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Zehnder ComfoSpot 50

Operating and installation instructions for user and installer

Legal regulations

This manual has been compiled with the utmost care. Nevertheless, the publisher accepts no liability for damage caused by missing or incorrect details in this manual. We reserve the right at any time and without previous notification to change the content of these instructions in part or as a whole.

Zehnder manufacturer's warranty

The current warranty terms can be obtained in paper form using the normal distribution channels.

Trademarks

All trademarks are recognized, even if they are not separately labelled. A missing label does not mean that an article or sign is free of trademark rights.

Contents

0 Preface

0.1 Validity

This document applies to:

- Unit types ComfoSpot 50 series

These unit type series are hereinafter designated with the common product name, ComfoSpot 50.
The subject of this manual is the ComfoSpot 50 in its various design variants. Possible accessories are only described to the extent necessary for appropriate operation of the unit. Please refer to the respective instructions for further information on accessory parts.

0.2 Target group and standard operation

This manual is for users and qualified personnel. The activities are only allowed to be carried out by appropriately trained personnel who are sufficiently qualified for the respective work involved.

0.2.1 Qualification of target group

0.2.1.1 Users

Users must be instructed by qualified personnel as follows:

- Instruction in hazards when handling electrical devices
- Instruction in the system's operation
- Instruction in the maintenance of the ComfoSpot 50
- Knowledge of and compliance with this manual, including all safety instructions.

0.2.1.2 Qualified personnel

Qualified personnel must have the following qualifications:

- Training in dealing with hazards and risks when installing and operating electrical devices
- Training for the installation and commissioning of electrical devices
- Knowledge of and compliance with the locally applicable building, safety and installation regulations of the relevant local authorities or municipalities, the regulations of the water and electric utilities, and other official regulations and guidelines
- Knowledge of and compliance with this document, including all safety instructions

Unless otherwise stated in this manual, only a recognized qualified person is authorized to install, connect up, commission, and to service the ComfoSpot 50.

0.2.2 Standard operation of the unit

This unit can be used by children aged 8 and over and also persons with reduced physical, sensory or mental abilities, or a lack of experience and knowledge provided that they are under supervision or have been instructed on the safe use of the unit and understand the risks that result from it. Children must not play with the unit. Children must not carry out cleaning and user maintenance without supervision.

1 Introduction and safety

The ComfoSpot 50 is built to the current state of the art and the recognized safety regulations. The unit is subject to continuous improvement and development. This is why it is possible for your unit to deviate slightly from the description.

1.1 Proper use

1.1.1 Ventilation unit ComfoSpot 50

The ComfoSpot 50 can be used for comfortable ventilation in living and office areas (with limitations in the commercial sector) at a normal room air humidity of approx. 40 – 70% RH, briefly up to approx. 80% RH. Any other type of use is considered as misuse. Extreme conditions (e.g. salty air or air polluted with chlorine) can damage the unit. For reasons of safety, it is prohibited to modify the product or to install components that are not explicitly recommended or distributed by Zehnder Group for this product.

1.1.2 Control panels

The ventilation unit is equipped with an internal control panel. As an option, an external control panel can be connected to the unit using a cable of max. 25 m length. The external control panel is only suitable for use in indoor areas.

1.2 Safety

Always observe the safety regulations and installation conditions in the current operating manual. Failure to observe the safety regulations, installation conditions, instructions, warnings, and comments in this document can result in personal injury or damage to the unit.

1.2.1 Safety regulations

- Do not make any changes to the unit or to the specifications listed in this document. Such changes can cause personal injury or lead to reduced performance in the ventilation system
- Always comply with the general locally-applicable building, safety and installation regulations of the relevant local authorities, the regulations of the water and electric utilities, and all other official regulations
- Installation, commissioning, and maintenance must be carried out by an authorized person or company, unless otherwise stated in this document
- Always disconnect the unit from the power supply before you start working on the ventilation system
- Following installation, all parts that could lead to personal injury are protected by the housing. The unit cannot be opened without the use of a tool
- Do not disconnect the unit from the power supply unless instructions to the contrary are listed in the manual
- The control unit can be damaged by static charge; which is why you must always take measures to prevent electrostatic discharge when handling the control unit (e.g. antistatic wrist strap)
- Replace the filters (at least) every six months. This ensures a pleasant and healthy air quality, and the unit will be protected against contamination
- Only operate the unit with a closed housing
- Keep this document in the vicinity of the unit during the entire service life of the ventilation unit

1.2.2 Installation conditions

- Check that the installation area is frost-protected
- The acceptable temperature range for the air being moved is between -20 °C and +40 °C
- The unit must not be installed in rooms subject to explosion hazards
- When installing the unit, make sure that the applicable country-specific standards / regulations for compliance with protection zones when installing electrical systems in rooms with a bathtub or shower are observed!
- The unit must not be used for extracting combustible or explosive gases
- The unit must be connected to a fixed 230 VAC / 50-60 Hz power supply
- To switch off from the mains, a disconnection system using a contact opening width in accordance with the conditions from overvoltage category III for complete disconnection must be provided
- Check whether the electrical installation is suitable for the maximum power of the unit. The values for the electrical input power can be found in the "Product data sheet" chapter
- Check that the installation area of the unit meets the requirements in the "General installation instructions" chapter

1.2.3 Symbols used

You will find the following symbols in this document:

 ***Important note!***

 ***Caution: Risk of affecting the operation of the ventilation system or damaging the unit!***

 ***Caution: Risk of personal injury!***

1.3 Warranty and liability

1.3.1 Warranty provisions

Warranty according to our general terms and conditions (http://www.international.zehnder-systems.com/company/general-terms-and-conditions). Warranty claims can only be asserted for material defects and/or design faults that have occurred during the warranty period. Repair work under the warranty conditions is only allowed to be carried out with the prior and written approval by Zehnder Group. A warranty on spare parts is only then given if those parts have been delivered by the manufacturer and were installed by an installation technician recognized by the manufacturer.

The warranty shall be null and void if:

- the warranty period has elapsed
- the unit is operated without filters released by the manufacturer of the ventilation unit
- parts are installed that are not supplied by the manufacturer
- the unit is used improperly
- the defects occur as a consequence of an incorrect connection, improper use, or from system contamination
- unauthorized changes or modifications to the system are made

1.3.2 Liability

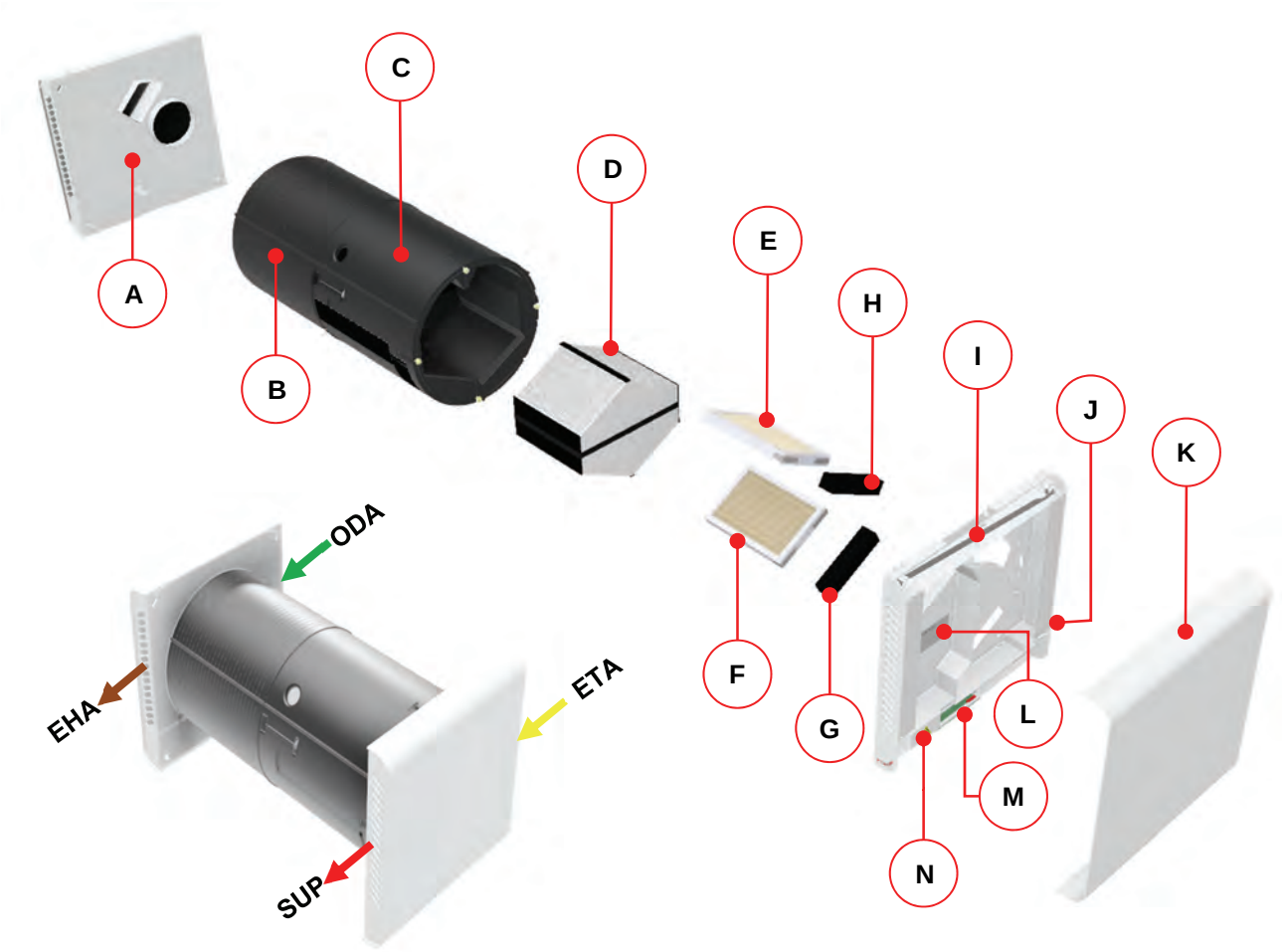
The ComfoSpot 50 was developed and manufactured for the decentralized ventilation of living areas and functional rooms. Every other use is deemed as "improper use", and can lead to damaging the ComfoSpot 50, or to personal injury, for which the manufacturer cannot be held liable. The manufacturer shall not be liable for any kind of damage that can be attributed to the following causes:

