

OPERATING INSTRUCTIONS



OPTIMA 270

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1. INSTALLATION OF OPTIMA BASIC

Important information

Safety information

This appliance can be used by children aged 8 and over and by people with reduced physical, sensory or mental capabilities or lack of experience and knowledge, as long as they are supervised or have been instructed in the safe use of the appliance and understand the hazards involved. Children must not play with the appliance. Children must not clean or maintain the appliance without supervision. We reserve the right to make design or technical changes.

1.1 Installation

Installation of the control panel

The control panel is intended for installation on a flat wall.

1.2 Assembly

Find the place on the wall where you want to attach the control panel and mark the location of the screw holes. At least two screws must be used to secure the control panel to the wall. The type of wall will determine the method for drilling holes, the hole size and the correct screws for fixing the panel.

When the control panel is securely mounted on the wall, take the Optima Basic panel, which comes with a pre-installed cable, and pass this cable through the opening in the cabinet, as shown in the picture.

Secure the cable to the chassis with a cable tie as shown to prevent the cable from being pulled out of the clamp in the display.

Please note: If the pre-installed 1.8 metre Optima Basic cable is not long enough, it is possible to replace this with a 4-core 0.25 mm² twisted pair cable with a length of up to 50 metres.

Attach the control panel to the cabinet using four screws as shown in the picture.

Complete the installation by carefully snapping the plastic cover onto the cabinet as shown in the picture.

Please note: The control panel can be installed flush with the wall using an integrated Euronorm box.

To remove the control unit, click off the plastic cover and remove the screws.

For further information about connecting the control panel to the Optima 270, refer to the electrical diagram in the installation manual.



1. INSTALLATION OF OPTIMA TOUCH

1.1 Installation

Installation of the control panel.

The control panel is intended to be mounted on a flat wall.

1.2 Assembly

Find the place on the wall where you want to attach the control panel and mark the location of the screw holes. At least four screws must be used to secure the bracket to the wall. The type of wall will determine the method for drilling holes, the hole size and the correct screws for fixing the panel.

Once the bracket is securely mounted on the wall, take the Optima Touch display, which comes with a pre-installed cable, and carefully click the display onto the bracket. Make sure the cable is carefully routed as shown in the picture before installing the display.

Please note: If the pre-installed 1.8 metre cable is not long enough, it is possible to replace this with a 4-core 0.25 mm² twisted pair cable with a length of up to 50 metres.

To remove the display, gently press the plastic clip (locking mechanism) as shown in the picture.

For further information about connecting the control panel to the Optima 270, refer to the electrical diagram in the installation manual.



2. PROGRAMMING THE OPTIMA 270 CONTROL UNIT

The control system is preset from the factory, which means that the unit can be put into operation without changing the operating settings. The factory setting is a basic setting that can be adapted to the wishes and requirements applicable to the home in question to ensure optimal utilisation and operation of the system.

Depending on the product's configuration, it is possible to connect Optima displays directly to the connector outside the product (connector labelled "display") or directly on the printed circuit board.

The I/O interface includes terminals for connecting both Modbus Master (e.g. BMS/CTS systems) and Modbus Slave devices (e.g. district heating, fire box PCB or CO₂ sensors). To expose the clamps, carefully remove the dust shield sticker.



2.1 System without display interface

2.1.1. Connect an Optima Touch display to the Optima 270 and adjust the settings as needed. Remove the Optima Touch control panel when programming is complete. The Genvex ventilation system will continue to operate according to the new set parameters.

2.1.2 Use the Genvex PC tool to adjust the Optima 270 parameters. Connect a laptop to the IO interface via the Optima Basic or Touch display and use the PC as an interface for programming the Optima 270, or connect it directly to the micro-USB connector on the Optima 270 circuit board.



Optima Basic and Touch displays can be retrofitted to this type of installation if required.



2.2 Installation with Optima Basic display

See details under 1.0.

2.3 Installation with Optima Touch display

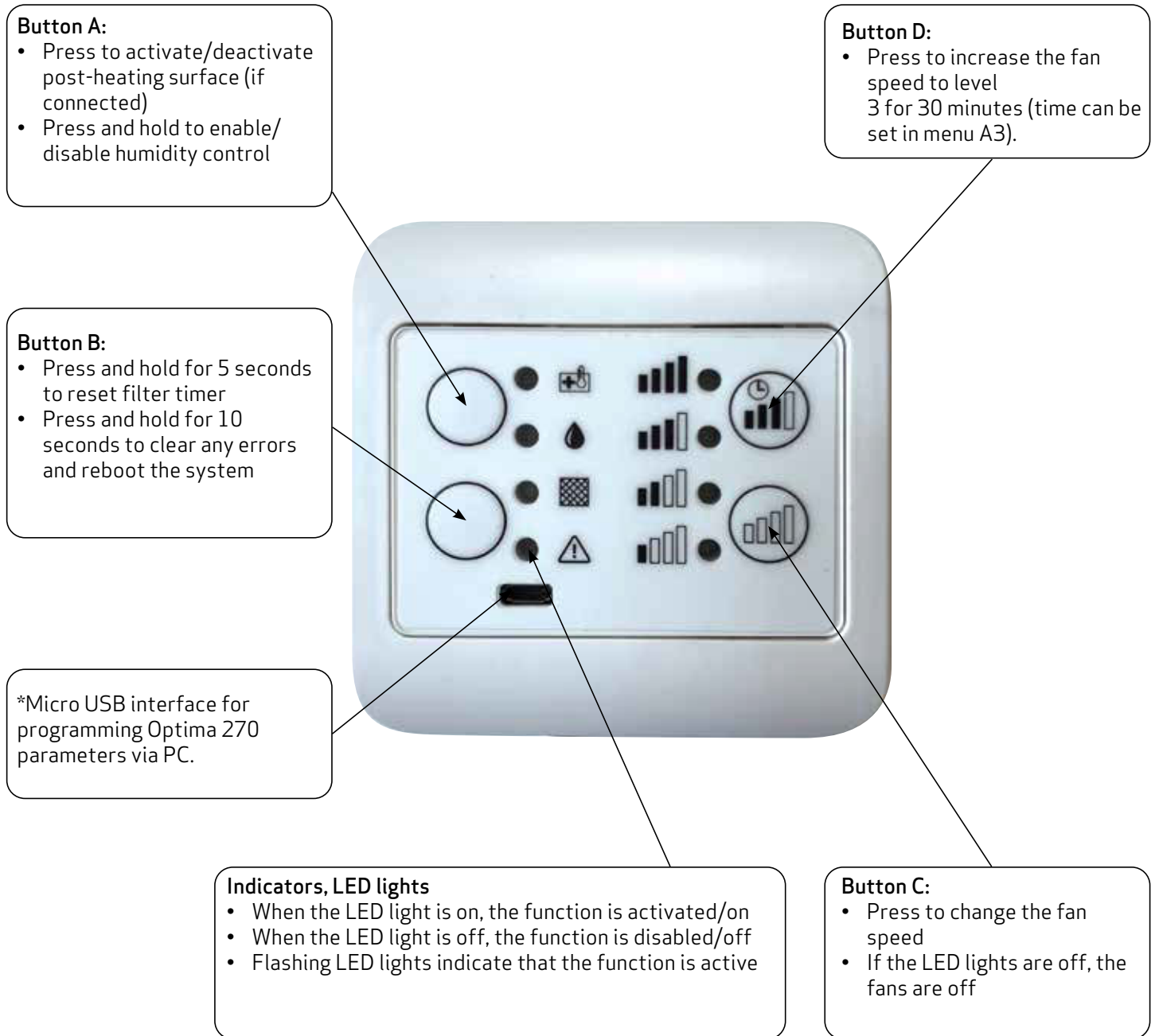
2.3.1. Connect an Optima Touch controller to the Optima 270 and adjust the settings as needed.

