OPERATING INSTRUCTIONS

OPTIMA 314

THE AIR WE BREATHE

Genvex

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1. INSTALLATION OF OPTIMA BASIC

Important information

Safety information

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision. Rights to make any design or technical modifications are reserved.

1. INSTALLATION OF OPTIMA TOUCH

1.1 Installation

Installation of the control panel.
The control panel is designed to be mounted onto a flat wall.

1.2 Mounting

Find the location on the wall where you will fix the control panel and mark the screw-hole positions. A min. of four screws must be used to fix the display fixture to the wall. Drilling of holes, hole size and the corresponding screws for fixing the panel depends on the wall material.

When the display fixture has been securely installed to the wall. Take the Optima Touch display which comes with a preinstalled wire connected and clip the display carefully on the fixture. Ensure that the cable is carefully positioned as indicated on the picture before fitting the display.

NOTE: if the preinstalled 1,8 meter length is not sufficient, it is possible to replace this with a 4 wire twisted pairs 0,25 mm2 cable with a maximum length of 50 meters.

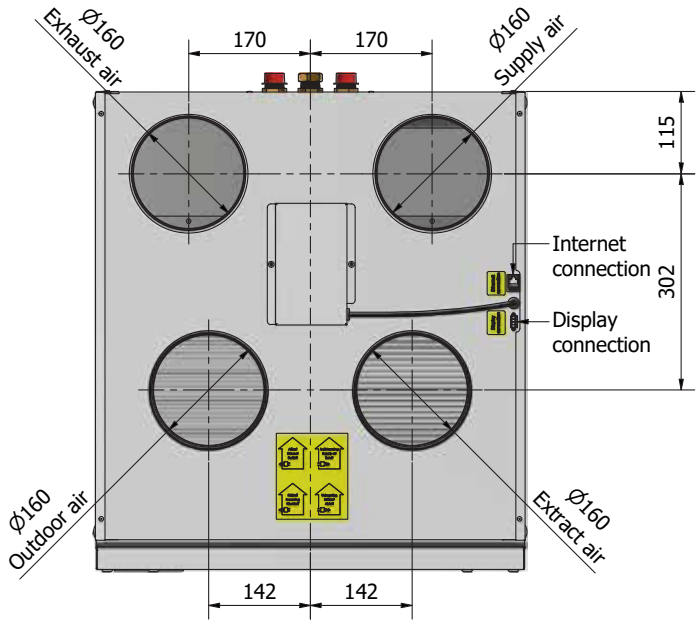
To remove the display , carefully push the plastic clip (locking mechanism) as indicated on the picture.

For additional information on connecting the control panel to Optima 314 – please refer to the electrical diagram in the installation manual.

2. PROGRAMMING THE OPTIMA 314 CONTROLLER

The control system comes factory-preset, which means that the unit can be put into operation without changing the operating settings. The factory setting is only a basic setting that can be adapted to the operating desires and demands for the dwelling in question to make it possible to achieve optimal utilisation and operation for the system. Depending on the product configuration it will be possible to either connect the Optima display directly to the Display connector on top of the machine or (connectors marked with "display") or directly on the Optima 314 Controller PCB.

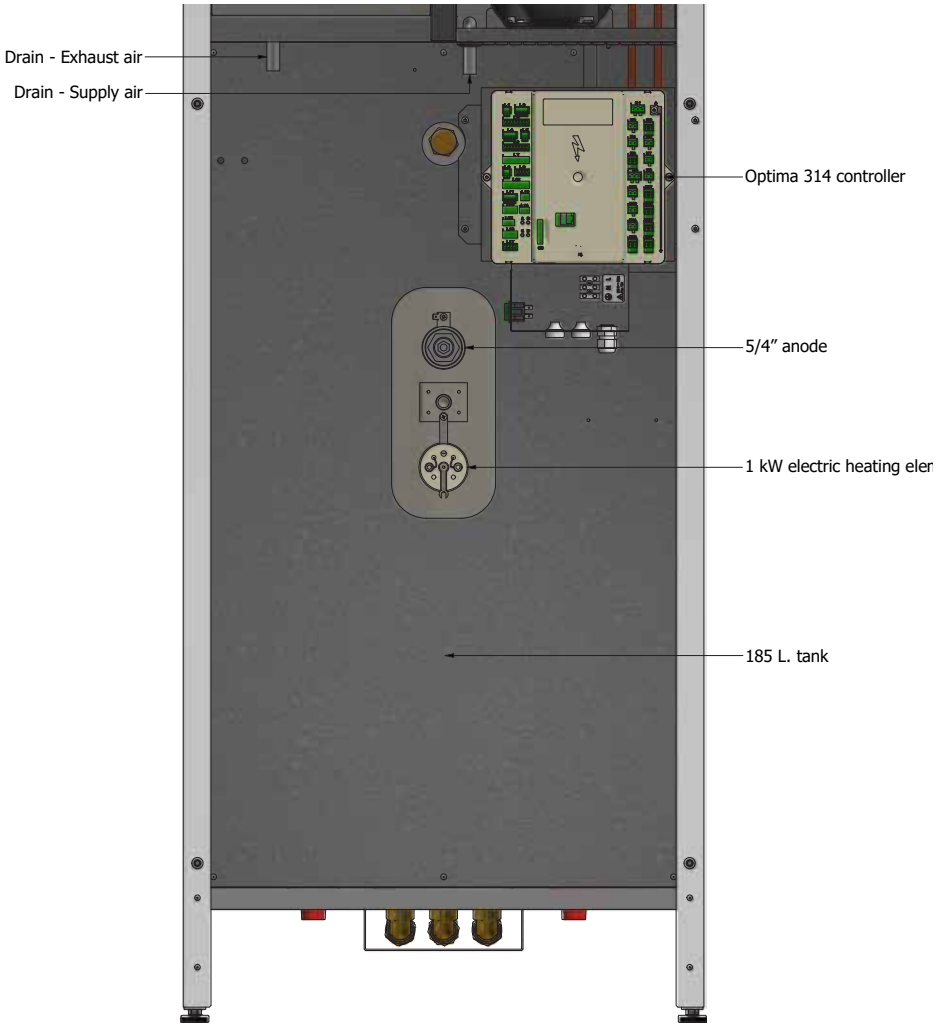
The Optima 314 controller PCB connection interface includes terminals for connecting both Modbus Master (for example building management systems) and Modbus Slave devices (for example mixing valve controller - or fire box PCB).



2.3. Installation with Optima Touch display

2.3.1. Connect an Optima Touch controller to the Optima 314 and adjust settings as necessary.

NOTE: The Optima 314 controller parameters can be saved to the Optima Touch for 1 ventilation unit and be transferred to a similar system by using the "EA1 Save" and "EA2 load settings".



