

HCH 5 / HCH 8

Installation and Service manual

Rev. 1.7 en

Dantherm[®] Control your climate



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Introduction

Overview

This is the installation and service guide for the home ventilation units HCH 5 and HCH 8 from Dantherm. The table of contents below lists the sections in this guide.
For any future inquiries regarding e.g. spare parts we kindly ask you to make a note of the serial numbers of the units here: This guide covers units with serial numbers higher than: 1708101457460
The ducting system must not be mounted until the unit is ready to operate. The power must not be connected until the ducting system has been mounted. The ventilation unit should not be used to dry newly built houses during construction or immediately after construction. The ducts must be dimmed and the units must not be connected until the house is ready for occupation, which means that the house is clean and dry. This is to prevent any construction dust and condensed water from depositing in the ducting system and to prevent any sanitation inconveniences from the ventilation units later on. If above mentioned warnings are disrespected, the warranty of the unit will be annulled and any kind of maintenance will be done at the customers own expense.
This guide covers the following sectionsIntroduction1General information2Product description4Fittings and installations6How to balance the unit12Set points and control strategies16Preventive maintenance18List of spare parts, HCH 5 and HCH 822Fault finding instruction24Technical data28Dimensions30Wiring diagram31Index32



General information

Introduction	This section gives you the general information about this guide and about the unit.
Guide, part no.	Part number of this installation guide is 060804.
Target group	The target group of this guide is technicians who install and balance the unit, carry out preventive maintenance and change malfunctioning parts of HCH 5 and HCH 8.
Copyright	Copying of this installation guide, or part of it, is forbidden without prior written per- mission from Dantherm.
Reservations	Dantherm reserves the right to make changes and improvements to the product and the installation guide at any time without prior notice or obligation.

EC-Declaration of Conformity	Dantherm A/S, Marienlystvej 65, DK-7 tioned below:	800 Skive hereby declare that the units men-
(6	352423/352424	HCH 5 and HCH 8
	are in conformity with the following di	rectives:
	2014/35/EU	Low Voltage Directive
	2014/30/EU	EMC Directive
	2014/53/EU	RED
	2009/125/EC	Eco Design Directive
	2011/65/EU	RoHS-directive
	1907/2006/EC	REACH Regulation
	- and are manufactured in conformity	with the following harmonized standards:
	EN 60335-1 :2012	Household and similar electrical appliances
		Safety
	EN 60335-2-40:2003	Household and similar electrical appliances
		Safety
	EN 61000-3-2:2014	Electromagnetic compatibility (EMC)
	EN 61000-3-3:2013	Electromagnetic compatibility (EMC)
	EN 61000-6-2:2005	Electromagnetic compatibility (EMC)
	EN 61000-6-3:2007	Electromagnetic compatibility (EMC)
	EN 60730-1:2011	Automatic electrical controls for household and similar use
	EN 62233:2008	Measurement methods for electromagnetic fields of household appliances
	EN 55014-1:2006	EMC Emission – Requirements for household appliances
	EN 55014-2:1997	EMC - Requirements for household appliances
	EN 301489-1 V1.9.2	EMC - Standard for radio equipment and services
	EN 301489-3 V1.6.1	EMC - Standard for radio equipment and services
	EN 300220-1 V2.4.1	ERM ; Short Range Devices
	EN 300220-2 V3.1.1	ERM ; Short Range Devices
	EN 13141-7:2010	Ventilation for buildings - performance testing of components/ products for residential ventilation

Skive, 30.06.2019

Product manager

Managing director Jakob Bonde Jessen

Recycling

The unit is designed to last for many years. When the time comes for the unit to be recycled, the unit should be recycled according to national rules and procedures to protect the environment.

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Product description

Introduction	This section gives a description of the unit.
The use of HCH 5 and HCH 8	HCH 5 and HCH 8 are used for ventilation of private houses. The units provide fresh heated outside air through the unit into the house. Polluted air and warm extract air is used to heat up the outside air by the means of heat exchange.
Illustration, internal	The illustration shows the different parts of the unit seen from the internal side:
	Visit Visit Vi

Parts

The table gives a survey of the main parts in the unit:

10	Temperature sensor, T1	6	Supply air fan module
8	Temperature sensor, T2	7	Connection of power
2	Temperature sensor, T3	9	Heat exchanger
11	Temperature sensor, T4	12	Bypass module
1	Exhaust filter (G4)	13	Exhaust fan module
3	Humidity sensor	14	Supply air filter (G4/F7) G4 filter is stand- ard, F7 filter for pollen is accessory
4	Reset button for filter timer	15	Data plate
5	Control		



Product description, *continued*

Air flow

The following describes and illustrates the air flow in a HCH 5 and HCH 8:

No.		Description
1	Outside air (T1)	Outside air which enters the heat exchanger is ready to be heated by the extract air from the house. (③)
2	Supply air (T2)	The supply air is heated by the means of heat recircula- tion from the extract air. (③)
3	Extract air (T3)	"Polluted" and warm extract air is used to heat up the outside air (\mathbb{O}) by the means of heat exchange in the heat exchanger.
4	Exhaust air (T4)	The heat of the extract air is use to heat up the cold outside air (\oplus) . The exhaust air is led out of the house.



