OPERATING INSTRUCTIONS

05:55

Rum
20.0°

OPTIMA 251

Genvex

TABLE OF CONTENT

INSTALLATION

1.1 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, the two bottommost and the two topmost.
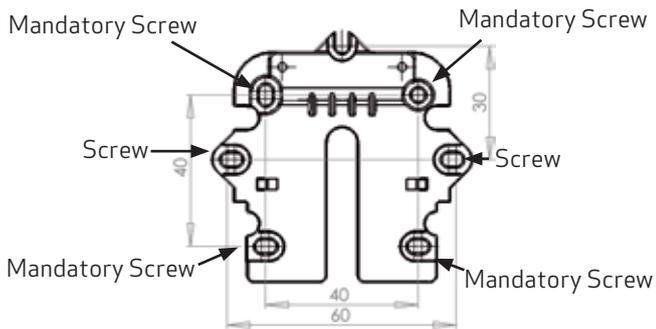
Hold the wall frame against the wall and mark the screw-hole positions. Drilling of holes, hole size and the corresponding screws for fixing the panel depend on the wall material.

Place the control panel in the fixtures and tilt it in against the wall. The four support points in the corner of the display must touch the wall to keep the display stable.
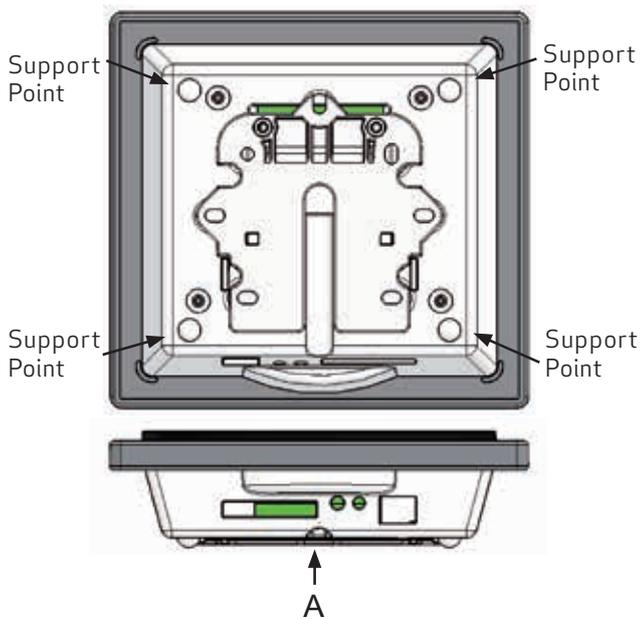
Underneath the control panel there is an access for the:

A: Terminal block. Connection to main circuit board

A low-current cable 4 x 0.25 mm^2 must be attached between the unit and the control panel. 50 m is the maximum cable length. The voltage drop for cable lengths over 50 m is too high and can result in unreliable operation.

How to mount the wall fixture:
1. First screw the fixture securely onto the flat wall and pass the cable up from below.

2. Connect the low-current cable to the terminal block. Check that the cable is connected to the same numbers at both ends. (Between the control panel and the main circuit board in the unit.)

3. Clip the control panel to the wall fixture by guiding it down from above, slightly slanting out at the bottom. Finish by pressing in at the bottom so that it sits flat against the wall. For demounting: pull the control panel a little out at the bottom and lift up.
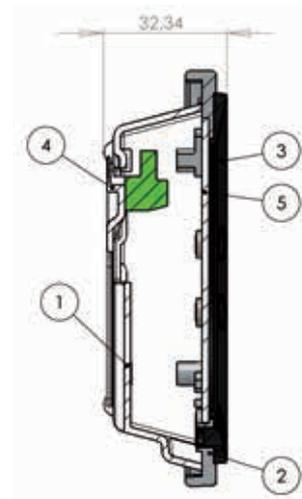
Pos.	Description
1	Panel housing
2	Front of panel
3	Pressure plate for display
4	Wall fixture
5	Glass for the display

2. CONTROL PANEL

The control panel must be mounted on an interior wall that is centrally located in the home.
Since the control panel at the same time functions as a room thermostat, it is important to observe the following:

• **Do not expose the control panel to direct sunlight**
• **Do not place the control panel on an outer wall**
• **Do not recess the control panel in the wall**
• **Do not place the control panel over a heat source**

A lamp close to the control panel can affect the light sensor so that the control panel will not regulate the light intensity as intended.

On the front of the control panel in the ring there are 7 keys that are used to operate the panel. The function of the keys changes depending on the menu selected. (More information is available under Operation).

There is an infrared movement sensor located under the glass screen. Simply by moving your hand past the control panel you can bring up the menu for daily operating options. (This function can be turned off:
See under Main menu/Display/Menu item 5).

The following are located at the bottom of the control panel:

1: SD card
2: Room sensor
3: Light sensor
4: Mini USB port for connection to computer

1: The removable SD card contains all the control models and versions that make the control panel compatible with older versions. The SD card also contains all the languages, menus, help texts, symbols and collected data logs. During the start-up procedure, the current versions are installed in the control panel so that the control can function without the SD card. However, the help texts will not appear in the display and the data logs will not be saved.

4: In order for a computer to read the data logs, the Genvex data logger program must be installed.

3. INSTALLATION

Please see the installation guide.

4. START-UP

The first time the system is started, the control panel display will show: "Choose language".

Click "Next" to switch between available languages. Press "Enter" when the desired language is shown in the display. The control panel will now load the current program version in the selected language.