3. DISPLAY

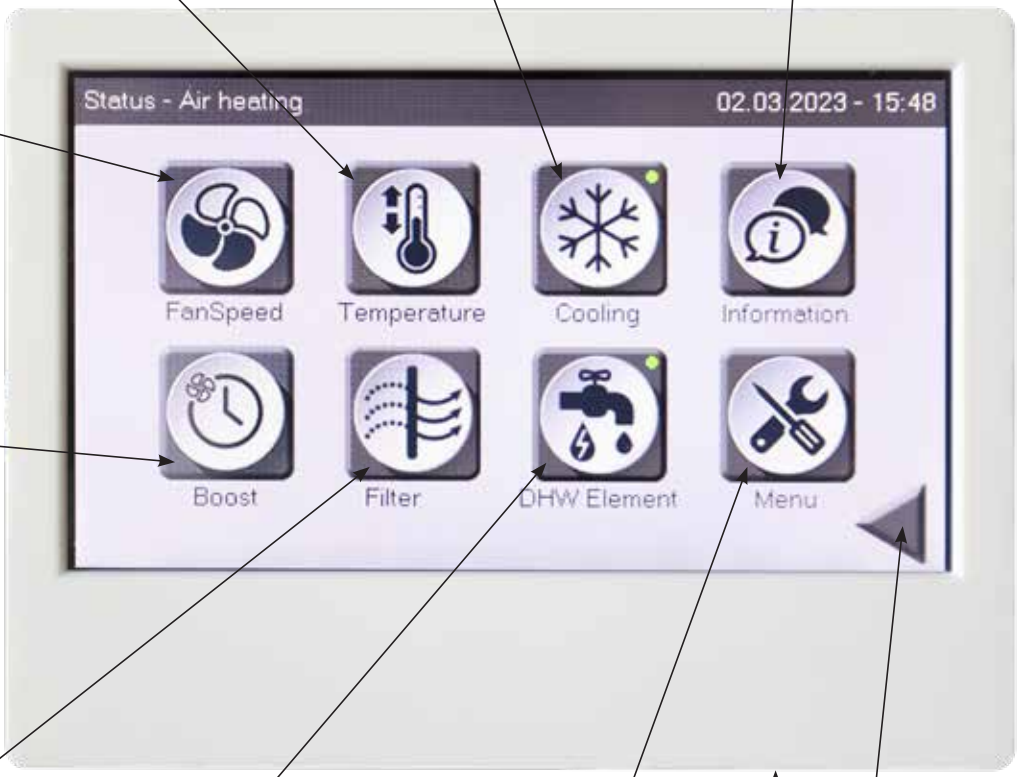
Userinterface Optima Touch – main screen

Touch to change room temperature setpoint (influences opening of summer bypass for room cooling etc.)

Touch to activate green light indicating that active cooling operation is allowed if required. If no green light is shown active cooling is disabled.
If EH2 is set to 0 the icon will be removed from the display.

Touch to access the status information, alarms and eventlog menu.

Touch to change fanspeed
The actual fanspeed will be indicated by colored fans indicating fanspeed 1-4
Standby will only be shown when menu EC3 is set to ON.
Please notice that fans will have a delay of 3-4 minutes until they are switched off.



Touch to increase fanspeed to step 3 for 30 minutes (time adjustable in menu A5).

Touch to access filter menu.
Here the filtertimer can be reset and the actual number of hours the filters has been in operation can be read.

Note - the filtertimer will only be shown if D3 lockscreen time has been set to 0, otherwise lockscreen timer will be visible

Touch to activate green light indicating that DHW electrical heating operation is allowed if required. If no green light is shown the DHW electrical heating is disabled.
If EH5 is set to 0 the icon will be removed from the display.

Touch to access the user and service menu.

Touch to go back to previous menu.

At the bottom of the display:
*Micro USB interface for PC programming of Optima 314 controller parameters.

*micro sd card – card reader for firmware update of controller and display.

4. START-UP

4.1 Userinterface Optima Touch – initial start up

During initial start up of the Optima 314 ventilation controller and with the Optima Touch connected to the controller, the following information will be shown.

Please wait approximately 1 minute for the initial boot sequence to complete.

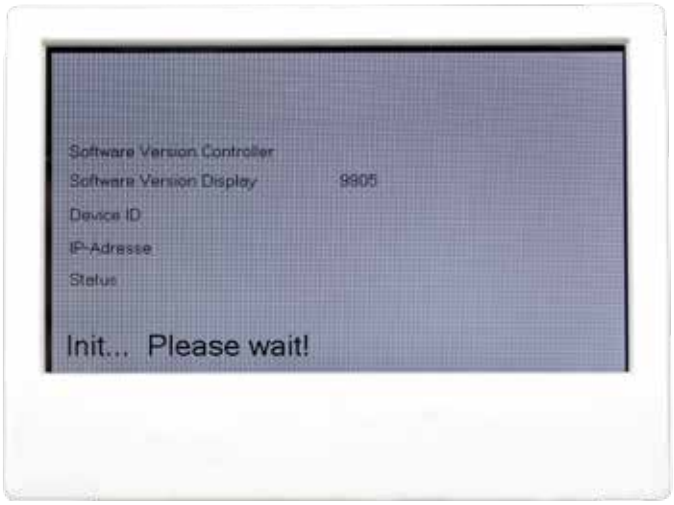
Software version controller: actual software version of Optima 314 controller.

Software version display: actual software version of display.

Device ID: the ID of the internet connection secure protocol device in the controller.

IP-adress: will only be shown if the ventilation unit has been connected to a router via RJ45 connection

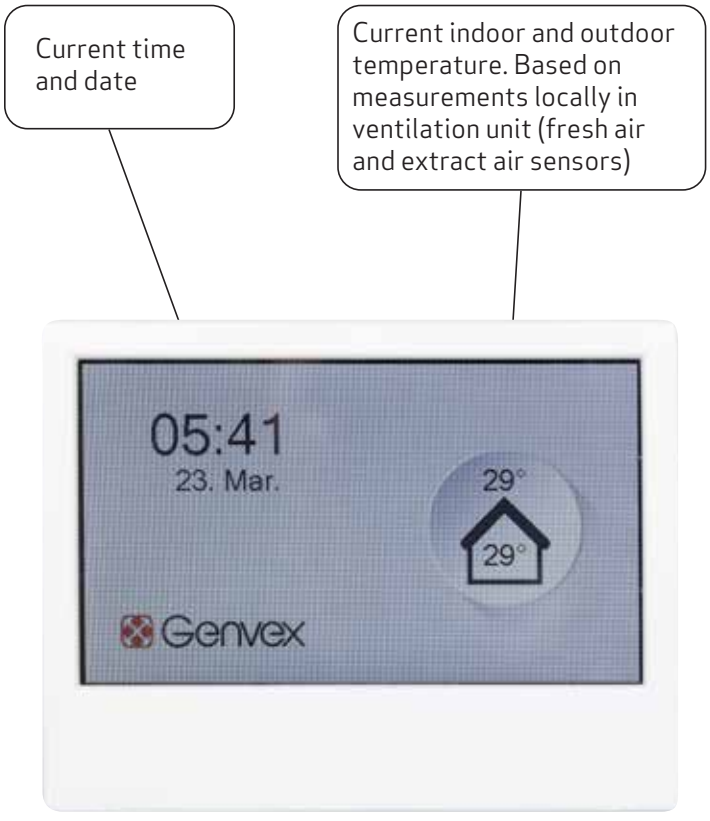
Internet connection status: will indicate whether internet connection status is connected or disconnected. If status indicates "disconnected" no connection through Genvex Connect app or remote monitoring/ remote service can be done.



4.2 Userinterface Optima Touch – screen saver

Depending on the screen saver settings in menu D – display. The current screen displayed will switch back to screen saver mode after 2 minutes. If D2 is set to 0 then the screensaver will be permanently active. If a time is set in D2 the screensaver will switch to blank screen according to the time set.

To reenter the main menu – touch the screen gently for 2 seconds untill the screen reactivates.



Screen saver

5. CONTROLLER MENU

5.1 Structure, user and service menu in Optima Touch

The user and service menu structure in the Optima Touch display is organized in the following sections

A. User: main user settings

B. Scheduler: calender schedules for change of fanspeeds and temperature setpoints

C. Date/time: date and time settings for info screen and for time stamping eventlog

D. Display: settings related to display and access to parameters

E. Service: service menu – please note that this menu should primarily be used by technicians with knowledge of the machine operation.

