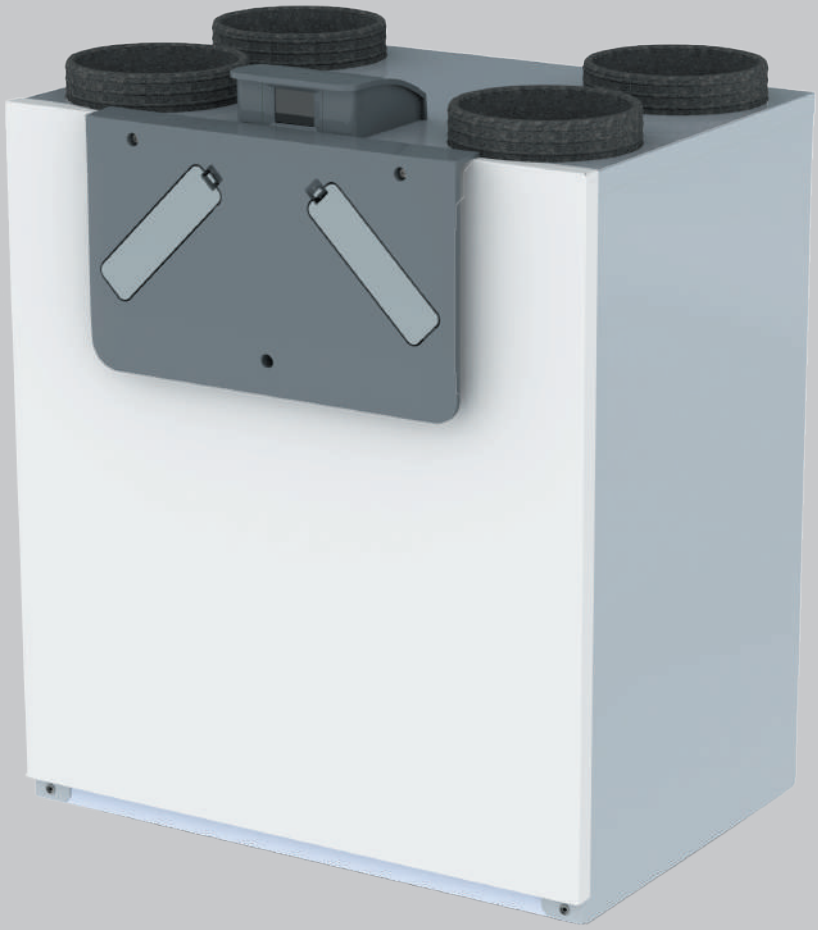
ComfoAir E350
Manual for the installer

zehnder
always the
best climate

Heating | Cooling | Ventilation | Filtering



Foreword

Please read this manual carefully before operating the unit.

With the help of this manual, you can install, commission or carry out maintenance on the ComfoAir E in a safe and optimal manner. The ComfoAir E is hereinafter referred to as the “unit”. As the unit is subject to continuous development and improvement, your unit may differ slightly from the descriptions in this manual.

The following symbols are used in this manual:

Symbol	Meaning
	Point of attention.
	Risk of compromised performance or damage of the ventilation system.
	Risk of personal injury.

Questions

Contact the importer if you have any questions or wish to order a new manual or new filters. Contact details:

Information given in the Instructions for the user.
General information about the ventilation system.
Warranty and liability conditions
EC declaration of conformity.
Replacing filters in the unit.
Cleaning the valves and/or grilles in the ventilation system.
Use of the display on the unit.

Information given in the Manual for the service engineer.
Maintenance procedures.
Malfunction procedures.
Available service parts.
Extensive technical data.

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1 Safety instructions

- Always comply with the safety regulations in this document. Failure to comply with the safety regulations, instructions, warnings and comments may lead to personal injury or damage to the unit.
- Always observe the local building, safety and installation guidelines of the municipality, utility companies or other authorities;
- Always connect air ducts with a minimum length of 900 mm to the unit before connecting the power supply to prevent contact with the rotating fans.
- After installation, all parts that could lead to personal injury are safely out of reach behind the casing. The ComfoAir cannot be opened without using tools.
- It is not permitted to modify the unit or any of the specifications contained in this document. This may result in personal injury or reduced ventilation system performance.
- Installation, commissioning and maintenance must be carried out by a certified person or company, unless stated otherwise. If this work is carried out by unauthorised persons, it may result in personal injury or reduced performance of the ventilation system.
- Always unplug the power cord before starting any work on the unit. Using the unit with the casing open may result in personal injury. In this case, make sure that no conductive or rotating parts can be touched.
- Static charge can damage the electronics. When working with electronics, always take protective measures to prevent electrostatic discharge, such as wearing an antistatic wristband.
- If the power cord is damaged, it must be replaced by the manufacturer, the service engineer or a qualified person to avoid risks.

2 Installation conditions

- Connect the unit to a 230 V~ 50 Hz power supply. Any other mains connection will damage the unit;
- The unit is designed for use in residential areas only. The unit is not suitable for commercial use, e.g. in swimming pools or saunas. Installation in an industrial environment can damage the unit;
- Check whether the installation area will remain within the permissible temperature range throughout the year.
  The permissible temperature of the installation area is given in the section “Technical specifications”;
- Zehnder recommends that the unit is not installed in spaces with higher-than-average humidity (such as a bathroom or toilet). This prevents the formation of condensation on the outside of the unit.
- Check whether the electrical installation can cope with the maximum capacity of the unit. The maximum capacity is given in the section “Technical specifications”.
- Check whether the installation area of the unit has sufficient room for the following aspects:
  - The air duct system including dampening material around the unit;
  - Carrying out maintenance activities in front of the unit (at least 1 m);
  - The condensation drain below the unit;
  - Wiring additional options (optional);
  - The power connection of the unit.

3 Transport and unpacking

The permissible storage and transport temperature
is -20°C to +50°C.
Treat the unit with care during transport and unpacking. Make sure the packing material is disposed of in an environmentally friendly manner.

Checking the delivery

Contact your supplier immediately in case of damage or an incomplete delivery. The delivery should at least include:

- The unit: check the identification plate to ensure that you have received the correct unit type.
- Mounting bracket;
- Documentation;
- Connector set;
- Protective cover;
- Condensation drain adapter 32 mm pipe;
- Condensation drain sealing cap.

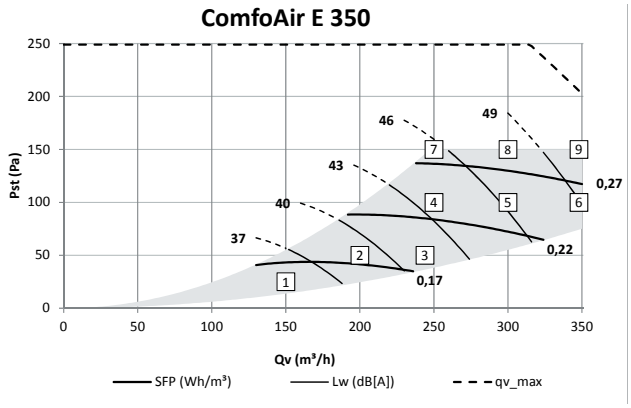
Information available on the identification plate	
Extension	**Meaning**
ComfoAir E	Product family name
350	Maximum airflow: 350 m^3/h.
R	The dwelling side is installed at the factory as standard on the right-hand side of the unit.
L	The dwelling side is installed at the factory as standard on the left-hand side of the unit.
VL/VR	The unit is supplied by the factory with a preheater

☞ **Check the unit type carefully. The location of the air ducts cannot be changed in the field.**

