# HCV 300 - 400 - 500 - 700 & HCC2

TAKE CONTROL OF THE INDOOR CLIMATE
WITH MECHANICAL VENTILATION WITH HEAT RECOVERY

**Dantherm**®

CONTROL YOUR CLIMATE

# VENTILATION WITH HEAT RECOVERY

## HIGH EFFICIENCY, LOW POWER CONSUMPTION
## AND LOW-NOISE BALANCED VENTILATION SOLUTIONS

**A good indoor climate**

Modern houses are very airtight and need to be thoroughly ventilated every day. Otherwise dust mites and mould can quickly appear and rot set in.

Dantherm residential ventilation units provide demand-controlled ventilation with heat recovery. They supply fresh clean air to the house while extracting stale air and unwanted moisture generated through cooking, washing and bathing. They help create a healthy and comfortable indoor climate and save energy as heat is recovered from the waste air and transferred to the incoming fresh air.

In the wide Dantherm range you will find the ideal ventilation solution for private family houses, social housing, and private sector apartment blocks. For new-build as well as for renovation projects.

### WHY CHOOSE DANTHERM RESIDENTIAL VENTILATION?

- 50 years' experience in designing and manufacturing ventilation systems
- High quality – made in Denmark
- Ventilation experts
- Cost and energy-efficient solutions
- Versatile range with several installation options
- Many control options, including smartphone app


*Healthy and comfortable indoor climate.*


*Private sector apartment blocks.*

## Highly efficient heat exchangers and fans

Dantherm manufacture their own highly efficient alu heat exchangers. Lightweight counterflow heat exchangers in aluminium, optimised to efficiencies of up to 86 % and designed with minimal pressure loss and power consumption in mind. Exchangers in plastic have a thermal efficiency of up to 96 %. In addition to that, Dantherm residential ventilation units come with energy-efficient EC fan motors which will further increase energy savings.

## Frost protection

The intelligent control system prevents the heat exchanger from icing up. Frost protection is automatically activated at low outdoor temperatures. In areas where the outdoor temperature is frequently lower than minus 6°C, pre-heating coils are recommended to heat the outdoor air before it enters the heat exchanger.

## Bypass cooling

Dantherm residential ventilation units have an inbuilt automatic bypass function to obtain 100% free cooling with outdoor air. The bypass opens and closes fully automated, according to the extract air temperature readings. In addition also a manual bypass function can be activated whenever required. It allows the fresh air from outside to move through the unit without passing through the heat exchanger. It is activated with one of the control interfaces, either the built-in control panel, wireless remote control, wired control, the Dantherm App or the Dantherm PC Tool.

## Demand-controlled ventilation with humidity sensor

Ventilation is demand-controlled thanks to integrated humidity sensors which continuously monitor the humidity of the extract air and adjust the fan speed accordingly. This reduces power consumption at times with low ventilation demands.



**HCV 300-400-500-700**



**HCC 2**

### KEY FEATURES HCV 300-400-500-700

- HCV 300-500-700 has a counterflow heat exchanger in aluminium with up to 86 % thermal efficiency
- HCV 400$_{P1}$ has a counterflow heat exchanger in plastic with up to 96 % thermal efficiency
- HCV 400$_{E1}$ has an enthalpy exchanger with up to 95 % heat recovery and 77 % humidity recovery
- HCV 400 fits inside a 600 mm kitchen cupboard
- Silent operation
- Demand control with built-in RH sensor
- Energy-efficient EC fans ensure low SFP
- Automatic bypass cooling
- Frost protection of heat exchanger
- Week program control
- Fireplace startup mode
- Versatile unit configuration with L/R switch
- Can be integrated in BMS systems
- Easy filter change
- Extensive range of control options, including Dantherm app

### KEY FEATURES HCC 2

- Up to 95 % thermal efficiency
- Counterflow plastic heat exchanger
- Silent operation
- Demand control with built-in RH sensor
- Low installation build in height (< 30 cm)
- Energy-efficient EC fans ensure low SFP
- PHI approved
- Automatic bypass cooling
- Frost protection of heat exchanger
- Week program control
- Fireplace startup mode
- Versatile unit configuration with L/R switch and wall/ceiling installation
- Can be integrated in BMS systems
- Easy filter change
- Extensive range of control options, including Dantherm app

### Controller

The embedded main controller continually measures and adjusts all parameters in order to maintain a correct ventilation level with the lowest possible energy consumption. The controller has a number of external connection options, such as: Wired LAN interface for TCP/IP

ModBus connection with Building Management Systems, ModBus over RS485, and two digital inputs for further programming.
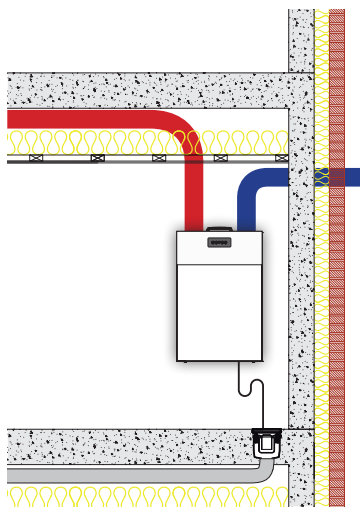
### A versatile range