- Failure to observe the instructions listed in this manual pertaining to safety, operation and maintenance
- Improper installation
- Installation of spare parts that were not delivered or stipulated by the manufacturer
- Defects as a consequence of an incorrect connection, improper use or from system contamination
- Normal wear

2 Instructions for the user and qualified personnel

2.1 Product description

The ComfoSpot 50 is a decentralized ventilation unit with heat recovery for a healthy, well-balanced, and energy-saving comfort ventilation. The unit is used as a single room unit (replacing the air for one and the same room). Here, stale, odorous air is extracted and carried outside via the extract/exhaust air section on the outside wall panel; simultaneously, an equal amount of fresh air is introduced into the same room via the outdoor/supply air section on the inner casing of the unit.
An enthalpy exchanger, which can transfer both humidity and heat owing to the physical characteristics, is used in the ComfoSpot 50 for the heat recovery. The unit body, made from a high-quality polypropylene, is used for accommodating the essential unit components, and also makes sure there is the necessary heat insulation and unit soundproofing.
The ComfoSpot 50 has two maintenance-free 24 VDC radial fans with electronic commutation. These fans and the control board receive the required operating voltage via an integrated 230 VAC / 24 VDC power supply unit.
By default, a filter (in filter class G4) is used in the unit for the outdoor air and the extract air. As an option, filters in class F7 with pollen filter quality can be used for the outdoor air.
The housings for the exterior and interior wall panels are made of impact-resistant plastic (ABS). The surfaces are moulded with a white, matt structure and can be painted over using a solvent-free façade or interior paint. A stainless steel outdoor air exhaust air cowling can be used as an alternative.
The air passage openings attached on both sides of the interior cover for the supply and extract air can be manually closed or opened using adjustable shutters per thumb wheel.



Item	Description
A	Outside wall panel
B	EPP housing section pipe extension
C	EPP housing section with integrated power supply unit, control board and fans
D	Enthalpy exchanger
E	Extract air filter G4
F	Outdoor air filter G4 (optional F7)
G	Filter cap made of cellular rubber for outdoor air filter
H	Filter cap made of cellular rubber for extract air filter
I	Bottom cover of interior cover, with air passage openings on both sides, and flap mechanism
J	Thumb wheel for shutter adjustment
K	Interior top cover
L	Type label
M	Control panel carrier with control panel (either at bottom or top of the bottom cover of interior cover)
N	Cover for electrical connection

2.1.1 Type label

The type label identifies the product unequivocally. The type label is located on the bottom cover of the interior cover. You will need the details on the type label for the safe use of the product and in case of questions for service. The type label must be attached permanently on the product.

2.1.2 Frost protection

The ComfoSpot 50 is equipped with an automatic frost protection control system, which prevents ice from forming in the heat exchanger at very low outdoor air temperatures. If needed, the frost protection mode is activated both in the four manual fan speeds and in the Automatic fan speed.

2.1.2.1 ComfoSpot 50 frost protection mode

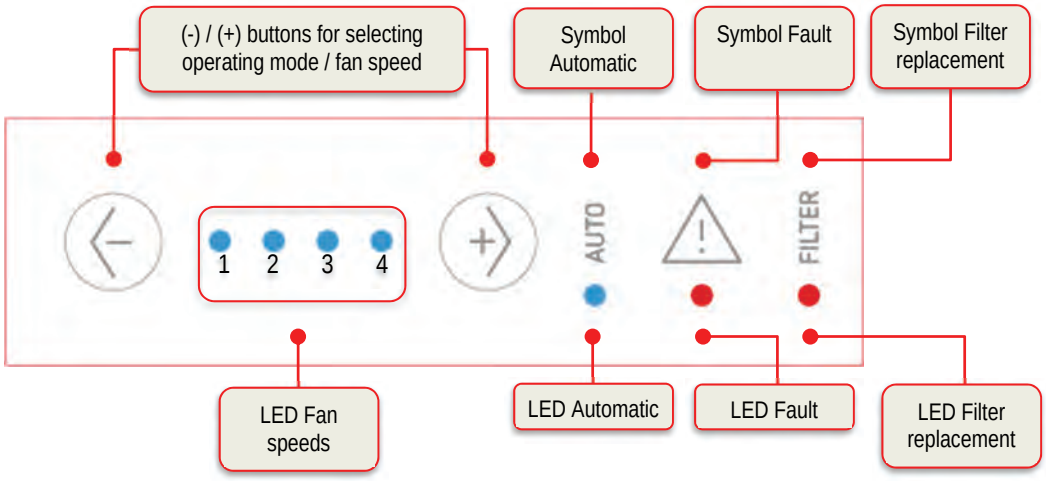
In frost protection mode, the ratio between the supply air and extract air volume flow is automatically adjusted depending on the outside air temperature by the control system, and the unit is shut down if the outside temperature is lower than -15 °C. A check is made regularly as to whether the temperature conditions in regard of frost protection have changed, and the respective operating mode (requiring frost protection) is activated automatically according to the result of that check.

2.1.3 Joint operation with fireplaces

Joint operation with fireplaces depending on the indoor air is only permissible in combination with the corresponding safety devices and in compliance with applicable laws, regulations, and standards.

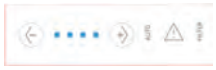
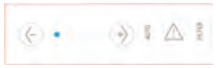
2.2 Functionality of the internal and external control panel

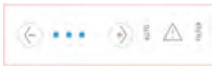
The internal control panel has a short-stroke button, which means the respective operating functions are triggered by pressing the relevant buttons. The external control panel has touch-sensitive buttons and responds to touching the buttons. The ComfoSpot 50 can be operated at the same time with the internal and the external control panel. The button assignments and the LED signalling in both control panels are identical in terms of functions.
The two buttons are used for setting the various fan speeds and operating modes. The ventilation stages and the Automatic operating mode are indicated with blue LEDs, and the service information with red LEDs.



2.3 Operating functions and signalling from the control panel

Icon	Description	Explanation
	Fan speed operating mode	The selection for the current fan speed (in total 4 fan speeds with preset speeds for each fan) is made by using the (-) / (+) buttons. Pressing the (+) button sets the next higher fan speed, and pressing the (-) button sets the next lower fan speed
LED1 lights up	Fan speed 1 (FS1)	
LED1-2 light up	Fan speed 2 (FS2)	
LED1-3 light up	Fan speed 3 (FS3)	
LED1-4 light up	Fan speed 4 (FS4)	

 AUTO LED lights up	Automatic operating mode (AUTO)	***The Automatic function can only be activated with a sensor module.*** Pressing the (+) button from the currently active FS4 transfers the unit to AUTO fan speed. AUTO fan speed is exited by pressing the (-) button, and the unit is transferred back to FS4. The Automatic function is visualized by the Automatic LED.
 AUTO LED lights up	Bathroom function operating mode	***The Bathroom function can only be activated with a sensor module and configured DIP switch setting.*** The fans are operated at maximum speed starting from a relative room air humidity of 80%. If this limit is not reached, the previously active operating mode is applied again.
 LED1-4 light up	Boost ventilation mode	***The boost ventilation function as temporarily activated fan speed 4 can only be activated with a configured DIP switch setting***. After the boost ventilation time has elapsed, the unit will be transferred to the most recently selected fan speed. The fan speed that was active for longer than 10 s is deemed as the last fan speed. When boost ventilation is active, the operating modes "Extract air mode" or "Supply air mode", that may be activated, are retained. The boost ventilation time of 15, 30 or 45 minutes can be set by the Customer Service with the programming module. (Factory setting: 15 minutes)
 LED1 lights up during the active time phase	Away mode	***The Away function as temporarily activated fan speed 1 can only be activated with a configured fan speed 1.*** The active operating time of the fan speed 1 of 15, 30, or 45 min/h can be set with a programming module by customer service. (Factory setting: 60 min/h ≙ FS1 permanent operation).
	LED display for energy-saving mode	The LED display on the control panel changes after 10 seconds into energy-saving mode without operator input (unit functions remain active; the LED display is switched off). If any button is pressed, the LED display will be activated again. The pressing of a button brings about no change to the operating mode.
	Standby mode	The unit can be switched from FS1 to Standby mode by pressing the (-) button. The fans then come to a stop. ***The shutters for the air passage openings must be closed using a thumb wheel!*** Standby mode is exited by pressing the (+) button. The unit will start with fan speed 1. ***Closed shutters must be previously opened again using the thumb wheel!*** There is no indication of the Standby mode from the LEDs of the control panel.
 LED1 flashes in alternation with the current fan speed	Extract air mode	Pressing the (-) button for 5 seconds in operating modes FS1 to FS4 activates or deactivates the Extract air mode. The supply air fan is switched off; the extract air fan continues to run with the current fan speed. The display for the current fan speed alternates every 2 seconds with the flashing LED1. To avoid condensation appearing on the outside wall panel, the unit automatically changes to the frost protection mode when the frost protection temperature is reached. The supply air fan is activated for several minutes every hour in order to record the correct outside air temperature.

 LED4 flashes in alternation with the current fan speed	Supply air mode	Pressing the (+) button for 5 seconds in operating modes FS1 to FS4 activates or deactivates the Supply air mode. The extract air fan is switched off; the supply air fan continues to run with the current fan speed. If the outdoor temperature falls below 13 °C, the extract air fan will be activated. The display for the current fan speed alternates every 2 seconds with the flashing LED4.
 Flashing of most recently active fan speed when supply air fan is switched off (Display of LED1-3 as example)	Frost protection mode	A temperature threshold, which activates its own frost protection routine if not reached, is stored for each fan speed. The fan speed of the supply air will be regulated linearly between the minimum and maximum set point when the outside temperature is dropping. The fan speed can still be changed. The supply air fan is deactivated if a second temperature threshold is not reached. If the outside temperature falls below the temperature limit threshold of -15 °C, the extract air fan will also be deactivated and the unit switched off. After the unit is switched off, a flashing in those LEDs (by touching the (-) or (+) button) which denoted the most recently active fan speed will be signalled. The fan speed cannot be changed and is signalled with the flashing of Fault LED.
 Fault LED flashes	Indication of locked modes	If an inaccessible operating mode is selected, it will be signalled by the flashing of Fault LED. These operating modes are the locked standby, locked supply and extract air mode and complete switch-off due to frost protection.
 LED Filter replacement flashes	Indication of filter inspection	The filters are monitored based on running time. 90 days are preset by default. After the filter runtime has elapsed, notification in regard of a filter inspection is signalled by the filter replacement LED flashing. Simultaneously pressing the (-) and (+) button for 3 seconds allows you to acknowledge the indication of the filter inspection and to reset the filter runtime.
 Fault LED lights up Error code LED1-4	Signalling of error code fault message	If an error occurs, this is signalled by the fault LED. Faults that can be diagnosed by the unit are symbolized by LED1-4 using an error code (see 3.4.1). Simultaneously pressing the (-) and (+) button for 3 seconds allows you to delete the indication of the fault notification.