4 Technical specifications

	ComfoAir E350	
Performance		
Minimum airflow if preheater on	100 m^3/h	
Minimum airflow if preheater off	50 m^3/h	
Maximum airflow	350 m^3/h	
Heat efficiency level[1]	91%	
Electrical connection details		
Maximum performance/power without preheater[2]	120 W	1.03 A
Maximum performance/power with preheater[2]	1580 W	7.38 A
Power supply	230 V ± 10%, single phase, 50 Hz	
Cos ϕ	0.34 - 0.51	
Mechanical connection details		
Dimensions of air connection (Ø)	Internal: 160 mm External: 190 mm	
Dimensions of condensation drain (Ø)	32 mm	
Material specifications		
Casing	Coated sheet steel	
Inner surface	EPP and ABS	
Heat exchanger	Polystyrene	
General		
Temperature range during transport and storage	-20°C to +50°C	
Temperature range moved air	-15°C to +50°C	
Temperature range of installation area	>8°C (is not a range)	
Relative humidity of installation area	<90% (non-condensing)	
IP classification	IP 41	
ISO classification	B	
Weight	50 kg	
Filter class	ISO Coarse and ISO ePM1 according to ISO 16890 (G4/F7)	

ComfoAir E350								
	Qv m^3/h	Pst Pa	P W	cos ϕ -	SFP Wh/m^3	Lw, supply dB(A)	Lw, return dB(A)	Lw, casing dB(A)
1	150	25	22	0.38	0.15	49	36	34
2	200	50	36	0.42	0.18	53	40	38
3	245	50	46	0.44	0.19	56	42	41
4	250	100	59	0.46	0.24	59	44	43
5	300	100	73	0.47	0.24	62	47	46
6	350	100	90	0.48	0.26	65	49	49
7	250	150	71	0.47	0.28	61	46	45
8	300	150	86	0.48	0.29	63	48	48
9	350	150	104	0.49	0.30	66	51	50

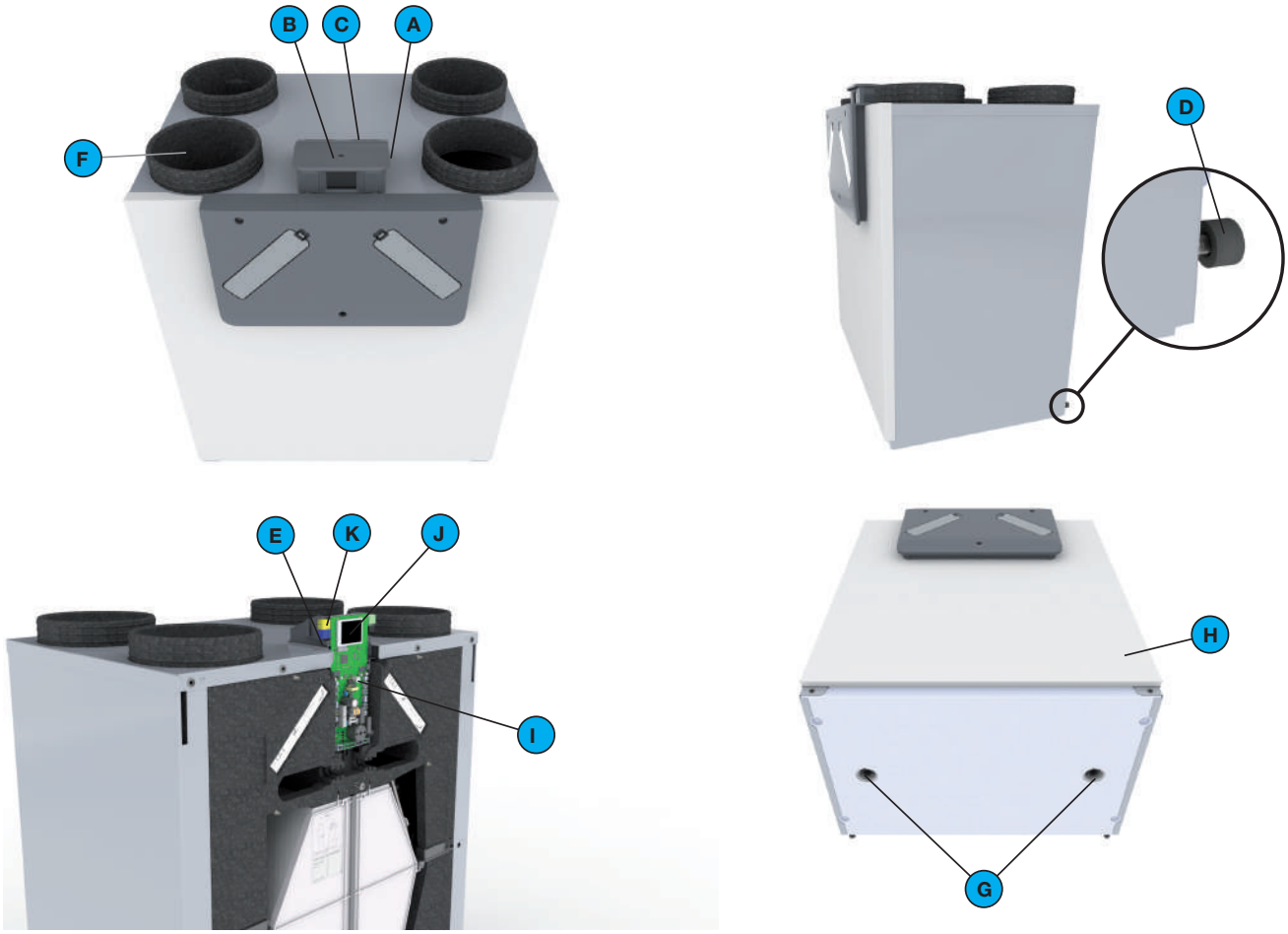


SFP in Wh/m^3 calculated based on the details as per EN13141-7: 2010
Cos ϕ with preheater deactivated

Lw in dB(A) reference 10^{-12} W
Casing radiation measured according to ISO 3741: 2010
Supply and extract air noise measured according to ISO 5135: 1997 (values are corrected for muzzle reflection)

[1] According to EN13141-7:2010
[2] At -15°C and maximum airflow.

4.1 Configuration of the unit



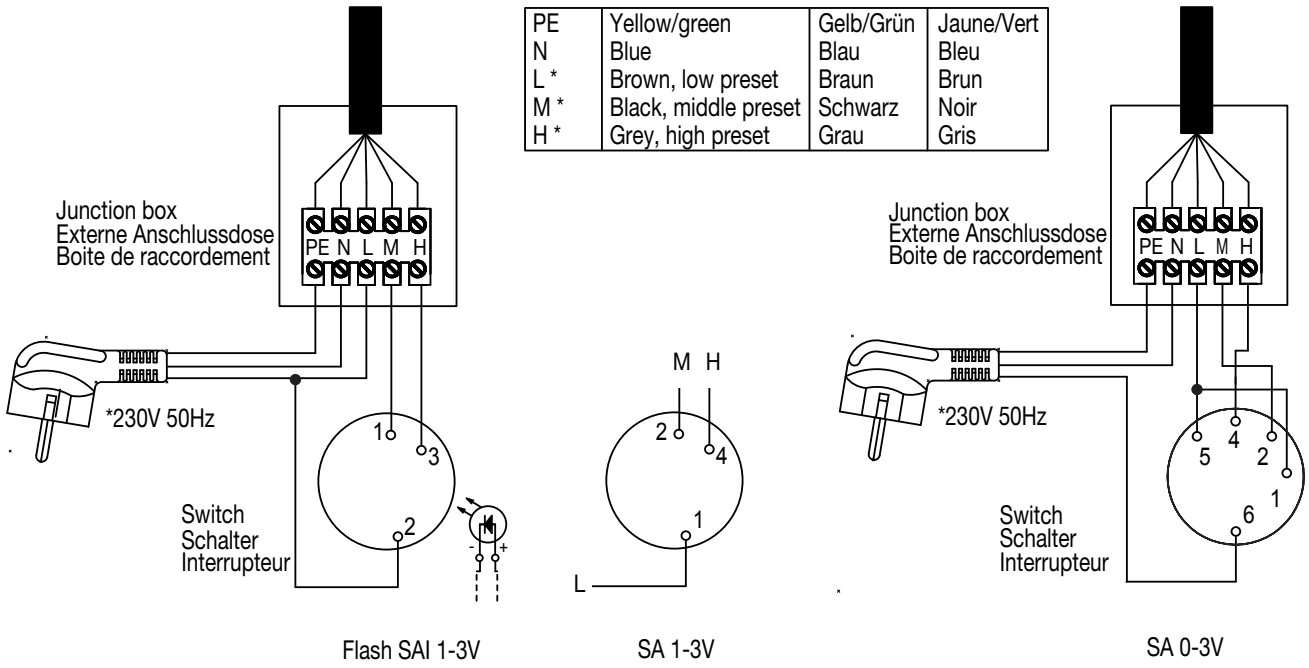
Identification	Part
A	Identification plate with all important details of the unit (not illustrated).
B	Inscription with the air connections on the protective cover of the display.
C	Power cable with 230 V plug (not illustrated).
D	2 adjustment caps.
E	Input for connecting a bathroom switch.
F	4 connections for the air ducts.
G	2 condensation drains to drain the condensation of the warm extract air
H	Front plate
I	Main PCB behind the front plate and protective cover of the display.
J	Touchscreen display for readout and programming of the unit.
K	0-10 V input