6. CONTROLLER SETTINGS

Menu	Description	Factory setting and (max. / min values
A1 - Reheating	If there is a reheater fitted to the system, you can choose if the reheater should operate. If the set point is set to OFF, the heater will not operate, even when this is necessary. If the set point is set to ON, the heater will start, as required. It regulates in ac-cordance with the temperature set in item 1 of the User Menu.	A1: Off (On - Off)
A2 - Humidity control	Here you turn on humidity control. It must be set to ON in order to be active.	A2: Off (On/Off)
A3 – DHW temperature	Here the domestic hotwater temperature controlled by the heatpump can be set. The temperature setpoint is related to the bottom temperature sensor of the DHW cylinder	A3: 52 °C (0-60 °C)
A4 – DHW element	Here the domestic hotwater temperature controlled by the electrical immersion heater can be set. The temperature setpoint is related to the temperature sensor located in the middle of the DHW cylinder.	A4: 50 °C (0-65 °C)
A5 - Boost time	Set the desired time for temporarily increased fan speed, activated via the boost button on the main display.	A5: 30 min (1 - 120 min)
A6 - Timer levels 3 and 4 - on/off	When switching the ventilation unit to fanspeed 3 and 4, the system will automatically return to fanspeed 2 after the number of hours set in A5 when adjusting this set point to ON. If the set point is set to OFF, the system will run at speed 3 or 4 until the fanspeeds are manually changed.	A6 : Off (On - Off)
A7 - Timer levels 3 and 4 - hours	If A6 is set to on , you can enter how many hours the system should run on level 3 or 4 before it automatically returns to level 2.	A7: 3 hours (1 - 9 hours)
B1- Fan scheduler	Here four seperate timers per day can be set for change of fanspeeds. The scheduler can be adjusted seperately for each weekday if required. If the same values shall be used for all weekdays - the schedule can be copied by touching the button "apply to all days"	B1: Not used (Not used / level 1-4 / Standby)
B2 - Temperature scheduler	Here four seperate timers per day can be set for change to a low-ered setpoint temperature (eg. for earlier opening of bypass in summertime in nighttime). The scheduler can be adjusted seper-ately for each weekday if required. If the same values shall be used for all weekdays - the schedule can be copied by touching the button "apply to all days"	B2: Not used (Not used / Alternative temp (B5) / Normal)
B3 – DHW scheduler	Here four seperate timers per day can be set for change to a low-ered setpoint temperature. The scheduler can be adjusted seperately for each weekday if required. If the same values shall be used for all weekdays - the schedule can be copied by touching the button "apply to all days"	B3: Not used / Alternative DHW temp (B6) / Normal

Menu	Description	Factory setting and (max. / min values
B4 - Enable scheduler	Here it is possible to activate / deactive the fan schedule set in B1 the temp schedule set in B2 and DHW scheduler set in B3	B1 Fan scheduler: Off (On - Off) B2 Temp. scheduler: Off (On - Off) B3 DHW scheduler: Off (On – Off)
B5 – Alternative tem-perature	Here it is possible to adjust the lowered temperature setpoint selected in B2. The temperature selected here will be an off-set to the temperature selected in the main menu “requested temperature”	B5: 0 °C (-10 to +10)
B6 – Alternative DHW temperature	Here it is possible to adjust the lowered temperature setpoint selected in B3. The temperature selected here will be an off-set to the temperature selected in the main menu “requested temperature”	B6: 0 °C (-10 to +10)
C1 - Time	Adjustment of actual time (important for error handling)	-
C2 - Date	Adjustment of actual date (important for error handling)	-
C3 - Daylight saving timer	Automatic switch over from summer/winter time ON/OFF	C3: On
D1- Language	Display language can be changed	D1 : English (English / Dansk / Deutsch / Svenska / Dutch)
D2 - Screensaver time	Idle time before screensaver activate. 0 = screensaver off	D2: 10 min (0 - 600 min)
D3 - Display lock time	Lock time active when touching lock symbol on main screen If set to 0 seconds – the filtermenu will be displayed instead of the lock screen icon on the main screen.	D3: 5 sec (0 - 120 sec)
D4 - Password	**Main menu password:** Choose password for locking main menu access. If password is selected - the next time the user trying to access the main menu will be prompted for entry of password. To deactive password promt use 0000 as password **Service menu password:** Choose password for locking service menu access. If password is selected - the next time the user trying to access the Service menu will be prompted for entry of password. To deactive password promt use 0000 as password	D4: 0000 (0000-9999)
D5 - Firmware update	Optima 314 controller and display can be firmware updated by use of a micro-SD card inserted into the SD card reader of the Optima touch display. Touch "start update" when the SD card containing the latest firmware has been inserted into the card reader to update the controller and display.	-

Menu	Description	Factory setting and (max. / min values)
EA - Save/load settings	**EA1 - Save settings** Saves the settings from the Optima314 controller to the display **EA2 - Load settings** Loads settings stored in EA1 and transfers data to a new Optima 314 PCB	-
EB - Fan speed levels	**EB1 - Level 1 Supply air** Level 1, which is the lowest speed, is usually used when there is nobody home. Both fans can be configured independently of each other for all levels so that the air flow in the supply air and in the extract air is equal, which provides optimal operation. The adjustment of the system must be performed with specialised air measuring equipment and can be done without using the main regulating damper. Configuring the air flows without expert advice is not recommended. Incorrect configuration can lead to major energy consumption or unpleasant indoor climate. Setting option: between 0 and 100%.	EB1: 40% (0-100%)
	EB2 - Level 2 Supply air Level 2 is the recommended speed of the system for providing optimal indoor climate. It should be adjusted to the ventilation requirement of the dwelling. Setting option: between 0 and 100%.	EB2: 50% (0-100%)
	EB3 - Level 3 Supply air is typically configured to a level with high activity in the house	EB3: 75% (0-100%)
	EB 4 - Level 4 supply air is typically configured to 100 % airflow for a quick replacement of air in the entire house. Remember that a higher air exchange rate increases energy consumption.	EB4: 100% (0-100%)
	EB5 - Level 1 Extract air The fan speed is adjusted until the same air flow is achieved as the supply air on level 1.	EB5: 40% (0-100%)
	EB6 - Level 2 Extract air The fan speed is adjusted until the same air flow is achieved as the supply air on level 2.	EB6: 50% (0-100%)
	EB7 - Level 3 extract air The air flow of level 3 is adjusted to the same air flow as the supply air on levels 3 .	EB7: 75% (0-100%)
	EB8 - Level 4 Extract air The fan speed is adjusted until the same air flow is achieved as the supply air on level 4.	EB8: 100% (0-100%)

Menu	Description	Factory setting and (max. / min values)
EB - Fan speed levels	**EB9 - min air volume mode** If set to on, the supply and extract fans will automatically increase fanspeed to the values set in EB10 and EB11 - when the heatpump activates. This function will ensure that the Combi unit will have the most optimal operating conditions. If EB9 is set to off - the fans will not automatically increase fanspeed and if a fan speed is selected which has lower fanspeed values than EB10 and EB11 - the heatpump will not activate. **EB10 – min air volume extract** Minimum fanspeed % for extract air fan. If EB9 is on then this will be the fanspeed when the heatpump is running. If EB9 is off then lower fanspeeds than this value will prevent the heatpump from starting. **EB11 – min air volume supply** Minimum fanspeed % for supply air fan. If EB9 is on then this will be the fanspeed when the heatpump is running. If EB9 is off then lower fanspeeds than this value will prevent the heatpump from starting. **EB12 - RPM Alarm** **Off =** RPM feedback from fans are not used actively **On =** If RPM feedback from fans reach 0 and fans are expected to run , the MVHR unit will shut down and show alarm. **EB13 - Reset RPM Alarm** Activate this function to reset RPM alarm once the problem has been fixed	EB9: On (on/off) EB10: 40 % (0-100 %) EB11: 40 % (0-100 %) EB12: On (on/off) EB13: Off (on/off)
EC - Regulator	**EC1 - Frost protection** **Off =** no frost protection active **T3 preheat** = electrical preheater controlled by fresh air temperature sensor (T3) **T5 preheat** = electrical preheater controlled by temperature sensor (T5) mounted in the discharge of the heatexchanger **Fan reduction =** supply air fanspeed is reduced gradualy to maintain discharge air temperature sensor (T5) at setpoint value EC2 **EC2 - Frost reduction** Adjustable setpoint for frost protection strategy EC1 **EC3 – Release system stop** If this setpoint is set to off, it will not be possible to switch off the fans of the machines. If the setpoint is on , the fans can be switched off. Please be aware that shutting off the ventilation for longer periods of time in cold ambient temperatures, can lead to condensation in the ductwork **EC4 – Factory reset** **Reset (-fans) =** reset all controller values to factory settings except fanspeeds **Reset al**l **=** reset all controller values to factory settings	EC1: Fan reduction (Off/ T3 preheat / T5 preheat / Fan reduction) EC2: 8 C (-10 - +10 C) EC3: on (on/off) EC4: Off (Reset -fans / Reset all)