The Dantherm residential ventilation range is versatile and flexible. It includes ventilation units for ceiling

void installation, wall installation, and installation in a cupboard. An L/R switch function allows them to be electronically swapped from left-hand setup to right-hand setup. With this swap function, all installation demands can be covered with one single ventilation unit.
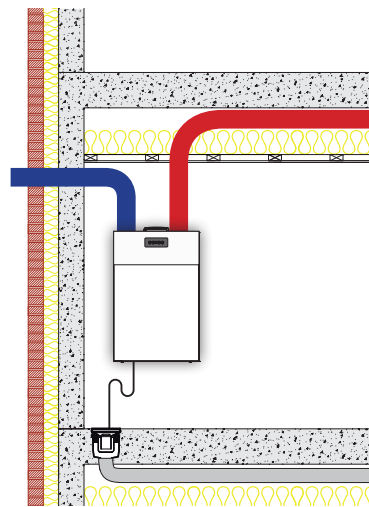
### Here are some configuration examples:

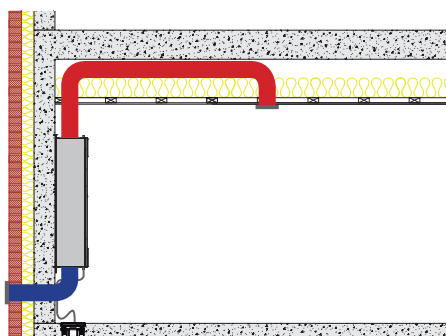Left-hand/right-hand installation and wall/ceiling void installation.
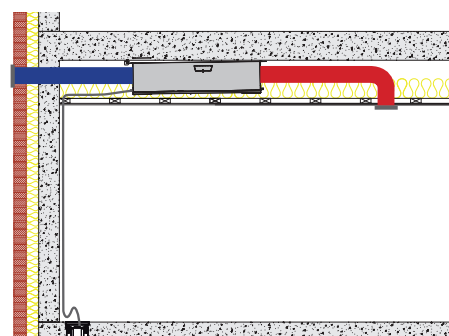
**HCV 300-400-500-700, Left setup**



**HCV 300-400-500-700, Right setup**



**HCC 2 on wall**



**HCC 2 in suspended ceiling**

### Week programs

Dantherm residential ventilation units offer 10 predefined week programs where the fan speed will increase or decrease according to a weekly schedule. One week program is available for customizing to specific user demands via Dantherm PC Tool .



*Filter change*

### Easy access to filters

Supply and extract air openings are fitted with G4 filters. F7 pollen filters are available as optional accessory. The filters are easy to access and change. Filter replacement warnings are shown on the control panel.



*Control panel*

*HCC2 mounted in ceiling void.*



## HCV 400
## MOUNTED IN CUPBOARD

# ADDITIONAL CONTROL OPTIONS

## WITH A SIMPLE CONTROL PANEL, DANTHERM APP OR AN ADVANCED WIRELESS REMOTE CONTROL

### Control options
The Dantherm HCV units come with a built-in control panel with demand-controlled operation and integrated humidity sensor as standard. The RH sensor is used to adjust the airflow in accordance with the activity level of the home. This way it will keep the humidity level as comfortable as possible all the time.

The HCC 2 residential ventilation unit is designed for hidden installation, therefore the basic unit comes without built-in control panel.

From the control panel the user can select between manual, demand or week program operation. Likewise the user can select automatic or manual bypass, activate fireplace mode, check alarms and filter status etc. In addition to the built-in control panel, Dantherm offer the following additional control options.

### Wireless remote control HRC 3
A wireless remote control with display is available as an optional accessory. With the wireless remote control, the end-user and the installer have access to various functions such as demand control, manual operation, week program operation, away operation, night operation, fireplace operation etc.
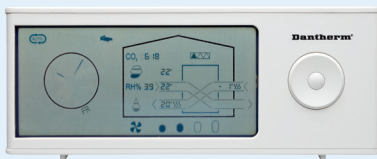
### Wired control HCP 10
With the HCP 10 wired control panel, the user can select between manual, demand or week program operation. Likewise the user can select automatic or manual bypass, activate fireplace mode, check alarms and filter status etc. The HCP10 is very useful for the HCC2 ventilation unit since this product has no user interface on the unit.

### Dantherm App
The Dantherm app, which is available for iOS and Android via the App store and Google play, offers a user-friendly and intuitive way to control the residential ventilation unit. The app is connected to the wifi router of the house.