4.2 Connection diagram

Key:

Code	Meaning
PE	Green / Yellow
N / BU	Blue
L / BK	Brown or black
WH	White
RD	Red
VT	Violet
GN	Green
YE	Yellow
GY	Grey
DISPLAY	Display
RF	RF PCB
VV	Preheater
C1	0-10 V input
C2	Bathroom switch
C3	n/a
C4	Malfunction / dirty filter alert (LED SAI Flash) Output voltage at malfunction / alert = 5 V

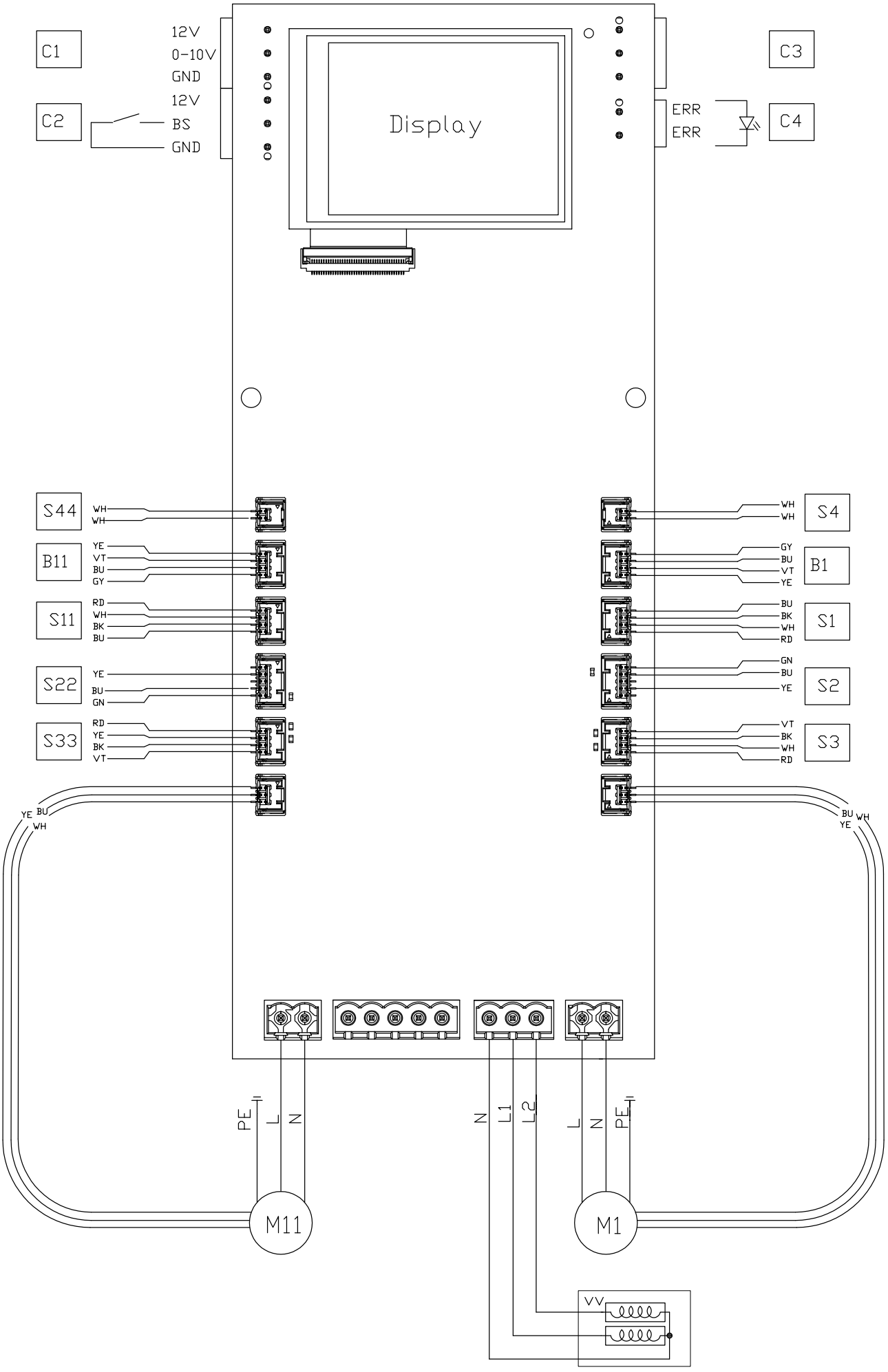
	Meaning	
Code	Right-hand unit	Left-hand unit
B1	BYPASS MOTOR 11 extract air	BYPASS MOTOR 20 outdoor air
B11	BYPASS MOTOR 20 outdoor air	BYPASS MOTOR 11 extract air
M1	FAN 22 supply air	FAN 12 exhaust air
M11	FAN 12 exhaust air	FAN 22 supply air
S1	RH + TEMP SENSOR 11 extract air	RH + TEMP SENSOR 20 outdoor air
S11	RH + TEMP SENSOR 20 outdoor air	RH + TEMP SENSOR 11 extract air
S2	PRESSURE SENSOR 22 supply air	PRESSURE SENSOR 12 exhaust air
S22	PRESSURE SENSOR 12 exhaust air	PRESSURE SENSOR 22 supply air
S3	RH + TEMP SENSOR 22 supply air	RH + TEMP SENSOR 12 exhaust air
S33	RH + TEMP SENSOR 12 exhaust air	RH + TEMP SENSOR 22 supply air
S4	n/a	TEMP SENSOR 21 outdoor air after preheater
S44	TEMP SENSOR 21 outdoor air after preheater	n/a



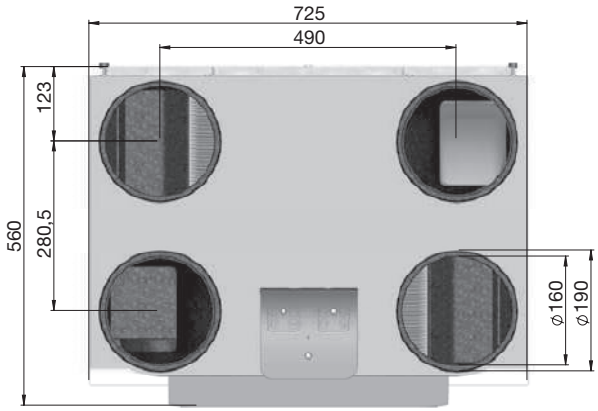
☞ **A control panel must always be connected to operate the unit!**

⚠ *** Unplug the unit from the wall outlet to disconnect it from the power supply. If the unit does not have a plug, use a switch according to EN 60335-1 (with switch-off of all poles and 3 mm overvoltage category III).**