Fittings and installations

Introduction	This section guides you through fittings and installation of HCH 5 and HCH 8.
Important	Only trained and certified installers are allowed to install the unit!
Content of the box	Follow this procedure to check the content of the box:

Step	Act	ion	
1	Unpack the unit care	fully.	
2	Check the content b	efore mounting the u	nit.
	HCH 5	HCH 8	\frown
	 Power cable set User's guide and service manual HCP 4 control panel Quick Guide 	 Power cable set User's guide and service manual HCP 4 control panel Four connect- ors with screws Quick Guide 	HCH8 only

Ducts

The ducts connected to the units must at minimum be on the same size as the duct connectors or bigger. The measurements can be seen on page 30.

Dimensioning of the ducts and sound mufflers must be in conformity with national standards and guidelines directives in applicable current building act. For any kind of support and instructions contact your Dantherm-distributor.

Noise and vibrations from the unit to the ducts must be minimized. This can be done by installing sound mufflers on both supply and exhaust air sides.

Hanging ducts. The ducts must not "hang" from the unit without support.

The ducts must be dimmed and the units must not be connected until the house is ready for occupation, which means that the house is clean and dry. This is to prevent any construction dust and condensed water from depositing in the ducting system and to prevent any sanitation inconveniences from the ventilation units later on.



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Fittings and installations, *continued*

Mounting the unit	Follow th	is procedure to mount the unit:	
	Step	Act	tion
	1	Remove the front door to make sure that it does not fall off during the mounting process unintentionally. Be aware that the styrene front panel is made of a porous material which is why any bumps must be avoided.	
	2	Follow the procedure below depending	on the type of your unit.
		HCH 5 1. Bend the four flaps with 90° at both the air in- and outlets as il- lustrated.	
		2. Connect four NPU coupling con- nectors (not included in the deliv- ery) to the air in- and outlets.	
		 HCH 8 Mount the four connection pieces (part of the delivery) to the in- and outlets. 	

Continued overleaf

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Fittings and installations, continued

Mounting the unit, Step Action continued 3 Build a wood construction which is levelled in both directions according to the illustrations. The construction must be constructed of plates that can sustain the weight of the unit (HCH 5 = 52 kg and HCH 8 = 70 kg). Make sure that there is minimum 50 mm compressed insulation between the two plates to prevent any vibrations from the unit to be transferred to the building. Make the construction so that the unit slopes backwards against the drain. Place a 20 mm rise below the front of the unit as shown: 1000 mm 1500 mm 100 20mm Min. 50 mm compressed insula-4 Place the unit on the construction and make sure it is levelled as illustrated

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Fittings and installations, *continued*

Mounting the unit, Action Step continued 5 Mount the drainage hose*) on the connection piece. The hose can be difficult to connect to the connection piece. When the hose is about to be mounted it can be helpful to warm up the hose prior to mounting, thereby it will be more flexible to work with. Use lubricant on the hose if necessary, so that it can smooth over the connection piece and maybe a hose clamp (not delivered) *) Drainage hose is not supplied. Use a 3/4" reinforced hose, which cannot be broken or crushed flat. Dantherm recommends a transparent type with iron wire, so it is possible to inspect the water trap Lead the drainage hose through the ceiling construction and insulate up above 6 the hose connection piece: Make sure that the drainage and drain pipe are always frost proof. A frozen drain pipe can lead to damage. If it cannot be assured to keep the drainage and drain pipe frost proof, Dantherm recommends connecting a heating cable around the drain pipe. See more about this in the accessories list in the section "Accessories" in the user's guide.