NOTE: The Optima 270 control unit parameters can be saved on the Optima Touch for one ventilation system and transferred to a similar system by using "EA1 Save" and "EA2 load settings" to save and load the settings, respectively.

The latest version of the Genvex Genlog software can be ordered from Genvex by calling +45 73 53 27 00.

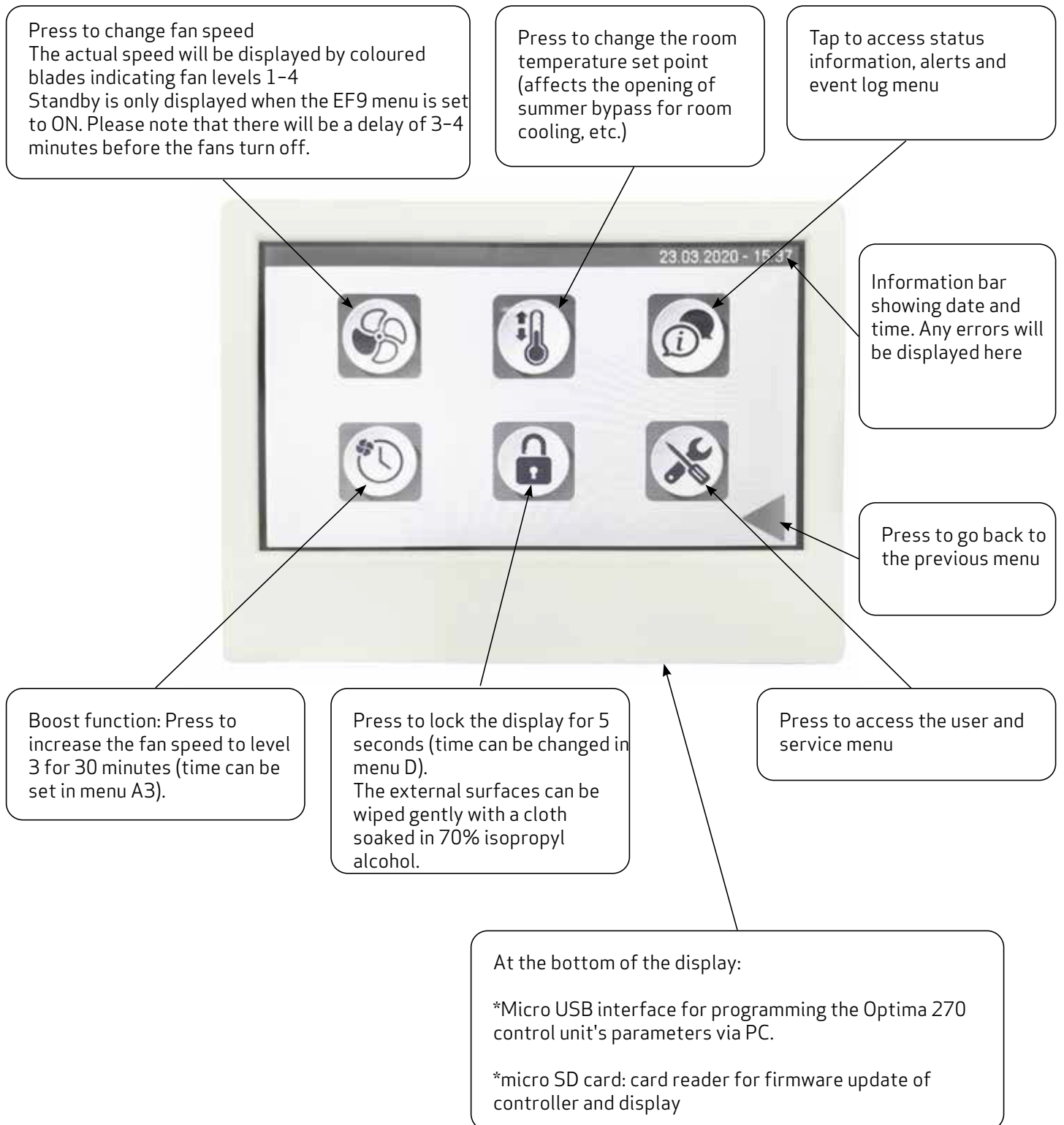
3. CONTROL PANEL

User interface Optima Basic



For more information on red LED alarm codes, refer to Troubleshooting in Section 6.

User interface Optima Touch - main display



4. START

4.1 Optima Touch user interface – first use

The following information will be displayed during the initial startup of the control unit for the Optima 270 ventilation, where the Optima Touch is connected to the control unit.
Wait approximately 1 minute for the initial boot sequence to complete.

Controller software version: the actual software version of the Optima 270 controller.

Software version, display: the actual software version of the display.

Device-ID: ID of the controller's secure communication protocol for Internet connection.

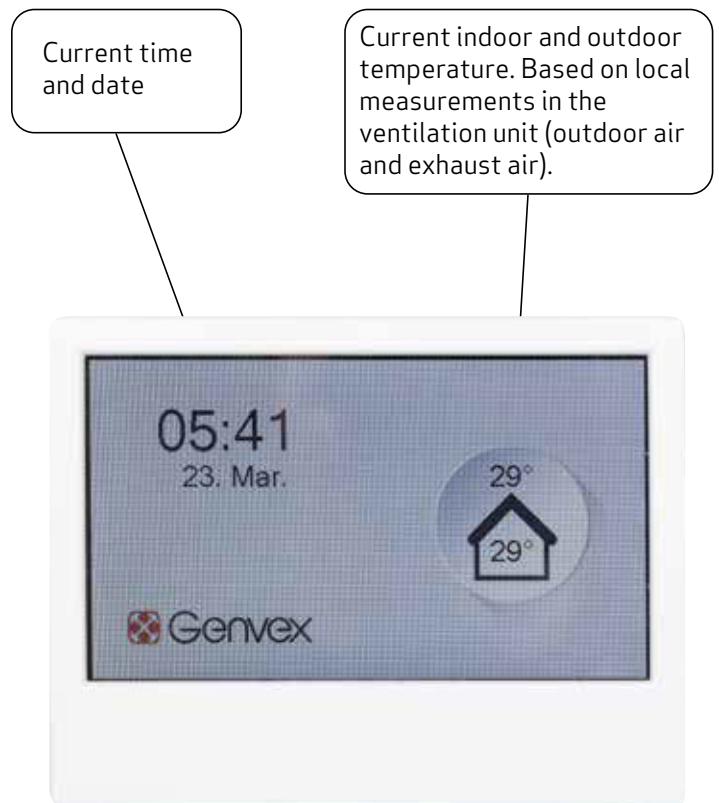
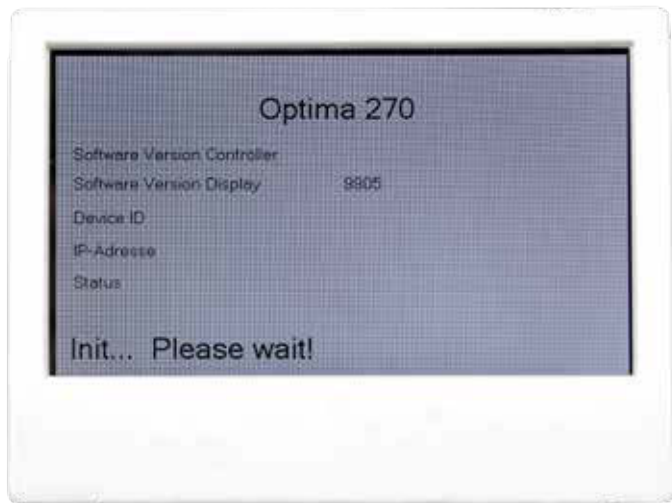
IP address: Only displayed if the ventilation unit is connected to a router via RJ45 connection.