The display will show:
• Updating model (loading the current model)
• Wait 1.5 minutes (It takes approximately 1.5 minutes to load the current version)
• Language load (91)
• Language OK
• Menu load (84)
• Menu OK
• Icon load (369)
• Menu OK
• Reset to default
• Restarting……..
• Optima 251 UK

The display will then change to:
• The Genvex logo
• Optima 251 UK
• Version number
D (Control panel): X.X
C (Main board): X.X

Finally, the display changes to daily operation and the system is now in operation with the factory setting which is only a basic setting.

The system is now ready to be adjusted with the most optimal air flows and the operational desires and demands for the dwelling in question, e.g. weekly operation, temperatures etc. to achieve the most effective utilisation and operation of the system.

5. OPERATING

Optima 251

The Optima 251 display is preprogrammed with factory settings which is uploaded to the ventilation unit PCB when starting up the ventilation unit for the first time. The factory setting is only a basic setting that should be adapted to the operating desires and demands for the dwelling in question to achieve the most effective utilisation and operation of the system.

5.1 Operating and changing data in the operating menu

Normally the symbols for daily operating options are displayed and the following keys can be seen.
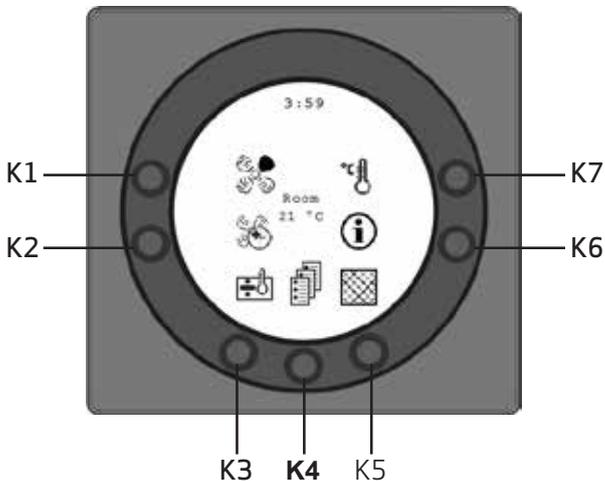
K1 - Speed

Use this function to set the fan speed to levels 0-1-2-3-4. Use the key next to the "Speed" symbol to change between the 4 speeds. The system can also be stopped by holding down the key for 3-4 seconds on condition that item 28 of the Service menu is set to ON.

K2 - Forced operation (Party mode)

Use this function/key to set the timer to party mode from 0 to 9 hours. If the number of hours is set to 0, speeds 3 and 4 will run until the speed is changed manually. If the the number of hours is set between 1 and 9 hours, speeds 3 and 4 will automatically reconnect to speed 2 after the number of hours configured.

K3 - Reheating

Use this function to switch the reheater on and off. On the key next to the symbol "reheating" you can change between "+" and "÷". If the symbol is set to "+" and the system is equipped with a reheater the heater will commence as required. If the symbol is set to "÷", the heater will not

commence, even if required. K4 - Main menu
Use this function to enter the main menu and access the sub-items Date and time, Calendar, User menu, Display, Info operation and Service menu.

K5 - Filter

Use this function to reset the filter alarm. The key next to the "Filter" symbol resets the alarm for filter change. To reset the filter alarm, change the filters and hold down the key with the "Filter" symbol until the exclamation mark in the symbol disappears.

K6 - Information

Use this function to get an overview of the current operating condition, e.g. temperatures, fan settings, relay status/function ON/OFF, alarms, timers etc.
Use the key next to the symbol "Info" to read the operating condition of the unit. More information can be found in the main menu section under the item Info operation.

K7 - Temperature

Use this function to set the desired temperature if the system is equipped with an reheater and/or a bypass damper. Press the key next to the "Temperature" symbol to enter the desired temperature between 10 and 30 °C. The current temperature will be displayed at the centre of the screen.

Press the key K4 to enter the main menu and sub-menus and the following keys change function:

K3   changes to "Arrow down " and when changing the setting to "÷".
K4   changes to "Enter". Press "Enter" to proceed through the menus and sub-menus.
K5   changes to "Arrow up" and when changing the setting to "+".
K6   changes to "Exit". Press "Exit" to return to the previous screen.
K7   changes to "Help". Press "Help" to see a short guide to the current menu item.

The horizontal arrow in the menu shows the current location. To save changes to a menu item, finish by pressing "Enter".

5.2 Main menu

There is a "Book" symbol at the bottom centre of the screen with the daily operating options. Press this key to enter the main menu.

Date and time (item 4.3)

Calendar (item 4.4)

User menu (item 4.5)

Display (item 4.6)

Info operation (item 4.7)

Service menu (item 4.8)

"Arrow down" or "Arrow up" will change the symbol to a horizontal arrow that shows the current location.

Press "Enter" to access the sub-items of the current menu. Press "Arrow down" or "Arrow up" again to select the required sub-menu item. When the horizontal arrow is next to a sub-menu item, the 2 lines will change place, the font sizes will change and the text "Set" will be added. Pressing "Enter" next to the selected sub-menu item will change the background of the item to grey. Use the "+" and "÷" keys to change the current value. Press "Enter" again to save the change.

If no changes are required, press "Exit" to go back out of the menus. Press "Help" to see a short guide to the menu item. Press one of the keys to exit the help program. After a short period of non-activity, the control will automatically exit the programs.

5.3 Date and time

Use this function to set the date and time.

01 - Hours
Enter the current hour here.
When changing between summer and winter time you have to set the time one hour forward or back manually.

02 - Minutes
Enter the current minute here.