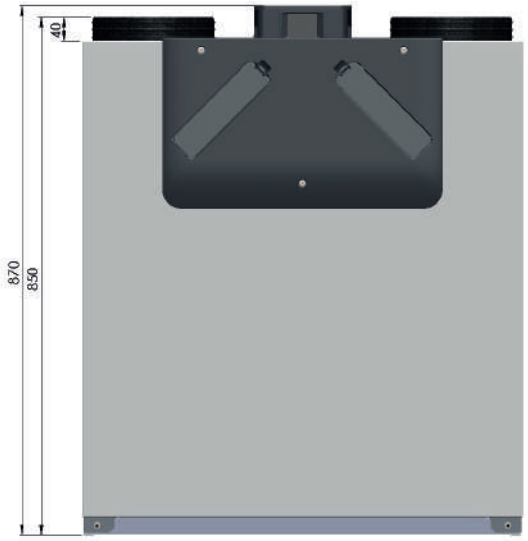
Front view of main PCB



4.3 Dimension sketch

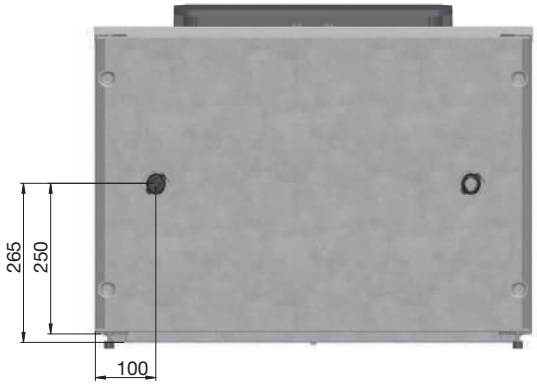


Top view



Front view

Side view



Bottom view

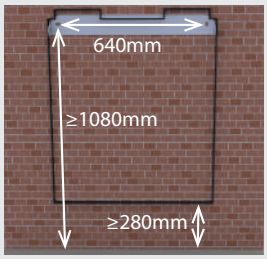
5 Installation procedures

During installation, take account of electromagnetic interference.

- Ensure that there is a barrier (e.g. separate duct or compartment) or minimum distance of 150 mm between the interfering power cables (e.g. 230 V) and cables sensitive to interference (e.g. testing, low voltage, interface, LAN, digital or analogue signal).
- Make sure interfering and sensitive cables cross each other in perpendicular.
- Ensure that the cables used for the controls meet the requirements specified in the section “Technical specifications”.

These measures will limit the EMC disruptions as much as possible and ensure the best communication.

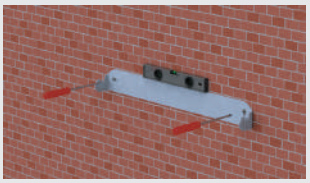
5.1 Wall mounting



Install the unit against a wall with a minimum mass of 160 kg/m².

The height given is just an indication. The type of condensation drain selected and the air ducts determine the exact height.

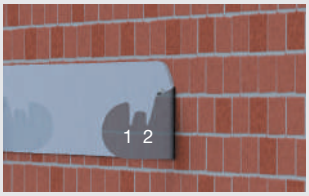
1



Mount the bracket on the wall.

- Ensure the openings in the bracket are directed upwards;
- Ensure that the bracket hangs level.

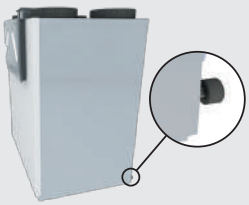
2



Hang the unit on the wall using the mounting bracket.

- For Zehnder ComfoPipe Plus air ducts: use opening 1;
- For all other air ducts: use opening 2;

3



Ensure the unit is level using the adjustment caps at the rear of the unit.

4

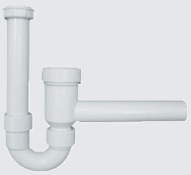
Example controls

Example accessories

Install the required controls and accessories according to the instructions in the corresponding manuals.

5

Example of siphon



Install the siphon to the bottom of the unit as described in the section on the condensation drain.

6

Example air duct

Install the air ducts to the unit as described in the section on air ducts.

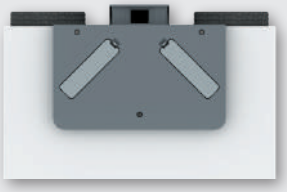
Only remove the protective cover just before you install the air ducts to the unit.

7

Example valve

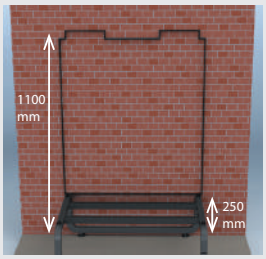
Install the valves as described in the section on valves.

8



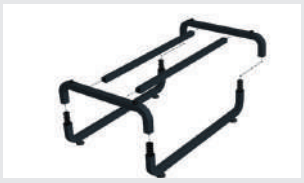
Commission the unit as described in the section on commissioning.

5.2 Floor mounting



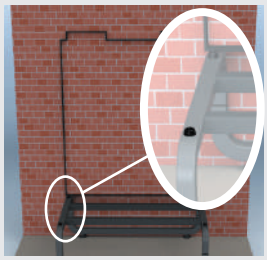
Use a Zehnder mounting frame on the floor (available as an optional extra) for walls with a mass of less than 160 kg/m^2. This will reduce contact noise as much as possible.

1 Example of instruction



Install the mounting frame according to the instructions in the corresponding manual.

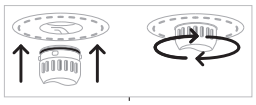
2

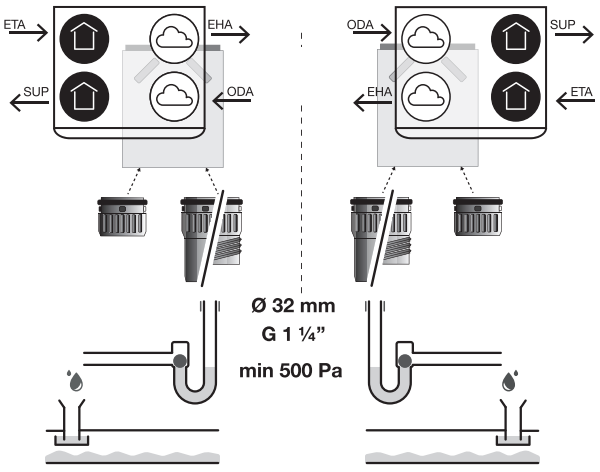


Place the unit on the mounting frame.
- Make sure the unit is locked in place.

3 Continue with step 4 of the wall-mounting procedure.

5.3 Installation of the condensation drain





Left-hand version Right-hand version

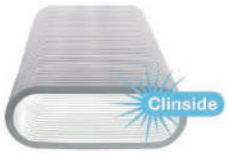
The condensation formed in the unit must be drained off frost-free, at a gradient and incorporate an air-seal (siphon). To drain the condensation from the unit, two bayonet connections are located on the bottom of the unit. These connections are not airtight. Consequently, it is necessary to close the unused connection with the sealing cap supplied.

Always use a dry siphon and not a conventional standard siphon, as the latter can dry out.

1. Connect the condensation drain seal cap to the Zehnder bayonet connector on the supply/extract-air side of the unit.
   (Left-hand version = left side;
   Right-hand version = right side).
2. Connect the condensation drain adapter to the Zehnder bayonet connector on the outdoor/extract-air side of the unit.
   (Left-hand version = right side;
   Right-hand version = left side).
3. Connect the dry siphon to the condensation drain adapter. Take account here of the following matters:
   - The condensation drain adapter supplied is a smooth tube with a diameter of 32 mm;
   - Zehnder recommends using a sealing sleeve to create an airtight connection between the condensation drain adapter and dry siphon. The condensation drain is not suitable for gluing;
   - Ensure that the pipes fitted never rise above the underneath of the unit;
   - Fit a dry siphon that is suitable for an underpressure of at least 500 Pa to guarantee an airtight seal. For a siphon with a ball as a dry lock, this can be achieved by fitting a pipe or hose of at least 90 mm between the dry lock and the Zehnder bayonet connector;
   - Allow the connected dry siphon to drain freely into the siphon of the domestic sewer.

Ensure that the water seal connected to the domestic sewer is always full of water. This prevents unpleasant odours.