Fittings and installations, *continued*

Step		Action
7	Mount the front door again	-00 .0
8	Make a water trap wh ter in it. Alternatively	iich meets the measurements on the picture and pour wa- you can use the water trap from Dantherm (accessories):
9	Connect the hose to way, to ensure that t The drain pipe must outlet.	the drain – The drain pipe must be kept frost proof all the ne water can run unhindered. at least fall by 1 % all the way from the unit to the drain
10	Dantherm A/S recom ors/coupling connect necessary loss of pre Make sure you conne "hang" from the unit Dantherm recommen nection, to make the the installation. HCH 5	mends insulated flex ducts when connecting to connect- cors. The ducts must be completely stretched to avoid un- ssure. Act the ducts to the right connectors: The ducts must not without support. ds that the ducts are mounted with a flexible hose con- connection easier and to damp noise and vibrations from
	HCH 8	



Fittings and installations, *continued*

Mounting the unit,	Step	Action
continued	11	Insulate the entire duct system with 100 mm insulation. For example, place the ducts below the insulation of the ceiling. If the insulation is wrapped around the tube, it is recommended to apply two layers of foil.
	12	Wrap the two layers staggered, and tape the area where the two layers meet until air tight.
	13	Insulate all flex ducts as well as the entire duct system. It is important that especially the exhaust air duct is insulated, to avoid the possibility of condensate inside the duct, which can lead to water in the unit
	14	Choose the right power supply cable matching the regulation in the actual country and connect the cable's IEC plug to the unit. Afterwards connect the unit to 230 V AC
	15	Balance the unit by following the instructions on page 12
Drifting snow and driving rain	Air inlets and outlets T1 and T4 must be mounted with ducts falling at least fall 1 % away from the unit to prevent drifting snow, driving rain and condensation from enter- ing the unit causing faults and further damaging the installation and the building. The warranty does not cover damages to the unit/building parts/insulation, which is caused by accumulated snow/water in the ducts.	
Accessories	In order to mount and install accessories from Dantherm A/S, follow the instruction de- livered with the accessory.	



How to balance the unit

Introduction	This section will guide you through balancing of HCH 5 and HCH 8.		
Important	Only trained and certified technicians are allowed to balance the unit!		
Legislation	Regulation of the air flow rates must always be carried out according to the national legislation.		
	Only nominal air flow rate must be balanced. The nominal air flow rate corresponds to Fan Step 3 in Manual Operation Mode on the control panel. See the other set points in the section "Set points and control strategies" on page 16 and "Description of the con-trol panel" in the user's guide.		
When	Regulation of the unit must take place in the following situations:		
	Before the first operation of the unit		
	 If the size of the house has been changed 		
	 If the house is renovated and the ducting system is affected by it 		
	• If the filter type is changed e.g. in connection with the pollen season		
Before you start	All air dampers in the ducting system must be installed according to manufacturer rec- ommendations before the regulation of HCH 5 and HCH 8 should take place. Make sure that you have the following equipment ready before the installation starts:		
	 Pressure manometer with approx. 5 mm diameter hose matching the pressure adapter on the unit, which is 6 mm in diameter. 		
	 Screwdriver with hex lobular pan head 25 		
Balancing the air flows	When balancing the air volumes of HCH 5 and HCH 8 it is important to ensure that the airflows are of equal mass flow! Multiple Important: The supply air flow (T2) must under no circumstances be higher than the extract air flow (T3), as this can cause humid air to be pressed into the building construction, with		
	destructive, negative, effects on the building, if the vapour shield it not 100 % air tight		
Procedure	Follow this procedure to balance the unit:		
	Step Action		
	1 Dismount the front door. Make sure that the insulating cover plates in front of the filters are cor- rectly mounted with the soft side to- wards the filter. Push the sheets against the filter to avoid any air be- ing sucked in that way		



How to balance the unit, *continued*

Procedure, continued	Step		Action
	2	Turn off the po power supply b	ower supply to the unit and wait for ten seconds. Then turn the back on.
	3	Activate Install After this, Fan	ation Mode by pressing Manual 🚱 + Auto 🚺 for 6 seconds. Step 3 illuminates constantly.
		NB: Installatior protection aga order to prever	n Mode is active for one hour. In Installation Mode are bypass, inst frost and compensation of filter flocculation switched off in nt interruption during balancing the unit on Fan Step 3.
	4	Dantherm H0	CH 5
		Pag Press.	The handwritten data are for illus- trative purposes only.
		Ei	nregelung / Balancing / Indregulering
		\rightarrow P1 \rightarrow P2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
		$-$ P3 \rightarrow P4	(41-96) 59 58 _[Pa] 230[m ³ /h]
		P1 – P2 Supply P3 – P4 Exhaus	r air st air
		Set a desired a to the size and	ir flow rate according to national regulations, which corresponds air usage of the house:
		Step	Action
		1 Write grap	e down the values of supply and exhaust air flow rates in the habove
		2 Read heat	and write down the corresponding pressure loss through the exchanger
		3 Balar	nce the unit
		4 Write in th	e down the settings of the two potentiometers in the table, later is procedure
			Continued overleat