Internet connection status: Indicates whether the Internet connection is connected or disconnected. If the status indicates "disconnected", no connection can be made via the Genvex Connect app or remote monitoring/remote servicing.

4.2 Optima Touch user interface – screen saver

Depends on the screen saver settings in D – Display menu. The display will revert to the screen saver after 2 minutes. If D2 is set to 0, the screen saver will be permanently active. If a time is set in D2, the screen saver will change to a blank display after the set time.

To access the main menu again, gently press the display for 2 seconds until the display reactivates.



Screen saver

5. CONTROL UNIT MENU

5.1 Structure, user and service menu in Optima Touch

The structure of the user and service menu in the Optima Touch display is divided into the following sections:

- A - User: main user settings
- B - Calendar: calendar schedules for changing fan speeds and temperature settings
- C - Date/Time: date and time settings on info display and for time stamping events in the log
- D - Display: settings for display and access to parameters
- E - Service: service menu - please note that this menu should primarily be used by technicians familiar with the operation of the machine.

6. CONTROL UNIT SETTINGS

Menu	Description	Factory setting (max./min. values)
A1 - Post-heating	If a post-heating surface is fitted in the system, you can choose whether the heater should be activated. If the setting is set to OFF, the heater will not turn on even when required. If the setting is set to ON, the heater will start as needed. This is regulated in accordance with the temperature set in point 1 of the user menu.	A1: Off (On/Off)
A2 - Humidity control	Humidity control is activated. This must be set to ON to be active.	A2: Off (On/Off)
A3 - Boost time	Set the desired time for temporarily increased fan speed, activated via the boost button on the main display.	A3: 30 mins (1-120 min)
A4 - Timer, levels 3 and 4 - On/Off	When the ventilation system is set to fan level 3 and 4, the system will automatically revert to fan level 2 after the number of hours set in A5 when this setting is set to ON. If the set point is set to OFF, the system will run at level 3 or 4 until the fan level is changed manually.	A4: Off (On/Off)
A5 - Timer, level 3 and 4 - timers	If A4 is activated, you can specify how many hours the system should run at level 3 or 4 before it automatically reverts to level 2.	A5: 3 hours (1-9 hours)
B1 - Fan calendar	Four separate timers can be set to change the fan level each day. The calendar can be adjusted separately for each day of the week if necessary. To use the same values for all days of the week, the schedule can be copied by pressing the "apply to all days" button.	B1: Not in use Not in use/Levels 1-4/Standby)
B2 - Temperature calendar	Four separate timers per day can be set to adjust to a lowered nominal temperature (e.g. for earlier opening of the bypass at night during the summer). The calendar can be adjusted separately for each day of the week if necessary. To use the same values for all days of the week, the schedule can be copied by pressing the "apply to all days" button.	B2: Not in use Not in use/Reduced/Normal)
B3 - Activate calendar	It is possible to activate/deactivate the schedule for the fan set in B1 and the schedule for the temperature set in B2.	Fan calendar: Off (On/Off) Temperature calendar: Off (On/Off)
B4 - Alternative temperature	Allows you to adjust the lowered temperature setpoint selected in B2. The temperature selected here will be an offset of the temperature selected in the main menu "desired temperature".	B4: 0°C (-10 to +10)
C1 - Time	Setting the time (important for error handling)	-
C2 - Date	Setting the date (important for error handling)	-
C3 - Summer time	Automatic change between summer/winter time	C3: On (On / Off)

Menu	Description	Factory setting (max./min. values)
D1 - Language	The language on the display can be changed.	D1: English (English/Dansk/ Deutsch/Svenska)
D2 - Screen saver time	Idle time before the screen saver is activated. 0 = screen saver off	D2: 10 minutes (0-600 min)
D3 - Display Lock Time	Activate lock time by touching the lock symbol on the main display.	D3: 5 sec. (0-120 sec.)
D4 - Password	<p>Main menu, password: Select password to lock access to main menu. If a password has been selected, the user will be prompted to enter the password the next time they try to access the main menu. To disable the password prompt, enter "0000" as the password.</p> <p>Service menu, password: Select password to lock access to the service menu. If a password has been selected, the user will be prompted to enter the password the next time they try to access the main menu. To disable the password prompt, enter "0000" as the password.</p>	-
D5 - Firmware update	Firmware for the Optima 270 controller and display can be updated using a micro SD card inserted in the SD card reader of the Optima Touch. To update the control unit and display, press "start update" when the SD card containing the latest firmware has been inserted into the card reader.	-
EA - Save/Load settings	<p>EA1 - Save settings Saves the settings from the Optima270 controller to the display.</p> <p>EA2 - Load settings Loads settings stored in EA1 and transfers data to a new Optima 270 PCB.</p>	-
EB - Fan level	<p>EB1 - Level 1 Supply Air Level 1 is the lowest speed, and is usually used when no one is home. Both fans can be configured independently of each other with all levels, so that the air flow is the same in the supply air and in the exhaust air, thus resulting in optimal operation. Specialised air measurement equipment must be used to adjust the system. It is not recommended to configure the air flows without the help of an expert. Incorrect configuration can lead to higher energy consumption or an unpleasant indoor climate. Setting option: between 0 and 100%.</p> <p>EB2 - Level 2 Supply Air Level 2 is the system's recommended speed for an optimal indoor climate. It should be adjusted to the home's ventilation requirements. Setting option: between 0 and 100%.</p> <p>EB3 - Level 3 Supply Air is typically configured for a high level of activity in the house.</p>	<p>EB1: 30% (0-100%)</p> <p>EB2: 50% (0-100%)</p> <p>EB3: 75% (0-100%)</p>