03 - Weekday
Enter the current weekday here.

04 - Date
Enter the current date here.

05 - Month
Enter the current month here.

06 - Year
Enter the current year here.

Weekday

Monday	1
Tuesday	2
Wednesday	3
Thursday	4
Friday	5
Saturday	6
Sunday	7

Month

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

5.4 Calendar

Use this function to configure the setting of each day of the week. Each day can be configured to run with different fan speeds as required. You can copy the configuration from one day to another. You can choose ON or OFF here, i.e. if for a period of time there is nobody home, the daily settings can be turned off and the system will run according to a manual setting, e.g. level 1.

01 - Calendar
Choose between controlling the system manually or controlling the speed (air exchange) and temperature automatically according to a fixed day program. If the menu item is set to OFF, the system will be controlled manually according to the speed and temperature selected.

If the menu item is set to ON, the system will be controlled according to the day programs entered in the menu items 02 to 08.

Setting option: ON/OFF.

02 - Monday

Up to 10 switching times can be entered for one day. The times can be entered in random order. Enter the hours in the first column, the minutes in the second and the speed in the third column. Use the fourth column to enter the temperature difference by which the temperature should be lowered.

Example: If the temperature is set to 21 °C and you enter – 2.0 °C, the system will aim at 19 °C.

If the speed has been changed manually on the key under daily operation, the program will return to the day program when the next switching time is passed.

Examples of a day program:
01 07:30 H3 -0,0
02 09:15 H1 -1,0
03 17:00 H3 -0,0
04 18:00 H2 -0,0
05 23:30 H2 -2,0

It is not necessary to use all switching times. If the line is marked by 0, it will be skipped by the control.

03 to 08

These days can be filled in individually in the same way as under item 02.

09 - Copy day

Use this menu item to copy one day to another, where the same switching times, speeds and temperature lowering are required.
For example: From Thursday to Tuesday.

5.5 User menu

01 - Temperature

Set the desired temperature between 10 and 30 °C.
In item 19 of the Service menu you can choose between supply air regulation, room regulation or extract air regulation. (The sensor is mounted in the control panel).

Setting option: between 10 and 30 °C.

02 - Preheating

If a preheater is fitted to the fresh air duct the set point must be configured to ON. Enter the desired preheating temperature in item 20 of the Service menu. If instead a refrigerant device is installed in the supply air duct the set point must be configured to OFF. (It is not possible to control a preheater and a refrigerant device at the same time).

If both types of optional equipment are installed, the set point must be configured manually in spring and autumn. If none of the help functions in item 27 of the Service menu

are used, the help function 4 can be used to control the additional cooling.

Setting option: ON/OFF.

03 - Reheating

If a reheater is fitted to the system it is optional if the reheater should operate. If the set point is configured to OFF the heater will not operate, even if required. Is the set point configured to ON the reheater will engage as required. It regulates according to the temperature set in item 1 of the User menu.

Setting option: ON/OFF.

04 - Timer levels 3 and 4

At speeds 3 and 4, the system will automatically reconnect to speed 2 after the number of hours set in item 17 of the Service menu by configuring the set point to ON. If the set point is set to OFF, the system will run at speed 3 or 4 until it is manually changed to another speed. The timer can also be operated directly on the key next to the symbol for "Party mode" on the screen for daily operating options.

Setting option: ON/OFF.

05 - Change filter

A filter timer is built-in counting how long the system has been running since the last change of filter. The set point can be set between 1-12, which corresponds to 12 months. It is recommended that the set point should initially be set to 3, corresponding to 3 months (by entering 0 - the filter timer will be off and will not give a filterwarning).

If the filters are too dirty after the period configured, set the set point to a lower number. If it is not necessary to change the filters after the configured period, the set point can be set to a larger number.

When the timer reaches the configured value for the change of filter, the alarm "Change filter" will flash at the top of the screen saver.

When the filters have been changed, return to the screen with daily operating options and hold down the key for the "Filter" symbol until the exclamation mark disappears and the system returns to normal operation.

Setting option: between 1 and 12 months. setpoint = 0 will disable the filter timer (Be carefull when using this setting – Genvex does not take any responsibility due to ventilation unit errors based on clogged filter)

06 - Humidity control

Here the humidity control is turned on, which must be set to ON in order to be active.

Setting option: ON/OFF.

5.6 Display menu

The menu item with the "Display" symbol.
Use this function to configure the following sub-menu items:

01 - Language
Choose between several different languages in the display.

02 - Program info
This menu shows which Optima is fitted on the system and its version number.

Example: Optima 251 UK D: 3.1 C: 1.0
D represents the version number of the control panel.
C represents the version number of the main board.

03 - Screen saver
The following settings can be selected here:
0: Screen saver off (daily operating options are displayed)
1: Screen saver off, but with light dimming
2: Room temperature + light dimming
3: Clock + light dimming
4: Clock and room temperature + light dimming
5: Black screen + light dimming

Setting option: between 0 and 5.

04 - Pause time
Use this to set the period from no operation of the symbols on the screen for daily operation until the screen automatically returns to the screen saver. From daily menu to screen saver variable from 1 to 10 minutes. The other automatic return connections cannot be adjusted. If no key has been pressed within the time intervals indicated below, it will automatically return to the previous screen:
• Change in menu item back to menu item = 30 seconds
• From menu item to main menu = 2 minutes
• From menu item to daily menu = 2 minutes

Setting option: between 1 and 10 minutes.