en



How to balance the unit, *continued*

Procedure, continued	Step	Action	
	5	Connect the pressure manometer to pres- sure adapter P1 and P2 and measure the pressure difference on the supply air side over the heat exchanger. P2	
		PI	
	6	Balance the nominal air flow rate on the supply air side by adjusting the potenti- ometer for the supply fan until the pres- sure difference determined on the graph is achieved. The potentiometers are placed on the back of the control panel. Wait approximately two minutes before the next adjustment of potentiometers, in order to let the unit stabilise the air flows. Mark Strong wind against the building might affect balancing the unit.	
	7	Connect the pressure manometer to pres- sure adapter P3 and P4 and measure the pressure loss on the exhaust air side over the heat exchanger. P3	
		P4 _	



How to balance the unit, *continued*

Procedure, continued	Step	Action			
	8	Balance the nominal air flow rate on the			
		exhaust air side by adjusting the poten-			
		tiometer for the exhaust fan until the			
		pressure difference determined on the			
		graph is achieved. The potentiometers			
	are placed on the back of the control				
		Wait approximately two minutes before			
the next adjustment of potentiometers.					
		in order to let the unit stabilise the air			
		flows.			
		Strong wind against the building might affect balancing the unit.			
	9	Check the pressure difference over heat ex	changer on the supply air side one		
		more time, as it might has changed due to	the adjustment on the exhaust air		
		side. Make an adjustment if necessary.			
10 Adjust the balancing of the valves in every room in order to		room in order to make sure that			
		the desired air flow rate can be supplied in	every room.		
	11	Check the nominal air flow rates based on	earlier instructions in this proce-		
dure as radical adjustments		dure as radical adjustments (balancing) wil	ll influence the nominal air flow		
		rates.			
	12	Write down the final set-ups for the potent	tiometers, pressure losses over the		
		heat exchanger and air flow rates in the ta	ble <i>on the unit</i> .		
		Einregelung / Balancir	ng / Indregulering		
		$\begin{array}{c} \hline \\ P1 \rightarrow P2 \end{array} \begin{array}{c} \\ (41-96) \end{array}$	[Pa][m³/h]		
		$\begin{array}{c} \blacksquare \\ P3 \rightarrow P4 \end{array} \begin{array}{c} \clubsuit \\ (41-96) \end{array}$	[Pa] [m³/h]		
After balancing	Deactiv The op	vate Installation Mode by pressing Manual erational modes are described closely in the	+ Auto for 6 seconds. e user's guide.		



Set points and control strategies

Introduction	This section describes the different factory settings for HCH 5 and HCH 8 and the pos- sibilities for adjustments on the control panel and the remote control.				
Factory settings	settings Default factory settings:				
	Set points	Factory set- ting	Setup HCP 4 Control panel) range HRC 2 Remote	
	Fan Step 0	Off	-	-	
	Fan Step 1	Gear 14	Gear 1 - 41	Gear 1 - 71	
	Fan Step 2	Gear 39	Gear 21 -66	Gear 36 -81	
	Fan Step 3	Gear 64	Gear 46 - 91	Gear 46 - 91	
	Fan Step 4 (maximum speed)	Gear 100	Gear 100	From Fan Step 3 to Gear 100 10 - 30 gears	
	'OFSET' (gears between Fan Step1–2–3)	25 gears	-	-	
	Automatic cooling/bypass Bypass, Tmax (extract temperature, T3)	T3 ≥ 24 °C	_	*Of/22-30 °C	
	Punass Train (outside temperature T1)	T1 > 15 °C			
	Automatic Demand Mode (RH%)	11 ≥ 15 C 45%	45%	35-65%	
	Filter duration	180 days	3/cF	90-360 days	
	Frost protection, exchanger (see below)	T4 <u>≤</u> + 2 °C	-	-	
	Frost protection, after-heat	$T2 \ge +5 \ ^{\circ}C$	_	-	
	*) Selecting 'of' eliminates automatic bypass.				
 Frost protection The unit's frost protection works as follows: Frost protection of the exchanger. Frost protection strategy has a built-in frost protection preventing ice b heat exchanger. If the exhaust air temperature (T4) is below + 2 °C for 1½ hours or 1 starts reducing the flow rate of supply air (i.e. RPM of the supply far the exhaust air temperature reaches + 2 °C. Frost protection norma outdoor temperature (T1) reaches ÷ 6 - ÷ 7 °C, or below. Unit shots down at an outside temperature below ÷ 13 °C If the outside temperature (T1) is below ÷ 13 °C for more than 5 mi stop operating for 30 minutes to prevent ice from building up. If th ature does not reach a temperature above ÷ 13 °C, the units shots of 30 minutes, etc. 				ding up in the ger, the unit reduced) until starts when es, the unit will utside temper- vn for another	
_			C	Continued overleaf	



Set points and control strategies, *continued*

Frost protection,	3) Recommendation
continued	To secure a balanced air flow without intentional shut-down, Dantherm A/S recom-
	mends installing pre-heat in areas where temperatures during longer periods of time
	is below $\div 6$ °C.
	In areas where temperatures constantly are below \div 13 °C, installing pre-heat is a
	must to secure optimal operation.

