compressor's actual frequency ≧ **A** rps
   c) Power transistor radiator fin temperature ≧ **C** °C
2) Heating
   a) Outdoor air temperature Tho-A 16°C
   b) Compressor's actual frequency ≧ **B** rps
   c) Power transistor radiator fin temperature ≧ **C** °C
3) Control contents
   a) Raises the outdoor unit fan tap by 1 tap.
   b) When the sampling is for 60 minutes and the value of power transistor radiator fin temperature (Tho-P) is as follows.
   i) When the power transistor radiator fin temperature (Tho-P) ≧ **C** °C, the outdoor unit fan tap is raised by 1 speed further.
   ii) When **C** °C > power transistor radiator fin temperature (Tho-P) ≧ **D** °C, present outdoor unit fan tap is maintained.
   iii) When the power transistor radiator fin temperature (Tho-P) ≧ **D** °C, the outdoor unit fan tap is dropped by 1 speed.
4) Ending conditions

   When the operation under the condition of item ii), ③ above and with the outdoor unit fan tap, which is determined by the item 2) is detected 2 times consecutively.

   • Compressor's frequency and power transistor radiator fin temperature

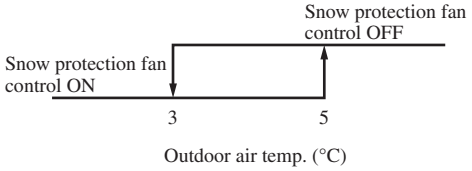
Model \ Item	A	B	C	D
100-140	85	85	72	68
200, 250	70	70	80	75

(f) Caution at the outdoor unit fan start control (3 phase models only)

When the outdoor unit fan is running at 400min^{-1} before operating the compressor, it may operate with the compressor only, without starting up the outdoor fan This is normal.

(g) Snow protection fan control

If the dip switch (SW3-2) on the outdoor unit control PCB is turned ON, the outdoor unit fan is operated for 30 seconds at 4 tap speed once in every 10 minutes depending on the outdoor air temperature (detected with Tho-A) in the stop mode or anomalous stop mode.

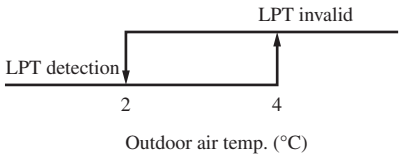


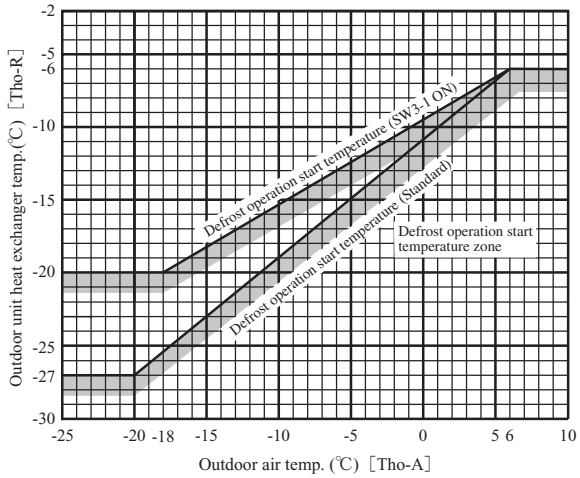
(5) Defrosting

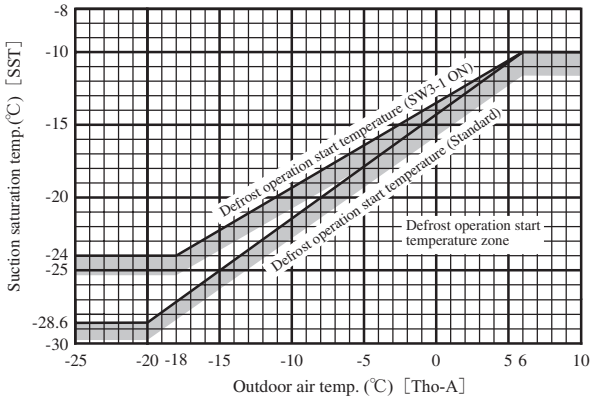
(a) Defrosting start conditions

If all of the following defrosting conditions A or conditions B are met, the defrosting operation starts.

1) Defrosting conditions A
   a) Cumulative compressor operation time after the end of defrosting has elapsed 37 minutes, and the cumulative compressor operation time after the start of heating operation (remote controller ON) has elapsed 30 minutes.
   b) After 5 minutes from the compressor ON
   c) After 5 minutes from the start of outdoor unit fan
   d) After satisfying all above conditions, if temperatures of the outdoor unit heat exchanger temperature thermistor (Tho-R1, R2) and the outdoor air temperature thermistor (Tho-A) become lower than the defrosting start temperature as shown by the right figure for 15 seconds continuously, or the suction gas saturation temperature (SST) and the outdoor air temperature (Tho-A), which are obtained from the value detected by the low pressure sensor (LPT) stay for 3 minutes within the range below the defrosting operation start temperature as shown by the right figure. However, it excludes for 10 minutes after the start of compressor and the outdoor air temperature is as shown by the lower figure.







2) Defrosting conditions B
   a) When previous defrosting end condition is the time out of defrosting operation and it is in the heating operation after the cumulative compressor operation time after the end of defrosting has become 30 minutes.
   b) After 5 minutes from the start of compressor
   c) After 5 minutes from the start of outdoor unit fan

(b) Defrosting end conditions

When any of the following conditions is satisfied, the defrosting end operation starts.

1) When it has elapsed 8 minutes and 20 seconds after the start of defrosting. (After 10 minutes and 20 seconds for model, 200 and 250)
2) When the outdoor unit heat exchanger temperatures (Tho-R1, R2), whichever the lower, becomes 12°C or higher for 10 seconds continuously.

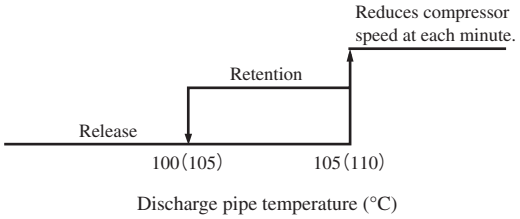
(c) Switching of defrosting control with SW3-1

1) If SW3-1 on the outdoor unit control PCB is turned to ON, it becomes easier to enter the defrosting operation. Use this when installing a unit at snowing regions.
2) Control contents
   a) It allows entering the defrosting operation under the defrosting condition A when the cumulative heating operation time becomes 30 minutes. It is 37 minutes at SW3-1 OFF (Factory default).
   b) It allows entering the defrosting operation under the defrosting condition B when the cumulative heating operation time becomes 25 minutes. It is 30 minutes at SW3-1 OFF (Factory default).
   c) It allows the defrosting operation with the outdoor unit heat exchanger temperature (Tho-R) and suction pressure saturation temperature (SST) being higher than normal.

(6) Protective control/anomalous stop control by compressor's number of revolutions

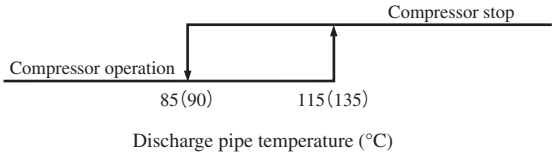
(a) Compressor discharge pipe temperature protection

1) Protective control
As the discharge pipe temperature (detected with Tho-D) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of discharge pipe temperature.



Note (1) Value in ( ) are for the model 200, 250.

2) Anomalous stop control
a) If the discharge pipe temperature (detected with Tho-D) exceeds the setting value, the compressor stops.
b) When it is detected 2 times within 60 minutes or after continuous 60 minutes, including the stop of compressor, E36 is displayed on the remote controller and it enters the anomalous stop mode.

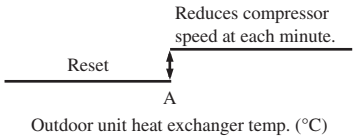


Note (1) Value in ( ) are for the model 200, 250.

3) Reset of anomalous stop mode
As it drops to the reset value of 85°C (90°C) or lower for 45 minutes continuously, it becomes possible to restart from the remote controller.
Note (1) Value in ( ) are for the model 200, 250.

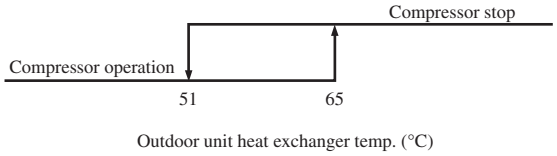
(b) Cooling high pressure protection

1) Protective control
a) When the outdoor air temperature (Tho-A) is 40°C or higher and the outdoor unit heat exchanger temperature (Tho-R) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of high pressure.
b) Control value A is updated to an optimum value automatically according to the operating conditions.



Control value A
54-60°C

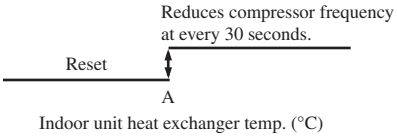
2) Anomalous stop control
a) As the outdoor unit heat exchanger temperature (Tho-R) exceeds the setting value, the compressor stops.
b) If it is detected 5 times within 60 minutes or 65°C or higher continues for 60 minutes, including the stop of compressor, E35 is displayed on the remote controller and it enters the anomalous stop mode.



3) Reset of anomalous stop mode
As it reaches the reset value of 51°C or lower, it becomes possible to restart from the remote controller.

(c) Heating high pressure protection

1) Protective control
a) As the indoor unit heat exchanger temperature (Thı-R) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of high pressure.
b) Control value A is updated to an optimum value automatically according to the operating conditions.

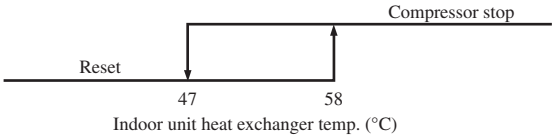


Model	Existing piping adaptation switch: SW5-1 (SW8-1: model 80)	
	OFF (Shipping)	ON
	Control value A (°C)	
100-140	48-54	46-52
200, 250	52-58	

Note (1) Adaptation to existing piping is at ON.

2) Anomalous stop control
Operation control function by the indoor unit controller - See the heating overload protection, page 306.

3) Adaptation to existing piping, stop control
If the existing piping adaptation switch, SW5-1, is turned ON, the compressor stops to protect existing piping when the indoor unit heat exchanger temperature (Thı-R) exceeds the setting value.

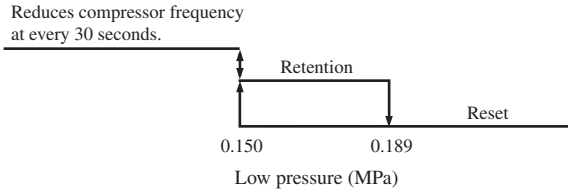


(d) Anomaly detection control by the high pressure switch (63H1)

1) If the pressure rises and operates the high pressure switch (opens at 4.15MPA/closes at 3.15MPa), the compressor stops.
2) Under any of the following conditions, E40 is displayed and it enters the anomalous stop mode.
   a) When it occurs 5 times within 60 minutes that pressure rises and the compressor is stopped by 63H1.
   b) When 63H1 has been in the open state for 60 minutes continuously, including the stop of compressor.

(e) Low pressure control

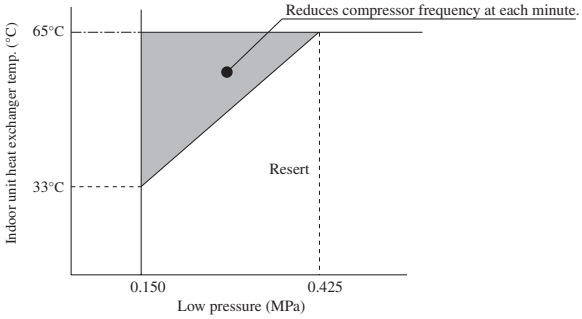
1) Protective control
   If the value detected by the low pressure sensor (LPT) exceeds the setting value, the compressor speed (frequency) is controlled to restrain the drop of pressure.



2) Anomalous stop control
   a) When a value detected by the low pressure sensor (LPT) satisfies any of the following conditions, the compressor stops to run for its protection.
      i) When the low pressure drops to 0.079MPa or under for 15 seconds continuously.
      ii) At 10 minutes after the start of compressor, the suction overheat becomes 30°C and the low pressure becomes 0.15MPa or under for 60 seconds continuously.
   b) E49 is displayed under any of the following conditions and it enters the anomalous stop mode.
      i) When the low pressure drops 3 times within 60 minutes and the compressor stops under any of the above conditions.
      ii) When a value detected with the low pressure sensor becomes 0.079MPa or under for 5 minutes, including the stop of compressor.
   c) However, when the control condition ① is established during the compressor protection start III, E49 is displayed at initial stop and it enters the anomalous stop mode.

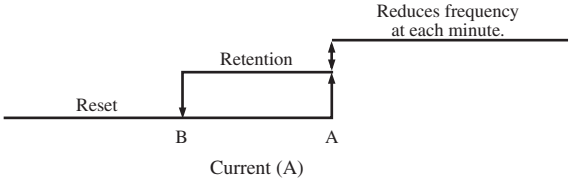
(f) Compressor pressure ratio protection control

1) During heating operation, if the indoor unit heat exchanger temperature (Thı-R) and the low pressure sensor (LPT) exceed the setting values at 10 minutes after the start of compressor, the compressor speed (frequency) is controlled to protect the compressor.
2) This control is not performed during the outdoor fan ON and for 10 minutes from the start of outdoor unit fan.
3) This control is not performed during defrosting operation and at 10 minutes after the reset of defrosting operation.
4) When there are 3 indoor unit heat exchanger temperatures (Thı-R), the highest temperature is detected.

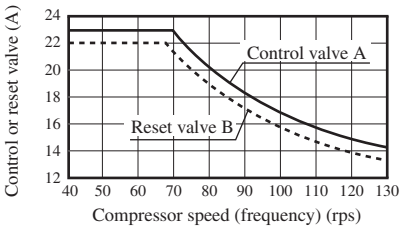


(g) Over-current protection current safe controls I, II

Detecting the outdoor unit inverter input (primary) current and the output (secondary) current, if the current values exceed setting values, the compressor speed (frequency) is controlled to protect the inverter.



(Fig. C) The control value "A" and the reset value vary depending on the compressor speed.

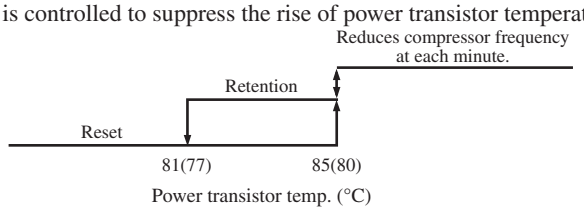


Model		Cooling		Heating	
		Control value A	Reset value B	Control value A	Reset value B
Primary current side	100	13.5 (23.0)	12.5 (22.0)	13.5 (23.0)	12.5 (22.0)
	125, 140	13.5 (23.0)	12.5 (22.0)	13.5 (23.0)	12.5 (22.0)
	200	17.0	16.0	17.0	16.0
	250	20.0	19.0	20.0	19.0
Secandary current side	100	13.0 (Fig.C)	12.0 (Fig.C)	13.0 (Fig.C)	12.0 (Fig.C)
	125, 140	13.0 (Fig.C)	12.0 (Fig.C)	13.0 (Fig.C)	12.0 (Fig.C)
	200	Not implemented			
	250				

Note (1) Value in ( ) are for the single phase models.

(h) Power transistor temperature protection

1) Protective control
If the power transistor temperature (detected with TIP) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of power transistor temperature.



Note (1) Value in ( ) are for the single phase model 100~140.

2) Anomalous stop control (model 200, 250 only)
   a) If the power transistor temperature rises further, the protective switch in the power transistor operates to protect the compressor and the power transistor.
   b) Under any of the following condition, E41 is displayed and it enters the anomalous stop mode.
      i) When the protective switch in the power transistor operates 5 times within 60 minutes and the compressor stops.

(i) Anomalous power transistor current

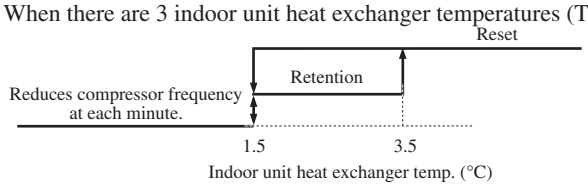
1) Prevents over-current on the inverter. If the current value in the power transistor exceeds the setting value, the compressor stops.
2) If the current value in the power transistor exceeds the specified value and the compressor stops 4 times within 30 minutes, E42 is displayed on the remote controller and it enters the anomalous stop mode.

(j) Anomalous inverter PCB

If the power transistor detects any anomaly for 15 minutes, including the stop of compressor, E51 is displayed on the remote controller and it enters the anomalous stop mode.

(k) Anti-frost control by the compressor frequency control

1) If the indoor unit heat exchanger temperature (detected with Thı-R) exceeds the setting value at 4 minutes after the start of compressor, the compressor speed (frequency) is controlled to initiate the anti-frost control of indoor unit heat exchanger.
2) When there are 3 indoor unit heat exchanger temperatures (Thı-R), the lowest temperature is detected.



3) Regarding the anti-frost control by the operation stop, refer to the operation control function by the indoor unit controller and the cooling, dehumidifying frost prevention of page 305.

(l) Dewing prevention control

[Control condition] During cooling and dehumidifying operation, if all the following conditions are established, the compressor speed (frequency) is reduced to prevent dewing and water splash.
① Cooling electronic expansion valve aperture (EEVC) is 500 pulses.
② Suction overheat is 10°C or higher.
③Compressor speed (frequency) is 60 rps or higher.

[Control contents] ① When the suction overheat is 10°C or higher, the compressor speed (frequency) is reduced at each 1 minute.
② Compressor speed (frequency) does not rise till the cooling expansion valve becomes 460 pulses.
③ This control takes 60 rps as its lower limit so that compressor speed is not controlled when it is less than 60 rps.

(m) Refrigerant quantity shortage protection

Under the compressor protection start III control during cooling and dehumidifying operations, the following control is performed by detecting the indoor unit heat exchanger temperature (Thı-R) and the indoor unit return air temperature (Thı-A).

[Control condition] When the state that the indoor unit heat exchanger temperature (Thı-R) does not become lower than the indoor unit return air temperature (Thı-A) by 4°C or more continues for 1 minute.

[Control contents] It judges that the flowing of refrigerant in to the indoor unit is insufficient so that the compressor is stopped and E57 is displayed on the remote controller.

(n) Broken wire detection on temperature thermistor and low pressure sensor

1) Outdoor unit heat exchanger thermistor, outdoor air thermistor and low pressure sensor
If the following is detected for 5 second continuously within 2 minutes to 2 minutes and 20 seconds after the compressor ON, the compressor stops. After a delay of 3 minutes, it restarts but, if the same is detected repeatedly 3 times within 40 minutes, the compressor stops with the anomalous stop.
Note (1) During defrosting and for 3 minutes after the end of defrosting, it is not detected.
- Outdoor unit heat exchanger thermistor: -50°C or lower
- Outdoor air temperature thermistor: -45 or lower
- Low pressure sensor: 0V or under or 4.0V or over

2) Discharge pipe temperature thermistor, suction pipe temperature thermistor and underneath temperature thermistor (model 200, 250 only)
If the following is detected for 5 second continuously within 10 minutes to 10 minutes and 20 seconds after the compressor ON, the compressor stops. After a delay of 3 minutes, it restarts but, if the same is detected repeatedly 3 times within 40 minutes, the compressor stops with the anomalous stop.
Note (1) During defrosting and for 3 minutes after the end of defrosting, it is not detected.
- Discharge pipe temperature thermistor: -10°C or lower
- Suction pipe temperature thermistor: -50 or lower
- Underneath temperature thermistor: -50°C or lower

(o) Fan motor error

1) If the fan speed of 100rpm or under is detected for 30 second continuously under the outdoor unit fan control (with the operation command of fan tap at ① speed or higher), the compressor stops.
2) When the fan motor speed drops to 100rpm or under 5 times within 60 minutes and the compressor stops, it enters the anomalous stop mode with E48 displayed on the remote controller.

(p) Anomalous stop by the compressor start stop

1) When it fails to shift to the compressor DC motor's rotor position defection operation at 5 seconds after establishing the compressor start condition, the compressor stops temporarily and restarts 3 minutes later.
2) If it fails to shift to the position detection operation again at second time, it judges the anomalous compressor start and stops the compressor by the anomalous stop (E59).

(q) Anomalous compressor rotor lock (model 200, 250 only)

After shifting to the compressor rotor's position detection operation, if fails again to detect the rotor position, the compressor stops.
Compressor restarts 3 minutes later but, if it is operated 4 times within 15 minutes, the anomalous stop (E60) occurs.

(7) Silent mode

(a) As "Silent mode start" signal is received from the remote controller, it operates by dropping the outdoor unit fan tap and the compressor speed (frequency).
(b) For details, refer to items (1) and (4) above.

(8) Test run

(a) It is possible to operate from the outdoor unit using the dip switch on the outdoor unit control PCB.

SW3-3	ON	SW3-4	OFF	Cooling test run
			ON	Heating test run
	OFF	Normal and end of test run		

Make sure to turn SW3-3 to OFF after the end of operation.

(b) Test run control

1) Operation is performed at the maximum compressor speed (frequency), which is determined for each model.
2) Each protective control and error detection control are effective.
3) If SW3-4 is switched during test run, the compressor is stoped for once by the stop control and the cooling/heating operation is switched.
4) Setting and display of remote controller during test run

Item / Mode	Contents of remote controller setting/display
Cooling test run	Setting temperature of cooling is 5°C.
Heating test run	Setting temperature of heating (preparation) is 30°C.

(9) Pump-down control

Turning ON the pump-down switch SW1 for 2 seconds during the operation stop or anomalous stop (excluding the thermostat OFF), the pump-down operation is performed. (This is invalid when the indoor unit is operating. This is effective even when the indoor unit is stopped by the anomalous stop or the power supply is turned OFF.)

(a) Control contents

1) Close the service valve at the liquid side. (It is left open at the gas side.)
2) Compressor is started with the target speed (frequency) at 55 rps in the cooling mode.
3) Red and green lamps (LED) flash continuously on the outdoor unit control PCB.
4) Each of protection and error detection controls, excluding the low pressure control, anti-frost control and dewing prevention control, is effective.
5) Outdoor unit fan is controlled as usual.
6) Electronic expansion valve is fully opened.

(b) Control ending conditions

Stop control is initiated depending on any of the following conditions.

1) Low pressure of 0.087MPa or lower is detected for 5 seconds continuously.
   a) Red LED: Light, Green LED: Flashing, Remote controller: Displays stop.
   b) It is possible to restart when the low pressure is 0.087MPa or higher.
   c) Electronic expansion valve (cooling/heating) is kept fully open.
2) Stop by the error detection control
   a) Red LED: Flashing, Green LED: Flashing
   b) Restart is prohibited. To return to normal operation, reset the power supply.
   c) Electronic expansion valve (cooling/heating) is left fully open.
3) When the cumulative operation time of compressor under the pump-down control becomes 5 minutes.
   a) Red LED: OFF, Green LED: Flashing, Remote controller: Stop
   b) It is possible to pump-down again.
   c) Electronic expansion valve (cooling/heating) is left fully open.

   Note (1) After the stop of compressor, close the service valve at the gas side.

Caution: Since pressing the pump-down switch cancels communications with the indoor unit, the indoor unit and the remote controller display “Transmission error – E5”. This is normal.

(10) Base heater ON/OFF output control (optional)

(a) Base heater ON conditions

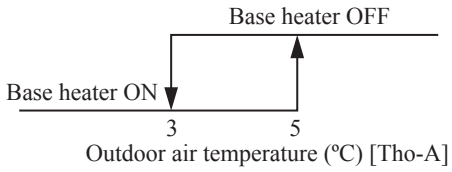
When all of following conditions are met, the base heater is turned ON.

・Outdoor air temperature (detected with Tho-A) is 3ºC or lower.
・In the heating mode
・When the compressor is turned ON

(b) Base heater OFF conditions

When either one of following conditions is met, the base heater is turned OFF.

・Outdoor air temperature (detected with Tho-A) is 5ºC or higher.
・When the compressor stop has been detected for 30 minutes continuously
・In the cooling or dehumidifying mode



1.12 MAINTENANCE DATA

1.12.1 Diagnosing of microcomputer circuit

(1) Selfdiagnosis function

(a) Check Indicator Table

Whether a failure exists or not on the indoor unit and outdoor unit can be know by the contents of remote controller error code, indoor/outdoor unit green LED (power pilot lamp and microcomputer normality pilot lamp) or red LED (check pilot lamp).

Note (1) SRK series only.

At the indoor unit side, errors are displayed with the combination of RUN light and TIMER light on the display panel.

(i) Indoor unit

1) FDT, FDTC, FDEN, FDU, FDUM, FDF series

Remote controller		Indoor control PCB		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	Red LED	Green LED (1)	Red LED	Green LED (1)				
No-indication	Stays OFF	Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	—	• **Normal operation**	—	—
		Stays OFF	Stays OFF	2 times flash	Stays OFF	Indoor unit power supply	• Power OFF, broken wire/blown fuse, broken transformer wire	Repair	366
		* 3 times flash	Keeps flashing	Stays OFF	Keeps flashing	Remote controller wires	• Poor connection, breakage of remote controller wire * For wire breaking at power ON, the LED is OFF.	Repair	367
						Remote controller	• Defective remote controller PCB	Replacement of remote controller	
WAIT or INSPECT I/U		Stays OFF	Keeps flashing	2 times flash	Keeps flashing	Indoor-outdoor units connection wire	• Poor connection, breakage of indoor-outdoor units connection wire	Repair	368-372
						Remote controller	• Improper setting of master and slave by remote controller		
E 1	Keeps flashing	Stays OFF	* Keeps flashing	Stays OFF	Keeps flashing	Remote controller wires (Noise)	• **Poor connection of remote controller signal wire (White)** * For wire breaking at power ON, the LED is OFF • **Intrusion of noise in remote controller wire**	Repair	374
						Remote controller indoor control PCB	*• Defective remote controller or indoor control PCB (defective communication circuit)?	Replacement of remote controller or PCB	
E5		2 times flash	Keeps flashing	2(6) times flash	Keeps flashing	Indoor-outdoor units connection wire	• **Poor connection of wire between indoor-outdoor units during operation (disconnection, loose connection)** • **Anomalous communication between indoor-outdoor units by noise, etc.**	Repair	375
		2 times flash	Keeps flashing	Stays OFF	Keeps flashing	(Noise)	• **CPU-runaway on outdoor control PCB**	Power reset or Repair	
						Outdoor control PCB	*• Occurrence of defective outdoor control PCB on the way of power supply (defective communication circuit)?	Replacement of PCB	
		2 times flash	Keeps flashing	Stays OFF	Stays OFF	Outdoor control PCB	• **Defective outdoor control PCB on the way of power supply**	Replacement	
						Fuse	• **Blown fuse**		
E6		1 time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor heat exchanger temperature thermistor	• **Defective indoor heat exchanger temperature thermistor** (defective element, broken wire, short-circuit) • Poor contact of temperature thermistor connector	Replacement, repair of temperature thermistor	376
						Indoor control PCB	*• **Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E7		1 time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor return air temperature thermistor	• **Defective indoor return air temperature thermistor** (defective element, broken wire, short-circuit) • Poor contact of temperature thermistor connector	Replacement, repair of temperature thermistor	377
						Indoor control PCB	*• **Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E8		1 time flash	Keeps flashing	Stays OFF	Keeps flashing	Installation or operating condition	• **Heating over-load** (Anomalously high indoor heat exchanger temperature)	Repair	378
						Indoor heat exchanger temperature thermistor	• **Defective indoor heat exchanger temperature thermistor (short-circuit)**	Replacement of temperature thermistor	
						Indoor control PCB	*• **Defective indoor control PCB** (Defective temperature thermistor input circuit)?	Replacement of PCB	
E9		1 time flash	Keeps flashing	Stays OFF	Keeps flashing	Drain trouble	• **Defective drain pump (DM), broken drain pump wire**, disconnected connector	Replacement, repair of DM	379
						Float switch	• **Anomalous float switch operation** (malfunction)	Repair	
						Indoor control PCB	*• **Defective indoor control PCB** (Defective float switch input circuit) *• **Defective indoor control PCB** (Defective DM drive output circuit)?	Replacement of PCB	
						Option	• **Defective optional parts** (At optional anomalous input setting)	Repair	
E 10		Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	Number of connected indoor units	• **When multi-unit control by remote controller is performed, the number of units is over**	Repair	380
E 14		3 times flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor unit No. setting	•No master is assigned to slaves.	Repair	381
						Rcmote controller wires	•Anomalous remote controller wire connection, broken wire between master and slave units		
E 16		1(2) time flash	Keeps flashing	Stays OFF	Keeps flashing	Fan motor	• **Defective fan motor**	Replacement, repair	382
						Indoor power PCB	• **Defective indoor power PCB**	Replacement	
E 18		1 time flash	Keeps flashing	Stays OFF	Keeps flashing	Address setting error	• Address setting error of master and slave indoor units	Repair	383
E 19		1 time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor control PCB	• **Improper operation mode setting**	Repair	384

Remote controller		Indoor control PCB		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	Red LED	Green LED (1)	Red LED	Green LED (1)				
E20		1(2) time flash	Keeps flashing	Stays OFF	Keeps flashing	Fan motor	• Indoor fan motor rotation speed anomaly	Replacement, repair	385
						Indoor power PCB	• Defective indoor power PCB	Replacement	
E21		1time flash	Keeps flashing	Stays OFF	Keeps flashing	Panel switch detection	• Defective panel switch operation (FDT only)	Repair	386
E28		Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	Remote controller temperature therm-istor	• Broken wire of remote controller temperature thermistor	Repair	387

Note (1) **Normal indicator lamp (Indoor, outdoor units: Green) extinguishes (or lights continuously) only when CPU is anomalous. It keeps flashing in any trouble other than anomalous CPU.**

(2) * mark in the Description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

2) SRK series

Remote controller		Indoor unit display		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	RUN light	TIMER light	Red LED	Green LED				
No-indication	Stays OFF	ON	Stays OFF	Stays OFF	Keeps flashing	—	**•Normal operation**	—	—
		—	—	2 times flash	Stays OFF	Indoor unit power supply	•Power OFF, broken wire/blown fuse, broken transformer wire	Repair	417
		—	—	2 times flash	Keeps flashing	Remote controller wires	•Poor connection, breakage of remote controller wire * For wire breaking at power ON, the LED is OFF.	Repair	418
						Remote controller	• Defective remote controller PCB	Replacement of remote controller	
		2 times flash	ON	Stays OFF	Keeps flashing	Indoor room temperature sensor	**•Defective indoor room temperature sensor**(defective element, broken wire, short-circuit) •Poor contact of temperature sensor connector	Replacement, repair of temperature sensor	419
						Indoor control PCB	**•Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
		Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	Limit switch, air inlet panel	**•Limit switch operate** **•Defective limit switch** (Poor contact of limit switch connector) **•Set is defective air inlet panel**	Replacement, repair	420
						Indoor control PCB	**•Defective indoor control PCB (Defective limit switch input circuit)?**	Replacement of PCB	
♨WAIT♨ or INSPECT I/U		—	—	2 times flash	Keeps flashing	Indoor-outdoor units connection wire	• Poor connection, breakage of indoor-outdoor units connection wire	Repair	421－425
						Remote controller	• Improper setting of master and slave by remote controller		
E1		—	—	Stays OFF	Keeps flashing	Remote controller wires (Noise)	**•Poor connection of remote controller signal wire (White)** * For wire breaking at power ON, the LED is OFF **•Intrusion of noise in remote controller wire**	Repair	427
						Remote controller indoor control PCB	*• Defective remote controller or indoor control PCB (defective communication circuit)?	Replacement of remote controller or PCB	
E5	Keeps flashing	ON	6 times flash	2 times flash	Keeps flashing	Indoor-outdoor units connection wire	**•Poor connection of wire between indoor-outdoor units during operation (disconnection, loose connection)** **•Anomalous communication between indoor-outdoor units by noise, etc.**	Repair	428
		ON	6 times flash	Stays OFF	Keeps flashing	(Noise)	**•CPU-runaway on outdoor control PCB**	Power reset or Repair	
						Outdoor control PCB	*•Occurrence of defective outdoor control PCB on the way of power supply (defective com-munication circuit)?	Replacement of PCB	
		ON	6 times flash	Stays OFF	Stays OFF	Outdoor control PCB	**•Defective outdoor control PCB on the way of power supply**	Replacement	
						Fuse	**•Blown fuse**		
E6		1 time flash	ON	Stays OFF	Keeps flashing	Indoor heat exchanger tempera ture sensor 1	**•Defective indoor heat exchanger temperature sensor 1** (defective element, broken wire, short-circuit) • Poor contact of temperature sensor 1 connector	Replacement, repair of temperature sensor 1	429
						Indoor control PCB	**•Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
		3 times flash	ON	Stays OFF	Keeps flashing	Indoor heat exchanger tempera ture sensor 2	**•Defective indoor heat exchanger temperature sensor 2** (defective element, broken wire, short-circuit) • Poor contact of temperature sensor 2 connector	Replacement, repair of temperature sensor 2	
						Indoor control PCB	**•Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E10		—	—	Stays OFF	Keeps flashing	Number of con-nected indoor units	**•When multi-unit control by remote controller is performed, the number of units is over**	Repair	430
E14		3 times flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor unit No. set-ting	•No master is assigned to slaves.	Repair	431
						Remote controller wires	•Anomalous remote controller wire connection, broken wire between master and slave units		
E16		6 times flash	ON	Stays OFF	Keeps flashing	Fan motor	**•Defective fan motor**	Replacement, repair	432
						Indoor control PCB	**•Defective indoor control PCB**	Replacement	
E28		—	—	Stays OFF	Keeps flashing	Remote controller temperature therm-istor	• Broken wire of remote controller temperature thermistor	Repair	433

Note (1) *mark in the Description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

(ii) Outdoor unit

1) FDT, FDTC, FDEN, FDU, FDUM, FDF series

Remote controller		Indoor control PCB		Outdoor control PCB		Outdoor inverter PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	Red LED	Green LED (1)	Red LED	Green LED (1)	Yellow LED (3)or Red LED (4)	Green LED (2)				
E35		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Keeps flashing	Keeps flashing	Installation or operating condition	• Higher outdoor heat exchanger temperature	Repair	388
								Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor	Replacement of temperature thermistor	
								Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E36		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Installation or operating condition	• Higher discharge temperature	Repair	389
								Discharge pipe temperature thermistor	• Defective discharge pipe temperature thermistor	Replacement, repair of temperature thermistor	
								Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E37		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	390
								Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E38		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Outdoor air temperature thermistor	• Defective Outdoor air temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	391
								Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E39		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Discharge pipe temperature thermistor	• Defective discharge pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	392
								Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E40		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Installation or operating condition	• Rising high pressure (Operation of 63H1) • Service valve closing operation	Repair	393
								Outdoor control PCB	*• Defective outdoor control PCB (Defective 63H input circuit)?	Replacement of PCB	
E41		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	2 times flash or 6 times flash		Inverter PCB or radiator fin	• Power transistor overheat	Replacement of PCB or Repair	394・395
E42		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	1 time flash or 5 times flash		Outdoor control PCB compressor	• Current cut (Anomalous compressor over-current)	Replacement of PCB	396・397
								Installation or operating condition	• Service valve closing operation	Repair	
E45		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Keeps flashing		Outdoor control PCB	• Anomalous outdoor control PCB communication	Service valve opening check	398
								Inverter PCB	• Anomalous inverter PCB communication	Replacement of PCB	
E48		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Outdoor fan motor	• Anomalous outdoor fan motor	Replacement, repair	399
								Outdoor control PCB	*• Defective outdoor control PCB (Defective motor input circuit)?	Replacement of PCB	
E49		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Installation or operating condition	• Low pressure error • Service valve closing operation	Repair	400・401
								Low pressure sensor	• Anomalous low pressure, broken wire of low pressure sensor or poor connector connection	Replacement, repair of sensor	
								Outdoor control PCB	*• Defective outdoor control PCB (Defective sensor input circuit)?	Replacement of control PCB	
E51		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	2 times flash or 6 times flash		Inverter PCB	• Anomalous inverter PCB	Replacement of PCB	402
E53		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Keeps flashing		Suction pipe temperature thermistor	• Defective suction pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	403
								Outdoor control PCB	*• Defective outdoor PCB (Defective thermistor input circuit)?	Replacement of control PCB	
E54		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Low pressure sensor	• Defective low pressure sensor	Replacement of sensor	404
								Outdoor control PCB	• Defective outdoor control PCB (Defective sensor input circuit)?	Replacement of control PCB	
E55		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Compressor underneath temperature thermistor	• Defective compressor underneath temperature thermistor (Models 200, 250 only)	Replacement of temperature thermistor	405
								Outdoor control PCB	• Defective outdoor control PCB (Defective thermistor input circuit)? (Models 200, 250 only)	Replacement of control PCB	
E57		Stays OFF	Keeps flashing	1 time flash	Keeps flashing			Operation status	• Shortage in refrigerant quantity	Repair	406
								Installation status	• Service valve closing operation	Service valve opening check	
E59		Stays OFF	Keeps flashing	5 times flash	Keeps flashing	Stays OFF or 4 times flash		Compressor inverter PCB	• Anomalous compressor startup	Replacement	407・408
E60		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Keeps flashing		Compressor	• Anomalous compressor rotor position detection (Models 200, 250 only)	Replacement	409

Note (1) * mark in the Description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.
(2) This LED is installed on models FDC200, 250VS
(3) This LED is installed on models FDC100-140VN, FDC100-140VS
(4) This LED is installed on models FDC200, 250VS

2) SRK series

Remote controller		Indoor unit display		Outdoor control PCB		Outdoor inventer PCB	Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	RUN light	TIMER light	Red LED	Green LED	Yellow LED				
E35	Keeps flashing	ON	Keeps flashing	1 time flash	Keeps flashing	Keeps flashing	Installation or operating condition	• Higher outdoor heat exchanger temperature	Repair	434
							Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor	Replacement of temperature thermistor	
							Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E36		ON	5 times flash	1 time flash	Keeps flashing		Installation or operating condition	• Higher discharge temperature	Repair	435
							temperature thermistor	• Defective discharge pipe temperature thermistor	Replacement, repair of temperature thermistor	
							Outdoor control PCB	*• Discharge pipe Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E37		Keeps flashing	2 times flash	1 time flash	Keeps flashing		Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	436
							Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E38		Keeps flashing	1 time flash	1 time flash	Keeps flashing		Outdoor air temperature thermistor	• Defective Outdoor air temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	437
							Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E39		Keeps flashing	4 times flash	1 time flash	Keeps flashing		Discharge pipe temperature thermistor	• Defective discharge pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	438
							Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E40		–	–	1 time flash	Keeps flashing		Installation or operating condition	• Rising high pressure (Operation of 63H1) • Service valve closing operation	Repair	439
							Outdoor control PCB	*• Defective outdoor control PCB (Defective 63H input circuit)?	Replacement of PCB	
E41		–	–	1 time flash	Keeps flashing	6 times flash	Inverter PCB or radiator fin	• Power transistor overheat	Replacement of PCB or Repair	440
E42		ON	1 time flash	1 time flash	Keeps flashing	1 time flash	Outdoor control PCB compressor	• Current cut (Anomalous compressor over-current)	Replacement of PCB	441・442
							Installation or operating condition	• Service valve closing operation	Repair	
E45		–	–	1 time flash	Keeps flashing	Keeps flashing	Outdoor control PCB	• Anomalous outdoor control PCB communication	Replacement of PCB	443
							Inverter PCB	• Anomalous inverter PCB communication		
E48		ON	7 times flash	1 time flash	Keeps flashing		Outdoor fan motor	• Anomalous outdoor fan motor	Replacement, repair	444
							Outdoor control PCB	*• Defective outdoor control PCB (Defective motor input circuit)?	Replacement of PCB	
E49		–	–	1 time flash	Keeps flashing		Installation or operating condition	• Low pressure error • Service valve closing operation	Repair	445・446
							Low pressure sensor	• Anomalous low pressure, broken wire of low pressure sensor or poor connector connection	Replacement, repair of sensor	
							Outdoor control PCB	*• Defective outdoor control PCB (Defective sensor input circuit)?	Replacement of control PCB	
E51		ON	4 times flash	1 time flash	Keeps flashing	6 times flash	Inverter PCB	• Anomalous inverter PCB	Replacement of PCB	447
E53		Keeps flashing	4 times flash	1 time flash	Keeps flashing	Keeps flashing	Suction pipe temperature thermistor	• Defective suction pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	448
							Outdoor control PCB	*• Defective outdoor PCB (Defective thermistor input circuit)?	Replacement of control PCB	
E54		–	–	1 time flash	Keeps flashing		Low pressure sensor	• Defective low pressure sensor	Replacement of sensor	449
							Outdoor control PCB	• Defective outdoor control PCB (Defective sensor input circuit)?	Replacement of control PCB	
E57		7 times flash	ON	1 time flash	Keeps flashing		Operation status	• Shortage in refrigerant quantity	Repair	450
							Installation status	• Service valve closing operation	Service valve opening check	
E59		–	–	5 times flash	Keeps flashing	Stays OFF	Compressor, inverter PCB	•Anomalous compressor startup	Replacement	451・452

Note (1) * mark in the Description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

(iii) Optional controller in-use

1) FDT, FDTC, FDEN, FDU, FDUM, FDF series

		Indoor unit control PCB		Outdoor unit control PCB		Description of trouble	Repair method
Error code	Red LED	Red LED	Green LED	Red LED	Green LED		
E75	Keeps flashing	Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	• Communication error (Defective communication circuit on the main unit of SC-SL2N-E or SC-SL3N-E) ete.	Replacement

2) SRK series

		Indoor unit display panel		Outdoor unit control PCB		Description of trouble	Repair method
Error code	Red LED	RUN light	TIMER light	Red LED	Green LED		
E75	Keeps flashing	–	–	Stays OFF	Keeps flashing	• Communication error (Defective communication circuit on the main unit of SC-SL2N-E or SC-SL3N-E) ete.	Replacement

(iv) Display sequence of error codes or inspection indicator lamps

■ **Occurrence of one kind of error**

Displays are shown respectively according to errors.

■ **Occurrence of plural kinds of error**

Section	Category of display
Error code on remote controller	• Displays the error of higher priority (When plural errors are persisting)
Red LED on indoor control PCB	E1 > E5 > ····· > E10 > E35 > ····· Eb0
Red LED on outdoor control PCB	• Displays the present errors. (When a new error has occurred after the former error was reset.)

■ **Error detecting timing**

Section	Error description	Error code	Error detecting timing
Indoor	Drain trouble (Float switch activated)	E9	Whenever float switch is activated after 30 second had past since power ON.
	Communication error at initial operation	"WAIT"	No communication between indoor and outdoor units is established at initial operation.
	Remote controller communication circuit error	E1	Communication between indoor unit and remote controller is interrupted for mote than 2 minutes continuously after initial communication was established.
	Communication error during operation	E5	Communication between indoor and outdoor units is interrupted for mote than 2 minutes continuously after initial communication was established.
	Excessive number of connected indoor units by controlling with one remote controller	E10	Whenever excessively connected indoor units is detected after power ON.
	Return air temperature thermistor anomaly	E7	-50 (-45) °C or lower is detected for 5 (15) seconds continuously within 60 minutes after initial detection of this anomalous temperature.
	Indoor heat exchanger temperature thermistor anomaly	E6	-50 (-28) °C or lower is detected for 5 (15) seconds continuously within 60 minutes after initial detection of this anomalous temperature. Or 70°C or higher is detected for 5 seconds continuously. (SRK series removes)
Outdoor	Outdoor air temperature thermistor anomaly	E38	-45°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -45°C or higher is detected for 5 seconds continuously within 20 seconds after compressor ON.
	Outdoor heat exchanger temperature thermistor anomaly	E37	-50°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -50°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.
	Discharge pipe temperature thermistor anomaly	E39	-10°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature.
	Suction pipe temperature thermistor anomaly	E53	-50°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature.
	Low pressure sensor anomaly	E54	0V or lower or 3.49V or higher is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous pressure.
	Underneath temperature thermistor anomaly	E55	-50°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature.

Note (1) Value in ( ) are for the SRK series.

■ **Error log and reset**

Error indicator	Memorized error log	Reset
Remote controller display	• Higher priority error is memorized.	• Stop the unit by pressing the ON/OFF switch of remote controller. • If the unit has recovered from anomaly, it can be operated.
Red LED on indoor control PCB	• Not memorized.	
Red LED on outdoor control PCB	• Memorizes a mode of higher priority.	

■ **Resetting the error log**

- Resetting the memorized error log in the remote controller
  Holding down "CHECK" button, press "TIMER" button to reset the error log memorized in the remote controller.
- Resetting the memorized error log
  The remote controller transmits error log erase command to the indoor unit when "VENTI" button is pressed while holding down "CHECK" button.
  Receiving the command, the indoor unit erase the log and answer the status of no error.

(2) Troubleshooting procedure

When any trouble has occurred, inspect as follows. Details of respective inspection method will be described on later pages.

Trouble → Confirmation of power supply (Indoor/ outdoor unit) → Confirmation of remote controller and LEDs on the PCB of indoor unit and outdoor unit (Indoor/ outdoor unit, remote controller) → Check of the anomalous operation data on the remote controller → Inspection of the unit/ controller → Replacement/ repair of faulty part, test run, adjustment

(3) Troubleshooting at the indoor unit

(a) FDT, FDTC, FDEN, FDU, FDUM, FDF series

With the troubleshooting, find out any defective part by checking the voltage (AC, DC), resistance, etc. at respective connectors at around the indoor PCB, according to the inspection display or operation status of unit (the compressor does not run, fan does not run, the 4-way valve does not switch, etc.), and replace or repair in the unit of following part.

(i) Replacement part related to indoor PCB's

Control PCB, power supply PCB, temperature thermistor (return air, indoor heat exchanger), remote controller switch, limit switch, transformer and fuse

Note (1) With regard to parts of high voltage circuits and refrigeration cycle, judge it according to ordinary inspection methods.

(ii) Instruction of how to replace indoor control PCB

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the replacement in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, WARNING and CAUTION.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.

⚠ WARNING	Wrong installation would cause serious consequences such as injuries or death.
⚠ CAUTION	Wrong installation might cause serious consequences depending on circumstances.

- After completing the replacement, do commissioning to confirm there are no anomaly.

⚠ WARNING

- Replacement should be performed by the specialist.
  If you replace the PCB by yourself, it may lead to serious trouble such as electric shock or fire.
- Replace the PCB correctly according to these instructions.
  Improper replacement may cause electric shock or fire.
- Shut off the power before electrical wiring work.
  Replacement during the applying the current would cause the electric shock, unit failure or improper running.
  It would cause the damage of connected equipment such as fan motor,etc.
- Fasten the wiring to the terminal securely, and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connections or hold could result in abnormal heat generation or fire.
- Check the connection of wiring to PCB correctly before turning on the power, after replacement.
  Defectiveness of replacement may cause electric shock or fire.

⚠ CAUTION

- In connecting connector onto the PCB, connect not to deform the PCB. It may cause breakage or malfunction.
- Insert connecter securely, and hook stopper. It may cause fire or improper running.
- Bundle the cables together so as not to be pinched or be tensioned. It may cause malfunction or electric shock for disconnection or deformation.

PSB012D990B C

◆ Model FDT, FDUM series

• Control PCB

Replace and set up the PCB according to this instruction.

① Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote controller			
Master /Slave setting		Master	Slave1	Slave2	Slave3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

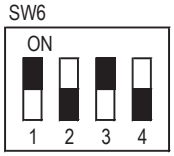
○:ON —:OFF

② Set to an appropriate capacity using the model selector switch(SW6).

Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
50V	○	—	○	—
60V	○	○	○	—
71V	○	—	—	○

SW6	-1	-2	-3	-4
100V	○	○	—	○
125V	—	—	○	○
140V	○	—	○	○



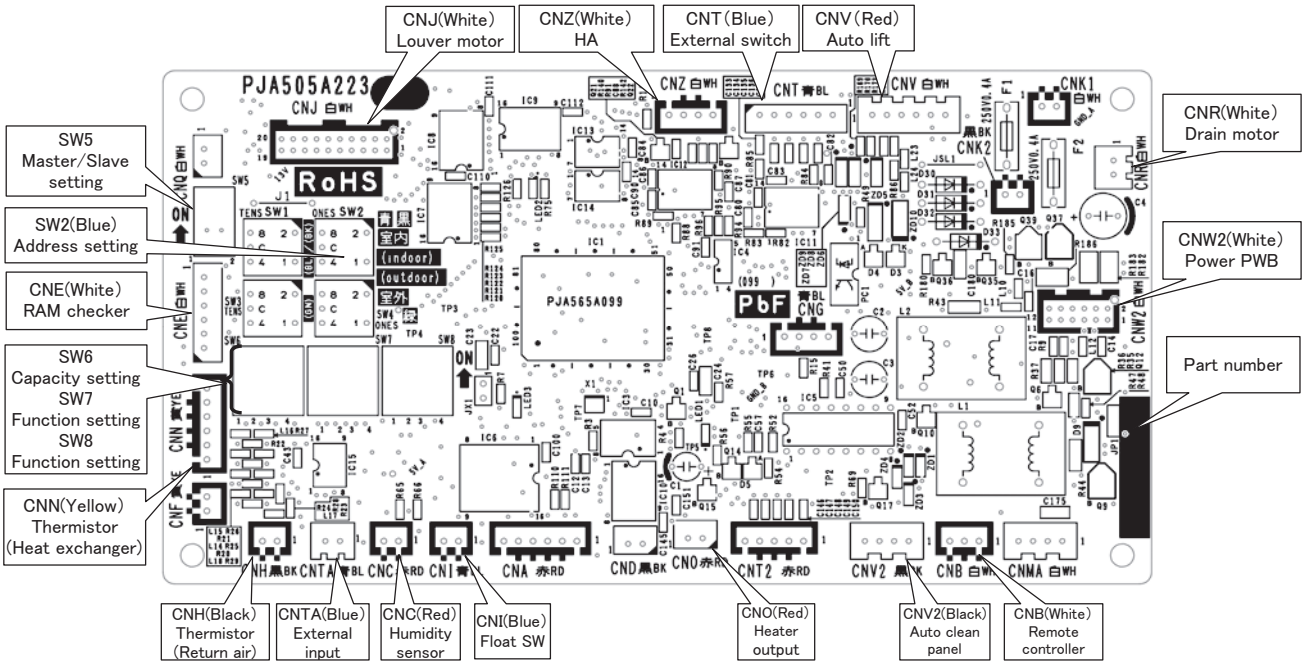
Example setting for 50V

③ Replace the PCB

1. Exchange PCB after detaching all connectors connected with the PCB.
2. Fix the PCB so as not to pitch the wiring.
3. Connect connectors to the PCB. Match the wiring connector to the connector color on the PCB and connect it.

④ Control PCB

Parts mounting are different by the kind of PCB.



- **Power PCB**

PSB012D992

PSB012D993

This PCB is a general PCB. Replace the PCB according to this instruction.

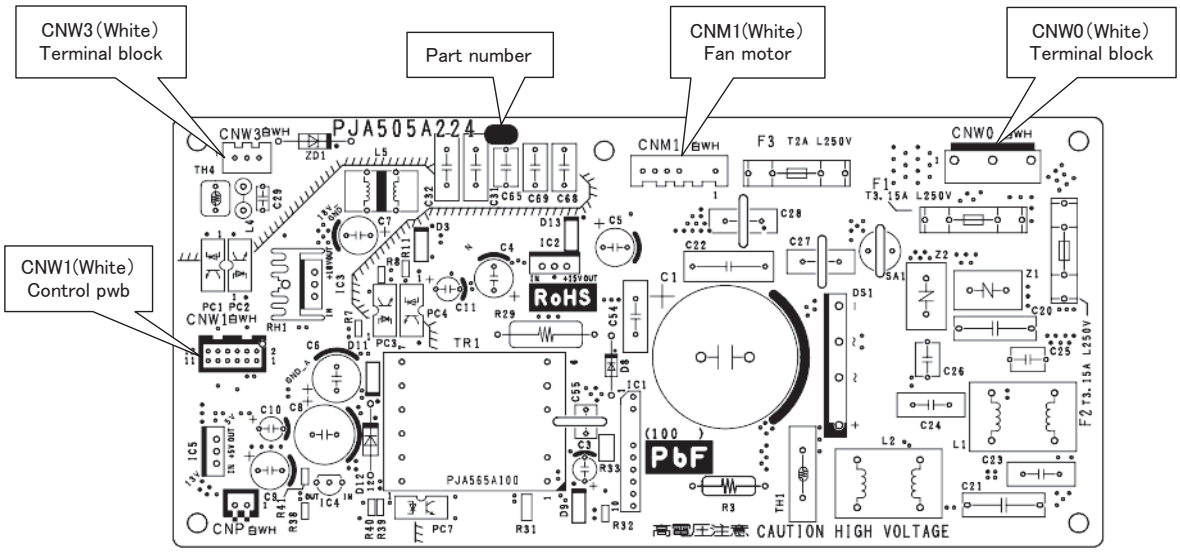
① Replace the PCB

1. Unscrew terminal of the wiring(yellow/green) connected to Terminal block (CNWO) from the box.
2. Replace the PCB only after all the wirings connected to the connector are removed.
3. Fix the board such that it will not pinch any of the wires.
4. Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB.
5. Screw back the terminal of wiring, that was removed in 1.

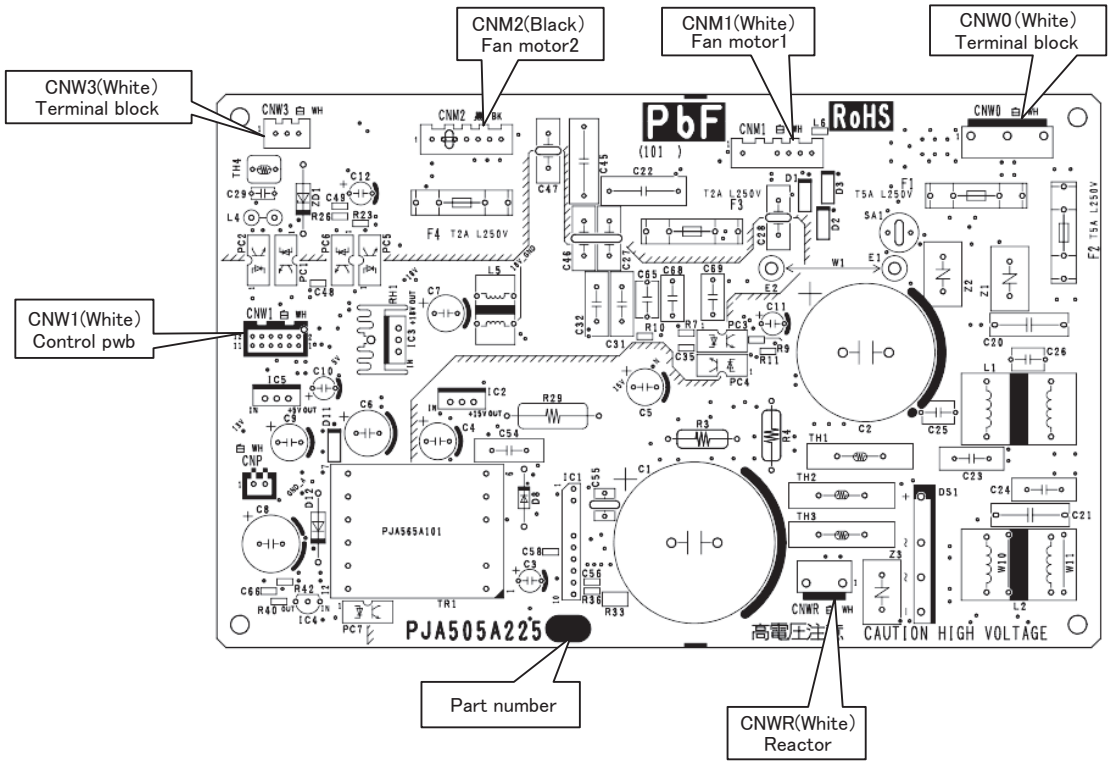
② Power PCB

Parts mounting are different by the kind of PCB.

• Models FDT50-140VF, FDUM50VF



• Models FDUM60-140VF



PSB012D931F C

◆ Model FDTC series

• Control PCB

Replace and set up the PCB according to this instruction.

① Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

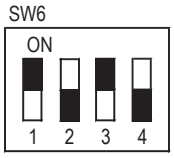
item	switch	Content of control	
Address	SW2	Plural indoor units control by 1 remote controller	
Test run	SW7-1	—	Normal
		○	Operation check/drain motor test run

○:ON —:OFF

② Set to an appropriate capacity using the model selector switch(SW6).

Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
50VF	○	—	○	—
60VF	○	○	○	—



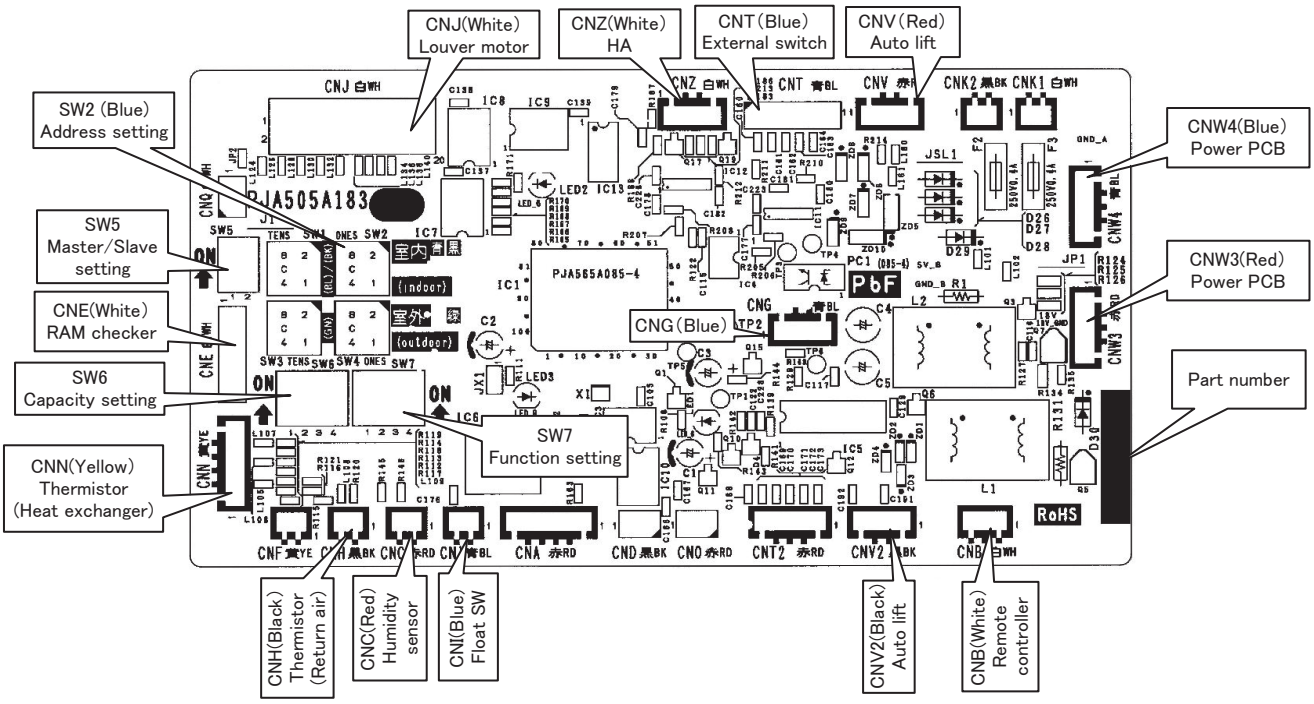
Example setting for 50VF

③ Replace the PCB

1. Fix the PCB so as not to pitch the cords.
2. Connect connectors to the PCB. Connect a cable connector with the PCB connector of the same color.
3. Do not pass CPU surrounding about wirings.

④ Control PCB

Parts mounting are different by the kind of PCB.



- **Power PCB**

PSB012D953A

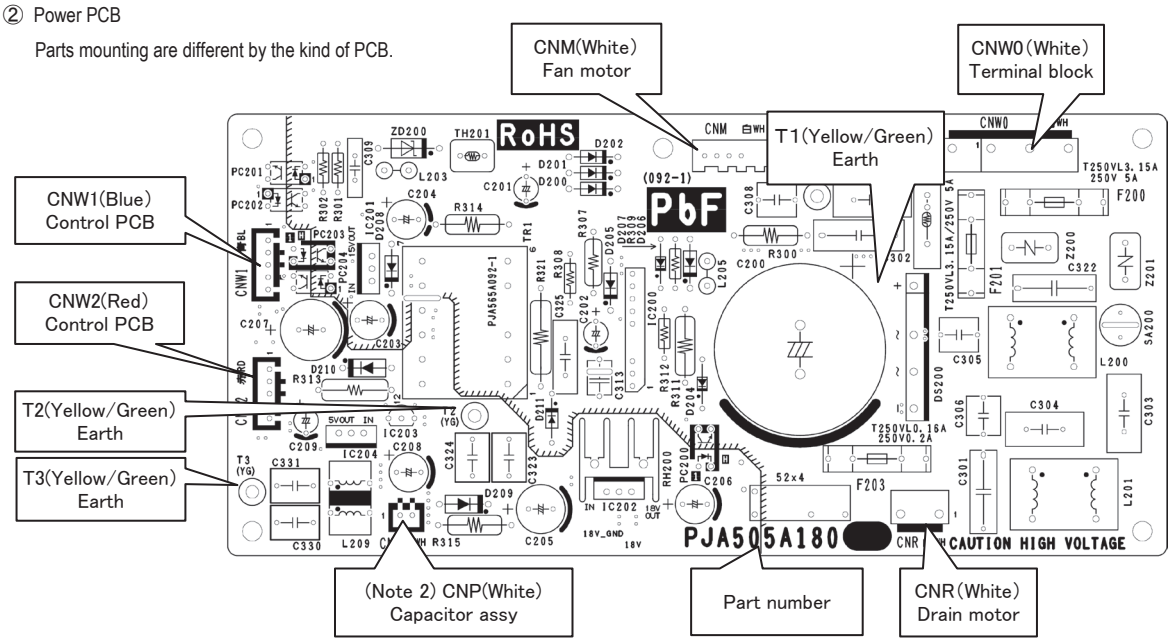
This PCB is a general PCB. Replace the PCB according to this instruction.

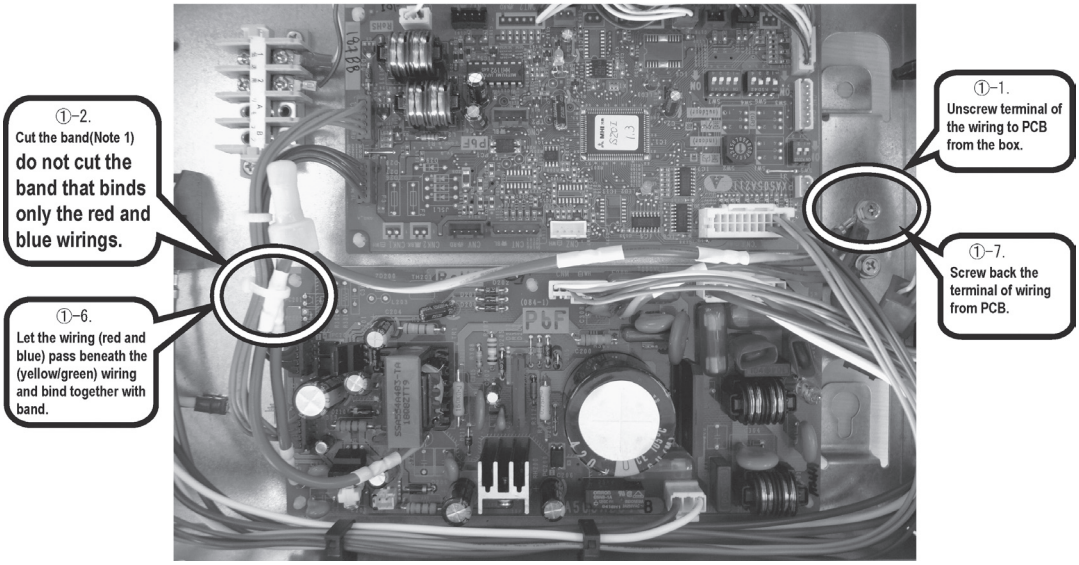
① Replace the PCB

1. Unscrew terminal of the wiring(yellow/green) soldered to PCB from the box.
2. Cut the band that binds the wiring (red and blue) from connector CNW1 and CNW2, and the wiring (yellow/green) from PCB (T2/T3) . (Note 1)
   (However, do not cut the band that binds only the red and blue wirings.)
3. Replace the PCB only after all the wirings connected to the connector are removed.
4. Fix the board such that it will not pinch any of the wires.
5. Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB. (Note 2)
6. Let the wiring (red and blue) pass beneath the (yellow/green) wiring and bind together with band.
7. Screw back the terminal of wiring (yellow/green) from PCB(T1, T2/T3), that was removed in 1.
   In that case, do not place the crimping part of the wiring under the PCB.
   (Note 1): It might not be applicable on some models.
   (Note 2): After replacing PCB, connection between capacitor assy and connector CNP is **no longer needed.**

② Power PCB

Parts mounting are different by the kind of PCB.