05 - Auto wake-up
It is possible to deactivate the "Auto wake-up" function, where you can change from the screen saver to the screen with the symbols for the daily operating options by moving your hand past the control panel.

If the function is set to OFF, press any key to display the daily operating options.

Setting option: between 0 and 4.

"0"	OFF
"1"	Max sensitive
"2"	Level 2
"3"	Level 3
"4"	Least sensitive

06 - Auto brightness
In the display there is a movement sensor.

Setting option: ON/OFF.

07 - Brightness day
Use this to enter the maximum brightness level for the control panel when the room is fully lit.

Setting option: between 0 and 100 %.

08 - Brightness night
Use this to enter the minimum brightness level for the control panel when the room is in complete darkness.

Setting option: between 0 and 100 %.

09 - Brightness day screen saver
Use this to enter the maximum brightness level for the screen saver when the room is fully lit.

Setting option: between 0 and 100 %.

10 - Brightness night screen saver
Use this to enter the minimum brightness level for the screensaver when the room is in complete darkness.

Setting option: between 0 and 100 %.

11 - Reset to factory settings
If the set points are configured so that the system does not function as expected and the cause cannot be established, there are 2 different options to reset the menu items to the factory settings.

• **Press 1** to change all menu items to the factory settings except for the menu items for Speed (Level), Filter timer, Calendar and Defrost temperatures.

• **Press 2** to change all menu items to the factory settings.

Note: Before performing a reset, ensure that the currently entered values are noted in the "Schedule for set points".
Setting option: between 0 and 2.

12 - Safety menu

It is possible to prevent access to selected main menu items so that they can only be changed with a password, which is a 4-digit figure. The first time, press 4 times 0 and then "Enter". Items 13 to 18 will open. Select the password in item 18, which will also be the password to access the menu items 13 to 18 in future.

13 - Date and time

If this item is set to ON, it will not be possible to enter the menu for Date and time without using the selected password in item 18.

Setting option: ON/OFF.

14 - Calendar

If this item is set to ON, it will not be possible to enter the menu for Calendar without using the selected password in item 18.

Setting option: ON/OFF.

15 - User menu

If this item is set to ON, it will not be possible to enter the User menu without using the selected password in item 18.

Setting option: ON/OFF.

16 - Display

If this item is set to ON, it will not be possible to enter the menu for Display without using the selected password in item 18.

Setting option: ON/OFF.

17 - Service menu

If this item is set to ON, it will not be possible to enter the Service menu without using the selected password in item 18.

Setting option: ON/OFF.

18 - Password

Enter the selected password here and use this also in item 12 to enter items 13 to 18. If you forget your password, contact Genvex Service department for assistance. To change the password, enter a new password in this item and press "Enter". The password has now been changed.

5.7 Info operation

The Info operation menu provides an overview of the current operating status of the system. If you want to see the operating status of the system over a period of operation, connect the control panel to a computer and use the Optima data logger program. The system monitors the operating status every minute and stores the data for up to one year on the SD card.

Current temperature

Press "Enter" next to the info operation menu. The first screen displayed shows the current temperatures.

T1	Supply air
T2	Room
T3	Fresh air
T4	Exhaust air
T7	Extract air
T8	Frost protection
T9	Extra sensor

Current fan speed

Press "Arrow down" to display the current percentage fan speeds and the opening of the bypass damper and of the water valve.

Supply air	in %
Extract air	in%
Bypass damper	in %
Water valve	in %
Bypass	on/off

Current setting of operation relays

Press "Arrow down" again to display the current status of the operation relays.

R2	Reheating
R3	Preheating
R8	System in operation
R9	Help relay 9

Current list of alarms

Press "Arrow down" again to display the current alarms. An alarm it is activated if ON appears beside it. At ON there is an alarm, which can also be seen on the screen saver and the display for daily operating options. At the top it says alarm. The Info operation menu shows the type of alarm. When the timer for changing filter reaches the set value, the alarm "Change filter" will flash at the top of the screen saver.

The alarm will read OFF when the error has been corrected or the filter is changed and reset.

Alarm	Status	Error at "ON"
Control stopped	ON/ OFF	Filter not changed after 14 days/ Frost protection error/The system is equipped with an external switch between terminals 28 and 29. "Alarm" will be displayed when these are short-circuited and the system has stopped.
Change filter	ON/ OFF	The filters should be changed.
Frost protection	ON/ OFF	The temperature of the water after heater is too low (frost danger).
Com error	ON/ OFF	The control panel cannot communicate with the main board between display and printed circuit board).

Hour counters (2 pages)
Press "Arrow down" again to display the hour counters, which count from the day the system is put into operation. The figures shown should be multiplied by 10. This shows how many hours the system has been running, how many hours the system has run at the various speeds and how many hours the relays have been connected (ON).

Total tid	
Level 0	
Level 1	
Level 2	
Level 3	
Level 4	
Relay 2 Reheating	
Relay 3 Preheating	
Relay 8 System in operation	
Relay 9 Help function	

Press "Exit" to return to the main menu.

5.8 Service menu

Use this function to configure the following sub-menu items.

10 - 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 measurement equipment and can be performed without the use of the main regulating damper. It is not recommended to configure the air flows without expert advice. Incorrect configuration can lead to major energy consumption or unpleasant indoor climate.

Setting option: between 0 and 100 %.

11 - Level 2 Supply air
Level 2 is the recommended speed of the system in order to provide the optimal indoor climate and it should be adjusted to the ventilation requirement of the dwelling.

Setting option: between 0 and 100 %.