Menu	Description	Factory setting (max./min. values)
EB – Fan level	<p>EB4 – Level 4 Supply Air Air is typically configured at 100% airflow for rapid air exchange throughout the house. Remember that a higher air exchange rate increases energy consumption.</p> <p>EB5 – Level 1 Exhaust Air The fan speed is regulated to match the amount of supply air at level 1.</p> <p>EB6 – Level 2 Exhaust Air The fan speed is regulated to match the amount of supply air at level 2.</p> <p>EB7 – Level 3 Exhaust Air The fan speed is regulated to match the amount of supply air at level 3.</p> <p>EB8 – Level 4 Exhaust Air The fan speed is regulated to match the amount of supply air at level 4.</p> <p>EB9 – Fan mode Use % if no built-in airflow sensors are connected. Fan speed inputs EB1 to EB9 will be based on the % of maximum capacity. Select m³/h as the setting for constant air flow control. <i>Note that this requires built-in airflow sensors in the system. Be aware that using this function without air flow sensors will lead to incorrect volume flows in the system. Please note that the fans will automatically adapt to an increased drop in pressure (e.g. clogged filters) to maintain a constant air flow – in this case, increased fan power consumption can be expected. When selecting m³/h, EB1 to EB9 will automatically allow direct setting of the desired air volume in m³/h. Please note that m³/h setpoints must match the capacity of the ventilation system. When using m³/h regulation, 1% corresponds to 10 m³/h (in general for all parameter settings related to fan operation).</i></p> <p>EB10 – RPM Alarm Off = Fan RPM feedback is not actively used. On = If RPM feedback from the fans reaches 0 RPM and the fan is expected to run, the ventilation system will shut down and display an alarm.</p> <p>EB11 – Reset RPM Alarm Enable this feature to reset the RPM alarm when the problem has been resolved.</p>	<p>EB4: 100% (0-100%)</p> <p>EB5: 30% (0-100%)</p> <p>EB6: 50% (0-100%)</p> <p>EB7: 75% (0-100%)</p> <p>EB8: 100% (0-100%)</p> <p>EB9: % (%/m³/h)</p> <p>EB10: Off (On/Off)</p> <p>EB11: Off (On/Off)</p>
EC – Regulator	<p>EC1 – Frost protection Off = No active frost protection. T3 outdoor air = Electric preheater controlled by the temperature sensor for outdoor air (T3). T4 Exhaust = Electric preheater controlled by the temperature sensor in the exhaust (T4).</p>	<p>EC1: Off Off / T3 outdoor air / T4 Exhaust / Vent. Reduc. / Rotor Reduc. / Vent.+Rotor</p>

Menu	Description	Factory setting (max./min. values)
EC - Regulator	<p>Vent. Reduc. = The fan speed for supply air is gradually reduced to keep the temperature sensor in the exhaust (T4) at the EC2 setpoint.</p> <p>Rotor Reduc. = Rotary heat exchanger speed is gradually reduced to keep the exhaust temperature sensor (T4) at the EC2 setpoint. The de-icing process starts automatically, depending on the measured indoor humidity and outdoor air temperature. Minimum rotor speed in de-icing mode = 1 RPM.</p> <p>Vent.+Rotor = Rotary heat exchanger speed is gradually reduced to keep the exhaust temperature sensor (T4) at the EC2 setpoint. The de-icing process starts automatically, depending on the measured indoor humidity and outdoor air temperature. Minimum rotor speed in de-icing mode = 1 RPM. If the EC2 setpoint is not reached in time, reducing the supply air fan speed will help to achieve this.</p> <p>EC2 - Frost reduction Adjustable setpoint for frost protection strategy EC1</p> <p>EC3 - Regulation method T1 Supply Air = Airborne climate control is based on the supply air sensor. T7 Exhaust = Airborne climate control is based on the temperature sensor for the exhaust air sensor.</p> <p>EC4 - 0-10V output selector Bypass = 0-10 volt output L11 can be adjusted to control the 0-10 volt bypass motor. Rotor = 0-10 volt output L11 can be adjusted to control the rotary heat exchanger. Water valve = 0-10 volt output L11 can be adjusted to control a water-based post-heating surface.</p> <p>EC5 - Auxiliary relay H17 Setpoint Function</p> <p>0 The relay is off.</p> <p>1 The relay is on when the system is running. This can be used to e.g. open and close outdoor air and exhaust air dampers.</p> <p>2 The relay is switched on when extra heat is required, or when the circulation pump must run when heating with water post-heating is required.</p> <p>3 The relay is on when the "Change filter" warning is active. This can be used to activate an external alert.</p> <p>4 The relay is on when cooling is required.</p> <p>5 The relay is switched on if one of the following two conditions is met:</p> <ul style="list-style-type: none"> • The outdoor temperature, sensor T9, is lower than the set value in EC8 (frost protection temperature, typically set to 5°C). • The outdoor temperature, sensor T9, is >15°C and the room temperature is > setpoint +1°C. 	<p>EC2: 0 (-10-10)</p> <p>EC3: T7 Exhaust air (T1 Supply air / T7 Exhaust air)</p> <p>EC4: Water valve (water valve/rotor/bypass)</p> <p>EC5: 0 (0-6)</p>

Menu	Description	Factory setting (max./min. values)
EC - Regulator	<p>6 The relay will be on when terminal L1 is shorted/activated (e.g. by connecting a kitchen cooker hood to the ventilation unit). This function can be used to activate a damper, which reduces the airflow to the rest of the house and focuses the exhaust air through the hood.</p> <p>EC6 - Regulation of water If a water post-heating surface with motor valve is installed in the system, it may be necessary to change the regulation time. The shorter the regulation time, the faster the motor valve will regulate.</p> <p>EC7 - Water frost If a water post-heating surface with motor valve is installed in the system, a frost protection sensor must be installed on the water post-heating surface and the setpoint must be set to ON. If no frost protection sensor is installed, the setpoint must be set to OFF.</p> <p>EC8 - Water frost temp. If frost protection in EC7 is set to ON, the frost protection temperature must be set to the temperature at which the system should stop, and the motor valve must fully open the hot water flow.</p> <p>EC9 - System stop Allows you to choose whether it is possible to stop the system by selecting "standby" under the settings for fan speed. If the setpoint is set to OFF, the system cannot be turned off. If "On" is then selected, "standby" will be displayed in the fan speed selector on the main display.</p> <p>EC10 - Right/left model Right = The ventilation system designed as a right-facing model (only for counter-flow heat exchanger units and right-facing rotor version). Left = The ventilation system designed as a left-facing model (only for counter-flow heat exchanger units). Rotor left = The ventilation system designed as a left-facing model (applies only to units with a rotary heat exchanger).</p> <p>Note that this setting should only be changed by the installer, as there is a risk of disrupting the machine's functions if an incorrect setting is used.</p> <p>EC11 - Factory Reset Reset - Vent. = Resets all controller values (except fan speeds) to factory settings. Reset all = Resets all controller values to factory settings.</p> <p>Make sure to take a note of all previous settings before resetting controller values.</p> <p>EC12 - System type 0 = Basic setup 1 = T3=T1 ; T7=T4</p> <p>Setpoint 1 is used for ventilation systems with a double integrated temperature sensor in the heat exchanger, to ensure an accurate temperature is indicated during active bypass</p>	<p>EC6: 20 sec. (1 sec. to 250 sec.)</p> <p>EC7: Off (On/Off)</p> <p>EC8: 5°C (0-10°C)</p> <p>EC9: Off (On/Off)</p> <p>EC10: Right (Right / Left / RotorLeft)</p> <p>EC11: Off (Off / Reset - Vent. / Reset all)</p> <p>EC12: 0 (0 / 1)</p>