Menu	Description	Factory setting and (max. / min values)
EC - Regulator	**EC5 – H3 relay options.** Preheat = the relay will activate a preheater connected to the relay H3. Adjust setpoint EC1 to T3 preheat or T5 preheat. Reheat = the relay will activate a reheater connected to the relay H3. The reheater connected to H3 will activate if the extract air temperature is setpoint – 1 C and keep running until the extract air temperature reaches the setpoint temperature. Please be aware that the H3 relay will switch off when the units is in heatpump deicing mode. Always on = the relay will be on continuously. **EC6 – AUX Relay H9** 0 : off 1 : The relay is on when the fans are active. 2: The relay is on when there is a need for additional roomheating. Please note that Menu A1 needs to be on as well. 3: The relay is on when a filterchange is required. 4: The relay is on when additional cooling is required. Please note that Menu EH2 needs to be on as well. To enable cooling activate the green light in the cooling icon on the main screen. 5: The control unit can handle an earth heat exchanger using a damper or brine circuit. The relay will be on in case of one of the following two conditions: If The outdoor temperature, sensor T9, is lower than 5 °C. (preheating of air by brine) Or If the outdoor temperature, sensor T9 > 15 °C and the roomtemperature is > setpoint + 1°C (precooling of air) 6: Floor heating control – The relay is switched on when the sensor in the tank bottom (T8) is greater than 30°C 7: Floor heating control – The relay is switched on when the sensor in the tank bottom (T8) is greater than 40°C 8: The relay is switched on when the L1 terminal is short-circuited/ activated (e.g. kitchen hood). This feature can be used with an on/ off damper connected to the H9 relay which shuts off towards the bathroom when the kitchen hoods is activated to direct the airflow on the kitchen hood. 9: It is possible to connect a solar pump controlled according to EC8 to the relay H9. The relay is off when T8 domestic hot water temperature reaches 52 °C	EC5: Preheat (preheat/ reheat / always on) EC6: 0 (0-10)

Menu	Description	Factory setting and (max. / min values)
EC - Regulator	10: It is possible to connect a solar pump controlled according to EC8 to the relay H9. The relay is off when T8 domestic hot water temperature reaches 65 °C 11: The relay is on if there is no error on the fire control system set in menu EJ1 connected to the Combi unit. **EC7 – AUX Relay H10** 0 : off 1 : The relay is on when the fans are active. 2: The relay is on when there is a need for additional roomheating. Please note that Menu A1 needs to be on as well. 3: The relay is on when a filterchange is required. 4: The relay is on when additional cooling is required. Please note that Menu EH2 needs to be on as well. To enable cooling activate the green light in the cooling icon on the main screen. 5: The control unit can handle an earth heat exchanger using a damper or brine circuit. The relay will be on in case of one of the following two conditions: If The outdoor temperature, sensor T9, is lower than 5 °C. (preheating of air by brine) Or If the outdoor temperature, sensor T9 > 15 °C and the roomtemperature is > setpoint + 1°C (precooling of air) 6: Floor heating control – The relay is switched on when the sensor in the tank bottom (T8) is greater than 30°C 7: Floor heating control – The relay is switched on when the sensor in the tank bottom (T8) is greater than 40°C 8: The relay is switched on when the L1 terminal is short-circuited/ activated (e.g. kitchen hood). This feature can be used with an on/ off damper connected to the H9 relay which shuts off towards the bathroom when the kitchen hoods is activated to direct the airflow on the kitchen hood. 9: It is possible to connect a solar pump controlled according to EC8 to the relay H10. The relay is off when T8 domestic hot water temperature reaches 52 °C 10: It is possible to connect a solar pump controlled according to EC8 to the relay H9. The relay is off when T8 domestic hot water temperature reaches 65 °C 11: The relay is on if there is no error on the fire control system set in menu EJ1 connected to the Combi unit.	EC7: 0 (0-10)

Menu	Description	Factory setting and (max. / min values)
EC – Regulator	**EC8 – Solar Hysteresis** If a solar collector is connected to the coil of the boiler, use this option to input the temperature difference between the temperature in the solar collector (T9) and the domestic water temperature (T8) that should be reached before the solar pump starts. The solar pump will not stop until T9 is equal to T8. The solar pump will stop under all circumstances once T8 has reached a temperature of 60 °C	EC8 : 5 (0-5 C)
ED - Electrical heating	**ED1 - Regulation electricity** If an electrical preheater or an electrical reheater is installed, it may be necessary to adjust the regulation time. **ED2 - Preheating tempeature** Setpoint temperature for frost protection preheater - see menu EC1 for reference temperature sensor **ED3 - Preheat PI P** P-band for the PI controller for the electrical modulating preheater. The P-band controls the amplification of the controller following a deviation from the set point (speeder) **ED4 - Preheat PI I** I-band for the PI controller for the electrical modulating preheater. The function controls how quickly the controller adapts to a deviation of the set point (brake). **ED5 - Preheat Reg** The Preheat Cycle function works, as follows: E.g. necessary output 50% and cycle = 60 sec means that the controller will switch the preheater on for 30 sec and off for 30 sec. Note: Please refer to your country-specific regulations on limitations when adjusting this function. The modulating preheater function refers to the value adjusted in set point EC1.The preheater will try to maintain a steady freish air temperature according to this set point. When the modulating preheater is used, the existing fresh air temperature sensor (T3), which is built into the ventilation unit, can be used as reference. No extra temperature sensor is required. **ED6 - Reheat offset** Offset for reheater with reference to the set point for the requested temperature. E.g. requested temp = 20°C Offset value = 2 reheater aims to maintain a supply temperature of 18°C **ED7 - Reheat PI P** P-band for the PI controller for the electrical modulating reheater. The P-band controls the amplification of the controller following a deviation from the set point (speeder). **ED8 - Reheat PI I** I-band for the PI controller for the electrical modulating preheater. The function controls how quickly the controller adapts to a deviation of the set point (brake).	ED1: 3 min (1 - 30 min) ED2: -3 °C (-15 to +10°C) ED3: 5 (1 - 255) ED4: 200 (1 - 255) ED5: 40 sec (10 - 120sec) ED6: -2 °C (-10 to +10°C) ED7: 5 (1 - 255) ED8: 200 (1-255)

