# DEMAND-CONTROLLED HOME VENTILATION

BEAM
Vacuum & Ventilation

# DEMAND-CONTROLLED HOME VENTILATION

## No more worrying about the indoor climate

**The indoor climate must be taken seriously**

A good indoor climate is all about health and wellbeing for the whole family. It is also about protecting the home against damage from moisture that can easily occur in modern, super-airtight housing if you forget to air your home regularly. The Dantherm home ventilation range is an energy efficient solution for any location.

In the past 10-15 years building regulations have become very stringent in their requirements for energy consumption in new homes. Modern houses are now so airtight that they need to be thoroughly aired every day, (preferably several times a day). If not, dust mites and mould can quickly appear in the home and the building will also be in danger of rot setting in.

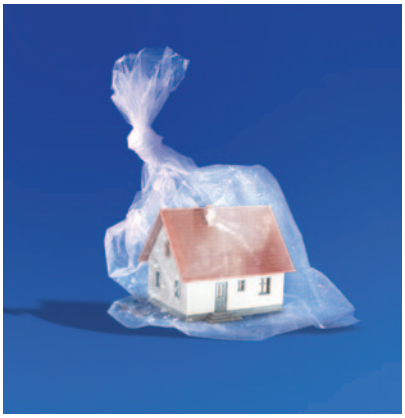
**Optimum air change**

The Dantherm home ventilation range consists of mechanical ventilation solutions for private homes that meet all regulatory requirements. These solutions provide optimum energy efficiency and the required air change that ensures a healthy and pleasant indoor climate for both the building and its occupants. A perfect solution for both new-builds and existing homes if you want to be able to forget about opening doors and windows several times a day.

**50 years' experience of indoor climate control**

Dantherm has put more than 50 years' experience of indoor climate solutions in office buildings, institutions and large residential developments into its home ventilation range. This means intelligent solutions that are easy to install and use. Solutions with a never-failing user-friendliness, comfort, efficiency and low energy consumption.

A modern family makes great demands on both interior design and indoor climate. Requirements do not become less when it comes to operation and cost. The installer values a range of products to suit all applications, ease of installation, comprehensive installation and user instructions, and easy and accurate adjustment of air volumes.



*No one at home – small air intake* | *Many guests – max. air intake* | *Normal activity – normal air intake*

*Dantherm home ventilation systems ensure that the relative humidity (air quality) is kept at a comfortable level throughout the home – regardless of the circumstances. The built-in humidity sensor ensures that the system adapts the air volume to current requirements – without using more energy than necessary.*

# HCV/HCH HOME VENTILATION WITH COUNTERFLOW HEAT EXCHANGER

## Enjoy greater indoor comfort with an energy-efficient home ventilation solution with heat recovery

Dantherm has put all its expertise and experience of creating the perfect indoor climate into this range of home ventilation systems. Designed right from the start with an eye for efficiency and simplicity – both during installation and in daily use.

**Maximum effect and zero trouble**

Dantherm HCV/HCH range is a ventilation system that is neither seen nor heard. It takes care of itself. It is energy-efficient and economical to run. It solves all indoor climate problems and ensures a pleasant atmosphere with good, clean air around the clock, (even when the house is full of guests).

Lightweight units, integrated pressure tubes and adjustment of air volumes directly on the unit itself make the ventilation system simple and uncomplicated for the installer. This makes Dantherm HCV/HCH range an extremely competitive choice both for new-builds and for installation of ventilation with heat recovery in existing homes.

**Certificates**

Dantherm HCV/HCH range is certified for use in passive houses by Passivhaus Institut in Darmstadt, Germany. The units are also DIBt certified by Deutsches Institut für Bautechnik in Berlin, Germany. Furthermore they are approved and listed on the SAP Appendix Q register.

**Energy-efficient technology**

The requirement for especially effective ventilation in new houses has arisen due to regulations whose purpose it is to limit energy consumption in private homes. This means that the ventilation solution itself should of course also be as energy-efficient as possible.

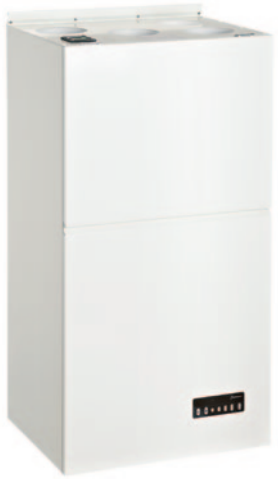
The Dantherm HCV/HCH units use the latest ventilation technology. The motors have been chosen because of their low electricity consumption. The unit is designed with optimum airways in light-weight styrene. Together with the demand-control, the lowest possible specific fan power (SFP value) is achieved.