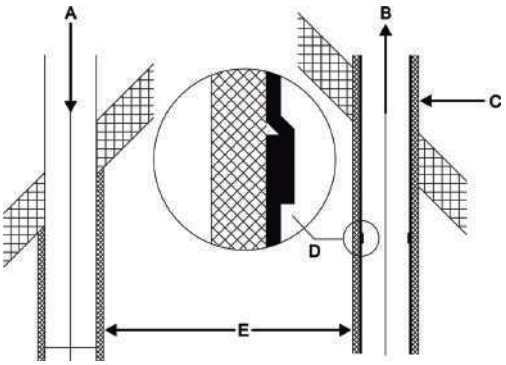
5.4 Installation of the air ducts

Air duct system	
 Zehnder ComfoFlat	Zehnder ComfoTube
Zehnder ComfoPipe (Plus)	

The unit can be installed with a special Zehnder air duct system. Read the installation instructions for the air duct system first. The next aspects must always be kept in mind during the installation of the air ducts:

⚠ **To prevent possible contact with the running fans, the air ducts with a minimum length of 900 mm must be attached to the unit before connecting the power supply.**

- Remove the protective cover just before mounting the air ducts to the unit;



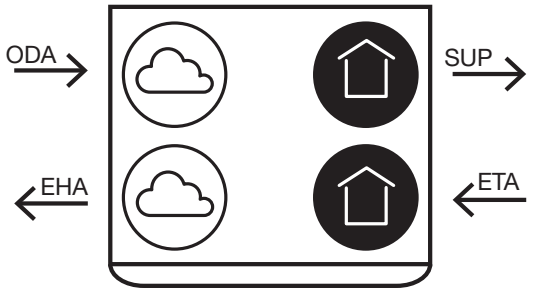
- The distance (E) between the opening of the outdoor air duct (A) and the opening of the exhaust duct (B) must be sufficient to prevent a short circuit between the airflows.
- The position of the outdoor-air opening relative to other possible sources of stale air is very important (other air exhausts, street instead of garden, etc.);
- Install the exhaust-air duct (D) to drain to the unit;
- Insulate all ducts so they are vapour-proof (C). This prevents leakages and the formation of condensation on the outside of the duct;
- Zehnder recommends that you fit thermal and moisture resistant insulation to the supply duct from the unit up to the supply valves. This will prevent unnecessary temperature loss in the summer and winter;
- Install the air ducts with as little air resistance as possible and free from air leakage;

Dimensions	Minimum diameter of air ducts
350	160 mm

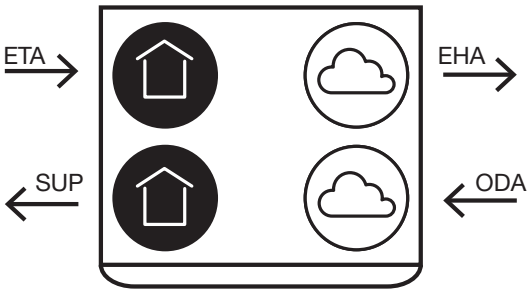
- Ensure that the inside of the air ducts is entirely free of obstruction. Air ducts must not have any sharp bends, dents or long screws on the inside. Obstacles will affect the performance and the maintenance of the system;
- Fit a silencer directly to the supply and extract air connections;
- Do not install a flexible air duct system. This will disrupt the basic performance of the balanced ventilation system. If a semi-flexible air duct system is required, then only use a system approved by Zehnder. Any other semi-bendable duct will disrupt the performance of the balanced ventilation system;
- Do not install a powered extractor hood to the system.

Key

Code	Meaning
ODA	Outdoor air
SUP	Supply air
ETA	Extract air
EHA	Exhaust air
R	Supply and extract air on the right-hand side
L	Supply and extract air on the left-hand side



R



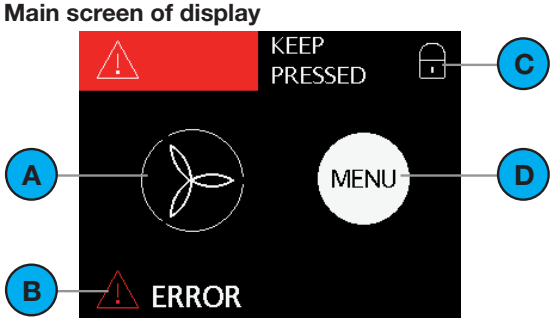
L

6 Commissioning procedures

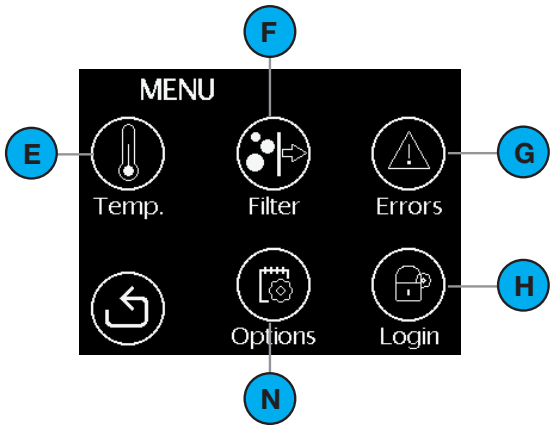
6.1 Overview of the display

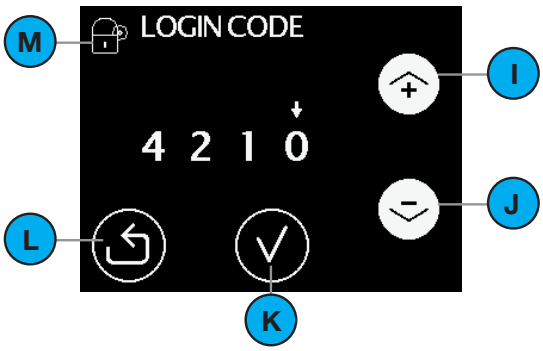
The unit has a touchscreen display for readout and programming the unit.