◆ Model FDEN series

PSB01ZD974B

Replace and set up the PCB according to this instruction.

① Set to an appropriate address and function using switch on PCB.

1. There is a unit having plural applicable PCB depending on a model.
2. Set the function setting corresponding the spare PCB and the applicable model.
3. Do "Setting according to the model *1" refer to "⑤ Function setting of wired remote controller" after turning on the power source when using wired remote controller

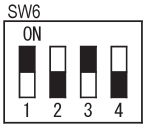
item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote controller			
Master /Slave setting		Master	Slave1	Slave2	Slave3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

○ : ON — : OFF

② Set to an appropriate capacity using the model selector switch(SW6).
Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
50V	○	—	○	—
60V	○	○	○	—
71V	○	—	—	○

SW6	-1	-2	-3	-4
100V	○	○	—	○
125V	—	—	○	○
140V	○	—	○	○



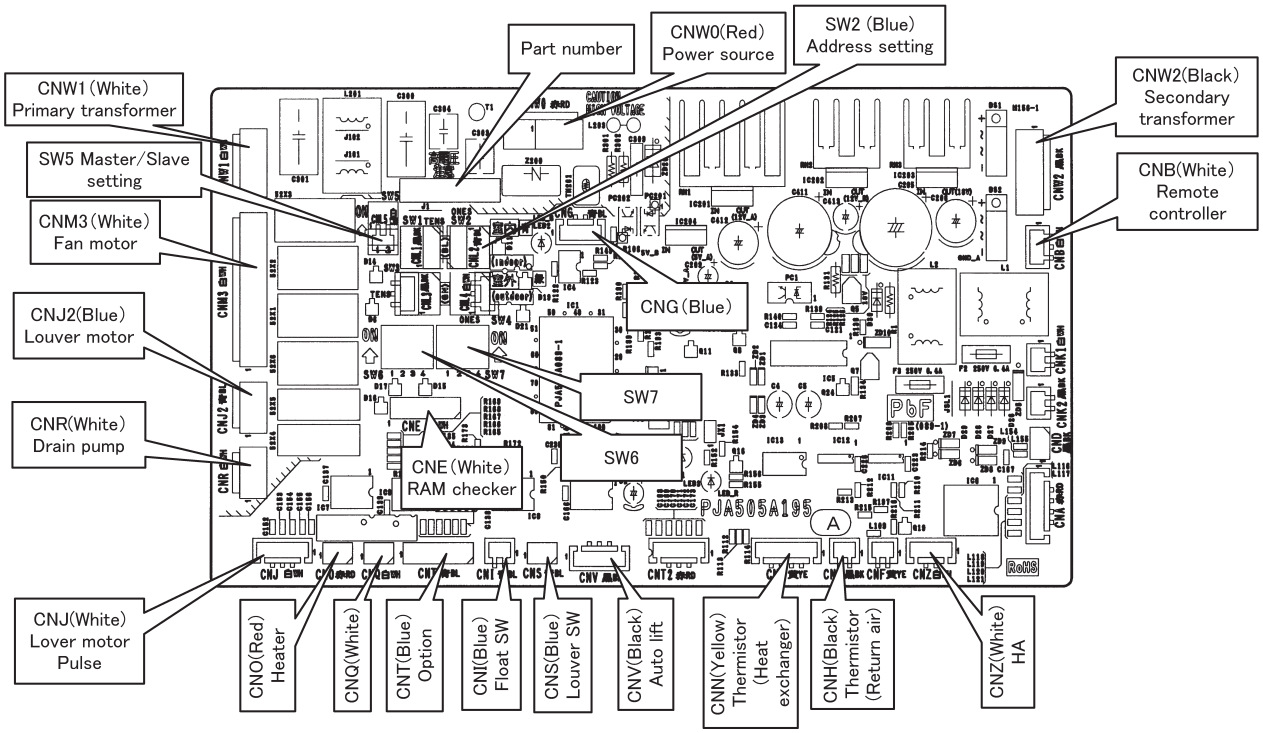
Example setting for 50V

③ Replace the PCB

1. Fix the PCB so as not to pitch the cords.
2. Connect connectors to the PCB. Connect a cable connector with the PCB connector of the same color.
3. Do not pass CPU surrounding about wirings.

④ Control PCB

Parts mounting are different by the kind of PCB.



PSB012D974B C

◆ Model FDU series

Replace and set up the PCB according to this instruction

① Set to an appropriate address and function using switch on PCB.

1. There is a unit having plural applicable PCB depending on a model.
2. Set the function setting corresponding the spare PCB and the applicable model.

item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote controller			
Master /Slave setting		Master	Slave1	Slave2	Slave3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

○:ON —:OFF

② Set to an appropriate capacity using the model selector switch(SW6).
Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
100V	○	○	—	○
125V	—	—	○	○
140V	○	—	○	○

SW6	-1	-2	-3	-4
200V	—	○	○	○
250V	○	○	○	○

SW6

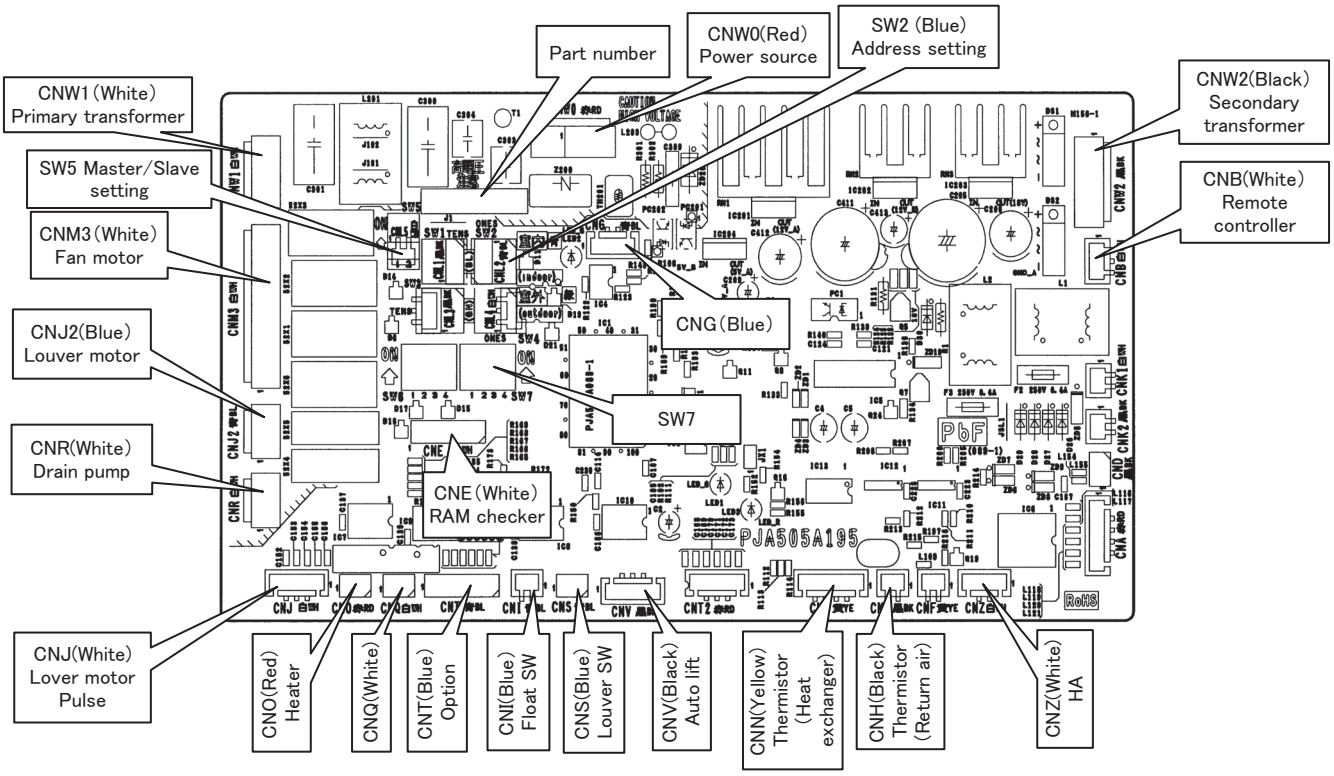
Example setting for 140V

③ Replace the PCB

1. Fix the PCB so as not to pitch the cords.
2. Connect connectors to the PCB. Connect a cable connector with the PCB connector of the same color.
3. Do not pass CPU surrounding about wirings.

④ Control PCB

Parts mounting are different by the kind of PCB.



PSB012D976

◆ Model FDF series

• Control PCB

Replace and set up the PCB according to this instruction.

① Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote controller			
Master /Slave setting		Master	Slave1	Slave2	Slave3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

② Set to an appropriate capacity using the model selector switch(SW6).

Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
71V	○	—	—	○
100V	○	○	—	○
125V	—	—	○	○
140V	○	—	○	○

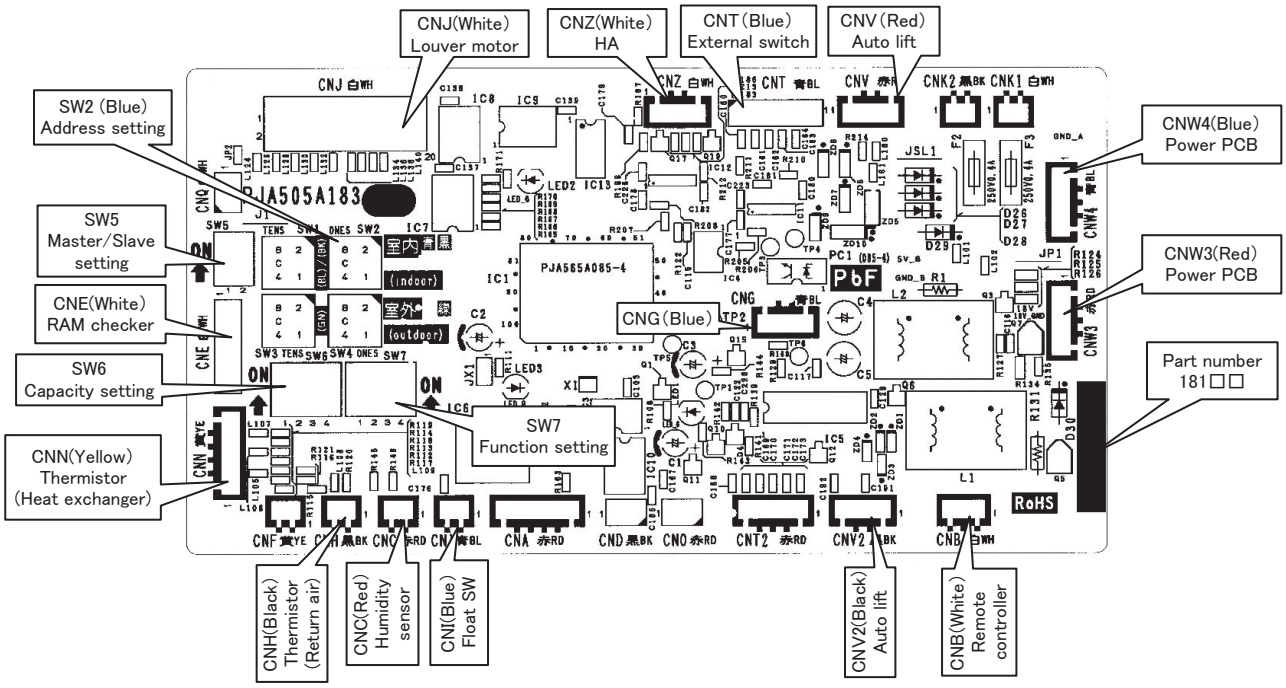
Example setting for 71V

③ Replace the PCB

1. Fix the PCB so as not to pitch the cords.
2. Connect connectors to the PCB. Connect a cable connector with the PCB connector of the same color.
3. Do not pass CPU surrounding about wirings.

④ Control PCB

Parts mounting are different by the kind of PCB.

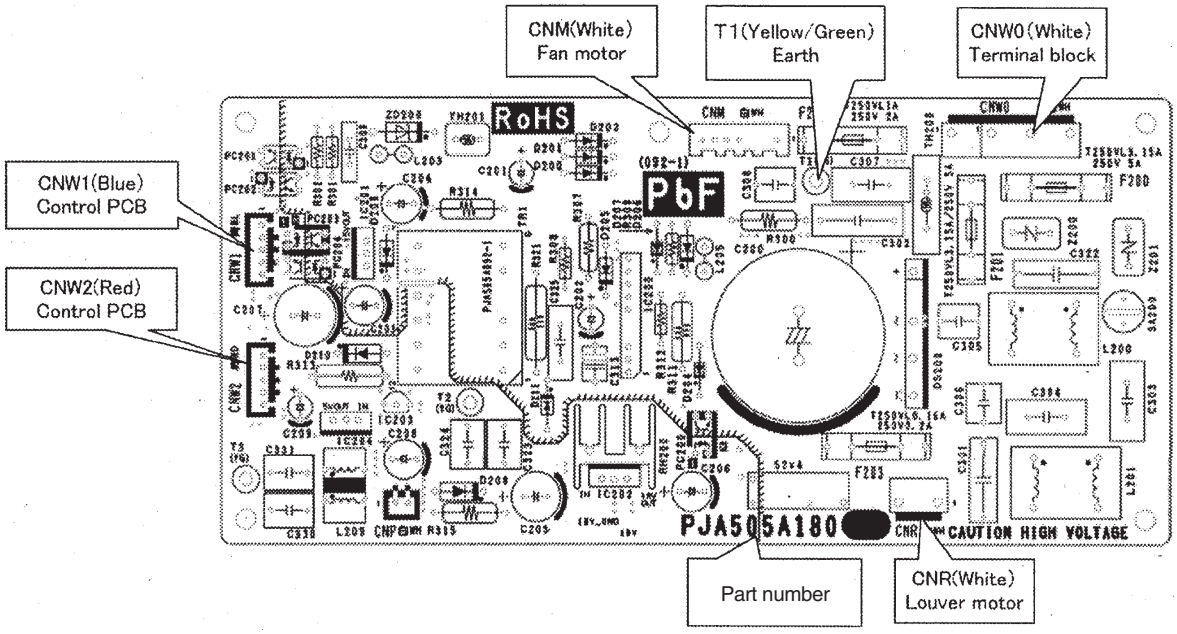


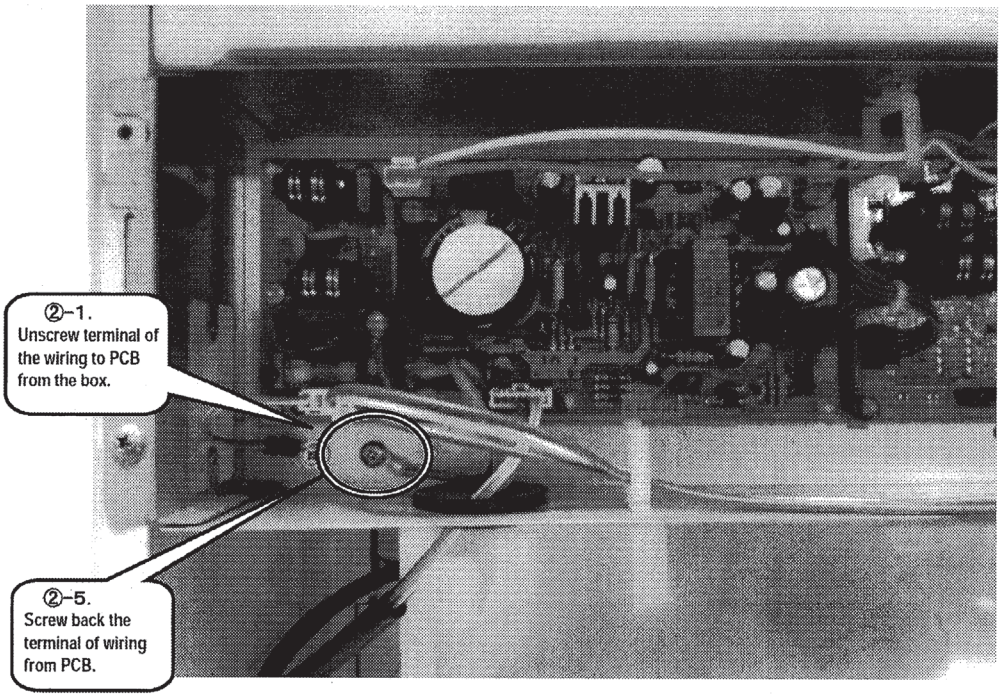
• Power PCB

This PCB is a general PCB. Replace the PCB according to this instruction.

Replace the PCB

1. Unscrew terminal of the wiring(yellow/green) soldered to PCB from the box.
2. Replace the PCB only after all the wirings connected to the connector are removed.
3. Fix the board such that it will not pinch any of the wires.
4. Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB.
5. Screw back the terminal of wiring (yellow/green) from PCB(T1), that was removed in 1.
   In that case, do not place the crimping part of the wiring under the PCB.





●DIP switch setting list

Switches	Description		Default setting		Remarks
SW2	Address No. setting at plural indoor units control by 1 R/C		0		0-F
SW5-1	Master/Slave setting	Master*/Slave	OFF		See table 2
SW5-2			OFF		
SW6-1	Model selection		As per model		See table 1
SW6-2					
SW6-3					
SW6-4					
SW7-1	Test run, Drain motor	Normal*/Test run	OFF	Normal	
SW7-2	Reserved		OFF		keep OFF
SW7-3	Powerful mode	Valid*/Invalid(FDU only)	ON	Valid	
SW7-4	Reserved		OFF		keep OFF
SW8-1	Reserved		OFF		keep OFF
SW8-2	Reserved		OFF		keep OFF
SW8-3	Reserved		OFF		keep OFF
SW8-4	Reserved		OFF		keep OFF
JSL1	Superlink terminal spare	Normal*/switch to spare	With		

Note (1) : SW8 : FDT, FDUM, only. * Default setting

Table 1: Indoor unit model selection with SW6-1-SW6-4

0: OFF 1:ON

	50V	60V	71V	100V	125V	140V	200V	250V
SW6-1	1	1	1	1	0	1	0	1
SW6-2	0	1	0	1	0	0	1	1
SW6-3	1	1	0	0	1	1	1	1
SW6-4	0	0	1	1	1	1	1	1

Table 2: Indoor unit Master/Slave setting with SW5-1,SW5-2

0: OFF 1:ON

	SW5-1	SW5-2
Master	0	0
Slave1	0	1
Slave2	1	0
Slave3	1	1

(b) SRK series

(i) Cautions

1) If you are disassembling and checking an air conditioner, be sure to turn off the power before beginning. When working on indoor units, let the unit sit for about 1 minute after turning off the power before you begin work.
2) When taking out printed circuit boards, be sure to do so without exerting force on the circuit boards or package components.
3) When disconnecting and connecting connectors, take hold of the connector housing and do not pull on the lead wires.

(ii) Items to check before troubleshooting

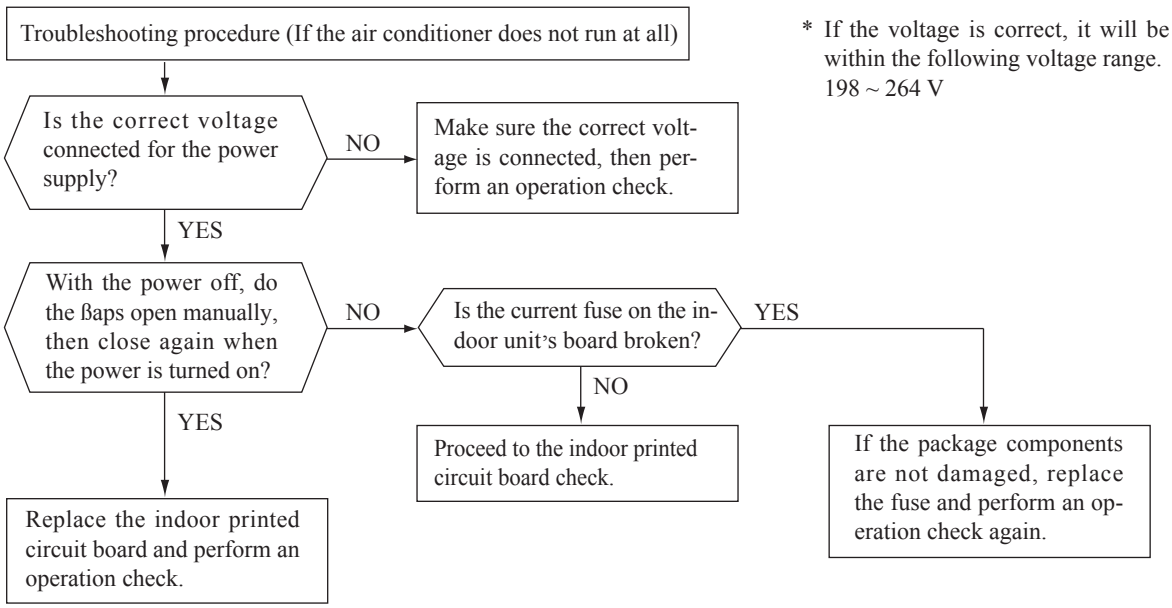
1) Is the air conditioner running? Is it displaying any self-diagnosis information?
2) Is a power supply with the correct voltage connected?
3) Are the control lines connecting the indoor and outdoor units wired correctly and connected securely?
4) Is the outdoor unit's service valve open?

(iii) Troubleshooting procedure (If the air conditioner does not run at all)

If the air conditioner does not run at all, diagnose the trouble using the following troubleshooting procedure.

Important When all the following conditions are met, we say that the air conditioner will not run at all.

1) The RUN light does not light up.
2) The flaps do not open.
3) The indoor unit fan motors do not run.
4) The self-diagnosis display does not function.



* If the voltage is correct, it will be within the following voltage range. 198 ~ 264 V

(4) Troubleshooting at the outdoor unit

When troubleshooting the outdoor unit, firstly assess the overview of malfunction and try to presume the cause and the faulty part by checking the error cord dispalyed on the remote controller and flashing pattern of indicator lamps (Red LED and Green LED), and then proceed further inspection and remedy it.

Self-diagnosis system by microcomputor on indoor and outdoor PCB can assist to find the cause of malfunction smoothly by making a diagnosis of not only the anomaly of microcomutor, but also the anomaly in power supply system, installation space, overload resulting from improper charging amount of refrigerant and etc.

Unless the power is reset, the error log is saved in memory and the inspection indicator lamps on outdoor PCB keep flashing after automatical recovering from malfunction.

After automatical recovering from malfunction, if any another error mode which has a higher priority than the previous error saved in memory occurs, it is overwritten in memory and is displayed.

[Reset of power supply]

Be sure to avoid electrical shock, when replacing or checking the outdoor control PCB, because some voltage is still retained in the electrolytic capacitor on the PCB even after shutting down tne power supply to the outdoor unit.

Be sure to start repairing work, after confirming that the Green LED on the PCB has been extiguished for more than 10 seconds after more than 3 minutes had been passed since power shut down, and reconfirming that voltage has been discharged sufficiently by measuring the voltage (DC) between both terminals of electrolytic capacitor (C58) (Measurment of voltage may be disturbed by the moisture-proof coating. In such case, remove the coating and measure it by taking care of avoiding electrical shock)

(a) Module of part to be replaced for outdoor unit controller

Outdoor control PCB, Inverter PCB, Temperature thermistor (of outdoor heat exchanger, discharge pipe, outdoor air, IPM and suction pipe), Fuses (for power supply and control PCB), Noise filter, Capacitor, Reactor and Transformer

(b) Replacement procedure of outdoor control PCB

Precautions for Safety

- Since the following precaution is the important contents for safety, be sure to observe them.
  WARNING and CAUTION are described as follows:

⚠WARNING	Indicates an imminently hazardous situation which will result in death or serious injury if proper safety procedures and instructions are not adhered to.
⚠CAUTION	Indicates a potentially hazardous situation which may result in minor or moderate injury if proper safety procedures and instructions are not adhered to.

⚠ WARNING

- Securely replace the PCB according to this procedure.
  If the PCB is incorrectly replaced, it will cause an electric shock or fire.
- Be sure to check that the power source for the outdoor unit is turned OFF before replacing the PCB. The PCB replacement under current-carrying will cause an electric shock or fire.
- After finishing the PCB replacement, check that wiring is correctly connected with the PCB before power distribution. If the PCB is incorrectly replaced, it will cause an electric shock or fire.

⚠ CAUTION

- Band the wiring so as not to tense because it will cause an electric shock.

1) Model FDC100VN, 125VN, 140VN
FDC100VS, 125VS, 140VS

PCA012D043 A

a) Replace the PCB **after elapsing 3 minutes from power OFF.**
(**Be sure to measure voltage (DC)** on both capacitor terminals located in controller back, and **check that the voltage is discharged sufficiently**.)

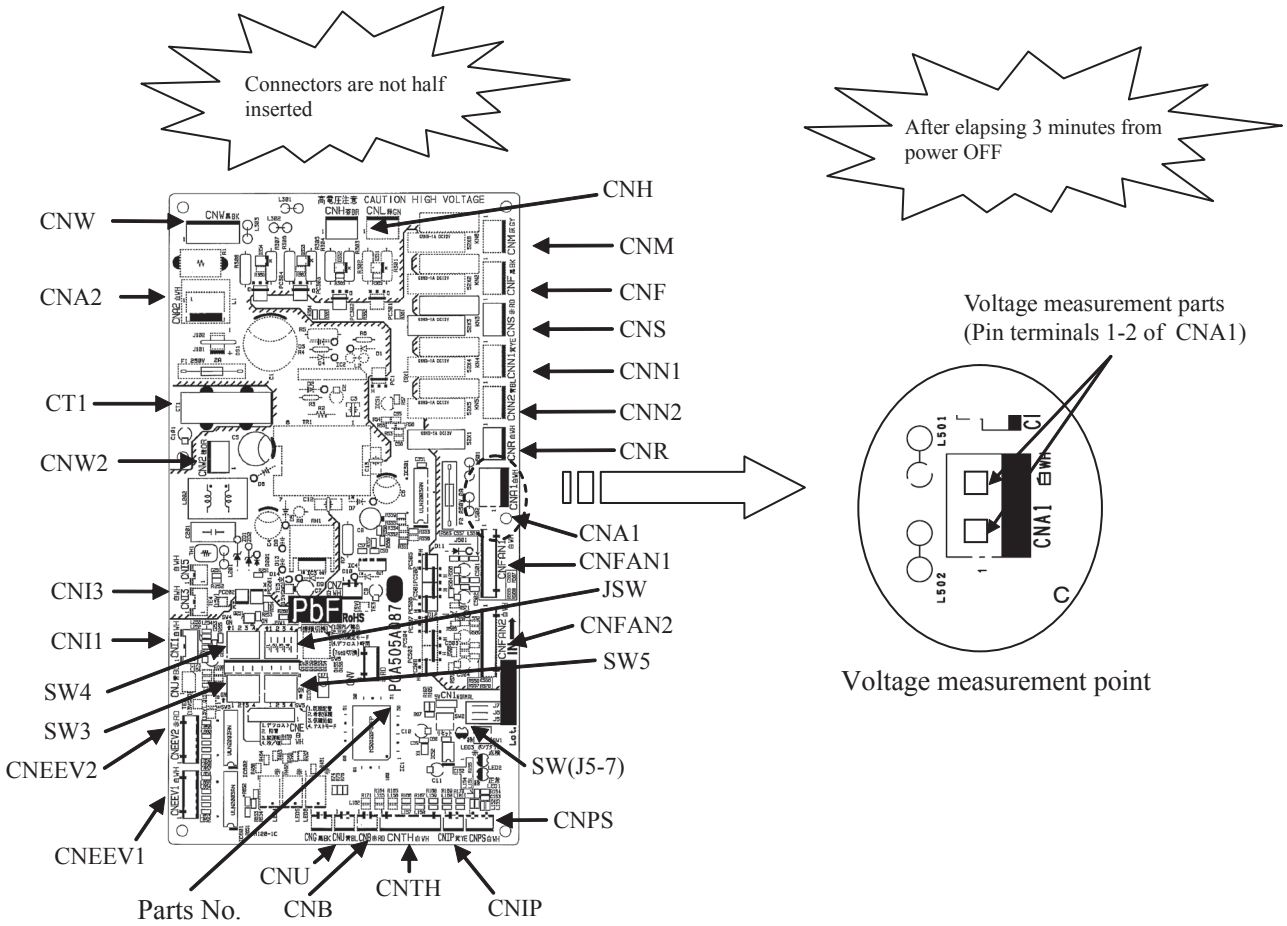
b) Disconnect the connectors from the control PCB.

c) Disconnect the white wiring passing through CT1 on the PCB before replacing the PCB.

d) Match the setting switches (SW3-5,JSW) with the former PCB.

e) Tighten up a screw after passing white wiring through CT1 of the changed.

f) Connect the connectors to the control PCB.(Confirm the **connectors are not half inserted**.)

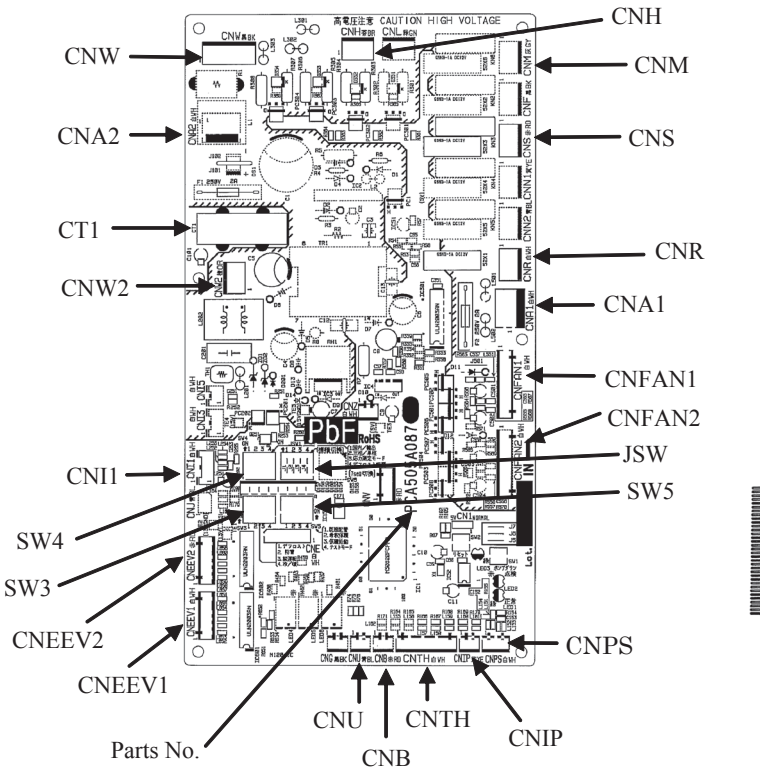


Parts Arrangement

2) Model FDC200,250VS

PCA012D017F F

a) Replace the PCB **after elapsing 3 minutes from power OFF**.
(**Be sure to measure the voltage (DC) of two places** (1.Resistor on PCB at the front of controller 2.Both capacitor terminals located in back of controller), and **check that the voltage is discharged sufficiently**. (Refer to Fig.1))
b) Disconnect the connectors from the control PCB.
c) Disconnect the blue wiring passing through CT1 on the substrate before replacing the PCB.
d) Match the setting switches (SW3-5,JSW) with the former PCB.
e) Tighten up a screw after passing blue wiring through CT1 of the changed.
f) Connect the connectors to the control PCB. (Confirm the **connectors are not half inserted**)



Parts Arrangement View

connectors are not half inserted

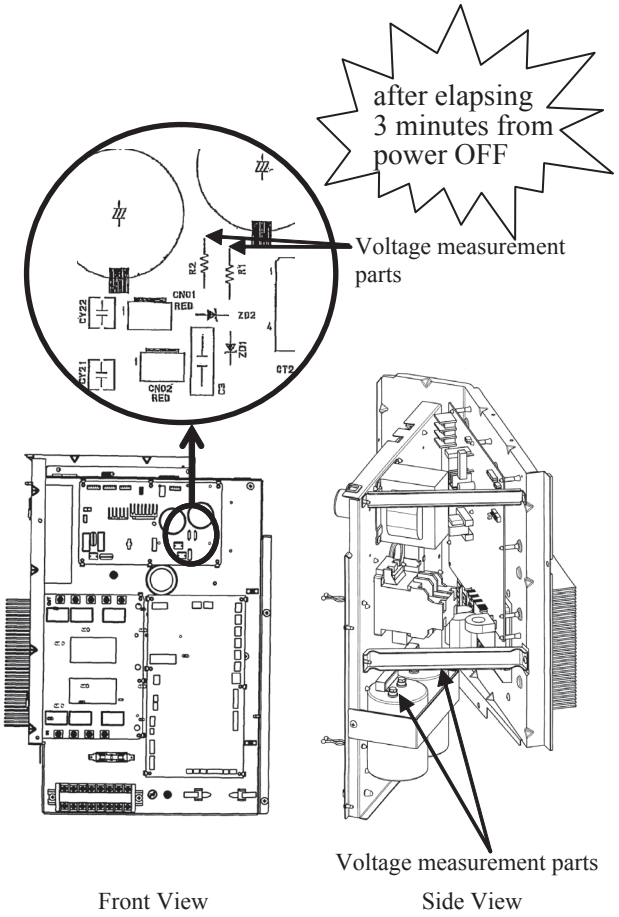


Fig.1 Position of capacitor

(c) Outdoor inverter PCB replacement procedure

Precautions for Safety

- Since the following precaution is the important contents for safety, be sure to observe them.
  WARNING and CAUTION are described as follows:

⚠ WARNING Indicates an imminently hazardous situation which will result in death or serious injury if proper safety procedures and instructions are not adhered to.

⚠ CAUTION Indicates a potentially hazardous situation which may result in minor or moderate injury if proper safety procedures and instructions are not adhered to.

⚠ WARNING

- Securely replace the PCB according to this procedure.
  If the PCB is incorrectly replaced, it will cause an electric shock or fire.
- Be sure to check that the power source for the outdoor unit is turned OFF before replacing the PCB. The PCB replacement under current-carrying will cause an electric shock or fire.
- After finishing the PCB replacement, check that wiring is correctly connected with the PCB before power distribution. If the PCB is incorrectly replaced, it will cause an electric shock or fire.

⚠ CAUTION

- Band the wiring so as not to tense because it will cause an electric shock.

Replace the inverter PCB according to the following procedure.

1) Model FDC100VN, 125VN, 140VN PCA012D025D F

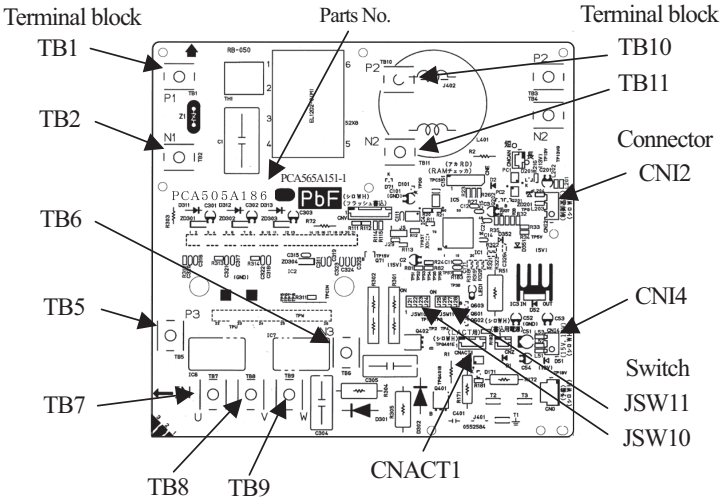
a) Replace the PCB **after elapsing 3 minutes from power OFF**.
(**Be sure to measure voltage (DC)** on both capacitor terminals located in controller back, and **check that the voltage is discharged sufficiently**.(Refer to Fig.1))

b) Take off the connection of inverter PCB terminal block connector and remove the screw of power transistor then remove the PCB. Wipe off the silicon grease neatly on the controller's radiation heat fins.

c) Refer to table1 for the setting of switch (JSW10,11) of new PCB.

d) Before installing the power transistor on the new PCB,Apply uniformly a bundled of silicon grease first on the surface of power transistor.Make sure it is applied to prevent damage on power transistor.

e) Tighten the screw of power transistor on inverter PCB and connect the terminal block.Confirm the connection and don't use soldering in the connection.Tighten properly the power transistor with a screw and make sure there is no clearance gap.Power transistor can be damage if not properly tighten.(Recommended power transistor tightening torque:0.98~1.47N·m)



Parts arrangement view

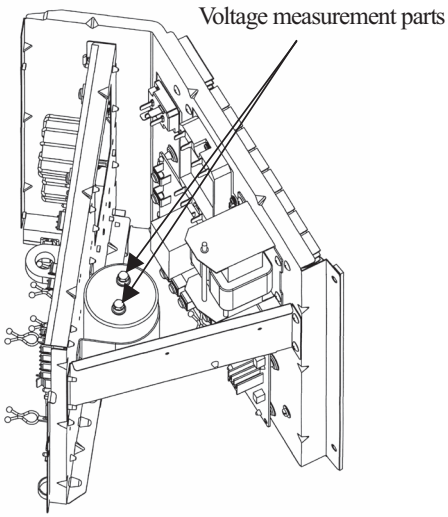


Fig.1 Position of capacitor

Table. 1 Switch setting

JSW10	-1	OFF	JSW11	-1	ON
	-2	OFF		-2	OFF
	-3	OFF		-3	OFF
	-4	OFF		-4	ON

2) Model FDC100VS, 125VS, 140VS

PCA012D025F F

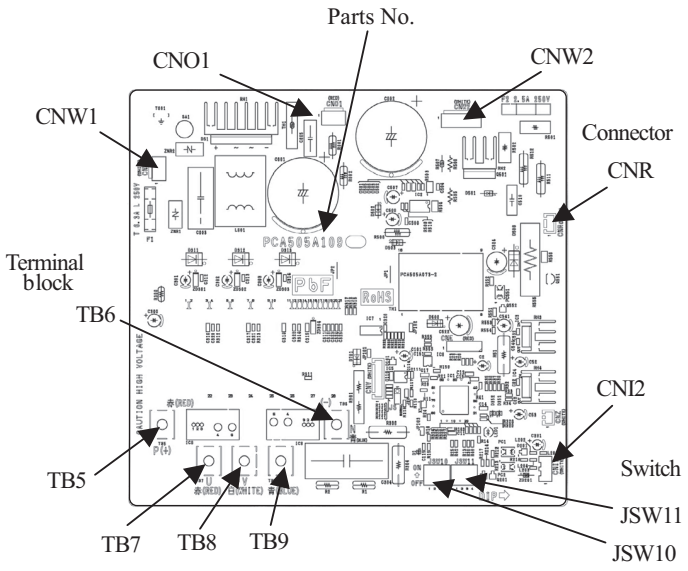
a) Replace the PCB **after elapsing 3 minutes from power OFF**.
(**Be sure to measure voltage (DC)** on both capacitor terminals located in controller back, and **check that the voltage is discharged sufficiently**.(Refer to Fig.1))

b) Take off the connection of inverter PCB terminal block connector and remove the screw of power transistor then remove the PCB. Wipe off the silicon grease neatly on the controller's radiation heat fins.

c) Refer to table1 for the setting of switch (JSW10,11) of new PCB.

d) Before installing the power transistor on the new PCB, Apply uniformly a bundled of silicon grease first on the surface of power transistor.Make sure it is applied to prevent damage on power transistor.

e) Tighten the screw of power transistor on inverter PCB and connect the terminal block.Confirm the connection and don't use soldering in the connection.Tighten properly the power transistor with a screw and make sure there is no clearance gap.Power transistor can be damage if not properly tighten.(Recommended power transistor tightening torque:0.98~1.47N·m)



Parts arrangement view

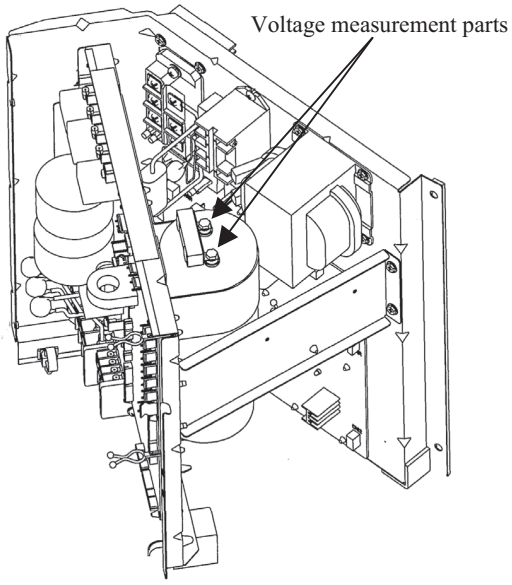


Fig.1 Position of capacitor

Table. 1 Switch setting

JSW10	-1	OFF	JSW11	-1	OFF
	-2	OFF		-2	ON
	-3	OFF		-3	OFF
	-4	OFF		-4	ON

3) Model FDC200VS, 250VS

PCB012D007C

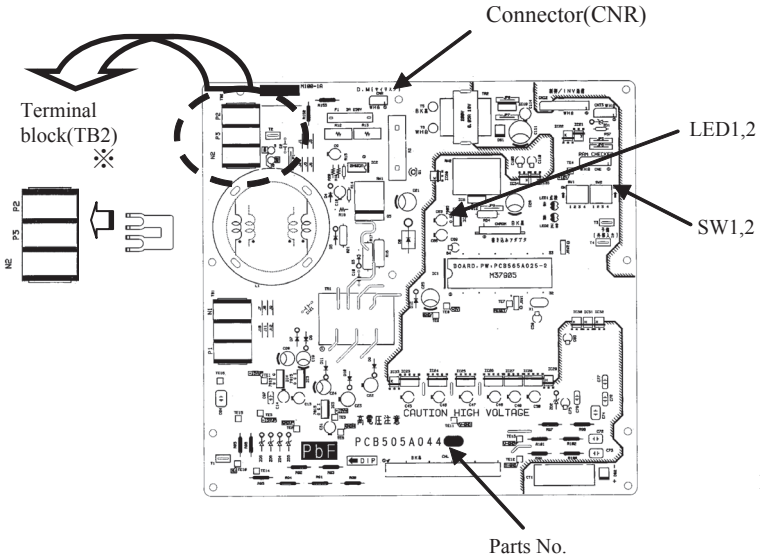
a) Replace the inverter PCB after 10 minutes from power OFF. (Be sure to check that LED (LED1,2) of the inverter PCB put out the lights. It measures that the voltage (AC) between terminals (R,S,T) on the noise filter PCB (see Fig 1) is discharged sufficiently.)

b) Remove the terminal on the terminal block (TB2) of the inverter PCB and the connector (CNR) of replace the PCB.

c) Make set switch (SW1,2) as shown in Table 1.

d) Connect the terminal of terminal block and the connector to the inverter PCB.

※Remove the short bar form the PCB before the replacement.
Connect it with P2-P3 pins of PCB after the replacement.



Parts Arrangement View
(the inverter PCB)

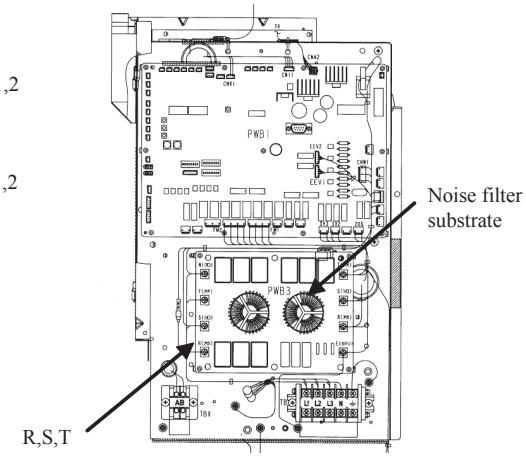


Fig. 1 The front of control

Table.1 Switch setting

In case of one substrate.

SW1-1	OFF
SW1-2	OFF
SW1-3	OFF
SW1-4	OFF
SW2-1	ON
SW2-2	OFF
SW2-3	OFF
SW2-4	OFF

●DIP switch setting list (Outdoor unit)

(1) Control PCB

Switches	Description		Default setting		Remarks
SW1	Pump down operation	Normal*/Pump down	OFF	Normal	
JSW1-1	Model selection		As per model		See table 1
JSW1-2					
JSW1-3					
JSW1-4					
SW3-1	Defrost condition	Normal*/Cold region	OFF	Normal	
SW3-2	Snow protection control	Normal*/Snow protection	OFF	Normal	
SW3-3	Test run SW	Normal*/Test run	OFF	Normal	
SW3-4	Test run mode	Cooling*/Heating	OFF	Cooling	
SW4-1	Model selection	Domestic/Overseas*	ON	Overseas	See table 1
SW4-2	Model selection	3-phase/Single phase	As per model		See table 1
SW4-3	Reserved		OFF		Keep OFF
SW4-4	Reserved		OFF		Keep OFF
SW5-1	Reserved		OFF		Keep OFF
SW5-2	Reserved		OFF		Keep OFF
SW5-3	Reserved		OFF		Keep OFF
SW5-4	Reserved		OFF		Keep OFF

* Default setting

Table 1: Outdoor unit model selection with JSW1-1-JSW1-4 and SW4-1-SW4-2

0: OFF 1:ON

	100VN	100VS	125VN	125VS	140VN	140VS	200VS	250VS
JSW1-1	0	0	1	1	0	0	1	0
JSW1-2	0	0	0	0	1	1	1	0
JSW1-3	0	0	0	0	0	0	0	1
JSW1-4	0	0	0	0	0	0	0	0
SW4-1	1	1	1	1	1	1	1	1
SW4-2*	1	0	1	0	1	0	0	0

* 3-phase: OFF/Single phase: ON

(2) Inverter PCB

Switches	100, 125, 140VN	100, 125, 140VS
	Single phase models	3-phase models
JSW10-1	OFF	OFF
JSW10-2	OFF	OFF
JSW10-3	OFF	OFF
JSW10-4	OFF ∗	OFF ∗
JSW11-1	ON	OFF
JSW11-2	OFF	ON
JSW11-3	OFF	OFF
JSW11-4	ON	ON

Switches	200,250VS
	3-phase models
SW1-1	OFF
SW1-2	OFF
SW1-3	OFF
SW1-4	OFF
SW2-1	ON
SW2-2	OFF
SW2-3	OFF
SW2-4	OFF

∗ When checking inverter PCB of FDC100-140 models with inverter checker, turn JSW10-4 ON.
(Regarding the checking method of inverter PCB with inverter checker, refer to page 346 for details)

(5) Check of anomalous operation data with the remote controller

(a) In case of RC-E5 remote controller

Operation data can be checked with remote control unit operation.

① Press the CHECK button.
The display change " OPER DATA ▼ "

② Press the (SET) button while " OPER DATA ▼ " is displayed.

③ When only one indoor unit is connected to remote controller, " DATA LOADING " is displayed (blinking indication during data loading).
Next, operation data of the indoor unit will be displayed. Skip to step ⑦.

④ When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
[Example]:
" SELECT I/U " (blinking 1 seconds) → " I/U000 ▲ " blinking.

⑤ Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.

⑥ Determine the indoor unit number with the (SET) button.
(The indoor unit number changes from blinking indication to continuous indication)
" I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
↓
" DATA LOADING " (A blinking indication appears while data loaded.)
Next, the operation data of the indoor unit is indicated.

⑦ Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
The items displayed are in the above table.
*Depending on models, the items that do not have corresponding data are not displayed.

Number	Data Item	
01		(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Controller Thermistor Tempeature)
05	THI-R1 ___℃	(Indoor Heat Exchanger Thermistor / U Bend)
06	THI-R2 ___℃	(Indoor Heat Exchanger Thermistor /Capillary)
07	THI-R3 ___℃	(Indoor Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED ___	(Indoor Unit Fan Speed)
09	DEMAND ___Hz	(Frequency Requirements)
10	ANSWER ___Hz	(Response Frequency)
11	I/U EEV ___P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN ___H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR ___℃	(Outdoor Air Temperature)
22	THO-R1 ___℃	(Outdoor Heat Exchanger Thermistor)
23	THO-R2 ___℃	(Outdoor Heat Exchanger Thermistor)
24	COMP ___Hz	(Compressor Frequency)
25	HP ___MPa	(High Pressure)
26	LP ___MPa	(Low Pressure)
27	Td ___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM ___℃	(Comp Bottom Temperature)
29	CT ___AMP	(Current)
30	TARGET SH ___℃	(Target Super Heat)
31	SH ___℃	(Super Heat)
32	TDSH ___℃	(Discharge Pipe Super Heat)
33	PROTECTION No. ___	(Protection State No. of The Compressor)
34	O/U FANSPEED ___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN ___H	(Total Running Hours of The Compressor)
38	O/U EEV1 ___P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2 ___P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

⑧ To display the data of a different indoor unit, press the AIR CON NO. button, which allows you to go back to the indoor unit selection screen.

⑨ Pressing the ①ON/OFF button will stop displaying data.
Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.
⊙If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

●Details of Compressor protection status No. 33

No.	Contents of display	In case of FDC71-140 refer to
"0"	Normal	
"1"	Discharge pipe temperature protection control	P.322, (6).(a).1)
"2"	Discharge pipe temperature anomaly	P.322, (6).(a).2)
"3"	Current safe control of inverter primary current	P.323, (6).(g)
"4"	High pressure protection control	P.322, (6).(b).1), (c).1)
"5"	High pressure anomaly	P.322, (6).(b).2)
"6"	Low pressure protection control	P.323, (6).(e).1)
"7"	Low pressure anomaly	P.323, (6).(e).2)
"8"	Anti-frost prevention control	P.324, (6).(k)
"9"	Current cut	P.323, (6).(g)
"10"	Power transistor protection control	P.324, (6).(h)
"11"	Power transistor anomaly (Overheat)	P.324, (6).(i)
"12"	Compression ratio control	P.323, (6).(f)
"13"	Spare	
"14"	Dewing prevention control	P.324, (6).(l)
"15"	Current safe control of inverter secondary current	P.323, (6).(g)
"16"	Stop by compressor rotor lock	
"17"	Stop by compressor startup failure	P.325, (6).(p)

Note(1) Operation data display on the remote controller.
・Data is dispalyed until canceling the protection control.
・In case of multiple protections controlled, only the younger No. is displayed.
Note(2) Common item.
① In heating mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "4" is displayed.
② In cooling and dehumidifying mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "8" is displayed.

(b) In case of RC-EX1A remote controller

[Operating procedure]

① On the TOP screen, touch the buttons in the order of "Menu" → "Next" → "Service & Maintenance" → "Service password" → "Set" → "Error display" → "Error history".

② When only one indoor unit is connected to the remote controller, followings will be displayed.

1. When there is any anomaly: "Loading. Wait a while" is displayed, followed by the operation data at the occurrence of anomaly.
   Contents of display
   - Error code
   - Number and data item
2. When there is no anomaly: "No anomaly" is displayed, and this mode is terminated.

③ When two or more indoor units are connected to the remote controller, followings will be displayed.

1. When there is any anomaly: If the unit having anomaly is selected on the "Select IU" screen, "Loading. Wait a while" is displayed, followed by the operation data at the occurrence of anomaly.

Contents of display
- Indoor unit No.
- Error code
- Number and data item

2. When there is no anomaly: "No anomaly" is displayed, ant this mode is terminated.

Note (1) When the number of connected units cannot be shown in a page, select "Next".

④ If you press [RUN/STOP] button, the display returns to the TOP screen.

◎ **If you touch "Back" button on the way of setting, the display returns to the last precious screen.**

Note (1) When two remote controllers are used to control indoor units, the check of anomaly operation data can be made on the master remote controller only. (It cannot be operated from the slave remote controller.)

■ Anomaly operation data (Corresponding data may not be provided depending on models. Such items will not be displayed.)

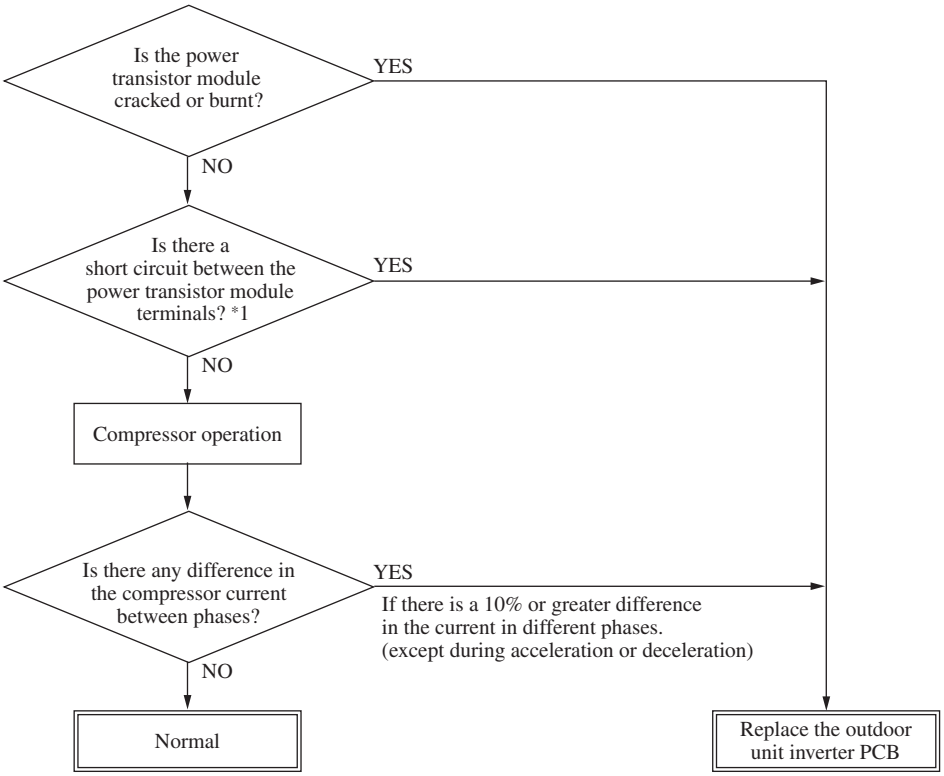
Number	Data Item	
01	❊	(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Controller Thermistor Tempeature)
05	THI-R1 ___℃	(Indoor Heat Exchanger Thermistor / U Bend)
06	THI-R2 ___℃	(Indoor Heat Exchanger Thermistor /Capillary)
07	THI-R3 ___℃	(Indoor Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED ___	(Indoor Unit Fan Speed)
09	DEMAND ___Hz	(Frequency Requirements)
10	ANSWER ___Hz	(Response Frequency)
11	I/U EEV ____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN ____H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR ___℃	(Outdoor Air Temperature)
22	THO-R1 ___℃	(Outdoor Heat Exchanger Thermistor)
23	THO-R2 ___℃	(Outdoor Heat Exchanger Thermistor)
24	COMP ___Hz	(Compressor Frequency)
25	HP ___MPa	(High Pressure)
26	LP ____MPa	(Low Pressure)
27	Td ___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM ___℃	(Comp Bottom Temperature)
29	CT ___AMP	(Current)
30	TARGET SH ___℃	(Target Super Heat)
31	SH ___℃	(Super Heat)
32	TDSH ___℃	(Discharge Pipe Super Heat)
33	PROTECTION No. ___	(Protection State No. of The Compressor)
34	O/U FANSPEED ___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN ____H	(Total Running Hours of The Compressor)
38	O/U EEV1 ____P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2 ____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

●Details of Compressor protection status No. 33

No.	Contents of display	In case of FDC71-140 refer to
"0"	Normal	
"1"	Discharge pipe temperature protection control	P.322, (6).(a).1)
"2"	Discharge pipe temperature anomaly	P.322, (6).(a).2)
"3"	Current safe control of inverter primary current	P.323, (6).(g)
"4"	High pressure protection control	P.322, (6).(b).1), (c).1)
"5"	High pressure anomaly	P.322, (6).(b).2)
"6"	Low pressure protection control	P.323, (6).(e).1)
"7"	Low pressure anomaly	P.323, (6).(e).2)
"8"	Anti-frost prevention control	P.324, (6).(k)
"9"	Current cut	P.323, (6).(g)
"10"	Power transistor protection control	P.324, (6).(h)
"11"	Power transistor anomaly (Overheat)	P.324, (6).(i)
"12"	Compression ratio control	P.323, (6).(f)
"13"	Spare	
"14"	Dewing prevention control	P.324, (6).(l)
"15"	Current safe control of inverter secondary current	P.323, (6).(g)
"16"	Stop by compressor rotor lock	
"17"	Stop by compressor startup failure	P.325, (6).(p)

Note(1) Operation data display on the remote controller.
・Data is dispalyed until canceling the protection control.
・In case of multiple protections controlled, only the younger No. is displayed.
Note(2) Common item.
① In heating mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "4" is displayed.
② In cooling and dehumidifying mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "8" is displayed.

(6) Power transistor module (including the driver PCB) inspection procedure



Note(1) In models 200 and 250, also replace the power transistor.

*1 Power transistor module terminal short circuit check procedure

Disconnect the compressor wiring, then conduct a short circuit check.

P-U, P-V, P-W

N-U, N-V, N-W

Check between the P-N terminals.

Bring the tester probes in contact with the following places on each te rminal.

P: Power transistor P terminal,

N: Power transistor N terminal,

U: End of red harness to compressor

V: End of white harness to compressor

W: End of black or blue harness to compressor

Check for a power transistor short circuit.

- When you do not have a diagnostic checker for judging if the inverter is defective, measure between the terminals of the power transistor parts, judge whether the power transistor is defective or not.
- Disconnect the compressor, then measure with the controller incorporated.

Tester		Normal values (Ω)	
Terminal (+)	Terminal (-)	Model 100-140	Model 200, 250
P	N	Approx. 1 M Approx. 300-400	Scores of M
N	P		A few of M
P	U	0	Scores of M
P	V		Scores of M
P	W		Scores of M
N	U	Approx. 1.2 M	Hundreds of K
N	V		Hundreds of K
N	W		Hundreds of K
U	P	Approx. 1.3 M	Hundreds of K
V	P		Hundreds of K
W	P		Hundreds of K
U	N	0	Scores of M
V	N		Scores of M
W	N		Scores of M

If the measured values range from 0 ~ several kW, there is a possibility that the elements are damaged, so replace the power transistor parts.

(7) Inverter checker for diagnosis of inverter output

●Checking method

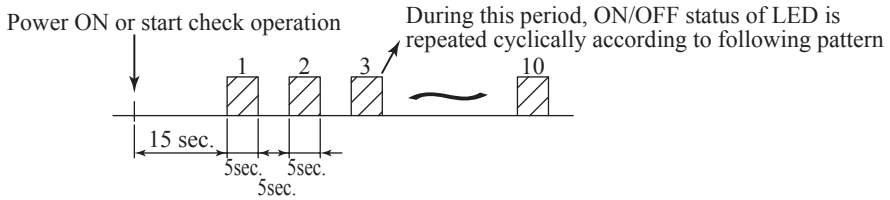
(a) Setup procedure of checker.

1) Power OFF (Turn off the breaker).
2) Remove the terminal cover of compressor and disconnect the wires (U, V, W) from compressor.
3) Connect the wires U (Red) , V (White) and W (Black) of checker to the terminal of disconnected wires (U, V, W) from compressor respectively.

(b) Operation for judgment.

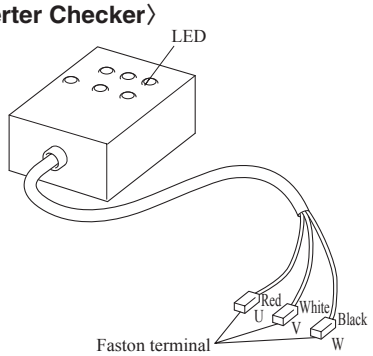
1) Power ON after JSW10-4 on outdoor inverter PCB was turned ON. (In case of FDC100-140)
   * In case of FDC200VS and 250VS, Start test operation on cooling or heating mode after power ON.
2) After 15 seconds since power has turned ON (or In case of FDC200VS, 250VS after the test operation started), LED start ON/OFF for 5 seconds cyclically and it repeats 10 times.
3) Check ON/OFF status of 6 LED's on the checker.
4) Judge the PCB by ON/OFF status of 6 LED's on the checker.

ON/OFF status of LED	If all of LED are ON/OFF according to following pattern	If all of LED stay OFF or some of LED are ON/OFF
Inverter PCB	Normal	Anomalous



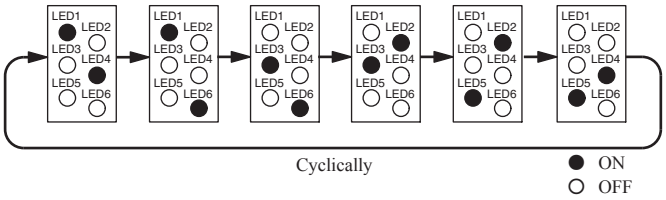
5) Be sure to turn off JSW10-4 on outdoor inverter PCB, after finishing the check operation. (In case of FDC100-140)

〈Inverter Checker〉



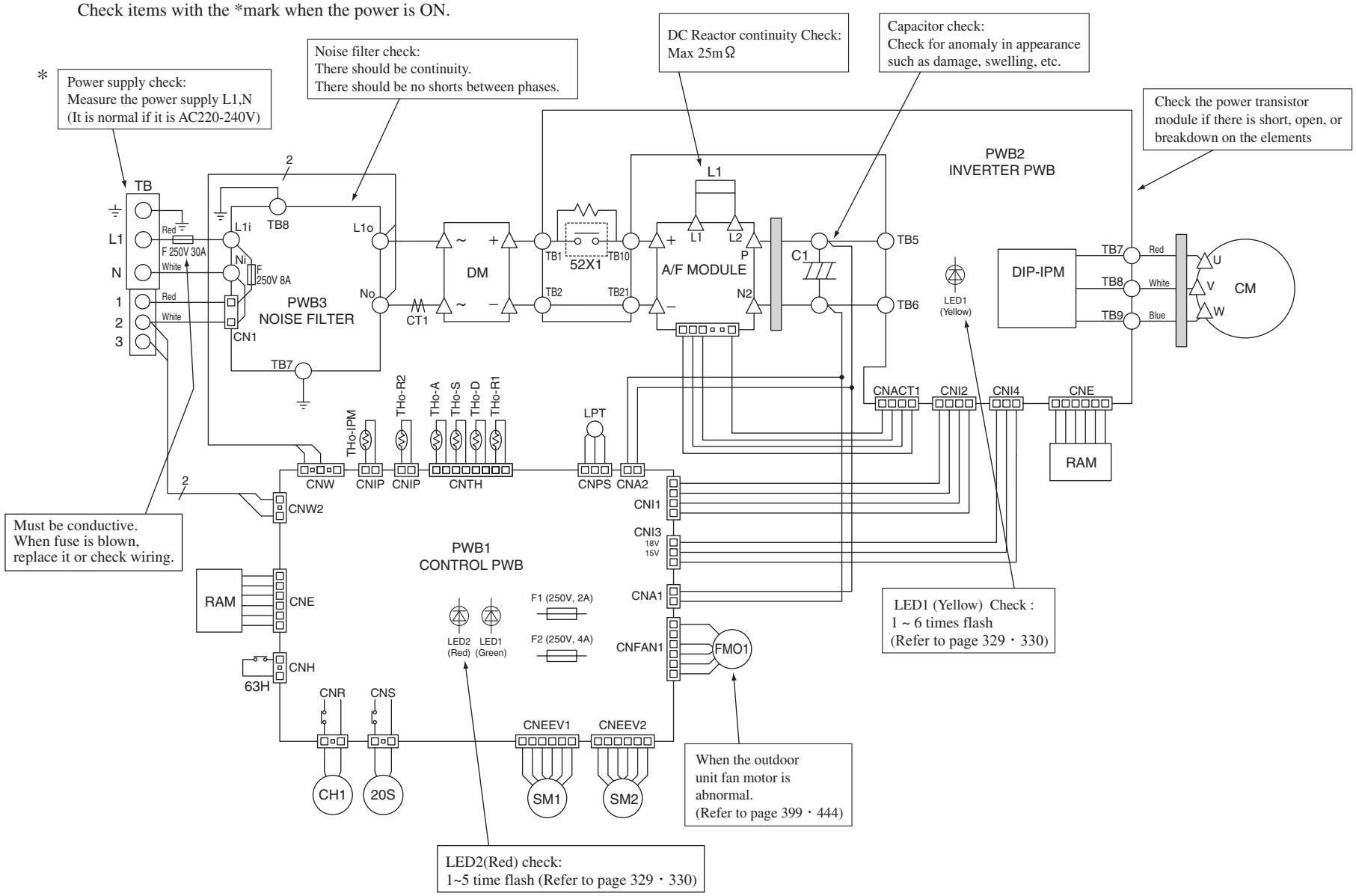
Connect to the terminal of the wires which are disconnected from compressor.