2.3.1 Automatic operating mode

Automatic operating mode requires an internal installation and configuration of a sensor module! The sensor modules inserted in the extract air section of the ventilation unit are available as optional accessories.
The Automatic function changes into the frost protection operating mode in the event of frost protection criteria being met!

The application of the Automatic function follows the logic of a demand controlled system for optimizing the indoor air quality. Consequently, an optimized response is achieved and mildew formation is prevented, which ultimately also leads to an increase in energy savings.
The ComfoSpot 50 ventilation unit with a sensor module is classified in energy efficiency class A.

2.3.1.1 Functional principle of HUMIDITY sensor

The HUMIDITY sensor module is primarily supposed to be installed in units for the ventilation of rooms with an increased occurrence of humidity.

The HUMIDITY sensor module is equipped with a humidity and temperature sensor and calculates the relative humidity. In the evaluation of the current sensor signal for the setpoint selection, the fans are regulated in accordance with the characteristic curve in diagram 1. Since the dehumidification performance decreases the smaller the temperature difference between indoor and outdoor air, at a difference of $\Delta T < 5$ K the air volume is reduced to 20 m³/h. When the Bathroom function operating mode is active, the unit will be operated with the highest fan speed if the relative humidity amounts to 80% or more.

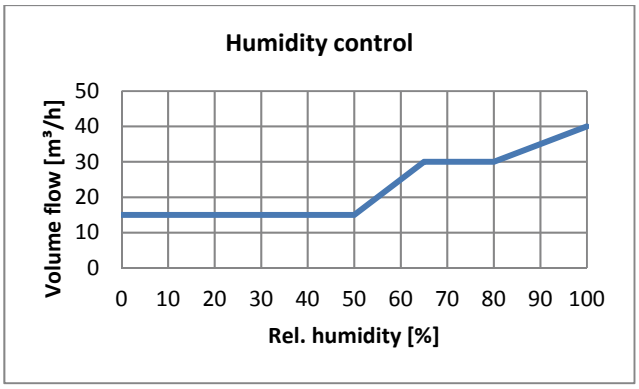


Diagram 1: Factory setting characteristic curve for Automatic operating mode with humidity control

2.3.1.2 Functional principle of CO_2 / VOC sensor

The CO_2 sensor module and the VOC sensor module are each combined with a humidity/temperature sensor.

The CO_2 sensor module and the VOC sensor module both offer the option to evaluate relative air humidity as well as the air quality for controlling the ventilation unit. The VOC sensor module detects volatile organic compounds (VOC) and the CO_2 sensor module, as NDIR sensor (nondispersive infrared sensor), detects carbon dioxide (CO_2). Volatile organic compounds correlate really well with the CO_2 concentration in living spaces. In the evaluation of the current sensor signal for the setpoint selection, the fans are regulated in accordance with the characteristic curve in diagram 2.

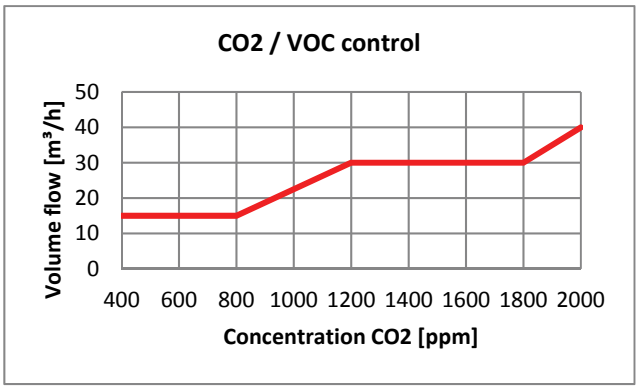


Diagram 2: Factory setting characteristic curve for Automatic operating mode with CO_2 / VOC control

The CO_2 and VOC sensor modules combined with a humidity/temperature sensor can be deactivated separately if needed, in accordance with the humidity or air quality control. If both sensor modules are configured as active, the control characteristic of the sensor module is designed with the greater sensor signal.
The required hardware settings on the control system are only allowed to be made by qualified personnel!

2.4 Maintenance by the user

If the maintenance work is not carried out regularly, this will affect the functionality of the ventilation unit in the long run!

The maintenance of the ventilation unit for the user is limited to changing the filters periodically and to cleaning the unit on the surface, if needed. Check the filters if this is indicated by the filter replacement LED.

Replace the filters at least every six months. This ensures a pleasant and healthy air quality, and the unit will be protected against contamination.

Cleaning the surface of the unit, and specifically the control panel, is possible using a damp cloth and a mild soap solution. Never just wipe it dry!

Unsuitable cleaning agents are:

- Alcohol (> 5%)
- Acetone

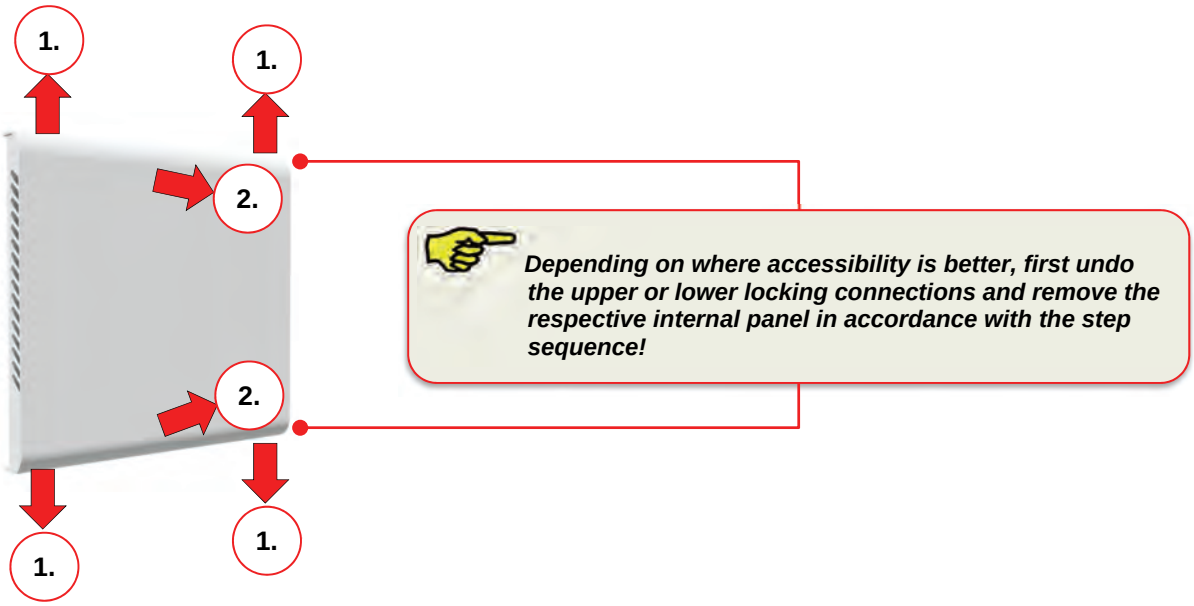
- Benzene or carbon tetrachloride
- All types of "strong" cleaning agents
- Scouring agents
- Glass cleaners and similar

2.4.1 Replacing the unit filters

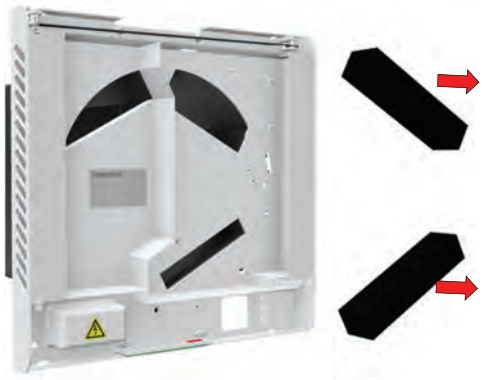
The ComfoSpot 50 must not be operated without filters. When changing filters, the unit needs to be transferred to the Standby operating mode.

In ComfoSpot 50, two high-quality original filters of the class G4 are installed by default. Retrofitting a pollen filter of the class F7 is possible. This is inserted into the lower filter compartment (outdoor air filter). The filters in the ComfoSpot 50 must be checked in accordance with the relevant notification on the control panel and, if needed, must be replaced. In doing so, proceed as follows:

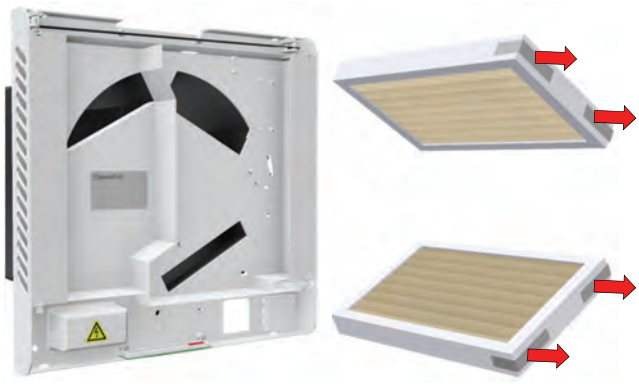
1. Put the unit into the Standby operating mode.
2. Take off the interior top cover, by disengaging the double locking connection (available on both sides) between the bottom and top cover of the interior top cover, either on the upper or lower curve (depending on the better accessibility). To do so, lift the relevant ends of the curved surface on the interior top cover approx. 2-3 mm upwards or downwards (1.) and pull it out to the front and out of the guides (2.), see figure.