Menu	Description	Factory setting and (max. / min values)
ED - Electrical heating	**ED9 - Reheat reg.** The Reheat Cycle function works, as follows: E.g. necessary output 50% and cycle = 60 sec means that the controller will switch the reheater on for 30 sec and off for 30 sec. Note: Please refer to your country-specific regulations on limitations when adjusting this function. The modulating reheater function refers to the value adjusted in selected temperature and chosen sensor for control (see EC3). To allow the reheater to operate adjust set point A1=on;The reheater will try to maintain a steady supply air temperature according to this set point. When using the modulating reheater, it will be necessary to replace the inlet air temperature sensor (T1) in the ventilation unit with a new temperature sensor installed upstream of the reheater.	ED9: 40 sec (10-120sec)
EE - Bypass	**EE1 - Bypass open offset** Here you set the temperature at which the bypass should open. You set a temperature differential, which means that if you want the bypass to be 100% open at e.g. 23°C and if the room set temperature is 20°C, this menu item should be set to 3°C. The bypass will open, provided that: 1. The extract air temperature is higher than the outdoor air temperature. 2. The outdoor air temperature is above the set temperature in EE2. The bypass opens when the temperature reaches the requested temperature + the temperature differential set in this menu item. **EE2 - Turn off bypass** To prevent the bypass damper from opening at low outdoor air temperatures and from blowing cold, unheated air into the dwelling, use this function to configure the lowest outdoor air temperature, at which the damper must be closed. The value is an expression of the greatest difference that may exist between the requested temperature and the lowest outdoor air temperature (offset). Setting option: Between 0 and 20 °C. If 0°C is selected, the function is disabled. **EE3 – Bypass time minimum on** Bypass will be open minimum according to the setpoint	EE1: 3 °C (1 - 10 °C) EE2: 4°C (0-20°C) EE5: 5 min (0-60 min)
EF - Filter	**EF1 - Reset filtertimer** select this option to reset filter timer to 0 days The current counter value will display current days since last filterreset **EF2 - Filtertimer** Setpoint for adjusting months until filteralarm will activate 0 months = filtertimer deactived	EF1: reset filter EF2: 3 months (0 - 12 months)

Menu	Description	Factory setting and (max. / min values)
EF - Filter	**EF3 - Filter/stop** To ensure that the filters are changed when the filter change alarm is active, the set point can be set to ON. The system will then stop automatically after 14 days if the filters have not been changed in the meantime. If this precaution is not required, the set point can be set to OFF and the system will continue to operate.	EF3: off (On/Off)
EG - Humidity control	**EG1 - Humidity max temperature** Setting the end point for outside temperaturecompensation (T3), see the X-axis on the graph. **EG2 - Humidity max value** Setting the end point for outside temperature compensation, see the Y-axis on the graph (desired max. humidity value). **EG3 - Humidity fanspeed** Setting of how much the fan speed may differ in relation to the desired fan speed. Examples Set point fanspeed level 2 (EB2 / EB6) = ± 15% **EG4 - Humidity regulation frequency** Setting of desired frequency for how often the fan speed may be changed. The function is defined as 1% per unit of time. When humidity regulation is activated, the current humidity is continuously measured via the integrated humidity sensor in the ventilation unit, which is placed in the extract air duct.	EG1: 15 °C (5 - 25 °C) EG2: 60 % (35 - 85 %) EG3: 15 % (5 - 30 %) EG4: 10 min (1 - 60 min)
EH – Heatpump settings	**EH1 – Priority water/air** Choosing water will prioritize water heating first before switching to room heating and vice versa. **EH2 – Release cooling** Choosing on will enable the cooling icon on the display from where the cooling can be activated. (green light in the cooling icon on the main screen means automatic activation of cooling enabled) Note: Choosing off will remove the cooling icon from the main menu. **EH3 – Cooling activation** Additional offset to EE1 (bypass offset) from when active cooling will start. e.g. requested room temperature 20 C EE1 set to 20 + 3 C the active cooling will turn on when the extract air temperature reaches 20 + 3 + 3 = 26 C Please notice that the bypass damper will close when running active cooling to maximize efficiency.	EH1 : water (water / air) EH2 : on (on/off) EH3: 3 C (0-5 C)

Menu	Description	Factory setting and (max. / min values)
EH – Heatpump settings	**EH4 – Min outdoor cooling** To prevent the cooling function to activate at low fresh air temperatures and from blowing cold, unheated air into the dwelling, use this function to configure the lowest fresh air temperature at which cooling may be enabled.	EH4: 15 C (0-20 C)
	EH5 – DHW element Enable the DHW element icon on the main screen of the touch panel. (green light in the DHW icon on the main screen means automatic activation of DHW element enabled). Note: Choosing off will remove the DHW icon from the main menu.	EH5: On (on/off)
	EH6 – Legionella on/off Selecting on will enable automatic legionella protection which will heat up the DHW cylinder to 65 C once a week, according to the calender EH7, EH8	EH6: Off (on/off)
	EH7 – Legionella start day Choose day to start legionella disinfection	EH7: Monday (Monday-Sunday)
	EH8 – Legionella start hour Choose hour to start legionella disinfection	EH8: 01 (00-23)
	EH9 – stop defrost temp The defrosting period ends by default when the evaporator reaches a temperature of 10 °C, which is the standard setting. Setting this value lower will reduce the deicing cycle but may lead to built up of ice on the evaporator.	EH9: 10 C (0-15 C)
	EH10 – Balanced defrost Choosing on will maintain the current fanspeed on both supply and extract air fans – but may lead to longer deicing periods. Choosing off will stop the supply air fan during the deicing cycle which will typically be the most efficient deicing strategy.	EH10: off (on/off)
	EH11 – Constant on/off If the home's other heating systems are not connected to the heat pump system, the home's other heating systems, e.g. a wood-burning stove, can stop the heat pump so that the heat pump system with heat exchanger only blows preheated air into all rooms. This may cause increasing problems with draught as the temperature drops outside. Setting EH11 will run the heatpump continuously independent of the extract air temperature. Choosing on, will switch off the heatpump when the desired roomtemperature has been reached.	EH11: off (on/off)
	EH12 – Constant @ temp If EH11 is set to on, set the outdoor air temperature here to when the heatpump will need to run continuously to heat the supply air.	EH12: 5 C (0-10 C)

<table>
<tr><th>Menu</th><th>Description</th><th>Factory setting and (max. / min values)</th></tr>
<tr><td>EH – Heatpump settings</td><td>
EH13 – External override
• Scheduler = the calender programme will determine the operation of the Combi unit.
• Solar Panel = the solar panel input determines the operation of the Combi
• Smart grid = the smart grid input determines the operation of the Combi

See SG functions below

<table>
<tr><td>OFF</td><td>The SG ready function can be activated by the installer here. Three possible modes can be selected. This function allows the start of the heat pump from an external access (terminal L9 on PCB). SG ready is not active if there is not external input (SG1 OFF, SG2 OFF).</td></tr>
<tr><td>(SG BOOST)*</td><td>The heat pump and electric heater must start, if below the max water temperature allowed in the tank. Both Heat Pump end Electric heater are forced to operate (SG1 ON and SG2 ON).</td></tr>
<tr><td>(SG ECO)*</td><td>The heat pump operates minimizing costs, only the heat pump is activated (SG1 OFF, SG2 ON).</td></tr>
<tr><td>(SG BLOCK)*</td><td>The unit can be stopped even if there is a need for hot water (SG1ON, SG2 OFF).</td></tr>
</table>
</td><td>EH13: Scheduler (scheduler / solar panel / smart grid)</td></tr>
<tr><td></td><td>EH14 – PV panel low set
Set voltage input from solar inverter where surplus electricity will active the heatpump to produce DHW to a higher temperature setpoint according to setpoint B6</td><td>EH14: 1V (0-10)</td></tr>
<tr><td></td><td>EH15 – PV panel high set
Set voltage input from solar inverter where surplus electricity will activate both the heatpump and immersion heater to produce DHW to a higher temperature setpoint according to B6</td><td>EH15: 5 V (0-10)</td></tr>
<tr><td></td><td>EH16 – PV panel delay
Time delay before switching between operating modes when signal from solar inverter fades / in-crease above threshold value.</td><td>EH16: 15 min (0-60 min)</td></tr>
<tr><td></td><td>EH17 – Compressor hysteresis
The default temperature difference between start/stop compressor is ± 0.4 °C. Changing the tempera-ture difference is recommended only under special operating conditions</td><td>EH17: 0,4 C (0,1 – 1,0 C)</td></tr>
<tr><td></td><td>EH18 – Compressor mode
Choose Auto to let the Combi automatically switch on/off the heatpump.
Choose off to enable ventilation and DHW production with immersion heater (e.g. when compressor is damaged and awaits service)</td><td>EH18: Auto (Auto / off)</td></tr>
</table>