12 - Levels 3 and 4 Supply air
Level 3 is the highest speed that can be configured. It is used e.g. if there are many guests or there is a lot of activity in the kitchen.

Setting option of level 3: between 0 and 100 %.
Factory setting of level 3: 75 %.

Level 4 is used mainly in summer to lower the indoor temperature. Remember that a higher air exchange rate increases the energy consumption.

Setting option of level 4: cannot be configured.

13 - Level 1 Extract air
The fan speed is adjusted until the same air flow is achieved as the supply air on level 1.

Setting option: between 0 and 100 %.

14 - Level 2 Extract air
The fan speed is adjusted until the same air flow is achieved as the supply air on level 2.

Setting option: between 0 and 100 %.

15 - Levels 3 and 4 Extract air
The air flow of level 3 is adjusted to the same air flow as the supply air on levels 3 and 4 (item 12).

Setting option of level 3: between 0 and 100 %.
Factory setting of level 3: 75 %.

Setting option of level 4: cannot be configured.

16 - Fine tuning (T2)
It is possible to fine tune the room sensor of the control panel so the correct current room temperature is displayed.

Setting option: between -5 and 0 °C.

17 - Timer levels 3 and 4

If automatic reconnection is used for speeds 3 or 4, you can enter how many hours the system should run on level 3 or 4 before it automatically returns to level 2. The set point can be configured between 1 and 9 hours.

Setting option: between 1 and 9 hours.

18 - Filter/stop

To ensure that the filters are changed when the alarm "Change Filter" flashes on the screen of the control panel, the set point can be configured to ON. The system will then stop automatically after 14 days if the filters have not been changed.

If this precaution is not required, the set point can be configured to OFF and the system will continue to operate.

Setting option: ON/OFF.

19 - Method of regulation

There are 3 options:
0. Room regulation (T2 sensor)
1. Supply air regulation (T1 sensor)
2. Extract air regulation (T7 sensor)

If the system is used in a dwelling, supply air regulation is the normal choice. The set point is configured to 1.
For room regulation, configure the set point to 0.
For extract air regulation, configure the set point to 2.

Setting option: between 0 and 2.

20 - Preheating

If preheating is set to ON in item 2 of the User menu, the set point must be configured to the fresh air temperature, at which the preheating should connect.
Setting option: between -15 and 0 °C.

21 - Bypass open

Here you set the temperature at which the bypass should be 100 % 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 set temperature in User Menu item 1 is 20 °C, this menu item should be set to 3 °C.

The bypass will open, provided that:
1. The exhaust temperature is higher than the outdoor air temperature.
2. The outdoor air temperature is above the set tempera-ture in the Service Menu Item 29.

Units with modulating bypass: If the temperature rises 0.5 °C above the temperature set in User Menu item 1, the bypass damper will begin to open. The bypass is 100 % open when the temperature reaches the set point in the User Menu Item 1 + the temperature differential set in this menu item.

To get a smooth opening of the bypass, the temperature at which the bypass is fully open should be set appr. 3 °C above the set temperature in Use Menu item 1.

Units with on/off bypass (e.g. ECO190 / ECO 375): The bypass opens when the temperature reaches the set point in the User Menu Item 1 + the temperature differential set in this menu item.

Setting option: between 1 and 10 °C.

22 - Regulation water

If a water reheater with a motor-operated valve is installed in the system it may be necessary to adjust the regulation time.

The less regulation time, the faster the motor-operated valve will regulate.

Setting option: between 1 and 250 seconds.

23 - Regulation electricity

If an electrical preheater or an electrical reheater is installed, it may be necessary to adjust the regulation time.

Setting option: between 1 and 30 minutes.

24 - Frost reduction

To avoid icing of the counter current heat exchanger, the supply air flow can be reduced gradually, when the exhaust air temperature after the counter current heat exchanger has fallen below the set temperature. This function gradually reduces the supply air flow, until the set value has been reached.

Caution: May cause under pressure in the house!
Setting option: between 0 and 10 °C. The function is disabled if set to 0 °C.

25 - Frost protection

If a water reheater with motor-operated valve is instal-led in the system, a frost protection sensor must be fitted to the water reheater and the set point configured to ON.

If no frost protection sensor is installed, the set point must be configured to OFF.

Setting option: ON/OFF.

26 - Frost protection temperature

If frost protection in item 25 is set to ON, the frost protection temperature must be configured to the temperature where the system should stop and the motor-operated valve open completely for the flow of hot water.

Setting option: between 0 and 10 °C.

27 - Help function
This function can be used for the following:

Setpoint	Function
0	The relay is off.
1	The relay is on when the system is running. This can e.g. be used to open and close the fresh air damper and the exhaust air damper.
2	The relay is on when extra heat is required or when the circulating pump should run when heating with water reheating is required.
3	The relay is on when the alarm "Change filter" is active. This can be used to activate an external alarm.
4	The relay is on when extra cooling is required. This function is used if a preheater is also fitted to the system.
5	The control can handle an earth heat exchanger by a damper. The relay will be on for one of the following two conditions: • The outdoor temperature, sensor T9, is lower than the value configured in item 26 (frost protection temperature, typically set at 5 °C). • The outdoor temperature, sensor T9, is more than 1° above the temperature configured in item 1 and 1 ° above the current room temperature.
6	The relay is on when the terminal L1 (kitchen hood connection) has been activated/bridged. A damper can be connected to the relay H17 which closes of the bathroom connection when activating the kitchen hood.

Setting option: between 0 and 6.

28 - System stop
Here you choose if it should be possible to stop the system by pressing the key for speed (K1) in the operating menu for 3-4 seconds. If the set point is OFF, the system cannot be turned off.