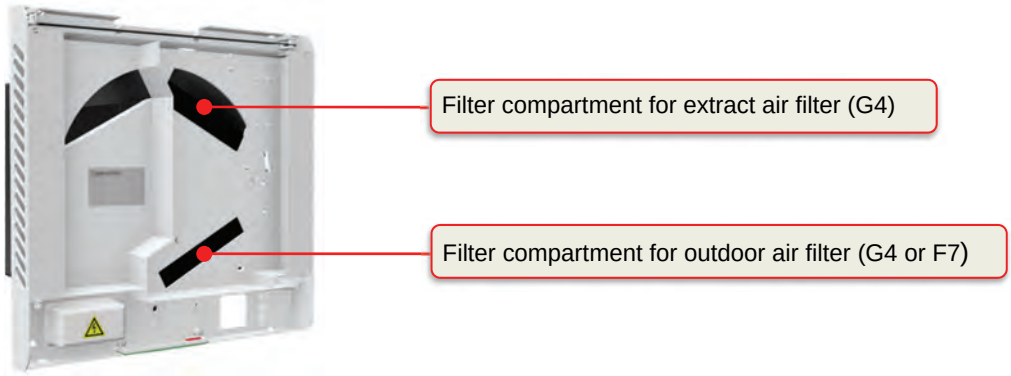
3. Use your finger to grasp at the side between the cellular rubber filter cap and the filter compartment opening of the bottom cover of the interior cover and pull out the filter cap.



4. Gripping the pulling tabs, pull the filter carefully out of the filter compartment.

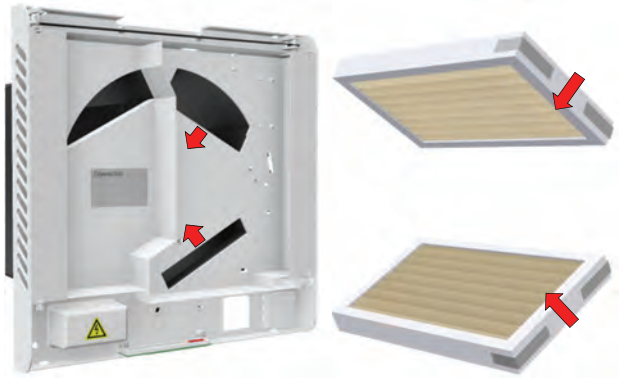


5. Insert the filters into the respective filter compartments in accordance with their class.

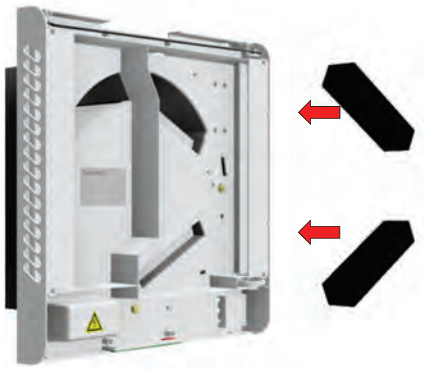


6. Using the directional arrow of the filter label pointing to the centre of the unit, insert the new filters.

***An arrow marker for the direction of flow for the filter is engraved on the bottom cover of the interior cover next to the filter compartment in each respective case**. **Make sure that the filter is not pushed into the filter compartment with force**.*



7. Insert the filter caps again so that the filter compartment is closed evenly.



8. Put the interior top cover onto the bottom cover, and press them in the area of the locking connections until you can hear them engage.

9. Switch the unit back into the desired operating mode.

2.4.2 Resetting the filter runtime

After completing the filter replacement, the meter for the filter runtime must be reset. To do this, you can clear the filter inspection indication again by pressing the (-) and (+) button for 3 seconds. The red LED on the control panel, symbolizing the filter replacement, switches off.

2.4.3 What should I do in case of a malfunction?

Contact the installation technician in case of a malfunction. Note down the type of your ComfoSpot 50; for more on this, see the type label on the bottom cover of the interior cover.
The mains connection must always be present, providing the ComfoSpot 50 does not have to be shut down due to a serious malfunction, maintenance work, or due to another urgent cause.

As soon as a mains disconnection is made, the apartment will no longer be mechanically ventilated. This makes it possible for problems involving moisture and mould to occur in the apartment. A longer period of being switched off, particularly during the summer months, brings about the danger of accumulating insects in the inside of the outside wall panel and in the EPP housing section of the pipe extension!

The ventilation unit must be permanently left in operation, excepting times needed for maintenance and repair work. The unit should be operated in the Away mode for the duration of an absence!

2.5 Disposal

Discuss with your supplier what you should do with your ComfoSpot 50 at the end of its life cycle. If you cannot return your ventilation unit, do not dispose of it with the normal household waste, but rather contact your local authority for options to recycle components or to process materials in an environmentally-friendly way.

3 Instructions for the qualified personnel

3.1 Installation requirements

The following requirements must be assured for the correct installation:

- Installation in accordance with the general and locally-applicable safety and installation regulations from, among others, the electric utility, and in accordance with the regulations stipulated in this manual
- Outside wall with final construction thickness of minimum 275 mm
- Sufficient clearance to objects and for maintenance work (at least 10 cm on extract air side, 20 cm on the supply air side, and 70 cm on the front side), with regard to the housing surfaces when installed
- Recommended suction opening for the outdoor air with respect to the ground >1 m, however, at least unpolluted air in the suction area
- 230 VAC, 50-60 Hz power supply for fixed units

3.1.1 Transport and packaging

Proceed with care when transporting and unpacking the ComfoSpot 50. The ventilation unit, together with mounted interior cover, and the outside wall panel are packed in a transport-safe box.

Do not damage or dispose of the packaging before final installation of the ventilation unit.

3.1.2 Checking the scope of delivery

If damages or incompleteness should be determined at the delivered product, please contact the supplier immediately. Included in the scope of delivery are:

- ComfoSpot 50 including installation set
- Outside wall panel including installation set
- Operating and installation instructions
- Product labels for energy-efficiency label

3.2 Installation

3.2.1 General installation instructions

The ComfoSpot 50 is intended exclusively for installation in an outside wall, where the side air passage openings must be located on the inner side, vertically and with the thumb wheel for shutter adjustment on the right side. To mount the ventilation unit, a wall mounting pipe must be installed into the outside wall in advance; please refer to the respective installation instructions enclosed for the procedure for installing the wall mounting pipe.

When planning the installation location, please note that the clearance needs to be 10 cm on the extract air side and 20 cm on the supply air side for the intended operation. For maintenance work, a free space of 70 cm should be observed in front of the unit.

The unit has the protection class IP11. Make sure that the applicable country-specific standards / regulations for compliance with protection zones when installing the unit in rooms with a bathtub or shower are observed!

3.2.2 Installation preparations

Prior to installing the ventilation unit, an appropriate wall mounting pipe must already be installed in the outside wall at the designated installation location. It must be adjusted flush with the level of the finished wall construction.

The installation of the ComfoSpot 50 is only allowed in connection with the round wall mounting pipe or with the square wall mounting pipe!

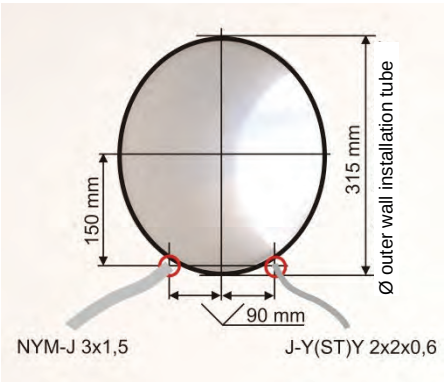
The square wall mounting pipe, intended in particular for new buildings, should be integrated in the outside wall construction in the course of the wall construction. The round wall mounting pipe is primarily used in the refurbishment and reconstruction of the building fabric, and is inserted in the outside wall by means of a core hole (∅ 340 mm).

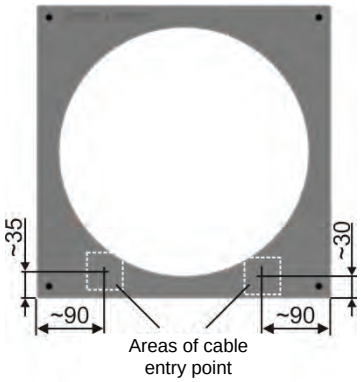
Observe the respective enclosed instructions on professional installation when installing the wall mounting pipe.

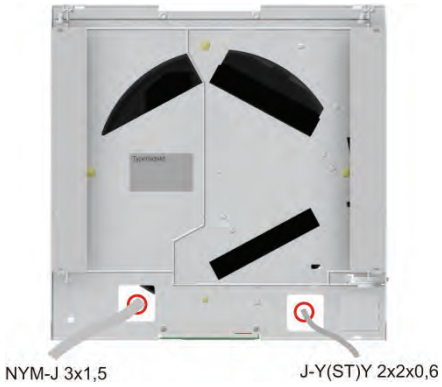
A 230 VAC mains connection for fixed units is to be prepared on site for the mains power supply.

In order to connect an external control panel, a cable must be installed on site between the control panel and ventilation unit (recommendation: type J-Y(ST)Y 2x2x0.6 LG indoor cable with colour coding in accordance with VDE 0815).

The mains supply line (e.g. NYM-J 3x1.5) must be installed in the area of the bottom left side of the unit and, where applicable, the cable to the external control panel, must be installed flush-mounted up to the area of the bottom right side of the unit. The cable ends should protrude approx. 10 cm out of the wall surface in the respective area of the cable entry point.







3.2.3 Installing the ventilation unit

Prior to starting work, ensure that the mains supply line has no voltage!

The relocation of the internal control panel to the bottom and the installation of a sensor module (optional accessories) in the unit has to be done prior to installation when the unit is disassembled!

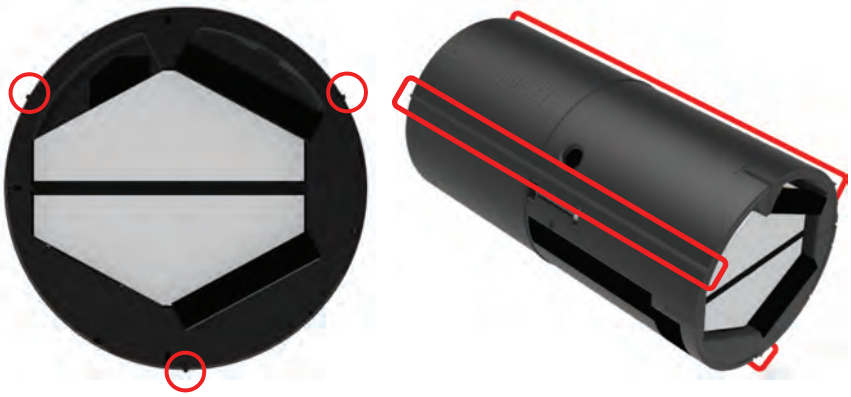
Proceed as follows for the installation of the unit:

1. Adjust the installation length of the unit either to the wall thickness or to the measure of length of the wall mounting pipe by shortening the EPP housing extension.