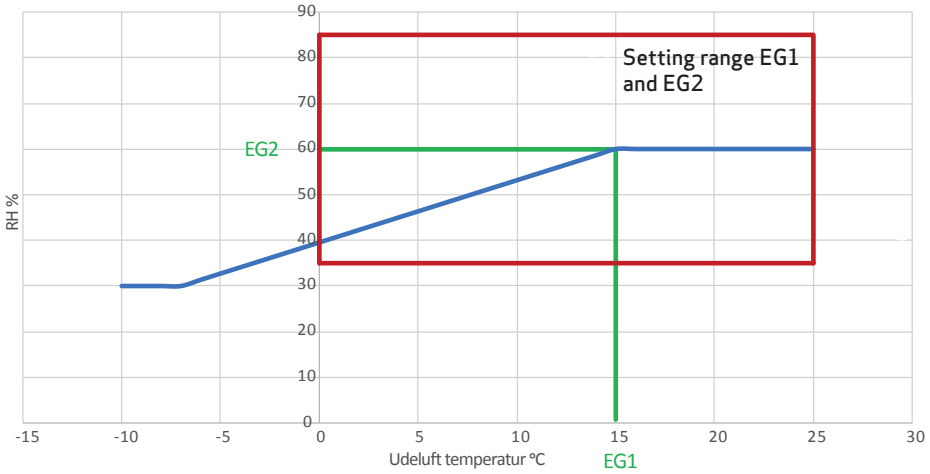
Menu	Description	Factory setting and (max. / min values)
	EI1 - CO_2 control On = activates external sensors for demand control (if available) Off = no external sensors for demand control available	EI1: Off (On/Off)
	EI2 - CO_2 setpoint setpoint for desired CO_2 level in PPM. If CO_2 level increase above setpoint, the fans will increase speed in steps to maintain CO_2 level at setpoint.	EI2: 800 PPM (400- 2000 PPM)
	EI3 - CO_2 level time setpoint in minutes for time between increase/decrease fanspeed in steps according to CO_2 level (see setpoint EI2)	EI3: 30 min (0 - 1000 min)
	EI4 - Number of RF CO_2 sensors Select number of wireless CO_2 sensors connected. Make sure that the dip switches in the CO_2 sensors are set correct according to seperate documentation.	EI4: 0 (0-4)
EJ - Fire control	**EJ1 - Number of fire dampers** Setpoint for number for fire dampers connected to the system which need to be monitored 0 = fire control system inactive 1-4 = number of dampers connected	EJ1: 0 (0 - 4)
	EJ2 - Fire test/ Reset Off = automatic mode, damper will be tested once a month according to schedule Test = test system now, with this function a function test of the fire damper will be force started and the result shown in the display (N.B. there will be a delay of up to 240 seconds from when the test is started until the test is carried out). Reset = reset fire alarm, in case of error during damper test, error in damper/smoke detector or lack of communication, the ventilation unit will shut down and an alarm symbol will be shown on the display. To restart the unit, a reset of the fire automation must be carried out.	EJ2: Off (Off / Test / Reset)
	EJ3 - Fire test date Schedule for when automatic monthly fire/smoke damper test shall be conducted	EJ3: 1 (1 - 31 day)
	EJ4 - Fire test hour Schedule for when automatic fire/smoke damper test shall be conducted	EJ4: 12 (0 - 23 hour)

Menu	Description	Factory setting and (max. / min values)
EK - Mixing valve control	PLEASE NOTE: If no external outdoor air temperature sensor has been connected the controller, the built in fresh air temperature sensor in the MVHR is used as reference for calculating weathercompensation temperature setpoints. **EK1 - Heating mode** Off = no external heating circuit connected Floor = underfloor heating circuit connected Radiator = radiator heating circuit connected **EK2 - Outdoor temp. Comp. At -12 °C** Setpoint for flowtemperature at -12 °C outdoor temperature **EK3 - Outdoor temp comp at 20 °C** Setpoint for outdoor temperature when flow temperature is 20 °C An outdoor air temperature exceeding the setpoint in EK3 will close the heating circuit (sommerstop) **EK4 - Compensation curve offset** Setpoint in °C where heating curve compensation set in EK5 will have maximum influence **EK5 - Compensation curve** Heating curve can be increased in steps of 0-5 °C with max influence according to value set in EK4 **EK6 - Max flow temperature** Flowtemperature will be limited to maximum 45 °C if underfloor heating is selected in EK1 Flowtemperature will be limited to 90 °C if radiator heating is selected in EK1 **EK7 - Valve time (sec)** Time for 3-point control valve from fully closed to fully open (depends on actuator and valve stem configuration). Please refer to valve supplier manual for this information. **EK8 - Max return temperature** If max return temperature exceeds the temperature setpoint, then the valve will close incrementally untill the return temperature setpoint is archieved. **EK9 - Neutral Zone** Hysteresis for temperature control via PID	 EK1: Off (Off / Floor / Heater) EK2: 45°C (20 - 90°C) EK3: 20°C (15 - 25°C) EK4: 2°C -10 - +10°C) EK5: 2°C (0 - 5°C) EK6: 45°C (20 - 65°C) EK7: 150 sec (1 - 255 sec) EK8: 50°C (25 - 70°C) EK9: 1°C (0 - 10°C)

Menu	Description	Factory setting and (max. / min values)
EK - Space heating control	**EK10 - Heating PI P** PI controller P-band By increasing this value the controller will try to reach the setpoint temperature faster (with a risk of overshooting the setpoint) **EK11 - Heating PI I (x10)** PI controller I-band By increasing this value the controller will try to reduce overshooting / offset of temperatures (with a risk of slowing the controller down) **EK12 - Heating Reg time** PI controller regulation time By increasing this value the controller will be slowed down as time between recalculation of valve position will be increased	EK10: 20 (0 - 255) EK11: 50 (0 - 255) EK12: 5 sec (1 - 120 sec)
EL – Modbus	**EL1 - Modbus adress** Modbus slave adress of unit **EL2 - Modbus baud rate** choose either 9600 or 19200 baud depending on the application type **EL3 - Modbus Parity** choose odd or even depending on the application type **EL4 - Modbus Modify** choose off or on depending on the application type	EL1: 20 (1 - 247) EL2: 19200 baud (9600 baud / 19200 baud) EL3: Even (None / Even / Odd) EL4: On (On/Off)
EM - Manual overridel	Enter password for entering relay test program (only for installers)	
OEM	Enter password for entering OEM program (only for installers)	

7. FURTHER EXPLANATIONS OF HUMIDITY AND DISTRICT HEATING CONTROL

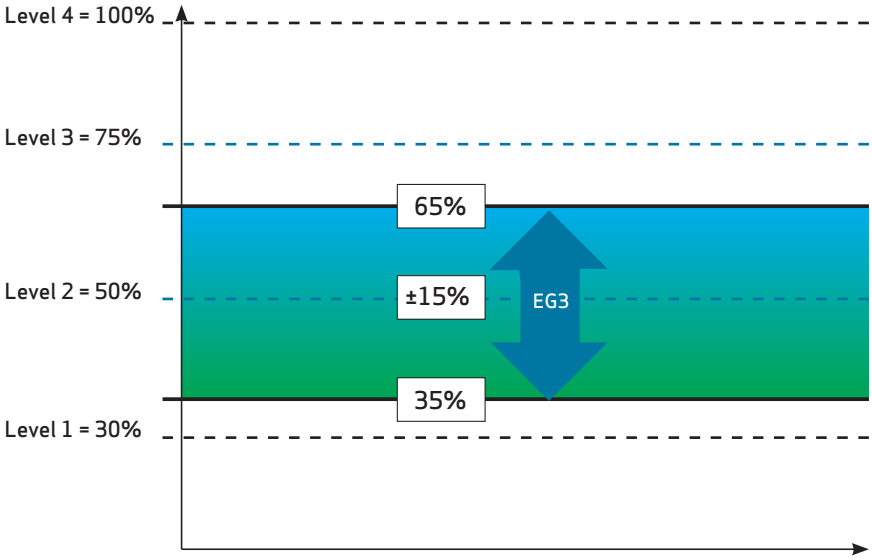
7.1 Humidity control explanation



Example 1:
At a fresh air temperature of 10°C the RH-control aims for 55 % humidity measured in the extract air.