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Preventive maintenance

Introduction	To make sure that HCH 5 and HCH 8 operates optimally and safely, it is necessary to carry out preventive maintenance. Preventive maintenance must be carried out periodically to maintain a good indoor climate, to avoid break downs or ineffective operation, and to maximize the durability. It is important to mention that intervals between maintenances can vary according to the environmental conditions, where the unit has been installed.		
Warning <u>A</u>	 Turn off the power supply before applying any work on the unit! Only trained and certified technicians are allowed to service the fans. Users are allowed to changes filters. Make sure that all work has finished and the styrene plate and front cover plates are fully mounted before turning on the power supply again. 		
Parts	The following parts must be checked and/or changed when needed:The following parts must be checked and cleaned if necessary. Necessity takes place ifthe unit suddenly has unstable operation, vibrates, leaks, makes noise or if any othermalfunction occurs, which is described in the section "Fault finding instruction" on page24.• Filters• Drain and drain hose• Fans• Bypass module• Drip tray and internal surfaces		
Filters and external cleaning	The filters must be checked and/or changed twice a year. The time intervals for filter changes should be regulated based on house requirements for ventilation, also level of environmental pollution and smog should be taken into consideration. However, Dantherm recommends that filters are changed at least once a year. Change the filters when the filter alarm flashes yellow on the control panel and a beep- sound (once an hour) sounds. Always reset the filter timer after changing the filters. See the section "Preventive maintenance" in the user's guide. The unit must always be kept clean to ensure an error free operation and a good hy- giene. Clean the external surface of the unit with a wet cloth.		
Fans	Clean the fan blades every second year with compressed air or with a brush. Every fan blade has to be clean in order to keep the fans balanced. Be careful not to re- move the balancing pieces which are mounted on the fan blades.		
Bypass	Check that the bypass module is well func- tioning. Try to open/close the damper manually with the trigger (requires a mag- net) to check functionality. The bypass module shall only be checked when an error occurs or if the unit is open e.g. in connection with another service.		

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Preventive maintenance, *continued*

Drip tray	Make sure tray with se inside the	Make sure that the condensate drain is not clogged in the drip tray and clean the drip tray with soapy water and a brush or a cloth every second year to ensure good hygiene inside the unit.				
Internal cleaning	The unit m Internal cle Check the cleaner or	The unit must be kept clean to ensure error free operation and good hygiene. Internal cleaning are only necessary if the unit is open e.g. in connection with service. Theck the internal surface in the unit. If it is dirty, clean with a wet cloth, brush, vacuum leaner or the like.				
Drain, external con- nection and duct flow	Drain, exte the risk of	rnal connections and hose frost occurs.	installations must be c	hecked once a year before		
now	with water	that the nose is minly com		that the water trap is theu		
	Make sure drain, and	that the hose is not broken that the hose is protected a	and that the hose dro Igainst frost from unit	ps minimum 1% toward the to drain.		
Heat exchanger	Check the Clean the h In special of the heat ex clean the e	Check the heat exchanger for dirt every second year. Clean the heat exchanger with a soft brush and a vacuum cleaner at all four inlets, In special cases, e.g. if there are clear traces of accumulated, dirty condensate water in the heat exchanger, it is necessary to remove the heat exchanger from the unit and clean the exchanger with soapy water.				
Controller	The contro Make sure out dust of	The controller must only be checked if an error occurs on the unit. Make sure that all connections are all right and that the controller is clean and free with out dust or moisture.				
Service intervals	The below	table gives an overview of t	he service intervals for	r the different parts.		
	Part	Functi	on	Service interval		
	1	Filter		Twice a year		
	2	External drain		Once a year		
	3	Heat exchanger		Every second year		
	4	Fans		Every second year		
	5	Drip tray/internal drain		Every second year		
	6	Internal air channels		Every second year		
	7	Bypass module				
				Every second year		

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Preventive maintenance, *continued*