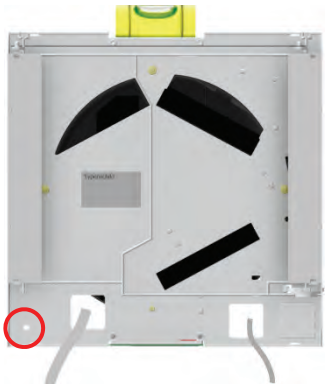
   The cut must be performed all around, perpendicular to the axis of the EPP pipe extension!

2. Remove the interior cover from the bottom cover, whilst considering the explanations given in 2.4.1, section 2.
3. Take off the cover for the electrical connection by undoing the yellow PVC nut. Spray silicone spray onto the interior of the wall mounting pipe, and insert the unit, together with the bottom cover of the interior cover, as far as it will go into the wall mounting pipe, whilst considering the position of the openings for the electrical connections.

If necessary, a suitable tool can be used to remove the centring spring raised 5 mm, and arranged 3 times on the EPP housing, to the dimension ∅300 of the EPP basic body, in order to facilitate the insertion!



4. Align the unit with the side air intake grills of the bottom cover of the interior cover being vertical. Transfer the drill hole onto the wall (in conjunction with the round wall mounting pipe) or onto the EPP housing for the square wall mounting pipe.



The vertical installation of the bottom cover of the outside wall panel requires the precise vertical positioning of the bottom cover of the interior cover!

5. Pull the unit out of the wall mounting pipe again. Drill a drill hole, and install the dowel from the installation set or a different dowel suitable for the material.

When the square wall mounting pipe is installed, the plasterboard dowel must be screwed into the EPP housing of the wall mounting pipe, and the bottom cover must be fastened using the countersunk wood screw! The plasterboard dowel and countersunk wood screw are an integral part of the installation set for the square wall mounting pipe.

6. Push the unit back in, and fix in place the bottom cover of the interior top cover to the drill hole using the screw from the installation set or a screw suitable for the alternatively selected type of fastening.

3.2.4 Electrical connections

Electrical connections are to be implemented in accordance with the existing standards specific to the relevant country, and must only be performed by qualified personnel!

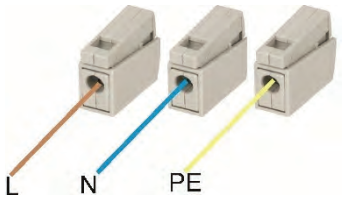
3.2.4.1 Connection for power supply

Prior to starting work, ensure that the mains supply line has no voltage!

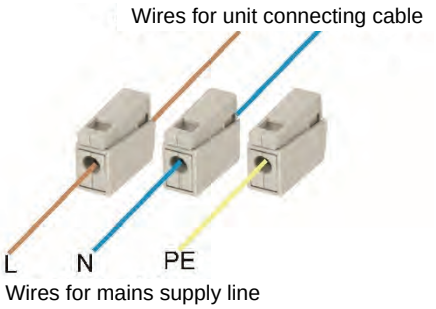
On-site, a disconnection system has to be installed using a contact opening width in accordance with the conditions from overvoltage category III for complete disconnection in the fixed electrical installation, in accordance with the installation regulations.

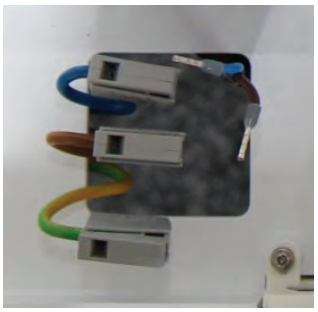
The power supply is connected after the final positioning of the unit in the wall mounting pipe. In doing so, proceed as follows:

1. Stripping the wires - Slip a WAGO luminaire terminal from the installation kit, together with the plug connection for solid conductors, onto one wire of the mains supply line respectively.



2. Connect one wire of the unit connecting cable respectively to the clamping connection for the stranded wire of the WAGO luminaire terminal for the L-conductor and the N-conductor. The WAGO luminaire terminal of the PE conductor remains unassigned (ventilation unit corresponds with protection class II – protective insulation).





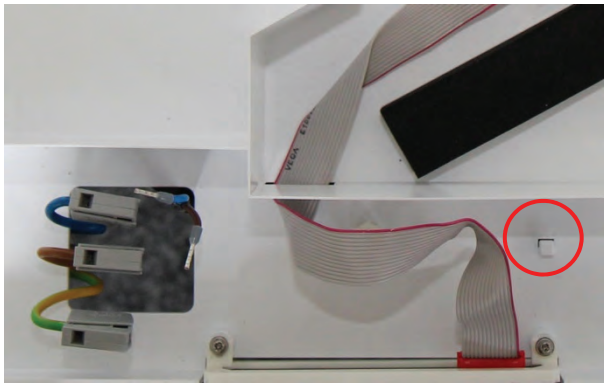
3. Install the connections orderly and space saving so that the mounting of the plastic cover for the electric connections can be done without difficulty.
4. Mount the plastic box for covering the electrical connection and fix it in place on the right-hand side using the yellow PVC nut and on the left-hand side using the designated screw for fixing the unit on the wall.

3.2.4.2 Relocating the internal control panel

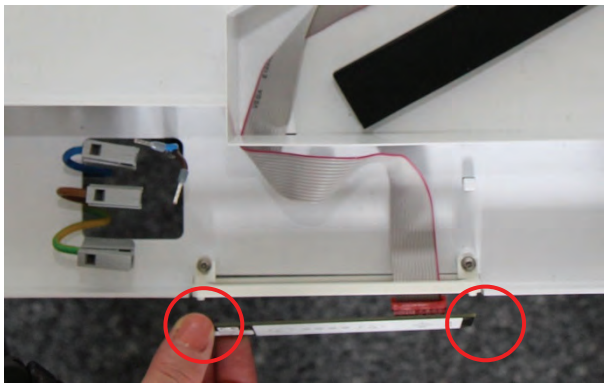
The control panel can be positioned for optimum accessibility either at the top or bottom of the interior cover of the unit, depending on the ventilation unit's wall mounting height.

Relocating this can be done as follows if the interior top cover is removed:

1. Take the ribbon cable out of the cable retainer in the connection area of the control panel.

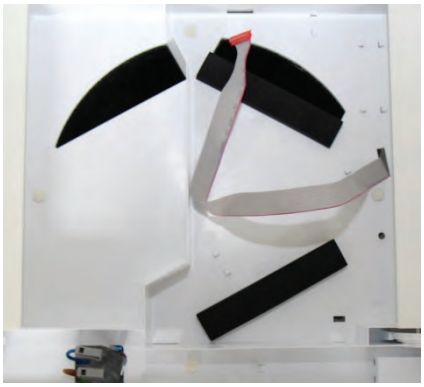


2. Cautiously pull the control panel using the two interlocking fixings (at the side) off the control panel carrier, and guide the control panel, together with the still connected ribbon cable, out of the control panel carrier for better handling.

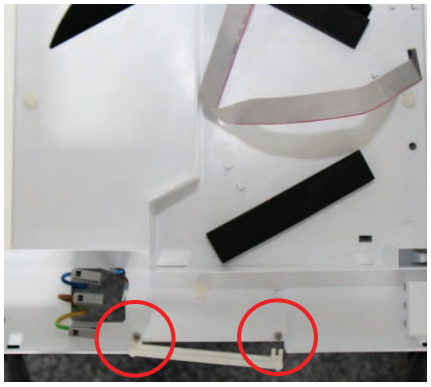


3. Disconnect the ribbon cable from the board for the control panel, by pulling the ribbon cable's plug (gripping with two fingers) out of the socket located on the board. Meanwhile, hold the control panel tight in the area of the plug connection using two fingers on your other hand. Remove the ribbon cable from the cable retainers and guide it back to the opening and into the bottom cover of the interior cover.

Pull the plug of the ribbon cable cautiously out of the post connection!

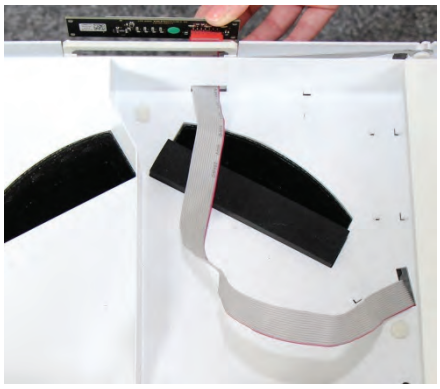


4. Undo and remove the two screws for fastening the control panel carrier, bring them onto the opposite side, and fasten the control panel carrier equally on the two screw-in mandrels.

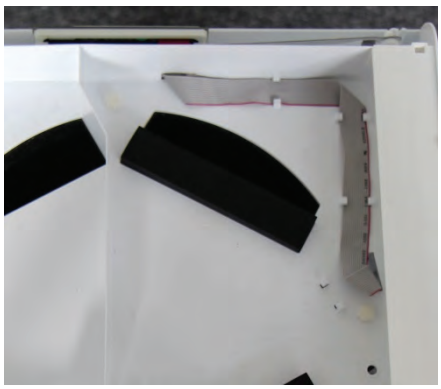


5. Guide the ribbon cable through the frame opening of the bottom cover and the control panel carrier. Restore the plug connection between the ribbon cable and control panel.

Watch out for the reverse polarity protection for the post connection when connecting!



6. Install the ribbon cable in the designated fixing points, taking care to produce a smooth overlapping in the vicinity of the 90° bends. Then snap the control panel onto the control panel carrier in the correct position.



7. In case the unit cable is not yet connected, establish the electrical connection by means of the WAGO luminaire terminals, install and fix in place the plastic box for covering the electrical connection (see 3.2.4.1).
8. Finally, snap the interior top cover onto the bottom cover of the interior cover using the operating panel cut-out on the curved surface.

The cut-out on the curved surface of the interior top cover must be on the side of the control panel when being placed onto the bottom cover of the interior cover!