PASSIVE HOUSE suitable component Dr. Wolfgang Feist

Deutsches Institut für Bautechnik DIBt

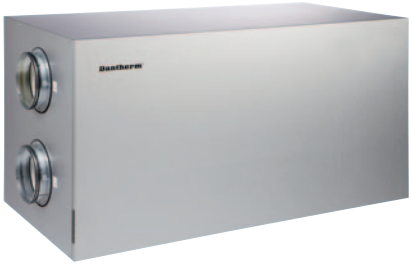
**Key benefits**

- Demand-controlled ventilation with integrated humidity sensor
- High efficiency – up to 95%
- PHI, DIBt and SAP Appendix Q approved
- EC motors with extremely low energy consumption (low SFP)
- Adjustment of air volumes directly on the unit
- The HCV models fit into a 60x60 cupboard



**HCV 3/HCV 4/HCV 5 - vertical**

| Model | HCV 3 | HCV 4 | HCV 5 | HCH 5 | HCH 8 |
|---|---|---|---|---|---|
| Max. air volume at 100 Pa ($m^3/h$) | 230 | 275 | 375 | 375 | 530 |
| Exchanger (type) | | | Counterflow | | |
| Efficiency (%) | | | up to 95 | | |
| Height (mm) | 1005 | 1005 | 1055 | 600 | 600 |
| Width (mm) | 530 | 590 | 590 | 1180 | 1180 |
| Depth (mm) | 419 | 416 | 566 | 580 | 780 |
| Weight (kg) | 33 | 33 | 45 | 52 | 70 |
| Duct connection (mm) | Ø125 | Ø125 | Ø160 | Ø160 | Ø250 |
| By-pass-module | No | No | Yes | Yes | Yes |



**HCH 5/HCH 8 - horizontal**

**Dantherm's new counterflow heat exchanger**

Dantherm has developed a new counterflow heat exchanger in order to fulfill the very ambitious targets of the new HCV/HCH home ventilation range. This is a light-weight aluminium counterflow exchanger.

The exchanger has been especially designed to serve two purposes. Firstly the heat recovery, which takes place by the intake air being heated by the extract air, is optimised to an efficiency level of up to 95%. Secondly, the exchanger is designed so the pressure loss and thereby the power consumption are minimal.

**By-pass module**

The HCV 5, HCH 5 and HCH 8 models have a built-in bypass module which ensures automatic fresh air cooling of the house e.g. on a summer's night. The bypass module has been designed so that 100% outside air is led around the exchanger to achieve maximum cooling.

**Humidity control**

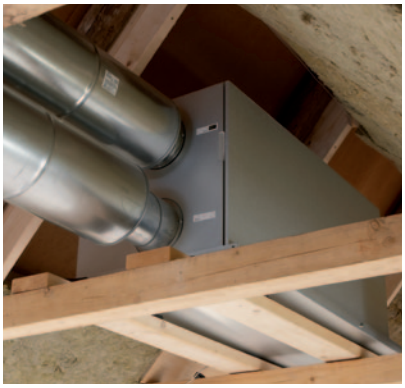
Dantherm HCV/HCH range has built in an RH sensor which automatically adjusts air volumes in relation to the relative humidity (RH) in the whole home. This means that there is no need to wire the unit up to external sensors.

Indoor climate problems for both people and materials are closely associated with high humidity. However, problems with drying-out can also occur if the air becomes too dry. The RH sensor controls the system so that air volumes always correspond to current requirements. In this way, maximum comfort is ensured without unnecessary energy consumption.

In practice the user never has to think about setting or operating the system when the installer has adjusted the system and switched on the automatic operation.

**Accessories**

- Remote control
- $CO_2$ sensor
- External hygrostat
- Water heating coil
- Electric pre/after heaters
- F7 filter
- Water lock kit
- Damper control
- Control of external cooling
- Connection and control of geothermal collector



# NO MORE WORRYING ABOUT THE INDOOR CLIMATE

# EASY OPERATION

## With control panel or wireless remote control

**Demand Control**
Dantherm HCV/HCH home ventilation is supplied with demand-controlled automation that needn't be touched once the system has been installed. The control panel has options to adjust individual default settings if special requirements arise.

Automatic demand control is based on a range of average considerations that guarantee a comfortable indoor climate in all conditions. The RH sensor will seek to keep the relative humidity at a comfortable level regardless of activity levels in the home.