---

### Wireless remote control HRC 3
*(Optional accessory for all models)*



- Demand control operation
- Manual operation
- Week program operation
- Away operation
- Night operation
- Manual bypass
- Fireplace mode
- Settings menu

### Wired control panel HCP 10
*(Optional accessory for all models)*



- Demand control operation
- Manual operation
- Week program operation
- Manual bypass cooling
- Summer cooling
- Fireplace mode
- Alarms

### Dantherm App
*(Optional accessory for all models)*



- Demand control operation
- Manual operation
- Week program operation
- Night operation
- Manual bypass cooling
- Summer cooling
- Fireplace mode
- Alarms
- Settings menu

---



*PC Tool Kit*

### Dantherm PC Tool Kit (HPT 1)
The PC Tool Kit contains a USB plug with program and quick guide + USB cable. The Dantherm PC Tool has an installer menu, where the installer can calibrate the unit, connect extra accessories, adjust various user settings, read and reset alarms, if any. It also has a user menu, where the user can read and adjust various settings, such as week programs, set points, alarms and historical data about temperatures and air quality.

# PRODUCT SELECTOR

| MODEL | HCV 300 | HCV 400 (P1) | HCV 400 (E1) | HCV 500 | HCV 700 | HCC 2 PLA |
|---|---|---|---|---|---|---|
| **Installation** | **Wall** | **Cupboard/wall** | **Cupboard/wall** | **Wall** | **Wall** | **Wall/ceiling void** |
| Energy class | A | A/A+* | A/A+* | A/A+* | A/A+* | A/A+* |
| Operating range (min/max @ 100Pa) | 50-180 | 50-240 | 50-240 | 80-300 | 80-450 | 50-180 |
| Max. floor area (m²)** | 150 | 240 | 240 | 260 | 450 | 170 |
| WxHxD (mm) | 600x1000x430 | 540x1050x549 | 540x1050x549 | 700x1050x605 | 700x1050x750 | 600x279x1122 |
| Weight (kg) | 36,0 | 39,0 | 40,0 | 49,5 | 70,0 | 34,0 |
| Duct connection (mm) | ø125 | ø160 | ø160 | ø160 | ø200 | ø125 |
| Heat exchanger | Alu | Plastic | Enthalpy | Alu | Alu | Plastic |
| G4 filter | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| F7 pollen filter | + | + | + | + | + | + |
| PHI certificate | ÷ | ÷ | ÷ | ÷ | ÷ | ✓ |
| Demand control (RH) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Automatic bypass cooling | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Summer cooling | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Frost protection of heat exchanger | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Week programs | ✓ | ✓ | ✓ | ✓ | ✓ | + |
| Night mode | + | + | + | + | + | + |
| Holiday mode | + | + | + | + | + | + |
| Fireplace mode | ✓ | ✓ | ✓ | ✓ | ✓ | + |
| Filter alarm | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Connection of fire/smoke alarm system | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Connection to geothermal collector | + | + | + | + | + | + |
| MODBUS connection (TCP/IP) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Right/left hand switching | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Wireless remote control HRC 3 | + | + | + | + | + | + |
| Wired control panel HCP 10 | + | + | + | + | + | + |
| Dantherm app | + | + | + | + | + | + |
| Preheater | + inside unit | + inside unit | + inside unit | + inside unit | + inside unit | + outside unit |
| After heater (EL or H²O) | + | + | + | + | + | + |
| VOC sensor | + | + | + | + | + | + |
| CO2 sensor | + | + | + | + | + | + |
| Dantherm PC Tool | + | + | + | + | + | + |

*A+ can be obtained with optional accessory kit
**Depending on local legislation

✓ included    + optional    ÷ not available    ▢ Performance    ▢ Functionalities    ▢ Accessories

# ABOUT THE DANTHERM GROUP

**Control your climate**

The Dantherm Group is a leading provider of climate control products and solutions. The group companies have more than 60 years of experience in designing and manufacturing high-quality and energy-efficient equipment for heating, cooling, drying and ventilation for a wide range of mobile and fixed applications.

Every year, Dantherm Group uses significant resources on product development to stay in the forefront and is constantly adapting the products to changing market demands and legislation.

The Dantherm Group has a number of strong brands with well-established market positions in the mobile, pool, commercial/industrial and residential markets.

Dantherm Group customers benefit from our comprehensive knowledge base and the experience and expertise that we have gained from more than three million climate control products and solutions sold worldwide.

**Global reach**

The Dantherm Group is headquartered in Skive, Denmark and has companies in Norway, Sweden, United Kingdom, Germany, France, Switzerland, Italy, Spain, Poland, Russia, China and United Arab Emirates and a global distribution network.

In 2016 the Dantherm Group was acquired by the Swedish equity fund Procuritas Capital Investors V LP – a strong owner with the ambition to continue the development and growth of the company.

**Dantherm A/S**
Marienlystvej 65 | DK-7800 Skive
Tel. +45 96 14 37 00 | Fax +45 96 14 38 20
info@dantherm.com | www.dantherm.com