3.2.4.3 Connecting the external control panel

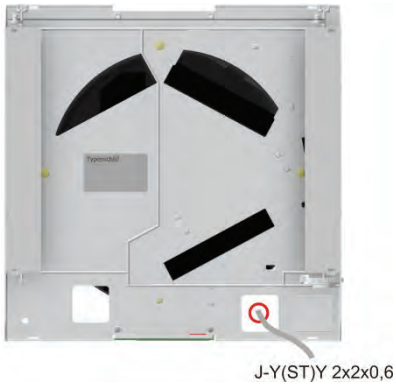
The unit-side connection of an optionally available external control panel must be established in the course of connecting the power supply.

3.2.4.3.1 Connecting the cable for the external control panel on the ventilation unit

The cable end of the on-site cable (J-Y(ST)Y 2x2x0.6), protruding in the area of the cable entry point, for the external control panel must be connected up as follows:

1. Pull the plug-in connector part with the screw-type terminals off the 4-pin plug connection of the pre-assembled connecting cable (contained in scope of delivery kit, external PDA control panel).

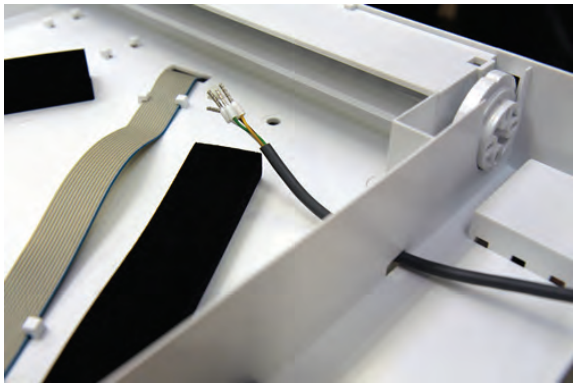
2. Connect the four wires of the on-site cable (J-Y(ST)Y 2x2x0.6) for the external control panel to the plug-in connector part with the screw-type terminals.

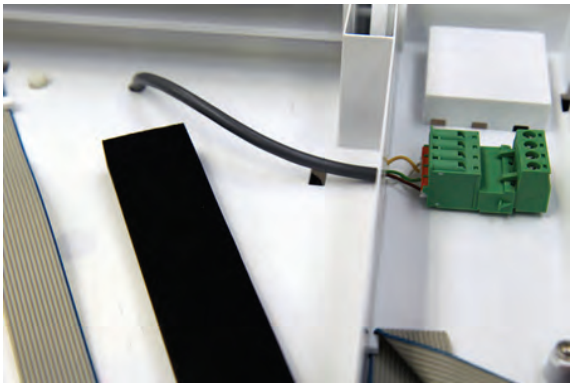


Note down the colour of the wires in accordance with the assignment of the clamping points. This assignment for the colour coding must match up with the assignment of the clamping points on the external control panel! Enter the colour coding in the table below in order to have the assignment available so that it can be reproduced when the external control panel is removed.

Colour coding connecting cable	Clamping point for plug connection	Colour coding Cable for external control panel
white	-	
yellow	A	
green	B	
brown	+	

3. Guide the connecting cable with the wire ends through the openings in the bottom cover, up to the BUS X7 terminal on the control board.

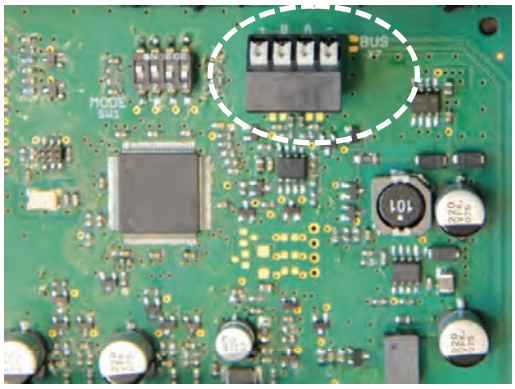
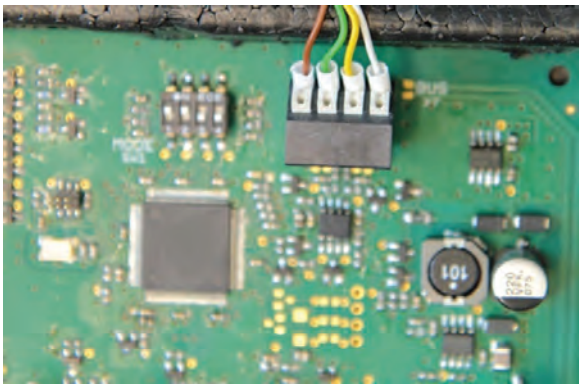




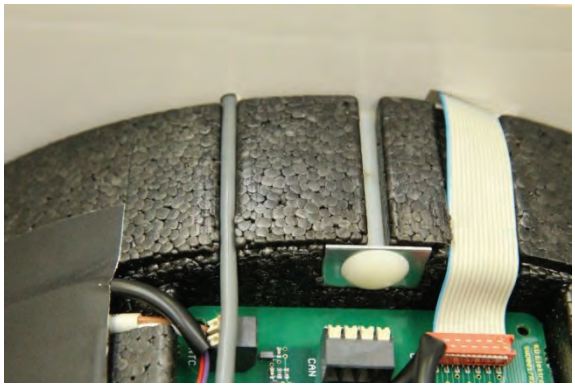
4. Connect the wires of the connecting cable to the BUS X7 terminal on the control board.

Watch out for the correct assignment of the wires in accordance with the assignment of the BUS X7 terminal

Colour coding connecting cable	Clamping point for BUS X7 terminal
white	-
yellow	A
green	B
brown	+

5. Install the connecting cable in the designated cable recess in the EPP housing.

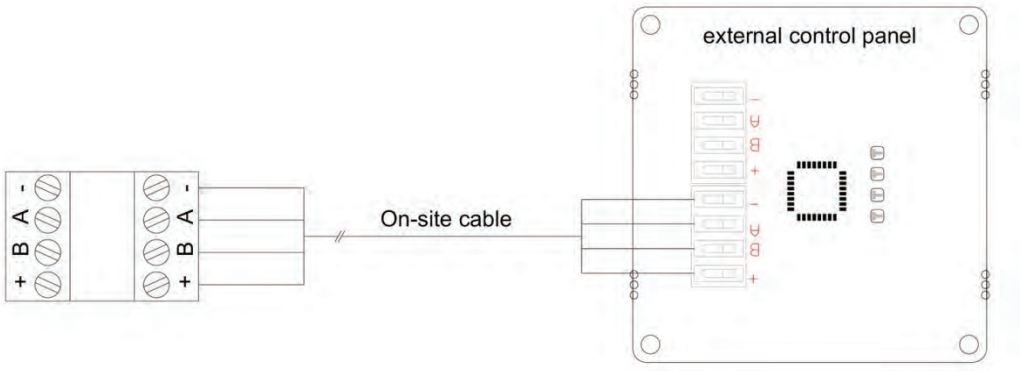


6. After pushing the unit into the wall mounting pipe, connect the plug-in connector part for the connecting cable with the plug-in connector part of the cable for the external control panel.

3.2.4.3.2 Connection to the external control panel

Connect the cable to the spring-type terminals for the connection board of the external control panel as depicted.

Watch out for the correct assignment of the wires in accordance with the assignment of the plug connection!



3.2.4.4 Installing and connecting the sensor module

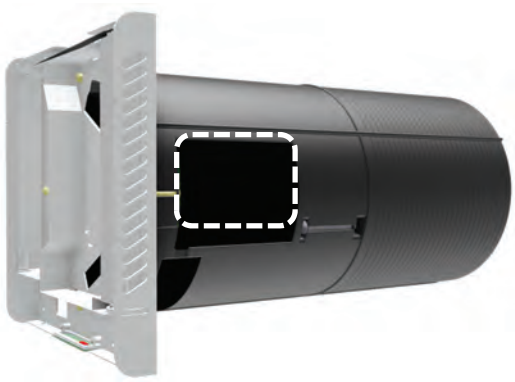
The installation and connection of a sensor module should be carried out prior to installing the ventilation unit.

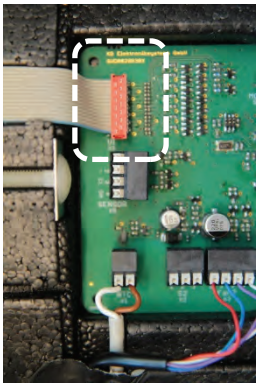
Retrofitting is only possible when the unit is disassembled. To do this, the connection for the power supply and the plug connection of the connecting cable of a possibly present external control unit needs to be disconnected.

Proceed as follows:

1. Take the interior top cover off and remove the filter caps and filters as set out in 2.4.1.

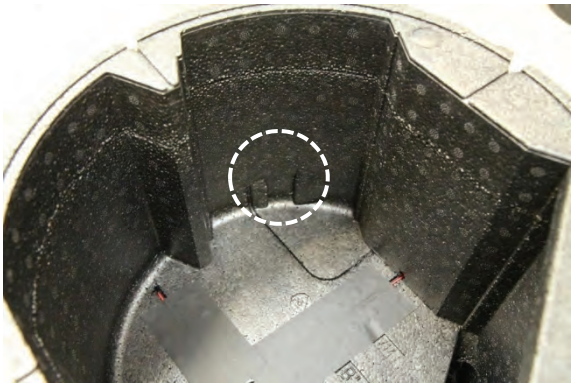
2. Remove the PVC cover of the control board at the side of the ribbon cable entry out of the slot on the EPP housing, and gripping the plug, cautiously pull the ribbon cable out of the UI X9 plug connection on the control board.

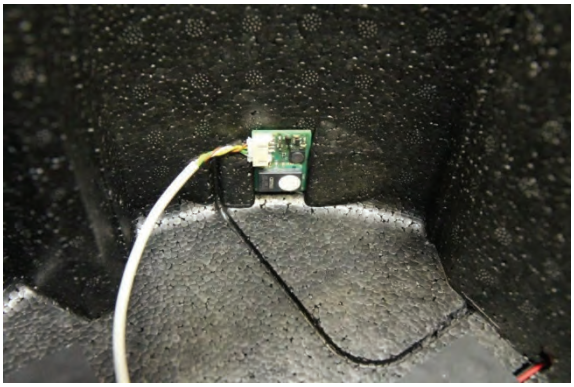




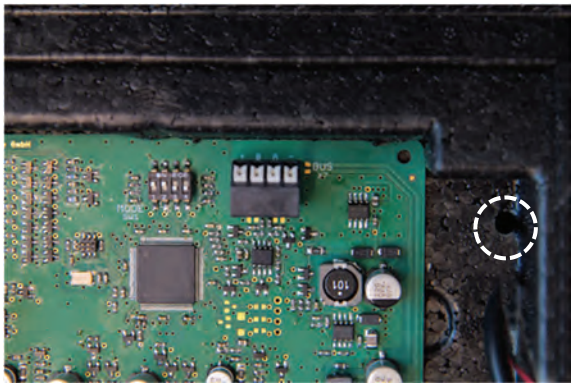
3. Undo the four nuts used to fasten the bottom cover of the interior cover to the EPP housing from the threaded bolts, and remove the bottom cover including the electronic equipment cover.