Menu	Description	Factory setting (max./min. values)
EC - Regulator	<p>EC13 - Output H3 option H3 Operating modes Preheat = R1 released for operation as preheater (activated via EC1) Post-heat = R1 released for operation as post-heating surface (activated via A1) Always on = R1 is switched on as operating relay, independent of EC1 and A1</p>	EC13: Preheat (Preheat / Post-heating / Always on)
ED - Electric heating	<p>ED1 - Heater reg If an electric post-heater is installed on output H3, it may be necessary to change the regulation time.</p> <p>ED2 - Preheat temperature Temperature setpoint, frost protection preheater – see menu EC1 for reference temperature sensor</p> <p>ED3 - Preheat PI P P band for the PI controller for the electrical modulating preheater. The P band controls the amplification of the control unit after a deviation from the setpoint (accelerator).</p> <p>ED4 - Preheat PI I I band for the PI controller for the electrical modulating preheater. This function controls how quickly the control unit adapts to a deviation from the setpoint (brake).</p> <p>ED5 - Preheat reg. The preheat cycle function works as follows: E.g. necessary output 50% and cycle = 60 sec. means that the controller turns on the preheater for 30 seconds and turns it off for 30 seconds. Please note: Please refer to your country-specific restrictions when customising this feature. The modulating preheater function refers to the value set in setpoint EC1. The preheater will aim to maintain a stable outdoor air temperature according to this set point. When the modulating preheater is used, the existing outdoor air temperature sensor (T3) built into the ventilation unit can be used as a reference. No additional temperature sensor is required.</p> <p>ED6 - Post-heating offset Offsetting of post-heating surface with reference to the setpoint for the desired temperature. E.g. desired temperature = 20°C Offset value = 2, the post-heating surface will aim to maintain a supply air temperature of 18°C.</p> <p>ED7 - Post-heating PI P P band for the PI controller for the electrically modulating post-heating surface. The P band controls the amplification of the control unit after a deviation from the setpoint (accelerator).</p> <p>ED8 - Post-heating PI I I band for the PI controller for the electrically modulating preheater. The function controls how fast the controller adapts to a deviation from the setpoint (brake).</p>	<p>ED1: 3 min (1-30 min)</p> <p>ED2: -3°C (-15 to +10°C)</p> <p>ED3: 5 (1-255)</p> <p>ED4: 200 (1-255)</p> <p>ED5: 40 sec. (10-120 sec.)</p> <p>ED6: -2°C (-10 to +10°C)</p> <p>ED7: 5 (1-255)</p> <p>ED8: 200 (1-255)</p>

Menu	Description	Factory setting (max./min. values)
EE - Bypass	<p>EE3 - Forced speed In this menu, the desired forced, stepped fan speeds can be selected when the bypass opens for night cooling and when the setpoint in EE4 is exceeded.</p> <p>EE4 - Forced temp. Offset value setpoint for enabling forced fan speed, e.g. when bypass is open for night cooling (fan speed increased by the value set in EE3).</p> <p><i>Desired temperature 20°C</i> <i>EE1 = 3°C</i> <i>Bypass opens at 23.1°C.</i> <i>EE4 = 3°C</i> <i>Increase in fan speed at 26.1°C</i></p> <p>EE5 - Bypass minimum on Bypass will be open to at least the set value.</p>	<p>EE3: 0% (0-100%)</p> <p>EE4: 3°C (0-5°C)</p> <p>EE5: 5 mins. (0-60 min)</p>
EF - Filter	<p>EF1 - Reset filter timer Select this option to reset the filter timer to 0 days. The current counter value will show days since the last filter reset.</p> <p>EF2 - Filter timer Setpoint for adjusting the number of months until the filter alert is activated. 0 months = filter hours disabled</p> <p>EF3 - Filter/stop To ensure that the filters are changed when the filter change warning is active, the setpoint can be set to ON. The system will then stop automatically after 14 days if the filters have not been replaced in the meantime. If this precaution is not required, the setpoint can be set to OFF and the system will continue to run.</p>	<p>EF1: Reset filter</p> <p>EF2: 3 months (0-12 months)</p> <p>EF3: Off (On/Off)</p>
EG - Humidity control	<p>EG1 - Humidity max. temperature Setting the end point for outdoor temperature compensation (T3), see the X-axis on the graph. If 0 is selected - outdoor temperature compensation is deactivated and the set value under EG2 is maintained as a constant setpoint.</p> <p>EG2 - Humidity max. value Sets the endpoint for outdoor temperature compensation, see the Y-axis on the graph (desired max. humidity value).</p> <p>EG3 - Humidity vent speed Determines how much the fan speed can vary relative to the desired fan speed. Examples: Set point, fan speed level 2 (EB2 / EB6) = ± 15%. Please note: If EB9 is set to constant volume flow control (m³/h), then the EG3 setting will correspond to setpoint x 10 = influence in m³/h e.g. EG3=5 corresponds to the permitted variation in the air volume of up to 5 x 10 = 50 m³/h</p>	<p>EG1: 15°C (0-25°C)</p> <p>EG2: 60% (35-85%)</p> <p>EG3: 15% (5-30%)</p>

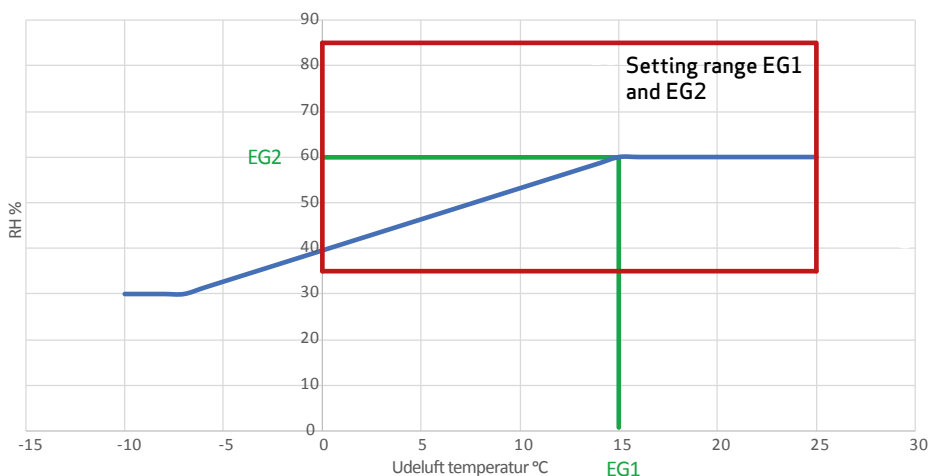
Menu	Description	Factory setting (max./min. values)
EG - Humidity control	<p>EG4 - Humidity reg. frequency Setting the desired frequency for how often the fan speed can be changed. The function is defined as 1% per unit of time. When humidity control is activated, the current humidity is continuously measured via the integrated humidity sensor in the ventilation system, located in the exhaust air duct.</p>	EG4: 10 minutes (1-60 min)
EH - Rotor	<p>EH1 - Speed (rpm) The setpoint for the minimum speed of the rotary heat exchanger (revolutions per minute). Be aware that a reduction in the RPM value may reduce the heat recovery rate but increase the control range for moisture recovery. These values should be adjusted by an installer.</p> <p>EH2 - Rotor stop °C Offset set point for temperature where heat recovery with a rotary heat exchanger is stopped. E.g. <i>setpoint: temperature 20°C</i> <i>EH2 = 2</i> <i>Rotary heat exchanger stops when outdoor air temperature T3 is 20-2 = 18°C.</i> <i>This feature will save energy for the rotor motor when there is limited opportunity to recover energy.</i></p> <p>EH3 - Rotor max. defrost time Setpoint in minutes for the maximum time that can be spent de-icing the rotary heat exchanger. If the time limit is exceeded, the rotary heat exchanger will return to normal operation.</p> <p>EH4 - Rotor defrost pause Setpoint in hours corresponding to the minimum time interval between de-icing cycles.</p>	<p>EH1: 10 rpm (0-25 rpm)</p> <p>EH2: 2°C (0-10°C)</p> <p>EH3: 30 mins (1-120 min)</p> <p>EH4: 4 hours (1-8 hours)</p>
EI - Demand control	<p>EI1 - CO₂ control On = Activates external sensors for demand control (if available). Off = No external sensors available for demand control.</p> <p>EI2 - CO₂ setpoint Setpoint for the desired CO₂ level in PPM. If the CO₂ level rises above the setpoint, the fan will increase the speed incrementally to keep the CO₂ level at the set point.</p> <p>EI3 - CO₂ level 4 time Setpoint in minutes for the time between incremental increases/decreases in fan speed according to CO₂ level (see setpoint EI2)</p> <p>EI4 - Number of Rf CO₂ sensors Select the number of wireless CO₂ sensors connected. Make sure the dip switches in the CO₂ sensors are set correctly according to the separate documentation.</p>	<p>EI1: Off (On/Off)</p> <p>EI2: 800 PPM (400-2000 PPM)</p> <p>EI3: 30 mins (0-1000 min)</p> <p>EI4: 0 (0-4)</p>