LED ON/OFF pattern



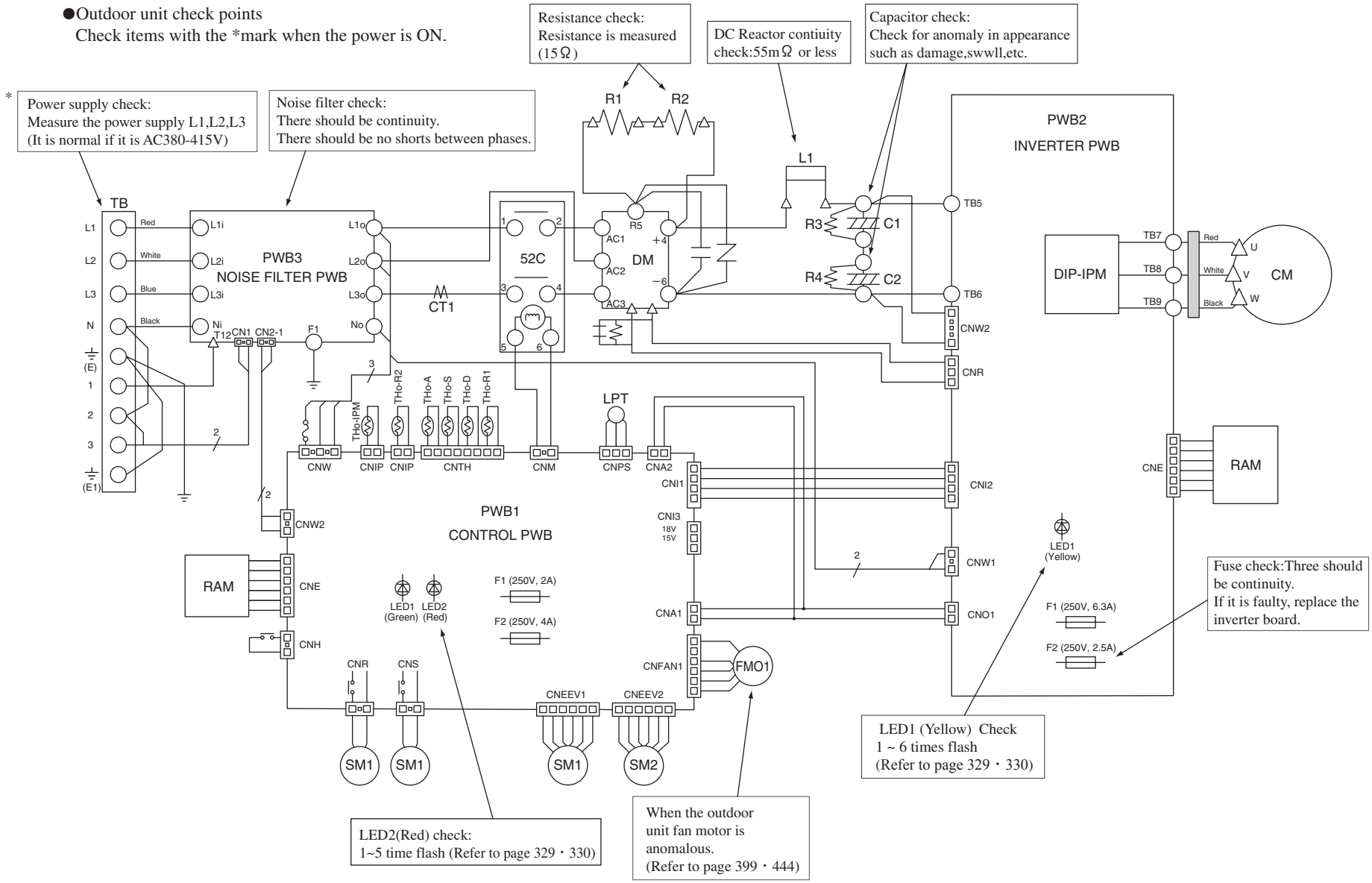
Models FDC100,125,140VN

●Outdoor unit check points
Check items with the *mark when the power is ON.



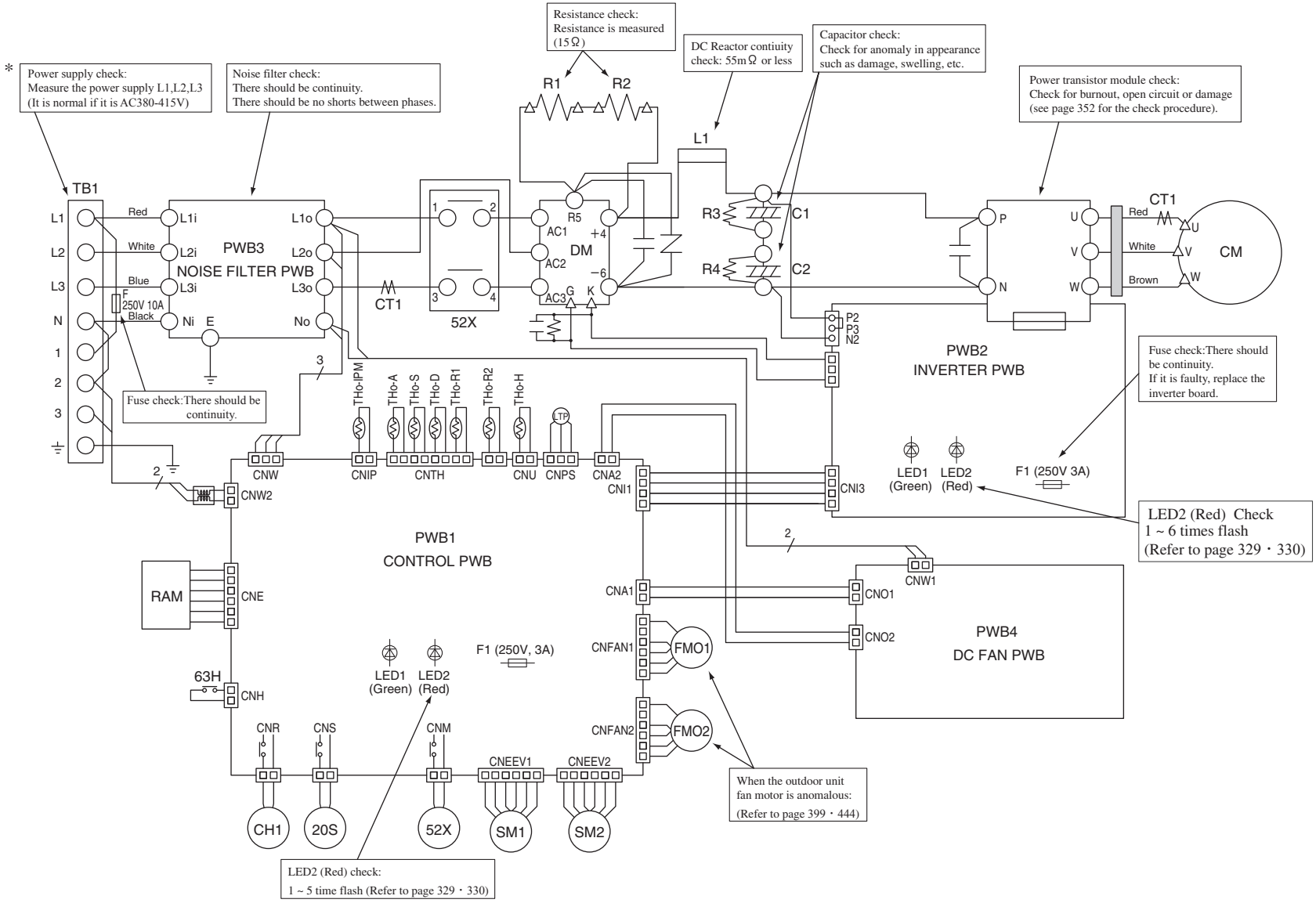
FDC100,125,140VS

●Outdoor unit check points
Check items with the *mark when the power is ON.



Models FDC200,250VS

●Outdoor unit check points
Cheek items with the *mark when the power is ON.



1.12.2 Troubleshooting flow

(1) List of troubles

(a) FDT, FDTC, FDEN, FDU, FDUM, FDF series

Remote controller display	Description of trouble	Reference page
None	Operates but does not cool.	359
None	Operates but does not heat.	360
None	Earth leakage breaker activated	361
None	Excessive noise/vibration (1/3)	362
None	Excessive noise/vibration (2/3)	363
None	Excessive noise/vibration (3/3)	364
None	Louver motor failure (FDT, FDTC, FDEN, FDF series)	365
None	Power supply system error (Power supply to indoor control PCB)	366
None	Power supply system error (Power supply to remote controller)	367
INSPECT I/U	INSPECT I/U (When 1 or 2 remote controllers are connected)	368
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controllers)	369
WAIT	Communication error at initial operation	370-372
None	No display	373
E1	Remote controller communication circuit error	374
E5	Communication error during operation	375
E6	Indoor heat exchanger temperature thermistor anomaly	376
E7	Return air temperature thermistor anomaly	377
E8	Heating overload operation	378
E9	Drain trouble	379
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote controller	380
E14	Communication error between master and slave indoor units	381
E16	Indoor fan motor anomaly	382
E18	Address setting error of moster and slave indoor unit	383
E19	Indoor unit operation check, drain motor check setting error	384
E20	Indoor fan motor rotation speed anomaly	385
E21	Defective panel switch operation (FDT only)	386
E28	Remote controller temperature thermistor anomaly	387
E35	Cooling overload operation	388
E36	Discharge pipe temperature error	389
E37	Outdoor heat exchanger temperature thermistor anomaly	390
E38	Outdoor air temperature thermistor anomaly	391
E39	Discharge pipe temperature thermistor anomaly	392
E40	High pressure error (63H1 activated)	393
E41	Power transistor overheat	394・395
E42	Current cut	396・397
E45	Inverter communication error	398
E48	Outdoor fan motor anomaly	399
E49	Low pressure error or low pressure sensor anomaly	400・401
E51	Inverter and fan motor anomaly	402
E53	Suction pipe temperature thermistor anomaly	403
E54	Low pressure sensor anomaly	404
E55	Underneath temperature thermistor anomaly (Models FDC 200, 250 only)	405
E57	Insufficient refrigerant amount or detection of service valve closure	406
E59	Compressor startup failure	407・408
E60	Anomalous compressor rotor lock (Models FDC 200, 250 only)	409

(b) SRK series

Remote controller display	Description of trouble	Reference page
None	Operates but does not cool.	410
None	Operates but does not heat.	411
None	Earth leakage breaker activated	412
None	Excessive noise/vibration (1/3)	413
None	Excessive noise/vibration (2/3)	414
None	Excessive noise/vibration (3/3)	415
None	Louver motor failure	416
None	Power supply system error (Power supply to indoor control PCB)	417
None	Power supply system error (Power supply to remote controller)	418
None	Room temperature sensor anomaly	419
None	Limit switch anomaly	420
INSPECT I/U	INSPECT I/U (When 1 or 2 remote controllers are connected)	421
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controllers)	422
♨WAIT♨	Communication error at initial operation	423-425
None	No display	426
E1	Remote controller communication circuit error	427
E5	Communication error during operation	428
E6	Indoor heat exchanger temperature sensor anomaly	429
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote controller	430
E14	Communication error between master and slave indoor units	431
E16	Indoor fan motor anomaly	432
E28	Remote controller temperature thermistor anomaly	433
E35	Cooling overload operation	434
E36	Discharge pipe temperature error	435
E37	Outdoor heat exchanger temperature thermistor anomaly	436
E38	Outdoor air temperature thermistor anomaly	437
E39	Discharge pipe temperature thermistor anomaly	438
E40	High pressure error (63H1 activated)	439
E41	Power transistor overheat	440
E42	Current cut	441・442
E45	Communication error between inverter PCB and outdoor control PCB	443
E48	Outdoor fan motor anomaly	444
E49	Low pressure error or low pressure sensor anomaly	445・446
E51	Inverter and fan motor anomaly	447
E53	Suction pipe temperature thermistor anomaly	448
E54	Low pressure sensor anomaly	449
E57	Insufficient refrigerant amount or detection of service valve closure	450
E59	Compressor startup failure	451・452

(2) Troubleshooting

(a) FDT, FDTC, FDEN, FDU, FDUM, FDF series

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Keeps flashing	Stays OFF	Operates but does not cool
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

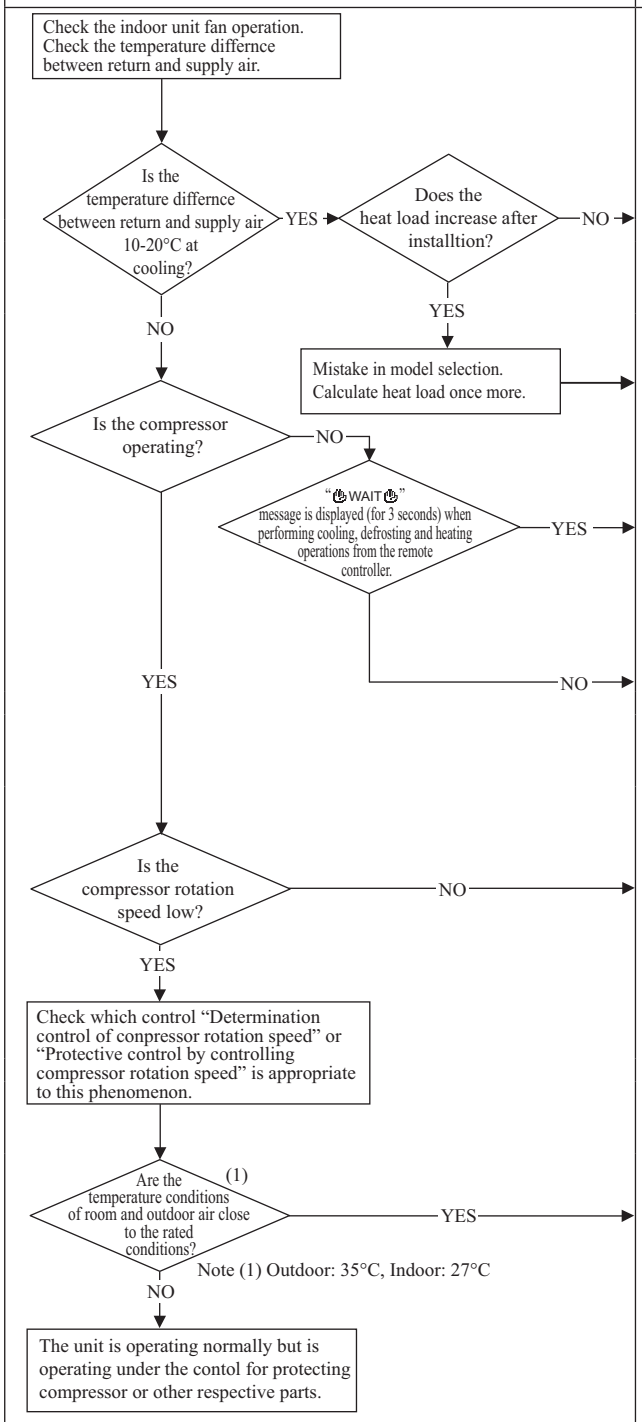
2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Keeps flashing	Stays OFF	Operates but does not heat
	Outdoor	Keeps flashing	Stays OFF	

1.Applicable model

All models

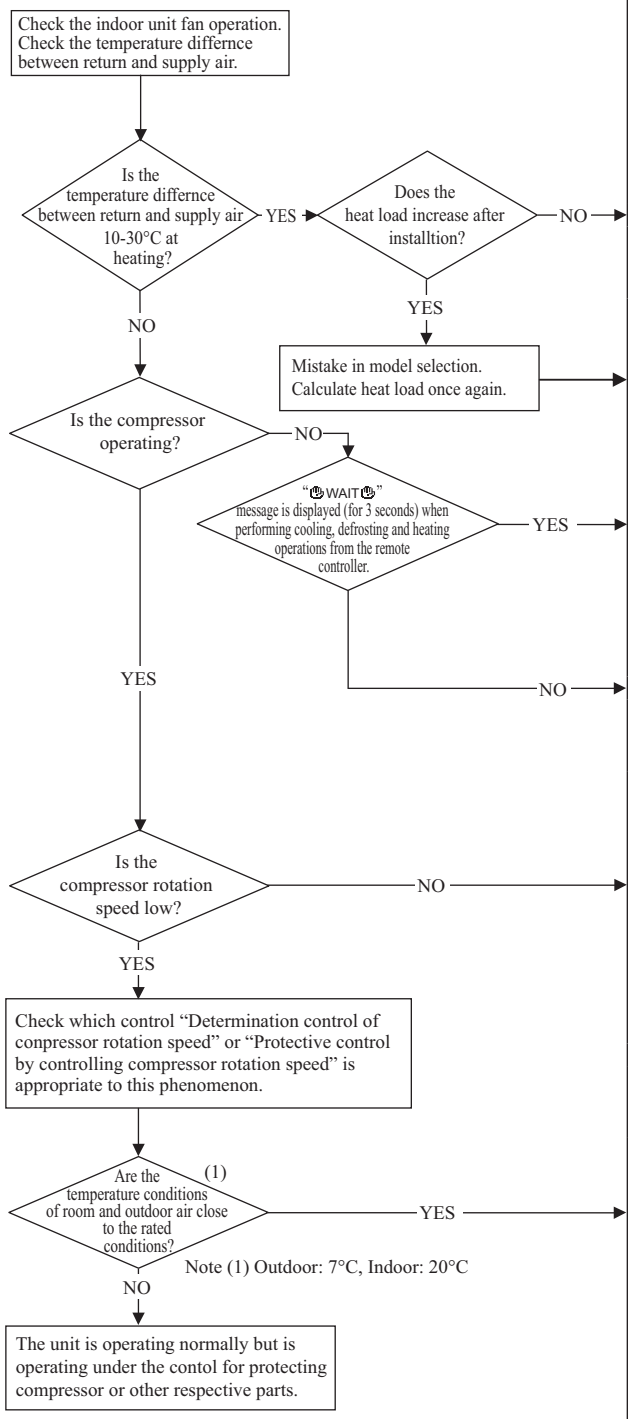
2.Error detection method

3. Condition of Error displayed

4.Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty expansion valve operation

5.Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Stays OFF	Stays OFF	Earth leakage breaker activated
	Outdoor	Stays OFF	Stays OFF	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Defective compressor
- Noise

5. Troubleshooting

Diagnosis	Countermeasure
Are OK the insulation resistance and coil resistance of compressor? — NO →	Replace compressor.*
YES ↓ Is insulation of respective harnesses OK? Is any harness bitten between pannel and casing or etc? — NO →	Secure insulation resistance.
YES ↓ Check the outdoor unit grounding wire/earth leakage breaker.	

Check of the outdoor unit grounding wire/earth leakage breaker

① Run an independent grounding wire from the grounding screw of outdoor unit to the grounding terminal on the distribution panel. (Do not connect to another grounding wire.)
② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation.

* Insulation resistance of compressor
- Immediately after installation or when the unit has been left for long time without power supply, the insulation resistance may drop to a few MΩ because of refrigerant migrated in the compressor.
  When the earth breaker is activated at lower insulation resistance, check the following points.

① 6 hours after power ON, check if the insulation resistance recovers to normal.
When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.
② Check if the earth leakage breaker is conformed to higher harmonic regulation or not.
Since the unit is equipped with inverter, it is necessary to use components conformed to higher harmonic regulation in order to prevent malfunction of earth leakage breaker.

Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	–	–	Excessive noise/vibration (1/3)
	Outdoor	–	–	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

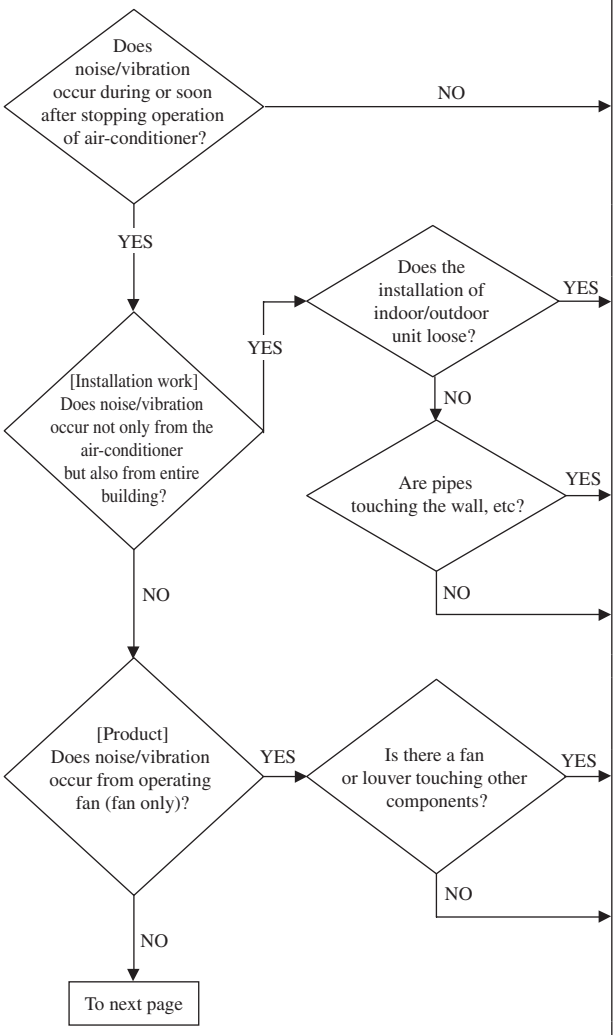
① Improper installation work
- Improper anti-vibration work at instllation
- Insufficient strength of mounting face

② Defective product
- Before/after shipping from factory

③ Improper adjustment during commissioning
- Excess/shortage of refrigerant, etc.

5. Troubleshooting

Diagnosis



Countermeasure

If excessive noise/vibration persists when sufficient time has elapsed after stopping the unit, it is considered that the air-conditioner is not the source.

Check the installed condition carefully, and correct the position or insert rubber cushions or others into the gap, if necessary.

Prevent the vibration from transmitting to wall and etc by fixing pipes on the wall or wrapping rubber cushion around the pipe which goes through the hole in the wall or applying other appropriate means.

Strength of ceiling wall, floor, etc. may be insufficient. Review the installing position or reinforce it.

Check for leaning of installed unit or anomalous mounting of fan, louver or motor and specify the contacting point and correct it.

When the heat exchanger or filter is clogged, clean them. In case that the unit is installed at the site where background noise is very low, small noise from indoor unit can be heard, but it is normal. Before installation, check for background noise. If backgound nois is very low, convince client prior to installation.

Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	–	–	Excessive noise/vibration (2/3)
	Outdoor	–	–	

1. Applicable model

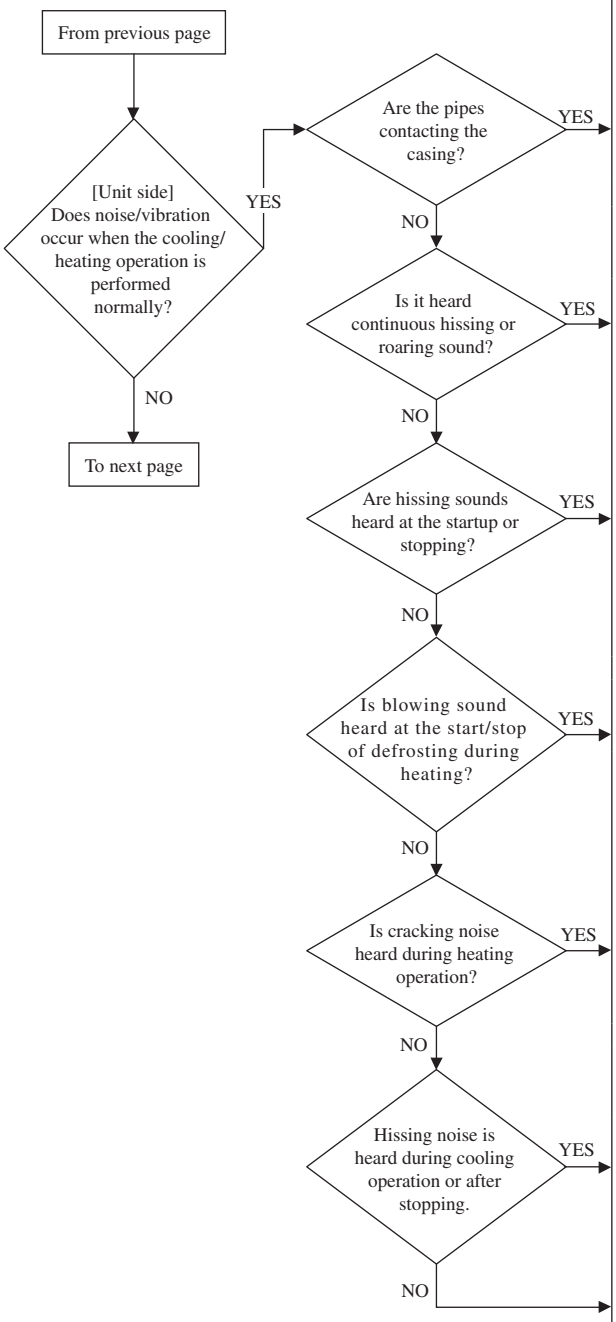
All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
	

Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	–	–	Excessive noise/vibration (3/3)
	Outdoor	–	–	

1. Applicable model

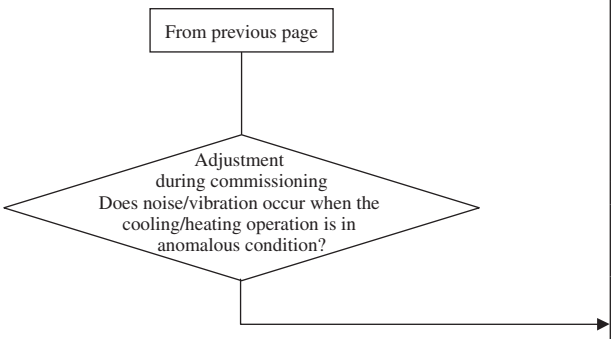
All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
	If insufficient cooling/ heating problem happens due to anomalous operating conditions at cooling/ heating, followings are suspicious. • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant. * Since there could be many causes of noise/ vibration, the above do not cover all. In such case, check the conditions when, where, how the noise/vibration occurs according to following check point. • Indoor/outdoor unit • Cooling/heating/fan mode • Startup/stop/during operation • Operating condition (Indoor/outdoor temperatures, pressure) • Time it occurred • Operation data retained by the remote controller such as compressor rotation speed, heat exchanger temperature, EEV opening degree, etc. • Tone (If available, record the noise) • Any other anomalies

Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Keeps flashing	Stays OFF	Louver motor failure (FDT, FDTC, FDEN, FDF series)
	Outdoor	Keeps flashing	Stays OFF	

1.Applicable model

FDT, FDTC, FDEN, FDF series only

2.Error detection method

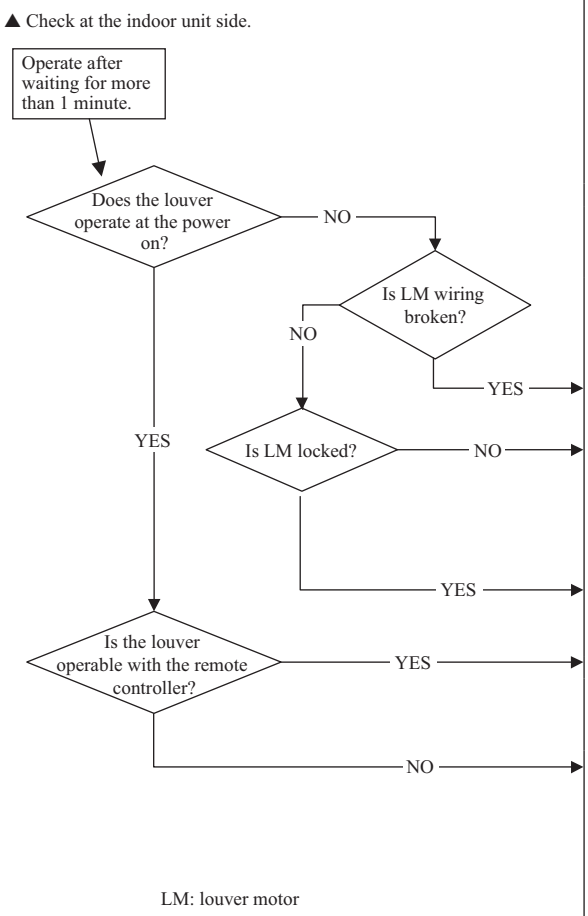
3. Condition of Error displayed

4.Presumable cause

- Defective LM
- LM wire breakage
- Faulty indoor control PCB

5.Troubleshooting

Diagnosis	Countermeasure



Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Stays OFF	Stays OFF	Power supply system error (Power supply to indoor control PCB)
	Outdoor	Stays OFF	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Misconnection or breakage of connecting wires
- Blown fuse
- Faulty transformer
- Faulty indoor control or power PCB
- Broken harness
- Faulty outdoor control PCB (Noise filter)

5. Troubleshooting

Diagnosis	Countermeasure
Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit? — NO → Is AC380/415V for 3-phase unit detected between 1, 2 and 3 on the teminal block of outdoor unit or is AC220/240V for 1-phase unit detected between 1 and 2 on the terminal block of outdoor unit? — NO →	Defective outdoor control PCB (Noise filter)
YES →	Misconnection or breakage of connecting wires
Note(1) FDT, FDUM : F1, F2 FDTC, FDF : F200, F201 FDEN, FDU : Fuse between wires.	
(1) Are fuses OK? — NO → Is the check of resistance between ①-③ of CNW0 OK? — NO →	Defective indoor power PCB → Replace.
YES → Is the checked result of resistance of FM, etc OK? — NO →	Replace FM, etc.
YES →	Replace fuse.
(2) Is DC5V detected between ④-⑤ of CNW1? — NO →	Defective indoor power PCB → Replace.
Note (2) ⑤ for GND	
YES → Is JX1 open? — NO →	Open JX1.
YES →	Defective indoor control PCB → Replace.

Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Keeps flashing	Stays OFF	Power supply system error (Power supply to remote controller)
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

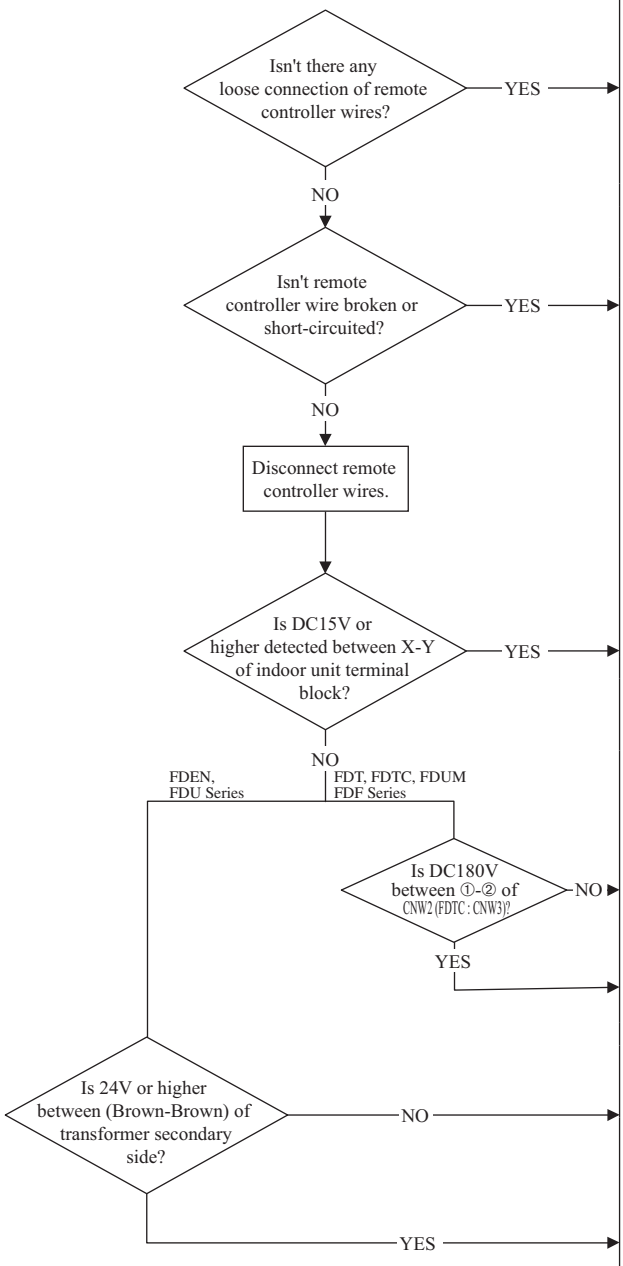
2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Remote controller wire breakage/short-circuit
- Defective remote controller
- Malfunction by noise
- Faulty indoor power PCB
- Broken harness
- Faulty indoor control PCB

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: INSPECT I/U	Indoor	Keeps flashing	Stays OFF	INSPECT I/U (When 1 or 2 remote controllers are connected)
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

Communication between indoor unit and remote controller is disabled for more than 30 minutes after the power on.

3. Condition of Error displayed

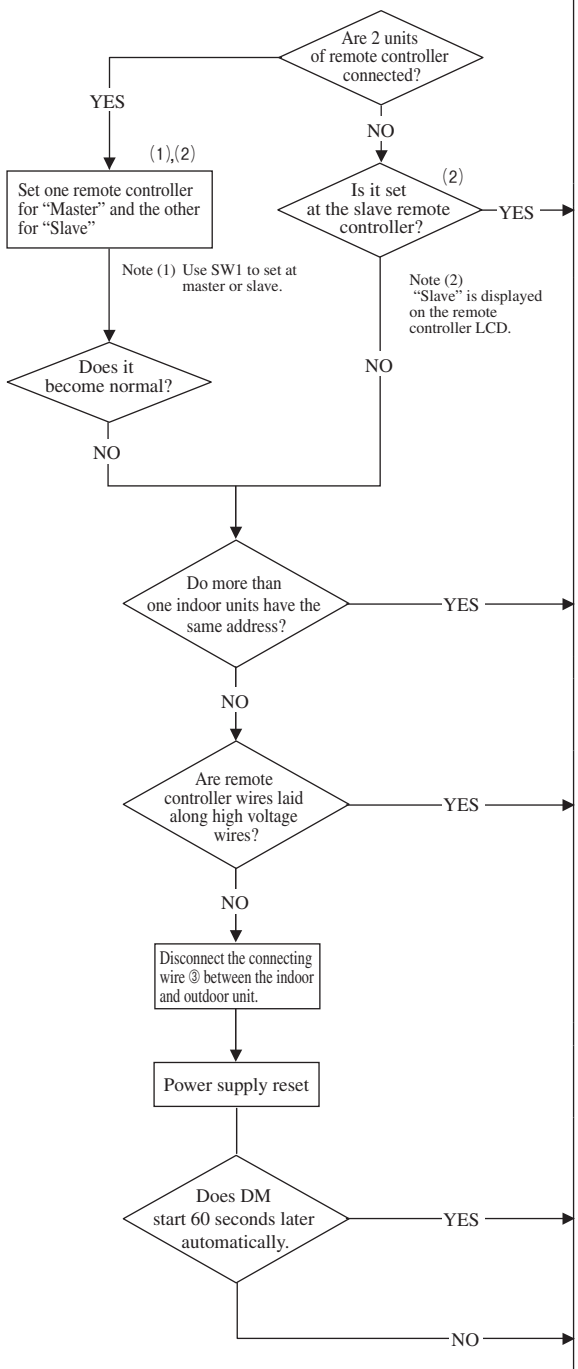
Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote controller communication circuit
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure



Note: If any error is detected 30 minutes after displaying "✋WAIT✋" on the remote controller, the display changes to "INSPECT I/U".

Error code	LED	Green	Red	Content
Remote controller: INSPECT I/U	Indoor	Keeps flashing	Stays OFF	INSPECT I/U (Connection of 3 units or more remote controller)
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

Indoor unit cannot communicate for more than 30 minutes after the power on with remote controller.

3. Condition of Error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote controller communication circuit
- Faulty indoor control or power PCB
- Faulty outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Are more than 3 units of remote controller connected? — YES →	Reduce to 2 units or less.
NO ↓ Does remote controller display "Slave"? — YES →	Change remote controller setting to "Master". (SW1 on remote controller PCB)
NO ↓ Do more than one indoor units have the same address? — YES →	Change address. (SW2 on indoor control PCB)
NO ↓ Is it set to a slave indoor unit. SW5-1, 2? — YES →	Change to master. (SW5-1, 2 on indoor control PCB)
NO ↓ Is there loose or wrong connection at the termanal of wiring between indoor and outdoor units? — YES →	Correct
NO ↓ Is the grounding wire connected properly? — NO →	Correct
YES ↓ Is approx. DC20V detected between ②-③ on the outdoor unit terminal block? — NO →	Defective outdoor control PCB→Replace.
YES ↓ Is approx. DC20V detected between ②-③ on the indoor unit terminal block? — NO →	Broken connecting wire→ Correct.
YES →	Defective indoor control or power PCB→Replace.

Note: If any error is detected 30 minutes after displaying "✋WAIT✋" on the remote controller, the display changes to "INSPECT I/U".

Error code	LED	Green	Red	Content
Remote controller: ✋WAIT✋	Indoor	Keeps flashing	Stays OFF	Communication error at initial operation (1/3)
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

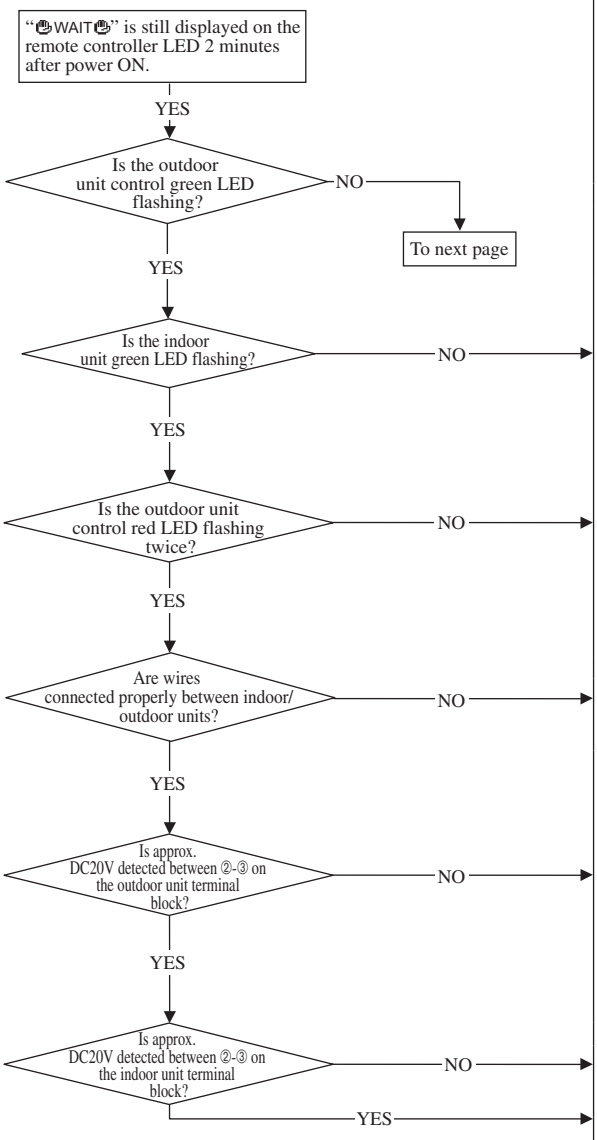
2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty indoor control or power PCB
- Defective remote controller
- Broken remote controller wire
- Faulty outdoor control PCB
- Broken connection wires

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: WAIT	Indoor	Keeps flashing	Stays OFF	Communication error at initial operation (2/3)
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty noise filter
- Faulty indoor control PCB
- Faulty outdoor control PCB
- Faulty inverter PCB
- Faulty fan motor

5. Troubleshooting

Diagnosis	Countermeasure
Diagnosis for when the outdoor control PCB LED is turned off	
From previous page → Shut down the breaker and back on again the breaker 3 minutes later.	
Does it reset normally? (NO → Isn't the outdoor unit controller power supply fuse (30A) blown? (1); YES → Normal (Malfunction by noise)	Normal (Malfunction by noise)
Note (1) 1-phase model only	
Isn't the outdoor unit controller power supply fuse (30A) blown? (1) (NO → To check method for inverter PCB before replacment of blown power supply fuse. → To next page)	
Is AC220/240V or AC380/415V detected at the noise filter secondary side? (NO → Replace noise filter.)	Replace noise filter.
Model 71-140 Is DC255-310V detected at CNA2? Model 200, 250 Is 220/240 detected at CNW2? (NO → Check connection of diode stack and electrolytic capacitor by refering main electrical circuit diagram)	Check connection of diode stack and electrolytic capacitor by refering main electrical circuit diagram
Note (2) Value in ( ) are for the model 200, 250.	
Isn't fuse 〔250V, 2(3)A〕 on the outdoor control PCB blown? (2) (NO → Defective outdoor control PCB→Replace.)	Defective outdoor control PCB→Replace.
Is DC5V detected on the outdoor control PCB (Between ①-④ of CNV)? (NO → Defective outdoor control PCB→Replace.)	Defective outdoor control PCB→Replace.
Is DC5V detected if the connector of outdoor unit fan motor is disconnected? (NO → Defective outdoor fan motor)	Defective outdoor fan motor
Is DC5V detected if the inverter power supply connector (CNI2) is disconnected? (NO → Defective inverter PCB →Replace.)	Defective inverter PCB →Replace.
YES → Defective outdoor control PCB→Replace.	Defective outdoor control PCB→Replace.

Note:

Error code	LED	Green	Red	Content
Remote controller: WAIT	Indoor	Keeps flashing	Stays OFF	Communication error at initial operation (3/3)
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

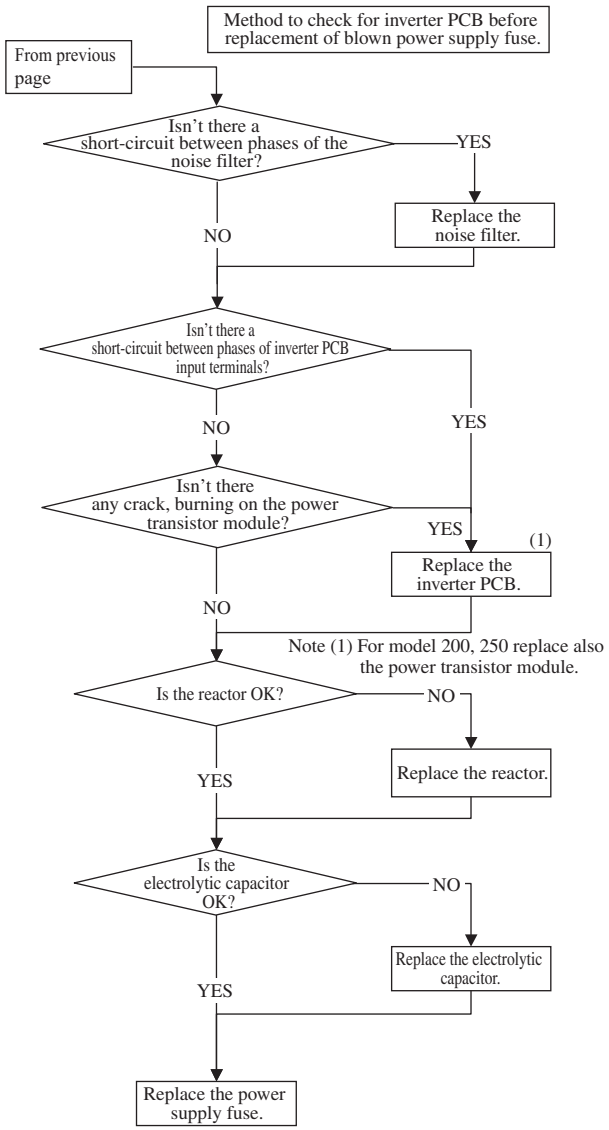
3. Condition of Error displayed

4. Presumable cause

- Blown fuse
- Faulty noise filter
- Faulty inverter PCB
- Faulty reactor
- Faulty electrolytic capacitor

5. Troubleshooting

Diagnosis



Countermeasure

Note:

Error code	LED	Green	Red	Content
Remote controller: None	Indoor	Keeps flashing	Stays OFF	No display
	Outdoor	Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty indoor control PCB
- Defective remote controller
- Broken remote controller wire

5. Troubleshooting

Diagnosis	Countermeasure
Remote controller does not display anything after the power on. → Is DC10V or higher detected at remote controller connection terminals?	
YES →	Defective remote controller
NO → Is DC10V or higher detected on remote controller wires if the remote controller is removed?	
YES →	Defective remote controller
NO → Are wires connected properly between the indoor/outdoor units?	
YES →	Defective connecting wire. Defective remote controller wire (Short-circuit, etc.)
NO →	Defective indoor control PCB→Replace.

Note:

Error code	LED	Green	Red	Content
Remote controller: E1	Indoor	Keeps flashing	Stays OFF	Remote controller communication circuit error
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When normal communication between the remote controller and the indoor unit is interrupted for more than 2 minutes. (Detectable only with the remote controller)

3. Condition of Error displayed

Same as above

4. Presumable cause

- Defective communication circuit between remote controller-indoor unit
- Noise
- Defective remote controller
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is it possible to reset normally by the power reset? → YES	Malfunction by noise Check peripheral environment.
NO → Turn SW7-1 to OFF. → ON Remove the wire ③ connecting between indoor/outdoor units. → Power reset → Does the drain pump restart automatically 1 minute later? → YES	Defective indoor control PCB → Replace.
NO → Note (2) Does the remote controller still display "WAIT" even after 3 minutes?	Defective remote controller → Replace.

Note: If the indoor unit cannot communicate normally with the remote controller for 180 seconds, the indoor unit PCB starts to reset automatically.

Error code	LED	Green	Red	Content
Remote controller: E5	Indoor	Keeps flashing	2 times flash	Communication error during operation
	Outdoor	Keeps flashing	See below	

1. Applicable model

All models

2. Error detection method

When normal communication between indoor and outdoor unit is interrupted for more than 2 minutes.

3. Condition of Error displayed

Same as above is detected during operation.

4. Presumable cause

- Unit No. setting error
- Broken remote controller wire
- Faulty remote controller wire connection
- Faulty outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
In case that the outdoor unit red LED flashes 2-times	
Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block. Is the connection of signal wires at the outdoor unit side OK? — NO →	Repair signal wires.
YES ↓ Note (2) Check for faulty connection or breakage of signal wires between indoor-outdoor units. Is the connection of signal wires between indoor-outdoor units OK? — NO →	Repair signal wires.
YES ↓ Power reset ↓ Has the remote controller LCD returned to normal state? — NO →	To the diagnosis of "WAIT"
YES →	Unit is normal. (Malfunction by temporary noise, etc.)
In case that the outdoor unit red LED stays OFF	
Power reset ↓ NO ↓ Has the remote controller LCD returned to normal state? — NO →	Defective outdoor control PCB (Defective network communication circuit) → Replace.
YES →	Unit is normal. (Malfunction by temporary noise, etc.)

Note: Pressing the pump-down switch cancels communications between indoor and outdoor unit so that "communication error-E5" is displayed on indoor unit and remote controller, but it is normal.

Error code	LED	Green	Red	Content
Remote controller: E6	Indoor	Keeps flashing	1 time flash	Indoor heat exchanger temperature thermistor anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected on the indoor heat exchanger thermistor (ThI-R1, R2 or R3).

3. Condition of Error displayed

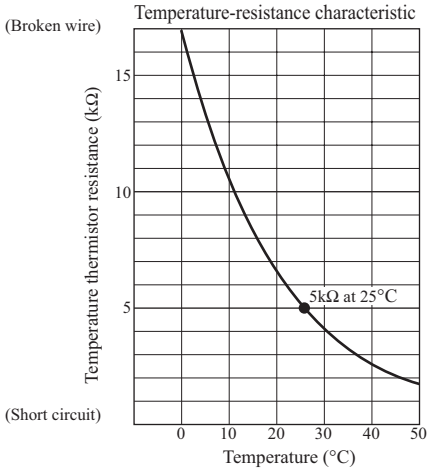
- When the temperature thermistor detects -40°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.
- Or if 70°C or higher is detected for 5 seconds continuously.

4. Presumable cause

- Defective indoor heat exchanger thermistor connector
- Indoor heat exchanger temperature thermistor anomaly
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of indoor heat exchanger temperature thermistor connector OK? → NO	Correct. → Insert connector securely.
YES → Are characteristics of indoor heat exchanger temperature thermistor OK? → NO	Defective indoor heat exchanger temperature thermistor → Replace.
YES	Defective indoor control PCB → Replace. (Defective indoor unit heat exchanger temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote controller: E7	Indoor	Keeps flashing	1 time flash	Return air temperature thermistor anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected by indoor return air temperature thermistor (ThI-A)

3. Condition of Error displayed

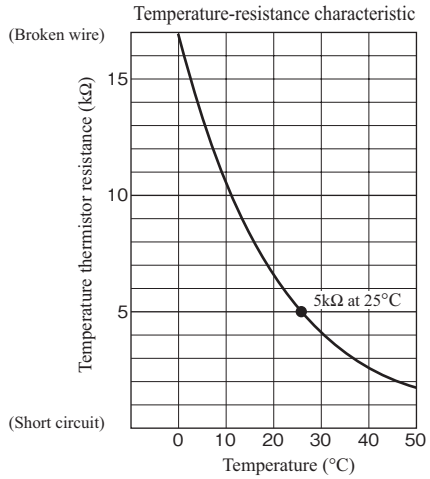
- When the temperature thermistor detects -20°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Defective return air temperature thermistor connector
- Defective return air temperature thermistor
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of return air temperature thermistor connector OK? — NO →	Correct. → Connect connector.
YES ↓	
Are the characteristics of return air temperature thermistor OK? — NO →	Defective return air temperature thermistor → Replace.
YES →	Defective indoor control PCB → Replace. (Defective return air temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote controller: E8	Indoor	Keeps flashing	1 time flash	Heating overload operation
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Indoor heat exchanger temperature thermistor (ThI-R1, R2, R3)

3. Condition of Error displayed

When it is detected 5 times within 60 minutes from initial detection or when the overload condition is detected for 6 minutes continuously.

4. Presumable cause

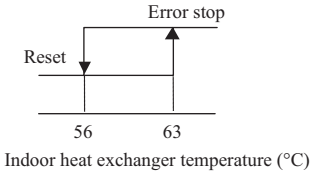
- Clogged air filter
- Defective indoor heat exchanger temperature thermistor connector
- Defective indoor heat exchanger temperature thermistor
- Anomalous refrigerant system

5. Troubleshooting

Diagnosis	Countermeasure
Is the air filter clogged? — YES →	Wash.
Is the indoor heat exchanger temperature thermistor connection OK? — NO →	Defective indoor heat exchanger temperature thermistor connector→ Correct.
Are the characteristics of indoor heat exchanger temperature thermistor OK? (2) — NO →	Defective indoor heat exchanger temperature thermistor.
Check the error data with the remote controller.	
Is the unit operating in the state of heating overload? — NO →	Check refrigerant system.
YES →	Adjust

Note (1) Judge if it is in the state of overload or not as follows.
- ▲ Is there any short-circuit of air?
- ▲ Isn't there any fouling or clogging on the indoor heat exchanger?
- ▲ Is the outdoor fan control normal?
- ▲ Isn't the room and outdoor air temperature too high?

Note (2) For characteristics of indoor heat exchanger temperature thermistor, see the error display E6.



Note: During heating operation; After starting compressor, compressor rotation speed is decreased by detecting indoor heat exchanger temperature (ThI-R) in order to control high pressure.

Error code	LED	Green	Red	Content
Remote controller: E9	Indoor	Keeps flashing	1 time flash	Drain trouble (FDT, FDTC, FDU and FDUM series)
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

FDT, FDTC, FDU and FDUM series only

2. Error detection method

Float switch is activated

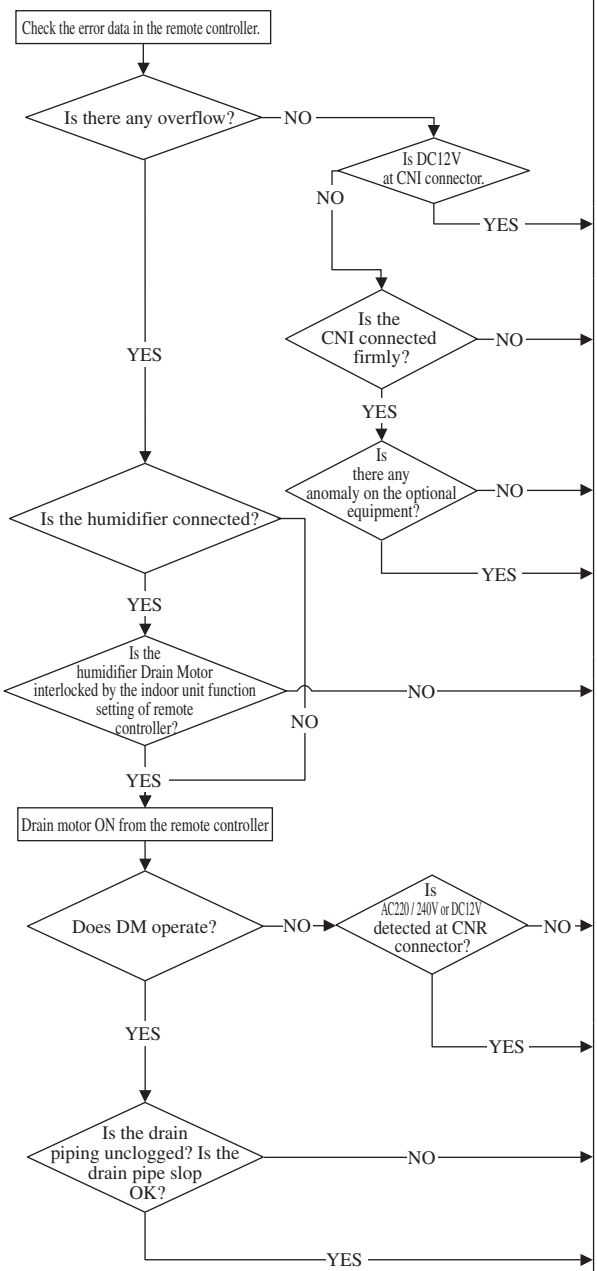
3. Condition of Error displayed

If the float switch OPEN is detected for 3 seconds continuously or if float switch connector or wire is disconnected.

4. Presumable cause

- Defective indoor control PCB
- Float switch setting error
- Humidifier DM interlock setting error
- Optional equipment setting error
- Drain piping error
- Defective drain motor
- Disconnection of drain motor wiring

5. Troubleshooting



Note: When this error occurred at power ON, disconnection of wire or connector of the float switch is suspected. Check and correct it (or replace it, if necessary).

Error code	LED	Green	Red	Content
Remote controller: E10	Indoor	Keeps flashing	Stays OFF	Excessive number of connected indoor units (more than 17 units) by controlling with one remoto controller
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When it detects more than 17 of indoor units connected to one remote contorller

3. Condition of Error displayed

Same as above

4. Presumable cause

- Excessive number of indoor units connected
- Defective remote controller

5. Troubleshooting

Diagnosis	Countermeasure
Aren't more than 17 indoor units connected to one remote controller? → NO	Defective remote controller → Replace.
Aren't more than 17 indoor units connected to one remote controller? → YES	Reduce to 16 or less units.

Note:

Error code	LED	Green	Red	Content
Remote controller: E14	Indoor	Keeps flashing	3 times flash	Communication error between master and slave indoor units
	Outdoor	Keeps flashing	Stays Off	

1. Applicable model

All models

2. Error detection method

When communication error between master and slave indoor units occurs

3. Condition of Error displayed

Same as above

4. Presumable cause

- Unit address setting error
- Broken remote controller wire
- Defective remote controller wire connection
- Defective indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is it OK the unit address setting for master and slave indoor units? → NO	Correct unit address setting.
YES → Isn't the remote controller wiring between indoor units defective? → YES	Correct wiring.
NO → Is it restored by resetting the power supply? → NO	Defective indoor control PCB→Replace.
YES	• Malfunction by noise • Check surrounding environment.

Note (1) Set dip switches SW5-1 and SW5-2 as shown in the following table. (Factory default setting – "Master")

		Indoor unit		
		Master	Slave-a	Slave-b
Dip switch	SW5-1	OFF	OFF	ON
	SW5-2	OFF	ON	OFF

Note:

Error code	LED	Green	Red	Content
Remote controller: E16	Indoor	Keeps flashing	1(2) time flash	Indoor fan motor anomaly
	Outdoor	Keeps flashing	Stays OFF	

Note (1) Value in ( ) is for the FDUM series FMI2 only.

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

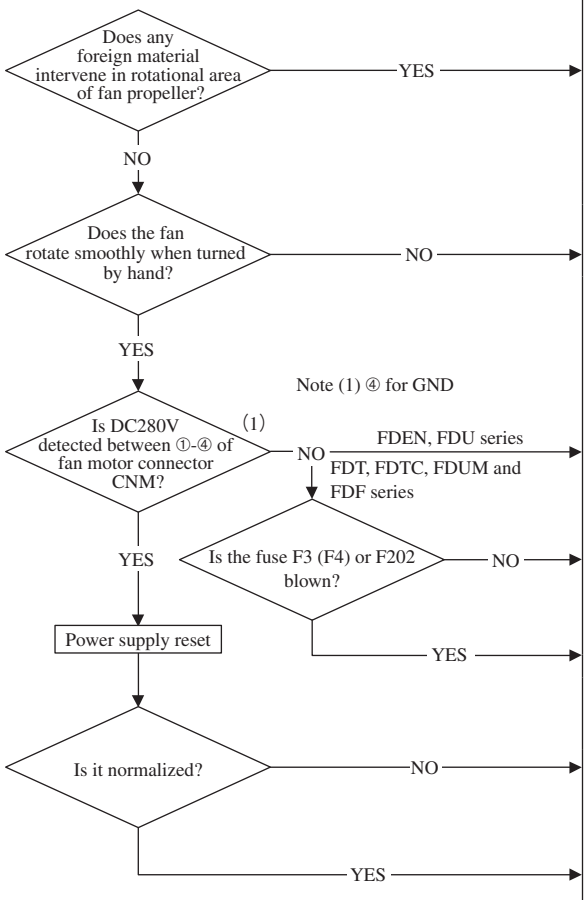
3. Condition of Error displayed

When actual rotation speed of indoor fan motor drops to lower than 200rpm for 30 seconds continuously, the compressor and the indoor fan motor stop. After 2-seconds, it starts again automatically, but if this error occurs 4 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective indoor power PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on control PCB
- Blown fuse
- External noise, surge

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: E18	Indoor	Keeps flashing	1 times flash	Address setting error of master and slave indoor units
	Outdoor	Keeps flashing	Stays Off	

1. Applicable model

All models

2. Error detection method

IU address has been set using the "Master IU address set" function of remote controller.

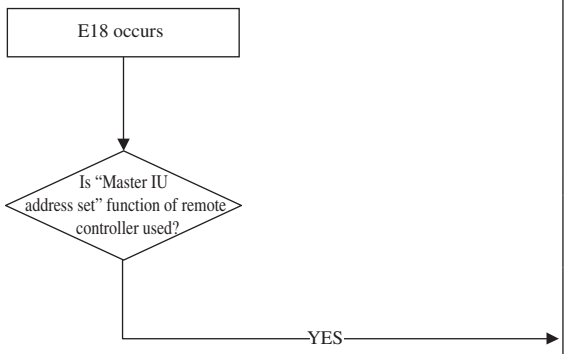
3. Condition of Error displayed

Same as above

4. Presumable cause

Same as above

5. Troubleshooting

Diagnosis	Countermeasure
	Return address No. to "IU …" using [▲] or [▼] button.

Note:

Error code	LED	Green	Red	Content
Remote controller: E19	Indoor	Keeps flashing	1 time flash	Indoor unit operation check, drain motor check setting error
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

After indoor operation check, when the communication between indoor and outdoor unit is established and SW7-1 is still kept ON.

3. Condition of Error displayed

Same as above

4. Presumable cause

Mistake in SW7-1 setting
(Due to forgetting to turn OFF SW7-1 after indoor operation check)

5. Troubleshooting

Diagnosis	Countermeasure
E19 occurs when the power ON → Is SW7-1 on the indoor control PCB ON ?	
NO →	Defective indoor control PCB (Defective SW7) →Replace
YES →	Turn SW7-1 on the indoor control PCB OFF and reset the power

Note:

Error code	LED	Green	Red	Content
Remote controller: E20	Indoor	Keeps flashing	1(2) time flash	Indoor fan motor rotation speed anomaly
	Outdoor	Keeps flashing	Stays OFF	

Note (1) Value in ( ) is for the FDUM series FMI2 only.

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

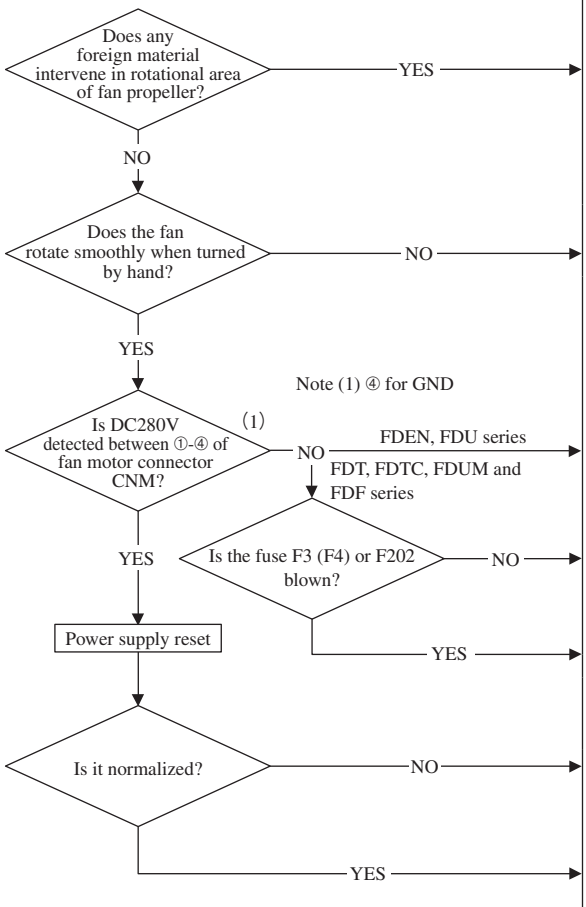
3. Condition of Error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -50rpm] after 2 minutes have been elapsed since the fan motor rotation speed command was output, the unit stops by detecting indoor fan motor anomaly.

4. Presumable cause

- Defective indoor power (control) PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on control PCB
- Blown fuse
- External noise, surge

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: E21	Indoor	Keeps flashing	1 time flash	Defective panel switch operation (FDT)
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

FDT series only

2. Error detection method

Panel switch (PS) has detected Open for more than 1 second.

3. Condition of Error displayed

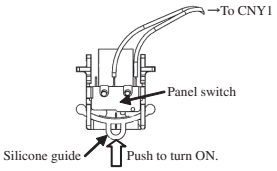
Same as above

4. Presumable cause

- Defective panel switch
- Disconnection of wiring
- Defective indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is grill opened? — YES →	Reset the error and close the grill.
NO ↓ Does matter improve if panel switch is turned ON forcibly after resetting error? — YES →	Insufficient push on the panel switch at the internal face of grill →Attach 3 mm thick rubber sheet at the section where the panel switch touches the inside of grill. Close then the grill.
<Forced panel switch ON> Put the switch in the state of ON by fixing the silicone section of panel switch with adhesive tape while it is held down.	
NO ↓ Are connectors at right inserted properly? — NO →	Disconnected, poorly connected connectors →Reinsert properly.
<Connectors on PCBs> Indoor control PCB: CNV	
YES ↓ Is there continuity between #1 – #4 of CNV on indoor control PCB when panel switch operation is checked? — NO →	• Defective panel switch or incorrect panel switch wiring → Replace panel switch. • Broken wire between panel switch PCB (CNV) → Correct or replace wire.
YES →	Defective indoor control PCB → Replace indoor control PCB.