4. Remove the enthalpy exchanger as shown in 3.3.1.
5. Clamp the sensor module into the fixation recess of the EPP housing, bearing in mind the cable routing.

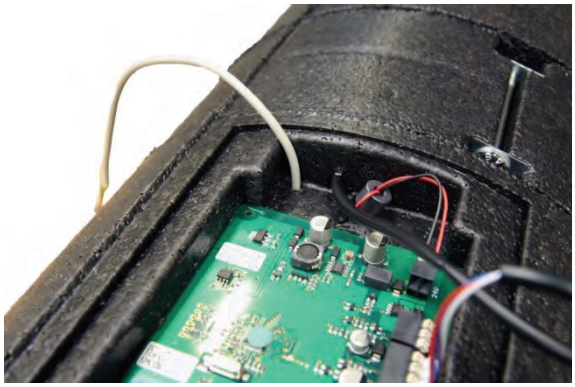




6. Remove the blanking plug for the cable guide in the vicinity of the control board from the EPP housing.



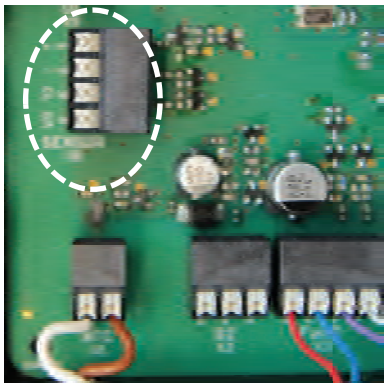
7. Guide the sensor cable, together with the wire ends, from the inside to the outside through the cable guide of the EPP housing, and push the sensor cable into the cable recess.

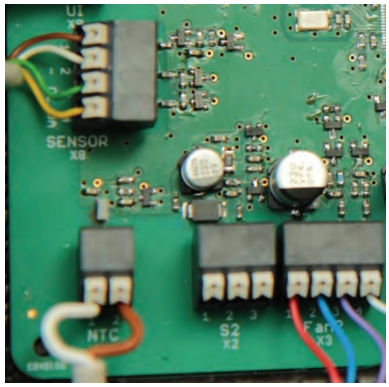


8. Connect the sensor cable to the clamping point SENSOR X8 on the control board.

Watch out for the correct assignment of the wires in accordance with the assignment of the SENSOR X8 terminal!

Colour coding for sensor cable	SENSOR X8 clamping point	Signal
brown	1	+
white	2	-
green	3	CL
yellow	4	DA





9. The four-pin DIP switch MODE SW1 is used for the configuration of the Automatic function for the respective sensor module. If necessary, correct the positions of the DIP switches in accordance with designated functional principle of the Automatic mode.

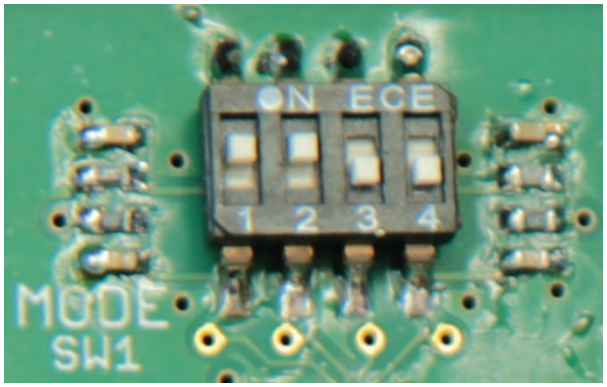


Fig. Position of DIP switch, factory setting

10. Carefully install the sensor cable at the edge of the control board, and clamp the PVC cover back into the guide slots on the EPP housing.

11. Install all parts in reverse order.

3.2.5 Parameterizable operating modes

3.2.5.1 Configuration of Automatic operating mode

The DIP switch MODE SW1 can be used to configure the Automatic operating mode for various functional principles. The use of the Bathroom function requires the release of the HUMIDITY sensor module (DIP switch no. 2 of MODE SW1 in ON position).

DIP switch no.				Activated Automatic function
1	2	3	4	
ON	OFF	OFF	OFF	VOC / CO_2 control
ON	ON	OFF	OFF	VOC / CO_2 control and HUMIDITY control
OFF	ON	OFF	OFF	HUMIDITY control
OFF	ON	OFF	ON	HUMIDITY control with Bathroom function
ON	ON	OFF	ON	VOC / CO_2 control and HUMIDITY control with Bathroom function

3.2.5.2 Configuration of the boost ventilation mode

The temporarily active fan speed 4 operates as the boost ventilation function. To enable boost ventilation operating mode, DIP switch no. 4 in MODE SW1 must be set to the ON position.

DIP switch no.	Position of DIP switch
3	ON

The boost ventilation time of 15, 30 or 45 minutes can be adjusted with the programming module.

3.2.5.3 Configuration of the Away mode

The temporarily activated fan speed 1 operates as the Away function.
The active operating time of fan speed 1 of 15, 30, or 45 min/h can be parameterized with a programming module.

3.2.6 Installing the outside wall panel

For the installation of the outside wall panel, one needs to make sure that a falling is prevented by secure fixing! Supplied installation accessories must, if necessary, be replaced on-site with appropriately suitable mounting material depending on the design of the façade. The responsibility for professional, safe installation lies with the performing technical crew!

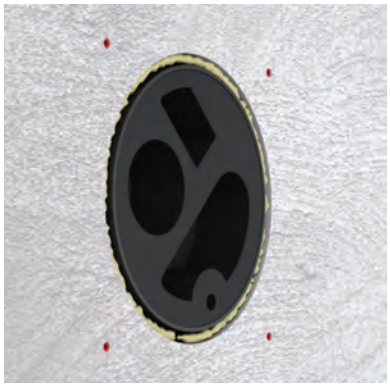
The outside wall panel should not be installed until the façade is completed, however, immediately following installation of the ventilation unit!
Check the flatness between the wall mounting pipe, the EPP housing section pipe extension and the façade surface!

Proceed as follows for the installation:

1. Take the top cover of the outside wall panel off the bottom cover of outer cover as set out in 2.4.1, item 2.

Instructions for the round wall mounting pipe:

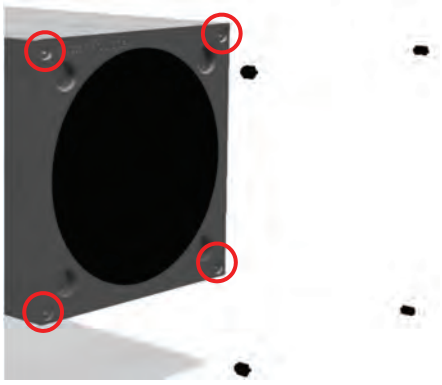
Using the raised contours for the airflow, put the bottom cover of the outside wall panel onto the EPP housing section pipe extension so that it fits exactly, and transfer the drill holes onto the façade centrally.



Take the bottom cover of the outside wall panel off again, and prepare a suitable fastening technique for the four fixing points as set out in the façade design.

Instructions for the square wall mounting pipe:

Use a hammer to cautiously tap in the respective driven-in dowel into the four receiving holes in the EPP housing for the wall mounting pipe surface plan.



2. Using the raised contours for the airflow, put the bottom cover of the outside wall panel onto the EPP housing, and fasten it on the four fixing points on the wall mounting pipe.

When screwing the bottom cover to the wall, the bottom cover of the outside wall panel must not bend! If necessary, undo the screws again so that the bottom cover of the outside wall panel is still fitted tightly to the façade, but this does not cause any deformation.
To protect against penetrating water, the gap between the bottom cover of the outside wall panel and the façade should be sealed using a suitable sealant (weatherproof acrylic)!

3. Press the top cover for the outside wall panel onto the bottom cover using all four locking connections. Fasten the four screws from the supplied installation kit for the top cover of the outside wall panel on the bottom cover of the outside wall panel.

In general, the top cover of the outside wall panel must be secured using additional fixing at 4 points!

4. If needed, the top and bottom cover of the outside wall panel made of ABS can be painted over with the façade colour.

Only use solvent-free paints!

3.3 Maintenance and repair by the qualified personnel

If regular maintenance work is not carried out on the ComfoSpot 50, this will affect the functionality of the comfort ventilation.

It is vital that an ESD armband be worn during work on the electrical system, in order to protect the control board from electrostatic effects!

Prior to intervening on the unit, make sure that there is no power in the mains supply line!

Routine maintenance of the ComfoSpot 50 is easy to carry out and should be performed regularly to keep the unit operating hygienically flawlessly. Only a maintenance interval of 2 years must be adhered to when the filter is changed on a regular basis and if our original filters are used. If the unit is operated improperly even for a short period, with or without low-quality filters, the enthalpy exchanger must be cleaned immediately, to restore the proper operation of the unit again.
Regardless of the maintenance for the unit, the outside wall panel must be regularly checked for contamination, and in particular the intake passage for the outdoor air. Any contamination possibly occurring must be removed immediately. The removal and installation of the outside wall panel is described in 3.2.6.

3.3.1 Inspection and cleaning of enthalpy exchanger

In doing so, proceed as follows:

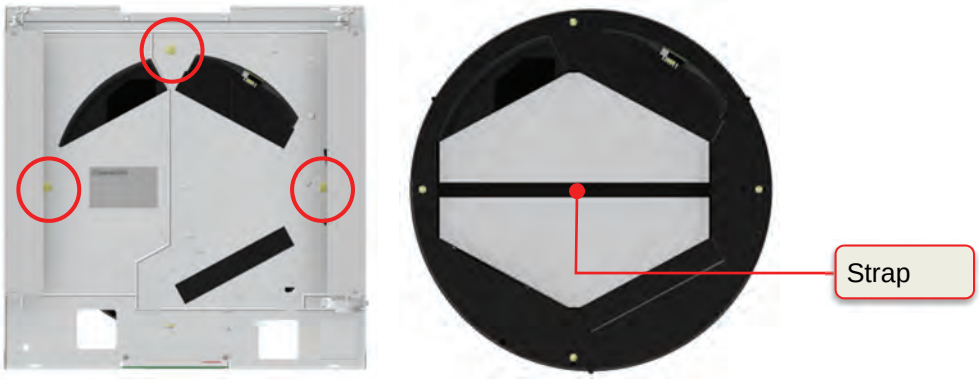
1. Disconnect the ComfoSpot 50 from the supply voltage.
2. Take the interior top cover off and remove the filter caps and filters (see 2.4.1).
3. Remove the plastic box for covering the electrical connection and disconnect the unit connecting cable (see 3.2.4.1).