Setting option: ON/OFF

29 - Turn off bypass
To prevent the bypass damper from opening at low fresh air temperatures and blow cold, not heated air into the dwelling, use this function to configure the lowest fresh air temperature, at which the damper must be closed. The value is an expression of the greatest difference that may exist between the temperature configured in item 1 and the lowest fresh air temperature.

Setting option: between 0 and 20 °C. If 0°C is selected, the function is turned fully off.

30 - Modbus Mode
See separate description for MODBUS.
Setting option: 0-2.
0 = Modbus OFF
1 = 9600 Baud
2 = 19200 Baud

31 - Modbus Adress
See separate description for MODBUS.
Setting option: 1-247.

32 - Humidity max. temperature
Setting the end point for outside temperature-compensation (T3), see the X-axis on the graph.

Setting option: 5-25 °C.

33 - Humidity max. value
Setting the end point for outside temperature compensation, see the Y-axis on the graph (desired max. humidity value).

Setting option: 35-85 %.

34 - Humidity fan speed
Setting of how much the fan speed may differ in relation to the desired fan speed. See menu points 11, 12, 14 and 15.

Setting option: 5-30 %.

35 - Humidity regulating frequency
Setting of desired frequency for how often the fan speed may be changed.

The function is defined as 1 % per unit of time.

Setting option: 1-60 min.

Sketch for humidity regulation

Desired RH set-point, see the graph below.
Variable fan speed on fresh air, see the graph below.

Outside temperature compensation curve

Legend:
— = **Limits**
— = **Factory setting**
--- = **Examples**
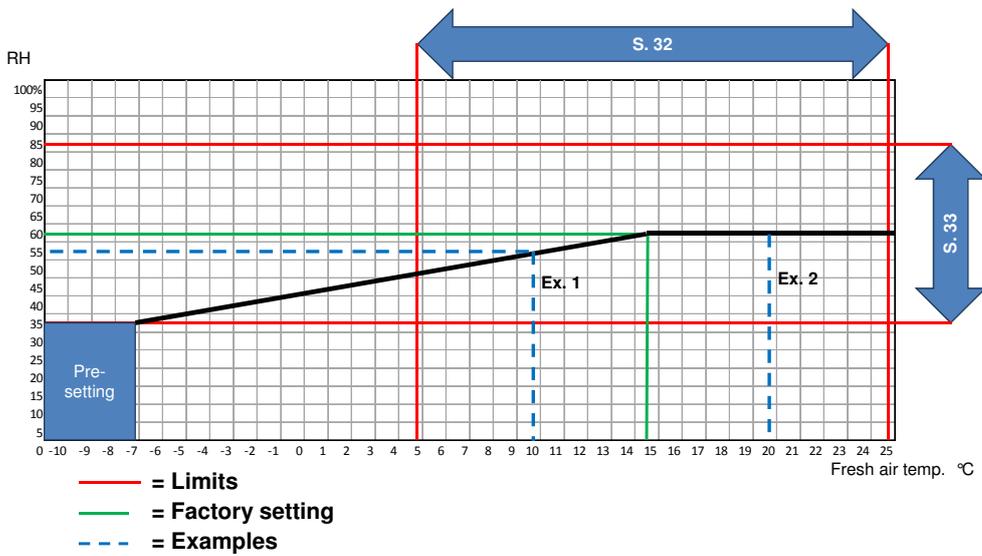
Example 1
At a fresh air temperature of 10 °C the RH-value is 55 %.

Example 2
At a fresh air temperature of 20 °C the RH-value is 60 %.

Set point 34
Setting for how much the fan speed may differ in relation to the desired fan speed.

Example:
Set point 34 = ± 15 %
With a desired fan speed of 3, the fan speed will be able to fluctuate ± 15 %. Since fan speed 3 is set at 75% in service menu 12 and 15, the fan speed must be max. 90% and min. 60%.

The same applies to fan speed 2. Since fan speed 2 is set at 50% in service menu 11 and 13, the fan speed must be max. 65% and min. 35%.

Regulation of the fan speed takes place ±1% for every 10 min.

Setting option: see set point 35.

Fan speed
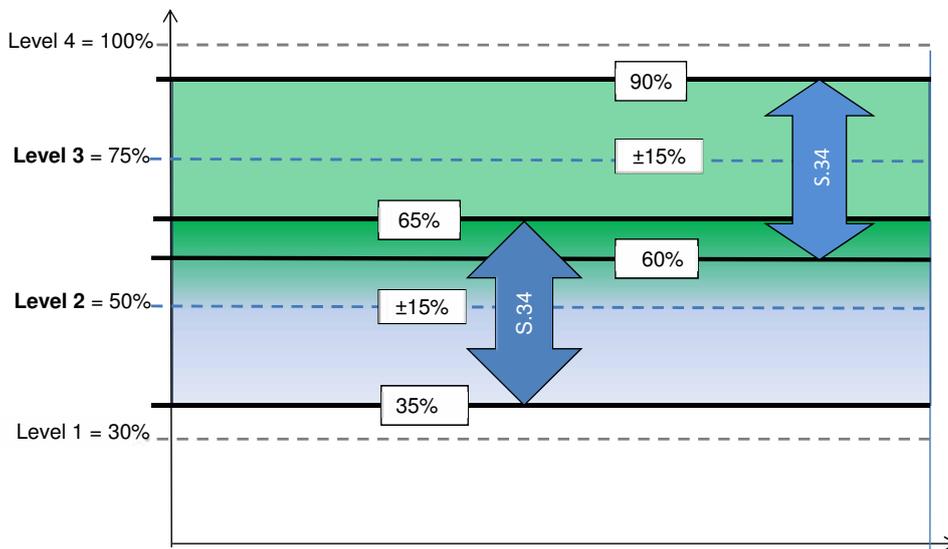
36 - Not applicable

37 - 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 setpoint (speeder)

38 - 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 setpoint (brake).