Note:

Error code	LED	Green	Red	Content
Remote controller: E28	Indoor	Keeps flashing	Stays OFF	Remote controller temperature thermistor anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) of remote controller temperature thermistor (Thc)

3. Condition of Error displayed

When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Faulty connection of remote controller temperature thermistor
- Defective remote controller temperature thermistor
- Defective remote controller PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the remote controller temperature thermistor connected properly? → NO	Correct.
Is the remote controller temperature thermistor connected properly? → YES → Are the characteristics of remote controller temperature thermistor OK? Is the thermistor wire OK? → NO	Defective remote controller temperature thermistor → Replace.
Are the characteristics of remote controller temperature thermistor OK? Is the thermistor wire OK? → YES	Defective remote controller PCB → Replace. (Defective remote controller temperature thermistor input circuit)

Resistance-temperature characteristics of remote controller temperature thermistor (ThC)

Temperature (°C)	Resistance value (kΩ)	Temperature (°C)	Resistance value (kΩ)
0	65	30	16
1	62	32	15
2	59	34	14
4	53	36	13
6	48	38	12
8	44	40	11
10	40	42	9.9
12	36	44	9.2
14	33	46	8.5
16	30	48	7.8
18	27	50	7.3
20	25	52	6.7
22	23	54	6.3
24	21	56	5.8
26	19	58	5.4
28	18	60	5.0

Note: After 10 seconds has passed since remote controller thermistor was switched from valid to invalid, E28 will not be displayed even if the thermistor harness is disconnected. At same time the thermistor, which is effective, is switched from remote controller thermistor to indoor return air temperature thermistor. Even though the remote controller thermistor is set to be Effective, the return air temperature displayed on remote controller for checking still shows the value detected by indoor return air temperature thermistor, not by remote controller temperature thermistor.

Error code	LED	Green	Red	Content
Remote controller: E35	Indoor control PCB	Keeps flashing	Stays OFF	Cooling overload operation
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

3. Condition of Error displayed

When outdoor heat exchanger temperature anomaly is detected 5 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor heat exchanger temperature thermistor
- Defective outdoor control PCB
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger
- Excessive refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
Are the characteristics of outdoor heat exchanger temperature thermistor normal? (* For the characteristics of outdoor heat exchanger temperature thermistor, refer to E37.) — NO →	Replace outdoor heat exchanger temperature thermistor.
YES ↓ Is the unit operating in the state of cooling overload? — YES →	Check unit side. • Isn't the air circulation of outdoor unit short-circuited? • Are installation spaces adequate? • Isn't there any fouling or clogging on heat exchanger?
NO ↓ Is the high pressure control normal? — NO →	Control operation check *
YES ↓ Is the temperature (measured actually) at detection of error correct? — NO →	Defective outdoor control PCB→Replace.
YES →	Excessive refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.

* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

Note:

Error code	LED	Green	Red	Content
Remote controller: E36	Indoor control PCB	Keeps flashing	Stays OFF	Discharge pipe temperature error
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

3. Condition of Error displayed

When discharge pipe temperature anomaly is detected 2 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor control PCB
- Defective discharge pipe temperature thermistor
- Clogged filter
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger

5. Troubleshooting

Diagnosis	Countermeasure
Are the characteristics of discharge pipe temperature thermistor normal? (* For the characteristics of discharge pipe temperature, refer to E39.) — NO →	Replace discharge pipe temperature thermistor.
YES ↓ Is the discharge pipe temperature error persisted during cooling operation? — YES →	Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.
NO ↓ Is the discharge pipe temperature control normal? — NO →	Control operation check *
YES ↓ Is the temperature (measured actually) at detection of error correct? — NO →	Defective outdoor control PCB→Replace.
YES →	Check unit side: • Isn't filter clogged? • Are adequate indoor, outdoor unit installation spaces? • Isn't there any short-circuit of air? • Isn't there any fouling, clogging on indoor heat exchanger?

* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

Note:

Error code	LED	Green	Red	Content
Remote controller: E37	Indoor control PCB	Keeps flashing	Stays OFF	Outdoor heat exchanger temperature themistor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature thermistor

3. Condition of Error displayed

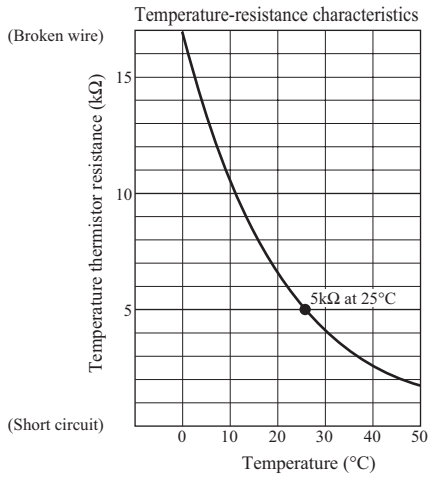
- When the temperature thermistor detects -50°C or lower for 20 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -50°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

4. Presumable cause

- Defective outdoor control PCB
- Broken thermistor harness or temperature sensing section
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor heat exchanger temperature thermistor connector connected properly? → NO	Correct connector.
YES → For the characteristics of outdoor heat exchanger temperature thermistor, see the following graph. Are the characteristics of outdoor heat exchanger temperature thermistor OK? → NO	Defective outdoor heat exchanger temperature thermistor→Replace.
YES	Defective outdoor control PCB→Replace. (Defective outdoor heat exchanger temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote controller: E38	Indoor control PCB	Keeps flashing	Stays OFF	Outdoor air temperature thermistor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on outdoor air temperature thermistor

3. Condition of Error displayed

- When the temperature thermistor detects -45°C or lower for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -45°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

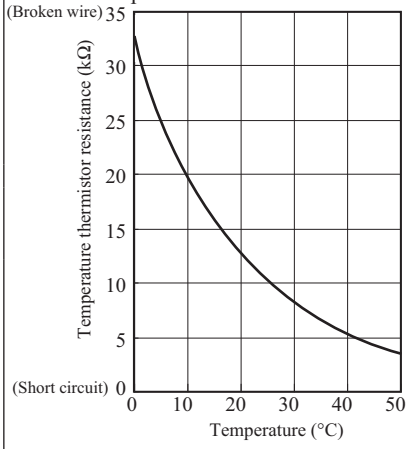
4. Presumable cause

- Defective outdoor control PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor air temperature thermistor connector connected properly? → NO	Correct connector.
YES → Is the characteristics of the outdoor air temperature thermistor OK? (For the characteristics of outdoor air temperature thermistor, see the following graph.) → NO	Defective outdoor air temperature thermistor→ Replace.
YES	Defective outdoor control PCB→Replace. (Defective outdoor air temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	LED	Green	Red	Content
Remote controller: E39	Indoor control PCB	Keeps flashing	Stays OFF	Discharge pipe temperature thermistor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the discharge pipe temperature thermistor

3. Condition of Error displayed

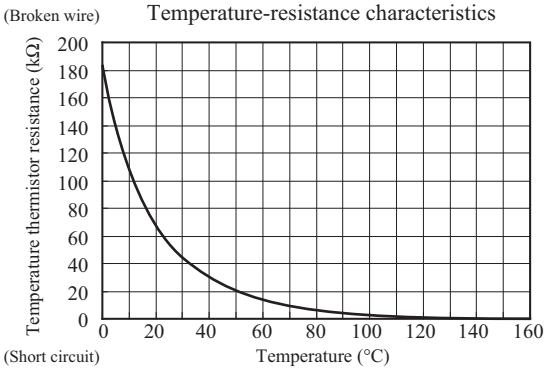
When the temperature thermistor detects -10°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.

4. Presumable cause

- Defective outdoor control PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the discharge pipe temperature thermistor connector connected properly? → NO	Correct connector.
YES ↓ Are the characteristics of discharge pipe temperature thermistor OK? (For the characteristics of discharge pipe temperature thermistor, see the following graph.) → NO	Defective discharge pipe temperature thermistor→Replace.
YES	Defective outdoor control PCB→Replace. (Defective temperature thermistor input circuit)



Note:

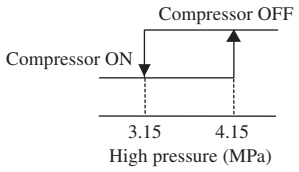
Error code	LED	Green	Red	Content
Remote controller: E40	Indoor control PCB	Keeps flashing	Stays OFF	High pressure error (63H1 activated)
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

When the high pressure switch 63H1 is activated.



3. Condition of Error displayed

If 63H1 turns OFF (opened), the compressor stops. After 3-minutes delay, the compressor restarts. If this anomaly occurs 5 times within 60 minutes or continues for 60 minutes continuously.

4. Presumable cause

- Short circuit of air flow, disturbance of air flow and clogging filter at outdoor heat exchanger/Breakdown of fan motor
- Defective outdoor control PCB
- Defective 63H1 connector
- Defective electronic expansion valve connector
- Closed service valve
- Mixing of non-condensing gas (nitrogen, etc.)

5. Troubleshooting

Diagnosis	Countermeasure
If the power supply breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)	
Is the service valve fully opened? — NO →	Open service valve.
YES ↓ Has 63H1 activated? — NO →	
On operation of 63H1 YES ↓ 1. During cooling ・ Is the outdoor fan motor running? ・ Isn't any short-circuit of air on the outdoor unit? ・ Are sufficient return air/supply air space secured? 2. During heating ・ Isn't the indoor heat exchanger temperature thermistor disconnected from the thermistor casing? ・ Isn't the filter clogged? * Under the condition of overcharging refirgerant, 63H1 may activate due to delay of starting the preventive control by compressor speed control, because detected heat exhanger temperature, which conducts compressor speed control, becomes lower than normal condition due to excess sub-cooling degree.	
Is 63H1 connector connected properly? — NO →	Correct 63H1 connector.
YES ↓ Is the electronic expansion valve connector connection OK? — NO →	Correct electronic expansion valve connector.
If any anomaly exists on the electronic expansion valve connector connection, the power supply must be reset. — YES →	Defective outdoor control PCB→Replace. (Defective 63H1 input circuit)

Note: In the protective control range for compressor startup (initial startup after power ON), even if 63H1 is activated only once (63H1turns OFF), immediately the error is displayed.

Error code	LED	Green	Red
Remote controller: E41	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		6 times flash	

Content

Power transistor overheat(1/2)
(Models FDC100-140)

1. Applicable model

Models FDC100-140

2. Error detection method

When less than DC14V of the output voltage is detected between ② and ③ on CNI3, E41 is displayed.
(See "Note" mentioned below)

3. Condition of Error displayed

Seme as above.

4. Presumable cause

- Inverter PCB anomaly
- Outdoor fan motor anomaly
- Outdoor control PCB anomaly
- Noise filter PCB anomaly

5. Troubleshooting

Diagnosis	Countermeasure
• Single phase models (FDC100-140VN)	
(1) (2) Is DC15V detected between ② and ③ on CNI3? — YES →	Replace inverter PCB If not solved, replace Noise filter PCB as well
NO Note(1) Under anomalous conditions, the voltage becomes less than DC14V.	
(1) Is DC15V detected after disconnecting outdoor fan motor? — YES →	Replace outdoor fan motor
NO →	Replace outdoor control PCB If not solved, replace inverter PCB as well
Note(2) How to check the voltage between ② and ③ of CNI3? ⇒See E51	
• 3-phase models (FDC100-140VS) E41⇒Replace inverter PCB.	

Note: The "Single phase models" of inverter PAC have no function to output the signal for the power transistor overheat. However since the power source for the power transistor and the outdoor fan motor is in the same line, when the anomaly of the outdoor fan motor occurs, E41 is displayed.

Error code	LED	Green	Red
Remote controller: E41	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1 time flash
	Outdoor inverter PCB	Red LED	Green LED
		2 times flash	Keeps flashing

Content

Power transistor overheat(2/2)

(Models FDC200, 250 only)

1. Applicable model

Models FDC200, 250

2. Error detection method

When anomalously high temperature is detected by power transistor temperature thermistor (Tho-P1)

3. Condition of Error displayed

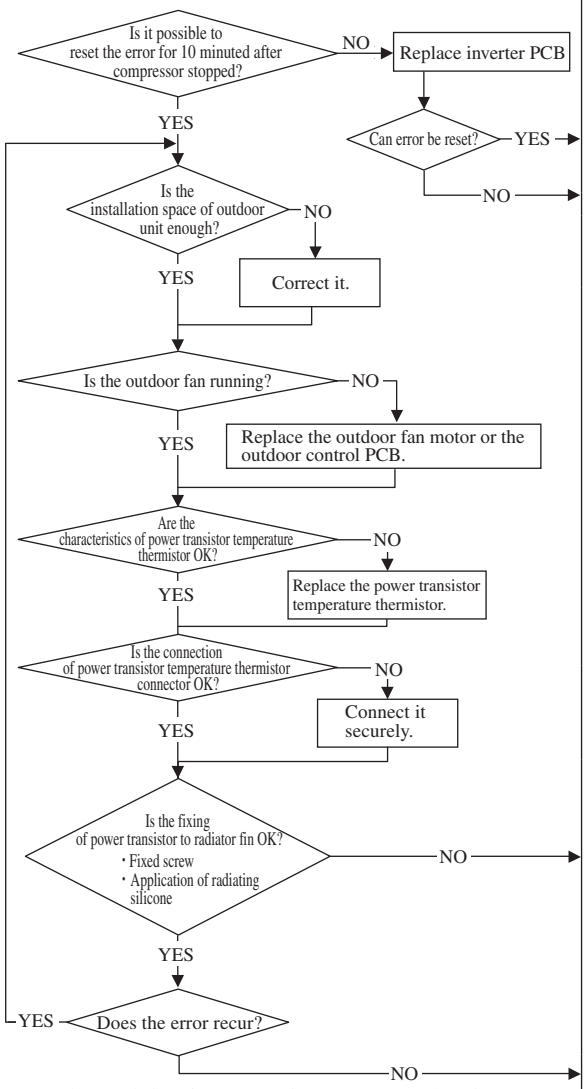
Anomalously high temperature of power transistor is detected 5 times within 60 minutes.

4. Presumable cause

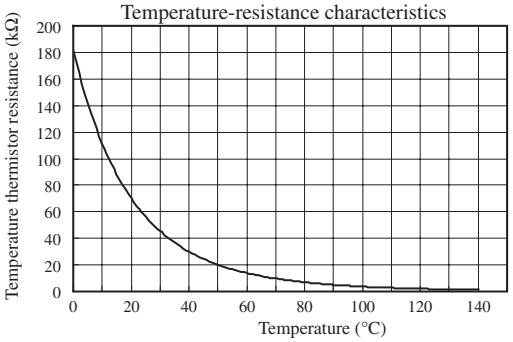
- Inverter PCB anomaly
- Outdoor fan motor anomaly
- Improperly fixing of power transistor to radiator fin
- Power transistor temperature thermistor anomaly
- Inadequate installation space of outdoor unit

5. Troubleshooting

Diagnosis	Countermeasure



* Characteristics of power transistor temperature thermistor



Note:

Error code	LED	Green	Red	Content
Remote controller: E42	Indoor control PCB	Keeps flashing	Stays OFF	Current cut (1/2)
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		1 time flash or 5 times flash	Keeps flashing	

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of Error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the intial detection.

4. Presumable cause

- The valves closed
- Faulty power supply
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
Is the Power supply voltage OK? — NO →	Check power supply.
YES ↓	
Are the service valves opened? — NO →	Open the valves.
YES ↓	
Is the high pressure during operation OK? — NO →	Check refrigerant amount and refregerant circuit *In case of transitional increase of high pressure and/or test run, several times restarting may recover it, because liquid refrigerant (migrated) in the compresser is discharged from the compressor.
YES ↓	
Is the checked result of insulation resistance and coil resistance (1) of compressor motor OK? — NO →	Replace compressor.
(1) 0.293Ω or more at 20°C (Models FDC100-140VN) 1.172Ω or more at 20°C (Models FDC100-140VS) 0.334Ω or more at 20°C (Models FDC200, 250)	
YES ↓	
To next page.	

Note:

Error code	LED	Green	Red	Content
Remote controller: E42	Indoor	Keeps flashing	Stays OFF	Current cut (2/2)
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		1 time flash or 5 times flash	Keeps flashing	

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of Error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the intial detection.

4. Presumable cause

- Defective outdoor control PCB
- Defective inverter PCB
- Faulty power supply
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
From previous page ↓ Is the checked result of power transistor module OK? — NO →	Defective inverter PCB→ Replace. *For model 200, 250 replace also the power transistor module.
YES ↓ • Is the space for installation of indoor and/or outdoor unit enough? • Is there any short circuit of air on indoor and/or outdoor unit? • At cooling, does the outdoor fan motor run? Are the service valves fully opened? Is the filter clogged? • At heating, does the indoor fan motor run? Are the service valves fully opened? Is the filter clogged? • Is there any liquid flooding? Is the superheat within normal range? Is the low pressure sensor and suction pipe temperature thermistor normal? • Is there any anoumalous sound on the compressor?	
YES ↓ After resetting power for several times does it become normal? — NO →	Defective inverter PCB→ Replace. *For model 200, 250 replace also the power transistor module.
YES ↓ Temporary noise may cause of anomaly. If noise source can be found, take countermeasure.	

Note:

Error code	LED	Green	Red	Content
Remote controller: E45	Indoor control PCB	Keeps flashing	Stays OFF	Communication error between inverter PCB and outdoor control PCB
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

When the communication between inverter PCB and outdoor control PCB is not established.

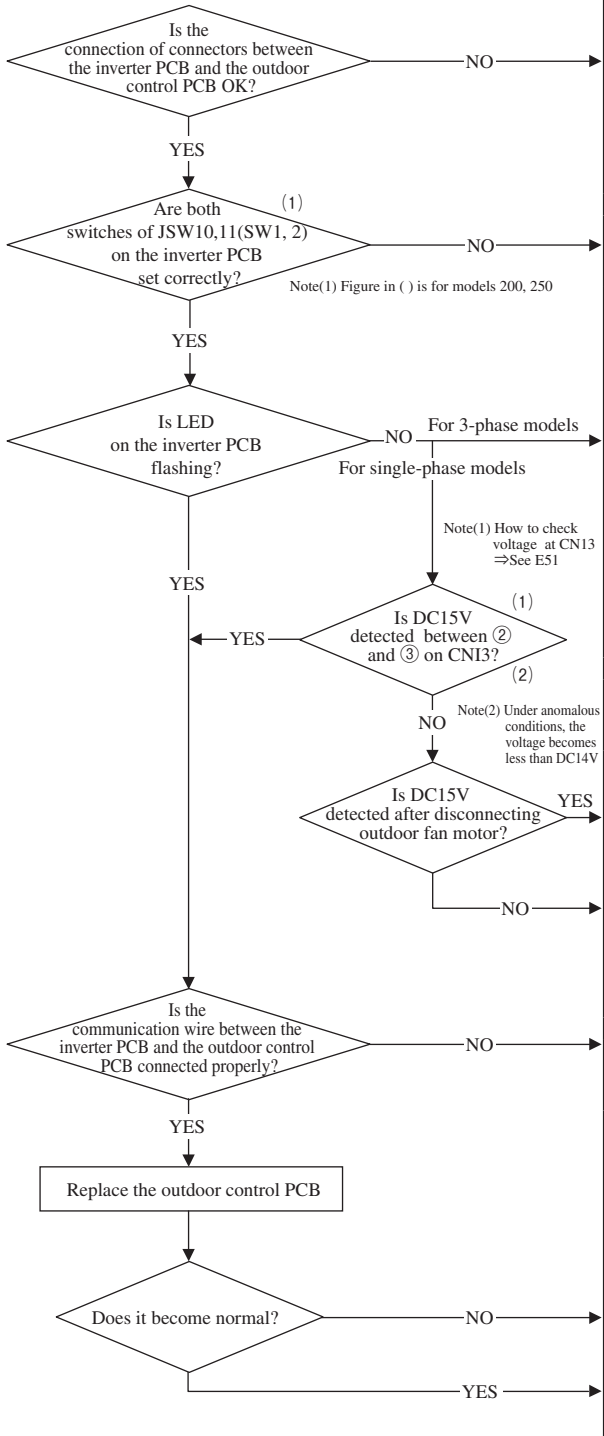
3. Condition of Error displayed

Same as above.

4. Presumable cause

- Inverter PCB anomaly
- Anomalous connection of connector between the outdoor control PCB and inverter PCB
- Outdoor control PCB anomaly
- Outdoor fan motor anomaly

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote controller: E48	Indoor control PCB	Keeps flashing	Stays OFF	Outdoor fan motor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of outdoor fan motor

3. Condition of Error displayed

When actual rotation speed of outdoor fan motor (FMo1) drops to 100min^{-1} or lower for 30 minutes continuously, the compressor and the outdoor fan motor stop. After 3-minutes delay, it starts again automatically, but if this anomaly occurs 5 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective outdoor control PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on outdoor control PCB
- Blow fuse
- External noise, surge

5. Troubleshooting

Diagnosis	Countermeasure
Does any foreign material intervene in rotational area of fan propeller? — YES	Remove foreign material.
Does the fan rotate smoothly when turned by hand? — NO	Replace fan motor. If resistance between ① (Vm):red -④(GND):blue is detected 1kΩ or lower, it is faulty.
Is DC280V detected between (CNFAN ① (red)-④ (blue)) of fan motor connector? — NO → Is F2 fuse blown? — NO	Check power supply voltage.
Is F2 fuse blown? — YES	Replace faulty fan motor and control PCB.
Power supply reset → Is normal state restored? — NO	Replace fan motor (If anomaly persists after replacing fan motor, replace control PCB.)
Is normal state restored? — YES	Malfunction by temporary noise

Note: When E48 error occurs, in almost cases F2 fuse (4A) on the outdoor control PCB is blown. There are a lot of cases that fuse is blown and E48 occurs due to defective fan motor. And even though only the outdoor control PCB (or fuse) is replaced,, another trouble (*1) could occur. Therefore when fuse is blown, check whether the fan motor is OK or not.
After confirming the fan motor normal, check by power ON. (Don't power ON without confirming the fan motor normal.)
*1 The error which does not seem to relate E48 may occur like as "✋WAIT✋", Stay OFF of LED on outdoor control PCB, inverter communication error (E45) and etc.

Error code	LED	Green	Red	Content
Remote controller: E49	Indoor control PCB	Keeps flashing	Stays OFF	Low pressure error or low pressure sensor anomaly (1/2)
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

Detected by low pressure drop and suction superheat

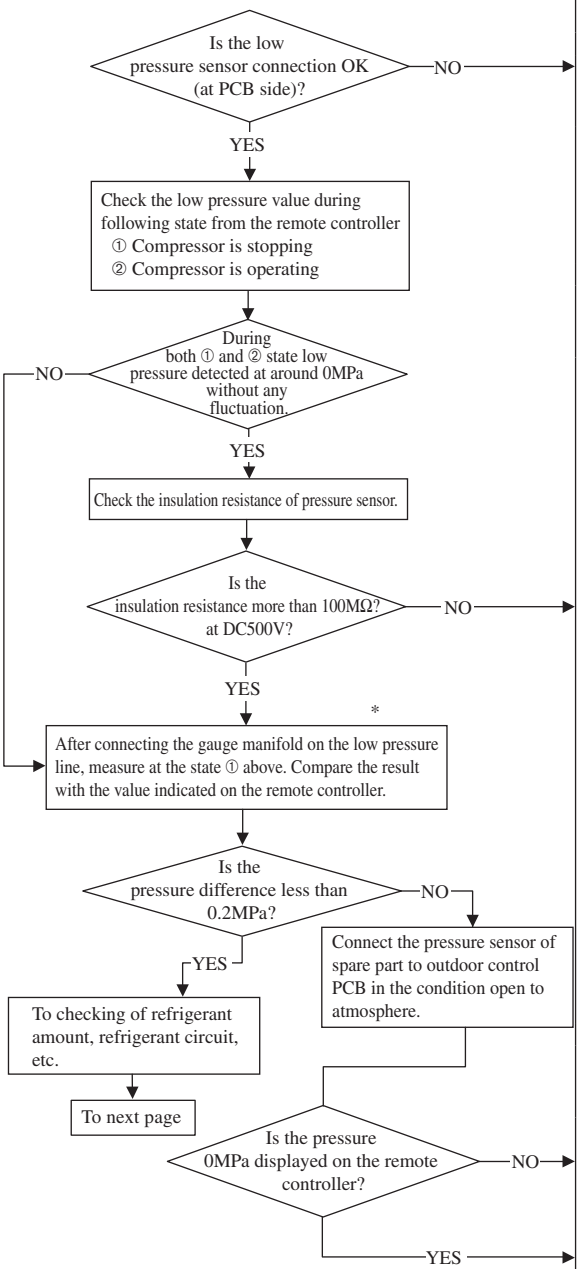
3. Condition of Error displayed

① When the low pressure sensor detects 0.079MPa or lower for 15 seconds continuously, compressor stops and it restarts automatically after 3-minutes delay. And if this anomaly occurs 3 times within 60 minutes,
② 10 minutes after the compressor starts, if the low pressure sensor detects 0.15MPa or lower for 60 minutes continuously and compressor suction superheat is detected 30degC or higher for 60 minutes continuously. And if this anomaly occurs 3 times within 60 minutes,
③ If low pressure sensor detects 0.079MPa or lower for 5 minutes continuously (including the compressor stop status),

4. Presumable cause

- Defective outdoor control PCB
- Defective low pressure sensor connector
- Defective low pressure sensor
- Defective suction pipe temperature thermistor connector
- Defective suction pipe temperature thermistor

5. Troubleshooting



Note: * Connect the gauge manifold to the service valve check joint during cooling, or connect it to the check joint at internal piping of outdoor unit during heating.

Error code	LED	Green	Red	Content
Remote controller: E49	Indoor control PCB	Keeps flashing	Stays OFF	Low pressure error or low pressure sensor anomaly (2/2)
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
From previous page.	
Is the service valve fully opened? — NO →	Open fully.
YES ↓	
Are the connections of low pressure sensor and suction pipe temprerature thermister connector OK? — NO →	Correct.
YES ↓	
Are the characteristics of low pressure sensor, suction pipe temperature thermistor OK? — NO →	Defective low pressure sensor, suction pipe temperature thermistor→ Replace.
YES ↓	
Is the low pressure normal during operation? — NO →	Charge refrigerant.
YES →	Defective outdoor control PCB→Replace. (Defective low pressure sensor, suction pipe temperature thermistor circuits)

Note:

Error code	LED	Green	Red	Content
Remote controller: E51	Indoor control PCB	Keeps flashing	Stays OFF	Inverter and fan motor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		6 times flash or 2 times flash	Keeps flashing	

1. Applicable model

All models

2. Error detection method

When power transistor anomaly is detected for 15 minutes continuously

3. Condition of Error displayed

Same as above

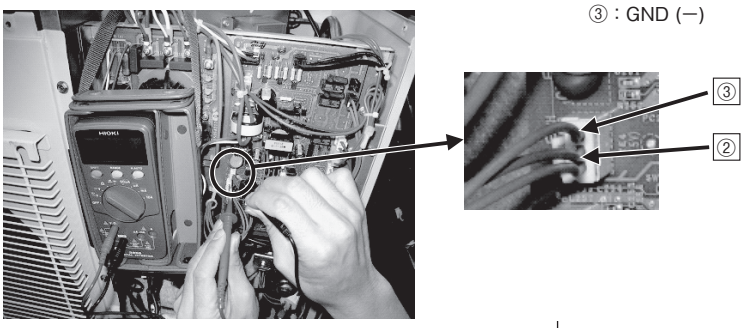
4. Presumable cause

- Outdoor fan motor anomaly
- Inverter PCB anomaly
- Outdoor control PCB anomaly

5. Troubleshooting

Diagnosis	Countermeasure
• Model FDC100-140VN	
Is DC15V detected between ② and ③ on CNI3? (1) (2) — YES →	Replace inverter PCB If not solved, replace Noise filter PCB as well.
Note(1) Under anomalous conditions, the voltage becomes less than DC14V.	
NO ↓ Is DC15V detected after disconnecting outdoor fan motor? (1) — YES →	Replace outdoor fan motor.
NO →	Replace outdoor control PCB If not solved, replace inverter PCB as well.
• Model FDC100-140VS and FDC200, 250VS Replace immediately the inverter PCB and the power transistor.	
Note(2) How to check the voltage between ② and ③ of CNI3?	

② : 15V (+)
③ : GND (−)



Note:

Error code	LED	Green	Red	Content
Remote controller: E53	Indoor control PCB	Keeps flashing	Stays OFF	Suction pipe temperature thermistor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

When the suction pipe temperature thermistor detects anomalously low temperature

3. Condition of Error displayed

If the temperature thermistor detects -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minutes delay, if this anomaly ocuurs 3 times within 40 minute.

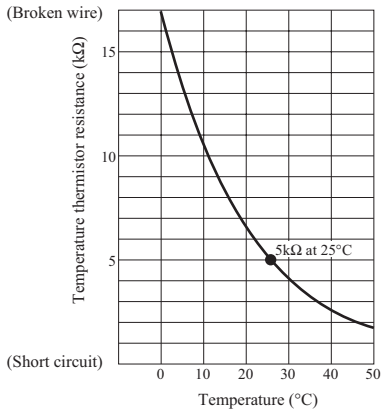
4. Presumable cause

- Defective suction pipe temperature thermistor connection
- Defective suction pipe temperature thermistor
- Defective outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of suction pipe temperature thermistor connector OK? — NO →	Correct connection of suction pipe temperature thermistor connector.
YES ↓	
Are the characteristics of suction pipe temperature thermistor OK? — NO →	Defective suction pipe temperature thermistor→ Replace.
YES →	Defective outdoor control PCB→Replace. (Defective suction pipe temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	LED	Green	Red	Content
Remote controller: E54	Indoor control PCB	Keeps flashing	Stays OFF	Low pressure sensor anomaly
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

When anomalous voltage (pressure) is detected

3. Condition of Error displayed

If the pressure sensor detects 0V or lower and 3.49V or higher for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minuts delay, if this anomaly occurs 3 times within 40 minutes

4. Presumable cause

- Defective low pressure sensor connection
- Defective low pressure sensor
- Defective outdoor control PCB
- Improper amount of refrigerant
- Anomalous refrigeration circuit

5. Troubleshooting

Diagnosis	Countermeasure
Are the connection of low pressure sensor connectors (at sensor side and PCB side) OK? — NO →	Correct low pressure sensor connector connection.
YES ↓ Are the pressure (actual measurement) matched with the value indicated on the remote controller? — YES →	Is refrigerant amount charged properly? Is there any anomaly on the refrigeration circuit?
NO ↓ Replace the low pressure sensor. ↓ Is normal condition restored? — NO →	Defective outdoor control PCB→Replace. (Defective low pressure sensor input circuit)
YES →	OK

Note:

Error code	LED	Green	Red	Content
Remote controller: E55	Indoor control PCB	Keeps flashing	Stays OFF	Underneath temperature thermistor anomaly (Models FDC200, 250 only)
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

Models FDC200, 250

2. Error detection method

When anoumalous low temperature (resistance) is detected by the underneath temperature thermistor

3. Condition of Error displayed

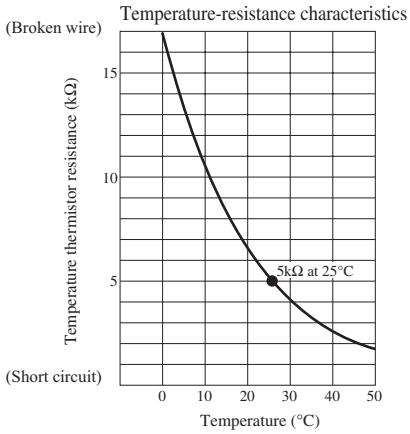
If the temperature thermistor detcts -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minutes delay, if this anomaly ocuurs 3 times within 40 minute.

4. Presumable cause

- Defective underneath temperature thermistor connection
- Defective underneath temperature thermistor
- Defective outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of underneath temperature thermistor connector OK? — NO →	Correct connection of underneath temperature thermistor connector.
YES ↓	
Are the characteristics of underneath temperature thermistor OK? — NO →	Defective underneath temperature thermistor→ Replace.
YES →	Replace outdoor control PCB. (Defective underneath temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote controller: E57	Indoor control PCB	Keeps flashing	Stays OFF	Insufficient refrigerant amount or detection of service valve
	Outdoor control PCB	Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED or Red LED	Green LED	
		Keeps flashing	Keeps flashing	

1. Applicable model

All models

2. Error detection method

- Judge insufficient refrigerant amount by detecting the temperature differnce between indoor heat exchanger (ThI-R) and indoor return air (ThI-A).
- It detects at initial startup in cooling or dehumidifying mode after power ON.

3. Condition of Error displayed

Anomalous stop at initial detection

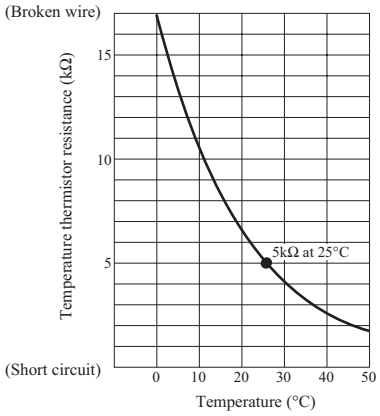
4. Presumable cause

- Defective indoor heat exchanger temperature thermistor
- Defective indoor return air temperature thermistor
- Defective indoor control PCB
- Insufficient refregerant amount

5. Troubleshooting

Diagnosis	Countermeasure
Is the service valve fully opened? — NO →	Open fully.
YES ↓ Are the connections of indoor heat exchanger and/or return air temperature thermistor connectors OK? — NO →	Correct indoor heat exchanger, return air temperature thermistor connector connections.
YES ↓ Are the characteristics of indoor heat exchanger and/or return air temperature thermistor OK? — NO →	Defective indoor heat exchanger, return air temperature thermistor → Replace.
YES ↓ Is the low pressure during operation normal? — NO →	Charge refrigerant.
YES →	Defective indoor control PCB→Replace. (Defective indoor heat exchanger, return air temperature thermistor input circuits)

Indoor heat exchanger, return air temperature thermistor
Temperature-resistance characteristics



Note: Insufficient refrigerant amount preventive control makes compressor stopped, if it judges insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (ThI-R) and return air temperature (ThI-A) for 1 minute after compressor ON in cooling or dehumidifying mode and for 9 minutes after compressor ON in heating mode. [in cooling mode: (ThI-A)-(ThI-R)>4degC, in heating mode: (ThI-R)-(ThI-A)<4degC]

Error code	LED	Green	Red
Remote controller: E59	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	5 times flash
	Outdoor inverter PCB	Yellow LED Red LED	Green LED
		Stays OFF or 4 times flash	Keeps flashing

Content

Compressor startup failure (1/2)

1. Applicable model

All models

2. Error detection method

When it fails to change over to the operation for rotor position detection of compressor motor (If the compressor speed cannot increase 11Hz or higher)

3. Condition of Error displayed

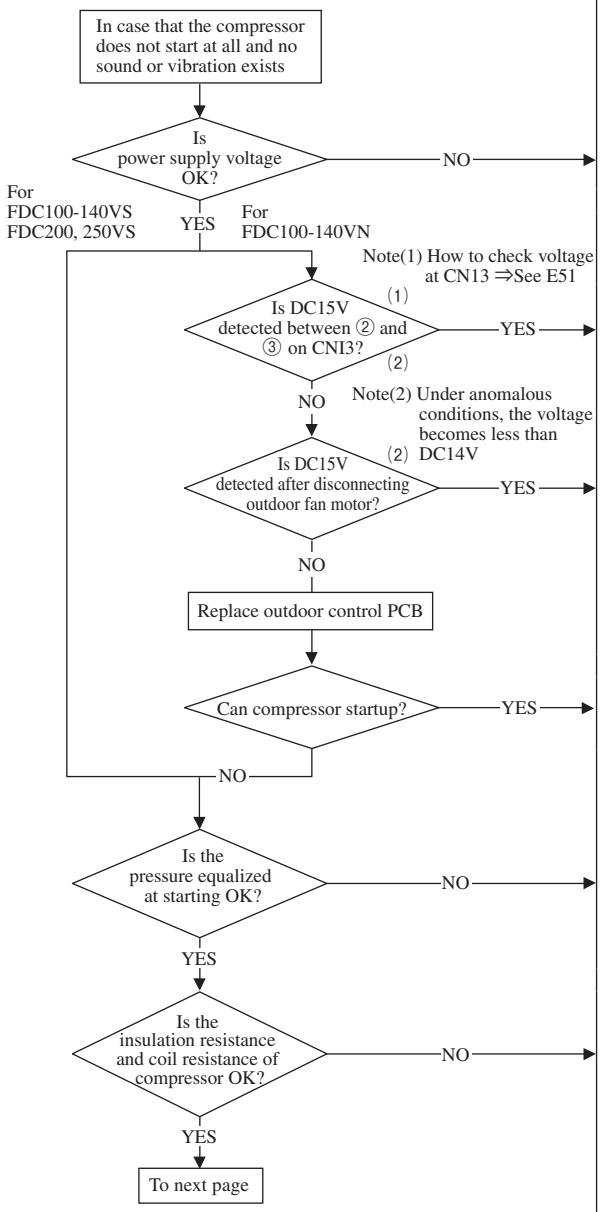
If the compressor fails to startup for 20 times (10 patterns x2 times) continuously.

4. Presumable cause

- Outdoor fan motor anomaly
- Outdoor control PCB anomaly
- Inverter PCB anomaly
- Anomalous power supply voltage
- Insufficient or Excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)

5. Troubleshooting

Diagnosis	Countermeasure



Note: Insulation resistance
- The unit is left for long period without power supply or soon after installation, insulation resistance may decrease to several MΩ or lower due to the liquid refrigerant migrated in the refrigerant oil in compressor. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whether the insulation resistance can recover or not, after 6 hours has passed since power ON.
  (By energize the crankcase heater, liquid refrigerant migrated in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breaker conforms to high-harmonic specifications
  (As INV PAC units has inverter, in order to prevent from improper operation, be sure to use the breaker of high-harmonic type)

Error code	LED	Green	Red
Remote controller: E59	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	5 times flash
	Outdoor inverter PCB	Yellow LED Red LED	Green LED
		Stays OFF or 4 times flash	Keeps flashing

Content

Compressor startup failure (2/2)

1. Applicable model

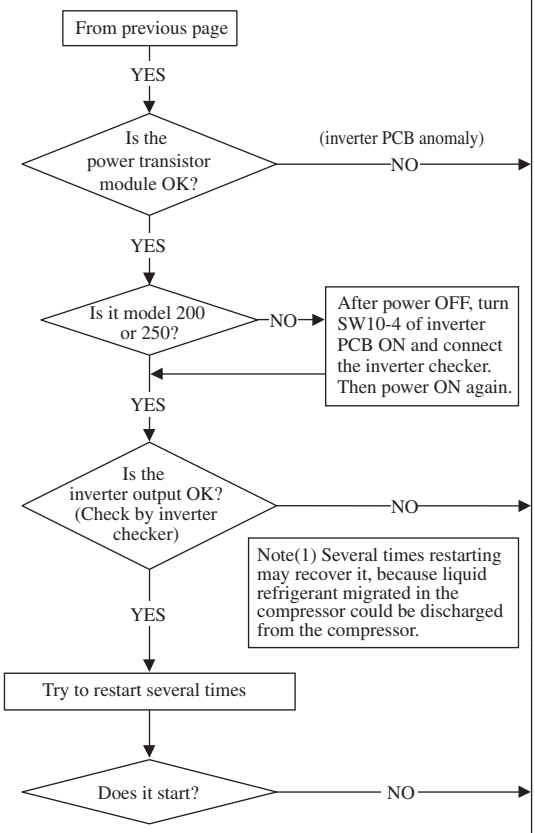
All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
	

Note:

Error code	LED	Green	Red
Remote controller: E60	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1 time flash
	Outdoor inverter PCB	Red LED	Green LED
		Keeps flashing	Keeps flashing

Content

Compressor rotor lock error
(Models FDC200, 250 only)

Note (1) Value in 〔 〕are for the Models SRC40 ~ 60.

1. Applicable model

Models FDC200, 250

2. Error detection method

Compressor rotor position

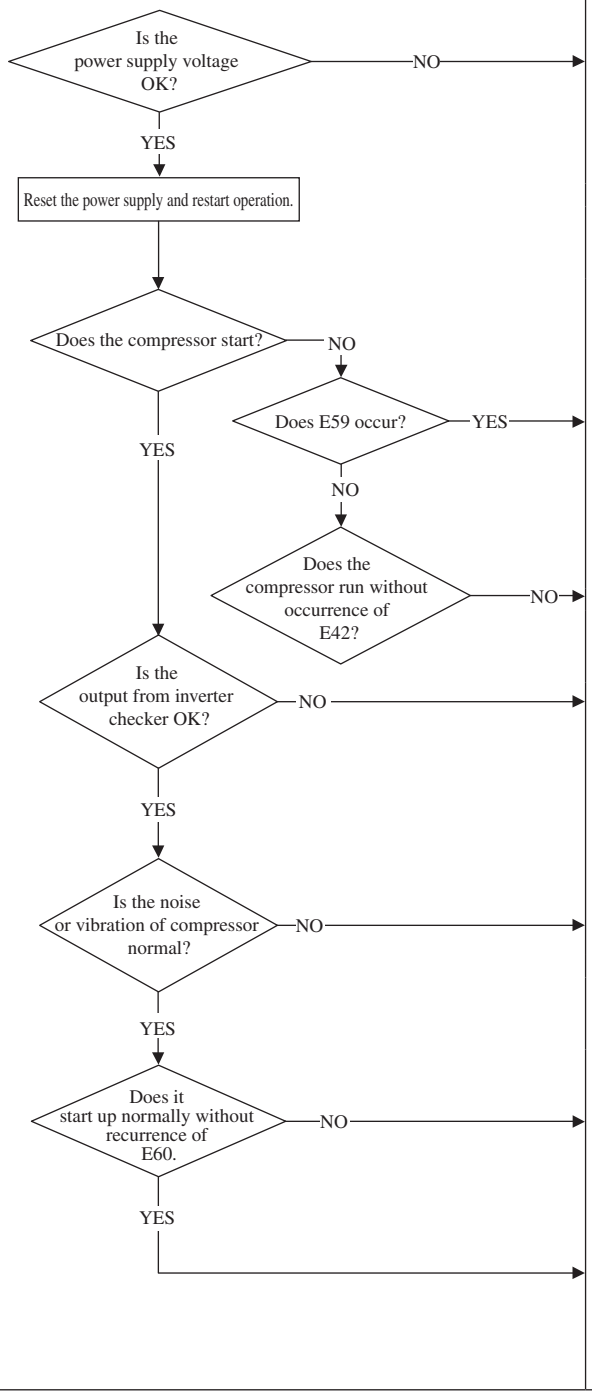
3. Condition of Error displayed

If it fails again to detect the rotor position after shifting to the compressor rotor position detection operation, the compressor stops.
- When it is restart automatically after 3 minutes, it is detected 4 times within 15 minutes.

4. Presumable cause

- Defective outdoor fan motor
- Defective outdoor control PCB
- Defective inverter PCB
- Anomalous power supply voltage
- Improper refrigerant amount and refrigerant circuit
- Defective compressor (motor, bearing)

5. Troubleshooting



Note: Insulation resistance
- The unit is left for long period without power supply or soon after installation, migrated liquid refrigerant may dissolve in the refrigerant oil in the compressor. In such case insulation resistance decreases upto several MΩ or lower. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whehter the insulation resistance can recover or not, ater 6 hours has passed since power ON. (By energize the crankcase heater, migrated liquid refrigerant in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breake conforms to high-hermonic specifications (As units has inverter, in order to prevent from improper operation, be sure to use high-hermonic one.)

(b) SRK series

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Operates but does not cool
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

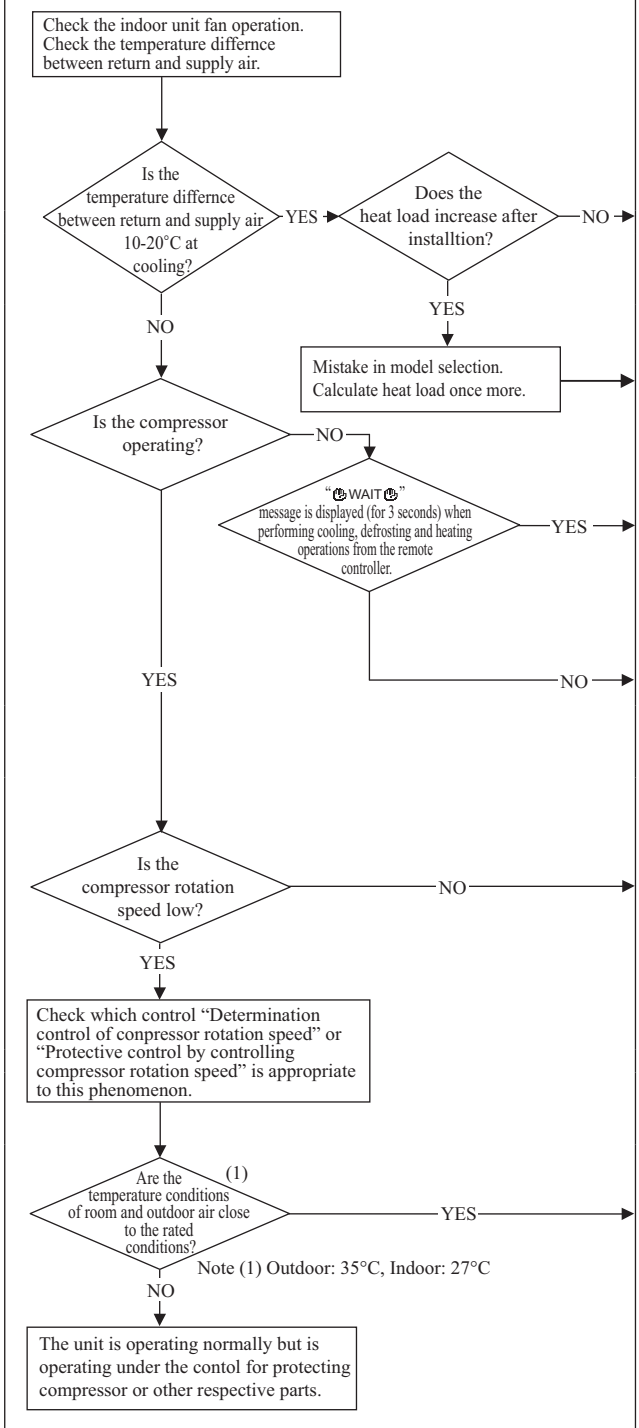
2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Operates but does not heat
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting

Diagnosis	Countermeasure
Check the indoor unit fan operation. Check the temperature differnce between return and supply air.	
Is the temperature differnce between return and supply air 10-30°C at heating? — YES → Does the heat load increase after installtion? — NO →	It is normal. (This unit is designed to start in the soft start mode by detecting the under dome temperature of compressor when it restart after power reset.
Does the heat load increase after installtion? — YES → Mistake in model selection. Calculate heat load once again.	It is necessary to replace to higher capacity one or to install additional unit.
Is the temperature differnce between return and supply air 10-30°C at heating? — NO → Is the compressor operating? — NO → "WAIT" message is displayed (for 3 seconds) when performing cooling, defrosting and heating operations from the remote controller. — YES →	Compressor refrigerant oil protection control at starting is activated. For the contents of control, refer to the compressor start control of the microcomputer control functions.
"WAIT" message is displayed (for 3 seconds) when performing cooling, defrosting and heating operations from the remote controller. — NO →	Compressor may be stopped by the error detection control. For the contents of control, refer to anomalous stop control by controlling compressor rotation speed of microcomputor control functions.
Is the compressor operating? — YES → Is the compressor rotation speed low? — NO →	Inspect the followings. • Minor clogging of filter • Minor clogging of heat exchanger • Minor short-circuit • Minor shortage of refrigerant amount • Poor compression of compressor
Is the compressor rotation speed low? — YES → Check which control "Determination control of conpressor rotation speed" or "Protective control by controlling compressor rotation speed" is appropriate to this phenomenon. → Are the temperature conditions of room and outdoor air close to the rated conditions? (1) — YES →	Considering appropriate operation control, check suspicious points. Inspect the followings for reference. • Major clogging of filter • Major clogging of heat exchanger • Major short-circuit • Major shortage of refrigerant amount • Compressor protection ON • Indoor fan tap • Valid setting of silent mode
Are the temperature conditions of room and outdoor air close to the rated conditions? (1) — NO → The unit is operating normally but is operating under the contol for protecting compressor or other respective parts.	

Note (1) Outdoor: 7°C, Indoor: 20°C

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Earth leakage breaker activated
	Outdoor control PCB	Green LED	Red LED	
		Stays OFF	Stays OFF	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Defective compressor
- Noise

5. Troubleshooting

Diagnosis	Countermeasure
Are OK the insulation resistance and coil resistance of compressor? — NO →	Replace compressor.*
YES ↓ Is insulation of respective harnesses OK? Is any harness bitten between pannel and casing or etc? — NO →	Secure insulation resistance.
YES ↓ Check the outdoor unit grounding wire/earth leakage breaker.	

Check of the outdoor unit grounding wire/earth leakage breaker

① Run an independent grounding wire from the grounding screw of outdoor unit to the grounding terminal on the distribution panel. (Do not connect to another grounding wire.)
② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation.

* Insulation resistance of compressor
- Immediately after installation or when the unit has been left for long time without power supply, the insulation resistance may drop to a few MΩ because of refrigerant migrated in the compressor.
  When the earth breaker is activated at lower insulation resistance, check the following points.

① 6 hours after power ON, check if the insulation resistance recovers to normal.
When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.
② Check if the earth leakage breaker is conformed to higher harmonic regulation or not.
Since the unit is equipped with inverter, it is necessary to use components conformed to higher harmonic regulation in order to prevent malfunction of earth leakage breaker.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Excessive noise/vibration (1/3)
	Outdoor control PCB	Green LED	Red LED	
		–	–	

1.Applicable model

All models

2.Error detection method

3. Condition of Error displayed

4.Presumable cause

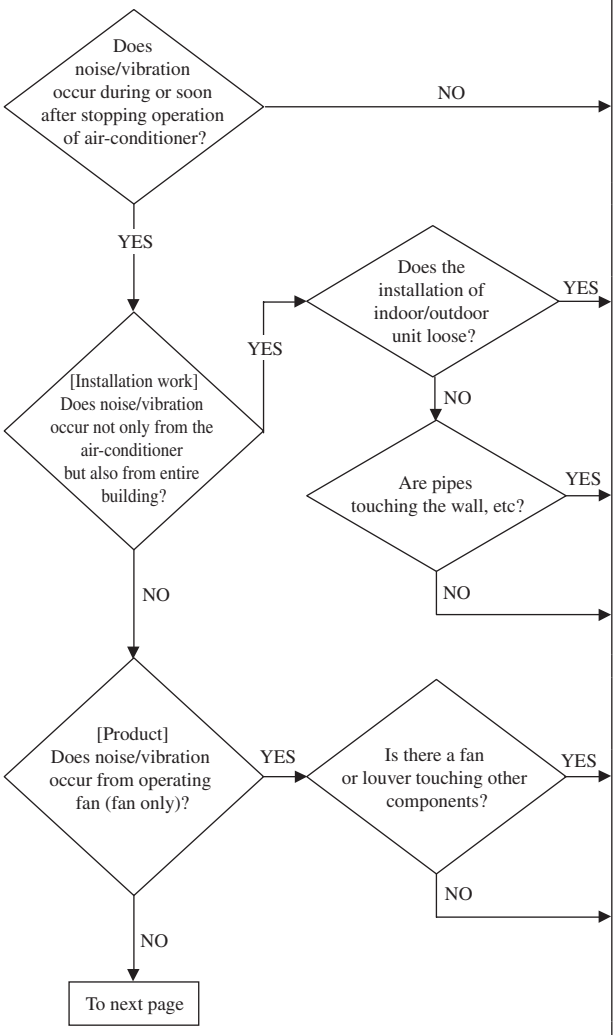
① Improper installation work
- Improper anti-vibration work at instllation
- Insufficient strength of mounting face

② Defective product
- Before/after shipping from factory

③ Improper adjustment during commissioning
- Excess/shortage of refrigerant, etc.

5.Troubleshooting

Diagnosis



Countermeasure

If excessive noise/vibration persists when sufficient time has elapsed after stopping the unit, it is considered that the air-conditioner is not the source.

Check the installed condition carefully, and correct the position or insert rubber cushions or others into the gap, if necessary.

Prevent the vibration from transmitting to wall and etc by fixing pipes on the wall or wrapping rubber cushion around the pipe which goes through the hole in the wall or applying other appropriate means.

Strength of ceiling wall, floor, etc. may be insufficient. Review the installing position or reinforce it.

Check for leaning of installed unit or anomalous mounting of fan, louver or motor and specify the contacting point and correct it.

When the heat exchanger or filter is clogged, clean them. In case that the unit is installed at the site where background noise is very low, small noise from indoor unit can be heard, but it is normal. Before installation, check for background noise. If backgound nois is very low, convince client prior to installation.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Excessive noise/vibration (2/3)
	Outdoor control PCB	Green LED	Red LED	
		–	–	

1. Applicable model

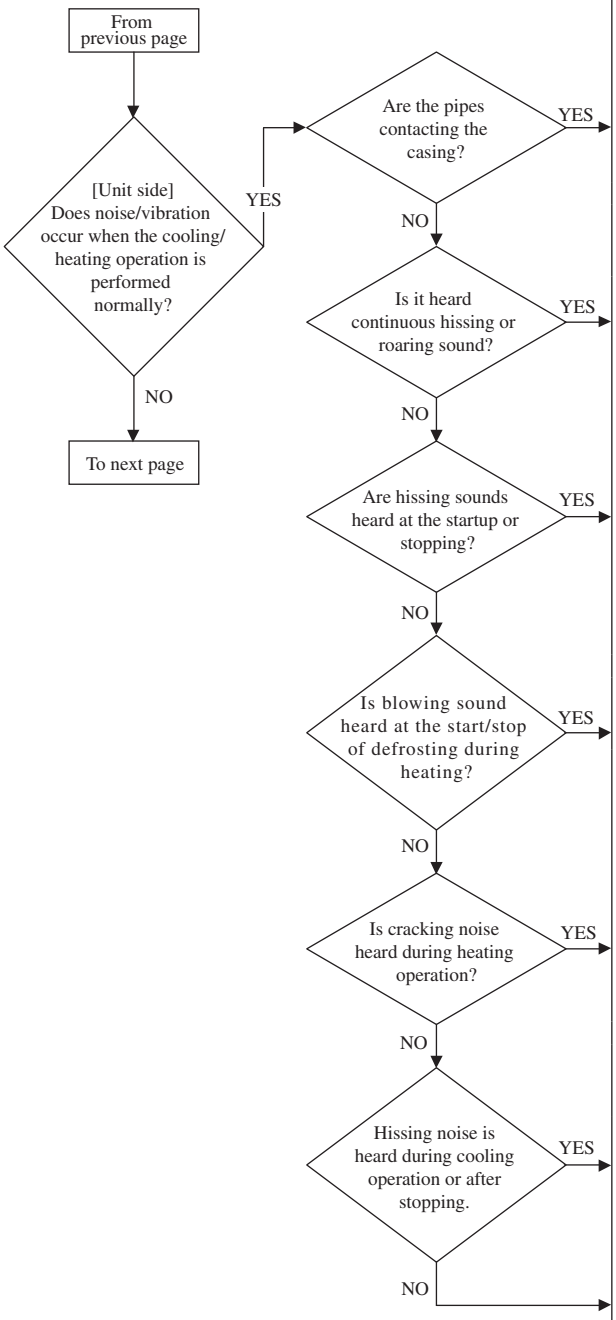
All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
	

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Excessive noise/vibration (3/3)
	Outdoor control PCB	Green LED	Red LED	
		–	–	

1. Applicable model

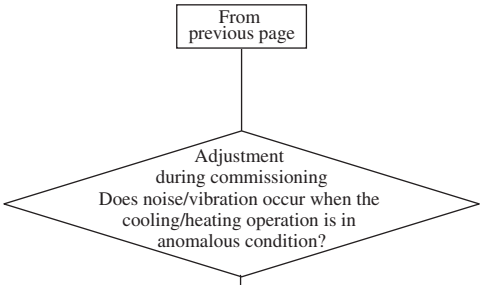
All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
	If insufficient cooling/heating problem happens due to anomalous operating conditions at cooling/heating, followings are suspicious. • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant. * Since there could be many causes of noise/vibration, the above do not cover all. In such case, check the conditions when, where, how the noise/vibration occurs according to following check point. • Indoor/outdoor unit • Cooling/heating/fan mode • Startup/stop/during operation • Operating condition (Indoor/outdoor temperatures, pressure) • Time it occurred • Operation data retained by the remote controller such as compressor rotation speed, heat exchanger temperature, EEV opening degree, etc. • Tone (If available, record the noise) • Any other anomalies

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Louver motor failure
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1.Applicable model

All models

2.Error detection method

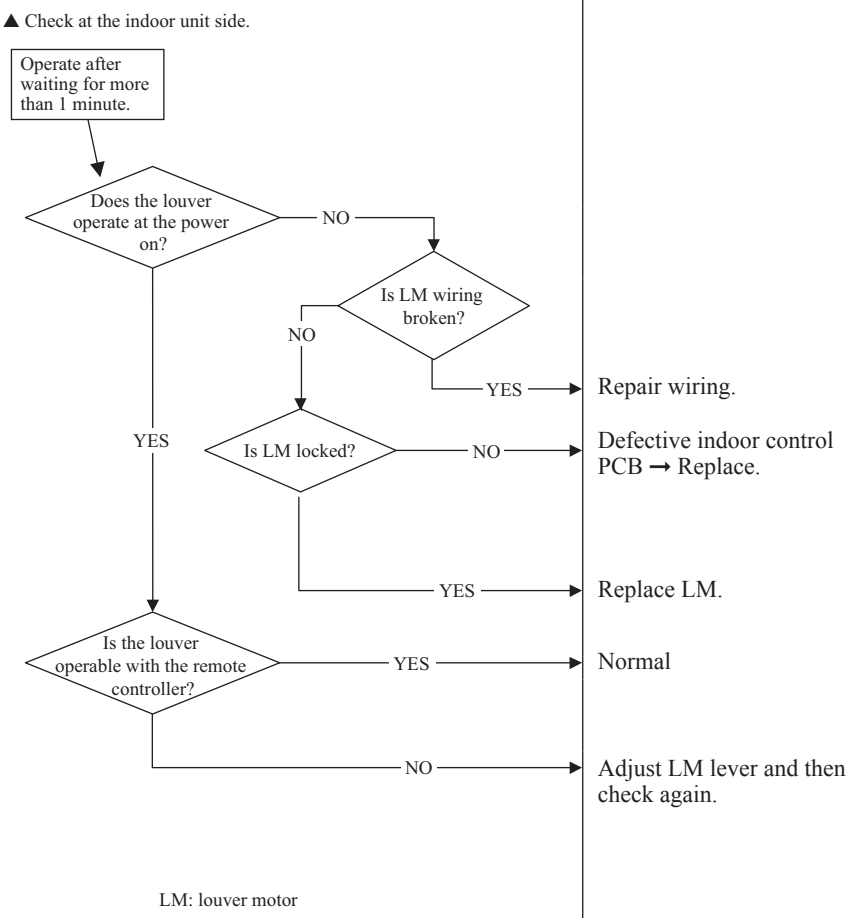
3. Condition of Error displayed

4.Presumable cause

- Defective LM
- LM wire breakage
- Faulty indoor control PCB

5.Troubleshooting

Diagnosis	Countermeasure



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Power supply system error (Power supply to indoor control PCB)
	Outdoor control PCB	Green LED	Red LED	
		Stays OFF	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Misconnection or breakage of connecting wires
- Blown fuse
- Faulty indoor control PCB
- Broken harness
- Faulty outdoor control PCB (Noise filter)

5. Troubleshooting

Diagnosis	Countermeasure
Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit? → NO → Is AC380/415V for 3-phase unit detected between 1, 2 and 3 on the teminal block of outdoor unit or is AC220/240V for 1-phase unit detected between 1 and 2 on the terminal block of outdoor unit? → NO	Defective outdoor control PCB (Noise filter)
→ YES	Misconnection or breakage of connecting wires
YES → Are fuse OK (250V 3.15A)? → NO	Replace fuse.
YES	Defective indoor control PCB → Replace.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	Power supply system error (Power supply to remote controller)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Remote controller wire breakage/short-circuit
- Defective remote controller
- Malfunction by noise
- Broken harness
- Faulty indoor control PCB
- Faulty interface kit

5. Troubleshooting

Diagnosis	Countermeasure
Isn't there any loose connection of remote controller wires? — YES →	Correct.
NO ↓ Isn't remote controller wire broken or short-circuited? — YES →	Replace wires.
NO ↓ Disconnect remote controller wires. ↓ Is DC15V or higher detected between X-Y of interface kit terminal block? — YES →	Replace remote controller.
NO ↓ Disconnect connecting wires. ↓ Is DC15V or higher detected between X-Y of indoor unit terminal block? — YES →	Replace interface kit.
NO →	Defective indoor control PCB→Replace.

Note:

Error code	Indoor display	RUN light	TIMER light	Content	Room temperature sensor anomaly
Remote controller: None		2 times flash	ON		
	Outdoor control PCB	Green LED	Red LED		
		Keeps flashing	Stays OFF		

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected by indoor return air temperature sensor (Th1)

3. Condition of Error displayed

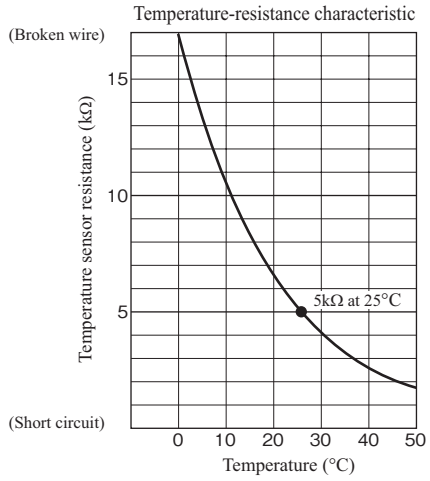
- When the temperature thermistor detects -45°C or lower for 15 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Defective room temperature sensor connector
- Defective room temperature sensor
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of room temperature sensor connector OK? → NO	Correct. → Connect connector.
Are the characteristics of room temperature sensor OK? → NO	Defective room temperature sensor → Replace.
YES	Defective indoor control PCB → Replace. (Defective room temperature sensor input circuit)



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		Stays OFF	Keeps flashing	Limit switch anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

The limit switch operates when the indoor unit is stopped.

3. Condition of Error displayed

Same as above

4. Presumable cause

- Defective Limit switch
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the inlet panel set correctly? — NO →	Correction, re-set
YES ↓	
Are limit switch OK? (1) — NO →	Defective limit switch → Replace.
YES →	Defective indoor control PCB → Replace. (Defective limit switch input circuit)

Note (1) Check the operation of limit switch by checking if the error can be rest or not by pushing the limit switch by finger when the inlet panel is removed.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: INSPECT I/U		–	–	INSPECT I/U (When 1 or 2 remote controllers are connected)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

Communication between indoor unit and remote controller is disabled for more than 30 minutes after the power on.

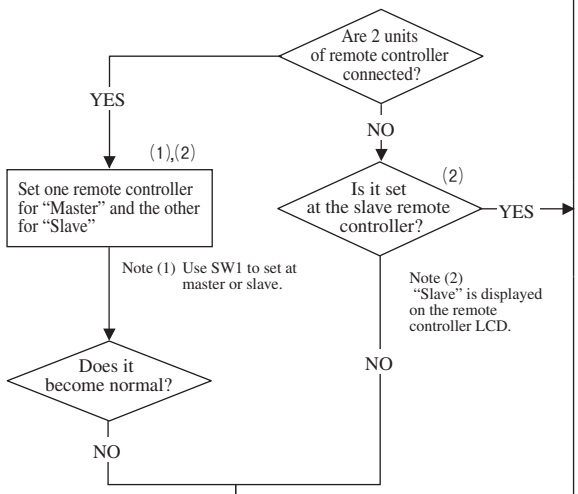
3. Condition of Error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote controller communication circuit
- Faulty interface kit PCB

5. Troubleshooting



Note: If any error is detected 30 minutes after displaying "✋WAIT✋" on the remote controller, the display changes to "INSPECT I/U".