Example 2:
At a fresh air temperature of 20°C the RH-control aims for 60 % humidity measured in the extract air.

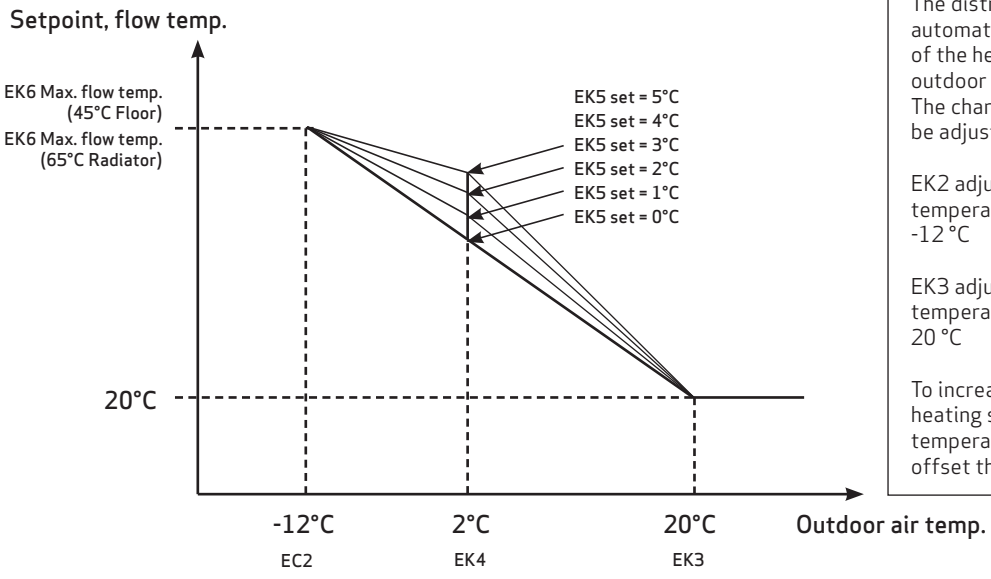
EG1 and EG2 is used to change the characteristics of the humidity control values by moving the compensation curve (indicated by the green line on the graph).



Example:
Set point = ± 15% (EG3)
With a desired fan speed of 2 set to 50 %, the fan speed will be able to fluctuate from 35 % to 65 % Humidity control is only available in fanspeed 2 and will automatically be deactived running in any other fanspeed mode.

Regulation of the fan speed takes place ±1% for every 10
min. (factory setting EG4)

7.2 Mixing valve control explanation



The district heating control system will automatically adjust the flowtemperature of the heating system according to the outdoor air temperature.
The characterstic of the heating curve can be adjusted by EK2 and EK3

EK2 adjust the requested flow temperature at outdoor air temperature -12 °C

EK3 adjust the requested outdoor temperature when the flowtemperature is 20 °C

To increase heating capacity of the heating system at a specific outdoor air temperature. EK4 and EK5 can be used to offset the heating curve characterstics

8. MAINTENANCE

8.1 Replacing Filters

When the filteralarm is displayed, the filters must be changed. Stop the system by the circuit breaker of the unit or by the circuit breaker on the terminal board. Open the front cover/filter drawers and remove the filters. After having changed the filters, reset the filter timer. The time interval for cleaning/ changing the filters can be adjusted in the operating menu. Based on normal environmental conditions with clean air – a filter change is recommended every 6 months for optimal working conditions.
Vacuum cleaning or using pressurised air on the filters is not recommended.
Recommended filters to be used: Original Genvex filters in quality Coarse / G4 = Standard filter (typically used on extract air side) ; ePM10 / F5 = Fine filter ; ePM1 / F7 = Pollen filter (typically used on fresh air side)

Please note that the following recommended annual service of the ventilation unit internal components should be done by an installer.

Condensation drain
When changing the filter in August/September before the outside temperature falls to 5 °C, check that the condensation drain is not blocked with dirt and make sure that there is water in the water trap. Pour 1 litre of water into the condensation tray and make sure it runs off freely. If the condensation drain does not work, this could lead to water damage in the home.

Heat exchanger
Inspect the heat exchanger every year. If it is dirty, remove it and: - Alu-exchanger: Wash in lukewarm soapy water and rinse using a hand shower if necessary. - Plastic exchanger: No cleaning with solvents - use only clean water carefully only careful dust removal from air intake surfaces with a household vacuum cleaner.

Fans
Inspect the two fan wheels for dirt each year. If they are dirty, they can be washed using a brush, bottle cleaner, etc. Supply air and extract air valves: Clean the valves by wiping with a dry cloth. Be careful that the valves do not turn, so that the air volume changes.

8.2 Dismantling/taking the system out of service

Generally it is recommended to maintain a constant airflow through the ventilation unit at all times to prevent condensation in the ductwork.
In case of the ventilation system not being used for weeks. The following must be done: The power supply, i.e. the power cables, must be disconnected. Disconnect the condensation outlet and power cables for any reheater/ preheater. Disconnect cables for the control panel and dismantle ducts. If the system should to be taken out of service, the ducts must be dismantled to avoid condensed water in the system and in the ducts. Close all supply air and extract air valves.

9. TROUBLESHOOTING

9.1 Safety thermostat in electrical heater (optional equipment)

If an error occurs on an electrical heater, the safety thermostat will disconnect. The heater
is equipped with a fire thermostat that automatically cuts off the power supply, if the temperature exceeds 50 °C. If the temperature decreases, the heater automatically re-engages. As an additional security there is a built-in thermal cut-out, which disengages if the temperature exceeds 100 °C. Re-engaging must be done manually. Does not apply to PTC electrical heaters.

The system is not running. Unit stopped
Possible error
- Fuse in main board has blown, no power to unit.
- One of the fuses on the circuit board of the unit isblown.
- Loose wire, no power to unit.
- Loose wire between unit and control panel.
- Faulty or incorrectly set week program.
- Filter timer has switched the system off. Condensed water is leaking from the unit Possible error:
- Condensation outlet blocked by dirt.
- The condensation outlet is not adequately protected against freezing at low outdoor temperatures.
- If EB10 = on, check fans to ensure operation. If fans are expected to run and RPM feedback = 0 then ventilation unit will shut down and indicate alarm

No supply air
Possible error
- Faulty supply air fan
- Clogged supply air filter
- Clogged fresh air grill due to dirt and leaves during the fall and snow and ice during the winter.
- Fuse on the circuit board is blown.
- The unit is in defrost mode (supply air fan stops)

No extract air
Possible error
- Faulty extract air fan
- Clogged extract air filter.
- Fuse on the circuit board is blown

Cold supply air
Possible error
- Clogged heat changer.
- Faulty extract air fan.
- Clogged extract air filter.
- Electrical reheater is disconnected at the over heating thermostat (only units with electrical reheater installed).
- Air in the heating pipes, faulty thermostat / motorvalve, incorrect setting of control panel.

9.2 Error codes

Error messages will be written in clear text on the Optima Touch display.