39 - Preheat Reg
Preheat Cycle the function works the following way e.g. necessary output 50% and cycle =60 sec means controller will switch on preheater for 30 sec and off for 30 sec.

Note: please refer to your country specifik regulations on limitations when adjusting this function.

The modulating preheater function refers to the value adjusted in setpoint no. 20.

The preheater will try to maintain a steady fresh air temperature according to this setpoint.

When using the modulating preheater - the exsting fresh air temperature sensor (T3) built into the ventilation unit can be used as reference. No extra temperatur sensor is required.

40 - Reheat offset
Offset for reheater with reference to the setpoint requested temp on display (user menu 01)
e.g. requested temp = 20 °C
offset value=2 reheater aims for 18 °C supply temperature

41 - 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 setpoint (speeder).

42 - Reheat PI I
I-band for the PI controller for the electrical modulating reheater.

The function controls how quickly the controller adapts to a deviation of the setpoint (brake).

43 - Reheat Reg
Reheat Cycle the function works the following way e.g. necessary output 50% and cycle = 60 sec means controller will switch on preheater for 30 sec and off for 30 sec.

Note: please refer to your country specifik regulations on limitations when adjusting this function.

The modulating reheater function refers to the value adjusted in setpoint no. 40.

The reheater will try to maintain a steady supply air temperature according to this setpoint.

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.

44 - Demand control
This function offers the opportunity for connecting external 0-10volt signals which can force control the fans up in speed by increasing the signal.

The function is only active in fan step 2 and 3 and requires that humidity control is deactivated (user menu 06).

The factory setting is 0%, which deactivates the demand control. The workspace for permitted increase of the fan speed can be limited via settings from 0-100%.

For example: workspace 100% here, 5 volts will increase the speed by +50%.
For example: workspace 50% here, 5 volts will increase the speed by +25 %.

45 - Fire damper*
Should the Genvex Optima controls be used in a fire and smoke protection system, it is possible from this point on the menu to select how many dampers are connected to the Optima controls and which must be monitored.

Adjustment options
0 = the function is deactivated
1 =1 damper is connected
2 =2 dampers are connected
3 =3 dampers are connected
4 =4 dampers are connected

When the function 1-4 is selected, the function will continue to be active after you have pressed exit once. After this, the menu points 46-48 will be displayed.

46 - Fire test now*

0 = auto, damper to be tested once a week according to schedule
1 = fire test now, with this function a function test of the fire damper will be force started and the result shown in the display and logged on the SD card (N.B. there will be a delay of up to 240 seconds from when the test is started until the test is carried out).
2 = 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.

47 - Fire test day*
Schedule for when automatic weekly fire/smoke damper test shall be conducted

1 = Monday
2 = Tuesday
3 = Wednesday
4 = Thursday
5 = Friday
6 = Saturday
7 = Sunday

48 - Fire test hour*
Schedule for when automatic fire/smoke damper test shall be conducted

Adjustment options: 1-24

*N.B. – This function can only be used together with the ES960CC PCB and ES1048 firebox.

By activation of menu 45, a point FireTST will be added under the info menu, which indicates the time of when the last fire test was carried out and the status of this test.

Similarly, a point fire alarm will be shown which, if indicated as ON, will indicate errors on the damper and also identify which damper it is that is at fault. If the fire alarm is OFF after "fire test now pt 46" and correct selection of number of dampers, then the installation has been completed correctly.

5.9 Schedule for week program

Monday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Tuesday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Wednesday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Thursday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Friday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Saturday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Sunday

	Hours	Minutes	Speed	Red. T2
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Red. T2 = Reduced room temperature (Night set-back)

5.10 Schedule for set points

Item	Headline	Factory setting	Configuration area	Date	Date	Date	Da
(5.5) 01	Temperature	21 °C	10 - 30 °C				
02	Preheating	OFF	ON / OFF				
03	Reheating	OFF	ON / OFF				
04	Timer levels 3 and 4	OFF	ON / OFF				
05	Change filter	3 months	1 - 12 months				
06	Humidity control	OFF	ON / OFF				
(5.8) 10	Level 1 Supply air	30 %	0 - 100 %				
11	Level 2 Supply air	50 %	0 - 100 %				
12	Level 3 and 4 Supply air	75 %	0 - 100 %				
13	Level 1 Extract air	30 %	0 - 100 %				
14	Level 2 Extract air	50 %	0 - 100 %				
15	Level 3 and 4 Extract air	75 %	0 - 100 %				
16	Fine tuning (T2)	÷ 3°C	÷ 5 - 0 °C				
17	Timer level 3 and 4	3 hours	1 - 9 hours				
18	Filter/stop	OFF	ON / OFF				
19	Method of regulation	2	0 - 2				
20	Preheating	÷ 3 °C	÷ 15 - 0 °C				
21	By pass open	3 °C	1 – 10 °C				
22	Regulation water	20 sec.	1 - 250 sec.				
23	Regulation electricity	3 min.	1 - 30 min.				
24	Frost reduction	0 °C	0 – 10 °C				
25	Frost protection	OFF	ON / OFF				
26	Frost protection temperature	5 °C	0 - 10 °C				
27	Help functions	0	0 - 5				
28	System stop	OFF	ON / OFF				
29	Turn off bypass	4 °C	0 - 20 °C				
30	Modbus Mode	0	0 - 2				
31	Modbus Address	1	1 - 247				
32	Humidity max. temperature	15 °C	5 - 25 °C				
33	Humidity max. value	60 %	35 - 85 %				
34	Humidity fan speed	15 %	5 - 30 %				
35	Humidity regulating frequency	10 mln.	1 - 60 min.				
36	Not applicable						
37	Preheat PI P	5	1-255				
38	Preheat PI I	200	1-255				
39	Preheat Reg	40	10-120				
40	Reheat offset	2	0-20				
41	Reheat PI P	5	1-255				
42	Reheat PI I	200	1-255				
43	Reheat Reg	40	10-120				
44	Demand control	0	0-100 %				
45	Fire damper	0	0-4				
46	Fire test now	0	0-2				
47	Fire test day	3	1-24				
48	Fire test hour	12	1-24				