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: INSPECT I/U		–	–	INSPECT I/U (Connection of 3 units or more remote controller)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

Indoor unit cannot communicate for more than 30 minutes after the power on with remote controller.

3. Condition of Error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote controller communication circuit
- Faulty indoor control PCB
- Faulty outdoor control PCB
- Faulty interface kit PCB

5. Troubleshooting

Diagnosis		Countermeasure
Are more than 3 units of remote controller connected?	YES	Reduce to 2 units or less.
NO		
Does remote controller display "Slave"?	YES	Change remote controller setting to "Master". (SW1 on remote controller PCB)
NO		
Do more than one interface kit have the same address?	YES	Set address again. (SW1 on interface kit PCB)
NO		
Is it set to a slave interface kit. SW3-1, 2?	YES	Change to master. (SW3-1, 2 on interface kit PCB)
NO		
Is there loose or wrong connection at the termanal of wiring between indoor and outdoor units?	YES	Correct
NO		
Is the grounding wire connected properly?	NO	Correct
YES		
Is approx. DC20V detected between ②-③ on the outdoor unit terminal block?	NO	Defective outdoor control PCB→Replace.
YES		
Is approx. DC20V detected between ②-③ on the indoor unit terminal block?	NO	Defective indoor control PCB→Replace.
YES		
Is approx. DC20V detected between ②-③ on the interface kit terminal block?	NO	Broken connecting wire→ Correct.
YES		Defective interface kit PCB→Replace.

Note: If any error is detected 30 minutes after displaying "WAIT" on the remote controller, the display changes to "INSPECT I/U".

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: WAIT		–	–	Communication error at initial operation (1/3)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty indoor control PCB
- Defective remote controller
- Broken remote controller wire
- Faulty outdoor control PCB
- Broken connection wires

5. Troubleshooting

Diagnosis	Countermeasure
"WAIT" is still displayed on the remote controller LED 2 minutes after power ON.	
YES → Is the outdoor unit control green LED flashing?	NO → To next page
YES → Is the outdoor unit control red LED flashing twice?	NO → Defective indoor control PCB→Replace. Defective remote controller→Replace. Broken remote controller wire Y→Replace.
YES → Are wires connected properly between indoor/outdoor units?	NO → Correct connection wires between indoor and outdoor units.
YES → Is approx. DC20V detected between ②-③ on the outdoor unit terminal block?	NO → Defective outdoor control PCB→Replace.
YES → Is approx. DC20V detected between ②-③ on the indoor unit terminal block?	NO → Defective connection wire (Broken) Noise
	YES → Defective indoor control PCB→Replace.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: WAIT		–	–	Communication error at initial operation (2/3)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty noise filter
- Faulty indoor control PCB
- Faulty outdoor control PCB
- Faulty inverter PCB
- Faulty fan motor

5. Troubleshooting

Diagnosis	Countermeasure
Diagnosis for when the outdoor control PCB LED is turned off	
From previous page → Shut down the breaker and back on again the breaker 3 minutes later.	
Does it reset normally? NO	
Does it reset normally? YES	Normal (Malfunction by noise)
Isn't the outdoor unit controller power supply fuse (30A) blown? (1) NO	Note (1) 1-phase model only
To check method for inverter PCB before replacment of blown power supply fuse. → To next page	
Isn't the outdoor unit controller power supply fuse (30A) blown? YES	
Is AC220/240V or AC380/415V detected at the noise filter secondary side? NO	Replace noise filter.
Is AC220/240V or AC380/415V detected at the noise filter secondary side? YES	
Is DC255-310V detected at CNA2? NO	Check connection of diode stack and electrolytic capacitor by refering main electrical circuit diagram
Is DC255-310V detected at CNA2? YES	
Isn't fuse 〔250V, 2A〕 on the outdoor control PCB blown? NO	Defective outdoor control PCB→Replace.
Isn't fuse 〔250V, 2A〕 on the outdoor control PCB blown? YES	
Is DC5V detected on the outdoor control PCB (Between ①-④ of CNV)? NO	Defective outdoor control PCB→Replace.
Is DC5V detected on the outdoor control PCB (Between ①-④ of CNV)? YES	
Is DC5V detected if the connector of outdoor unit fan motor is disconnected? NO	Defective outdoor fan motor
Is DC5V detected if the connector of outdoor unit fan motor is disconnected? YES	
Is DC5V detected if the inverter power supply connector (CNI2) is disconnected? NO	Defective inverter PCB →Replace.
Is DC5V detected if the inverter power supply connector (CNI2) is disconnected? YES	Defective outdoor control PCB→Replace.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: WAIT		–	–	Communication error at initial operation (3/3)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

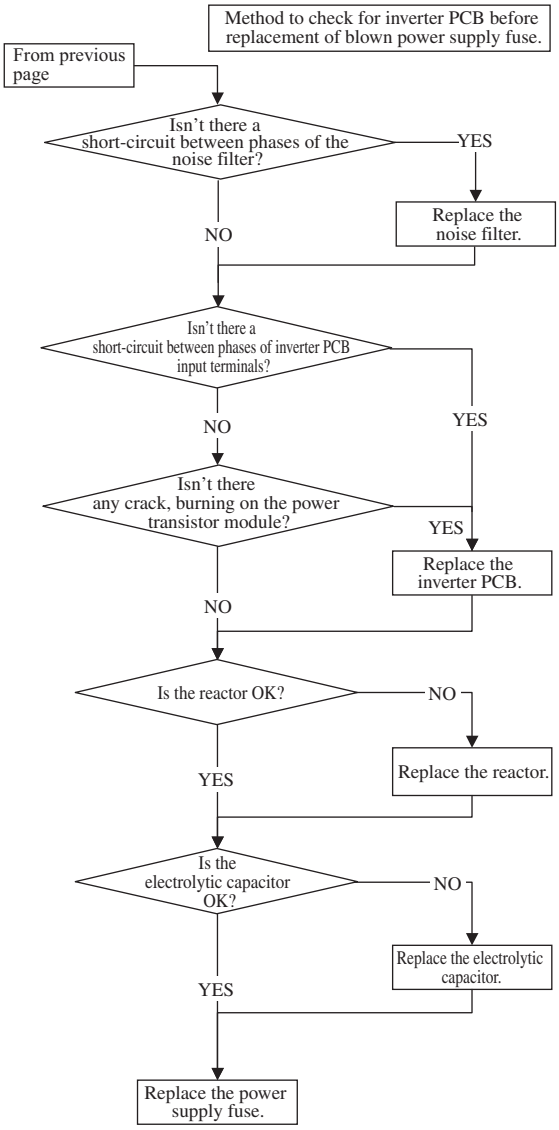
3. Condition of Error displayed

4. Presumable cause

- Blown fuse
- Faulty noise filter
- Faulty inverter PCB
- Faulty reactor
- Faulty electrolytic capacitor

5. Troubleshooting

Diagnosis



Countermeasure

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: None		–	–	No display
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	2 times flash	

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Faulty indoor control PCB
- Defective remote controller
- Broken remote controller wire
- Defective interface kit

5. Troubleshooting

Diagnosis	Countermeasure
Remote controller does not display anything after the power on.	
Is DC10V or higher detected at remote controller connection terminals? — YES	Defective remote controller
NO	
Is DC10V or higher detected on remote controller wires if the remote controller is removed? — YES	Defective remote controller
NO	
Is DC10V or higher detected at interface kit connection terminals? — YES	Defective interface kit
NO	
Is DC10V or higher detected on connecting wires if the interface kit is removed? — YES	Defective interface kit
NO	
Are wires connected properly between the indoor/outdoor units? — YES	Defective connecting wire. Defective remote controller wire (Short-circuit, etc.)
NO	Defective indoor control PCB→Replace.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E1		–	–	Remote controller communication circuit error
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When normal communication between the remote controller and the indoor unit is interrupted for more than 2 minutes. (Detectable only with the remote controller)

3. Condition of Error displayed

Same as above

4. Presumable cause

- Defective communication circuit between remote controller-indoor unit
- Noise
- Defective remote controller
- Faulty indoor control PCB
- Defective interface kit

5. Troubleshooting

Diagnosis	Countermeasure
Is it possible to reset normally by the power reset? — YES →	Malfunction by noise Check peripheral environment.
NO ↓ Is DC10V or higher detected at remote controller connection terminals? — YES →	Defective remote controller
NO ↓ Is DC10V or higher detected on remote controller wires if the remote controller is removed? — YES →	Defective remote controller
NO ↓ Is DC10V or higher detected at interface kit connection terminals? — YES →	Defective interface kit
NO ↓ Is DC10V or higher detected on connecting wires if the interface kit is removed? — YES →	Defective interface kit
NO ↓ Are wires connected properly between the indoor/outdoor units? — YES →	Defective connecting wire. Defective remote controller wire (Short-circuit, etc.)
NO →	Defective indoor control PCB→Replace.

Note (2) Does the remote controller still display "WAIT" even after 3 minutes?

Note: If the indoor unit cannot communicate normally with the remote controller for 180 seconds, the indoor unit PCB starts to reset automatically.

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E5		ON	6 times flash	Communication error during operation
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	See below	

1. Applicable model

All models

2. Error detection method

When normal communication between indoor and outdoor unit is interrupted for more than 2 minutes.

3. Condition of Error displayed

Same as above is detected during operation.

4. Presumable cause

- Unit No. setting error
- Broken remote controller wire
- Faulty remote controller wire connection
- Faulty outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
In case that the outdoor unit red LED flashes 2-times	
Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block.	
Is the connection of signal wires at the outdoor unit side OK? — NO →	Repair signal wires.
YES ↓	
Note (2) Check for faulty connection or breakage of signal wires between indoor-outdoor units.	
Is the connection of signal wires between indoor-outdoor units OK? — NO →	Repair signal wires.
YES ↓	
Power reset ↓	
Has the remote controller LCD returned to normal state? — NO →	To the diagnosis of "✋WAIT✋"
YES →	Unit is normal. (Malfunction by temporary noise, etc.)
In case that the outdoor unit red LED stays OFF	
Power reset ↓	
NO ↓	
Has the remote controller LCD returned to normal state? — NO →	Defective outdoor control PCB (Defective network communication circuit) → Replace.
YES →	Unit is normal. (Malfunction by temporary noise, etc.)

Note: Pressing the pump-down switch cancels communications between indoor and outdoor unit so that "communication error-E5" is displayed on indoor unit and remote controller, but it is normal.

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E6		1(3) time flash(1)	ON	Indoor heat exchanger temperature sensor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

Note(1) Value in ( ) are the $Th2_2$.

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected on the indoor heat exchanger sensor ($Th2_1$, $Th2_2$).

3. Condition of Error displayed

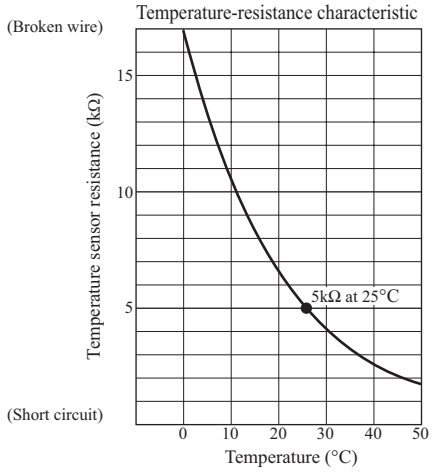
- When the temperature sensor detects -28°C or lower for 15 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Defective indoor heat exchanger sensor connector
- Indoor heat exchanger temperature sensor anomaly
- Faulty indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of indoor heat exchanger temperature sensor connector OK? — NO →	Correct. → Insert connector securely.
YES ↓	
Are characteristics of indoor heat exchanger temperature sensor OK? — NO →	Defective indoor heat exchanger temperature sensor → Replace.
YES →	Defective indoor control PCB → Replace. (Defective indoor unit heat exchanger temperature sensor input circuit)



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E10		–	–	Excessive number of connected indoor units (more than 17 units) by controlling with one remoto controller
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When it detects more than 17 of indoor units connected to one remote contorller

3. Condition of Error displayed

Same as above

4. Presumable cause

- Excessive number of indoor units connected
- Defective remote controller

5. Troubleshooting

Diagnosis	Countermeasure
Aren't more than 17 indoor units connected to one remote controller? → NO	Defective remote controller → Replace.
Aren't more than 17 indoor units connected to one remote controller? → YES	Reduce to 16 or less units.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E14		–	–	Communication error between master and slave indoor units
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When communication error between master and slave indoor units occurs

3. Condition of Error displayed

Same as above

4. Presumable cause

- Unit address setting error
- Broken remote controller wire
- Defective remote controller wire connection
- Broken interface kit wire
- Defective interface kit wire connection
- Defective indoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is it OK the unit address setting for master and slave interface kit? — NO →	Correct unit address setting.
YES ↓	
Isn't the remote controller wiring between interface kit defective? — YES →	Correct wiring.
NO ↓	
Isn't the interface kit wiring between indoor units defective? — YES →	Correct wiring.
NO ↓	
Is it restored by resetting the power supply? — NO →	Defective indoor control PCB → Replace.
YES →	• Malfunction by noise • Check surrounding environment.

Note (1) Set dip switches SW3-1 and SW3-2 as shown in the following table. (Factory default setting – "Master")

		Interface kit		
		Master	Slave1	Slave2
Dip switch	SW3-1	OFF	OFF	ON
	SW3-2	OFF	ON	OFF

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E16		6 times flash	ON	Indoor fan motor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

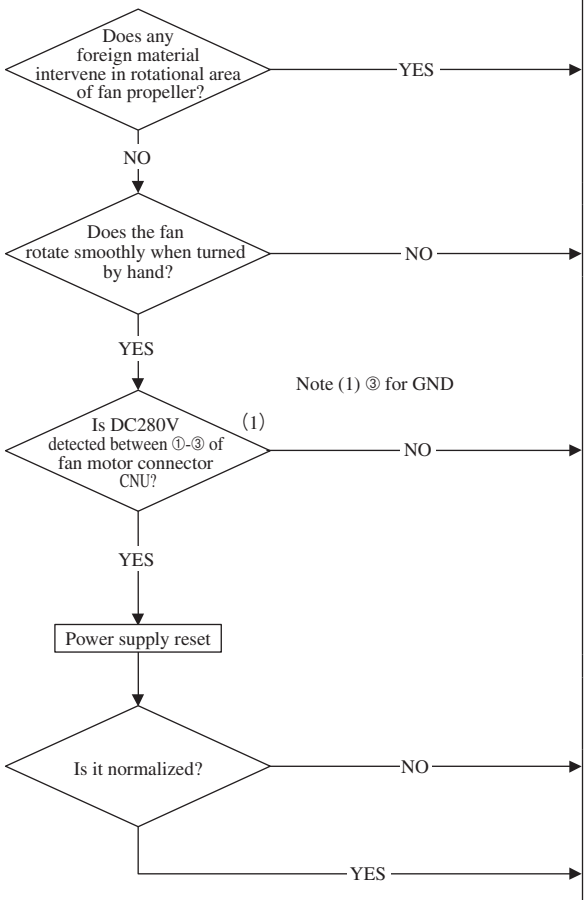
3. Condition of Error displayed

- When actual rotation speed of indoor fan motor drops to lower than 300rpm for 30 seconds continuously, the compressor and the indoor fan motor stop.

4. Presumable cause

- Defective indoor control PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on indoor control PCB
- External noise, surge

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E28		–	–	Remote controller temperature thermistor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) of remote controller temperature thermistor (Thc)

3. Condition of Error displayed

When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Faulty connection of remote controller temperature thermistor
- Defective remote controller temperature thermistor
- Defective remote controller PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the remote controller temperature thermistor connected properly? → NO	Correct.
Is the remote controller temperature thermistor connected properly? → YES → Are the characteristics of remote controller temperature thermistor OK? Is the thermistor wire OK? → NO	Defective remote controller temperature thermistor → Replace.
Are the characteristics of remote controller temperature thermistor OK? Is the thermistor wire OK? → YES	Defective remote controller PCB → Replace. (Defective remote controller temperature thermistor input circuit)

Resistance-temperature characteristics of remote controller temperature thermistor (ThC)

Temperature (°C)	Resistance value (kΩ)	Temperature (°C)	Resistance value (kΩ)
0	65	30	16
1	62	32	15
2	59	34	14
4	53	36	13
6	48	38	12
8	44	40	11
10	40	42	9.9
12	36	44	9.2
14	33	46	8.5
16	30	48	7.8
18	27	50	7.3
20	25	52	6.7
22	23	54	6.3
24	21	56	5.8
26	19	58	5.4
28	18	60	5.0

Note: After 10 seconds has passed since remote controller thermistor was switched from valid to invalid, E28 will not be displayed even if the thermistor harness is disconnected. At same time the thermistor, which is effective, is switched from remote controller thermistor to indoor return air temperature thermistor. Even though the remote controller thermistor is set to be Effective, the return air temperature displayed on remote controller for checking still shows the value detected by indoor return air temperature thermistor, not by remote controller temperature thermistor.

Error code	Indoor display	RUN light	TIMER light
Remote controller: E35		ON	Keeps flashing
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Cooling overload operation

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

3. Condition of Error displayed

When outdoor heat exchanger temperature anomaly is detected 5 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor heat exchanger temperature thermistor
- Defective outdoor control PCB
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger
- Excessive refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
Are the characteristics of outdoor heat exchanger temperature thermistor normal? (* For the characteristics of outdoor heat exchanger temperature thermistor, refer to E37.) — NO →	Replace outdoor heat exchanger temperature thermistor.
YES ↓ Is the unit operating in the state of cooling overload? — YES →	Check unit side. • Isn't the air circulation of outdoor unit short-circuited? • Are installation spaces adequate? • Isn't there any fouling or clogging on heat exchanger?
NO ↓ Is the high pressure control normal? — NO →	Control operation check *
YES ↓ Is the temperature (measured actually) at detection of error correct? — NO →	Defective outdoor control PCB→Replace.
YES →	Excessive refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.

* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E36		ON	5 times flash	Discharge pipe temperature error
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

3. Condition of Error displayed

When discharge pipe temperature anomaly is detected 2 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor control PCB
- Defective discharge pipe temperature thermistor
- Clogged filter
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger

5. Troubleshooting

Diagnosis	Countermeasure
Are the characteristics of discharge pipe temperature thermistor normal? (* For the characteristics of discharge pipe temperature, refer to E39.) — NO →	Replace discharge pipe temperature thermistor.
YES ↓ Is the discharge pipe temperature error persisted during cooling operation? — YES →	Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.
NO ↓ Is the discharge pipe temperature control normal? — NO →	Control operation check *
YES ↓ Is the temperature (measured actually) at detection of error correct? — NO →	Defective outdoor control PCB→Replace.
YES →	Check unit side: • Isn't filter clogged? • Are adequate indoor, outdoor unit installation spaces? • Isn't there any short-circuit of air? • Isn't there any fouling, clogging on indoor heat exchanger?

* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro computer control function for corresponding models.

Note:

Error code	Indoor display	RUN light	TIMER light
Remote controller: E37		Keeps flashing	2 times flash
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Outdoor heat exchanger temperature themistor anomaly

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature thermistor

3. Condition of Error displayed

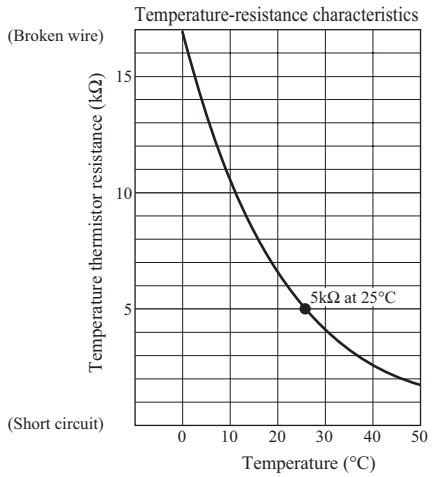
- When the temperature thermistor detects -50°C or lower for 20 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -50°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

4. Presumable cause

- Defective outdoor control PCB
- Broken thermistor harness or temperature sensing section
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor heat exchanger temperature thermistor connector connected properly? → NO	Correct connector.
YES ↓ For the characteristics of outdoor heat exchanger temperature thermistor, see the following graph. Are the characteristics of outdoor heat exchanger temperature thermistor OK? → NO	Defective outdoor heat exchanger temperature thermistor→Replace.
YES	Defective outdoor control PCB→Replace. (Defective outdoor heat exchanger temperature thermistor input circuit)



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E38		Keeps flashing	1 time flash	Outdoor air temperature thermistor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on outdoor air temperature thermistor

3. Condition of Error displayed

- When the temperature thermistor detects -45°C or lower for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -45°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

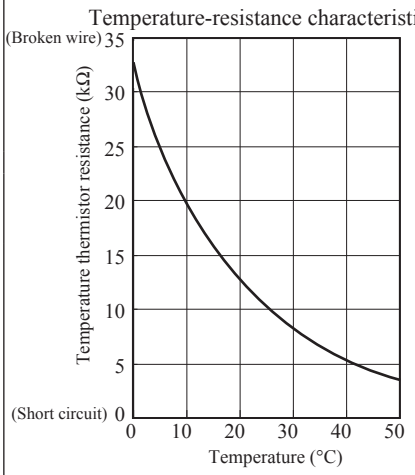
4. Presumable cause

- Defective outdoor control PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor air temperature thermistor connector connected properly? — NO →	Correct connector.
YES ↓ Is the characteristics of the outdoor air temperature thermistor OK? (For the characteristics of outdoor air temperature thermistor, see the following graph.) — NO →	Defective outdoor air temperature thermistor→ Replace.
YES →	Defective outdoor control PCB→Replace. (Defective outdoor air temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E39		Keeps flashing	4 times flash	Discharge pipe temperature thermistor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the discharge pipe temperature thermistor

3. Condition of Error displayed

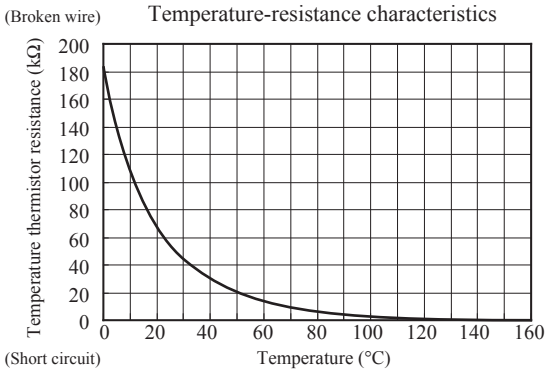
When the temperature thermistor detects -10°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.

4. Presumable cause

- Defective outdoor control PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the discharge pipe temperature thermistor connector connected properly? → NO	Correct connector.
YES → Are the characteristics of discharge pipe temperature thermistor OK? (For the characteristics of discharge pipe temperature thermistor, see the following graph.) → NO	Defective discharge pipe temperature thermistor→ Replace.
YES	Defective outdoor control PCB→Replace. (Defective temperature thermistor input circuit)



Note:

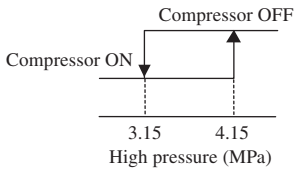
Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E40		–	–	High pressure error (63H1 activated)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

When the high pressure switch 63H1 is activated.



3. Condition of Error displayed

If 63H1 turns OFF (opened), the compressor stops. After 3-minutes delay, the compressor restarts. If this anomaly occurs 5 times within 60 minutes or continues for 60 minutes continuously.

4. Presumable cause

- Short circuit of air flow, disturbance of air flow and clogging filter at outdoor heat exchanger/Breakdown of fan motor
- Defective outdoor control PCB
- Defective 63H1 connector
- Defective electronic expansion valve connector
- Closed service valve
- Mixing of non-condensing gas (nitrogen, etc.)

5. Troubleshooting

Diagnosis	Countermeasure
If the power supply breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)	
Is the service valve fully opened? — NO →	Open service valve.
YES ↓ Has 63H1 activated? — NO →	
On operation of 63H1 YES ↓ 1. During cooling · Is the outdoor fan motor running? · Isn't any short-circuit of air on the outdoor unit? · Are sufficient return air/supply air space secured? 2. During heating · Isn't the indoor heat exchanger temperature thermistor disconnected from the thermistor casing? · Isn't the filter clogged? * Under the condition of overcharging refirgerant, 63H1 may activate due to delay of starting the preventive control by compressor speed control, because detected heat exhanger temperature, which conducts compressor speed control, becomes lower than normal condition due to excess sub-cooling degree.	
Is 63H1 connector connected properly? — NO →	Correct 63H1 connector.
YES ↓ Is the electronic expansion valve connector connection OK? — NO →	Correct electronic expansion valve connector.
If any anomaly exists on the electronic expansion valve connector connection, the power supply must be reset.	
YES →	Defective outdoor control PCB→Replace. (Defective 63H1 input circuit)

Note: In the protective control range for compressor startup (initial startup after power ON), even if 63H1 is activated only once (63H1turns OFF), immediately the error is displayed.

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E41		–	–	Power transistor overheat
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		6 times flash		

1. Applicable model

All models

2. Error detection method

When less than DC14V of the output voltage is detected between ② and ③ on CNI3, E41 is displayed. (See "Note" mentioned below)

3. Condition of Error displayed

Same as above.

4. Presumable cause

- Defective inverter PCB
- Defective outdoor fan motor
- Defective outdoor control PCB
- Delective noise filter PCB

5. Troubleshooting

Diagnosis	Countermeasure
• Single phase models	
(1) (2) Is DC15V detected between ② and ③ on CNI3? → YES	Replace inverter PCB
NO ↓ Note(1) Under anomalous conditions, the voltage becomes less than DC14V.	
(1) Is DC15V detected after disconnecting outdoor fan motor? → YES	Replace outdoor fan motor
→ NO	Replace outdoor control PCB If not solved, replace inverter PCB as well
Note(2) How to check the voltage between ② and ③ of CNI3? ⇒See E51	
• 3-phase models	
E41⇒Replace inverter PCB	

Note: The "Single phase models" of inverter PAC have no function to output the signal for the power transistor overheat. However since the power source for the power transistor and the outdoor fan motor is in the same line, when the anomaly of the outdoor fan motor occurs, E41 is displayed.

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E42		ON	1 time flash	Current cut (1/2)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		1 time flash		

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of Error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the intial detection.

4. Presumable cause

- The valves closed
- Faulty power supply
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
Is the Power supply voltage OK? — NO →	Check power supply.
YES ↓	
Are the service valves opened? — NO →	Open the valves.
YES ↓	
Is the high pressure during operation OK? — NO →	Check refrigerant amount and refregerant circuit *In case of transitional increase of high pressure and/or test run, several times restarting may recover it, because liquid refrigerant (migrated) in the compresser is discharged from the compressor.
YES ↓	
Is the checked result of insulation resistance and coil resistance (1) of compressor motor OK? — NO →	Replace compressor.
(1) 0.293Ω or more at 20°C (Single phase models) 1.172Ω or more at 20°C (3-phase models)	
YES ↓	
To next page.	

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E42		ON	1 time flash	Current cut (2/2)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		1 time flash		

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of Error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the intial detection.

4. Presumable cause

- Defective inverter PCB
- Faulty power supply
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
From previous page	
Is the checked result of power transistor module OK? — NO →	Defective inverter PCB→ Replace.
YES ↓	
• Is the space for installation of indoor and/or outdoor unit enough? • Is there any short circuit of air on indoor and/or outdoor unit? • At cooling, does the outdoor fan motor run? Are the service valves fully opened? Is the filter clogged? • At heating, does the indoor fan motor run? Are the service valves fully opened? Is the filter clogged? • Is there any liquid flooding? Is the superheat within normal range? Is the low pressure sensor and suction pipe temperature thermistor normal? • Is there any anoumalous sound on the compressor?	
YES ↓	
After resetting power for several times does it become normal? — NO →	Defective inverter PCB→ Replace.
YES ↓	
Temporary noise may cause of anomaly. If noise source can be found, take countermeasure.	

Note:

Error code	Indoor display	RUN light	TIMER light
Remote controller: E45		–	–
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Communication error between inverter PCB and outdoor control PCB

1. Applicable model

All models

2. Error detection method

When the communication between inverter PCB and outdoor control PCB is not established.

3. Condition of Error displayed

Same as above.

4. Presumable cause

- Defective inverter PCB
- Defective connector between the outdoor control PCB and inverter PCB
- Defective outdoor control PCB
- Defective outdoor fan motor

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of connectors between the inverter PCB and the outdoor control PCB OK? — NO →	Correct the connection.
YES ↓ Are both switches of JSW10,11 on the inverter PCB set correctly? — NO →	Set JSW10, 11 correctly ⇒ See page 346 or 347.
YES ↓ Is LED on the inverter PCB flashing? — NO, For 3-phase models →	No power is supplied to inverter PCB. Check the power supply voltage and correct it If not solved, find the cause by checking following points. • Fan motor anomaly
For single-phase models ↓ Note(1) How to check voltage at CN13 ⇒See E51	
YES ← Is DC15V detected between ② and ③ on CNI3? (1) (2) — YES →	
NO ↓ Note(2) Under anomalous conditions, the voltage becomes less than DC14V	
Is DC15V detected after disconnecting outdoor fan motor? — YES →	Replace outdoor fan motor
NO →	Replace control PCB if not solved, replace inverter PCB as well
YES ↓ Is the communication wire between the inverter PCB and the outdoor control PCB connected properly? — NO →	Connect the communication wire securely
YES ↓ Replace the outdoor control PCB	
Does it become normal? — NO →	Replace inverter PCB
YES →	OK

Note:

Error code	Indoor display	RUN light	TIMER light
Remote controller: E48		ON	7 times flash
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Outdoor fan motor anomaly

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of outdoor fan motor

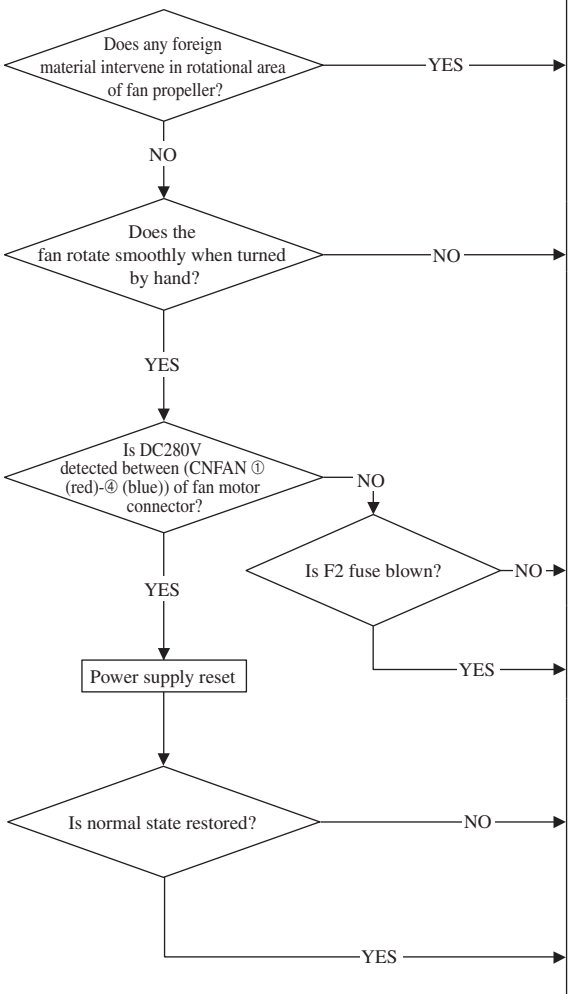
3. Condition of Error displayed

When actual rotation speed of outdoor fan motor (FMo1) drops to 100min^{-1} or lower for 30 minutes continuously, the compressor and the outdoor fan motor stop. After 3-minutes delay, it starts again automatically, but if this anomaly occurs 5 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective outdoor control PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on outdoor control PCB
- Blow fuse
- External noise, surge

5. Troubleshooting



Note: When E48 error occurs, in almost cases F2 fuse (4A) on the outdoor control PCB is blown. There are a lot of cases that fuse is blown and E48 occurs due to defective fan motor. And even though only the outdoor control PCB (or fuse) is replaced,, another trouble (*1) could occur. Therefore when fuse is blown, check whether the fan motor is OK or not.
After confirming the fan motor normal, check by power ON. (Don't power ON without confirming the fan motor normal.)
*1 The error which does not seem to relate E48 may occur like as "WAIT", Stay OFF of LED on outdoor control PCB, inverter communication error (E45) and etc.

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E49		–	–	Low pressure error or low pressure sensor anomaly (1/2)
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detected by low pressure drop and suction superheat

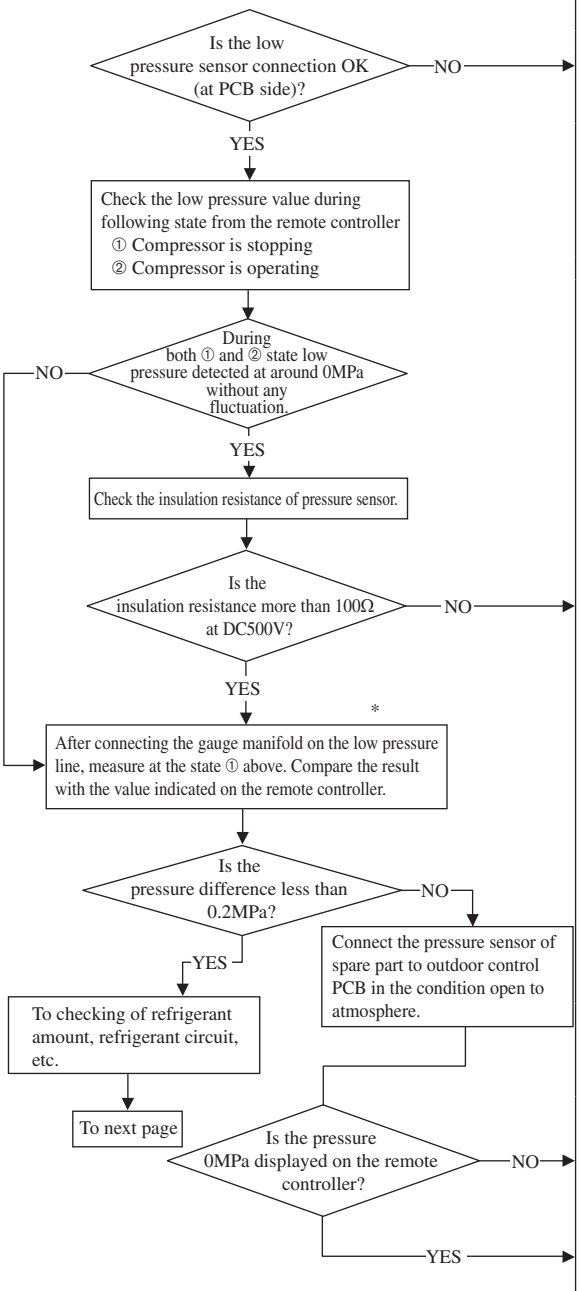
3. Condition of Error displayed

① When the low pressure sensor detects 0.079MPa or lower for 15 seconds continuously, compressor stops and it restarts automatically after 3-minutes delay. And if this anomaly occurs 3 times within 60 minutes,
② 10 minutes after the compressor starts, if the low pressure sensor detects 0.15MPa or lower for 60 minutes continuously and compressor suction superheat is detected 30degC or higher for 60 minutes continuously. And if this anomaly occurs 3 times within 60 minutes,
③ If low pressure sensor detects 0.079MPa or lower for 5 minutes continuously (including the compressor stop status),

4. Presumable cause

- Defective outdoor control PCB
- Defective low pressure sensor connector
- Defective low pressure sensor
- Defective suction pipe temperature thermistor connector
- Defective suction pipe temperature thermistor

5. Troubleshooting



Note: * Connect the gauge manifold to the service valve check joint during cooling, or connect it to the check joint at internal piping of outdoor unit during heating.

Error code	Indoor display	RUN light	TIMER light
Remote controller: E49		–	–
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Low pressure error or low pressure sensor anomaly (2/2)

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
From previous page.	
Is the service valve fully opened? — NO →	Open fully.
YES ↓	
Are the connections of low pressure sensor and suction pipe temprerature thermister connector OK? — NO →	Correct.
YES ↓	
Are the characteristics of low pressure sensor, suction pipe temperature thermistor OK? — NO →	Defective low pressure sensor, suction pipe temperature thermistor→ Replace.
YES ↓	
Is the low pressure normal during operation? — NO →	Charge refrigerant.
YES →	Defective outdoor control PCB→Replace. (Defective low pressure sensor, suction pipe temperature thermistor circuits)

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E51		ON	4 times flash	Inverter and fan motor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		6 times flash		

1. Applicable model

All models

2. Error detection method

When power transistor anomaly is detected for 15 minutes continuously

3. Condition of Error displayed

Same as above

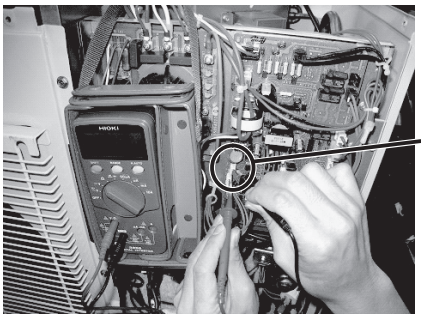
4. Presumable cause

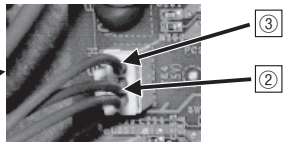
- Defective outdoor fan motor
- Defective inverter PCB
- Defective outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
• Model FDC100-140VN	
Is DC15V detected between ② and ③ on CNI3? (1) (2) — YES →	Replace inverter PCB If not solved, replace Noise filter PCB as well.
Note(1) Under anomalous conditions, the voltage becomes less than DC14V.	
NO ↓ Is DC15V detected after disconnecting outdoor fan motor? (1) — YES →	Replace outdoor fan motor.
NO →	Replace outdoor control PCB If not solved, replace inverter PCB as well.
• Model FDC100-140VS Replace immediately the inverter PCB and the power transistor.	
Note(2) How to check the voltage between ② and ③ of CNI3?	

② : 15V (+)
③ : GND (−)





Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E53		Keeps flashing	4 times flash	Suction pipe temperature thermistor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

When the suction pipe temperature thermistor detects anomalously low temperature

3. Condition of Error displayed

If the temperature thermistor detects -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minutes delay, if this anomaly ocuurs 3 times within 40 minute.

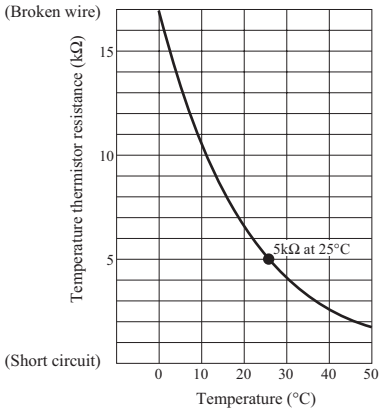
4. Presumable cause

- Defective suction pipe temperature thermistor connection
- Defective suction pipe temperature thermistor
- Defective outdoor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of suction pipe temperature thermistor connector OK? — NO →	Correct connection of suction pipe temperature thermistor connector.
YES ↓	
Are the characteristics of suction pipe temperature thermistor OK? — NO →	Defective suction pipe temperature thermistor→ Replace.
YES →	Defective outdoor control PCB→Replace. (Defective suction pipe temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote controller: E54		–	–	Low pressure sensor anomaly
	Outdoor control PCB	Green LED	Red LED	
		Keeps flashing	1 time flash	
	Outdoor inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

When anomalous voltage (pressure) is detected

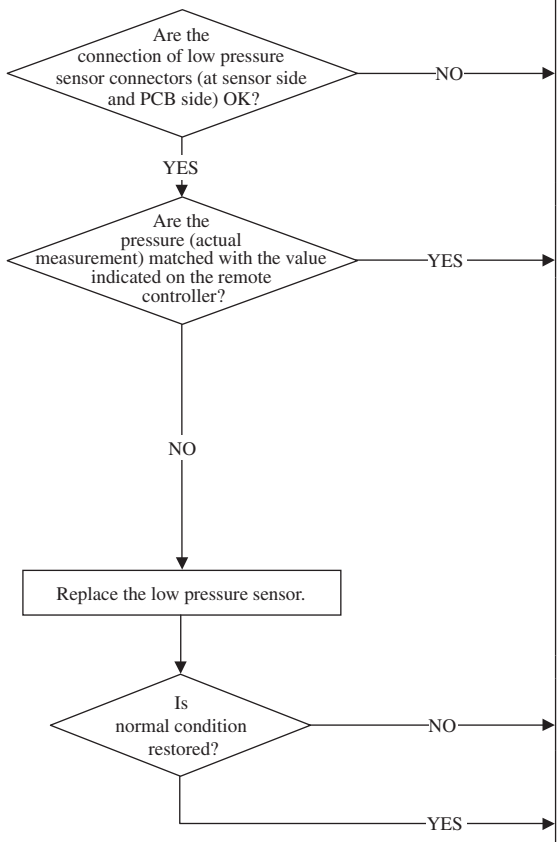
3. Condition of Error displayed

If the pressure sensor detects 0V or lower and 3.49V or higher for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minuts delay, if this anomaly occurs 3 times within 40 minutes

4. Presumable cause

- Defective low pressure sensor connection
- Defective low pressure sensor
- Defective outdoor control PCB
- Improper amount of refrigerant
- Anomalous refrigeration circuit

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light
Remote controller: E57		7 times flash	ON
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	1 time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Insufficient refrigerant amount or detection of service valve closure

1. Applicable model

All models

2. Error detection method

- Judge insufficient refrigerant amount by detecting the temperature differnce between indoor heat exchanger (ThI-R) and indoor return air (ThI-A).
- It detects at initial startup in cooling or dehumidifying mode after power ON.

3. Condition of Error displayed

Anomalous stop at initial detection

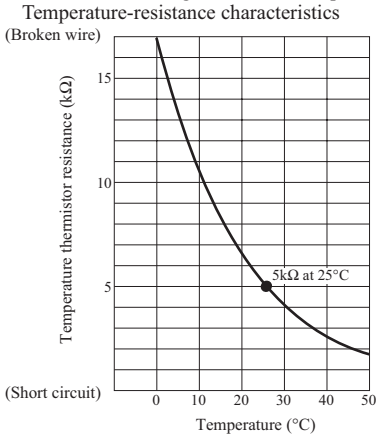
4. Presumable cause

- Defective indoor heat exchanger temperature thermistor
- Defective indoor return air temperature thermistor
- Defective indoor control PCB
- Insufficient refregerant amount

5. Troubleshooting

Diagnosis	Countermeasure
Is the service valve fully opened? — NO →	Open fully.
YES ↓ Are the connections of indoor heat exchanger and/or return air temperature thermistor connectors OK? — NO →	Correct indoor heat exchanger, return air temperature thermistor connector connections.
YES ↓ Are the characteristics of indoor heat exchanger and/or return air temperature thermistor OK? — NO →	Defective indoor heat exchanger, return air temperature thermistor → Replace.
YES ↓ Is the low pressure during operation normal? — NO →	Charge refrigerant.
YES →	Defective indoor control PCB→Replace. (Defective indoor heat exchanger, return air temperature thermistor input circuits)

Indoor heat exchanger, return air temperature thermistor
Temperature-resistance characteristics



Note: Insufficient refrigerant amount preventive control makes compressor stopped, if it judges insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (ThI-R) and return air temperature (ThI-A) for 1 minute after compressor ON in cooling or dehumidifying mode and for 9 minutes after compressor ON in heating mode. [in cooling mode: (ThI-A)-(ThI-R)>4degC, in heating mode: (ThI-R)-(ThI-A)<4degC]

Error code	Indoor display	RUN light	TIMER light
Remote controller: E59		–	–
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	5 times flash
	Outdoor inverter PCB	Yellow LED	
		Stays OFF	

Content

Compressor startup failure (1/2)

1. Applicable model

All models

2. Error detection method

When it fails to change over to the operation for rotor position detection of compressor motor (If the compressor speed cannot increase 11Hz or higher)

3. Condition of Error displayed

If the compressor fails to startup for 20 times (10 patterns x2 times) continuously.

4. Presumable cause

- Faulty outdoor fan motor
- Faulty outdoor control PCB
- Faulty inverter PCB
- Anomalous power supply voltage
- Insufficient or Excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)

5. Troubleshooting

Diagnosis	Countermeasure
In case that the compressor does not start at all and no sound or vibration exists	
Is power supply voltage OK? — NO →	Check the power supply voltage and correct it
YES (For FDC100-140VS / For FDC100-140VN)	
Note(1) How to check voltage at CN13 ⇒See E51	
Is DC15V detected between ② and ③ on CNI3? (1) (2) — YES →	Replace inverter PCB If not solved yet, replace Noise filter PCB
NO	
Note(2) Under anomalous conditions, the voltage becomes less than DC14V	
Is DC15V detected after disconnecting outdoor fan motor? (2) — YES →	Replace outdoor fan motor.
NO	
Replace outdoor control PCB	
Can compressor startup? — YES →	OK
NO	
Is the pressure equalized at starting OK? — NO →	Check refrigerant amount and refrigerant circuit.
YES	
Is the insulation resistance and coil resistance of compressor OK? — NO →	Replace compressor
YES	
To next page	

Note: Insulation resistance
- The unit is left for long period without power supply or soon after installation, insulation resistance may decrease to several MΩ or lower due to the liquid refrigerant migrated in the refrigerant oil in compressor. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whether the insulation resistance can recover or not, after 6 hours has passed since power ON.
  (By energize the crankcase heater, liquid refrigerant migrated in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breaker conforms to high-harmonic specifications
  (As INV PAC units has inverter, in order to prevent from improper operation, be sure to use the breaker of high-harmonic type)

Error code	Indoor display	RUN light	TIMER light
Remote controller: E59		–	–
	Outdoor control PCB	Green LED	Red LED
		Keeps flashing	5 times flash
	Outdoor inverter PCB	Yellow LED	
		Stays OFF	

Content

Compressor startup failure (2/2)

1. Applicable model

All models

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
From previous page → YES → Is the power transistor module OK?	
Is the power transistor module OK? — (inverter PCB anomaly) NO →	Replace inverter PCB
Is the power transistor module OK? — YES → After power OFF, turn SW10-4 of inverter PCB ON and connect the inverter checker. Then power ON again.	
Is the inverter output OK? (Check by inverter checker) — NO →	Replace inverter PCB
Is the inverter output OK? (Check by inverter checker) — YES → Try to restart several times	
Note(1) Several times restarting may recover it, because liquid refrigerant migrated in the compressor could be discharged from the compressor.	
Does it start? — NO →	Replace compressor

Note:

2. V MULTI SYSTEM

CONTENTS

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2.1 GENERAL INFORMATION

2.1.1 How to read the model name

Example: FDT 40 VF

- VF — Series code
- 40 — Product capacity
- FDT — Model name
  - FDT : Ceiling cassette-4way type
  - FDEN : Ceiling suspended type

Example: FDC 100 VN

- VN — Applicable power source···See the specification
- 100 — Product capacity
- FDC — Model name (FDC : Outdoor unit)

2.1.2 Table of models

Model \ Capacity	50	60	71	100	125
Ceiling cassette-4way type (FDT)	○	○	○	○	○
Ceiling suspended type (FDEN)	○	○	○	○	○
Outdoor unit to be combined (FDC)	FDC100VN FDC100VS (4 Horse Power)	FDC125VN FDC125VS (5 Horse Power)	FDC140VN FDC140VS (6 Horse Power)	FDC200VS (8 Horse Power)	FDC250VS (10 Horse Power)

2.1.3 Table of system combinations

Outdoor unit	Type	Indoor unit assembly capacity	Branch pipe set (Optional)
FDC100VN FDC100VS	Twin	50+50	DIS-WA1
FDC125VN FDC125VS		60+60 50+71	
FDC140VN FDC140VS	Twin	71+71	
	Triple	50+50+50	DIS-TA1
FDC200VS	Twin	100+100	DIS-WB1
		71+125	
	Triple	71+71+71	DIS-TB1
	Double Twin	50+50+50+50	DIS-WA1 x 2set DIS-WB1 x 1set
FDC250VS	Twin	125+125	DIS-WB1
	Triple	60+60+125	DIS-WA1 x 1set DIS-WB1 x 1set
		71+71+100	
	Double Twin	60+60+60+60	DIS-WA1 x 2set DIS-WB1 x 1set

Notes(1) Always use the branch piping set (optional) at branches in the refrigerant piping.
(2) If wireless specifications are used, use 1 wireless indoor unit in combination with wired indoor units.
(3) The combinations except the above table forbids.

2.2 SPECIFICATIONS

(1) Indoor units

(a) Ceiling cassette-4way type (FDT)

Adapted to **RoHS** directive

Item \ Model		FDT50VF	
		Panel **T-PSA-3BW-E**	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	5.0	5.4
Sound Pressure Level	dB(A)	P-Hi : 39 Hi : 33 Me : 31 Lo : 30	
Exterior dimensions Height x Width x Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	UNIT 22 PANEL 5.5	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Turbo fan × 1	
Motor <Starting method>	W	50 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 20 Hi : 18 Me : 16 Lo : 14	
External static pressure	Pa	0	
Outdoor air intake		Possible	
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Overload protection for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 6.35 (1/4")	
		Gas line : ϕ 12.7 (1/2")	
Connecting method		Flare piping	
Drain pump		Built-in Drain pump	
Drain		Hose Connectable with VP25	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDT60VF	
		Panel **T-PSA-3BW-E**	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	5.6	6.7
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 33 Me : 31 Lo : 30	
Exterior dimensions Height x Width x Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	UNIT 24 PANEL 5.5	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Turbo fan × 1	
Motor <Starting method>	W	50 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 28 Hi : 18 Me : 16 Lo : 14	
External static pressure	Pa	0	
Outdoor air intake		Possible	
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Overload protection for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 6.35 (1/4")	
		Gas line : ϕ 12.7 (1/2")	
Connecting method		Flare piping	
Drain pump		Built-in Drain pump	
Drain		Hose Connectable with VP25	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDT71VF	
		Panel **T-PSA-3BW-E**	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	7.1	8.0
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 35 Me : 33 Lo : 31	
Exterior dimensions Height x Width x Depth	mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	UNIT 24 PANEL 5.5	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Turbo fan × 1	
Motor <Starting method>	W	50 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 28 Hi : 21 Me : 19 Lo : 17	
External static pressure	Pa	0	
Outdoor air intake		Possible	
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Overload protection for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Drain pump		Built-in Drain pump	
Drain		Hose Connectable with VP25	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDT100VF	
		Panel **T-PSA-3BW-E**	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	10.0	11.2
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 40 Me : 37 Lo : 35	
Exterior dimensions Height x Width x Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	UNIT 27 PANEL 5.5	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Turbo fan × 1	
Motor <Starting method>	W	140 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	
External static pressure	Pa	0	
Outdoor air intake		Possible	
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Overload protection for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Drain pump		Built-in Drain pump	
Drain		Hose Connectable with VP25	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27℃	19℃	35℃	24℃
Heating	20℃		7℃	6℃

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item \ Model		FDT125VF	
		Panel **T-PSA-3BW-E**	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	12.5	14.0
Sound Pressure Level	dB(A)	P-Hi : 51 Hi : 42 Me : 40 Lo : 37	
Exterior dimensions Height x Width x Depth	mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	UNIT 27 PANEL 5.5	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Turbo fan × 1	
Motor <Starting method>	W	140 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 37 Hi : 30 Me : 27 Lo : 23	
External static pressure	Pa	0	
Outdoor air intake		Possible	
Air filter, Q'ty		Pocket plastic net × 1 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-T-36W-E (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Overload protection for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Drain pump		Built-in Drain pump	
Drain		Hose Connectable with VP25	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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(b) Ceiling suspended type (FDEN)

Adapted to **RoHS** directive

Item \ Model		FDEN50VF	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	5.0	5.4
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 39 Me : 38 Lo : 37	
Exterior dimensions Height x Width x Depth	mm	210 × 1,070 × 690	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	28	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Centrifugal fan × 2	
Motor <Starting method>	W	25 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 11 Hi : 10 Me : 9 Lo : 7	
External static pressure	Pa	0	
Outdoor air intake		Not possible	
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 6.35 (1/4")	
		Gas line : ϕ 12.7 (1/2")	
Connecting method		Flare piping	
Drain pump		—	
Drain		Hose Connectable with VP20	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PFA003Z954 A

Adapted to **RoHS** directive

Item \ Model		FDEN60VF	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	5.6	6.7
Sound Pressure Level	dB(A)	P-Hi : 48 Hi : 41 Me : 39 Lo : 38	
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	37	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	
Motor <Starting method>	W	20 × 2 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	
External static pressure	Pa	0	
Outdoor air intake		Not possible	
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 6.35 (1/4")	
		Gas line : ϕ 12.7 (1/2")	
Connecting method		Flare piping	
Drain pump		—	
Drain		Hose Connectable with VP20	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

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Adapted to **RoHS** directive

Item / Model		FDEN71VF	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	7.1	8.0
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 41 Me : 39 Lo : 38	
Exterior dimensions Height x Width x Depth	mm	210 × 1,320 × 690	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	37	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	
Motor <Starting method>	W	20 × 2 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	
External static pressure	Pa	0	
Outdoor air intake		Not possible	
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Drain pump		—	
Drain		Hose Connectable with VP20	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PFA003Z954 A

Adapted to **RoHS** directive

Item \ Model		FDEN100VF	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	10.0	11.2
Sound Pressure Level	dB(A)	P-Hi : 46 Hi : 44 Me : 41 Lo : 39	
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	49	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	
Motor <Starting method>	W	30 × 2 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	
External static pressure	Pa	0	
Outdoor air intake		Not possible	
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Drain pump		—	
Drain		Hose Connectable with VP20	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PFA003Z954 A

Adapted to **RoHS** directive

Item \ Model		FDEN125VF	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	12.5	14.0
Sound Pressure Level	dB(A)	P-Hi : 50 Hi : 46 Me : 44 Lo : 43	
Exterior dimensions Height x Width x Depth	mm	250 × 1,620 × 690	
Exterior appearance (Munsell color)		Plaster White (6.8Y8.9/0.2) near equivalent	
Net weight	kg	49	
Heat exchanger		Louver fin & inner grooved tubing	
Air handling equipment Fan type & Q'ty		Centrifugal fan × 4	
Motor <Starting method>	W	40 × 2 < Direct line start >	
Air flow (Standard)	CMM	P-Hi : 32 Hi : 29 Me : 26 Lo : 23	
External static pressure	Pa	0	
Outdoor air intake		Not possible	
Air filter, Q'ty		Pocket plastic net × 2 (Washable)	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Insulation (noise & heat)		Polyurethane form	
Remote controller		wired : RC-EX1A, RC-E5 (option) wireless : RCN-E1R (option)	
Room temperature control		Thermostat by electronics	
Safety equipment		Internal thermostat for fan motor Frost protection thermostat	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Drain pump		—	
Drain		Hose Connectable with VP20	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IPXO	
Standard Accessories		Mounting kit, Drain hose	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.

PFA003Z954 A

(2) Outdoor units

Adapted to **RoHS** directive

Item \ Model		FDC100VN	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Sound Pressure Level	dB(A)	49	
Exterior dimensions Height x Width x Depth	mm	845×970×370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	81	
Refrigerant equipment Compressor type & Q'ty		RMT5126MDE2 × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	0.9 M-MA68	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 1	
Motor <Starting method>	W	86 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 75, Heating : 73	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	20 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain		Holes size ϕ 20 x 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC100VS	
Power source		380-415V 3N～50Hz / 380V 3N～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	10.0 [4.0 (Min.)～11.2 (Max.)]	11.2 [4.0 (Min.)～12.5 (Max.)]
Sound Pressure Level	dB(A)	49	
Exterior dimensions Height x Width x Depth	mm	845 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	83	
Refrigerant equipment Compressor type & Q'ty		RMT5126MDE3 × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	0.9 M-MA68	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 1	
Motor <Starting method>	W	86 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 75, Heating : 73	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	20 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain		Holes size ϕ 20 x 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC125VN	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Sound Pressure Level	dB(A)	Cooling : 50 Heating : 51	
Exterior dimensions Height x Width x Depth	mm	845 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	81	
Refrigerant equipment Compressor type & Q'ty		RMT5126MDE2 × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	0.9 M-MA68	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 1	
Motor <Starting method>	W	86 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 75, Heating : 73	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	20 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain		Holes size ϕ 20 x 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC125VS	
Power source		380-415V 3N～50Hz / 380V 3N～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)～14.0 (Max.)]	14.0 [4.0 (Min.)～16.0 (Max.)]
Sound Pressure Level	dB(A)	Cooling : 50 Heating : 51	
Exterior dimensions Height x Width x Depth	mm	845 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	83	
Refrigerant equipment Compressor type & Q'ty		RMT5126MDE3 × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	0.9 M-MA68	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 1	
Motor <Starting method>	W	86 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 75, Heating : 73	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	20 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Refrigerant line (one way) length		Max.50m	See page 154
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain		Holes size ϕ 20 x 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC140VN	
Power source		220-240V～50Hz / 220V～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Sound Pressure Level	dB(A)	51	
Exterior dimensions Height x Width x Depth	mm	845 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	81	
Refrigerant equipment Compressor type & Q'ty		RMT5126MDE2 × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	0.9 M-MA68	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 1	
Motor <Starting method>	W	86 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 75, Heating : 73	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	20 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Refrigerant line (one way) length		Max.50m	See page 154 and 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain		Holes size ϕ 20 x 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC140VS	
Power source		380-415V 3N～50Hz / 380V 3N～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	14.0 [5.0 (Min.)～14.5 (Max.)]	16.0 [4.0 (Min.)～16.5 (Max.)]
Sound Pressure Level	dB(A)	51	
Exterior dimensions Height x Width x Depth	mm	845 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	83	
Refrigerant equipment Compressor type & Q'ty		RMT5126MDE3 × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	0.9 M-MA68	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 1	
Motor <Starting method>	W	86 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 75, Heating : 73	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	20 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ 9.52 (3/8")	
		Gas line : ϕ 15.88 (5/8")	
Connecting method		Flare piping	
Refrigerant line (one way) length		Max.50m	See page 154 and 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain		Holes size ϕ 20 x 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC200VS	
Power source		380-415V 3N～50Hz / 380V 3N～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	20.0 [7.0 (Min.)～22.4 (Max.)]	22.4 [7.6 (Min.)～25.0 (Max.)]
Sound Pressure Level	dB(A)	57	
Exterior dimensions Height x Width x Depth	mm	1,300 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	122	
Refrigerant equipment Compressor type & Q'ty		GTC5150ND70K × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	1.45 M-MA32R	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 2	
Motor <Starting method>	W	86 × 2 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 150, Heating : 145	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	33 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ9.52 (3/8")	
		Gas line : ϕ22.22 (7/8")	
Connecting method		Liquid : Flare / Gas : Brazing	
Refrigerant line (one way) length		Max.70m	See page 154 and 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 5.4kg (Pre-charged up to the piping length of 30m)	
Drain		Holes size ϕ20 × 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Connecting pipe, Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

PJF000Z294

Adapted to **RoHS** directive

Item \ Model		FDC250VS	
Power source		380-415V 3N～50Hz / 380V 3N～60Hz	
Operation data		Cooling	Heating
Nominal capacity	kW	25.0 [10.0 (Min.)～28.0 (Max.)]	28.0 [9.5 (Min.)～31.5 (Max.)]
Sound Pressure Level	dB(A)	Cooling : 57 Heating : 58	
Exterior dimensions Height x Width x Depth	mm	1,505 × 970 × 370	
Exterior appearance (Munsell color)		Stucco White (4.2Y7.5/1.1) near equivalent	
Net weight	kg	140	
Refrigerant equipment Compressor type & Q'ty		GTC5150ND70K × 1	
Starting method		Direct line start	
Refrigerant oil	ℓ	1.45 M-MA32R	
Heat exchanger		Straight fin & inner grooved tubing	
Refrigerant control		Electronic expansion valve	
Air handling equipment Fan type & Q'ty		Propeller fan × 2	
Motor <Starting method>	W	86 × 2 < Direct line start >	
Air flow (Standard)	CMM	Cooling : 150, Heating : 145	
External static pressure	Pa	0	
Shock & vibration absorber		Rubber sleeve (for Compressor)	
Electric heater	W	33 (Crank case heater)	
Safety equipment		Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data Refrigerant piping size	mm	Liquid line : ϕ12.7 (1/2")	
		Gas line : ϕ22.22 (7/8")	
Connecting method		Liquid : Flare / Gas : Brazing	
Refrigerant line (one way) length		Max.70m	See page 154 and 155
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 7.2kg (Pre-charged up to the piping length of 30m)	
Drain		Holes size ϕ20 × 3pcs	
Insulation for piping		Necessary (both Liquid & Gas lines)	
IP code		IP24	
Standard Accessories		Connecting pipe, Edging	

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27˚C	19˚C	35˚C	24˚C
Heating	20˚C		7˚C	6˚C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound pressure level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient temperature.
(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

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(3) Operation chart

The V Multi is a system that allows for different models and capacities of indoor units to be connected so the individual operating characteristics of the indoor and outdoor are provided. Use the procedure shown in Item (c) to calculate the combined operating characteristics.

(a) Operating characteristic of outdoor unit

(220-240V 50Hz/220V 60Hz)

Item \ Model		FDC100VN	FDC125VN	FDC140VN
Cooling power consumption	kW	2.62/2.62	3.91/3.91	4.51/4.51
Heating power consumption		2.60/2.60	3.63/3.63	4.40/4.40
Cooling running current	A	11.7/12.3	17.3/18.2	20.4/21.4
Heating running current		11.6/12.2	16.2/16.9	19.5/20.4
Inrush current (L.R.A) <Max. running current>	A	5 <24>		

(380-415V 50Hz/380V 60Hz)

Item \ Model		FDC100VS	FDC125VS	FDC140VS
Cooling power consumption	kW	2.62/2.62	3.91/3.91	4.51/4.51
Heating power consumption		2.60/2.60	3.63/3.63	4.40/4.40
Cooling running current	A	3.8/4.0	5.5/5.9	6.5/6.9
Heating running current		3.8/4.0	5.1/5.5	6.3/7.0
Inrush current (L.R.A) <Max. running current>	A	5 <15>		

(380-415V 50Hz/380V 60Hz)

Item \ Model		FDC200VS	FDC250VS
Cooling power consumption	kW	6.34/6.34	8.71/8.71
Heating power consumption		6.20/6.20	7.75/7.75
Cooling running current	A	9.1/9.1	12.7/12.7
Heating running current		9.0/9.0	11.4/11.4
Inrush current (L.R.A) <Max. running current>	A	5 <19>	5 <22>

Note(1) This packaged air-conditioner is manufactured and tested in conformity with the following standard.
ISO-T1 "UNITARY AIR-CONDITIONERS"

(b) Operating characteristic of indoor unit

FDT Series

(220-240V 50Hz/220V 60Hz)

Item \ Model		FDT50VF	FDT60VF	FDT71VF	FDT100VF	FDT125VF
Cooling power consumption	kW	0.04-0.04/0.04	0.07-0.07/0.07	0.08-0.08/0.08	0.15-0.15/0.15	
Heating power consumption		0.04-0.04/0.04	0.07-0.07/0.07	0.08-0.08/0.08	0.15-0.15/0.15	
Cooling running current	A	0.20-0.19/0.20	0.35-0.32/0.35	0.40-0.37/0.40	0.76-0.69/0.76	
Heating running current		0.20-0.19/0.20	0.35-0.32/0.35	0.40-0.37/0.40	0.76-0.69/0.76	

FDEN Series

(220-240V 50Hz/220V 60Hz)

Item \ Model		FDEN50VF	FDEN60VF	FDEN71VF	FDEN100VF	FDEN125VF
Cooling power consumption	kW	0.05-0.06/0.06	0.10-0.11/0.11	0.11-0.12/0.14	0.14-0.16/0.16	0.16-0.18/0.20
Heating power consumption		0.05-0.06/0.06	0.09-0.10/0.10	0.10-0.11/0.13	0.13-0.15/0.15	0.15-0.17/0.18
Cooling running current	A	0.25-0.26/0.29	0.46-0.48/0.50	0.50-0.53/0.67	0.65-0.67/0.77	0.77-0.78/0.91
Heating running current		0.23-0.25/0.28	0.42-0.44/0.46	0.46-0.48/0.63	0.59-0.63/0.70	0.70-0.72/0.80

Notes(1) This packaged air-conditioner is manufactured and tested in conformity with the following standard.
ISO-T1 "UNITARY AIR-CONDITIONERS"
(2) The values shown in the above table are common to both cooling and heating operations.