Optima 314		
Main menu	**Factory settings**	**Possible settings**
A – User		
A1 - Reheating	Off	On - Off
A2 - Humidity control	Off	On - Off
A3 - DHW temperature	52°C	0 - 60°C
A4 - DHW Element Temp	50°C	0 - 65°C
A5 - Boost time	30 min	1 - 120 min
A6 - Timer levels 3 and 4	Off	On - Off
A7 - Timer levels 3 and 4	3 Timer	1 - 9 Timer
B - Schedulers		
B1 - Fan Scheduler	Not in use	Not in use / level 1 -4 / standby
B2 - Temperature scheduler	Not in use	Not in use / Alternative temp (B5) / Normal
B3 - DHW scheduler	Not in use	Not in use / Alternative DHW temp (B6) / Normal
B4 - Enable scheduler	Off	On - Off (B1 - B2 - B3)
B5 - Alternative Temp.	0,0°C	-10°C - +10°C
B6 - Alternative DHW Temp	0,0°C	-10°C - +10°C
C – Date / Time		
C1 - Time		
C2 - Date		
C3 - Daylight Saving Time	On	On - Off
D – Display		
D1 - Language	English	English / Dansk / Deutch / Svenska
D2 - Screensaver time	10 min	0 - 600 min
D3 - Display Lock time	5 sek	0 - 120 sek
D4 - Password	0000	0000 - 9999
D5 - Firmware Update		
EA - Save/Load Setting		
EA1 - Save settings		
EA2 - Load settings		
EB – Fan level		
EB1 - Level 1 Supply air	40 %	0 - 100 %
EB2 - Level 2 Supply air	50 %	0 - 100 %
EB3 - Level 3 Supply air	75 %	0 - 100 %
EB4 - Level 4 Supply air	100 %	0 - 100 %
EB5 - Level 1 Extract air	40 %	0 - 100 %
EB6 - Level 2 Extract air	50 %	0 - 100 %
EB7 - Level 3 Extract air	75 %	0 - 100 %
EB8 - Level 4 Extract air	100 %	0 - 100 %
EB9 - Min air volume mode	On	On - Off
EB10 - Min air volume extract	40%	0 - 100%
EB11 - Min air volume supply	40%	0 - 100%
EB12 - RPM Alarm	On	On - Off
EB13 - Reset RPM Alarm	Off	On - Off

Optima 314		
Main menu	**Factory settings**	**Possible settings**
EC – Regulator		
EC1 - Frost protection	Fan Reduction	Off / T3 preheat / T5 preheat / Fan Reduction
EC2 - Frostreduktion	8°C	-10°C - +10°C
EC3 - Release system stop	On	On - Off
EC4 - Factory reset	Off	Off - Reset (%fans) - Reset all
EC5 - H3 relay options	Preheat	Preheat - Reheat - Always on
EC6 - AUX Relay H9	0	0 - 10
EC7 - AUX Relay H10	0	0 - 10
EC8 - Solar Hysteresis	5°C	0 - 5°C
ED – Electric heating		
ED1 - Regulation electricity	3 min	1 - 30 min
ED2 - Preheating temperature	3°C	-15°C - +10°C
ED3 - Preheat PI P	5	1 - 255
ED4 - Preheat PI I	200	1 - 255
ED5 - Preheat reg.	40 sek	10 - 120 sek
ED6 - Reheat offset	-2°C	-10°C - +10°C
ED7 - Reheat PI P	5	1 - 255
ED8 - Reheat PI I	200	1 - 255
ED9 - Reheat reg.	40 sek	10 - 120 sek
EE – Bypass		
EE1 - Bypass open offset	3°C	1 - 10°C
EE2 - Turn off bypass	4°C	0 - 20°C
EE5 - Bypass Time min on	5 min	0 - 60 min
EF – Filter		
EF1 - Reset filtertimer		
EF2 - Filtertimer	3 mth	0 - 12 month
EF3 - Filter/stop	Off	On - Off
EG – Humidity control		
EG1 - Humidity max temp	15°C	0 - 25°C
EG2 - Humidity max value	60 %	35 - 85 %
EG3 - Humidity fan speed	15 %	5 - 30 %
EG4 - Humidity reg. Freq.	10 min	1 - 60 min
EH - Combi Settings		
EH1 - Priority water / air	Water	Water - Air
EH2 - Release cooling	On	On - Off
EH3 - Cooling activation	3°C	0 - 5°C
EH4 - Min outdoor cooling	15°C	0 - 20°C
EH5 - DHW element	On	On - Off
EH6 - Legionella on/off	Off	On - Off
EH7 - Legionella start day	Monday	Monday - Sunday
EH8 - Legionella start hour	01	00 - 23
EH9 - Stop defrost temp	10°C	0 - 15 °C

Optima 314		
Main menu	**Factory settings**	**Possible settings**
EH - Combi Settings		
EH10 - Balanced defrost	Off	On - Off
EH11 - Constant on/off	Off	On - Off
EH12 - Constant @ temp	5°C	0 - 10°C
EH13 - External override	Scheduler	Scheduler / solar panel / Smart Grid
EH14 - PV panel low set	1V	0 - 4095
EH15 - PV panel high set	5V	0 - 4095
EH16 - PV panel delay	15 min	0 - 60 min
EH17 - Compressor hysteresis	0.4°C	0.1 - 1.0°C
EH18 - Compressor mode	Auto	Auto - Off
EI – Demand Control		
EI1 - CO2 control	Off	On - Off
EI2 - CO2 setpunkt	800 PPM	400 - 2000 PPM
EI3 - CO2 level time	30 min	0 - 1000 min
EI4 - no. CO2 Sensors	0	0 - 4
EJ – Fire Control		
EJ1 - No. Of fire dampers	0	0 - 4 stk
EJ2 - Fire test/reset	Off	Off / Test / Reset
EJ3 - Fire test date	1	1 - 31 day in month
EJ4 - Fire test hour	12	0 - 23 time
EK – Mixing valve		
EK1 - Heating mode	Off	Off / Floor / Heater
EK2 - Temp comp at -12°C	45°C	20 - 90°C
EK3 - Temp comp at 20°C	20°C	15 - 25°C
EK4 - Comp. Curve offset	2°C	-10°C - +10°C
EK5 - Compensation curve	2°C	0 - 5°C
EK6 - Max flow temp.	45°C	20 - 65°C
EK7 - Valve time	150 sek	1 - 255 sek
EK8 - Max Returntemp.	50°C	25 - 70°C
EK9 - Neutral Zone	1°C	0 - 10°C
EK10 - Heating PI P	20	0 - 255
EK11 - Heating PI I (x10)	50	0 - 255
EK12 - Heating Reg tid	5 sek	1 - 120 sek
EL – Modbus		
EL1 - Modbus address	20	1 - 247
EL2 - Modbus baud rate	19200 baud	9600 / 19200 baud
EL3 - Modbus parity	Even	None / Even / Odd
EL4 - Modbus modify	On	On - Off
EM – Manually override		
OEM		

THE AIR WE BREATHE

All Genvex systems are rated with energy label A

Genvex develops ventilation units that use as little energy as possible, whilst still being as efficient as possible. This is good for the environment – and will also save you money. Our units comply with all applicable standards and are easy to use, install and maintain. Last – but not least – all Genvex units have compact dimensions that makes them easy to install seamlessly in all types of homes – large or small.

Genvex is a part of the Swedish NIBE Group, which has specialised in providing environment-friendly energy solutions throughout the last 70 years. The NIBE group consists of more than 140 companies all over Europe.

Genvex – the original Danish ventilation system

Genvex is a true Danish original. We started producing ventilation systems in 1978 and are still the front runners when it comes to development and production of the most innovative and durable ventilation systems on the market.

Our units are installed in thousands of homes, providing clean, fresh air free from pollen, dust and harmful particles. They help lots of families with maintaining a healthy and comfortable indoor climate and prolong the longevity of the house itself. With very high heat recovery rates, a Genvex system lets you recover and reuse up to 95 % of the heat inside your home. As a result, our units provide a strong contribution to energy savings in both in family homes and in society as a whole.

Please visit www.genvex.com to see a list of our distributors

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