Main screen of display



Menu screen of display





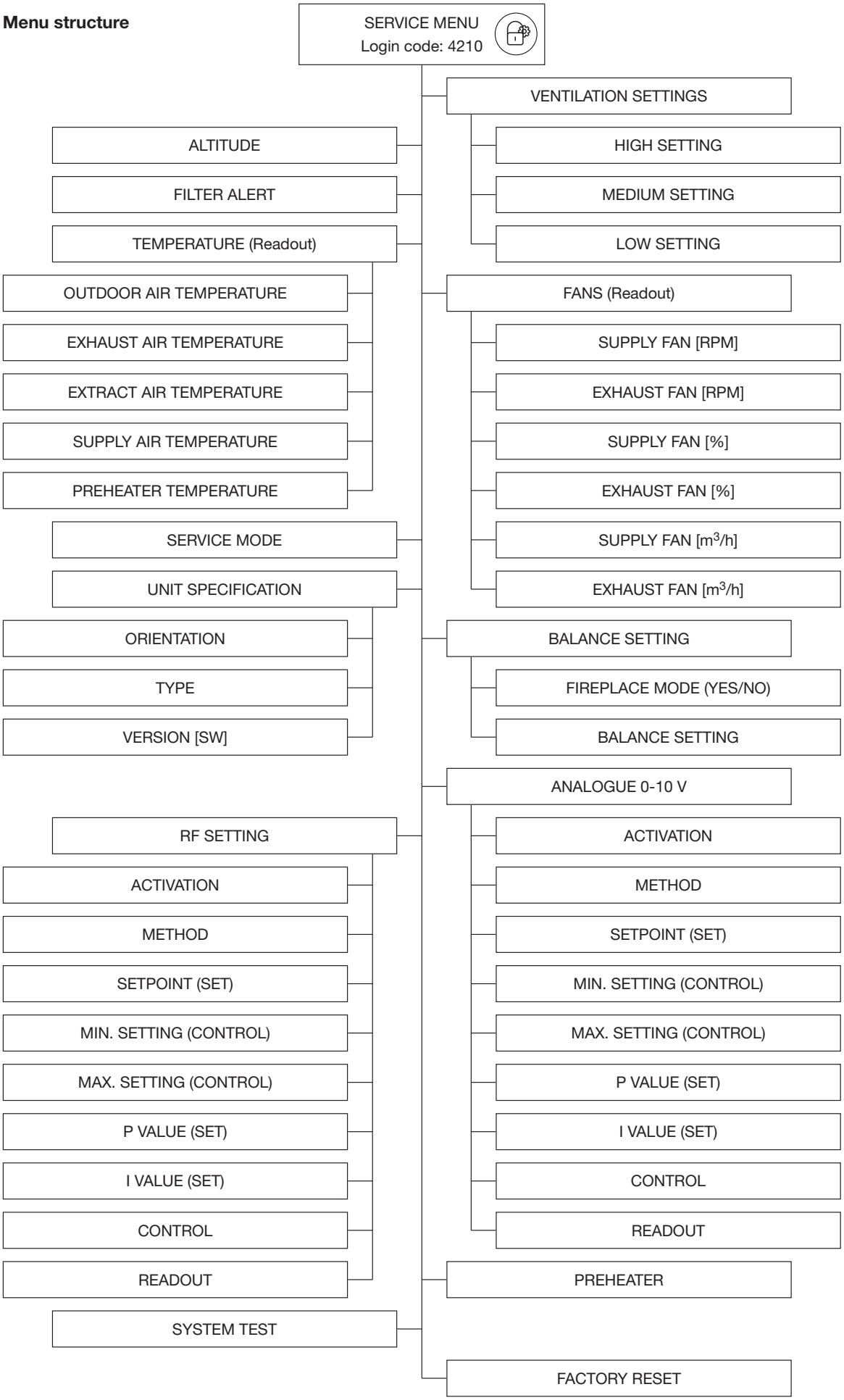
#	Explanation
A	Current airflow: ■ No icon = No ventilation ■ = LOW SETTING; ■ = MEDIUM SETTING; ■ = HIGH SETTING;
B	Current status: ■ Green = The unit is operating correctly; ■ Orange = Replace filters; ■ Red = Malfunction.
C	Child lock is engaged.
D	Icon for activating the menu screen.
E	Icon for activating the comfort temperature menu.
F	Icon for activating the filter replacement menu.
G	Icon for activating the error readout menu.
H	Icon for activating the installer/service menu.
I	Arrow up: ■ Increase value; ■ To previous error alert.
J	Arrow down: ■ Decrease value; ■ To next error alert.
K	Selection check box for activating the text shown. Any changes are saved.
L	Arrow to return to the previous screen. Any changes are NOT saved.
M	Identification menu for the fitter / service engineer.
N	Icon for activating the option menu.

6.2 Service menu

The service menu lists all the steps required for commissioning the unit and tracing the causes of any malfunction.

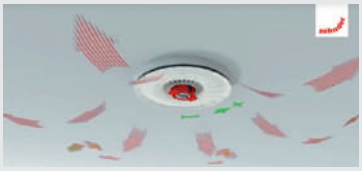
The service menu is protected by a password (4210) that remains active for at least 15 minutes. Each number of the password must be entered individually with the arrow keys and confirmed with the confirmation key.

Menu structure



6.3 Programming air specifications

1

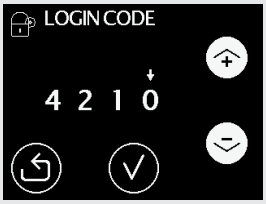


Close all windows and doors.
Open all valves connected to the ventilation system via the ducts.

2

Connect the device to the mains.
Select a language and confirm that the siphon is mounted correctly. Check the above illustration for more information about the installation of the siphon.

3



Go to the settings for the installer.
(MENU > Login; Login code= 4210

4

Set the required total air flow to the maximum flow rate. (MENU>Login>VENTILATION SETTINGS>HIGH SETTING)

= Air flow almost at limit value

= Air flow insufficient

If the limit value is lower than the desired air flow, a further system test must be carried out. (MENU>Login>SYSTEM TEST) For more information, see chapter 6.14.

5

The fans will automatically start rotating to the set position. The unit is in the commissioning mode for one hour.

Press to switch the commissioning mode off again directly without saving the value entered.

Press to save the value entered.

REPEAT THESE STEPS FOR THE MEDIUM AND LOW SETTINGS

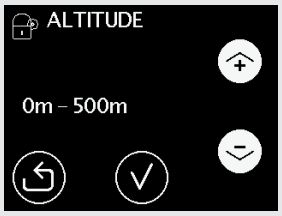
6

Measure the air flow at each opened valve using a flow meter.
Write down the air flow for these valves.
Adjust the opened valves to the required air flow per room.
Measure the air flow again at each opened valve using a flow meter.
Check that the air flow complies with the standard for each opened valve.

7

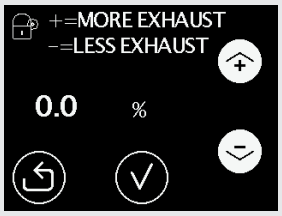
If the air flow is fine everywhere:
Press to exit the commissioning mode.
Complete an installation/test report. An example can be found in the back of the user manual.

8



The unit's installation height must be specified in the "ALTITUDE" menu.
(MENU>Login>ALTITUDE>)

9



In the menu BALANCE SETTING an unbalance between supply and exhaust air can be set.
(MENU>Login>BALANCE SETTING>BALANCE FINE TUNE)

BALANCE SETTING selection: '+'= more exhaust air; '-'= less exhaust air.
With the FIREPLACE MODE setting activated, only less exhaust air ('-') is possible.

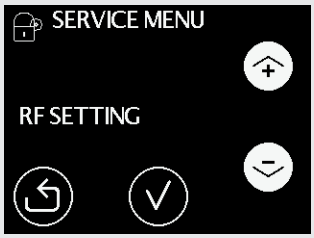
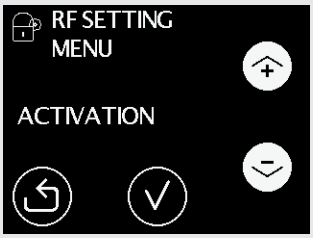
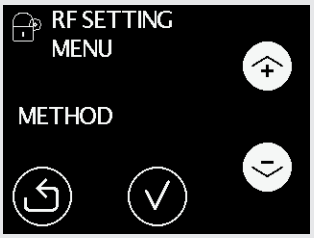
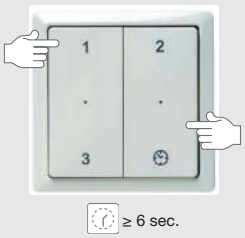
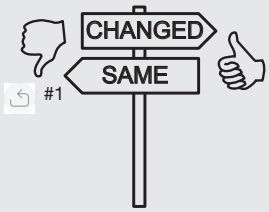
FROST PROTECTION selection (without preheater):
(BALANCE SETTING>FIREPLACE MODE)

- FIREPLACE MODE active? YES: (Default) Exhaust and supply air remain in balance at all times. As a result, the unit switches off faster in frost mode than in inactive fireplace mode.
- FIREPLACE MODE active? NO: There is more supply air than exhaust air. So in frost mode, ventilation is maintained longer.

Malfunctions of the preheater or bypass can only be reset after the system test has been carried out again.

6.4 RF controls

To enable the use of RF controls, the unit needs to be equipped with an RF PCB. The RF PCB has to be ordered separately and can be installed later on.

1	2	3
		
If RF ACTIVATION is set to ON: Set the RF ACTIVATION on the display of the unit to OFF. (MENU>SERVICE MENU>RF SETTING>ACTIVATION>OFF) The power will now be removed from the RF PCB.	Set the RF ACTIVATION on the display of the unit to ON. (MENU>SERVICE MENU>RF SETTING>ACTIVATION>ON) You now have 10 minutes to register the RF control.	Set METHOD on the display of the unit to DISCRETE CONTROL (MENU>SERVICE MENU>RF SETTING>METHOD>DISCRETE CONTROL)
4 		
RFZ: Press button “1” & and button “✓” together for at least 6 sec.	The airflow rate of the unit changes (see the unit's display): Registering successful. The airflow rate of the unit does not change (see the unit's display): Return to step 1.	

Each RF control must be registered separately.
For each extra RF control, return to step 1.