(c) Calculation of total operation characteristics

Since the operation characteristics of V Multi system depend on combination of indoor unit, calculate the total operation characteristics of the system by using the formulas below according to speciations of each indoor unit or outdoor unit.

1) 1 Phase models

a) Total power consumption

Total power consumption (kW) = Power consumption of outdoor unit + ∑ (Power consumption of indoor unit)

b) Total running current

Total running current (A) = Running current of outdoor unit + ∑ (Running current of indoor unit)

c) Total power factor

Total power factor (%) = [Total power consumption (W) / Total running current (A) × Power source] × 100

Total operation characteristics = Operation characteristic value of outdoor unit + Operation characteristic value of indoor unit

[Example]

(Conditions) Operation Voltage ····· Indoor unit: 220 V, 50 Hz
Outdoor unit: 220 V, 50 Hz
Operation mode ····· Cooling and Heating
Unit····· Outdoor unit: FDC140VN × 1 unit
Indoor unit: FDT71VF × 2 units

Operation characteristics of each unit (Cooling/Heating)

Item \ Model	FDC140VN	FDT71VF
Power consumption (kW)	4.51/4.40	0.08/0.08
Running current (A)	20.4/19.5	0.40/0.40

① Total power consumption (kW)

(Cooling) 4.51 + (0.08 × 2) = 4.67

(Heating) 4.40 + (0.08 × 2) = 4.56

② Total running current (A)

(Cooling) 20.4 + (0.40 × 2) = 21.2

(Heating) 19.5 + (0.40 × 2) = 20.3

③ Total power factor (%)

(Cooling) $\frac{4.67 \times 1000}{21.2 \times 220} \times 100 \fallingdotseq 99\ \%$

(Heating) $\frac{4.56 \times 1000}{20.3 \times 220} \times 100 \fallingdotseq 99\ \%$

2) 3 Phase models

a) Total power consumption

Total power consumption (kW) = Power consumption of outdoor unit + ∑ (Power consumption of indoor unit)

b) Total running current

Total running current (A) = Running current of outdoor unit + [∑ (Running current of indoor unit) × 1/3]

c) Total power factor

Total power factor (%) = [Total power consumption (W) / $\sqrt{3}$ × Total running current (A) × Power source] × 100

Total operation characteristics = Operation characteristic value of outdoor unit + Operation characteristic value of indoor unit

[Example]

(Conditions) Operation Voltage ····· Indoor unit: 220 V, 50 Hz
Outdoor unit: 380 V, 50 Hz
Operation mode ····· Cooling and Heating
Unit····· Outdoor unit: FDC200VS × 1 unit
Indoor unit: FDT71VF × 1 unit, FDT125VF × 1 unit

Operation characteristics of each unit

(Cooling/Heating)

Item \ Model	FDC200VS	FDT71VF	FDT125VF
Power consumption (kW)	6.34/6.20	0.08/0.08	0.15/0.15
Running current (A)	9.1/9.0	0.40/0.40	0.76/0.76

① Total power consumption (kW)

(Cooling) 6.34 + 0.08 + 0.15 = 6.57 (kW)

(Heating) 6.20 + 0.08 + 0.15 = 6.43 (kW)

② Total running current (A)

(Cooling) $9.1 + \left[(0.40 + 0.76) \times \frac{1}{3})\right] \fallingdotseq 9.5$ (A)

(Heating) $9.0 + \left[(0.40 + 0.76) \times \frac{1}{3})\right] \fallingdotseq 9.4$ (A)

③ Total power factor (%)

(Cooling) $\frac{6.57 \times 1000}{\sqrt{3} \times 9.5 \times 380} \times 100 \fallingdotseq 99$ %

(Heating) $\frac{6.43 \times 1000}{\sqrt{3} \times 9.4 \times 380} \times 100 \fallingdotseq 99$ %

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3.1 WIRELES KIT

3.1.1 FDT Series (RCN-T-36W-E)

PJF012D010

⚠ WARNING

- Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connection or hold will cause abnormal heat generation or fire.
- Make sure the power supply is turned off when electric wiring work.
  Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

- DO NOT install the wireless kit at the following places in order to avoid malfunction.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
  (7) Places affected by the direct airflow of the AC unit.
  (8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight.
  (9) Places where the receiver is affected by infrared rays of any other communication devices
  (10) Places where some object may obstruct the communication with the remote controller
- DO NOT leave the wireless kit without the cover.
  In case the cover needs to be detached, protect the receiver with a packaging box or bag in order to keep it away from water and dust.

Attention

- Instruct the customer how to operate it correctly referring to the instruction manual.
- For the installation method of the air conditioner itself, refer to the installation manual enclosed in the package.

① Accessories

Please make sure that you have all of the following accessories.

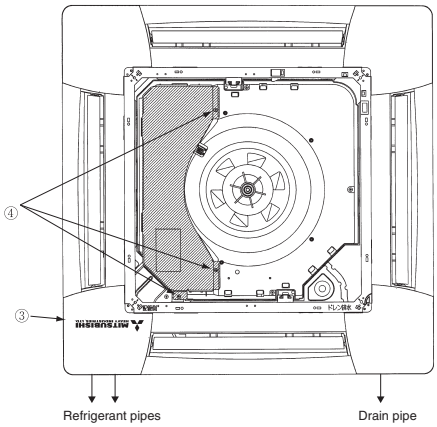
Receiver		1	Remote controller holder		1
Wireless remote controller		1	Wood screw for holder		2
Parts set		1	AAA dry cell battery (RO3)		2

② How to install the receiver

The receiver can be installed by replacing with a corner panel on the applicable decorative panel.

Preparation before installation

① Attach the decorative panel onto the air conditioner according to the installation manual for the panel.
② Remove the air return grille.
③ Remove a corner panel located on the refrigerant pipes side.
④ Remove three screws and detach the cover (indicated as shadowed area) from the control box of the air conditioner.



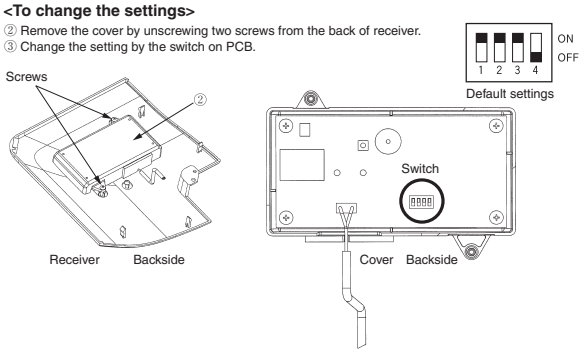
Setting on site

① PCB on the receiver has the following switches to set the functions. Default setting is shown with ▭ mark.

S W 1	Customized signal setting to avoid mixed communication	ON : Normal OFF : Remote
S W 2	Receiver master/slave setting	ON : Master OFF : Slave
S W 3	Buzzer valid/Invalid	ON : Valid OFF : Invalid
S W 4	Auto restart	ON : Valid OFF : Invalid

<To change the settings>

② Remove the cover by unscrewing two screws from the back of receiver.
③ Change the setting by the switch on PCB.



④ When SW1 is turned to OFF position, change the corresponding remote controller setting as follows:

How to change the remote controller setting

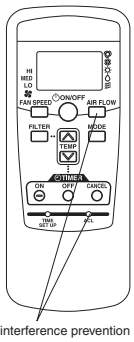
Pressing ACL and AIR FLOW button at the same time or inserting the batteries with pressing AIR FLOW button will customize the signal.

Note

※ When the batteries are removed, the setting will return to the default setting.
Please make sure to reset it when the batteries are replaced.

Caution

Instruct the customer to set the mentioned above when replacing the batteries.
(How to set is also mentioned in the user's manual attached on the air conditioner.)

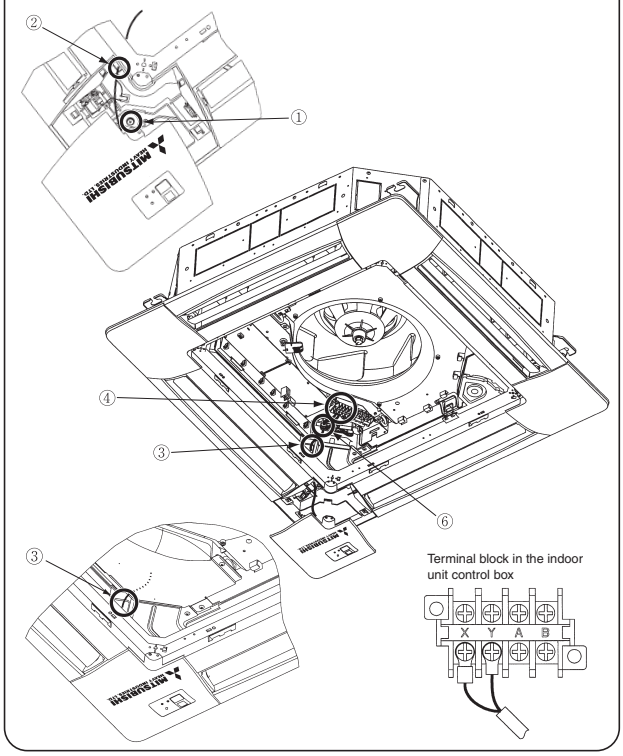


Radio interference prevention mode

Installation of the receiver

① Loosen the bolts which fix the panel and make a gap between the panel and the indoor unit
② Put the wiring of the receiver through the opening.
③ Put the wiring on the notch on the control box so as not to be pinched by the control box and lid as shown below.
④ Connect the wiring to the terminal block provided in the control box. (Non- polarized)
⑤ Attach the receiver to the panel according to the panel installation manual.
⑥ Fix the wiring with the clamp so that the wiring do not contact the edge of control box's metal sheet.
⑦ Reattach the control box lid with 3 screws removed.

※ Note: Make sure the wires not to be pinched by any other parts like panel, control box and indoor unit.

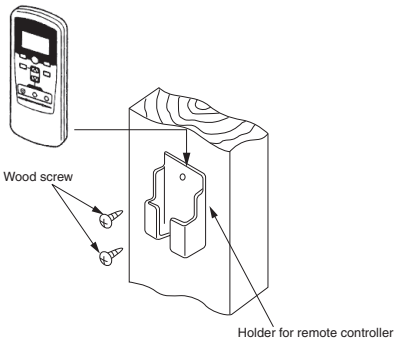


③ Remote controller

Installation of the controller holder

Caution

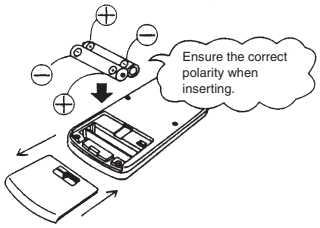
DO NOT install it on the following places
1. Places exposed to direct sunlight
2. Places near heat devices
3. High humidity places
4. Hot surface or cold surface enough to generate condensation
5. Places exposed to oil mist or steam directly.
6. Uneven surface



Installation tips for the remote controller holder
- Adjust and keep the holder upright
- Tighten the screw to the end to avoid scratching the remote controller.
- DO NOT attach the holder on plaster wall.

How to insert batteries

① Detach the back lid.
② Insert the batteries. (two AAA batteries)
③ Reattach the back lid.

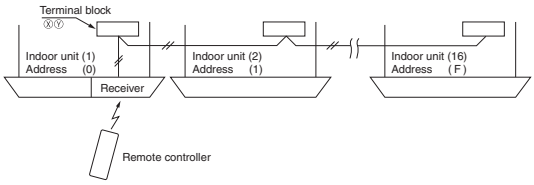


Control plural indoor units with one remote controller

Up to 16 indoor units can be connected.
① Connect the XY terminal with 2-core wire. As for the size, refer to the following note.
② For Packaged air conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

Restrictions on the thickness and length of wire
(Maximun total extension 600m.)

Standard	Within 100m x 0.3 mm^2
	Within 200m x 0.5 mm^2
	Within 300m x 0.75mm^2
	Within 400m x 1.25mm^2
	Within 600m x 2.0 mm^2



③ For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

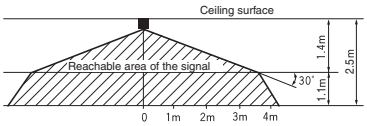
Master/Slave setting when using plural remote controllers

Up to two receivers can be installed in one indoor unit group.
When two receivers are used, it is necessary for a receiver to turn OFF SW2 on the receiver PCB to set it as slave.

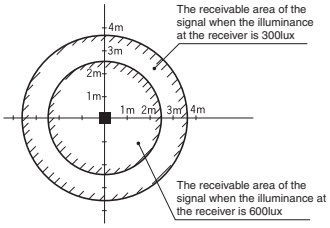
(For the method of switching, please see **Setting on site** in the section of **② How to install the receiver** in this manual.)

Wireless remote controller's operable area

① Standard reachable area of the signal
[condition] Illuminance at the receiver: 300lux
(when no lighting is installed within 1m of the receiver in an ordinary office.)



② Correlation between illuminance at the receiver and reachable area of the signal in a plain view.
The drawing in the right shows the correlation between the reachable area of the signal and illuminance at the receiver when the remote controller is operated at 1.1m high under the condition of ceiling height of 2.5m.
When the illuminance becomes double, the area is narrowed down to two thirds.



③ Installation tips when several receivers are installed close
Minimum distance between the indoor units which can avoid cross communication is 5m under the condition of 300lux of illuminance at the receiver.
(When no lighting is installed within 1m of the receiver in an ordinary office)

④ How to disable the Auto mode operation

VRF system (except heat recovery 3-pipe systems) cannot be operated in Auto mode.
Make sure to set the remote controller for the models so as not to be able to choose Auto mode.

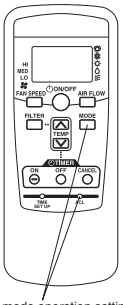
Pushing ACL and MODE button at the same time or inserting the batteries with pressing MODE button will make auto mode operation.

Attention

※ When the batteries are removed, the setting will return to the default setting (Auto mode is valid).

Caution

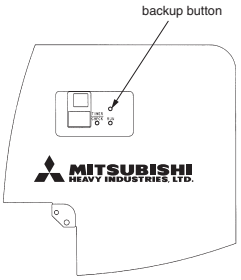
Instruct the customer to set the mentioned above when replacing the batteries. (How to set is also mentioned in the user's manual attached on the air conditioner.)



Auto mode operation setting

⑤ Backup button

A Backup button is provided on the receiver.
Even when the operation from the wireless remote controller is not possible (due to flat batteries, controller lost, or controller failure), still it possible to operate as temporary means. Press the button directly when operating it.
(1) The air conditioner starts the operation with the condition of Auto mode, 23˚C of set point, High fan speed and horizontal louver position.
(2) The air conditioner stops the operation when the button is pressed when in operation.



⑥ Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with wireless remote controller, while the backup button on the receiver is pressed.
- If the backup button on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check by consulting with inspection guides on the wiring diagram of outdoor units.

⑦ How to read the two-digit display

On the receiver of a wireless kit, a two-digit (7-segment) display is provided.
(1) An indication will be displayed for one hour after power on.
(2) An indication will be displayed for 3.5 seconds after transmitting a "STOP" command from the wireless remote controller or the operation of the backup button to stop the unit.
(3) An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
(4) When there are no error records to indicate, addresses of all the connected units are displayed.
(5) When there are some error records remaining, the error records are displayed.
(6) Error records can be cleared by transmitting a "STOP" command from the wireless remote controller, while the backup button is pressed.

3.1.2 FDTC Series (RCN-TC-24W-ER)

PJA012D758

⚠ WARNING

- Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connection or hold will cause abnormal heat generation or fire.
- Make sure the power supply is turned off when electric wiring work.
  Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

- DO NOT install the wireless kit at the following places in order to avoid malfunction.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
  (7) Places affected by the direct airflow of the AC unit.
  (8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight.
  (9) Places where the receiver is affected by infrared rays of any other communication devices
  (10) Places where some object may obstruct the communication with the remote controller
- DO NOT leave the wireless kit without the cover.
  In case the cover needs to be detached, protect the receiver with a packaging box or bag in order to keep it away from water and dust.

Note

- Instruct the customer how to operate it correctly referring to the instruction manual.
- For the installation method of the air conditioner itself, refer to the installation manual enclosed in the package.

① Accessories

Please make sure that you have all of the following accessories.

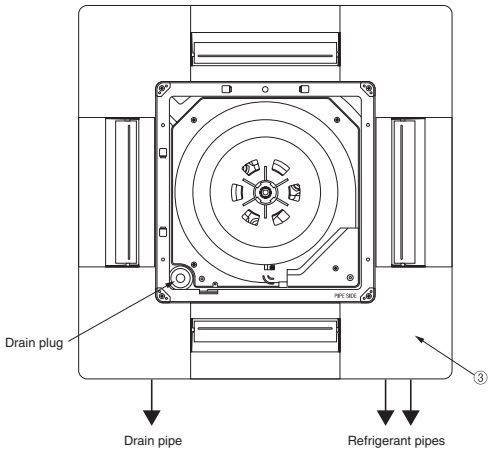
Receiver		1	Remote controller holder		1
Wireless remote controller		1	Wood screw for holder		2
Parts set		1	AAA dry cell battery (RO3)		2

② How to install the receiver

The receiver can be installed by replacing with a corner panel on the applicable decorative panel.

Preparation before installation

① Attach the decorative panel onto the air conditioner according to the installation manual for the panel.
② Remove the air return grille.
③ Remove a corner panel located on the refrigerant pipes side.
④ Remove two screws and detach the lid from the control box of the air conditioner.



Setting on site

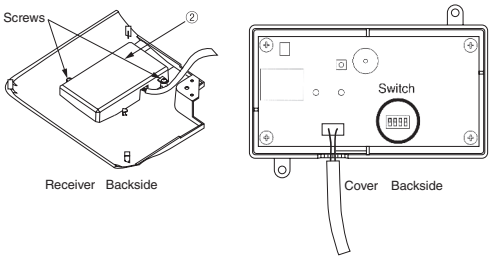
① PCB on the receiver has the following switches to set the functions. Default setting is shown with ▭ mark.

S W 1	Customized signal setting to avoid mixed communication	ON : Normal OFF : Remote
S W 2	Receiver master/slave setting	ON : Master OFF : Slave
S W 3	Buzzer valid/Invalid	ON : Valid OFF : Invalid
S W 4	Auto restart	ON : Valid OFF : Invalid

<To change the settings>

② Remove the cover by unscrewing two screws from the back of receiver.
③ Change the setting by the switch on PCB.

Default settings



④ When SW1 is turned to OFF position, change the corresponding remote controller setting as follows:

How to change the remote controller setting

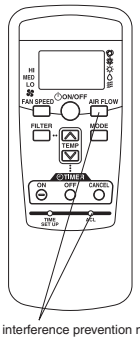
Pressing ACL switch with AIR FLOW button kept pressing or inserting the batteries with pressing AIR FLOW button will customize the signal.

Note

※ When the batteries are removed, the setting will return to the default setting.
Please make sure to reset it when the batteries are replaced.

Caution

Instruct the customer to set the mentioned above when replacing the batteries.
(How to set is also mentioned in the user's manual attached on the air conditioner.)

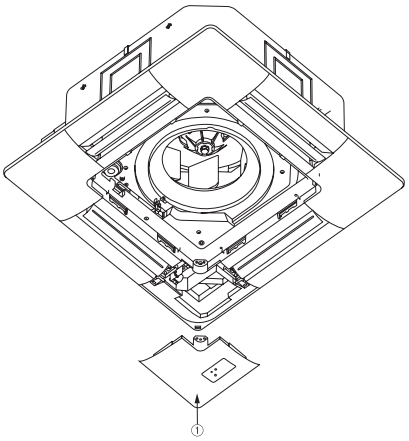


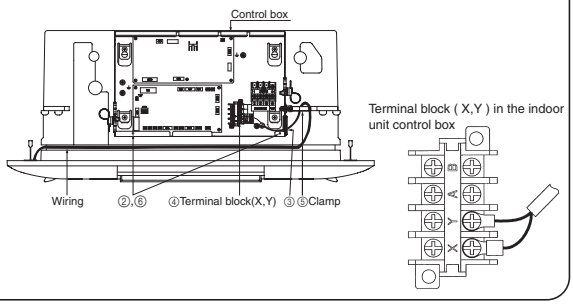
Radio interference prevention mode

Installation of the receiver

① Attach the receiver to the panel according to the panel installation manual.
② Remove two screws and detach the lid from the control box.
③ Put the wiring in the control box with other wiring as shown below.
④ Connect the wiring to the terminal block (X,Y) provided in the control box.(Non-polarized)
⑤ Fix the wiring with the clamp as shown below.
⑥ Reattach the control box lid with 2 screws removed.

※ Note: Make sure wires not to be pinched by any other parts like panel and control box.



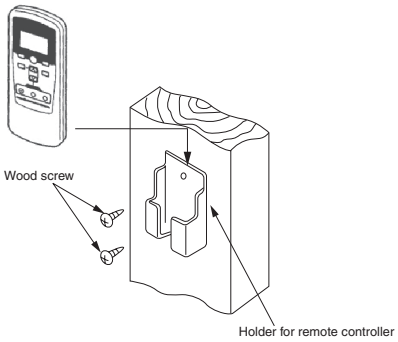


③ Remote controller

Installation of the controller holder

Caution

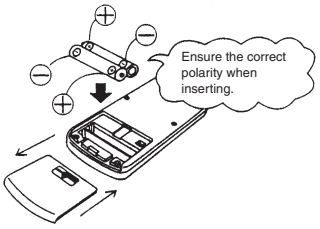
DO NOT install it on the following places
1. Places exposed to direct sunlight
2. Places near heat devices
3. High humidity places
4. Hot surface or cold surface enough to generate condensation
5. Places exposed to oil mist or steam directly.
6. Uneven surface



Installation tips for the remote controller holder
- Adjust and keep the holder upright
- Tighten the screw to the end to avoid scratching the remote controller.
- DO NOT attach the holder on plaster wall.

How to insert batteries

① Detach the back lid.
② Insert the batteries. (two AAA batteries)
③ Reattach the back lid.

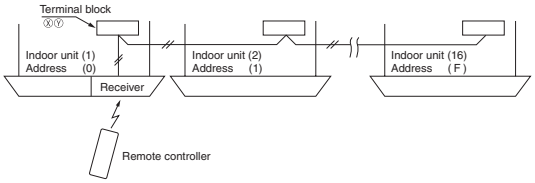


Control plural indoor units with one remote controller

Up to 16 indoor units can be connected.
① Connect the XY terminal with 2-core wire. As for the size, refer to the following note.
② For Single packaged air conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

Restrictions on the thickness and length of wire
(Maximun total extension 600m.)

Standard	Within 100m x 0.3 mm^2
	Within 200m x 0.5 mm^2
	Within 300m x 0.75mm^2
	Within 400m x 1.25mm^2
	Within 600m x 2.0 mm^2



③ For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

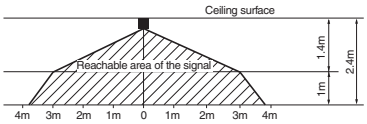
Master/Slave setting when using plural remote controllers

Up to two receivers can be installed in one indoor unit group.
When two receivers are used, it is necessary for a receiver to turn OFF SW2 on the receiver PCB to set it as slave.

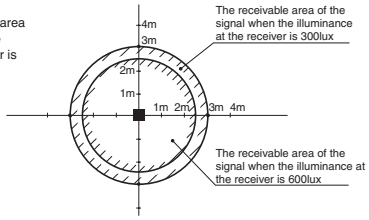
(For the method of switching, please see **Setting on site** in the section of **② How to install the receiver** in this manual.)

Wireless remote controller's operable area

① Standard reachable area of the signal
[condition] Illuminance at the receiver: 300lux
(when no lighting is installed within 1m of the receiver in an ordinary office.)



② Correlation between illuminance at the receiver and reachable area of the signal in a plain view.
The drawing in the right shows the correlation between the reachable area of the signal and illuminance at the receiver when the remote controller is operated at 1m high under the condition of ceiling height of 2.4m.



③ Installation tips when several receivers are installed close
Minimum distance between the indoor units which can avoid cross communication is 5m under the condition of 300lux of illuminance at the receiver.
(When no lighting is installed within 1m of the receiver in an ordinary office)

④ How to disable the Auto mode operation

VRF series (except heat recovery 3-pipe systems) cannot be operated in Auto mode.
Make sure to set the remote controller for the models so as not to be able to choose Auto mode.

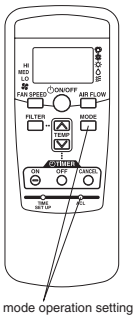
Pressing ACL switch with MODE button kept pressing or inserting the batteries with pressing MODE button will make auto mode operation.

Note

※ When the batteries are removed, the setting will return to the default setting (Auto mode is valid).

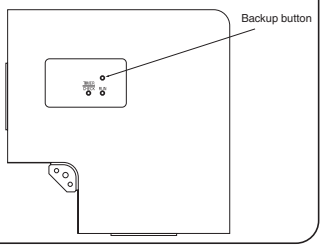
Caution

Instruct the customer to set the mentioned above when replacing the batteries. (How to set is also mentioned in the user's manual attached on the air conditioner.)



⑤ Backup button

A Backup button is provided on the receiver. Even when the operation from the wireless remote controller is not possible (due to flat batteries, controller lost, or controller failure), still it possible to operate as temporary means. Press the button directly when operating it.
(1) The air conditioner starts the operation with the condition of Auto mode, 23˚C of set point, High fan speed and horizontal louver position.
(2) The air conditioner stops the operation when the button is pressed when in operation.



⑥ Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with wireless remote controller, while the backup button on the receiver is pressed.
- If the backup button on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check by consulting with inspection guides on the wiring diagram of outdoor units.

⑦ How to read the two-digit display

On the receiver of a wireless kit, a two-digit (7-segment) display is provided.
(1) An indication will be displayed for one hour after power on.
(2) An indication will be displayed for 3.5 seconds after transmitting a "STOP" command from the wireless remote controller or the operation of the backup button to stop the unit.
(3) An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
(4) When there are no error records to indicate, addresses of all the connected units are displayed.
(5) When there are some error records remaining, the error records are displayed.
(6) Error records can be cleared by transmitting a "STOP" command from the wireless remote controller, while the backup button is pressed.

3.1.3 FDEN Series (RCN-E1R)

PFA012D620

⚠ WARNING

- Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal. Loose connection or hold will cause abnormal heat generation or fire.
- Make sure the power supply is turned off when electric wiring work. Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

- Install a receiver unit where it is not exposed to direct sunrays or intense light from lighting fixtures.

① Accessories

Please make sure that you have all of the following accessories.

Remoto controller holder	AAA dry cell battery (RO3)	Wood screw for holder	Wireless remote controller
1	2	2	1

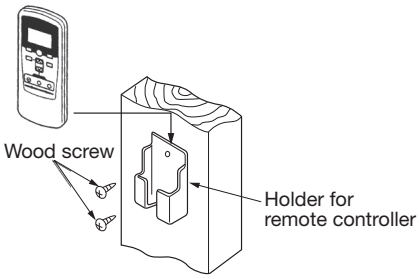
② Installation of the controller holder

⚠CAUTION DO NOT install it on the following places.

1. Places exposed to direct sunlight
2. Hot surface or cold surface enough to generate condensation
3. Places near heat devices
4. Places exposed to oil mist or steam directly.
5. High humidity places
6. Uneven surface

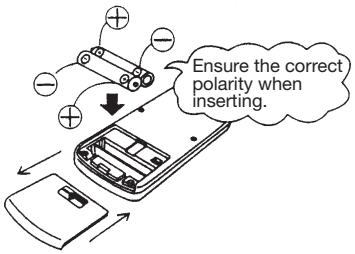
Installation tips for the remote controller holder

- Adjust and keep the holder up right.
- Tighten the screw to the end to avoid scratching the remote controller.
- DO NOT attach the holder on plaster wall.



How to insert batteries

① Detach the back lid.
② Insert the batteries. (two AAA batteries)
③ Reattach the back lid.



③ FDEN

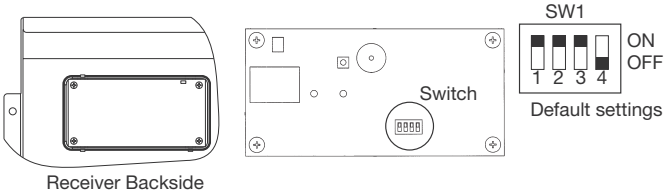
Setting on site

PCB on the receiver has the following switches to set the function.
Default setting is shown with ☐ mark.

SW1	Prevents interference during plural setting	ON : Normal (1ch) OFF : Customized (2ch)
SW2	Receiver master/slave setting	ON : Master OFF : Slave
SW3	Buzzer valid/Invalid	ON : Valid OFF : Invalid
SW4	Auto restart	ON : Valid OFF : Invalid

To change setting

1. Remove the front panel.
2. Remove four screws located on the back of the receiver and detach the board.
3. Change the setting by the switch on PCB.



4. When switch 1 is turned to off position, change the wireless remote controller setting. (For the method of changing the setting, refer to Setting to avoid mixed communication on page 4)
Refer to Wireless remote controller unit operation distance of ⑥ FDEN in case of plural setting.

Master/Slave setting when using plural remote controllers

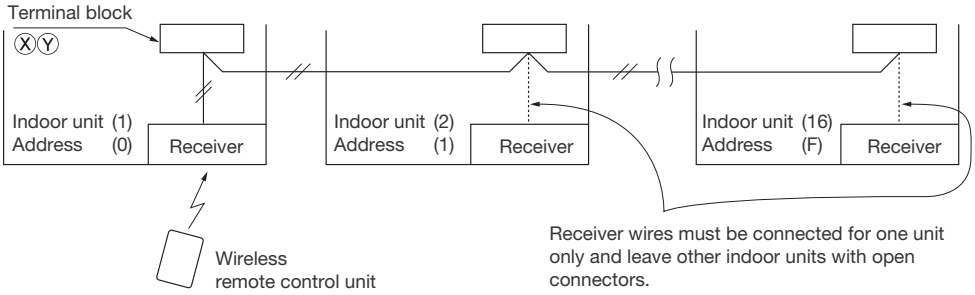
Up to two receiver or wired remote controller can be installed in one indoor unit group.
When two receivers or wired remote controller are used, it is necessary to change SW on the PCB to set it as slave.

Control plural indoor units with one remote controller

Up to 16 indoor units can be connected.
① Connect indoor units with each other with 2-core wires. As for size, refer to the following note.
② The receiver wires must be connected only with the indoor unit that will be operated by the remote controller directly.
③ Set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

Restrictions on the thickness and length of wire
(Maximun total extension 600m.)

Standard	Within 100m x 0.3 mm^2
	Within 200m x 0.5 mm^2
	Within 300m x 0.75 mm^2
	Within 400m x 1.25 mm^2
	Within 600m x 2.0 mm^2



※ATTENTION

In a system configured as shown above, up to two receivers are usable. If two receivers are used, it is necessary to designate one of them as a slave by setting SW2. (For the method of changing the setting, refer to Setting on site .) Since other receivers are not usable, do not couple the connectors for them. (Unless the connector is coupled for a receiver, the LED will not be able to make any indication)

③ FDEN (continued)

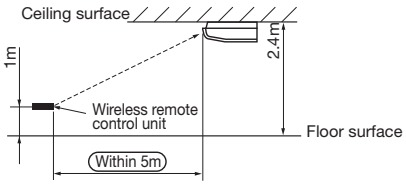
Wireless remote controller unit operation distance

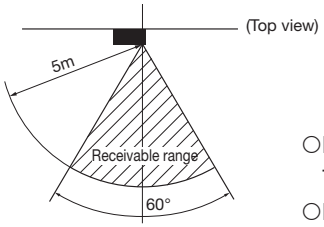
① Standard signal receiving range

[Condition]

Illuminance at the receiver area: 360 lux.

(When no lighting fixture is located within 1m of indoor unit in an ordinary office)





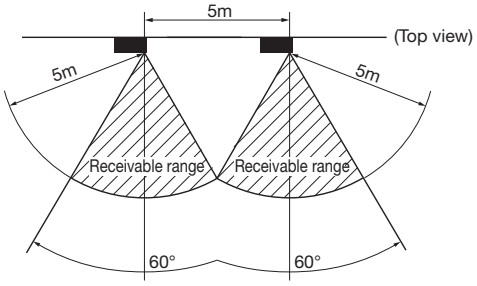
② Points for attention in connecting a plural number of indoor units

[Condition]

Illuminance at the receiver area: 360 lux.

(When no lighting fixture is located within 1m of indoor unit in an ordinary office)

When the remote control unit is used with the aforementioned interference-prevention setting, a minimum distance guaranteeing the prevention of unintended unit responses is 5m.



○Please operate remote control unit switches with the unit faced correctly toward the indoor unit's receiver section.

○Effective operation distance can vary with the luminance around the receiver and the reflection from walls of the room.

○When the receiver is exposed to intensive light such as from the direct sun or a strong light, it may become operable only from a short distance or unable to receive signals at all.

Backup button

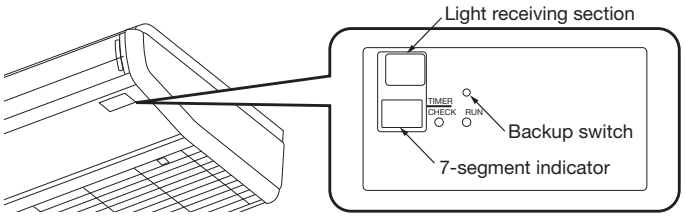
A backup switch is provided on the receiver section of the panel surface.

When operation from the wireless remote control unit is not possible (due to flat batteries, a mislaid unit, a unit failure), you can use it as an emergency means. You should operate this switch manually.

(1) If pressed while the air conditioner is in a halt, it will cause the air conditioner to start operation in the automatic mode.

Wind speed: Hi fan, Temperature setting: 23°C, Louver: horizontal

(2) If pressed while the air conditioner is in operation, it will stop the air conditioner.



Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with the wireless remote control unit, while the backup switch on the receiver is depressed.
- If the backup switch on the receiver is pressed during a test run, it will end the test run.

※If you cannot operate the unit properly during a test run, please check wiring by consulting with inspection guides.

③ FDEN (continued)

How to read the two-digit display

A two-digit indicator (7-segment indicator) is provided on the receiver section.

(1) An indication will be displayed for one hour after power on.
(2) An indication appears for 3.5 seconds when a “Stop” command is sent from the wireless remote control unit while the air conditioner is not running.
(3) An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
(4) When there are no error records to indicate, addresses are displayed for all of the connected units.
(5) When there are some error records remaining, the error records are displayed.
(6) Error records can be cleared by transmitting a “Stop” command from the wireless remote control unit, while the backup switch is depressed.

④ Remote controller

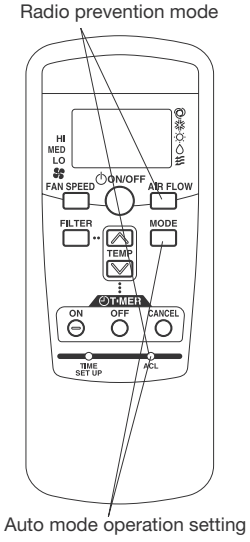
Setting to avoid mixed communication

Pressing ACL and AIR FLOW button at the same time or inserting the batteries with pressing AIR FLOW button will customize the signal.

Setting to disable the Auto mode operation

VRF system (except heat recovery 3-pipe system) cannot be operated in Auto mode.
Make sure to set the remote controller for the models so as not to be able to choose Auto mode.

Pushing ACL and MODE button at the same time or inserting the batteries with pressing MODE button will make auto mode operation.



※**ATTENTION**

When the batteries are removed, the setting will return to the default setting.
Please make sure to reset it when the batteries are replaced.

⚠**Caution**

Instruct the customer to set the mentioned above when replacing the batteries.
(How to set is also mentioned in the user’s manual attached on the air conditioner.)

3.1.4 FDUM,FDU,FDF Series (RCN-KIT3-E)

Read this manual together with the installation manual attached to the air conditioner.

PJZ012D060 a

⚠ WARNING

- Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connection or hold will cause abnormal heat generation or fire.
- Make sure the power supply is turned off when electric wiring work.
  Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

- DO NOT install the wireless kit at the following places in order to avoid malfunction.
  (1)Places exposed to direct sunlight
  (2)Places near heat devices
  (3)High humidity places
  (4)Hot surface or cold surface enough to generate condensation
  (5)Places exposed to oil mist or steam directly
  (6)Uneven surface
  (7)Places affected by the direct airflow of the AC unit.
  (8)Places where the receiver is influenced by the fluorescent lamp (especially in verter type) or sunlight.
  (9)Places where the receiver is affected by infrared rays of any other communication devices.
  (10)Places where some object may obstruct the communication with the remote controller
- DO NOT leave the wireless kit without the cover.
  In case the cover needs to be detached, protect the receiver with a packaging box or bag in order to keep it away from water and dust.

Attention

- Instruct the customer how to operate it correctly referring to the instruction manual.
- User's manual of a wireless remote controller is attached to a indoor unit or a outside unit.
- Read this together with a manual attached to this kit.

① Accessories

Please make sure that you have all of the following accessories.

① Receiver	1
② Wiring (3m)	1
③ Parts set (A)	1
④ Parts set (B)	1
⑤ Parts set (C)	1
⑥ Wireless remote controller	1
⑦ User's manual	1

① Remote controller holder	1
② Screw for holder	2
③ AAA dry cell battery (R03)	2

① Screw for receiver	2
② Fixing band	1
③ Clamp	5
④ Screw for clamp	5

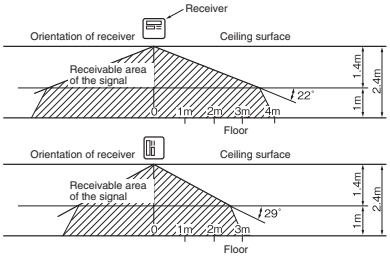
① Receiver installation bracket	1
② Screw for the bracket	2
③ Installation fitting	2

② Wireless remote controller's operable area

(1) When installed on ceiling

① Standard reachable area of the signal

condition Illuminance at the receiver : **300lux** (when no lighting is installed within 1m of the receiver in an ordinary of ce.)

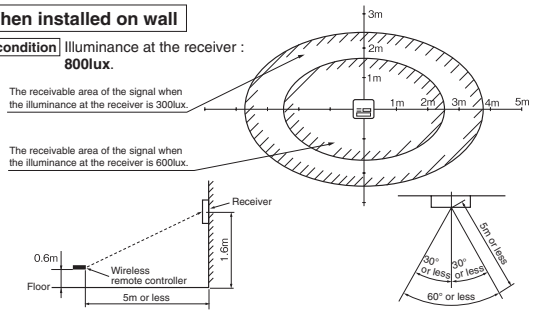


② Correlation between illuminance at the receiver and reachable area of the signal in a plain view.

condition Correlation between the reachable area of the signal and illuminance at the receiver when the remote controller is operated at 1.1m high under the condition of ceiling height of 2.5m.
When the illuminance becomes double, the area is narrowed down to two third.

(2) When installed on wall

condition Illuminance at the receiver : **800lux**.



③ How to install the receiver

The following two methods can be used to install the receiver onto a ceiling or a wall.
Select a method according to the installation position.

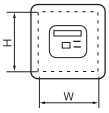
<Installation position>

(A) Direct installation onto the ceiling with wood screws.
(B) Installation with accessory's bracket

(1) Drilling of the ceiling (ceiling opening)

Drill the receiver installation holes with the following dimensions at the ceiling position where wires can be connected.

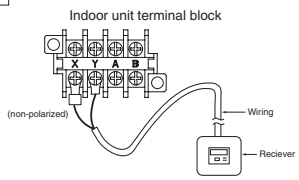
(A) Direct installation onto the ceiling with wood screws.	88mm(H)×101mm(W)
(B) Installation with enclosed bracket.	108mm(H)×108mm(W)



(2) Wiring connection of receiver

Caution

Do not connect the wiring to the power source of the terminal block. If it is connected, printed board will be damaged.

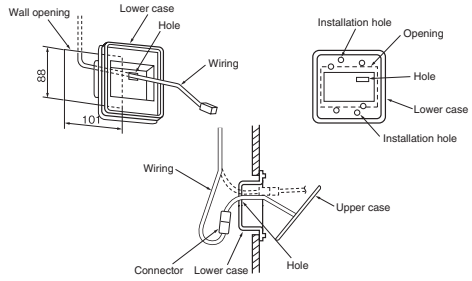


(3) Installation of the receiver

Remove the screw on the side of the receiver and sprit it into the upper case and lower case.Install the receiver with one of the two installation methods (A) or (B) shown below.

(A) Direct installation onto the ceiling with screws

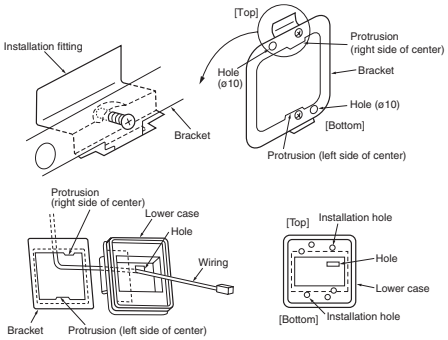
Use this installation method when the ceiling is wooden, and there is no problem for strength in installing directly with wood screws.



①Put through the wiring from the back side to the hole of the lower case.
②Fit the lower case into the ceiling opening. Make sure that the clearance between the convex part of the back of the lower case and the ceiling opening must be as equal as possible on both sides.
③Using the two installation holes shown above, fix the lower case onto the ceiling with the enclosed wood screws. (The other four holes are not used.)
④Connect the wiring with the wiring from the upper case by the connector.
⑤Take out the connector to the backside from the hole of the lower case putting through the wiring at ①.
⑥Fit the upper case and the lower case, and tighten the screws.

(B) Installation with enclosed bracket

Use this method when installaing onto a gypsum board (7 to 18mm), etc.



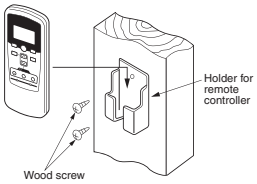
①Catch the two protrusion of the enclosed bracket onto the tting as shown above, and temporarily fix with the screws. (The bracket has an up/down and front/back orientation. Con rm the top/bottom protrusion positions and the positional relation of the ø 10 holes on the bracket and the installation hole on the lower case with the above drawing.)
②Insert the end of the installation tting into the back of the ceiling from the opening, and tighten the screws to fix the bracket onto the ceiling.
③Pass the wiring from the rear side through the hole on the lower case.
④Fit the lower case onto the bracket, and fix the lower case to the bracket using the two installation holes shown above. (The other four holes are not used.)
⑤Follow step ① to ⑥ for (A) to complete the installation.

④ Remotecontroller

Installation of the controller holder

Caution

DO NOT install it on the following places
1) Places exposed to direct sunlight
2) Places near heat devices
3) High humidity places
4) Hot surface or cold surface enough to generate condensation
5) Places exposed to oil mist or steam directly
6) Uneven surface



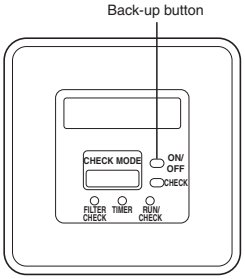
Installation tips for the remote controller holder
- Adjust and keep the holder upright.
- Tighten the screw to the end to avoid scratching the remote controller.
- DO NOT attach the holder to plaster wall.

How to insert batteries

① Detach the back lid.
② Insert the batteries. (two AAA batteries)
③ Reattach the back lid.

⑤ Cooling test run operation

- After safety con rmation, turn on the power.
- Transmit a cooling operation command with wireless remote controller, while the backup button on the receiver is pressed.
- If the backup button on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check by consulting with inspection guides on the wiring diagram of outdoor units.



⑥ Setting of wireless remote controller and receiver

(A) Methods of avoiding the malfunction due to the mixed communication

Do both procedures ① and ②.

This setting is to avoid the mixed communication with other household electric appliances or the mixed communication when two receivers are located closely.

①**Setting change of the wireless remote controller**

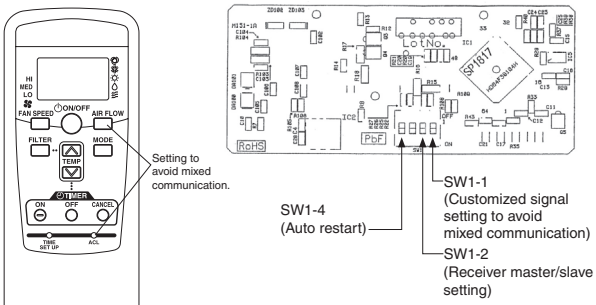
Pressing ACL and AIRFLOW button at the same time or inserting the batteries with pressing AIRFLOW button will customize the signal.

Note ***When the batteries are removed, the setting will return to the default setting. Make sure to reset it when the batteries are replaced.**

②**Setting the PCB of the receiver**

Turn SW1-1 off.

† ●**Wireless remote controller** † ●**PCB of the receiver**



SW1-1	Customized signal setting to avoid mixed communication	ON : Normal OFF : Remote
SW1-2	Receiver master/slave setting	ON : Master OFF : Slave
SW1-4	Auto restart	ON : Valid OFF : Invalid

▭ : Default setting

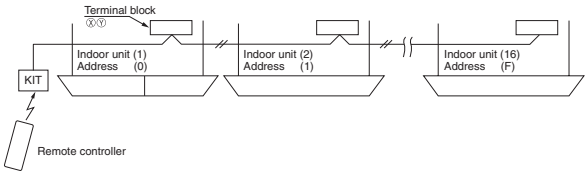
(B) Control plural indoor units with one remote controller

Up to 16 indoor units can be connected.

①Connect the XY terminal with 2-core wire. As for the size, refer to the following note.

②For Packaged air conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

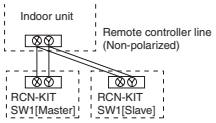
Restrictions on the thickness and length of wire (Maximun total extension 600m.)	
Standard	Within 100m x 0.3 mm²
	Within 200m x 0.5 mm²
	Within 300m x 0.75mm²
	Within 400m x 1.25mm²
	Within 600m x 2.0 mm²



③For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

(C) Master/Slave setting when using plural remote controller

Up to two receivers can be installed in one indoor unit group.



Switch	Setting	Function
SW1-2	ON	Master
	OFF	Slave

(D) Change setting of auto mode operation

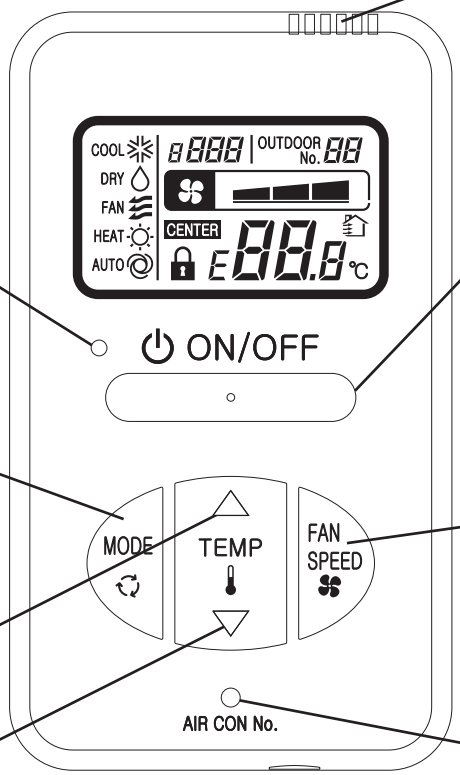
Auto mode operation is prohibited to be selected for KX models (except for KXR models).
Therefore be sure to change setting of remote controller to disable the auto mode operation for these models according to the following procedure.
While pressing the MODE button, press the ACL switch, or while pressing the MODE button, insert the batteries to the remote controller. Then the auto mode can be invalid.
Attention
When the batteries are removed, it is returned to initial setting (Auto mode becomes valid).
Accordingly when replacing the batteries, be sure to perform the above operation once again.

(E) Change setting of fan speed

While pressing the FAN SPEED button, press the ACL switch, or while pressing the FAN SPEED button, insert the batteries to the remote controller. Then the fan speed can be changed from 2-speed setting to 3-speed setting.
When changing fan speed setting of remote controller, be sure to perform the same fan speed setting as that of the indoor unit model to be used.
Attention
When the batteries are removed, it is returned to initial setting (Fan speed setting is 2-speed).
Accordingly when replacing the batteries, be sure to perform the above operation once again.

3.2 SIMPLE WIRED REMOTE CONTROLLER (RCH-E3)

Names and functions of sections



Remote controller sensor

Operation/Inspection lamp
During operation: Green
failure: Red

ON/OFF button
Button to start/stop the air conditioner

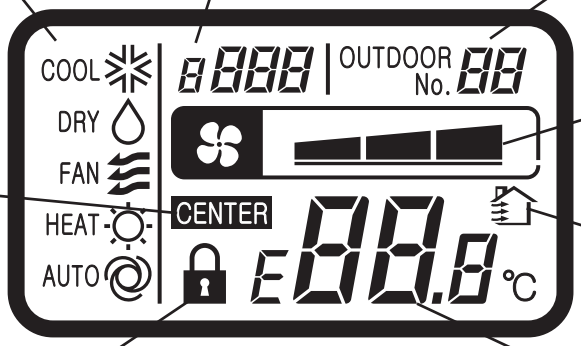
MODE button
Use to select the mode.

FAN SPEED button
Button to set the fan speed

TEMP button
Use to raise the setting temperature.

TEMP button
Use to lower the setting temperature.

AIR CON No. button
Indicates the No. of air conditioner which is connected.



Operation mode display
: Cooling
: Drying
: Fan operation
: Heating
: Auto mode

Indoor unit No. display

VRF series outdoor unit No. display

Fan speed display

Central control display
Displayed when controlling the unit with the central controller.

Ventilation display
This is lit during the ventilation operation.

Control disable display
The lamp is lit for 3 seconds when a disabled button is pressed.

Setting TEMP display
Error code display

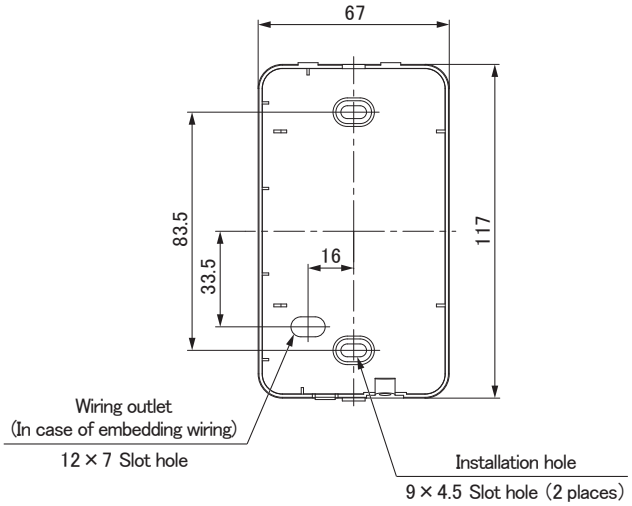
Installation of remote controller

DO NOT install the remote controller at the following places in order to avoid malfunction.

(1) Places exposed to direct sunlight
(2) Places near heat devices
(3) High humidity places
(4) Hot surface or cold surface enough to generate condensation
(5) Places exposed to oil mist or steam directly
(6) Uneven surface

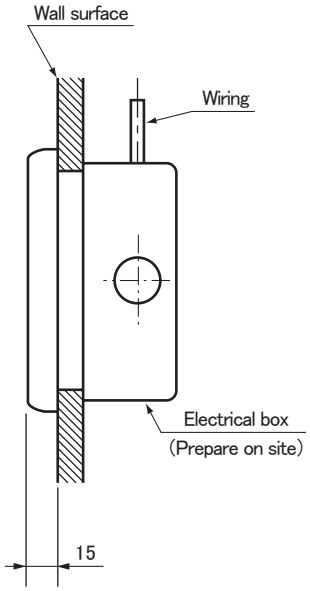
PJZ000Z272

Remote control installation dimensions

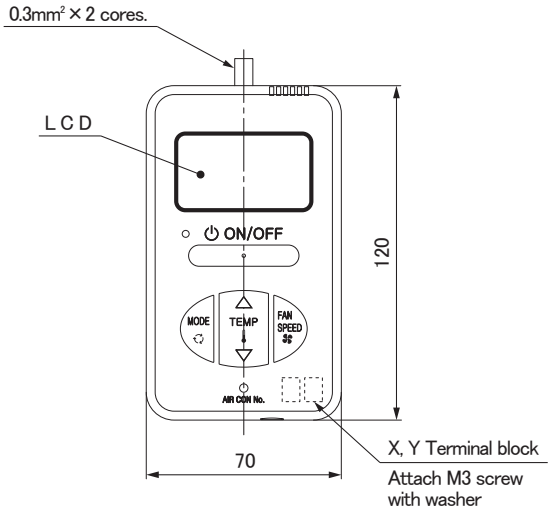


Note: Installation screw for remote controller
M4 Screw (2 pieces)

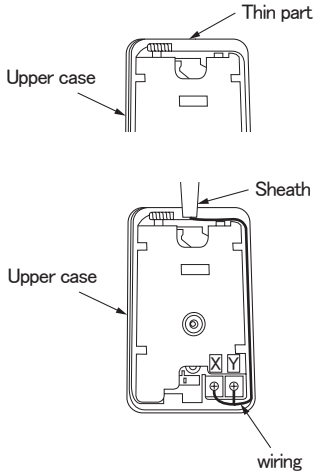
In case of embedding wiring



In case of exposing wiring

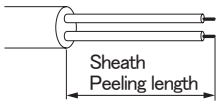


The remote controller wiring can be extracted from the upper center.
After the thin part in the upper side of the remote controller upper case is scraped with a nipper or knife, remove burr with a file.



The peeling length of each wiring is as follows:

X wiring : 160mm Y wiring : 150mm



Wiring specifications

(1) Wiring of remote controller should use 0.3mm² × 2 core wires or cables. (on-site configuration)
(2) Maximum prolongation of remote controller wiring is 600m.
If the prolongation is over 100m, change to the size below.
But, the wiring in the remote controller case should be 0.3mm² (recommended) to 0.5mm².
Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire
connecting section. Be careful about contact failure.

Unit:mm

Length	Wiring thickness
100 to 200m	0.5mm² × 2 cores
Under 300m	0.75mm² × 2 cores
Under 400m	1.25mm² × 2 cores
Under 600m	2.0mm² × 2 cores

Adapted to **RoHS** directive

Simple Remote Controller Installation Manual

PJZ012D069

Read together with indoor unit's installation manual.

⚠WARNING

- **Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.**
  Loose connection or hold will cause abnormal heat generation or fire.
- **Make sure the power supply is turned off when electric wiring work.**
  Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

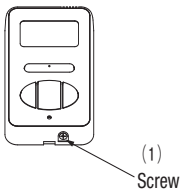
- **DO NOT install the remote controller at the following places in order to avoid malfunction.**
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
- **DO NOT leave the remote controller without the upper case.**
  In case the upper cace needs to be detached, protect the remote controller with a packaging box or bag in order to keep it away from water and dust.

Accessories	Remote controller, wood screw (ϕ3.5×16) 2 pieces
Prepare on site	Remote controller cord (2 cores) (Refer to [2. Installation and wiring of remote controller]) [In case of embedding cord] Electrical box, M4 screw (2 pieces) [In case of exposing cord] Cord clamp (if needed)

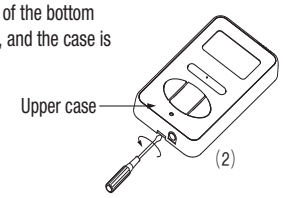
1. Installation procedure

In case of embedding cord

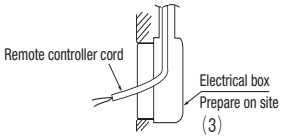
(1) Make certain to remove the screw on the bottom surface of the remote controller.



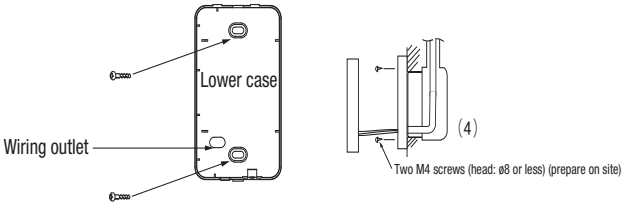
(2) Remove the upper case of the remote controller.
Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote controller and slightly twist it, and the case is removed.



(3) Pre-bury the electrical box and remote controller cord.



(4) Prepare two M4 screws (recommended length: 12 – 16mm), and install the lower case to the electrical box.
Do not use a screw whose screw head is larger than the height of the wall around the screw hole.

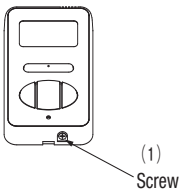


(5) Connect the remote controller cord to the terminal block.
Connect the terminals (X and Y) of the remote controller and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)

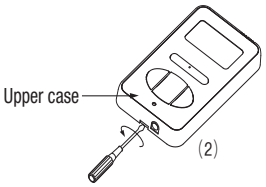
(6) Mount the upper case for restoring to its former state so as not to crimp the remote controller cord, and secure with the removed screw.

In case of exposing cord

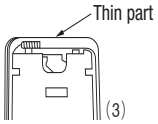
(1) Make certain to remove a screw on the bottom surface of the remote controller.



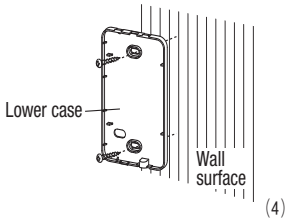
(2) Remove the upper case of the remote controller.
Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it, and the case is removed.



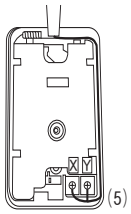
(3) The remote controller cord can be extracted from the upper center.
After the thin part in the upper side of the remote controller upper case is scraped with a nipper or knife, remove burr with a file.



(4) The lower case of the remote controller is mounted to a flat wall with two accessory wood screws.

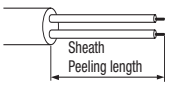


(5) Connect the remote controller cord to the terminal block.
Connect the terminals (X and Y) of the remote controller and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)
The wiring route is as shown in the right.



The wiring in the remote controller case should be 0.3 mm^2 (recommended) to 0.5 mm^2 at maximum.
Further, peel off the sheath.
The peeling length of each wiring is as follows:

X wiring : 160mm
Y wiring : 150mm



(6) Mount the upper case for restoring to its former state so as not to crimp the remote controller cord, and secure with the removed screw.

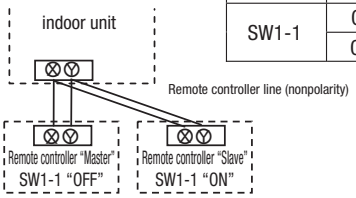
(7) In the case of exposing installation, secure the remote controller cord to the wall surface with a cord clamp so as not to loosen the remote controller cord.

2. Installation and wiring of remote controller

(1) Wiring of remote controller should use 0.3mm^2 × 2 core wires or cables. (on-site configuration)
(2) Maximum prolongation of remote controller wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, the wiring in the remote controller case should be 0.3mm^2 (recommended) to 0.5mm^2.
Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire
connecting section. Be careful about contact failure.
100 - 200m·····0.5mm^2 × 2 cores
Under 300m·····0.75mm^2 × 2 cores
Under 400m·····1.25mm^2 × 2 cores
Under 600m·····2.0mm^2 × 2 cores

3. Master/ slave setting when more than one remote controller are used

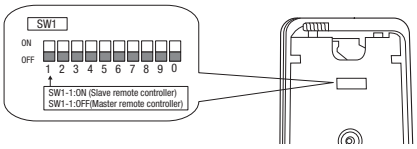
(1) Up to two remote controllers can be connected to one unit (or one group) of indoor unit.



Switch	Setting	Function detail
SW1-1	ON	Slave remote controller
	OFF	Master remote controller

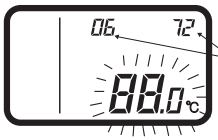
(2) Set the switch SW1-1 of the slave remote controller is "Slave" (ON). The factory default is set as "Master" (OFF).

(Note) • The remote controller thermistor enabled setting can be set only to the master remote controller.
• Install the master remote controller at the position to detect room temperature.
• The air conditioner operation follows the last operation of the remote controller in case of the master / slave setting.



4. The indication when power source is supplied

(1) At the time of turning the power source on, after the light is on for the first 2 seconds, the display becomes as shown below.
The number displayed on the upper side of LCD in the remote control is the software number, and this is not an error code.



Software number
(The number in the left is one example. Another number may be shown.)

(2) Then, "88.0 °C" blinks on the remote controller until the communication between the remote controller and the indoor unit is established.

(3) In the case of connecting one remote controller with one unit (or one group) of indoor unit, make certain to set the master remote controller (factory default).
If the slave remote control is set, a communication cannot be established.

(4) If a state where the communication between the remote controller and the indoor unit cannot be established continues about for 30 minutes, "E" is displayed. Confirm the wiring of the indoor unit and the outdoor unit and master/slave setting of the remote controller.

5. Confirmation method for return air temperature

Return air temperature can be confirmed by the remote controller operation.

(1) **Press AIR CON NO. button for over 5 seconds.**
"88" blinks on the temperature setting indicator.
("88" blinks for approximately 2 seconds while data is read.)
↓
Then, the return air temperature is displayed.
(Example) return air temperature: "27 °C" (blinking)

(Note) For the return air temperature, in the normal case, the return air temperature of the indoor unit is displayed; however, in the case that the remote control thermistor is effective, detected temperature by the remote controller thermistor is displayed.

(2) **Press ⏻ ON/OFF button.**
End.

[In the case that the remote thermistor is ineffective and plural indoor units are connected to one remote controller]

(1) **Press AIR CON NO. button for over 5 seconds.**
indoor unit No. indicator: "U 000" (blinking)
(Among the connected indoor units, the lowest number is displayed.)

(2) **Press TEMP△ or TEMP▽ button.**
Select the indoor unit No.

(3) **Press MODE button.**
Dectder the indoor unit No.
(Example) indoor unit No. indicator: "U 000"
"88" blinks on the temperature setting indicator. (blinking for approximately 2 to 10 seconds while data is read) Then, the return air temperature is displayed. When AIR CON NO. is pressed, return to the indoor unit selection display (example, "U 000").

(4) **Press ⏻ ON/OFF button.**
End.

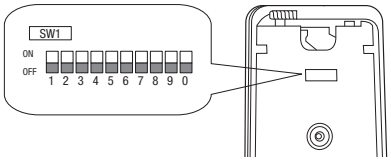
6. Function setting

Each function of the remote controller and the indoor unit is automatically set to the initial setting, which is the standard use, on the occasion of connecting the remote controller with the indoor unit. In the case of the standard use, the setting change is unnecessary. However, if you whould like to change the initial setting " ○ ", change the setting for only the item of the function number. **Record the setting contents and stored them.**

(1) Function setting item by switch on PCB

Switch No.	Setting	Setting detail	Initial setting
SW1-1	ON	Slave remote controller	
	OFF	Master remote controller	○
SW1-2	ON	Remote controller thermistor enabled	
	OFF	Remote controller thermistor disabled	○
SW1-3	ON	"MODE" button prohibited	
	OFF	"MODE" button enabled	○
SW1-4	ON	"ON/OFF" button prohibited	
	OFF	"ON/OFF" button enabled	○

Switch No.	Setting	Setting detail	Initial setting
SW1-5	ON	"TEMP" button prohibited	
	OFF	"TEMP" button enabled	○
SW1-6	ON	"FAN SPEED" button prohibited	※ Note 1
	OFF	"FAN SPEED" button enabled	※ Note 1
SW1-7	ON	Auto restart function enabled	
	OFF	Auto restart function disabled	○
SW1-8, 9, 0	ON	Not used	
	OFF		



- As for the slave remote controller, function setting is impossible other than SW1-1.
- In the indoor unit with only one fan speed, "FAN SPEED" button cannot be enabled.