Menu	Description	Factory setting (max./min. values)
EJ - Fire control	<p>EJ1 - Number of fire dampers Setpoint for the number of fire dampers connected to the system that should be monitored. 0 = Fire control system inactive 1-4 = Number of dampers connected</p> <p>EJ2 - Fire test/Reset Off = Automatic mode, damper will be tested once per month according to the schedule. Test = Test system now. This function starts a forced function test of the fire damper and the result is shown on the display (NOTE: There will be a delay of up to 240 seconds from the start of the test to completion). Reset = Reset fire alarm. In case of any errors during the damper test or in the damper/smoke detector or a lack of feedback, the ventilation system will shut down and the display will show an alarm symbol. Restarting the device requires a fire auto reset.</p> <p>EJ3 - Fire test, date Schedule when the automatic monthly test of fire/smoke dampers is performed.</p> <p>EJ4 - Fire test, hour Schedule when the automatic fire/smoke damper test is performed.</p>	<p>EJ1: 0 (0-4)</p> <p>EJ2: Off (Off/Test/Reset)</p> <p>EJ3: 1 (1-31 days)</p> <p>EJ4: 0 (0-23 hours)</p>
EK - District heating control	<p>PLEASE NOTE: If no external outdoor temperature sensor is connected to the control unit, the built-in outdoor air temperature sensor in the ventilation system is used as a reference in calculating temperature set points for weather compensation.</p> <p>EK1 - District heating mode Off = No external heating circuit connected. Underfloor heating = Underfloor heating circuit connected. Radiator = Radiator heating circuit connected.</p> <p>EK2 - Outdoor compensation at -12°C Set point for the flow temperature at -12°C outdoor temperature.</p> <p>EK3 - Outdoor compensation at 20°C Setpoint for the outdoor temperature when the supply temperature is 20°C. An outdoor air temperature that exceeds the setpoint in EK3 will close the heating circuit (summer stop).</p> <p>EK4 - Offset of compensation curve Setpoint in °C at which the heat compensation curve set in EK5 will have the greatest influence.</p> <p>EK5 - Compensation curve The heating curve can be increased in increments of 0-5°C with a maximum influence according to the value set in EK4.</p>	<p>EK1: Off (Off/Floor/Heater)</p> <p>EK2: 45°C (20-90°C)</p> <p>EK3: 20°C (15-25°C)</p> <p>EK4: 2°C (-10 to +10°C)</p> <p>EK5: 2°C (0-5°C)</p>

Menu	Description	Factory setting (max./min. values)
EK - District heating control	<p>EK6 - Max. flow temperature The supply temperature will be limited to a maximum of 45°C if underfloor heating is chosen in EK1. The supply temperature will be limited to 90°C if radiator heating is selected in EK1.</p> <p>EK7 - Valve time (sec.) Time from 3-point control valve fully closed to fully open (depends on actuator and valve stem configuration). For more information refer to the valve supplier's manual.</p> <p>EK8 - Max. return temperature If the maximum return temperature exceeds the temperature setpoint, the valve will close incrementally until the return temperature reaches the set point.</p> <p>EK9 - Neutral zone Hysteresis for temperature control via PID.</p> <p>EK10 - Heat PI P PI controller's P-band. By increasing this value, the control unit will aim to reach the set point temperature faster (with the risk of exceeding the set point).</p> <p>EK11 - Heat PI I (x 10) PI controller I-band. By increasing this value, the control unit will aim to reduce overshoot/offset of temperatures (with the risk of slowing down the control unit).</p> <p>EK12 - Heat reg. time The regulation time of the PI control unit. Increasing this value will slow the control unit down, increasing the interval between recalculation of the valve position.</p>	<p>EK6: 45°C (20-65°C)</p> <p>EK7: 150 sec. (1-255 sec.)</p> <p>EK8: 50°C (25-70°C)</p> <p>EK9: 1°C (0-10°C)</p> <p>EK10: 20 (0-255)</p> <p>EK11: 50 (0-255)</p> <p>EK12: 5 sec. (1-120 sec.)</p>
EL - Modbus	<p>EL1 - Modbus address Modbus slave address for the device.</p> <p>EL2 - Modbus baud rate Choose either 9600 or 19200 baud, depending on the type of application.</p> <p>EL3 - Modbus parity Select even or odd depending on the type of application.</p> <p>EL4 - Modbus modify 0 = writing to modbus setpoints not allowed 1 = writing to modbus setpoints limited 2 = writing to modbus setpoints full access</p>	<p>EL1: 1 (1-247)</p> <p>EL2: 9600 baud (9600 / 19200 baud)</p> <p>EL3: Even (None / Even / Odd)</p> <p>EL4: 1 (0/1/2)</p>
EM - Forced control	Enter password to open relay test program (for installers only).	
OEM	Enter password to open the OEM program (for installers only).	

7. FURTHER EXPLANATIONS OF HUMIDITY AND DISTRICT HEATING CONTROL

7.1 Explanation of humidity control



Example 1:

At an outdoor air temperature of 10°C, the RH control aims for 53% humidity, as measured in the exhaust air.

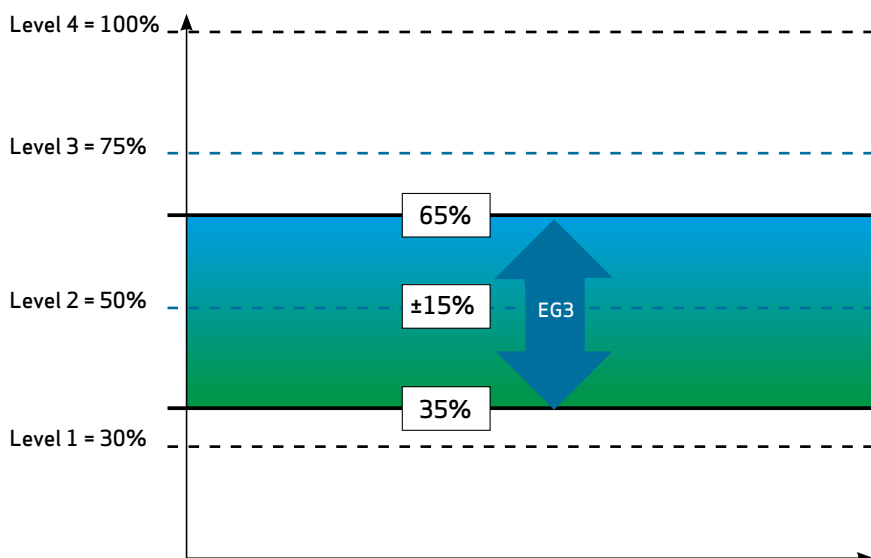
Example 2:

At an outdoor air temperature of 20°C, the RH control aims for 60% humidity, as measured in the exhaust air.