Tasks	The following must be checked closely in connection with a preventive maintenance visit:				
	 Change the filters and reset the filter timer Clean the fan blades every second year with compressed air or a brush 				
	 Make sur the trigg 	re that the damper in the bypass module is opening/closin er	g manually with		
	• Clean the	e drip tray with soapy water and a brush or a cloth			
	 Check th or vacuu 	e internal surface inside the unit. If it is dirty, clean with a m cleaner	wet cloth, brush,		
	• Make su	re that:			
	- the hos	e is firmly connected to the unit			
	- the wat	er trap is filled with water			
	- the hos	e is not broken			
	- the out	let falls 1 % all the way			
	- the dra	in is protected against frost all the way			
	Clean the	e heat exchanger with a soft brush and a vacuum cleaner a	t all four inlets,		
	 Make sure that all connection are all right and that the controller is clean and free from dust or moisture 				
	• Turn on power supply, start up the unit and test all fan speeds. Observe that the unit operates correctly without faults				
Terms of warranty The factory guarantee is Preventive maintenance months. The documenta		guarantee is only valid when preventive maintenance can b aintenance must be carried out with a minimum time inter documentation of the maintenance should be a written lo	tee is only valid when preventive maintenance can be proven. ance must be carried out with a minimum time interval of six nentation of the maintenance should be a written log/journal.		
Service journal	Fill in the journal at every service visit:				
	Date	Description of the fulfilled service/replacement of parts.	Technician/init.		



Preventive maintenance, *continued*

Service journal, <i>con-</i> <i>inued</i>	Date	Description of the fulfilled service/replacement of parts.	Technician/init.
-			

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Illustration

List of spare parts, HCH 5 and HCH 8



List

List of spare parts including item numbers:

Pos.	HCH 5	HCH 8	Description
1	062	064	Reset button for filters, FRB
2	062294	062295	Print MPCB
3	062048	-	Heat exchanger, 400 mm complete
3	-	062040	Heat exchanger, 600 mm complete
3a	066565	066567	Gasket for heat exchanger
4	062036	-	Fan, 190 mm, 1300 mm cable
4	-	062039	Fan, 225 mm, 1300 mm cable
5	062062		Connector panel, CP: IEC plug
6	062056	-	Inlet duct ILU w/4 holes, top 160 mm
6	-	062042	Inlet duct ILU w/6 holes, top250 mm
7	062059		HCP4 control panel
8	062068		Wire fittings, complete set
9	062055		Temperature sensor, duct set, ceiling

List of spare parts, HCH 5 and HCH 8, *continued*

List, continued

Pos.	HCH 5 HCH 8	Description
10	062061	Humidity sensor, HS:SHT 15
11	062052	Modbus cable with plug, 2000 mm, control panel
12	062053	Power supply cable with plug, 2000 mm, P2000
13	062054	Modbus cable with plug, 2000 mm, MC2000
14	062063	Power cable, 230 V AC
15	062057	Rail for drip tray, 539x50 mm
16	062050	Damper motor 230 V AC 2Nm 75 sec w/split bushing
17	062066	Magnet, 64x10 mm, 8 kg
18	062058	Handle, 90x13 mm
19	063377	Front door
20	062065	Pressure tube fitting for pressure measurement
21	062051	Filter insulating cover plate, left and right
22	063059	Styrene front panel, complete



Fault finding instruction

Alarms

For easier fault finding, use the remote control, on which all alarms are displayed. See the section "Functional description" in the user's guide on how to activate the different operation modes. Localise the problem in the left column below and follow the instructions in the right column

Alarm	Cause	Action
Yellow light-emitting diode (30/min) and a beep-sound The unit still operates, however the power consumption and the noise levels are increased due to high level of pressure loss in the dirty filter.	The filters need to be checked/replaced.	Replace the filters and reset the filter alarm on the unit. See the section "Preventive maintenance" on page 18
Red, permanent light-emitting diode and beep-sound. The unit operates in fail-safe mode, (Fail Safe Mode 1) which is similar to nominal operation but without access to cooling function by means of bypass.	T1 outside air sensor or supply air sensor T2 is de- fective. Note that the bypass damper is always closed, when the unit is operating in fail safe mode.	Check and if necessary replace the sensor set.
Red, flashing light-emitting diode (30/min) and beep-sound. The unit operates in fail-safe mode (Fail Safe Mode 2), during which the supply fan operates only at lowest speed (Fan Step 1) and the exhaust fan operates at Fan Step1/ Fan Step2.	One of the following com- ponents are defective or has a bad connection: • T3 extract air sensor • T4 exhaust sensor • The built in RH sensor Or: One of the two fans is not able to reach the desired speed.	Check and if necessary replace the sensor set. Check that the fans are able to rotate untram- melled and that the cable has not lost the connec- tion.
Red, flashing light-emitting diode (120/min) and beep-sound. The unit has stopped and the by- pass-damper is closed because	One of the temperature sen- sors has detected a critically high temperature above 70 °C.	Make sure that there is no fire or other sources of heat which might be heating up the ducts to a temperature above 70 °C.
this type of malfunction can cause a safety risk.	T2 Supply air sensor has measured a temperature be- low 5 °C, at which there is a risk of frost damages on the reheating coil (accessory). The ducts are not insulated properly. Very low outside temperatures $< \div 10^{\circ\circ}$ C. The building is not heated. The unit is not balanced cor- rectly.	Check the reason for the low supply air tempera- ture and adjust it. Re-in- sulate channels. Install preheat. Carry out correct regulation of the unit. Activate Installation Mode by pressing Manual + Auto for 6 seconds. See "How to balance the unit" on page 12