(2) Function setting item by button operation

Classification	Function No.	Function	Setting No.	Setting	Initial setting	Remarks
Remote controller function	01	Indoor unit fan speed	01	Fan speed: three steps	※ Note 1	The fan speed is three steps, ■■■ - ■■ - ■ .
			02	Fan speed: two steps (Hi-Lo)	※ Note 1	The fan speed is two steps, ■■■ - ■ .
			03	Fan speed: two steps (Hi-Me)		The fan speed is two steps, ■■■ - ■■ .
			04	Fan: one step	※ Note 1	The fan speed is fixed to one step.
	03	Remote controller thermistor at the time of cooling	01	Remote controller thermistor: no offset	○	
			02	Remote controller thermistor: +3.0 °C		At the time of cooling, in the case of remote controller thermistor enabled, offset temperature at +3.0°C.
			03	Remote controller thermistor: +2.0 °C		At the time of cooling, in the case of remote controller thermistor enabled, offset temperature at +2.0°C.
			04	Remote controller thermistor: +1.0 °C		At the time of cooling, in the case of remote controller thermistor enabled, offset temperature at +1.0°C.
			05	Remote controller thermistor: -1.0 °C		At the time of cooling, in the case of remote controller thermistor enabled, offset temperature at -1.0°C.
			06	Remote controller thermistor: -2.0 °C		At the time of cooling, in the case of remote controller thermistor enabled, offset temperature at -2.0°C.
			07	Remote controller thermistor: -3.0 °C		At the time of cooling, in the case of remote controller thermistor enabled, offsett temperature at -3.0°C.
	04	Remote controller thermistor at the time of heating	01	Remote controller thermistor: no offset	○	
			02	Remote controller thermistor: +3.0 °C		At the time of heating, in the case of remote controller thermistor enabled, offset temperature at +3.0°C.
			03	Remote controller thermistor: +2.0 °C		At the time of heating, in the case of remote controller thermistor enabled, offset temperature at +2.0°C.
			04	Remote controller thermistor: +1.0 °C		At the time of heating, in the case of remote controller thermistor enabled, offset temperature at +1.0°C.
			05	Remote controller thermistor: -1.0 °C		At the time of heating, in the case of remote controller thermistor enabled, offset temperature at -1.0°C.
			06	Remote controller thermistor: -2.0 °C		At the time of heating, in the case of remote controller thermistor enabled, offset temperature at -2.0°C.
			07	Remote controller thermistor: -3.0 °C		At the time of heating, in the case of remote controller thermistor enabled, offset temperature at -3.0°C.
	05	Ventilation setting	01	No ventilator connection	○	
			02	Ventilator links air-conditioner		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit board), the operation of ventilation device is linked with the operation of indoor unit.
	06	"Auto" operation setting	01	"Auto" operation enabled	※ Note 1	
			02	"Auto" operation disabled	※ Note 1	"Auto" operation disabled
Indoor unit function	07	Operation permission/ prohibition	01	Disabled	○	
			02	Enabled		Operation permission/prohibition controller is enabled.
	08	External input	01	Level input	○	
			02	Pulse input		
	09	Fan speed setting	01	Standard	Note2	
			02	High speed 1	Note2	
			03	High speed 2	Note2	
	10	Fan remaining operation at the time of cooling	01	No remaining operation	○	After cooling stopped, no fan remaining operation
			02	0.5 hours		After cooling stopped, fan remaining operation for 0.5 hours
			03	1 hour		After cooling stopped, fan remaining operation for 1 hour
			04	6 hours		After cooling stopped, fan remaining operation for 6 hours
	11	Fan remaining operation at the time of heating	01	No remaining operation	○	After heating stopped or after heating thermostat OFF, no fan remaining operation
			02	0.5 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 0.5 hours
			03	2 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 2 hours
			04	6 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 6 hours
	12	Setting temperature offset at the time of heating	01	No offset	○	
			02	Setting temperature offset + 3.0 °C		The setting temperature at the time of heating is offset by +3.0 °C.
			03	Setting temperature offset + 2.0 °C		The setting temperature at the time of heating is offset by +2.0 °C.
			04	Setting temperature offset + 1.0 °C		The setting temperature at the time of heating is offset by +1.0 °C.
	13	Heating fan controller	01	Low fan speed	※ Note 1	At the time of heating thermostat OFF, operate with low fan speed.
			02	Setting fan speed		At the time of heating thermostat OFF, operate with the setting fan speed.
			03	Intermittent operation	※ Note 1	At the time of heatingr thermostat OFF, intermittently operate.
			04	Fan off		At the time of heating thermostat OFF, a fan will be stopped. When the remote controller thermistor is enabled, automatically set to "Fan off". Do not set at the time of the indoor unit thermistor.
	14	Return air temperature offset	01	No offset	○	
			02	Return air temperature offset +2.0 °C		Offset the return air temperature of the indoor unit by +2.0 °C.
			03	Return air temperature offset +1.5 °C		Offset the return air temperature of the indoor unit by +1.5 °C.
			04	Return air temperature offset +1.0 °C		Offset the return air temperature of the indoor unit by +1.0 °C.
			05	Return air temperature offset -1.0 °C		Offset the return air temperature of the indoor unit by -1.0 °C.
			06	Return air temperature offset -1.5 °C		Offset the return air temperature of the indoor unit by -1.5 °C.
			07	Return air temperature offset -2.0 °C		Offset the return air temperature of the indoor unit by -2.0 °C.

Note 1: The symbol " ※ " in the initial setting varies depending upon the indoor unit and the outdoor unit to be connected, and this is automatically determined as follows:

Swith No. Function No.	Function	Setting	Product model
SW1-6	"FAN SPEED" button	"FAN SPEED" button prohibited	Product model whose indoor fan speed is only one step
		"FAN SPEED" button enabled	Product model whose indoor fan speed is two steps or three steps
Remote controller function 01	Indoor unit fan speed	Fan speed: three steps	Product model whose indoor unit fan speed is three steps
		Fan speed: two steps (Hi-Lo)	Product model whose indoor unit fan speed is two steps
		Fan speed: two steps (Hi-Me)	
		Fan: one step	Product model whose indoor unit fan speed is only one step
Remote controller function 06	"Auto" operation setting	"Auto" operation enabled	Product model where "Auto" mode is selectable
		"Auto" operation disabled	Product model without "Auto" mode
Indoor unit function 13	Heating fan control	Low fan speed	Product model except FDUS
		Intermittent operation	FDUS

Note 2: Fan speed of "High speed" setting

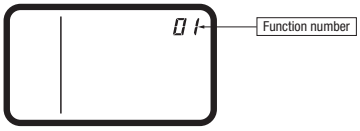
Fan speed setting	Indoor unit fan speed setting		
	■■■ - ■■ - ■	■■■ - ■	■■■ - ■■
Standard	Hi — Mid — Lo	Hi — Lo	Hi — Mid
High speed 1・2	UHi — Hi — Mid	UHi — Mid	UHi — Hi

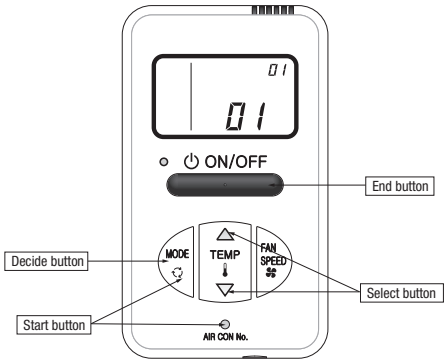
Initial setting of some indoor unit is "High speed".

Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "07 Operation permission/ prohibition" and "08 External input".

7. How to set functions by button operation

(1) **Stop air-conditioning, and simultaneously press AIR CON NO. and MODE buttons at the same time for over three seconds.**
The function number "01" blinks in the upper right.

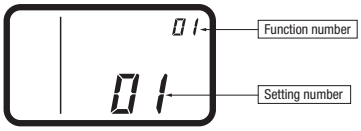




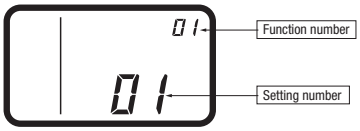
(2) **Press TEMP△ or TEMP▽ button.**
Select the function number.

(3) **Press MODE button.**
Decide the function number.

(4) **[In the case of selecting the remote controller function (01-06)]**
① The current setting number of the selected function number blinks
(Example)
Function number: "01" (lighting)
Setting number: "01" (blinking)

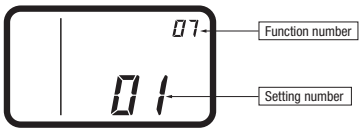


② **Press TEMP△ or TEMP▽ button.**
Select the setting number.
③ **Press MODE button.**
The setting is completed.
Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted.
(Example)
Function number: "01" (lighting for 3 to 20 seconds)
Setting number: "01" (lighting for 3 to 20 seconds)



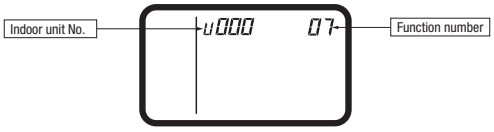
Then, the screen goes back to the function number blinking indication (1), if the setting is sequentially conducted, continue with the same procedures. If the setting is finished, proceed to (5).

[In the case of selecting the indoor unit function (07-14)]
① **"88" blinks on the temperature setting indicators.**
(blinking for approximately 2 to 10 seconds while data is read)
↓
After that, the current setting number of the selected function number blinks.
(Example)
Function number: "07" (lighting)
Setting number: "01" (blinking)



Proceed to ②.

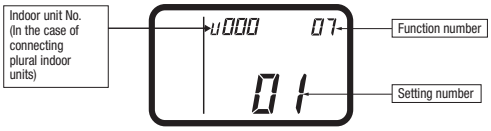
[Note]
a. In the case of connecting one remote control to plural indoor units, the display will be as follows:
Indoor unit No. display: "U 000" (blinking)
(Display the lowest number among the connected indoor units.)



b. Press TEMP△ or TEMP▽ button.
Select the indoor unit No. to be set.
If "U ALL" is selected, the same setting can be set to all units.
c. Press MODE button.
Decide the indoor unit No.
"88" blinks on the temperature setting indicators. (blinking for 2 to 10 seconds while data is read)
When AIR CON NO. button is pressed, go back to the indoor unit selection display (for example, "U 000" blinking).

② **Press TEMP△ or TEMP▽ button.**
Select the setting number

③ **Press MODE button.**
The setting is completed.
Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted.
(Example)
Indoor unit No.: "U 000" (lighting for 3 to 20 seconds)
Function number: "07" (lighting for 3 to 20 seconds)
Setting number: "01" (lighting for 3 to 20 seconds)



Then, the screen goes back to the function number blinking indication (1), if the setting is sequentially conducted, continue with the same procedures. If the setting is finished, proceed to (5).

(5) **Press ON/OFF button.**
The setting is completed.

- Even if ON/OFF button is pressed during setting, the setting is ended. However, any details where the setting has not been completed will be ineffective.
- The setting contents are stored in the controller, and even if the power failure occur, this will not be lost.

[Confirmation method for current setting]
According to the operation, the "setting number" displayed first after selecting "function number" and pressing MODE button is the currently set content.
(However, in the case of selecting "U ALL" (all units), the setting number of the lowest number among the indoor units is displayed.)

3.3 FAN CONTROLLER KIT (U-FCRA)

PJD012D049 ⚠a

This manual instructs the way of installing the optional fan controller for high static pressure ducts. Install the controller in accordance with the following procedure.

⚠ WARNING

(1) Consult your dealer for the installation of the controller.
(2) Only qualified electrician must install the controller.
(3) Remove the control box before the installation.
Before installing the product,take it out from the package and place it on the floor.
(4) Be sure to turn off the power supply during installation.
Unless the above precautions are observed,it could cause electrical shocks or fire.

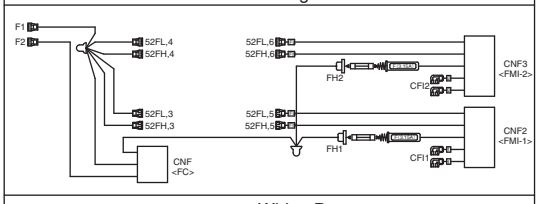
1.Applicable models and corresponding fan controller kit

Standard type	FDU200VF,250VF
Fan controller kit	U-FCRA (PJZ006A102A)

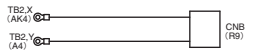
2.Component parts list

Fan controller	Band	Tapping Screw
1 piece	ⓐ(L=92) : 5 pieces	(M3 : 2 pcs.) 2 pieces

Wiring A

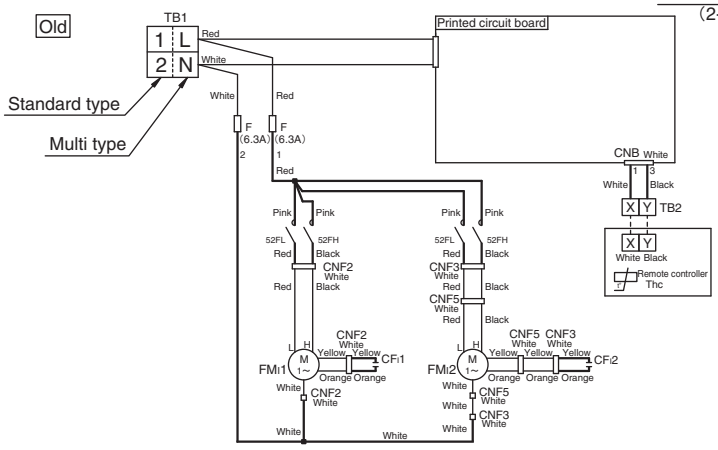


Wiring B

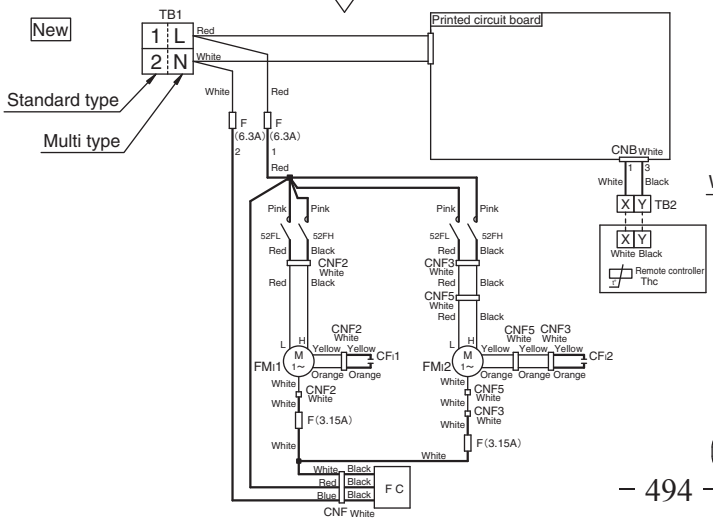


3.Electric circuit diagram (Change the sections indicated with bald lines.)

Old



New



＜Precautions for wiring＞

○ Connect wires correctly as shown by the electric wiring diagram. Be sure to tighten set screws firmly to prevent them generating heat or causing other troubles after becoming loose.
○ Number of wires connected to the terminal block must be 2 wires or less. Never connect 3 more wires in any event.

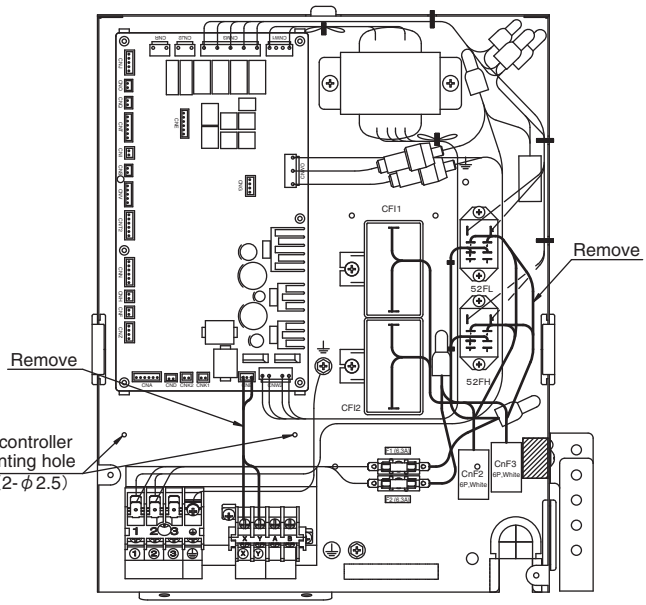
4. Installation procedure

(1) Remove the lid from the control box.
(2) Remove the wiring (fuse～CNF2,3) and wiring(TBⓍⓎ～CNB).

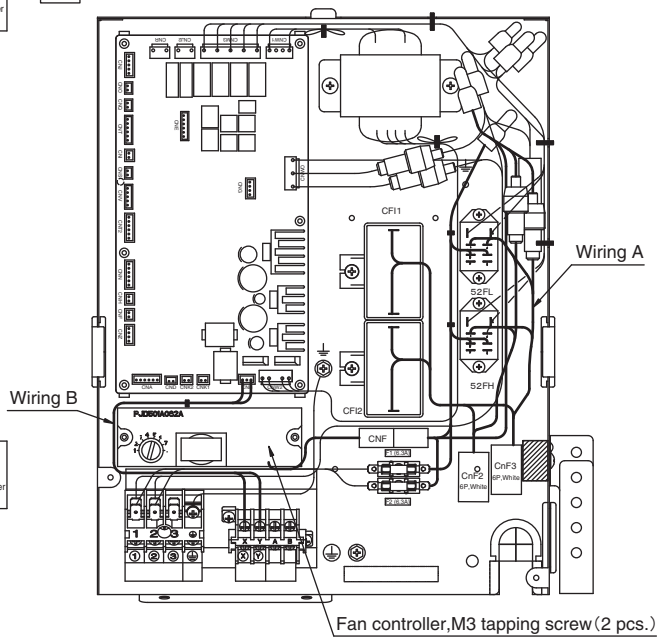
⚠CAUTION Confirm that electricity has been dischaged before touching the capacitor terminals.There is risk of electric shocks.

(3) Install the fan controller.
(4) Referring to "3.Electric circuit diagram",connect wires as illustrated and fix with bands ⓐ.
(5) Reinstall the removed lid on the control box.

Old



New



Regarding the Characteristics fan please see to page 133

3.4 BASE HEATER KIT (CW-H-E1)

PCZ012D007A

Model Name: CW-H-E1

⚠ WARNING

- Follow the instruction and installation manual for outdoor unit when installing the heater.
- This heater must be installed by authorized personnel.
- Turn off the power supply when the kit is installed.
- Failure to follow the above will result in serious accident like electrical shock or fire.

⚠ CAUTION

- Follow the law or regulation of the country where it is installed.
- Do not alter the heater.
- Lay down the heater so that the edge of the sheet metal does not damage the heater.
- Bending radius must be bigger than 25mm.
- Do not use the heater near flammable substances.
- Be sure to check the electrical insulation before use.
- Be sure to check the drain is not trapped by the heater.
- Do not leave refrigerant oil on the base.

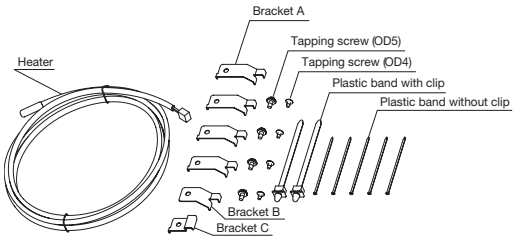
AREAS TO BE APPLIED

This kit is to be used in an area where the lowest temperature drops below zero.

⚠Caution: In case the heater is not applied on the unit which is installed in an area mentioned above, it may be regarded as installation failure and warranty may not be given.

Components

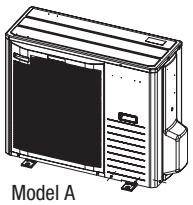
- Heater : 1pc
- Bracket A : 4pcs
- Bracket B : 1pcs
- Bracket C : 1pcs
- Tapping screw (OD5) : 4pcs
- Tapping screw (OD4) : 4pcs
- Plastic band with clip : 2pcs
- Plastic band : 5pcs



Applicable model

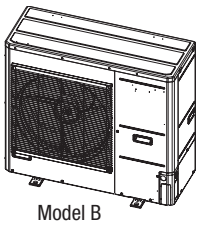
This heater kit is applicable for 3 different models.

<Model A>
Single fan with plastic fan guard model



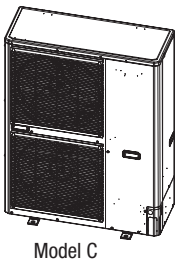
Model A

<Model B>
Single fan model



Model B

<Model C>
Double fan model

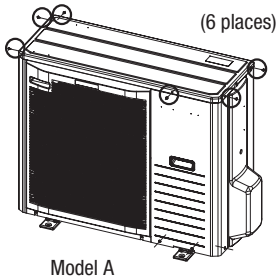


Model C

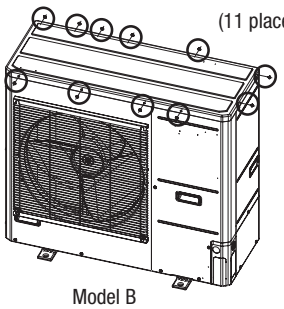
Installation procedure

Step 1

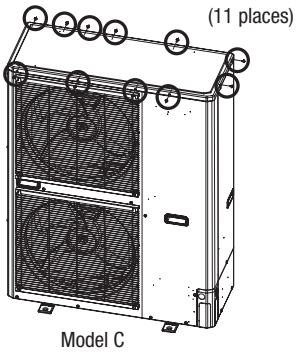
1. Remove the top panel of the outdoor unit



Model A

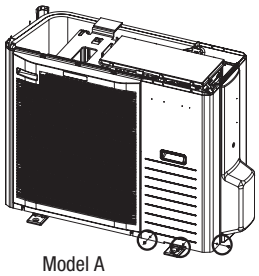


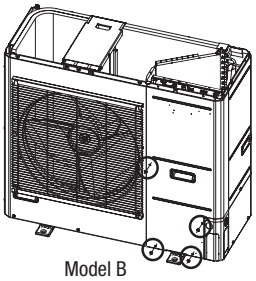
Model B

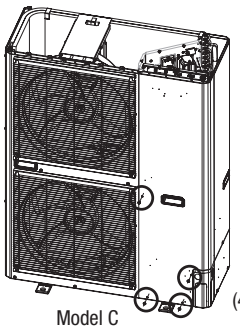


Model C

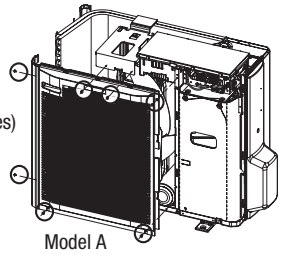
Step 2 2. Remove the service panel

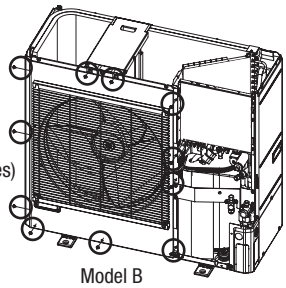

Model A (3 places)

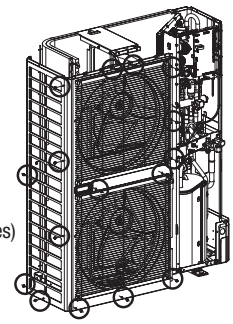

Model B (4 places)


Model C (4 places)

Step 3 3. Remove the front panel
Pull the panel straightforward so that the panel doesn't touch the fan blade.

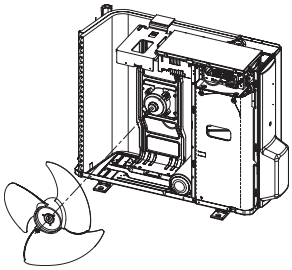

(7 places) Model A

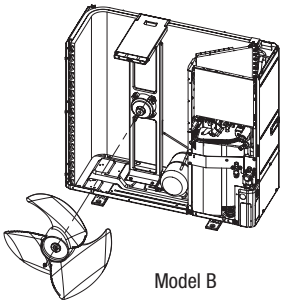

(11 places) Model B

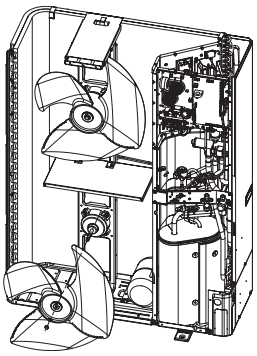

(16 places) Model C

Step 4 4. Remove the fan blade if necessary.

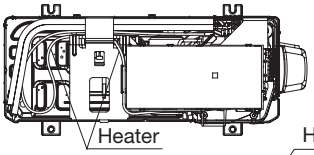
<Note>
Do not rotate the axis of fan motor when removing the fan blade.
It may cause malfunction of the fan motor.

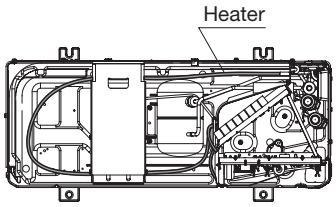

Model A

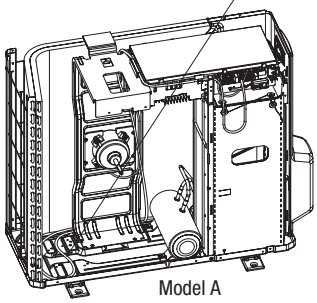

Model B


Model C

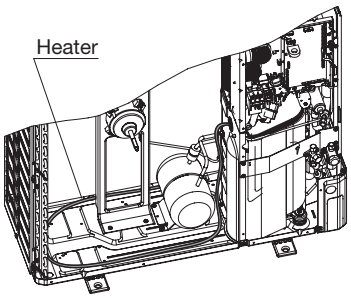
Step 5 5. Lay down the drain pan heater on the base.
For model A, put the cables rear the fan motor bracket.







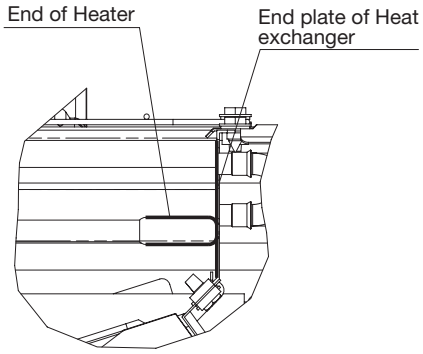
Model A



Model B, C

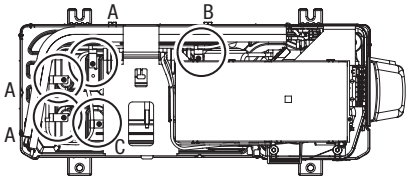
Step 6

6. Put the heater underneath the heat exchanger and align the end of heater with the end plate of heat exchanger.

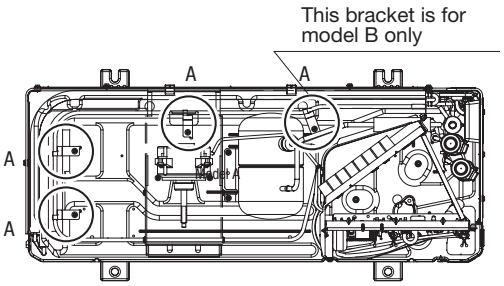


Step 7

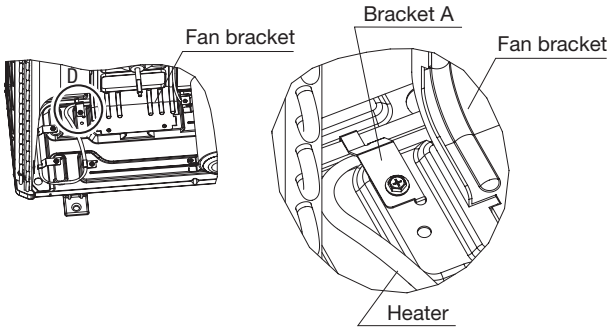
7. Fix the heater with brackets.



For model A, use 3 pcs of bracket A, 1pc of bracket B and C. Fix bracket A and C with the attached screw (OD4), and fix bracket B with the removed screw which is fastened at the same place.

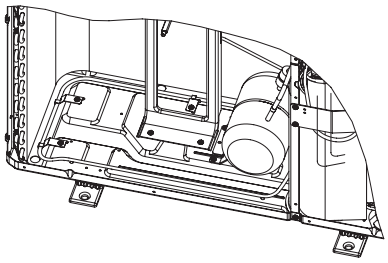


For model B and C, fix bracket A with the attached screw (OD5).



Model A

Detail view D



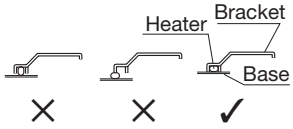
Model B, C

<Note for model A>

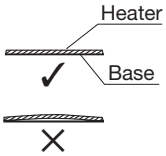
1) Put the end of heating part just after the bracket C
2) Fix the incoming and out going cable with one bracket A on the left of fan bracket as figure shows.

<Note>

1) Fix the heater so that the bracket doesn't pinch the heater as figure shows.



2) Place the heater so as to touch the base completely.

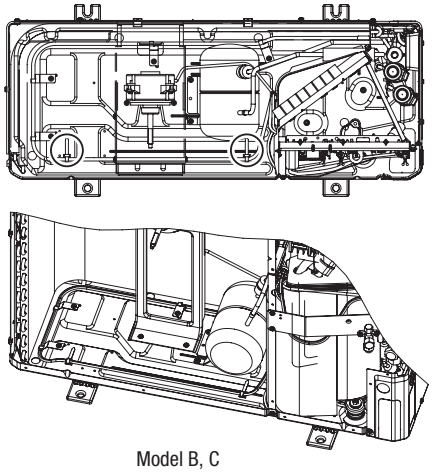


3) In bending position, twist the heater to make it easier to bend, and get back to be able to fix it with bracket.

4) Be careful not to be injured by aluminum fin when fixing the heater with screw.

Step 8

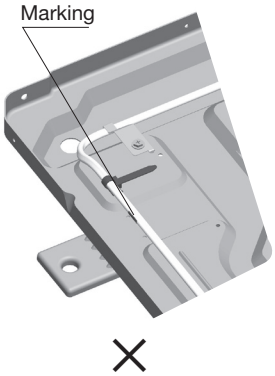
8. Insert the plastic band with clip on the designated place (2 places), and fix the heater.(Model B,C only)



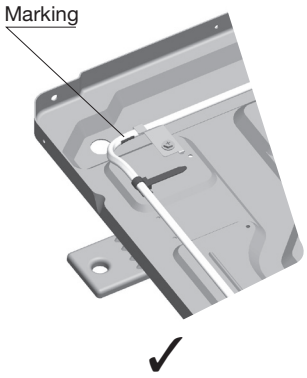
Model B, C

<Note>

1) Do not fasten the heating part with the plastic band.
   There is a marking on the end of heating part.



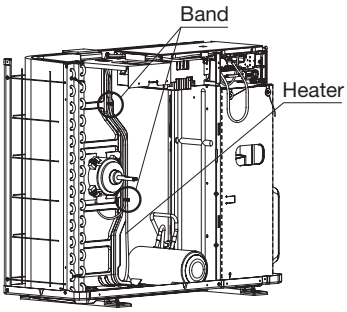
2) When the heater is laid down correctly, the end of heating part comes to the corner of the base.



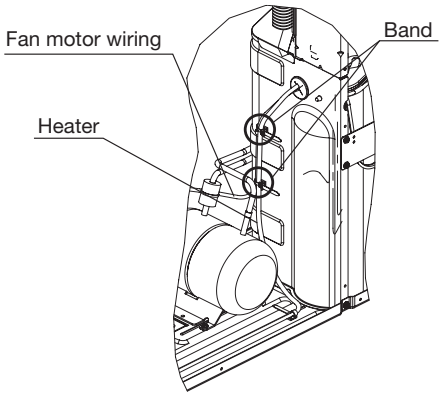
Step 9

9. Lay down the wiring on the same route of fan motor wiring, and fix the wire with attached plastic band at the same place where the fan motor wiring is banded.

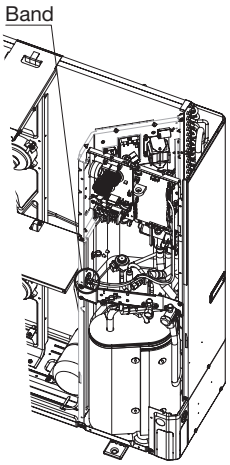
Model A

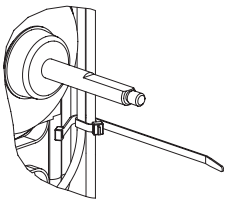


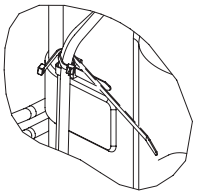
Model B

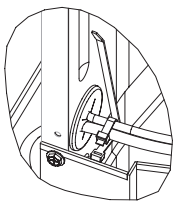


Model C









<Note>

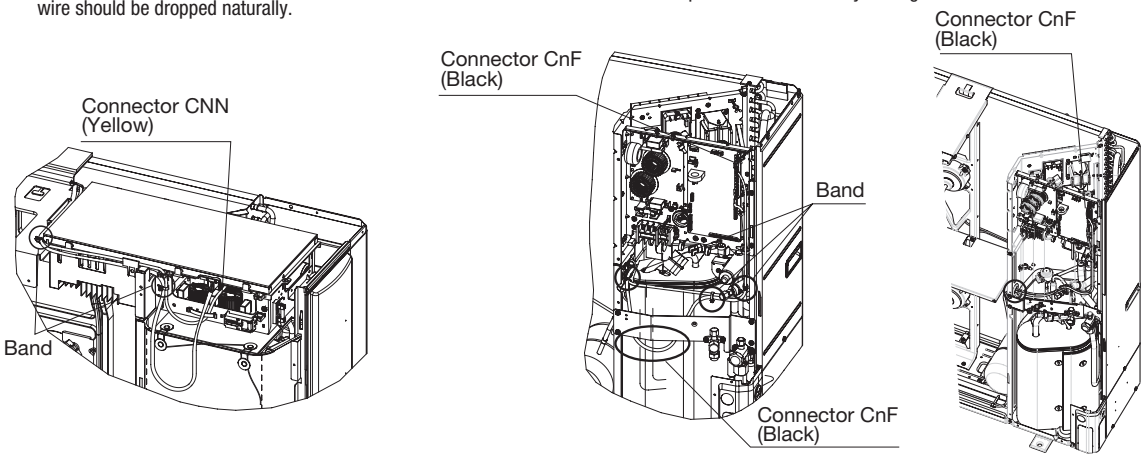
Fan motor wiring is banded on the bracket so that it doesn't loosen.
Do not loose the band for the motor wiring to band the heater wire together but use the attached plastic band.

Step 10

10.Insert the connector to the port (Model A: CNN, Model B,C:CNF) on the PCB, and fix the wire with bands. Excess part of the wire should be dropped naturally.

<Note>

Be sure to cut the excess part of plastic band.
It may cause abnormal noise when hit by fan blade or misassembling of panels.
Do not bundle excess part of the wire. It may damage the heater.



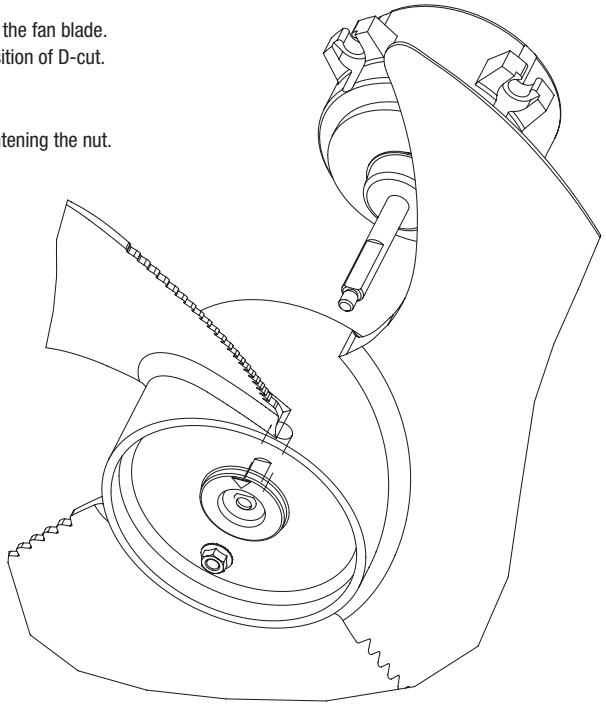
Model A　　Model B　　Model C

Step 11

11. Reassemble the fan blade.
Take care to align the D-cut of motor shaft and the fan blade.
▽ mark on the center of the fan shows the position of D-cut.

<Note>

1. Tightening torque of the nut is 4.0-4.9 N·m.
2. Do not rotate the axis of fan motor when tightening the nut.
It may cause malfunction of the fan motor.



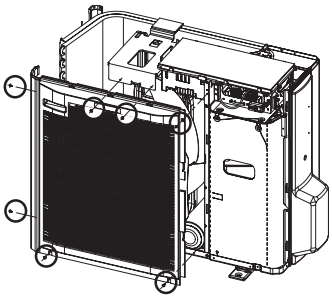
<Note>

- This heater should have bending radius of at least 25mm including non-heating part. Do not bundle the excess part of the wire. It may cause disconnection of the heater or insufficient capacity.
- Be sure to prevent the heater from touching any refrigerant piping.
Especially, pay close attention not to make it touch with pipes which are close to the wiring route such as suction pipe, check valve and check joint.

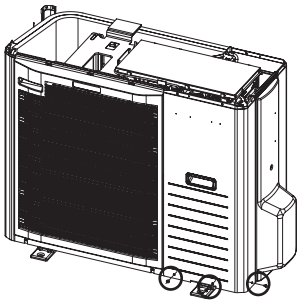
Step 12

12. Reassemble the panels.

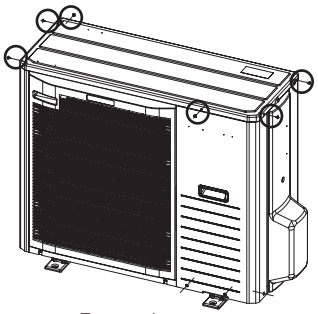
[Model A]



Front panel

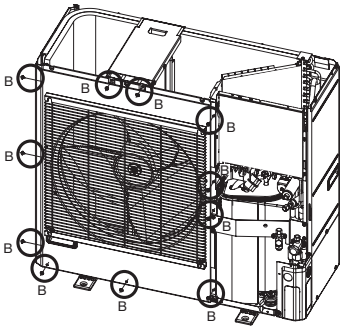


Service panel

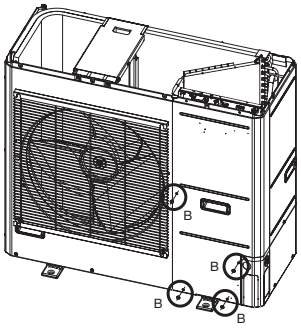


Top panel

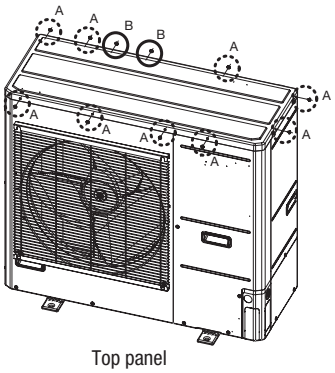
[Model B]



Front panel

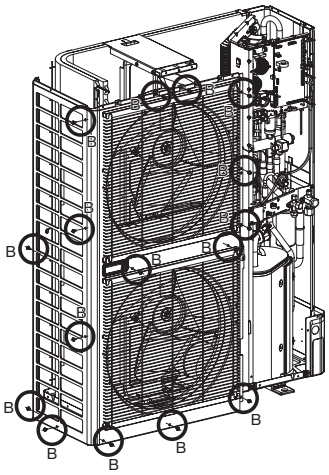


Service panel

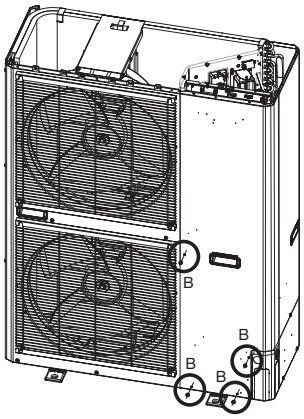


Top panel

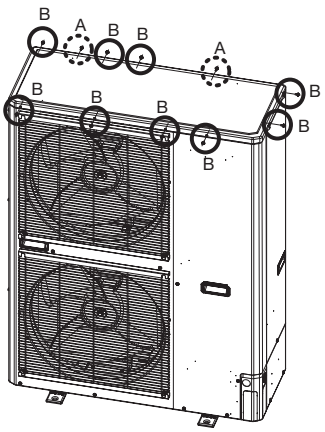
[Model C]



Front panel



Service panel

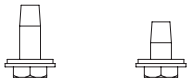


Top panel

<Note>

1) When reassembling the service panel, take care not to damage the front panel with the edge.

2) Top panel of model B and model C is fixed with two different screws.
Be sure to use correct screw as figure shows.



A **B**

3.5 INTERFACE KIT (SC-BIKN-E)

RKZ012A088B

Accessories included in package

Be sure to check all the accessories included in package.

No.	Part name	Quantity
①	Indoor unit's connection cable (cable length: 1.8m)	1
②	Wood screws (for mounting the interface: ø4x 25)	2
③	Tapping screws (for the cable clump and the interface mounting bracket)	3
④	Interface mounting bracket	1
⑤	Cable clamp (for the indoor unit's connection cable)	1
⑥*	CNT terminal connection cable (total cable length: 0.5m)	1

* SC-BIKN-EA only

Safety precautions

Before use, please read these Safety Precautions thoroughly before installation.

- All the cautionary items mentioned below are important safety related items to be taken into consideration, so be sure to observe them at all times.

⚠Warning	Incorrect installation could lead to serious consequences such as death, major injury or enviromental destruction.

- Symbols used in these precautions

!	Always go along these instruction.

- After completed installation, carry out trial operation to confirm no anomaly, and ask the user to keep this installation manual in a good place for future reference.

⚠ Warnings

- **Installation must be carried out by a qualified installer.**
  If you install it by yourself, it may cause an electric shock, fire and personal injury , as a result of a system malfunction.
- **Install it in full accordance with the instruction manual.**
  Incorrect installation may cause an electric shock, fire and personal injury.
- **Electrical work must be carried out by a qualified electrician in accordance with the technical standard for electrical equipment, the indoor wiring standard and this instruction manual.**
  Incorrect installation may cause an electric shock, fire and personal injury.
- **Use the specific cables for wiring. And connect all the cables to terminals or connectors securely and clamp them with cable clamps in order for external forces not to be transmitted to the terminals directly.**
  Incomplete connection may cause malfunction, and lead to heat generation and fire.
- **Use the original accessories and specified components for installation.**
  If the parts other than those prescribed by us are used, it may cause an electric shock, fire and sersonal injury.

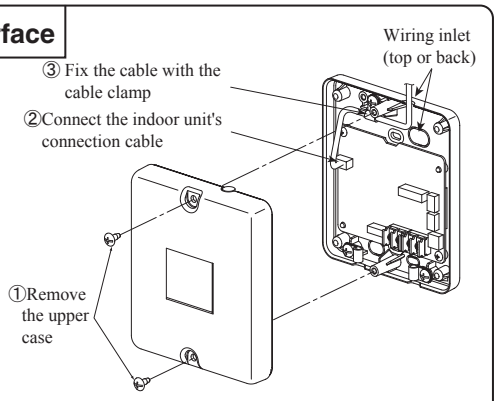
Connecting the indoor unit's connection cable to the interface

①Remove the upper case of the interface.
- Remove 2 screws from the interface casing before removal of upper casing.

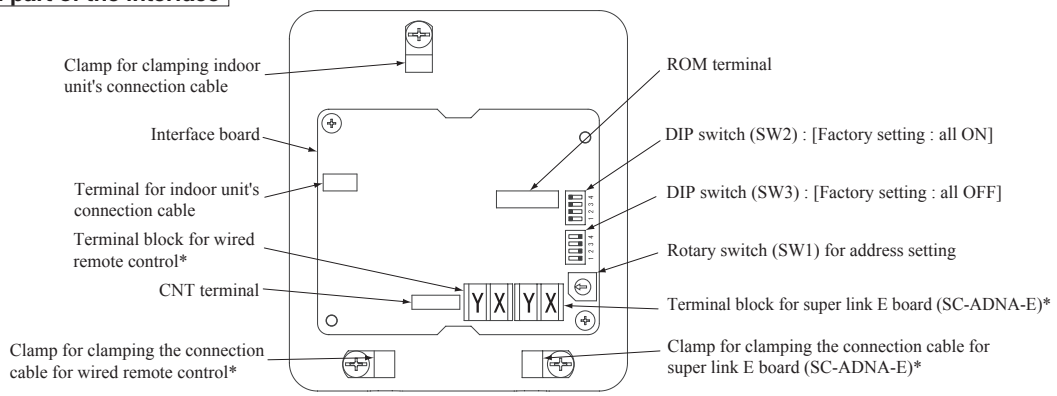
②Connect the indoor unit's connection cable to the interface.
- Connect the connector of the indoor unit connection cable to the connector on the interface's circuit board.

③Fix the indoor unit's connection cable with the cable clamp.
- Cable can be brought in from the top or from the back.
- Cut out the punch-outs for the connection cables running into the casing with cutter.

④Connect the indoor unit's connection cable to the indoor control PCB.
- Connect the indoor unit's connection cable to the indoor control PCB securely.
- Clamp the connection cable to the indoor control box securely with the cable clamp provided as an accessory.
- Regarding the cable connection to the indoor unit, refer to the instruction manual for indoor unit.



Name of each part of the interface



*Either the connection cables of super link E board (SC-ADNA-E) or of wired remote control is connectable.

Switch	Setting	Function	Switch	Setting	Function
SW2-1	ON**	CNT level input	SW2-3	ON**	External input (CNT input)
	OFF	CNT Pulse input		OFF	Operation permission/prohibition (CNT input)
SW2-2	ON**	Wired remote control : Enable	SW2-4	ON**	Annual cooling : Enable***
	OFF	Wired remote control : Disable		OFF	Annual cooling : Disable***

** Factory setting

*** Indoor fan control at low outdoor air temperature in cooling

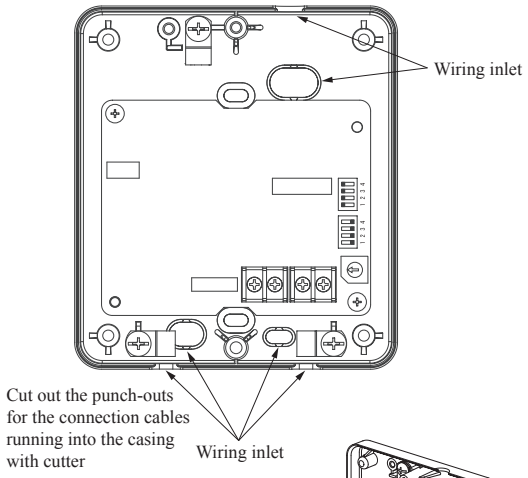
#

Installation of the interface

- Install the interface within the range of the connection cable length (approximately 1.3m) from the indoor unit.
- Be sure not to extend the connection cable on site. If the connection cable is extended, malfunction may occur.
- Fix the interface on the wall, pillar or the like.

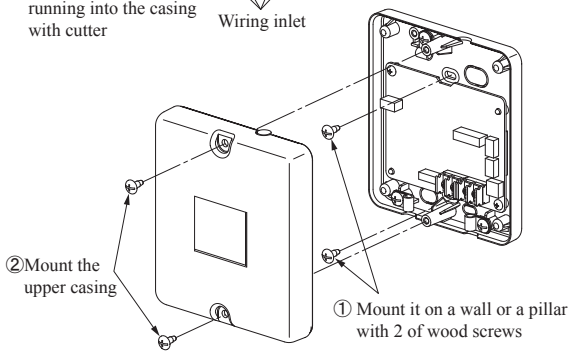
●DO NOT install the interface and wired remote control at the following places.

○Places exposed to direct sunlight
○Places near heating devices
○High humidity places
○Surfaces where are enough hot or cold to generate condensation
○Places exposed to oil mist or steam directly
○Uneven surface



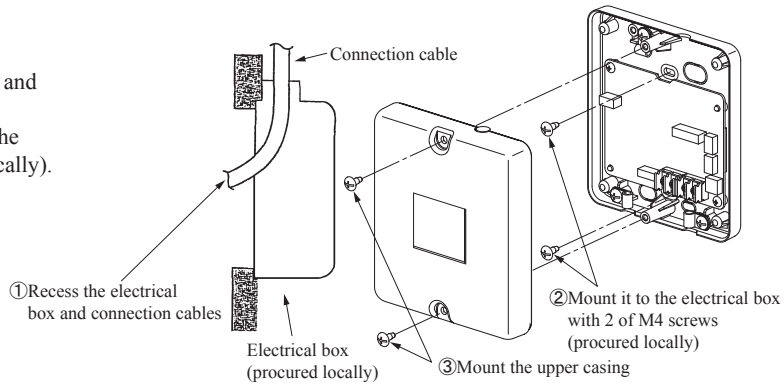
Mounting the interface directly on a wall

①Mount the lower casing of the interface on a flat surface with wood screws provided as standard accessory.
②Mount the upper casing.



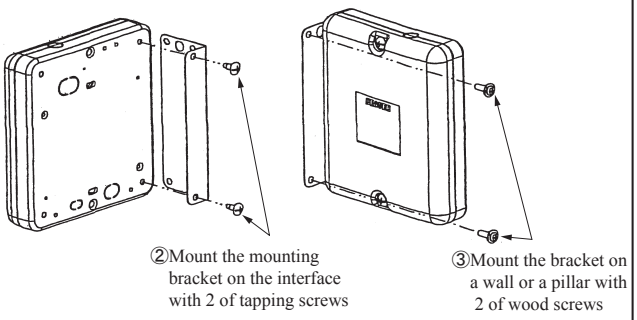
Recessing the interface in the wall

①Recess the electrical box (procured locally) and connection cables in the wall.
②Mount the lower casing of the interface to the electrical box with M4 screws (procured locally).
③Mount the upper casing.



Mounting the interface with the mounting bracket

①Mount the mounting bracket to the interface with tapping screws provided as standard accessory.
②Mount the mounting bracket on wall or the like with wood screws provided as standard accessory.
③Mount the mounting bracket to a wall surface, etc. using the wood screws provided.



Installation check items

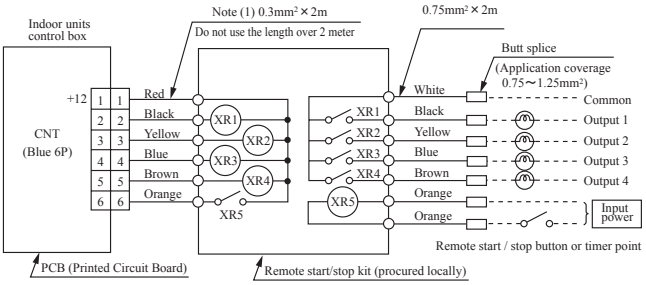
☐ Are the connection cables connected securely to the terminal blocks and connectors?
☐ Are the thickness and length of the connection cables conformed with the standard?

#

Functions of CNT connector

It is available to operate the air conditioning unit and to monitor the operation status with the external control unit (remote display) by sending the input/output signal through CNT connector on the indoor control PCB.

①Connect a external remote control unit (procured locally) to CNT terminal.
②In case of the pulse input, switch OFF the DIP switch SW2-1 on the interface PCB.
③When setting operation permission/prohibition mode, switch OFF the DIP switch SW2-3 on the interface PCB.



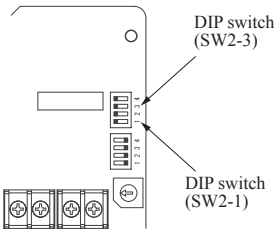
Input/ Output	Function	Output signal		Content
		Relay	ON/OFF	
Output 1	Operation output	XR_1	ON	During air-conditioner operation
Output 2	Heating output	XR_2	ON	During heating operation
Output 3	Compressor operation output	XR_3	ON	During compressor running
Output 4	Malfunction output	XR_4	ON	During anomalous stop

●$XR_{1\sim4}$ are for the DC 12V relay
●XR_5 is a DC 12/24V or AC 220~240V relay
●CNT connector (local) maker, model

Connector	Molex	5264-06
Terminals	Molex	5263T

Input/ Output	Function	SW2-1		SW2-3				Air-Conditioner	Operation by Remote Control
		Setting		Setting	Input signal		Content		
					Level/Pulse	XR_5			
Input	External control input	ON*	Level input	ON*	Level	OFF→ON	External input	ON	Allowed
						ON→OFF		OFF	
				OFF		OFF→ON	Operation permission	OFF	
						ON→OFF	Operation prohibition	OFF	Not allowed
		OFF	Pulse input	ON*	Pulse	OFF→ON	External input	OFF→ON	Allowed
								ON→OFF	
				OFF	Level	OFF→ON	Operation permission	ON	
						ON→OFF	Operation prohibition	OFF	Not allowed

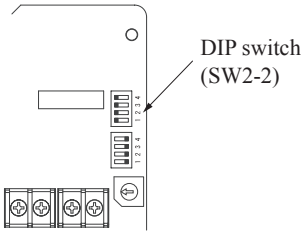
* Factory setting



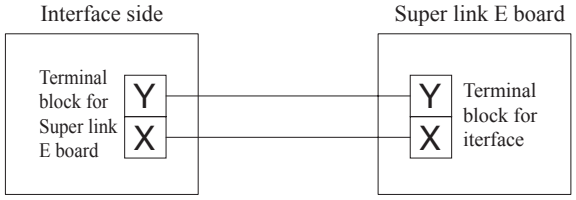
Connection of super link E board

Regarding the connection of super link E board, refer to the instruction manual of super link E board.
For electrical work, power supply for all of units in the super link system must be turned OFF.

①Switch ON the DIP switch SW2-2 (Factory setting: ON) on the interface PCB.
Caution: Wireless remote control attached to the indoor unit can be used in parallel, after connecting the wired remote control. However, some of functions other than the basic functions such as RUN/STOP, Temperature Setting, etc. may not work properly and may have a mismatch between the display and the actual behavior.



②Wiring connection between the interface and the super link E board.



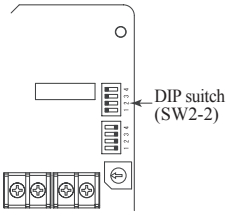
No.	Names of recommended signal wires
1	Shielded wire
2	Vinyl cabtyre round cord
3	Vinyl cabtyre round cable
4	Vinyl insulated wirevinyl sheathed cable for control

Within 200 m 0.5 mm² × 2 cores
Within 300 m 0.75 mm² × 2 cores
Within 400 m 1.25 mm² × 2 cores
Within 600 m 2.0 mm² × 2 cores

③Clamp the connection cables with cable clamps.

#

Connection of wired remote control



Regarding the connection of wired remote control, refer to the instruction manual of wired remote control.

①Switch ON the DIP switch SW2-2 (Factory setting : ON) on the interface PCB.

Caution: Wireless remote control attached to the indoor unit can be used in parallel, after connecting the wired remote control. However, some of functions other than the basic functions such as RUN/STOP, Temperature Setting, etc. may not work properly and may have a mismatch between the display and the actual behavior.

②Wiring connection between the interface and the wired remote control.

Installation and wiring of wired remote control

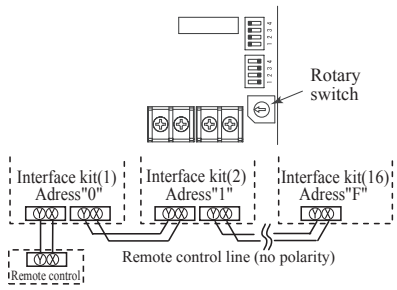
Ⓐ Install the wired remote control with reference to the attached instruction manual of wired remote control.
Ⓑ 0.3mm² x 2-core cable should be used for the wiring of wired remote control.
Ⓒ Maximum length of wiring is 600m.
If the length of wiring exceeds 100m, change the size of cable as mentioned below.
100m-200m: 0.5mm² x 2-core, 300m or less: 0.75mm² x 2-core, 400m or less: 1.25mm² x 2-core, 600m or less: 2.0mm² x 2-core
However, cable size connecting to the terminal of wired remote control should not exceed 0.5mm². Accordingly if the size of connection cable exceeds 0.5mm², be sure to downsize it to 0.5mm² at the nearest section of the wired remote control and waterproof treatment should be done at the connecting section in order to avoid contact failure.
Ⓓ Don't use the multi-core cable to avoid malfunction.
Ⓔ Keep the wiring of wired remote control away from grounding (Don't touch it to any metal frame of building, etc.).
Ⓕ Connect the connection cables to the terminal blocks of the wired remote control and the interface securely (no polarity).

③Clamp the connection cables with cable clamps.

Control of multiple units by a single wired remote control

Multiple units (up to 16) can be controlled by a single wired remote control.
In this case, all units connected with a single wired remote control will operate under the same mode and same setting temperature.

①Connect all the interface with 2-core cables of wired remote control line.
②Set the address of indoor unit for remote control communication from "0" to "F" with the rotary switch SW1 on the interface PCB.
③After turning the power ON, the address of indoor unit can be displayed by pressing AIR CON button on the wired remote control.
Make sure all indoor units connected are displayed in order by pressing ▲ or ▼ button.

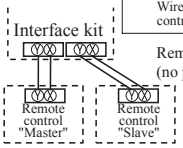


Master/Slave setting wired when 2 of wired remote control are used

Maximum two wired remote control can be connected to one indoor unit (or one group of indoor units)

①Set the DIP switch SW1 on the wired remote control to "Slave" for the slave remote control. (Factory setting : Master)
○ Caution : Remote control sensor is invalid.

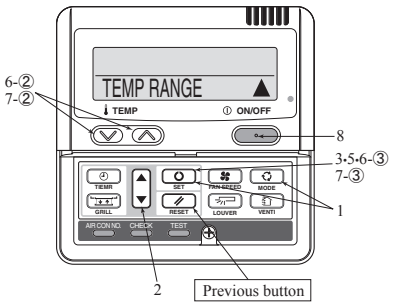
Switch	setting	contents
Wired remote control: SW1	M	Master remote control
	S	Slave remote control



● When using the wireless remote control in parallel with the wired remote control;
Since temperature setting range of wired remote control is different from that of wireless remote control, please adjust the setting range of wired remote control to be the same setting range of wireless remote control by following procedure. (The set temperature may not be displayed correctly on the wireless remote control, unless change of temperature setting range is done.)
Changing procedure of temperature setting range is as follows.

How to set upper and lower limit of temperature sting range

1. Stop the air-conditioner, and press (SET) and (MODE) button at the same time for 3 seconds or more.
   The indication changes to"FUNCTION SET▼"
2. Press ▼ button once, and change to the "TEMP RANGE▲" indication.
3. Press (SET) button, and enter the temperature range setting mode.
4. Confirm that the "Upper limit ▼ " is shown on the display.
5. Press (SET)button to fix.
6. ①Indication: "∨ ∧ SET UP"→"UPPER 28℃ ∨ ∧"
   ②Select the upper limit value 30℃ with temperature setting button △."UPPER30℃∨ " (blinking)
   ③Press (SET) button to fix. "UPPER 30℃" (Displayed for two seconds)
   After the fixed upper limit value displayed for two seconds, the indication will return to"UPPER LIMIT▼".
7. Press ▼ button once, "LOWER LIMIT ▲ " is selected, press (SET) button to fix.
   ①Indication: "∨ ∧ SET UP" → "LOWER 20℃∨ ∧"
   ②Select the lower limit value 18℃ with temperature setting button ▽."LOWER18℃∧ " (blinking)
   ③Press (SET) button to fix. "LOWER 18℃" (Displayed for two seconds)
   After the fixed lower limit value displayed for two seconds, the indication will return to"LOWER LIMIT▼"
8. Press ON/OFF button to finish.



Temperature setting range

Mode	Temperature setting range
Cooling, Heating, Dry, Auto	18-30℃

• It is possible to quit in the middle by pressing ON/OFF button, but the change of setting is incompleted.
• During setting, if pressing (RESET) button, it returns to the previous screen.

#

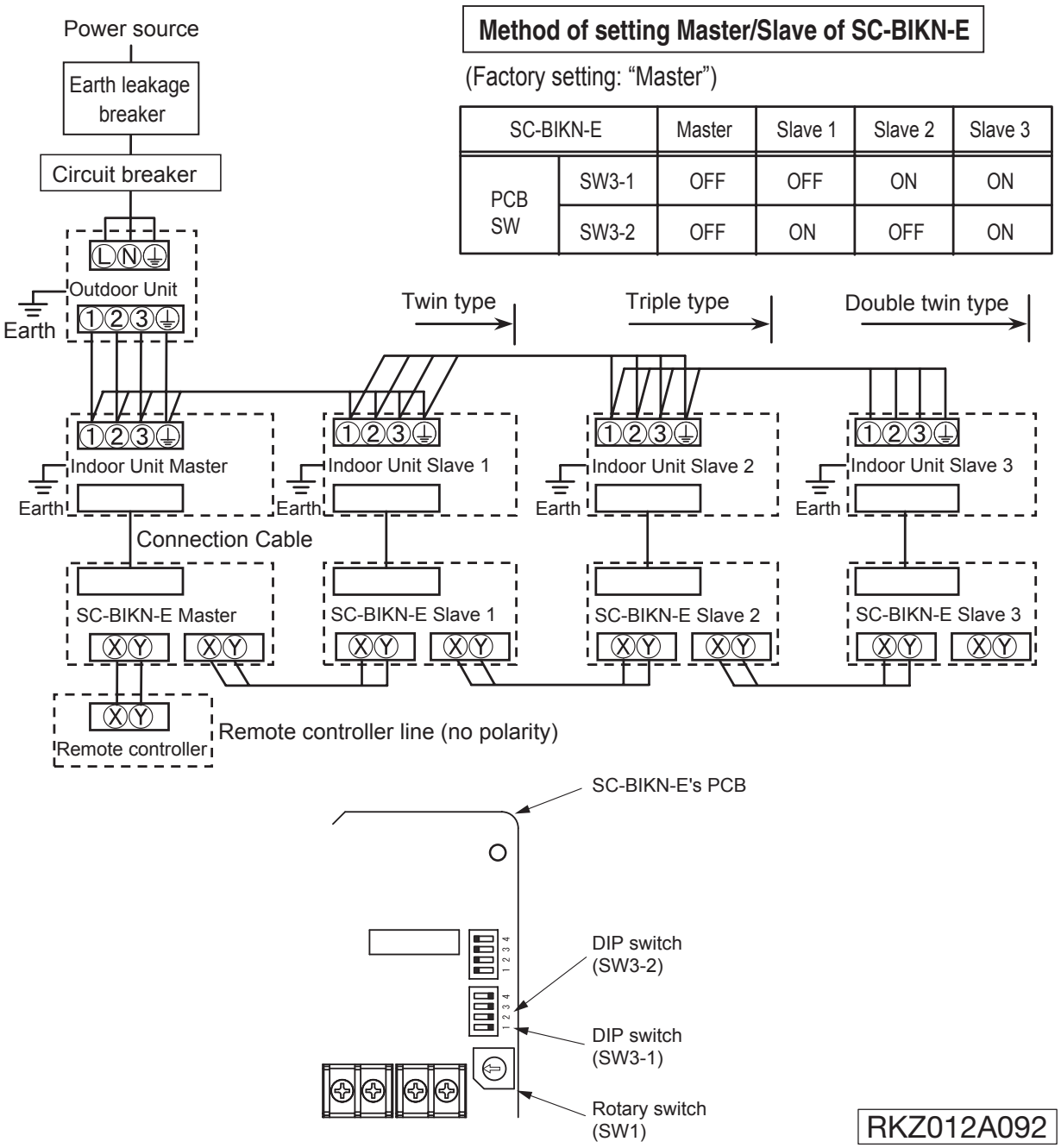
3.5.1 Cable connection for SRK twin/triple installation

①Connect the same pairs number of terminal block "①,②,and ③"and " Ⓧ and Ⓨ " between master and slave indoor units.

②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW1 on SC-BIKN-E's PCB (Printed circuit board).

③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW3-1, 3-2 on SC-BIKN-E's PCB.

④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of SC-BIKN-E

(Factory setting: "Master")

SC-BIKN-E		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW3-1	OFF	OFF	ON	ON
	SW3-2	OFF	ON	OFF	ON

3.6 SUPER LINK E BOARD (SC-ADNA-E)

PJZ012D029F

- Read and understand the instructions completely before starting installation.
- Refer to the instructions for both indoor and outdoor units.

Safety precautions

- Carefully read "Safety precautions" first. Follow the instructions for installation.
- Precautions are grouped into "Warning⚠" and "Caution⚠". The "Warning⚠" group includes items that may lead to serious injury or death if not observed. The items included in the "Caution⚠" group also may lead to serious results under certain conditions. Both groups are crucial for safety installation. Read and understand them carefully.
- After installation, conduct the test operation of the device to check for any abnormalities. Describe how to operate the device to the customer following the installation instruction manual. Instruct the customer to keep this installation instruction for future reference.

⚠Warning

- This device should be installed by the dealer where you purchase the device or a licensed professional shop. If the device is incorrectly installed by the customer, it may result in electric shock or fire.
- Install the device carefully following the installation instruction. If the device is incorrectly installed, it may result in electric shock or fire.
- Use the accessory parts and specified parts for installation. If any parts that do not match the specifications are used, it may result in electric shock or fire.
- A person with the electrical service certification should conduct the service based on the "Technical standards for electrical facilities", "Electrical Wiring Code", and the installation instruction. If the work is done incorrectly, it may result in electric shock or fire.
- Wiring should be securely connected using the specified types of wire. No external force on the wire should be applied to any terminals. If a secure connection is not achieved, it may result in electric shock or fire.