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

Note: If EG1=0°C, outdoor temperature compensation is deactivated and the system will regulate according to a constant humidity level in accordance with EG2.

Remember to adapt EG2 to a suitable humidity level so that there is no risk of damp surfaces in the home in wintertime.



Example:

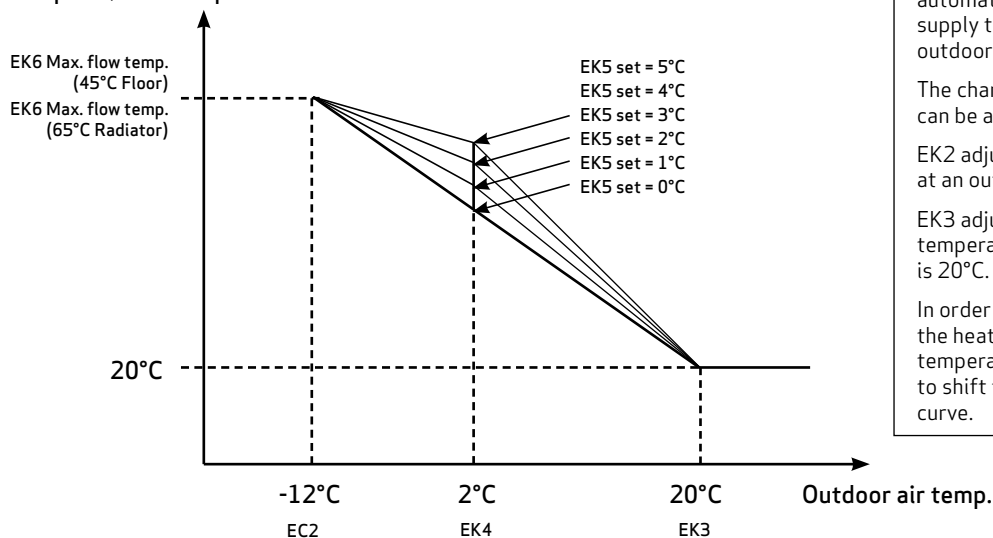
Setpoint = ± 15% (EG3)
With a desired fan speed of 2, set to 50%, speed can range from 35% to 65%.

Humidity control is only available at fan level 2 and will be automatically disabled at any other fan level.

Speed is regulated ±1% every 10 min (Factory setting, EG4).

7.2 Explanation of district heating control

Setpoint, flow temp.



The district heating control system automatically adjusts the heating system's supply temperature according to the outdoor air temperature.

The characteristics of the heating curve can be adjusted via EK2 and EK3.

EK2 adjusts the desired flow temperature at an outdoor temperature of -12°C.

EK3 adjusts the desired outdoor temperature when the supply temperature is 20°C.

In order to increase the heating capacity of the heating system at a specific outdoor temperature, EK4 and EK5 can be used to shift the characteristics of the heating curve.

7.3 Schedule for set points

Optima 270			
Main menu/submenu	Factory settings	Setting range	Form for user settings
A - User			
A1 - Post-heating	Off	On - Off	
A2 - Humidity control	Off	On - Off	
A3 - Boost time	30 mins	1 - 120 min	
A4 - Hours level 3 & 4	Off	On - Off	
A5 - Hours levels 3 & 4	3 hours	1 - 9 hours	
B - Calendar			
B1 - Fan calendar	Not in use	Not in use / Levels 1 -4	
B2 - Temperature calendar	Not in use	Not in use / Reduced / Normal	
B3 - Activate calendar	Off	On - Off	
B4 - Alternative temperature	0.0°C	-10°C to +10°C	
C - Date / Time			
C1 - Time			
C2 - Date			
C3 - Summer time	On	On - Off	
D - Display			
D1 - Language	English	English / Dansk / Deutsch / Svenska	
D2 - screen saver time	10 minutes	0 - 600 min	
D3 - Display Lock Time	5 sec	0 - 120 sec	
D4 - Password	0000	0000 - 9999	
D5 - Firmware update			
EA - Save/Load Setpoints			
EA1 - Save setpoints			
EA2 - Load Setpoints			
EB - Fan level			
EB1 - Level 1 Supply Air	30%	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 Exhaust Air	30%	0 - 100%	
EB6 - Level 2 Exhaust Air	50%	0 - 100%	
EB7 - Level 3 Exhaust Air	75%	0 - 100%	
EB8 - Level 4 Exhaust Air	100%	0 - 100%	
EB9 - Fan mode	%	% / m3/h	
EB10 - RPM Alarm	Off	On - Off	
EB11 - Reset RPM Alarm	Off	On - Off	

Optima 270

Main menu/submenu	Factory settings	Setting range	Form for user settings
EC – Regulator			
EC1 – Frost protection	Off	Off / T3 Outdoor air / T4 Exhaust / Vent. Reduc. / Rotor Reduc. / Vent.+Rotor	
EC2 – Frost reduction	0.0°C	-10°C to +10°C	
EC3 – Regulation method	T7 Exhaust air	T1 Supply air / T7 Exhaust air	
EC4 – 0-10V output selector	Water valve	Water valve / Rotor / Bypass	
EC5 – Auxiliary relay H17	0	0 – 6	
EC6 – Regulation of water	20 sec	1 – 250 sec	
EC7 – Water frost	Off	On – Off	
EC8 – Water frost temp.	5°C	0 – 10°C	
EC9 – System stops	Off	On – Off	
EC10 – Right/Left model	Right	Right / Left / RotorLeft	
EC11 – Factory Reset	Off	Off / Reset – Vent. / Reset everything	
EC12 – System type	0	0 – 9999	
EC13 – Output H3 option	Preheat	Preheating / Post-heating / Always on	
ED – Electric heating			
ED1 – Heater reg.	3 min	1 – 30 min	
ED2 – Preheat temperature	-3°C	-15°C to +10°C	
ED3 – Preheat PI P	5	1 – 255	
ED4 – Preheat PI I	200	1 – 255	
ED5 – Preheat reg.	40 sec	10 – 120 sec	
ED6 – Post-heating offset	-2°C	-10°C to +10°C	
ED7 – Post-heating PI P	5	1 – 255	
ED8 – Post-heating PI I	200	1 – 255	
ED9 – Post-heating reg.	40 sec	10 – 120 sec	
EE – Bypass			
EE1 – Bypass max.	3°C	1 – 10°C	
EE2 – Switch off bypass	4°C	0 – 20°C	
EE3 – Forced speed	0%	0 – 100%	
EE4 – Forced temp.	3°C	0 – 5°C	
EE5 – Bypass minimum on	5 mins.	0 – 60 min	
EF – Filter			
EF1 – Reset filter timer			
EF2 – Filter timer	3 months	0 – 12 months	
EF3 – Filter/stop	Off	On – Off	
EG – Humidity control			
EG1 – Humidity max. temperature	15°C	0 – 25°C	
EG2 – Humidity max. value	60%	35 – 85%	
EG3 – Humidity vent speed	15%	5 – 30%	
EG4 – Humidity reg. frequency	10 minutes	1 – 60 min	