Fault finding instruction, *continued*

Localise the problem in the left column and follow the instructions in the right column

Malfunction	Cause	Action
The unit does not operate, and there is no light in the control panel.	The power supply is not connected.	Make sure that the power supply cable is mounted correctly.
There is water around/beneath the unit.	A water trap has not been mounted on the drain as described.	Check and mount water trap as described.
	The drain studs on the unit or on the drain hose is fro- zen.	Secure the drain studs on the unit and all the way to the drain against freezing, if necessary use a heater cable (ac- cessory).
	The unit is mounted slant- wise due to which water from the drain comes up into the unit.	Straighten the unit so that it is placed hori- zontally in the long di- rection and with 2 cm tilt in the drain direction on the back. See also the mounting guide, page 6.
	The drain is clogged in the hose or in the drip tray in- side the unit.	Check that the drain is not clogged and if nec- essary clean it with wa- ter and detergent.
	The styrene front panel and/or the front plastic panel of the drip tray has- not been mounted cor- rectly.	Check that the front plastic panel of the drip tray and the styrene front panel are moun- ted correctly and firmly.

Inconvenience

Localise the problem in the left column and follow the instructions in the right column

Inconvenience	Cause	Action
Abnormal noise	The unit is running on Fan Step	Turn the unit back to Fan Step
from the unit.	4 (only suited for shorter dura-	1, 2, 3 or activate Automatic
	tion of use).	Demand Mode.
	The filter is blocked.	Check and if necessary replace
		the filter.



Fault finding instruction, *continued*

Inconvenience, con-	Inconvenience	Cause	Action
tinued	Abnormal noise from the unit.	The installation has not been done correctly. The air flow channels might be partly blocked.	Make sure that the ducts are led correctly and that the air flows are not blocked.
		The unit has not been balanced correctly.	Balance the air flow rate as shown in the section in the sec- tion "How to balance the unit", page 12
	The unit is not cooling suffi- ciently.	The outside air might be heated up before entering the house.	If necessary, move the inlet grille to the north side of the building.
		The temperatures are exceeding the established limits, which must be met in order to achieve cooling by means of bypass.	Push the manual bypass button and cooling will be active for the next 6 hours.
		See the section "Set points and control strategies" on page 15.	
		The bypass-damper is stuck or the damper motor is defective.	Check the bypass module and replace the damper motor if necessary.
	Unstable opera- tion, with a wide variation of air flow rates.	The unit is probably set to Au- tomatic Demand Mode which is varying the air flow rate accord- ing to the needs in the need of the house and the indoor hu- midity level.	It is recommended to set the unit in Manual Operation Mode and choose the fan step which meets the demands most opti- mal (normally Fan Step 3).
		There is no malfunction on the unit.	It is not advisable to operate at air flow rates beneath the de- fined flow rate demanded in the house, which have a reference to national law regulations; oth- erwise there might be a risk of damage from damp and re- duced air quality.



Fault finding instruction, *continued*

Inconvenience, con-	Inconvenience	Causa	Action
tinued	The house is being unnec- essarily dried out.	The unit might be operat- ing with too high level of air exchange compared to the size and needs of the house.	Check if the air flow rates correspond the size of the house and ventilation load, do this by controlling the air flow rates, which is de- scribed "How to balance the unit" on page 12.
		The unit has been set to operate at the nominal air change (Fan Step 3) in Manual Operating Mode. Low level of humidity can be observed especially dur- ing winter when the outside air is very dry.	Switch to Automatic De- mand Mode or set the air flow rate at Fan Step 2 or 1 in Manual Operation Mode. Using Fan Step 2 or 1 is only recommended for a short period of time.
	There is damp on the inside of the windows and other cold surfaces (autumn, winter and spring)	The air change is too low or the air distribution is un- fortunate which causes too low air change in critical rooms.	Accurately adjust the air flow rates and its distribu- tion through balancing the valves to ensure the air change in critical places. Set the unit to Automatic Demand Mode so it auto- matically keeps the humid- ity on a suitable level. Do not let the unit operate constantly on Fan Step 1 or 2 in Manual Operation Mode as it does not guar- antee keeping the humidity level in the house down, when the moisture load of the house is high.
	The unit is always operat- ing at the same speed.	The unit is set to Manual Operation Mode at one fixed speed.	Switch to Automatic De- mand Mode after which the unit is going to adjust to air flow rates according to the need of the house.
	The display goes out after a short period of time, after which only the green light– emitting diode is on.	The display goes into En- ergy Saving Mode after 2 minutes to effect power save.	The unit is operating cor- rectly.