6. FUNCTION

6.1 Controlling Optima 251

Regulation of room temperature
There are 3 methods of regulation – see service menu item 19. If the supply air regulation has been selected, the controller will blow in air with the temperature set, provided that a reheater is fitted to the system. The supply air temperature is regulated by the supply air sensor T1.

It is recommended to configure the supply air temperature 2-3 °C below the room temperature.

Relay R8
When the system is running at levels 1, 2, 3 or 4, the relay will be turned on. This function can be used to e.g. control the fresh air damper or the exhaust air damper.

6.2 Extra capacity

Water reheating
For systems with water reheaters the motor-operated reheater will begin to regulate (PI regulation) when the temperature has fallen 1 °C below the temperature set.

Electrical reheating on / off version
For systems with electrical reheaters the reheater will connect when the temperature has fallen 1 °C below the temperature set. If the regulation time is set to e.g. 3 minutes, the temperature sensor T1 will measure if the temperature is now above or below the temperature set after 3 minutes. If the temperature is still below the temperature set, the reheating will keep running. When the temperature reaches the value set, the electrical reheater will disconnect.

Electrical reheater (modulating)
For systems with the modulating electrical reheater. The electrical reheater will automatically adapt to changes in airflow and temperatures - maintaining a constant temperature according to the requested setpoint. The controller will be adjusting the electrical output of the reheater automatically.

Extra cooling
If an extra cooling device is fitted to the system, this will turn on when the bypass motor is open completely and turn off again when the bypass motor begins to turn off again.

Systems with an electrical preheater will regulate in the same way as an electrical reheater.

6.3 Operating reliability

Safety thermostat
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 80 °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 110 °C. Re-engaging must be done manually.

Does not apply to PTC electrical heaters.

Remember to disconnect the power to the system before performing any service on the ventilation system.

7. MAINTENANCE

Follow the following instructions to achieve optimal performance:

> ⚠️ Before opening the unit, turn off the power/ pull out the plug and wait until the fans have stopped completely.

A couple of days after the primary installation, check that the condensation outlet is working.

Environmental requirements
When repairing or dismantling the unit, statutory environmental regulations must be observed regarding recycling and destruction of various materials.

7.1 Unit

Filters
When the alarm "Change filter" flashes in the control panel display, 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.

> ⚠️ There is a danger of cuts from sharp discs. The discs must not be damaged.
> Vacuum cleaning or using pressurised air on the filters is not recommended.
> Filter performance may be impaired.
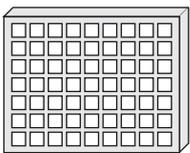
G4 = Standard filter
F5 = Fine filter
F7 = Pollen filter

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.

7.2 Alarms

Filter timer
The control has a filter timer to guarantee that the filter is changed and that optimal operation is established. When the timer reaches the set value, "Chg. filter" will flash in the display until the filters have been changed.
When the filters have been changed, the button for the filter symbol must be held down until "Alarm!", "Chg. Filter" and the exclamation mark disappears and the unit reverts to normal operation.

Com error
This error appears when there is no communication between the display and control. Check that the wiring is correct on terminals 21 to 24.

21	Signal
22	Signal
23	10 Volt
24	0 Volt

Frost protection error
This error message will be displayed if a water reheater is fitted to the system and the temperature of the water reheater is too low, causing a danger of frost burst.
The control will stop the system and open the motor-operated valve to keep the heater warm.

7.3 Dismantling/taking the system out of service

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.

8. TROUBLESHOOTING

8.1 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.

8.2 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.

8.3 Air faults

No supply air:
Possible error:
• Faulty supply air fan
• Clogged supply air fi lter
• 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)
• Incorrect value set in User menu item 2.

No extract air:
Possible error:
• Faulty extract air fan
• Clogged extract air fi lter.
• 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.

THE AIR WE BREATHE

All Genvex systems are rated with energy label **A**

The original Genvex units are assembled by skilled and experienced technicians and have a lifetime that in many cases is measured in decades. The units are approved by all applicable standards and are easy to operate and service. Last – but not least all Genvex systems are developed with focus on compact dimensions and ease of installation and can be integrated discreetly in all types of homes.

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Our unit is working in thousands of homes providing fresh clean air – free of pollen, dust and harmful particles. This helps to strengthen the health of the house and to make the indoor environment healthy and comfortable for lots of families. At the same time, our system is an important element when it comes to saving energy in homes and in society as a whole – in fact you can recover up to 95% of the heat energy with a Genvex system.

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