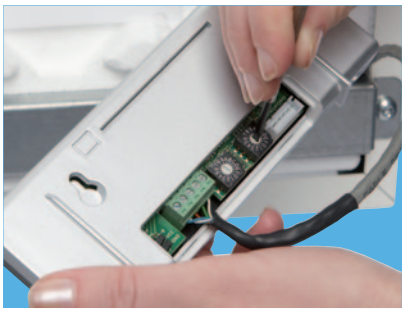
**Free Cooling**
Automatic cooling takes place on units with a bypass module i.e. it takes in cold air as long as the outside temperature is above 15°C and the room temperature indoors is 24°C or above.

**Control panel**
The three push buttons of the control panel give access to:
- manual control of ventilation speed
- automatic control of ventilation speed
- manual by-pass/cooling

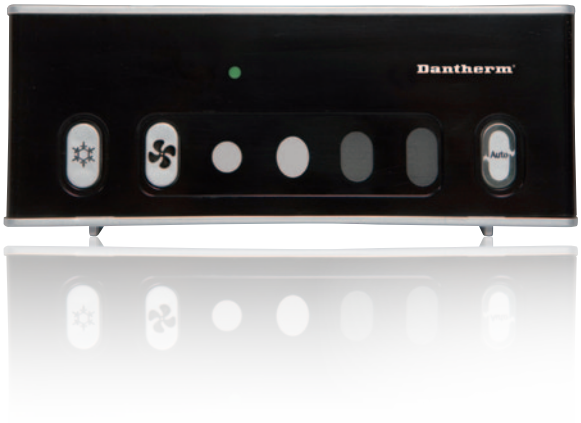
**Remote control**
With an optional wireless remote control the user gets access to:
- Automatic demand control
- Manual operation
- Weekly program operation
- Away operation
- Night operation
- Fireplace operation

The remote control also offers a number of helpful options for the installer i.e.:
- Activate installer mode
- Change setting for automatic demand mode
- Adjust set points for heating, cooling and bypass
- See and adjust fans speed settings

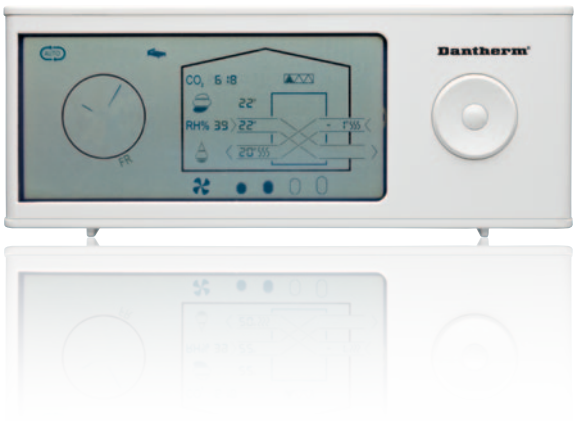
**Installation/Commissioning**
The settings of correct air volumes are very quickly carried out on the back of the control panel.



*Easy operation with a very userfriendly control panel.*




*Superior wireless remote control (accessory).*



# HOME VENTILATION WITH ROTOR HEAT EXCHANGER - HRV

## Remote control with weekly programming and summer operation

The HRV 5 is the perfect solution for the home owner who wants an energy-efficient, noiseless solution which can be easily fitted in e.g. a utility room.

The HRV 5 is operated by the included Dantherm remote control. Weekly programming takes place in 20 user-friendly programming steps to set required air volumes, timing and day of the week. Current operational data can always be read on the remote control display.

If you require the HRV 5 to be demand-controlled, a hygrostat can be connected to the controls which makes the unit run at the highest step as long as the preset humidity level is exceeded.

**Rotating heat exchanger**

The HRV 5 transfers the heat from the outgoing air to the incoming air using a rotor heat exchanger which has an efficiency of up to 80%.

The rotor heat exchanger has the great advantage that part of the humidity from the outgoing air is led back into the home, so that unnecessary drying-out is avoided in the dry winter months.

The rotor exchanger is a very simple and energy efficient solution which does not allow ice to build up in the exchanger at temperatures down to -20°C. This means that pre-heating is not required under normal conditions. The system does not require a drainage pipe as all the moisture is led out with the air without condensation taking place.

The fans have energy efficient motors which are able to deliver variable air volumes – depending on requirements. The maximum air flow is 450 $m^3/h$.

**Easy summer operation**

During the summer period the HRV 5 uses cold outdoor air to cool down the house at night. If the room temperature exceeds the set value, the rotor stops and cool outdoor air is blown directly into the home.