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Technical data

Performance data	The table shows the technical performance data for HCH 5 and HCH 8.				
	Specification	Unit	HCH 5	HCH 8	
	Max. air flow at 100 Pa ext. pressure	(m³/h)	375	530	
	Heat exchanger	Dantherm Alu. Counterflow Heat Exchanger			
	Temperature efficiency	%	Up to 951		
	Filter class supply air/exhaust,		ISO Coarse 75% (G4)/		
	standard		ISO Coar	rse 75% (G4)	
	Operational temperature range with- out pre-heat	°C	$\div 13^2 \text{ to } + 50$		
	Operational temperature range with pre-heat	°C	÷ 30 to + 50		

Cabinet data

The table shows the technical cabinet data for HCH 5 and HCH 8.

Specification	Unit	HCH 5	HCH 8			
Height	mm	600	600			
Width	mm	1180	1180			
Depth (Standard mounting rail/rail	mm	580	780			
for plan mounting)						
Duct connection	mm	160	250			
Weight, unit	kg	52	70			
Weight including packaging	kg	66	84			
Dimensions including packaging	mm	H: 740	H: 738			
(HxWxD)		W: 1200	W: 1200			
		D: 800	D: 800			
Outer cabinet material		Aluzink				
Colour	RAL	Aluzink	, grey			
Cabinet insulation, styrene	mm	mm 40				
Insulation factor, cabinet	$W/m^2 x \ ^\circ K$	//m²x °K 0,78				
Fire classification, polystyrene cabi-	DIN 4102 class B1					
net						
Fire class, the whole unit		EN 13501 class	E			
Protection class	IP 20					

 ¹ Condensing operation.
 ² Dantherm recommends preheating at temperatures under -6° C to ensure a balanced operation.

Technical data, continued

Specification	Unit	HCH 5	HCH 8
Supply voltage		1x230 V, 50 Hz	
Max. current consumption, w/o pre- heat and afterheat	A	0,7	1,1
Max. power consumption, w/o pre- heat and afterheat	W	154	246

Cabinet, sound data The table shows the technical sound data for HCH 5 and HCH 8.

Specification	Unit	HCH 5		HCH 8	
	m³/h	22	20	350	340
External pressure	Pa	70	100	70	100
Sound power level, cabinet	Lw dB(A)	50	52	54	56
Sound pressure, cabinet at 1 metre ¹	Lp dB(A)	46	48	50	52

The table shows the technical sound data for HCH 5 and HCH 8. Duct, sound data

Specification	Unit	HC	H 5	HC	H 8
63 Hz (supply/extract)	Lw dB(A)	37/38	38/39	43/40	44/41
125 Hz (supply/extract)	Lw dB(A)	42/41	44/43	50/46	51/47
250 Hz (supply/extract)	Lw dB(A)	53/50	55/52	54/46	56/48
500 Hz (supply/extract)	Lw dB(A)	42/42	45/45	48/44	50/46
1000 Hz (supply/extract)	Lw dB(A)	41/36	43/38	41/39	43/41
2000 Hz (supply/extract)	Lw dB(A)	39/34	40/35	36/34	38/36
4000 Hz (supply/extract)	Lw dB(A)	27/20	29/22	21/21	23/23
Sound power level, supply air duct	Lw dB(A)	57	59	61	63
Sound power level, extract air duct	Lw dB(A)	56	58	57	59
Sound pressure, supply air duct, 1 metre ²	Lp dB(A)	43	45	47	49
Sound pressure, extract air duct, 1 metre ²	Lp dB(A)	42	44	43	45

¹ Measured in a hard room of approx. 10 m², with 2,5 m to ceiling and medium absorption.

² Measured at 1 metre distance in free area.

² Measured at 1 metre distance in free area.



Dimensions

HCH 5

The illustration shows the dimensions on a HCH 5:



HCH 8

The illustration shows the dimensions on a HCH 8:



Dantherm

Wiring diagram



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Dantherm A/S Marienlystvej 65 7800 Skive Denmark support.dantherm.com



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