Optima 270

Main menu/submenu	Factory settings	Setting range	Form for user settings
EH - Rotor			
EH1 - Speed (rpm)	10 rpm	0 - 25 rpm	
EH2 - Rotor stop °C	2°C	0 - 10°C	
EH3 - Rotor max. defrost time	30 mins	1 - 120 min	
EH4 - Rotor defrost pause	4 hours	1 - 8 hours	
EI - Demand control			
EI1 - CO2 control	Off	On - Off	
EI2 - CO2 set point	800 PPM	400 - 2000 PPM	
EI3 - CO2 level 4 time	30 mins	0 - 1000 min	
EI4 - Number of Rf CO2 sensors	0	0 - 4	
EJ - Fire control			
EJ1 - Number of fire dampers	0	0 - 4 pcs	
EJ2 - Fire Test / Reset	Off	Off / Test / Reset	
EJ3 - Fire test date	1	1 - 31 days	
EJ4 - Fire test hour	0	0 - 23 hours	
EK - District heating control			
EK1 - District heating mode	Off	Off / Underfloor heating / Radiator	
EK2 - Outdoor temp comp. -12°C	45°C	20 - 90°C	
EK3 - Outdoor temp comp. 20°C	20°C	15 - 25°C	
EK4 - Comp. curve break	2°C	-10°C to +10°C	
EK5 - Compensation curve	2°C	0 - 5°C	
EK6 - Max. flow temp.	45°C	20 - 65°C	
EK7 - Valve time (sec)	150 sec	1 - 255 sec	
EK8 - Max. Return Temp.	50°C	25 - 70°C	
EK9 - Neutral zone	1°C	0 - 10°C	
EK10 - F-heat PI P	20	0 - 255	
EK11 - F-heat PI I (x10)	50	0 - 255	
EK12 - F heating Reg. time	5 sec	1 - 120 sec	
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	1	0, 1, 2	
EM - Forced control			
OEM			

8. MAINTENANCE

8.1 Replacing the filters

When the filter alert is displayed, the filters must be replaced.

Stop the system using the switch for the unit or with the switch on the terminal block. Open the front cover/filter drawers and remove the filters. The filter timer resets once the filters have been replaced. The time interval for cleaning/replacing the filters can be adjusted in the operation menu.

Based on normal environmental conditions with clean air, it is recommended to change the filter every six months to ensure optimal working conditions.

Vacuuming or using compressed air on the filters is not recommended.

Recommended filters to use: Original Genvex filters, Coarse/G4 = Standard filter (typically used on the exhaust side); ePM10/F5 = Fine filter; ePM1/F7 = Pollen filter (typically used on the outside air side).

Please note that the recommended annual servicing of the ventilation system's internal components should be carried out by an installer as listed below.

Condensate drain

When changing the filter in August/September, before the outdoor temperature drops to 5°C, check that the condensation drain is not blocked by dirt and ensure that there is water in the trap. Pour 1 litre of water into the condensation tray and make sure it drains away without any issue. A condensate drain that does not function properly can lead to water damage in the home.

Heat exchanger

Check the heat exchanger every year. If it is dirty, remove it and: - Aluminium exchanger: Wash in lukewarm soapy water and rinse using a showerhead if necessary. - Plastic exchanger: Do not clean with solvents - only use clean water and carefully remove dust from suction surfaces with a regular vacuum cleaner.

Fans

Inspect the two fans for dirt every year. If they are dirty, they can be cleaned with a brush, bottle cleaner, etc. Valves for supply air and exhaust air: The valves can be cleaned by

wiping them with a dry cloth. Be careful not to rotate the valves so that the air volume changes.

8.2 Dismantling/taking the system out of operation

It is generally recommended to maintain a constant flow of air through the ventilation system to prevent condensation in the ducts.

If the system is to be taken out of operation, the ducts must be removed to avoid condensation in the system and in the ducts.

If the ventilation system is taken out of operation for shorter periods of time - it is recommended to close all supply air and exhaust air valves.

9. TROUBLESHOOTING

9.1 Safety thermostat in electric heater (optional)

If there is a fault on an electric heater, the safety thermostat will be disconnected. The heater is equipped with overheating protection that automatically cuts the power off if the temperature exceeds 50°C.

If the temperature drops, the heater automatically reconnects. As an additional safety feature, there is a built-in thermal fuse that switches off if the temperature exceeds 100°C. Subsequent connections must be made manually.

Does not apply to PTC electric heaters.

The system is not running. Device stopped

Possible error

- Fuse in the main board is blown, the device is not getting any power.
- One of the fuses on the unit's circuit board has blown.
- Loose wire, no power to unit.
- Loose wire between the unit and the control panel.
- Defective or incorrectly set weekly program.
- Filter timer has turned off the system.

Condensation runs out of the unit

Possible error:

- Condensate drain blocked by dirt.
- The condensate drain is not sufficiently protected against freezing at low outdoor temperatures.
 - If EB10 = On, the fans must be checked to ensure they are operating. If the fans are expected to run and the RPM counter = 0, the ventilation unit will shut down and display an alert.
- Leaky junction – possibly cracked by frost

No supply air

Possible error

- Defective supply air fan
- Clogged supply air filter
- Outdoor air grill clogged by dirt and leaves during autumn or snow and ice in winter.
- The fuse on the circuit board has blown.
- The unit is in defrost mode (supply air fan stops).

No exhaust air

Possible error

- Defective exhaust fan.
- Clogged exhaust filter.
- The fuse on the printed circuit board has blown.

Cold supply air

Possible error

- Clogged heat exchanger.
- Defective exhaust fan.
- Clogged exhaust filter.
- Electric post-heating surface interrupted by superheating thermostat (only units with electric post-heater installed).
- Air in the heating pipes, defective thermostat/motor valve, wrong setting in the control panel.

Fan unintentionally runs at full speed

Check that EB9 is not set to m3/h when no flow sensors are installed. Make sure EB9 is set to %.

If flow sensors are installed in the product, check that the duct system is not blocked and that the pressure drop is sufficiently low (the ventilation unit is not able to reach the setpoint).

9.2 Error codes

Error messages will be displayed in plain text on the Optima Touch display. When using only the I/O connector PCB and Optima Basic display, LED 2 will flash red with the error messages.

Refer to the table below to identify errors.

LED 1: Online

Green light on = internet connection ok
Green light off = no internet connection

LED 2: Alert

- 1 flash = Stop control
- 2 flashes = Sensor error
- 3 flashes = Humidity sensor error
- 4 flashes = Fan error
- 5 flashes = Water frost error
- 6 flashes = Fire error/on test
- 7 flashes = Fire error - Damper 1
- 8 flashes = Fire error - Damper 2
- 9 flashes = Fire error - Box 1
- 10 flashes = Fire error - Damper 3
- 11 flashes = Fire error - Damper 4
- 12 flashes = Fire failure - Box 2
- 13 flashes = Rotor alert



Rotary heat exchanger, operating status

While the rotary heat exchanger is in operation, the following operation modes can be read on the control unit in the Info/Operation status menu:

Rotor status = 0 (Rotary heat exchanger not activated in menu EC4)

Rotor status = 1 (Rotor stopped due to temperature conditions, indoor/outdoor temperatures too close to each other)

Rotor status = 2 (Rotor running for heat recovery)

Rotor status = 3 (Rotor running due to active cooling recovery mode, indoor temperature is colder than outdoor temperature or cooling active with limitation of minimum supply air temperature)

Rotor status = 4 (Defrosting mode, rotor speed reduced due to defrosting of rotary heat exchanger)

THE AIR WE BREATHE

All
Genvex
systems are
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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.

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