6.5 Explanation of VENTILATION SETTINGS menu

The building regulations describe how much fresh supply air must be provided to each room. The VENTILATION SETTINGS must be programmed in such a way that the unit can supply the maximum necessary volume of fresh air for the entire building. If only HIGH SETTING is programmed, the unit will automatically set MEDIUM SETTING to 66% of HIGH SETTING, and LOW SETTING to 33% of HIGH SETTING. If MEDIUM SETTING or LOW SETTING is programmed, this automatic link will be lost. To recover the link, all the unit's FACTORY SETTINGS must be restored via the FACTORY RESET function.

FACTORY SETTINGS	
ComfoAir E	**350**
HIGH SETTING	315 m^3/h
MEDIUM SETTING	205 m^3/h
LOW SETTING	105 m^3/h

Once the settings screen or valve setup screen is visible, the unit switches off all automatic programmes and runs on the set value so that all valves can be properly set. After touching the screen, you have 60 minutes to set all valves. The unit then switches back automatically to the normal operating mode and the main screen. Every time the screen is touched, the 60-minute timer is reset. If the settings screen or valve setup screen is exited manually, the unit returns directly to the normal operating mode and after 15 minutes without being touched the unit returns automatically to the main screen.

6.6 Explanation of REPLACE FILTER warning

The filter warning appears by default 21 days before the filters need to be replaced. This gives the user enough time to purchase new filters before the dirty filters are to be replaced. It is possible to set the alert to appear earlier by increasing the number of filter order days in the service menu FILTER ALERT. The filters must be replaced at least once every 180 days.

6.7 Explanation of ALTITUDE menu

This value compensates for the influence of altitude on the air volume. In the “Altitude” menu, the altitude of the installation location of the unit must be specified.

6.8 Explanation of TEMPERATURE menu

The unit is equipped with 5 temperature sensors. The readout of the current value of these sensors appears in the TEMPERATURE menu in the sequence given below.

	Meaning
OUTDOOR AIR TEMPERATURE (TEMP SENSOR 20)	Outdoor air temperature prior to the preheater
EXHAUST AIR TEMPERATURE (TEMP SENSOR T12)	Exhaust air temperature
EXTRACT AIR TEMPERATURE (TEMP SENSOR T11)	Extract air temperature
SUPPLY AIR TEMPERATURE (TEMP SENSOR T22)	Supply air temperature
PREHEATER TEMPERATURE (TEMP SENSOR T21)	Outdoor air temperature after the preheater.

6.9 Explanation of FANS menu

The unit is equipped with 2 fans. The readout of the current value of these fans appears in the FANS menu in the sequence given below.

	Meaning
SUPPLY FAN [RPM] (FAN 22)	Speed of the supply fan.
EXHAUST FAN [RPM] (FAN 12)	Speed of the exhaust fan.
SUPPLY FAN [%] (FAN 22)	Control percentage (fan duty) of the supply fan.
EXHAUST FAN [%] (FAN 12)	Control percentage (fan duty) of the exhaust fan.
SUPPLY FAN [m^3/h] (FAN 22)	Airflow rate (flow) of the supply fan.
EXHAUST FAN [m^3/h] (FAN 12)	Airflow rate (flow) of the exhaust fan.

6.10 Explanation of UNIT SPECIFICATION menu

In the UNIT SPECIFICATION menu, the readout of the basic unit details appears in the sequence below.

	Meaning
ORIENTATION	Show the current orientation of the unit: ■ RIGHT UNIT has the air connectors that enter the home on the left-hand side and the siphon connector to the right; ■ LEFT UNIT has the air connectors that enter the home on the right-hand side and the siphon connector to the left;
TYPE	Show the current version of the unit ■ ComfoAir E 350 indicates that the unit has a maximum air capacity of 350 m^3/h; ■ VL/VR indicates that the unit is supplied from the factory with a preheater
VERSION	Indicates that current software version.

6.11 Explanation of the BALANCE SETTING menu

The unit is equipped with a constant volume control which ensures that the same amount of air is supplied as is extracted. The unit thus factors in the difference in duct resistance. Leave this value in the menu at 0%, so both airflows are always in balance.

In the “Balance setting” menu, an unbalance between supply air and extract air can be set.
(MENU>Login>BALANCE SETTING>BALANCE SETTING)

Select BALANCE SETTING
‘+’ = more extract air ; ‘-’ = less extract air; when fireplace control is activated, only less extract air (= ‘-’) is possible.

Select frost protection (without preheater)
(Balance setting > Fireplace mode)

- Fireplace mode active? YES: (Standard) Extract air and supply air always remain in balance. This will cause the unit to switch off sooner in frost conditions than in inactive fireplace mode.
- Fireplace mode active? NO: More extract air than supply air is conveyed. This ensures longer operation in frost conditions until deactivation.

6.12 Explanation of ANALOGUE 0-10 V menu (standard) and RF SETTING (optional)

The unit can be controlled with any analogue 0-10 V signal and/or an RF signal. To ensure the control runs properly, the following parameters can be set in the sequence given below.

	Meaning
ACTIVATION	■ ON indicates that the unit should detect a 0-10 V or RF signal; ■ OFF indicates that the unit does not have to detect a 0-10 V or RF signal.
METHOD	■ DISCRETE CONTROL indicates that the unit must process the 0-10 V or RF signal as a control signal using 3 steps; ■ CONTROL indicates that the unit must process the 0-10 V or RF signal as a control signal; ■ SET indicates that the unit must process the 0-10 V or RF signal as a regulate signal.
SETPOINT[1]	The setpoint at which the unit starts regulating.
MIN. SETTING.[2]	The minimum incoming value the unit must use to exercise control. (LOW SETTING)
MAX. SETTING.[2]	The maximum incoming value the unit must use to exercise control. (HIGH SETTING)
P VALUE[1]	The proportional bandwidth value at which the unit starts regulating.
I VALUE[1]	The integration point at which the unit starts regulating.
CONTROL	■ POSITIVE indicates that the unit must speed up at a higher control value or a too low regulation value; ■ NEGATIVE indicates that the unit must slow down at a higher control value or a too low regulation value.
READOUT	The currently incoming 0-10 V or RF signal.

[1] Only relevant if SET METHOD is selected.
[2] Only relevant if CONTROL METHOD or DISCRETE CONTROL METHOD is selected.

6.13 Explanation of the PREHEATER menu

In the PREHEATER menu, the use of a preheater can be set.

If no preheater is present, the unit switches to “Frost protection without preheater” in frost mode.

6.14 Explanation of the SYSTEM TEST menu

A system test can be initiated in the SYSTEM TEST menu.
(MENU>Login>SYSTEM TEST)

	Meaning
SYSTEM TEST CANCELLED MAX. BELOW 150 m^3/h	This error must be resolved in order to carry out a system test. Otherwise errors of the preheater or bypass cannot be resolved! Possible causes: ■ HIGH SETTING set lower than 160 m^3/h ■ Air volume of valves not set correctly (valves too tight) ■ Air ducts have too much resistance ■ Outdoor air grille blocked ■ ALTITUDE entered incorrectly ■ Filters are dirty ■ Heat exchanger is frozen
Preset 3 supply air (m^3/h) ACTUAL (SETTING)	The air volume on the supply side (ODA & SUP) is set lower. Accept this or reduce the air resistance on the supply side of the system. Then carry out another system test. Possible causes: ■ Air volume of valves not set correctly (valves too tight) ■ Air ducts have too much resistance ■ Outdoor air grille blocked ■ ALTITUDE entered incorrectly ■ Filters are dirty
Preset 3 extract air (m^3/h) ACTUAL (SETTING)	The air volume is lower than set on the extract side (ETA & EHA). Accept this or reduce the air resistance on the extract side of the system. Then carry out another system test. Possible causes: ■ Air volume of valves not set correctly (valves too tight) ■ Air ducts have too much resistance ■ ALTITUDE entered incorrectly ■ Filters are dirty ■ Heat exchanger is frozen

6.15 Explanation of RESTORE TO FACTORY SETTINGS menu

The factory settings of the unit are permanently saved to the control PCB. Using the RESTORE TO FACTORY SETTINGS menu, the unit can be switched back to the factory settings. This permanently overwrites all adjusted settings. After the reset, the unit will start running as if it had just left production. The air specifications, analogue input and RF controls (if unit is equipped with) will have to be reset/re-programmed.
If only the malfunction codes need to be reset, then use the reset function in menu errors on the first menu screen.