**Key benefits**

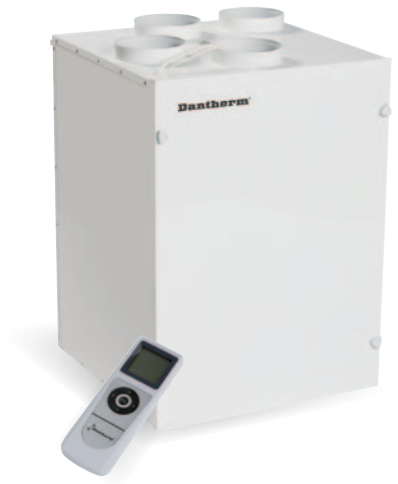
- High efficiency – up to 80%
- EC motors with low energy consumption
- Low noise level
- Wireless remote control with weekly programming and summer operation settings
- Constant air volume with pressure compensation

**Accessories**

- Additional remote control
- Alarm cable
- Heating coil – electricity
- Hygrostat

| Model | HRV 5 |
|---|---|
| Max. air volume ($m^3/h$)* | 450 |
| Air volume at 150 Pa ($m^3/h$) | 340 |
| Exchanger (type) | Rotor |
| Efficiency (%) | up to 80 |
| Height (mm) | 822 |
| Width (mm) | 593 |
| Depth (mm) | 612 |
| Weight (kg) | 55 |
| Duct connection (mm) | Ø160 |
| By-pass-function | Yes |

*free-blowing.



# HOME VENTILATION WITH CROSS-FLOW HEAT EXCHANGER - HXV

## A flexible solution that can be adapted to any installation

Latest building construction methods require that ventilation systems need to be compact, yet still provide flexible performance to operate in modern private homes and apartments.

The HXV 5 heat recovery ventilation unit extracts the warm, moist, stale air and replaces it with dry, clean air that is warmed up as it passes through the heat exchanger. This helps to maintain the health of the home and its occupants.

**Economical and easy to use**

HXV 5 is a perfect ventilation solution for energy and cost-conscious home owners. Its' compact design, low weight and easy maintenance make it a good choice for apartments, single or 2-family houses.

**High-end control panel**

The high-end control panel provides the home owner with the option of monitoring and operating the system according to the relative humidity and air quality levels. Once the required values have been entered the control panel automatically adjusts the air volume to maintain the specified values. This ensures that the unit is constantly operating at the optimum level to maintain a good and stable climate in the home. This also contributes to energy saving as the HXV 5 with high-end control panel will reduce the airflow when the demand for air exchange is low.

Studies have shown that the quality of the indoor climate has a huge impact on our sense of well being and our ability to concentrate. With the high-end control panel home owners are able to gain greater control over the quality of the air in their living environment – safe in the knowledge that the HXV 5 is operating in accordance with the activity levels of the family.

**Key benefits**

- Compact size that fits into standard 60 cm cupboards
- Cross-flow heat exchanger
- Easy to operate and maintain
- Built-in electric heater for supply air
- Configurable for left or right-hand installation

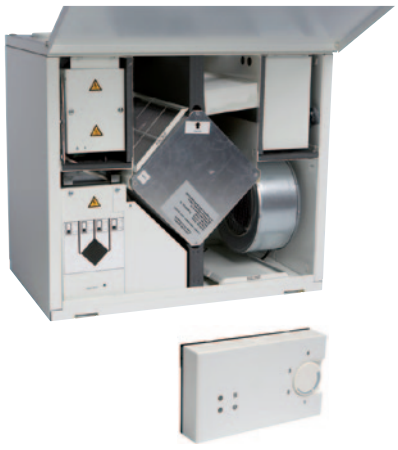
**Accessories**

- High-end control panel with air quality and humidity sensors
- RJ-45 cable, 12 metres
- LPHW heating coil – (water)
- Hygrostat for standard control panel
- Ducting with vapour barrier

**High-end control panel**

| Model | HXV 5 |
|---|---|
| Max. air volume ($m^3/h$)* | 450 |
| Air volume at 150 Pa ($m^3/h$) | 360 |
| Heat exchanger (type) | Cross-flow |
| Efficiency (%) | up to 70 |
| Height (mm) | 540 |
| Width (mm) | 590 |
| Depth (mm) | 391 |
| Weight (kg) | 36,5 |
| Duct connection (mm) | Ø125 |
| By-pass function | Yes |

*Free-blowing.



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