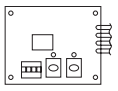
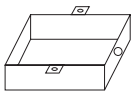
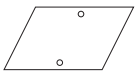
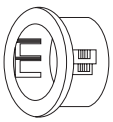
⚠Caution

- Provide ground connection.
  The ground line should never be connected to the gas supply piping, the water supply piping, the lightning conductor rod, nor the telephone ground.If the grounding is improper, it may result in electric shock.
- Do not install the device in the following locations.
  1.Where there is mist/spray of oil or steam such as kitchens.
  2.Where there is corrosive gases such as sulfurous acid gas.
  3.Where there is a device generating electromagnetic waves.
  These may interfere with the control system resulting in the device becoming uncontrollable.
  4.Where flammable volatile materials such as paint thinner and gasoline may exist or where they are handled. This may cause a fire.

1 Application

Indoor-to-outdoor three core communication specification type 3 (since October 2007)

2 Accessories

SL E board	Metal box	Metal cover	Screw for Ground
			M4×8L 2 pieces
Pan head screws	Locking supports	Binding band	Grommet
φ4×8L 2 pieces	To secure the print board and the metal box Made of nylon 4 pieces		

3 Function

Allowing the center console SL1N-E, SL2NA-E, and SL3N-AE/BE to control and monitor the commercial air conditioning unit.

4 Control switching

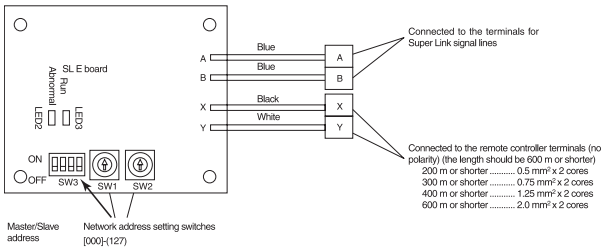
Settings can be changed by the switch SW3 on the SL E board as in the following.

Switch	Symbol	Switch	Remarks
SW3	1	ON	Master
		OFF (default)	Slave
	2	ON	Fixed previous protocol
		OFF (default)	Automatic adjustment of Super Link protocol
	3	ON	Indicates the forced operation stop when abnormality has occurred.
		OFF (default)	Indicates the status of running/stop as it is, when abnormality has occurred.
	4	ON	The hundredth address activated "1"
		OFF (default)	The hundredth address activated "0"

5 Connection Outline

Note for setting the address

- Set the address between 00 and 47 for the previous Super Link connection and between 000 and 127 for the new Super Link connection. (*1)
- Do not set the address overlapping with those of the other devices in the network. (The default is 000)



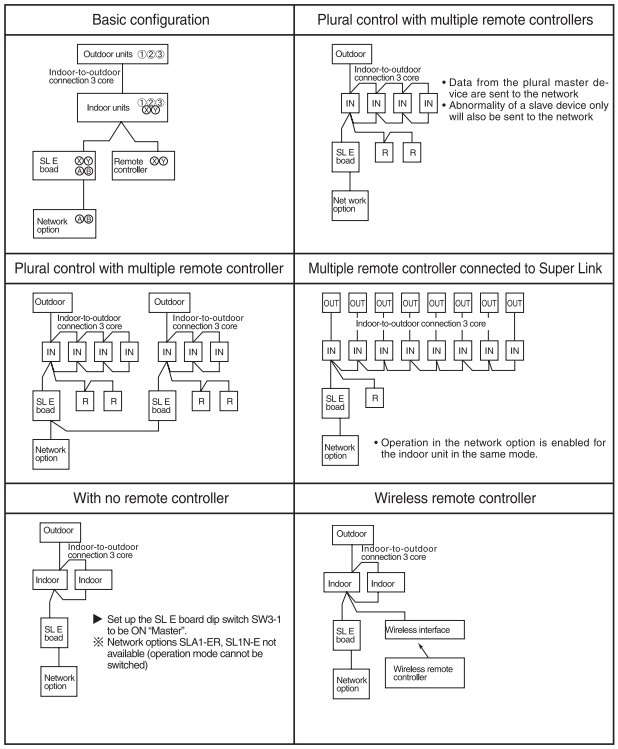
(*1) Whether the actual link is either the new Super Link or the previous Super Link depends on the models of the connected outdoor and indoor units. Consult the agent or the dealer.

Signal line specification

Communication method	Previous Super Link	New Super Link
Line type	MVVS	MVVS
Line diameter	0.75 - 1.25mm²	0.75/1.25mm²
Signal line (total length)	up to 1000m	up to 1500/1000m (*2)
Signal line (maximum length)	up to 1000m	up to 1000m

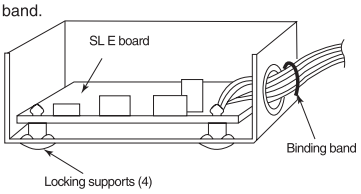
(*2) Up to 1500 m for 0.75 mm², and up to 1000 m for 1.25 mm².
Do not use 2.0 mm². It may cause an error.
(*3) Connect grounding on both ends of the shielding wire.
For the grounding method, refer to the section "6 Installation".

(1) Set the Super Link network address with SW1 (tens place), SW2 (ones place), and SW3 (hundreds place).
(2) Set the SL E board SW3-1 to be ON (Master) when using this without any remote controller (no wired remote controller nor wireless remote controller).
(3) Set up the plural master/slave device using the dip switches on the indoor unit board.
(4) Set up the remote controller master/slave device using the slide switch on the remote controller board.
(5) Set up "0" to "F" using the address rotary switch on the indoor unit board when controlling the indoor unit with the multiple remote controller.

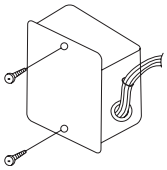


6 Installation

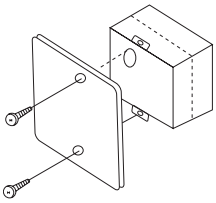
1. When using the metal box (mounted on the indoor unit / mounted on the back of the remote controller):
   (1) Mount the SL E board in the metal box using the locking supports.
   (2) Wiring should go through the provided grommet since then through the wiring to the hole on the Metal box.
   Secure the grommet after inserting the grommet into the Metal box as shown in below figure, then tie the wiring at the outlet of the unit using a binding band.



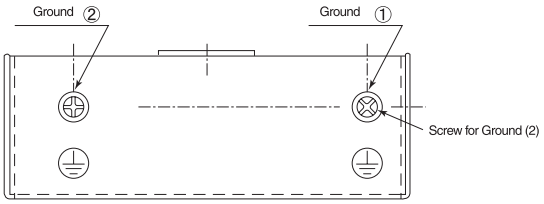
▲ When installed outside the indoor unit, put the metal cover on.



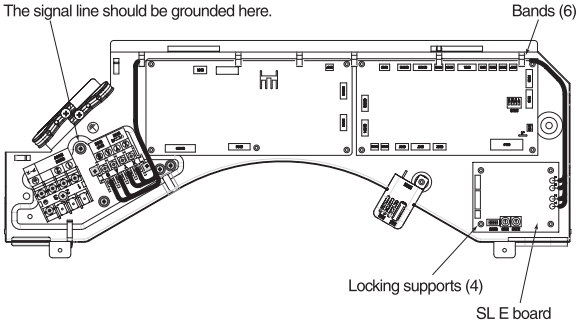
▲ When installed on the back of the remote controller, mount it directly on the remote controller bottom case.



Connect grounding. Connect grounding for the power line to Ground ①, and grounding for the signal line to Ground ② or to the Ground on the indoor unit control box.



2. When connecting to the indoor unit control box (ceiling-concealed type and FDT type only):
   (1) Mount the SL E board in the control box using the locking supports.
   (2) Remove 6 bands from the box and put the wiring through the bands to be secured.



Electrical shock hazard! Make sure to turn the power off for servicing. Be cautious so that no abnormal force should be applied to the wiring. Do not let the SL E board hung by the wiring. Do not damage the board with a screw driver.
The board is sensitive to static electricity. Release the static electricity of your body before servicing.
(you can do this by touching the control board which is grounded).

Location of installation

Install the device at the location where there are no electromagnetic waves nor where there is water and dust. The specified temperature range of the device is 0 to 40°C. Install the device at the location where the ambient temperature stays within the range. If it exceeds the specification, make sure to provide solution such as installing a cooling fan. When used outside of the range, it may cause abnormal operation.

7 Indicator display

Check the LED 3 (green) and LED 2 (red) on the SL E board for flashing.

SL E board LEDs		Inspection mode	Display on the integrated network control device
Red	Green		
Off	Flashing	Normal communication	
Off	Off	• Disconnection in the remote controller communication line (X or Y) • Short-circuit in the remote controller communication line (between X and Y) • Faulty indoor unit remote controller power • Faulty remote controller communication circuit • Faulty CPU on SL E board	No corresponding unit number
One flash	Flashing	• Disconnection in the Super Link signal line (A or B) • Short-circuit in the Super Link signal line (between A and B) • Faulty Super Link signal circuit	
Two flashes	Flashing	• Faulty address setting for the SL E board (Set up the address for previous SL E board : more than 48 new SL E board : more than 128)	
Three flashes	Flashing	• SL E board parent not set up when used without a remote controller • Faulty remote controller communication circuit	E1
Four flashes	Flashing	• Address overlapping for the SL E board and the Super Link network connected indoor unit	E2
Off	Flashing	• Number of connected devices exceeds the specification for the multiple indoor unit control	E10

3.7 Filter set (FDUT series)

PJZ012D081

Installation manual of the blowout duct flange plate kit

Use this kit for a direct -blow and duct-less installation.
Replace the plate at the blow outlet of unit and connect the blowout duct according to the following procedure.
The blow outlet assembled on the unit at the shipping from factory, is for conneting duct which produces static pressure of 10Pa or more at the outside of unit.

CAUTION

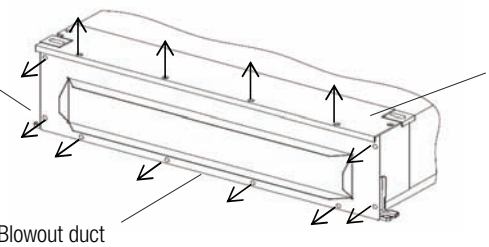
(1) Install the kit while the unit is placed on the floor.
It should not be attempted to install it after installation of the unit in place. Otherwise, it will become very difficult to install it. because related sections could be deformed by the weight of unit.
(2) Do not supply the electric power to the unit during the installation of the kit.
There is the risk of electrical shock or injury be being caught up with revolving parts.

1. Applicable model of unit and type of blowout duct flange plate kit

Type of blowout duct flange plate kit	UT-SAT1EF	UT-SAT2EF	UT-SAT3EF
Model	15, 22, 28, 36	45, 56	71

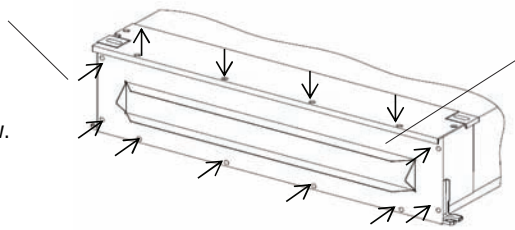
(Figure shows the state that the unit is placed on a floor. Top and bottom are inverted after installing the unit.)
(1) Place the unit as shown below.
(2) Remove the blowout duct flange plate from the unit. Keep the removed tapping screws to reuse later.

◆Location of tapping screws to be removed
15, 22, 28, 36 : 12 places
45, 56 : 14 places
71 : 12 places
Tapping screw size:

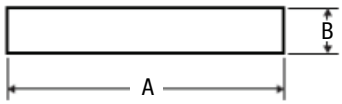


(3) Install the optional blowout duct flange plate using the tapping screws removed at the step (2) above.
Take care not to damage the insulation when tightening the tapping screws.

◆Location of tapping screws to be tightened
15, 22, 28, 36 : 12places
45, 56 : 14 places
71 : 12 places
Reuse removed tapping screw.



3. Instruction
(1) Dimensions of the blowout duct flange of the kit are as shown below.
Dimensions in the following table show the outside measurements of the flange.



	A	B
15,22,28,36	600	70
40,56	860	70
71	1060	70

#

Installation manual for FILTER SET

PJZ012D089

This manual contains installation points for FILTER SET manufactured by MHI.

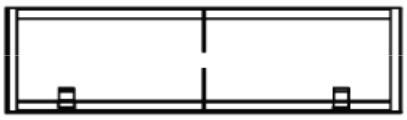
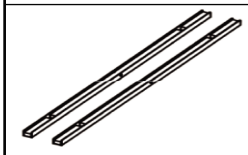
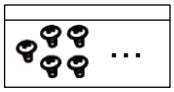
CAUTION

- After unpacking, carry out this work on the ground.
- Do not carry out the work during operation, or there is a danger of being entangled in the rotating parts and getting injured.
- Be sure to cut off the power and stop the unit before maintenance.

1. Applicable model of unit and type of filter set

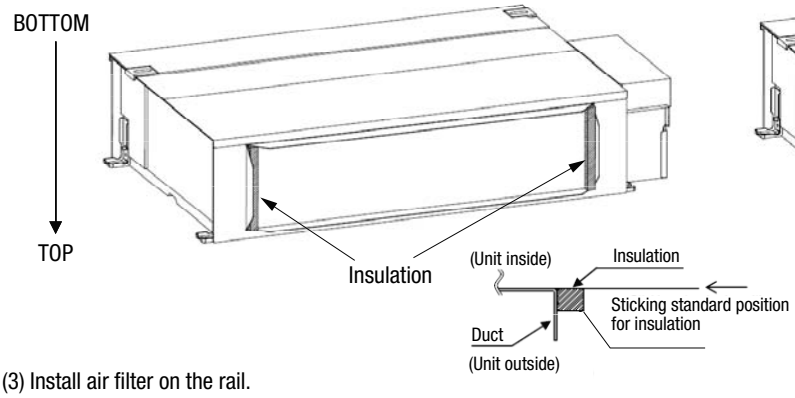
Type of FILTER SET	UT-FL1EF	UT-FL2EF	UT-FL3EF
Model	15, 22, 28, 36	45, 56	71

2. Parts list of FILTER SET

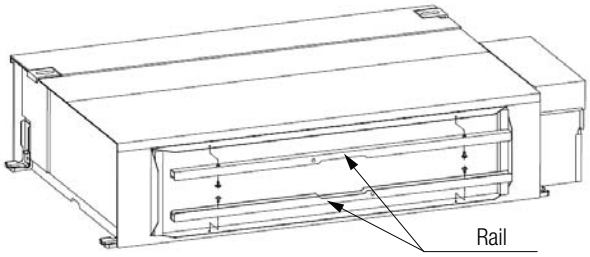
Filter	Rail	Insulation	Bracket	Parts set (screw)
				 UT-FL1EF 5pcs. UT-FL2EF 5pcs. UT-FL3EF 7pcs.
1pc.	2pcs.	2pcs.	1pc.	

● Following procedure (1) to (4) is needed when filter is installed on suction duct flange of unit.

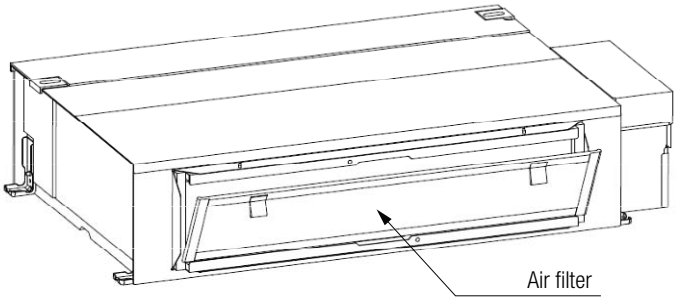
(1) Stick the insulation on both inner sides of the duct flange.

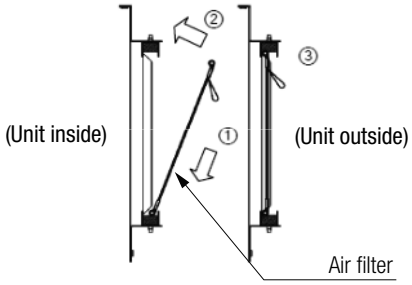


(2) Install the rail on both inner sides of the duct with the screw.



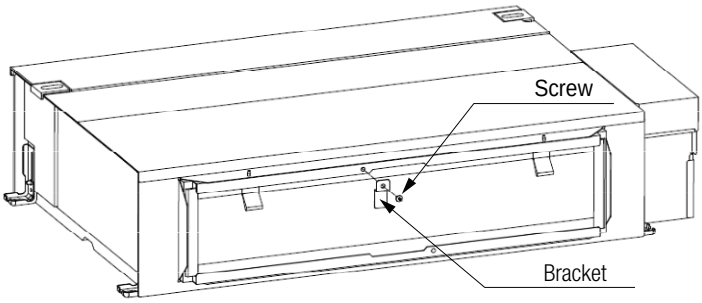
(3) Install air filter on the rail.





Filter installation procedure

(4) Install bracket on the rail with screw.



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4. F1 SERIES SPECIFICATIONS

(1) Ceiling cassette-4way type (FDT)

(a) Single type

Adapted to **RoHS** directive

Item			Model	FDT100VNVF1	
				Indoor unit **FDT100VF1**	Outdoor unit **FDC100VN**
Power source				220-240V ~ 50Hz / 220V ~ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)~ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.76	
		Heating		2.74	
	Max power consumption			3.86	
	Running current	Cooling	A	12.1 / 12.7	
		Heating		12.0 / 12.6	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.62	
	COP	Heating		4.09	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 51 Hi : 40 Me : 37 Lo : 35	49
		Heating			
	Silent mode sound pressure level			–	–
Exterior dimensions (Height x Width x Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 27 PANEL 5.5	81
Compressor type & Q'ty				–	RMT5126MDE2×1
Compressor motor (Starting method)			kW	–	Direct line start
Refrigerant oil (amount, type)			ℓ	–	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (stating method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	75
		Heating			73
Available external static pressure			Pa	0	–
Outside air intake				Possible	–
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	–
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	–	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-T-36W-E	
	Room temperature control			Thermostat by electronics	
	Operation display			–	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") Pipeφ9.52(3/8")x0.8 O/Uφ9.52 (3/8") Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	–	–
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 700	–
Recommended breaker size			A	–	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mm×3 cores（including earth cable）/ Termainal block（Screw fixing type）	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				–	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

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#

Adapted to **RoHS** directive

Item			Model	FDT100VSVF1	
				Indoor unit **FDT100VF1**	Outdoor unit **FDC100VS**
Power source				380-415V 3N~ 50Hz / 380V 3N~ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)~ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.76	
		Heating		2.74	
	Max power consumption			3.86	
	Running current	Cooling	A	4.2 / 4.4	
		Heating		4.2 / 4.4	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	95 / 91	
		Heating		94 / 95	
	EER	Cooling		3.62	
	COP	Heating		4.09	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling	dB(A)	P-Hi : 51 Hi : 40 Me : 37 Lo : 35	49
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 27 PANEL 5.5	83
Compressor type & Q'ty				—	RMT5126MDE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (stating method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-T-36W-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") Pipeφ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 700	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores（including earth cable）/ Termainal block（Screw fixing type）	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

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#

(b) Twin type

Adapted to **RoHS** directive

Item			Model	FDT140VNPVF1	
				Indoor unit **FDT71VF1 (2 units)**	Outdoor unit **FDC140VN**
Power source				220-240V ～ 50Hz / 220V ～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.51	
		Heating		4.58	
	Max power consumption			5.95	
	Running current	Cooling	A	19.8 / 20.7	
		Heating		20.1 / 21.0	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.1	
	COP	Heating		3.49	
	Sound power level	Cooling	dB(A)	64	73
		Heating			
	Sound pressure level	Cooling		P-Hi：46 Hi：35 Me：33 Lo：31	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845×970×370
Exterior appearance (Munsell color)				Plaster White （ 6.8Y8.9/0.2 ）near equivalent	Stucco White （ 4.2Y7.5/1.1 ）near equivalent
Net weight			kg	UNIT 24 PANEL 5.5	81
Compressor type & Q'ty				—	RMT5126MDE2×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (stating method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi：28 Hi：21 Me：19 Lo：17	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-T-36W-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 700	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mm×3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ①：Pipe of O/U～Branch, ②：Pipe of Branch～I/U

PJF000Z314 C

#

Adapted to **RoHS** directive

Item			Model	FDT140VSPVF1	
				Indoor unit FDT71VF1 (2 units)	Outdoor unit FDC140VS
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.51	
		Heating		4.58	Revision
	Max power consumption			5.95	
	Running current	Cooling	A	6.7 / 7.1	
		Heating		6.7 / 7.1	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	97	
		Heating		99 / 98	
	EER	Cooling		3.1	
	COP	Heating		3.49	
	Sound power level	Cooling	dB(A)	64	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 35 Me : 33 Lo : 31	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 24 PANEL 5.5	83
Compressor type & Q'ty				—	RMT5126MDE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (stating method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 28 Hi : 21 Me : 19 Lo : 17	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-T-36W-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 700	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable) / Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

operation \ item	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PJF000Z314

#

Adapted to **RoHS** directive

Item			Model	FDT200VSPVF1	
				Indoor unit **FDT100VF1 (2 units)**	Outdoor unit **FDC200VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.58	
		Heating		6.02	
	Max power consumption			8.36	
	Running current	Cooling	A	9.9 / 10.6	
		Heating		9.1 / 9.8	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	96 / 94	
		Heating		95 / 93	
	EER	Cooling		3.04	
	COP	Heating		3.72	
	Sound power level	Cooling	dB(A)	65	74
		Heating			
	Sound pressure level	Cooling		P-Hi : 51 Hi : 40 Me : 37 Lo : 35	57
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	1,300×970×370
Exterior appearance (Munsell color)				Plaster White （ 6.8Y8.9/0.2 ） near equivalent	Stucco White （ 4.2Y7.5/1.1 ） near equivalent
Net weight			kg	UNIT 27 PANEL 5.5	122
Compressor type & Q'ty				—	GTC5150ND70K×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×2
Fan motor (stating method)			W	140 < Direct line start >	86 x 2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 37 Hi : 27 Me : 24 Lo : 20	150
		Heating			145
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	33(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-T-36W-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 700	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores（including earth cable）/ Termainal block（Screw fixing type）	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Connecting pipe, Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PJF000Z314Ⓐ

#

(c) Triple type

Adapted to **RoHS** directive

Item			Model	FDT200VSTVF1	
				Indoor unit **FDT71VF1 (3 units)**	Outdoor unit **FDC200VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.49	
		Heating		6.12	
	Max power consumption			8.24	
	Running current	Cooling	A	9.7 / 10.2	
		Heating		9.1 / 9.6	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		3.08	
	COP	Heating		3.66	
	Sound power level	Cooling	dB(A)	64	74
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 35 Me : 33 Lo : 31	57
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	Unit 246 × 840 × 840 Panel 35 × 950 × 950	1,300×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 24 PANEL 5.5	122
Compressor type & Q'ty				—	GTC5150ND70K×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×2
Fan motor (stating method)			W	50 < Direct line start >	86 x 2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 28 Hi : 21 Me : 19 Lo : 17	150
		Heating			145
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	33(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-T-36W-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 700	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Connecting pipe, Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(8) Branching pipe set "DIS-TB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PJF000Z314 C

#

(2) Ceiling suspended type (FDEN)

(a) Single type

Adapted to **RoHS** directive

Item			Model	FDEN100VNVF1	
				Indoor unit **FDEN100VF1**	Outdoor unit **FDC100VN**
Power source				220-240V ~ 50Hz / 220V ~ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)~ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.85	
		Heating		2.97	
	Max power consumption			4.16	
	Running current	Cooling	A	12.5 / 13.1	
		Heating		13.0 / 13.6	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.51	
	COP	Heating		3.77	
	Sound power level	Cooling	dB(A)	64	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 44 Me : 41 Lo : 39	49
		Heating			
	Silent mode sound pressure level			–	–
Exterior dimensions (Height x Width x Depth)			mm	250 × 1,620 × 690	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	81
Compressor type & Q'ty				–	RMT5126MDE2× 1
Compressor motor (Starting method)			kW	–	Direct line start
Refrigerant oil (amount, type)			ℓ	–	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (stating method)			W	30 ×2 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	75
		Heating			73
Available external static pressure			Pa	0	–
Outside air intake				Not possible	–
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	–
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	0	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-E1R	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, CHECK: Yellow	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") Pipeφ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	–	–
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose Connectable with VP20(O.D.26)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	–	–
Recommended breaker size			A	–	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mm×3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				–	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

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Adapted to **RoHS** directive

Item			Model	FDEN100VSVF1	
				Indoor unit **FDEN100VF1**	Outdoor unit **FDC100VS**
Power source				380-415V 3N~ 50Hz / 380V 3N~ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)~ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.85	
		Heating		2.97	
	Max power consumption			4.16	
	Running current	Cooling	A	4.2 / 4.4	
		Heating		4.3 / 4.6	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	98	
		Heating		99 / 98	
	EER	Cooling		3.51	
	COP	Heating		3.77	
	Sound power level	Cooling	dB(A)	64	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 44 Me : 41 Lo : 39	49
		Heating			
	Silent mode sound pressure level			–	–
Exterior dimensions (Height x Width x Depth)			mm	250 × 1,620 × 690	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	83
Compressor type & Q'ty				–	RMT5126MDE3× 1
Compressor motor (Starting method)			kW	–	Direct line start
Refrigerant oil (amount, type)			ℓ	–	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (stating method)			W	30 ×2 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	75
		Heating			73
Available external static pressure			Pa	0	–
Outside air intake				Not possible	–
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	–
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	0	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-E1R	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, CHECK: Yellow	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") Pipeφ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	–	–
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20(O.D.26)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	–	–
Recommended breaker size			A	–	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores（including earth cable）/ Termainal block（Screw fixing type）	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				–	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	–	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

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#

(b) Twin type

Adapted to **RoHS** directive

Item			Model	FDEN140VNPVF1	
				Indoor unit FDEN71VF1 (2 units)	Outdoor unit FDC140VN
Power source				220-240V ~ 50Hz / 220V ~ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)~ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)~ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.87	
		Heating		4.59	
	Max power consumption			6.33 Revision	
	Running current	Cooling	A	21.6 / 22.0	
		Heating		20.1 / 21.0	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	98	
		Heating		99	
	EER	Cooling		2.87	
	COP	Heating		3.49	
	Sound power level	Cooling	dB(A)	62	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 50 Hi : 41 Me : 39 Lo : 38	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	210 × 1,320 × 690	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	37	81
Compressor type & Q'ty				—	RMT5126MDE2× 1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (stating method)			W	20 ×2 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	0	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-E1R	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, CHECK: Yellow	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose Connectable with VP20(O.D.26)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mmx3 cores(including earth cable) / Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U~Branch, ② : Pipe of Branch~I/U

PFA003Z973 C

#

Adapted to **RoHS** directive

Item			Model	FDEN140VSPVF1	
				Indoor unit **FDEN71VF1 (2 units)**	Outdoor unit **FDC140VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.87	
		Heating		4.59	
	Max power consumption			6.33	
	Running current	Cooling	A	7.2 / 7.6	
		Heating		6.7 / 7.1	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	98	
		Heating		99 / 98	
	EER	Cooling		2.87	
	COP	Heating		3.49	
	Sound power level	Cooling	dB(A)	62	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 50 Hi : 41 Me : 39 Lo : 38	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	210 × 1,320 × 690	845×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	37	83
Compressor type & Q'ty				—	RMT5126MDE3× 1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (stating method)			W	20 ×2 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	0	20(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-E1R	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, CHECK: Yellow	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20(O.D.26)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores（including earth cable）/ Termainal block（Screw fixing type）	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PFA003Z973 C

#

Adapted to **RoHS** directive

Item			Model	FDEN200VSPVF1	
				Indoor unit FDEN100VF1 (2 units)	Outdoor unit FDC200VS
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.47	
		Heating		5.97	
	Max power consumption			8.22	
	Running current	Cooling	A	9.7 / 10.1	
		Heating		9.1 / 9.5	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	96 / 97	
		Heating		95	
	EER	Cooling		3.09	
	COP	Heating		3.75	
	Sound power level	Cooling	dB(A)	64	74
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 44 Me : 41 Lo : 39	57
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	250 × 1,620 × 690	1,300×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	122
Compressor type & Q'ty				—	GTC5150ND70K× 1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×2
Fan motor (stating method)			W	30 ×2 < Direct line start >	86 ×2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 28 Hi : 26 Me : 23 Lo : 21	150
		Heating			145
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	0	33(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-E1R	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, CHECK: Yellow	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20(O.D.26)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Connecting pipe, Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

PFA003Z973Ⓐ

#

(c) Triple type

Adapted to **RoHS** directive

Item			Model	FDEN200VSTVF1	
				Indoor unit **FDEN71VF1 (3 units)**	Outdoor unit **FDC200VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.40	
		Heating		5.90	
	Max power consumption			8.13	
	Running current	Cooling	A	9.6 / 10.0	
		Heating		9.0 / 9.4	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	96 / 97	
		Heating		95	
	EER	Cooling		3.13	
	COP	Heating		3.80	
	Sound power level	Cooling	dB(A)	62	74
		Heating			
	Sound pressure level	Cooling		P-Hi : 50 Hi : 41 Me : 39 Lo : 38	57
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	210 × 1,320 × 690	1,300×970×370
Exterior appearance (Munsell color)				Plaster White (6.8Y8.9/0.2) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	37	122
Compressor type & Q'ty				—	GTC5150ND70K× 1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×2
Fan motor (stating method)			W	20 ×2 < Direct line start >	86 ×2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 14 Lo : 12	150
		Heating			145
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	0	33(Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-E1R	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, CHECK: Yellow	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20(O.D.26)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Connecting pipe, Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(8) Branching pipe set "DIS-TB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

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#

(3) Duct connected-Low/Middle static pressure type (FDUM)

(a) Single type

Adapted to **RoHS** directive

Item			Model	FDUM100VNVF1	
				Indoor unit **FDUM100VF1**	Outdoor unit **FDC100VN**
Power source				220-240V ~ 50Hz / 220V ~ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)~ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.80	
		Heating		3.02	
	Max power consumption			4.23	
	Running current	Cooling	A	12.6 / 13.2	
		Heating		13.5 / 14.1	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	97 / 96	
		Heating		97	
	EER	Cooling		3.57	
	COP	Heating		3.71	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	49
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	280 × 1370 × 740	845×970×370
Exterior appearance (Munsell color)				—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	81
Compressor type & Q'ty				—	RMT5126MDE2×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (stating method)			W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-KIT3-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U φ9.52 (3/8") Pipe φ9.52(3/8")x0.8 O/U φ9.52 (3/8") Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mmx3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				UM-FL3EF	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27℃	19℃	35℃	24℃	60Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(7) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(8)The external static pressure setting can be changed to 10-100Pa. (For RC-EX1A and RC-E5 only)

Revision

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#

Adapted to **RoHS** directive

Item			Model	FDUM100VSVF1	
				Indoor unit **FDUM100VF1**	Outdoor unit **FDC100VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.80	
		Heating		3.02	
	Max power consumption			4.23	
	Running current	Cooling	A	4.2 / 4.4	
		Heating		4.5 / 4.7	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	96 / 97	
		Heating		97 / 98	
	EER	Cooling		3.57	
	COP	Heating		3.71	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	49
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	280 × 1370 × 740	845×970×370
Exterior appearance (Munsell color)				—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	83
Compressor type & Q'ty				—	RMT5126MDE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (stating method)			W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-KIT3-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U φ9.52 (3/8") Pipe φ9.52(3/8")x0.8 O/U φ9.52 (3/8") Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mm×3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				UM-FL3EF	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit	Standards
	DB	WB	DB	WB		
Cooling	27℃	19℃	35℃	24℃	60Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(8)The external static pressure setting can be changed to 10-100Pa. (For RC-EX1A and RC-E5 only)

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#

(b) Twin type

Adapted to **RoHS** directive

Item			Model	FDUM140VNPVF1	
				Indoor unit **FDUM71VF1 (2 units)**	Outdoor unit **FDC140VN**
Power source				220-240V ～ 50Hz / 220V ～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.78	
		Heating		4.60	
	Max power consumption			6.21	
	Running current	Cooling	A	21.4 / 22.4	
		Heating		20.6 / 21.5	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		2.93	
	COP	Heating		3.48	
	Sound power level	Cooling	dB(A)	65	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 29 Lo : 25	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	280 × 950 × 635	845×970×370
Exterior appearance (Munsell color)				—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	34	81
Compressor type & Q'ty				—	RMT5126MDE2×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (stating method)			W	130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-KIT3-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				UM-FL2EF	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27℃	19℃	35℃	24℃	35Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(9) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(10)The external static pressure setting can be changed to 10-100Pa. (For RC-EX1A and RC-E5 only)

PJG000Z159 C

#

Adapted to **RoHS** directive

Item			Model	FDUM140VSPVF1	
				Indoor unit **FDUM71VF1 (2 units)**	Outdoor unit **FDC140VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.78	
		Heating		4.60	
	Max power consumption			6.21	
	Running current	Cooling	A	7.1 / 7.5	
		Heating		6.8 / 7.2	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	97	
		Heating		98 / 97	
	EER	Cooling		2.93	
	COP	Heating		3.48	
	Sound power level	Cooling	dB(A)	65	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 29 Lo : 25	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	280 × 950 × 635	845×970×370
Exterior appearance (Munsell color)				—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	34	83
Compressor type & Q'ty				—	RMT5126MDE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (stating method)			W	130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-KIT3-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Edging
Optional parts				UM-FL2EF	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27℃	19℃	35℃	24℃	35Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(9) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(10)The external static pressure setting can be changed to 10-100Pa. (For RC-EX1A and RC-E5 only)

PJG000Z159 C

#

Adapted to **RoHS** directive

Item			Model	FDUM200VSPVF1	
				Indoor unit **FDUM100VF1 (2 units)**	Outdoor unit **FDC200VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.86	
		Heating		7.22	
	Max power consumption			9.17	
	Running current	Cooling	A	10.5 / 11.1	
		Heating		11.1 / 11.7	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	94	
		Heating		94	
	EER	Cooling		2.92	
	COP	Heating		3.10	
	Sound power level	Cooling	dB(A)	65	74
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	57
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	280 × 1370 × 740	1,300×970×370
Exterior appearance (Munsell color)				—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	122
Compressor type & Q'ty				—	GTC5150ND70K×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×2
Fan motor (stating method)			W	100 + 130 < Direct line start >	86 x 2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	150
		Heating			145
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	33 (Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-KIT3-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Connecting pipe, Edging
Optional parts				UM-FL3EF	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27℃	19℃	35℃	24℃	60Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(9) Static pressure of optional air filter "UM-FL3EF" is 5Pa initially.
(10)The external static pressure setting can be changed to 10-100Pa. (For RC-EX1A and RC-E5 only)

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#

(c) Triple type

Adapted to **RoHS** directive

Item			Model	FDUM200VSTVF1	
				Indoor unit **FDUM71VF1 (3 units)**	Outdoor unit **FDC200VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.57	
		Heating		6.26	
	Max power consumption			8.34	
	Running current	Cooling	A	10.1 / 10.6	
		Heating		9.6 / 10.1	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	94	
		Heating		94	
	EER	Cooling		3.04	
	COP	Heating		3.58	
	Sound power level	Cooling	dB(A)	65	74
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 29 Lo : 25	57
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	280 × 950 × 635	1,300×970×370
Exterior appearance (Munsell color)				—	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	34	122
Compressor type & Q'ty				—	GTC5150ND70K×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×2
Fan motor (stating method)			W	130 < Direct line start >	86 x 2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	150
		Heating			145
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	33 (Crank case heater)
Operation control	Remote control			(option) wired : RC-EX1A , RC-E5 , RCH-E3 wireless : RCN-KIT3-E	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	Built-in Drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	Connecting pipe, Edging
Optional parts				UM-FL2EF	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27℃	19℃	35℃	24℃	35Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(8) Branching pipe set "DIS-TB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U
(9) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(10)The external static pressure setting can be changed to 10-100Pa. (For RC-EX1A and RC-E5 only)

PJG000Z159 C

#

(4) Floor standing type (FDF)

(a) Single type

Adapted to **RoHS** directive

Item			Model	FDF100VNVD1	
				Indoor unit FDF100VD1	Outdoor unit FDC100VN
Power source				220-240V ～ 50Hz / 220V ～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.12	
		Heating		3.10	
	Max power consumption			4.37	
	Running current	Cooling	A	13.8 / 14.5	
		Heating		13.8 / 14.4	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	98	
		Heating		98	
	EER	Cooling		3.21	
	COP	Heating		3.61	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	49
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	1,850 × 600 × 320	845×970×370
Exterior appearance (Munsell color)				Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	81
Compressor type & Q'ty				—	RMT5126MDE2×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			RC-E5 (Installed) ／ wireless : RCN-KIT3-E (option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U φ9.52 (3/8") Pipe φ9.52(3/8")x0.8 O/U φ9.52 (3/8")	
				Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose Connectable with VP20	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6mm×3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

operation \ item	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.

PGA000Z812 D

#

Adapted to **RoHS** directive

Item			Model	FDF100VSVD1	
				Indoor unit **FDF100VD1**	Outdoor unit **FDC100VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.12	
		Heating		3.10	
	Max power consumption			4.37	
	Running current	Cooling	A	4.6 / 4.8	
		Heating		4.6 / 4.8	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	98 / 99	
		Heating		97 / 98	
	EER	Cooling		3.21	
	COP	Heating		3.61	
	Sound power level	Cooling / Heating	dB(A)	65	70
	Sound pressure level	Cooling / Heating	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	49
	Silent mode sound pressure level		dB(A)	—	—
Exterior dimensions (Height x Width x Depth)			mm	1,850 × 600 × 320	845×970×370
Exterior appearance (Munsell color)				Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	83
Compressor type & Q'ty				—	RMT5126MDE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating	m^3/min		73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			RC-E5 (Installed) ／ wireless : RCN-KIT3-E (option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U φ9.52 (3/8") Pipe φ9.52(3/8")x0.8 O/U φ9.52 (3/8")	
				Gas line: φ15.88 (5/8") φ15.88(5/8")x1.0 φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

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#

(b) Twin type

Adapted to **RoHS** directive

Item			Model	FDF140VNPVD1	
				Indoor unit **FDF71VD1 (2 units)**	Outdoor unit **FDC140VN**
Power source				220-240V ～ 50Hz / 220V ～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.16	
		Heating		5.01	
	Max power consumption			6.71	
	Running current	Cooling	A	22.9 / 23.9	
		Heating		22.2 / 23.2	
	Inrush current, max current			5 , 24	
	Power factor	Cooling	%	98	
		Heating		98	
	EER	Cooling		2.71	
	COP	Heating		3.19	
	Sound power level	Cooling	dB(A)	61	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 42 Hi : 39 Me : 35 Lo : 33	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	1,850 × 600 × 320	845×970×370
Exterior appearance (Munsell color)				Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	81
Compressor type & Q'ty				—	RMT5126MDE2×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 18 Hi : 16 Me : 14 Lo : 12	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			RC-E5 (Installed) ／ wireless : RCN-KIT3-E (option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

operation \ item	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

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#

Adapted to **RoHS** directive

Item			Model	FDF140VSPVD1	
				Indoor unit **FDF71VD1 (2 units)**	Outdoor unit **FDC140VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	14.0 [5.0(Min.)～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	16.0 [4.0(Min.)～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.16	
		Heating		5.01	
	Max power consumption			6.71	
	Running current	Cooling	A	7.6 / 8.0	
		Heating		7.4 / 7.8	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	98	
		Heating		98	
	EER	Cooling		2.71	
	COP	Heating		3.19	
	Sound power level	Cooling	dB(A)	61	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 42 Hi : 39 Me : 35 Lo : 33	51
		Heating			
	Silent mode sound pressure level			—	—
Exterior dimensions (Height x Width x Depth)			mm	1,850 × 600 × 320	845×970×370
Exterior appearance (Munsell color)				Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	83
Compressor type & Q'ty				—	RMT5126MDE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 18 Hi : 16 Me : 14 Lo : 12	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	20 (Crank case heater)
Operation control	Remote control			RC-E5 (Installed) ／ wireless : RCN-KIT3-E (option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8")	
				Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ15.88(5/8")x1.0 O/Uφ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

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#

Adapted to **RoHS** directive

Item			Model	FDF200VSPVD1	
				Indoor unit **FDF100VD1 (2 units)**	Outdoor unit **FDC200VS**
Power source				380-415V 3N～ 50Hz / 380V 3N～ 60Hz	
Operation data	Nominal cooling capacity (range)		kW	20.0 [7.0(Min.)～ 22.4(Max.)]	
	Nominal heating capacity (range)		kW	22.4 [7.6(Min.)～ 25.0(Max.)]	
	Power consumption	Cooling	kW	6.50	
		Heating		6.42	
	Max power consumption			8.26	
	Running current	Cooling	A	9.6 / 10.1	
		Heating		9.5 / 10.0	
	Inrush current, max current			5 , 19	
	Power factor	Cooling	%	98	
		Heating		98	
	EER	Cooling		3.08	
	COP	Heating		3.49	
	Sound power level	Cooling / Heating	dB(A)	65	74
	Sound pressure level	Cooling / Heating	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	57
	Silent mode sound pressure level		dB(A)	—	—
Exterior dimensions (Height x Width x Depth)			mm	1,850 × 600 × 320	1,300×970×370
Exterior appearance (Munsell color)				Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	122
Compressor type & Q'ty				—	GTC5150ND70K×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (amount, type)			ℓ	—	1.45 M-MA32R
Refrigerant (Type, amount, pre-charge length)			kg	R410A 5.4kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×2
Fan motor (stating method)			W	157 < Direct line start >	86 x 2 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	150
		Heating			145
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for Compressor)
Electric heater			W	—	33 (Crank case heater)
Operation control	Remote control			RC-E5 (Installed) ／ wireless : RCN-KIT3-E (option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/Uφ9.52 (3/8") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/Uφ9.52 (3/8") Gas line: I/Uφ15.88 (5/8") ②φ15.88(5/8")x1.0 ①φ22.22(7/8")x1.6 O/Uφ22.22 (7/8")	
	Connecting method			Flare piping	Liquid : Flare ／ Gas : Brazing
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.70m	
	Vertical height diff. between O.U. and I.U.		m	Max.30m（Outdoor unit is higher）	Max.15m（Outdoor unit is lower）
	Drain hose			Hose Connectable with VP20	Holes size φ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			φ1.6㎜x3 cores(including earth cable)/ Termainal block(Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	Connecting pipe, Edging
Optional parts				—	

Note (1) The data are measured at the following conditions. The pipe length is 7.5m.

item / operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WB1"×1(option). ① : Pipe of O/U～Branch, ② : Pipe of Branch～I/U

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5. Lot10 SPECIFICATIONS

(1) Ceiling cassette-4way type (FDT)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDT100VF
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.7	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.05	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.30	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.59	kW
Tj=2℃	Pdh	5.20	kW
Tj=7℃	Pdh	3.41	kW
Tj=12℃	Pdh	3.50	kW
Tj=bivalent temperature	Pdh	8.59	kW
Tj=operating limit	Pdh	6.25	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	28	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.61	A+
heating / Average	SCOP/A	3.92	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.65	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.62	-
Tj=30℃	EERd	5.17	-
Tj=25℃	EERd	8.10	-
Tj=20℃	EERd	10.86	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.75	-
Tj=7℃	COPd	5.17	-
Tj=12℃	COPd	6.44	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	625	kWh/a
heating / Average	Qhe	3466	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a
Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2220	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDT100VF
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.7	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.05	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.30	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.59	kW
Tj=2℃	Pdh	5.20	kW
Tj=7℃	Pdh	3.41	kW
Tj=12℃	Pdh	3.50	kW
Tj=bivalent temperature	Pdh	8.59	kW
Tj=operating limit	Pdh	6.25	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	48	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.57	A
heating / Average	SCOP/A	3.91	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.65	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.62	-
Tj=30℃	EERd	5.17	-
Tj=25℃	EERd	8.10	-
Tj=20℃	EERd	10.86	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.75	-
Tj=7℃	COPd	5.17	-
Tj=12℃	COPd	6.45	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	629	kWh/a
heating / Average	Qhe	3470	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a
Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2220	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDT50VF x 2
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.5	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.96	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.50	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.41	kW
Tj=2℃	Pdh	5.11	kW
Tj=7℃	Pdh	3.29	kW
Tj=12℃	Pdh	3.55	kW
Tj=bivalent temperature	Pdh	8.41	kW
Tj=operating limit	Pdh	6.45	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	38	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.89	A+
heating / Average	SCOP/A	3.81	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.54	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.40	-
Tj=30℃	EERd	5.38	-
Tj=25℃	EERd	8.94	-
Tj=20℃	EERd	12.33	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.51	-
Tj=2℃	COPd	3.57	-
Tj=7℃	COPd	5.39	-
Tj=12℃	COPd	6.51	-
Tj=bivalent temperature	COPd	2.51	-
Tj=operating limit	COPd	2.35	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	595	kWh/a
heating / Average	Qhe	3488	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a
Other items			
Sound power level(indoor)	Lwa	55	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	1200	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDT50VF x 2
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.5	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.96	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.50	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.41	kW
Tj=2℃	Pdh	5.11	kW
Tj=7℃	Pdh	3.29	kW
Tj=12℃	Pdh	3.55	kW
Tj=bivalent temperature	Pdh	8.41	kW
Tj=operating limit	Pdh	6.45	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	58	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.85	A+
heating / Average	SCOP/A	3.81	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.54	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.40	-
Tj=30℃	EERd	5.38	-
Tj=25℃	EERd	8.94	-
Tj=20℃	EERd	12.33	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.51	-
Tj=2℃	COPd	3.57	-
Tj=7℃	COPd	5.39	-
Tj=12℃	COPd	6.51	-
Tj=bivalent temperature	COPd	2.51	-
Tj=operating limit	COPd	2.35	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	599	kWh/a
heating / Average	Qhe	3492	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a
Other items			
Sound power level(indoor)	Lwa	55	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	1200	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDT100VF1
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.7	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.61	A+
heating / Average	SCOP/A	3.92	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.05	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.65	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.30	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.62	-
Tj=30℃	EERd	5.17	-
Tj=25℃	EERd	8.10	-
Tj=20℃	EERd	10.86	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.59	kW
Tj=2℃	Pdh	5.20	kW
Tj=7℃	Pdh	3.41	kW
Tj=12℃	Pdh	3.50	kW
Tj=bivalent temperature	Pdh	8.59	kW
Tj=operating limit	Pdh	6.25	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.75	-
Tj=7℃	COPd	5.17	-
Tj=12℃	COPd	6.44	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	28	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	625	kWh/a
heating / Average	Qhe	3466	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2220	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDT100VF1
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.7	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.05	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.30	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.59	kW
Tj=2℃	Pdh	5.20	kW
Tj=7℃	Pdh	3.41	kW
Tj=12℃	Pdh	3.50	kW
Tj=bivalent temperature	Pdh	8.59	kW
Tj=operating limit	Pdh	6.25	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	48	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.57	A
heating / Average	SCOP/A	3.91	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.65	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.62	-
Tj=30℃	EERd	5.17	-
Tj=25℃	EERd	8.10	-
Tj=20℃	EERd	10.86	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.75	-
Tj=7℃	COPd	5.17	-
Tj=12℃	COPd	6.45	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	629	kWh/a
heating / Average	Qhe	3470	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a
Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2220	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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(2) Ceiling cassette-4way compact type (FDTC)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDTC50VF x 2
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.4	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.17	A
heating / Average	SCOP/A	3.84	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	Pdh	7.87	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.53	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.20	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.08	-
Tj=30℃	EERd	4.47	-
Tj=25℃	EERd	7.35	-
Tj=20℃	EERd	11.05	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.32	kW
Tj=2℃	Pdh	5.06	kW
Tj=7℃	Pdh	3.25	kW
Tj=12℃	Pdh	3.60	kW
Tj=bivalent temperature	Pdh	8.32	kW
Tj=operating limit	Pdh	6.35	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.38	-
Tj=2℃	COPd	3.69	-
Tj=7℃	COPd	5.42	-
Tj=12℃	COPd	6.55	-
Tj=bivalent temperature	COPd	2.38	-
Tj=operating limit	COPd	2.35	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	38	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	678	kWh/a
heating / Average	Qhe	3424	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	810	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDTC50VF x 2
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.4	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.13	A
heating / Average	SCOP/A	3.84	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.87	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.53	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.20	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.08	-
Tj=30℃	EERd	4.47	-
Tj=25℃	EERd	7.35	-
Tj=20℃	EERd	11.05	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.32	kW
Tj=2℃	Pdh	5.06	kW
Tj=7℃	Pdh	3.25	kW
Tj=12℃	Pdh	3.60	kW
Tj=bivalent temperature	Pdh	8.32	kW
Tj=operating limit	Pdh	6.35	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.38	-
Tj=2℃	COPd	3.69	-
Tj=7℃	COPd	5.42	-
Tj=12℃	COPd	6.55	-
Tj=bivalent temperature	COPd	2.38	-
Tj=operating limit	COPd	2.35	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	58	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	682	kWh/a
heating / Average	Qhe	3428	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	810	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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(3) Ceiling suspended type (FDEN)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDEN100VF1
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.2	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.13	A
heating / Average	SCOP/A	3.80	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.80	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.40	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.50	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.51	-
Tj=30℃	EERd	4.88	-
Tj=25℃	EERd	7.35	-
Tj=20℃	EERd	9.78	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.20	kW
Tj=2℃	Pdh	5.00	kW
Tj=7℃	Pdh	3.22	kW
Tj=12℃	Pdh	3.76	kW
Tj=bivalent temperature	Pdh	8.20	kW
Tj=operating limit	Pdh	6.45	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.56	-
Tj=2℃	COPd	3.65	-
Tj=7℃	COPd	5.24	-
Tj=12℃	COPd	5.88	-
Tj=bivalent temperature	COPd	2.56	-
Tj=operating limit	COPd	2.35	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	98	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	683	kWh/a
heating / Average	Qhe	3387	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	64	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	1680	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDEN50VF x 2
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.2	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	4.80	B
heating / Average	SCOP/A	3.80	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.11	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.09	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.19	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.21	-
Tj=30℃	EERd	4.61	-
Tj=25℃	EERd	6.58	-
Tj=20℃	EERd	9.11	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.65	kW
Tj=2℃	Pdh	5.25	kW
Tj=7℃	Pdh	3.40	kW
Tj=12℃	Pdh	3.70	kW
Tj=bivalent temperature	Pdh	8.65	kW
Tj=operating limit	Pdh	6.30	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.51	-
Tj=2℃	COPd	3.62	-
Tj=7℃	COPd	5.35	-
Tj=12℃	COPd	5.97	-
Tj=bivalent temperature	COPd	2.51	-
Tj=operating limit	COPd	2.21	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	23	W
standby mode	Psb	23	W
thermostat-off mode	Pto	66	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	730	kWh/a
heating / Average	Qhe	3388	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	660	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDEN100VF1
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.2	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.10	A
heating / Average	SCOP/A	3.80	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.80	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.40	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.50	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.51	-
Tj=30℃	EERd	4.88	-
Tj=25℃	EERd	7.35	-
Tj=20℃	EERd	9.78	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.20	kW
Tj=2℃	Pdh	5.00	kW
Tj=7℃	Pdh	3.22	kW
Tj=12℃	Pdh	3.76	kW
Tj=bivalent temperature	Pdh	8.20	kW
Tj=operating limit	Pdh	6.45	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.56	-
Tj=2℃	COPd	3.65	-
Tj=7℃	COPd	5.24	-
Tj=12℃	COPd	5.88	-
Tj=bivalent temperature	COPd	2.56	-
Tj=operating limit	COPd	2.35	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	118	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	687	kWh/a
heating / Average	Qhe	3390	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	64	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	1680	m3/h
Rated air flow(outdoor)	-	4500	m3/h

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDEN50VF x 2
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.2	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.11	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.19	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.65	kW
Tj=2℃	Pdh	5.25	kW
Tj=7℃	Pdh	3.40	kW
Tj=12℃	Pdh	3.70	kW
Tj=bivalent temperature	Pdh	8.65	kW
Tj=operating limit	Pdh	6.30	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	23	W
standby mode	Psb	23	W
thermostat-off mode	Pto	86	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	4.77	B
heating / Average	SCOP/A	3.80	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.09	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.21	-
Tj=30℃	EERd	4.61	-
Tj=25℃	EERd	6.58	-
Tj=20℃	EERd	9.11	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.51	-
Tj=2℃	COPd	3.62	-
Tj=7℃	COPd	5.35	-
Tj=12℃	COPd	5.97	-
Tj=bivalent temperature	COPd	2.51	-
Tj=operating limit	COPd	2.21	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	734	kWh/a
heating / Average	Qhe	3392	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	660	m3/h
Rated air flow(outdoor)	-	4500	m3/h

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(4) Duct connected-Low/Middle static pressure type (FDUM)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDUM100VF
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.06	B
heating / Average	SCOP/A	3.94	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.86	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.44	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.58	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.57	-
Tj=30℃	EERd	4.40	-
Tj=25℃	EERd	7.07	-
Tj=20℃	EERd	10.11	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.23	kW
Tj=2℃	Pdh	5.00	kW
Tj=7℃	Pdh	3.22	kW
Tj=12℃	Pdh	3.70	kW
Tj=bivalent temperature	Pdh	8.23	kW
Tj=operating limit	Pdh	6.64	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.70	-
Tj=7℃	COPd	5.45	-
Tj=12℃	COPd	6.64	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	45	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	692	kWh/a
heating / Average	Qhe	3303	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2160	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDUM50VF x 2
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	4.81	B
heating / Average	SCOP/A	3.82	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.81	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.49	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.40	kW
Tj=25℃	Pdc	4.75	kW
Tj=20℃	Pdc	4.10	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.52	-
Tj=30℃	EERd	4.35	-
Tj=25℃	EERd	6.33	-
Tj=20℃	EERd	9.32	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.25	kW
Tj=2℃	Pdh	5.05	kW
Tj=7℃	Pdh	3.25	kW
Tj=12℃	Pdh	3.55	kW
Tj=bivalent temperature	Pdh	8.25	kW
Tj=operating limit	Pdh	6.35	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.50	-
Tj=2℃	COPd	3.66	-
Tj=7℃	COPd	5.24	-
Tj=12℃	COPd	6.23	-
Tj=bivalent temperature	COPd	2.50	-
Tj=operating limit	COPd	2.35	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	18	W
standby mode	Psb	18	W
thermostat-off mode	Pto	64	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	728	kWh/a
heating / Average	Qhe	3413	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	780	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDUM100VF
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.00	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.03	B
heating / Average	SCOP/A	3.94	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.86	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.44	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.58	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.57	-
Tj=30℃	EERd	4.40	-
Tj=25℃	EERd	7.07	-
Tj=20℃	EERd	10.11	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.23	kW
Tj=2℃	Pdh	5.00	kW
Tj=7℃	Pdh	3.22	kW
Tj=12℃	Pdh	3.70	kW
Tj=bivalent temperature	Pdh	8.23	kW
Tj=operating limit	Pdh	6.64	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.70	-
Tj=7℃	COPd	5.45	-
Tj=12℃	COPd	6.64	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	65	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	696	kWh/a
heating / Average	Qhe	3307	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2160	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDUM50VF x 2
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	4.78	B
heating / Average	SCOP/A	3.81	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.81	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.49	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.40	kW
Tj=25℃	Pdc	4.75	kW
Tj=20℃	Pdc	4.10	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.52	-
Tj=30℃	EERd	4.35	-
Tj=25℃	EERd	6.33	-
Tj=20℃	EERd	9.32	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.25	kW
Tj=2℃	Pdh	5.05	kW
Tj=7℃	Pdh	3.25	kW
Tj=12℃	Pdh	3.55	kW
Tj=bivalent temperature	Pdh	8.25	kW
Tj=operating limit	Pdh	6.35	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.50	-
Tj=2℃	COPd	3.66	-
Tj=7℃	COPd	5.24	-
Tj=12℃	COPd	6.23	-
Tj=bivalent temperature	COPd	2.50	-
Tj=operating limit	COPd	2.35	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	18	W
standby mode	Psb	18	W
thermostat-off mode	Pto	84	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	732	kWh/a
heating / Average	Qhe	3416	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	780	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDUM100VF1
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.86	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.58	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.23	kW
Tj=2℃	Pdh	5.00	kW
Tj=7℃	Pdh	3.22	kW
Tj=12℃	Pdh	3.70	kW
Tj=bivalent temperature	Pdh	8.23	kW
Tj=operating limit	Pdh	6.64	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW
Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃
Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW
Degradation coefficient			
cooling	Cdc	0.25	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	45	W
crankcase heater mode	Pck	25	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.06	B
heating / Average	SCOP/A	3.94	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	1.44	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.57	-
Tj=30℃	EERd	4.40	-
Tj=25℃	EERd	7.07	-
Tj=20℃	EERd	10.11	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.70	-
Tj=7℃	COPd	5.45	-
Tj=12℃	COPd	6.64	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-
Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃
Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-
Degradation coefficient			
heating	Cdh	0.25	-
Annual electricity consumption			
cooling	Qce	692	kWh/a
heating / Average	Qhe	3303	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a
Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2160	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDUM100VF1
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.00	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.03	B
heating / Average	SCOP/A	3.94	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.86	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.44	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.58	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.57	-
Tj=30℃	EERd	4.40	-
Tj=25℃	EERd	7.07	-
Tj=20℃	EERd	10.11	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.23	kW
Tj=2℃	Pdh	5.00	kW
Tj=7℃	Pdh	3.22	kW
Tj=12℃	Pdh	3.70	kW
Tj=bivalent temperature	Pdh	8.23	kW
Tj=operating limit	Pdh	6.64	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.68	-
Tj=2℃	COPd	3.70	-
Tj=7℃	COPd	5.45	-
Tj=12℃	COPd	6.64	-
Tj=bivalent temperature	COPd	2.68	-
Tj=operating limit	COPd	2.17	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	65	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	696	kWh/a
heating / Average	Qhe	3307	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	2160	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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(5) Floor standing type (FDF)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDF100VD1
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.02	B
heating / Average	SCOP/A	3.80	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.87	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.43	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.50	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.21	-
Tj=30℃	EERd	4.49	-
Tj=25℃	EERd	7.29	-
Tj=20℃	EERd	9.68	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.14	kW
Tj=2℃	Pdh	4.95	kW
Tj=7℃	Pdh	3.20	kW
Tj=12℃	Pdh	3.75	kW
Tj=bivalent temperature	Pdh	8.14	kW
Tj=operating limit	Pdh	6.95	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.54	-
Tj=2℃	COPd	3.79	-
Tj=7℃	COPd	4.88	-
Tj=12℃	COPd	5.67	-
Tj=bivalent temperature	COPd	2.54	-
Tj=operating limit	COPd	2.32	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	60	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	697	kWh/a
heating / Average	Qhe	3423	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	1740	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	FDF100VD1
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	9.3	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	4.99	B
heating / Average	SCOP/A	3.80	A
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	7.87	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	1.43	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	4.74	kW
Tj=20℃	Pdc	4.50	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.21	-
Tj=30℃	EERd	4.49	-
Tj=25℃	EERd	7.29	-
Tj=20℃	EERd	9.68	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	8.14	kW
Tj=2℃	Pdh	4.95	kW
Tj=7℃	Pdh	3.20	kW
Tj=12℃	Pdh	3.75	kW
Tj=bivalent temperature	Pdh	8.14	kW
Tj=operating limit	Pdh	6.95	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.54	-
Tj=2℃	COPd	3.79	-
Tj=7℃	COPd	4.88	-
Tj=12℃	COPd	5.67	-
Tj=bivalent temperature	COPd	2.54	-
Tj=operating limit	COPd	2.32	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-7	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	80	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	701	kWh/a
heating / Average	Qhe	3427	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	65	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	1740	m3/h
Rated air flow(outdoor)	-	4500	m3/h

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(6) Wall mounted type (SRK)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	SRK50ZJX-S1 x2
Outdoor unit model name	FDC100VN

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	8.2	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.46	A
heating / Average	SCOP/A	4.00	A+
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.20	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	0.00	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	5.20	kW
Tj=20℃	Pdc	4.90	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.62	-
Tj=30℃	EERd	4.98	-
Tj=25℃	EERd	8.39	-
Tj=20℃	EERd	11.40	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	6.80	kW
Tj=2℃	Pdh	4.41	kW
Tj=7℃	Pdh	2.90	kW
Tj=12℃	Pdh	3.76	kW
Tj=bivalent temperature	Pdh	8.20	kW
Tj=operating limit	Pdh	7.00	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.72	-
Tj=2℃	COPd	3.68	-
Tj=7℃	COPd	5.80	-
Tj=12℃	COPd	7.09	-
Tj=bivalent temperature	COPd	2.33	-
Tj=operating limit	COPd	2.24	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-10	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	125	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	642	kWh/a
heating / Average	Qhe	2869	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	810	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	SRK50ZJX-S1 x2
Outdoor unit model name	FDC100VS

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	Yes
heating	Yes

Average(mandatory)	Yes
Warmer(if designated)	No
Colder(if designated)	No

Item	symbol	value	unit
Design load			
cooling	Pdesignc	10.0	kW
heating / Average	Pdesignh	8.2	kW
heating / Warmer	Pdesignh	-	kW
heating / Colder	Pdesignh	-	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	5.42	A
heating / Average	SCOP/A	4.00	A+
heating / Warmer	SCOP/W	-	-
heating / Colder	SCOP/C	-	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	8.20	kW
heating / Warmer (2℃)	Pdh	-	kW
heating / Colder (-22℃)	Pdh	-	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	0.00	kW
heating / Warmer (2℃)	elbu	-	kW
heating / Colder (-22℃)	elbu	-	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	10.00	kW
Tj=30℃	Pdc	7.37	kW
Tj=25℃	Pdc	5.20	kW
Tj=20℃	Pdc	4.90	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	3.62	-
Tj=30℃	EERd	4.98	-
Tj=25℃	EERd	8.39	-
Tj=20℃	EERd	11.40	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	6.80	kW
Tj=2℃	Pdh	4.41	kW
Tj=7℃	Pdh	2.90	kW
Tj=12℃	Pdh	3.76	kW
Tj=bivalent temperature	Pdh	8.20	kW
Tj=operating limit	Pdh	7.00	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	2.72	-
Tj=2℃	COPd	3.68	-
Tj=7℃	COPd	5.80	-
Tj=12℃	COPd	7.09	-
Tj=bivalent temperature	COPd	2.33	-
Tj=operating limit	COPd	2.24	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	-	kW
Tj=2℃	Pdh	-	kW
Tj=7℃	Pdh	-	kW
Tj=12℃	Pdh	-	kW
Tj=bivalent temperature	Pdh	-	kW
Tj=operating limit	Pdh	-	kW
Tj=-15℃	Pdh	-	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	-	-
Tj=2℃	COPd	-	-
Tj=7℃	COPd	-	-
Tj=12℃	COPd	-	-
Tj=bivalent temperature	COPd	-	-
Tj=operating limit	COPd	-	-
Tj=-15℃	COPd	-	-

Bivalent temperature			
heating / Average	Tbiv	-10	℃
heating / Warmer	Tbiv	-	℃
heating / Colder	Tbiv	-	℃

Operating limit temperature			
heating / Average	Tol	-20	℃
heating / Warmer	Tol	-	℃
heating / Colder	Tol	-	℃

Cycling interval capacity			
for cooling	Pcycc	-	kW
for heating	Pcych	-	kW

Cycling interval efficiency			
for cooling	EERcyc	-	-
for heating	COPcyc	-	-

Degradation coefficient			
cooling	Cdc	0.25	-

Degradation coefficient			
heating	Cdh	0.25	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	20	W
standby mode	Psb	20	W
thermostat-off mode	Pto	145	W
crankcase heater mode	Pck	25	W

Annual electricity consumption			
cooling	Qce	646	kWh/a
heating / Average	Qhe	2872	kWh/a
heating / Warmer	Qhe	-	kWh/a
heating / colder	Qhe	-	kWh/a

Capacity control(indicate one of three options)	
fixed	No
staged	No
variable	Yes

Other items			
Sound power level(indoor)	Lwa	60	dB(A)
Sound power level(outdoor)	Lwa	70	dB(A)
Global warming potential	GWP	1975	kgCO2eq.
Rated air flow(indoor)	-	810	m3/h
Rated air flow(outdoor)	-	4500	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. MITSUBISHI HEAVY INDUSTRIES EUROPE, LTD. AIR-CONDITIONING DIVISION 4th Floor International Buildings 71 Kingsway, London, WC2B 6ST United Kingdom

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