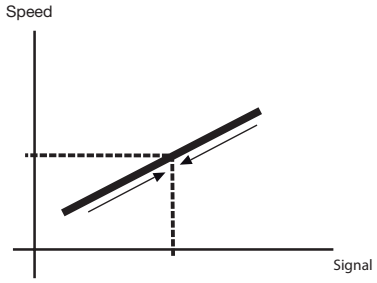
6.16 Explanation of control methods

What is SET METHOD?

Regulating involves maintaining the programmed set point. If the incoming signal of the desired set point deviates, the unit will adapt the outgoing signal to arrive at the desired set point.

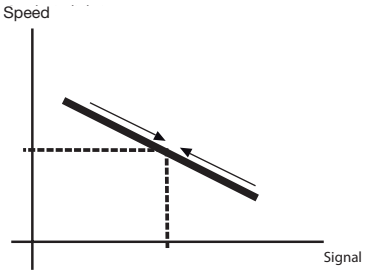
What is POSITIVE?

In the event of positive regulating, power will go up if the measurement is below the set point. In the event of a higher measurement, power will go down. Most of the pressure sensors use positive regulating.



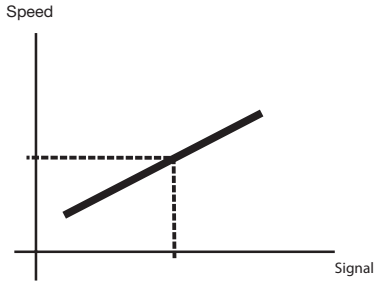
What is NEGATIVE?

In the event of negative regulating, power is increased if the measurement is higher than the set point. In the event of a lower measurement, power is decreased.

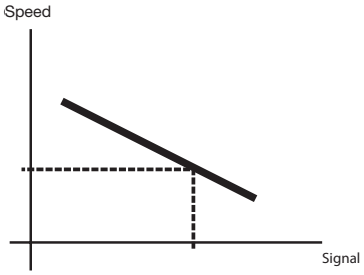


What is the METHOD CONTROL?
With this method, an incoming signal generates a standard outgoing signal.

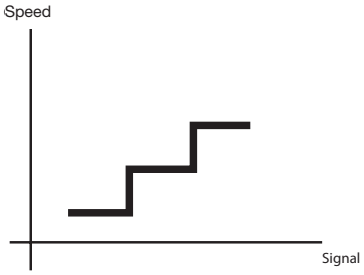
What is POSITIVE?
With positive control, a higher input signal generates a higher output signal.



What is NEGATIVE?
With negative control, a higher input signal generates a lower output signal.



What is the METHOD DISCRETE CONTROL?
With separate control, the output signal generates one of the programmed VENTILATION SETTINGS.



- Input signal < 4 V = Setting 1
- Input signal between 4 V and 7 V = Setting 2
- Input signal >7 V = Setting 3

What are the P VALUE and the I VALUE for (PI Controller)?
Proportional means that the difference between the desired and measured value is increased by the value k. Integral means that the error is constantly summed and that the unit continues to transmit more signals depending on how long an error lasts between the measured and desired value. (The time required to obtain the same value as the P action. A small time value results in a strong I action.)

7 Available accessories

(Example) Appearance & Name	Comment
	Use a Zehnder mounting frame on the floor. This will reduce contact noise as much as possible. **Use a Zehnder mounting frame on the floor for walls with a mass of less than 160 kg/m^2. This will reduce contact noise as much as possible.**
 ComfoValve Luna S125	The system will perform best when ComfoValve Luna S125 supply valves are used.

8 Available controls

Picture and name	Comment
Sample Bathroom / Pulse switch	Connect a switch / push-button as per the connection diagram in the section 'Connection diagram'. Any switch / push-button can be used (this switch is not available from Zehnder).
 SAI Flash.	Wired control for manual control of the unit.
 SA 0-3 V.	Wired control for manual control of the unit.
 SA 1-3 V.	Wired control for manual control of the unit.
 RFZ.	Wireless control for remote manual control of the unit.
 CO_2 Sensor 0-10 V.	Wired control for remote automatic control of the unit based on the CO_2 level measured.
 Humidity sensor 0-10 V.	Wired control for remote automatic control of the unit based on the humidity level measured.
 Malfunction or dirty filter alert	Connect this LED as per the connection diagram in the technical specifications. **Use a malfunction or dirty filter LED if the unit's display is not visible to the user. For example, because the unit is located in an area inaccessible to the user. Some controls are fitted as standard with a malfunction or dirty filter LED.**

Not all combinations of switches and sensors are possible.
Preferably select a single system: RF or wired (with the exception of the bathroom switch).
Preferably use no more than one wired switch (with the exception of the bathroom switch).

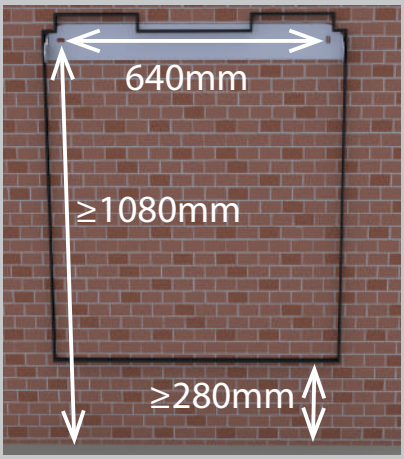
9 Quick installation guide

Key:

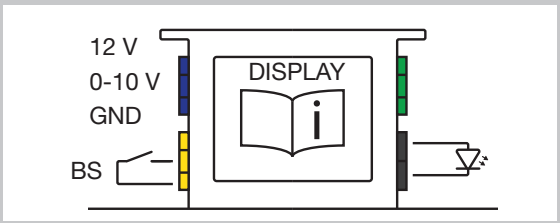
Code	Meaning
R	Supply and extract air on the right-hand side
L	Supply and extract air on the left-hand side
ODA	Outdoor air
SUP	Supply air
ETA	Extract air
EHA	Exhaust air

zehnder
always the best climate

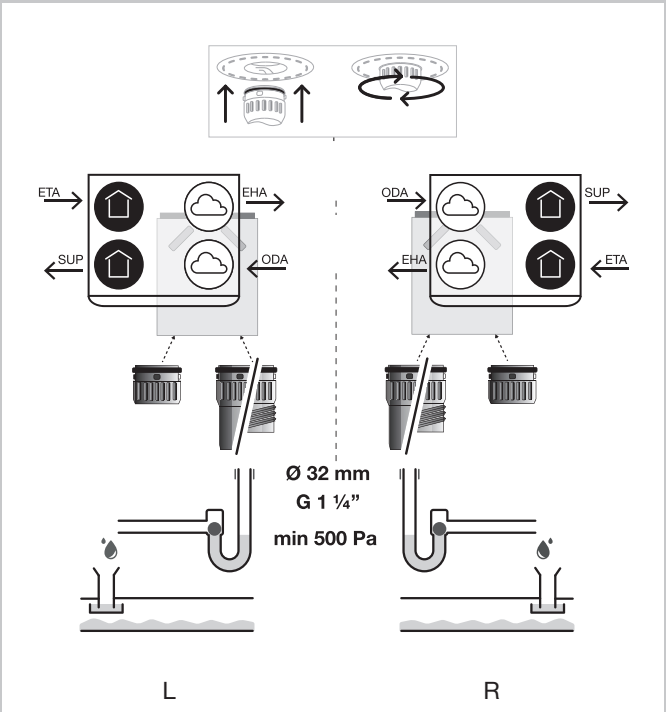
Wall mounting



Installation of the controls



Installation of air ducts and siphon (according to DIN 12056)



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