   Disconnect the plug connection of the connecting cable if the external control panel is connected.
4. Pull the ventilation unit far enough out of the wall mounting pipe until the PVC cover for the control board is freely accessible.

5. Remove the PVC cover of the control board at the side of the ribbon cable entry out of the slot on the EPP housing, and gripping the plug, cautiously pull the ribbon cable out of the UI X9 plug connection on the control board.

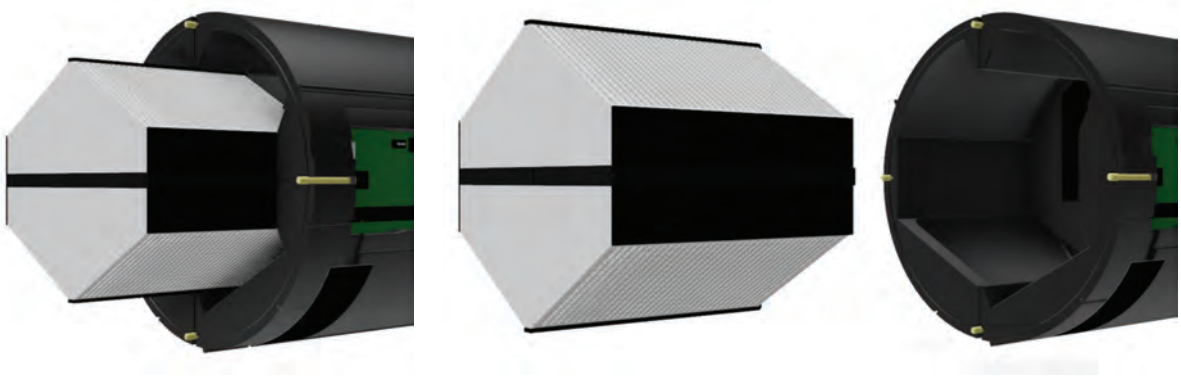
Should there be a connected up external control panel, disconnect the wires for the connecting cable from the BUS X7 terminal.

6. Undo the remaining three PVC nuts used to fasten the bottom cover of the interior cover from the threaded bolts, and remove the bottom cover.



7. Gripping the strap, cautiously pull the enthalpy exchanger out of the EPP housing.

When withdrawing the enthalpy exchanger, use your other hand to hold the EPP housing tight, gripping the lower filter compartment.



8. Clean the enthalpy exchanger if needed. In doing so, proceed as follows:
   - Dip the enthalpy exchanger several times in warm water (max. 40 °C).
   - Then rinse off the enthalpy exchanger thoroughly with warm tap water (max. 40 °C).

Do not use aggressive or dissolving cleaning agents!

   - In order to dry it, position the enthalpy exchanger such that residual water can run out of the openings.

Instructions on correct cleaning methods can also be found on the manufacturer's website (www.paul-waermetauscher.de).

9. Push the enthalpy exchanger carefully into the EPP housing as far as it will go.

Also hold the EPP housing tight when doing so!

10. Following the inspection, install all parts whilst considering the restoration of all electrical connections in the reverse order.
11. Restore the power supply.

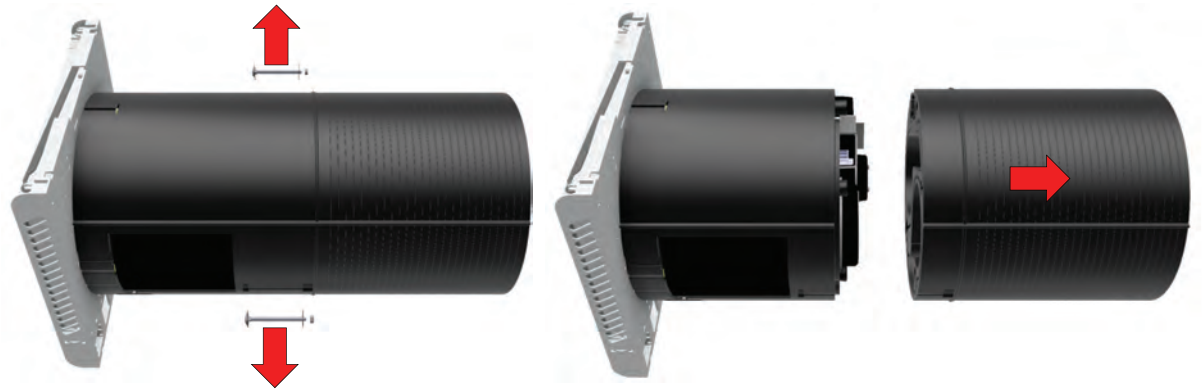
3.3.2 Replacing the fans

To change the fans, the unit must be completely pulled out of the wall. In doing so, proceed as follows:

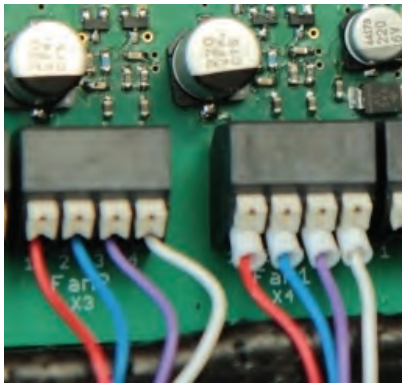
1. Disconnect the ComfoSpot 50 from the supply voltage.
2. Perform steps 2. and 3. as per 3.3.1 to remove the fans.

   Disconnect the plug connection of the connecting cable if the external control panel is connected up.

3. Pull the unit cautiously out of the wall mounting pipe.
4. After undoing the threaded connections on both sides and removing the EPP pipe extension, the fans will be accessible.



5. Remove the PVC cover for the control board at the side of the ribbon cable entry point out of the slot on the EPP housing.



6. The structurally identical fans can be removed from the EPP housing after the fan cables have been disconnected from the FAN1 X4 and FAN2 X3 terminals on the control board, whilst feeding in simultaneously. In doing so, do not damage the sealing tapes in the vicinity of the fans.

   When exchanging the fans, make sure that all the wires in the fan cables are disconnected prior to removal, and are connected up again as per terminal scheme (see 3.5.2) when installing! Make sure that the sealing tapes surrounding the fans are seated correctly, and install the connecting cables flush in the designated cable recesses!

7. After exchanging the fans, install all parts whilst considering the restoration of all electrical connections in the reverse order.
8. Restore the power supply.

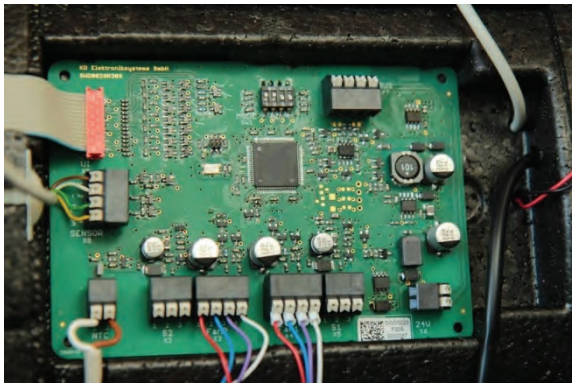
3.3.3 Exchanging the control board

The control board is located on the right-hand side of the EPP housing, behind the bottom cover of the interior cover. The unit must be withdrawn from the wall mounting pipe until the cover for the control board can be freely accessed. In doing so, proceed as follows:

1. Disconnect the ComfoSpot 50 from the supply voltage.
2. Perform steps 2. to 4. as per 3.3.1 to remove the control board.

Disconnect the plug connection of the connecting cable if the external control panel is connected.

3. Pull the PVC cover for the control board at the side of the ribbon cable entry point out of the slot on the EPP housing.
4. After disconnecting all cable connections, the control board can be removed from the fixation recess on the EPP housing.



When exchanging the control board, make sure that all the wires in the cables are disconnected prior to removal, and connected up again as per terminal scheme (see 3.5.2) when installing!

5. After exchanging the control board, install all parts whilst considering the restoration of all electrical connections in the reverse order.
6. Restore the power supply.

3.4 Visualization of fault notifications

The unit control system is equipped with an internal system for recognizing faults. A fault notification is visualized through the flashing of the red "Fault LED" and a coded failure prediction using LED1-4. As a reaction to a fault status, the fans are shut down.

3.4.1 Fault codes in the Fault status

Fault	LED1	LED2	LED3	LED4
Fan 1	flashes	-	-	flashes
Fan 2	-	flashes	-	flashes
Temp. sensor outdoor air	-	-	flashes	flashes
Humidity sensor	flashes	flashes	-	flashes
CO_2 / VOC sensor	-	-	-	flashes

Should a fault notification occur, note down the type label serial number, and please contact the responsible installation technician.

3.5 Technical description

General specifications	Description / Value
Heat exchanger type	Enthalpy exchanger with polymer membrane
Housing / Interior lining	ABS plastic, UV-resistant; interior lining is made of expanded polypropylene (EPP) to provide heat and sound insulation
Weight	6 kg
Electrical connection	230 VAC, 50-60 Hz
Max. current draw	0.07 A
Protection class	II
Degree of protection	IP11
Temperature ranges	-20 to 40 °C
Installation location	In vertical outside wall; wall thickness min. 335 mm to max. 600 mm
Mounting position	Horizontally in the wall mounting pipe; air passage openings laterally vertical on the interior cover and outside wall panel; thumb wheel for shutter adjustment AT THE RIGHT

Operation data

Fan speed	Volume flow [m³/h]	Thermal efficiency [%]	Humidity efficiency [%]	Power consumption [W]
Standby	-	-	-	< 1
FS1	15	85	74	4
FS2	25	76	58	6
FS3	40	66	46	10
FS4	50	62	44	15

Sound data housing emission

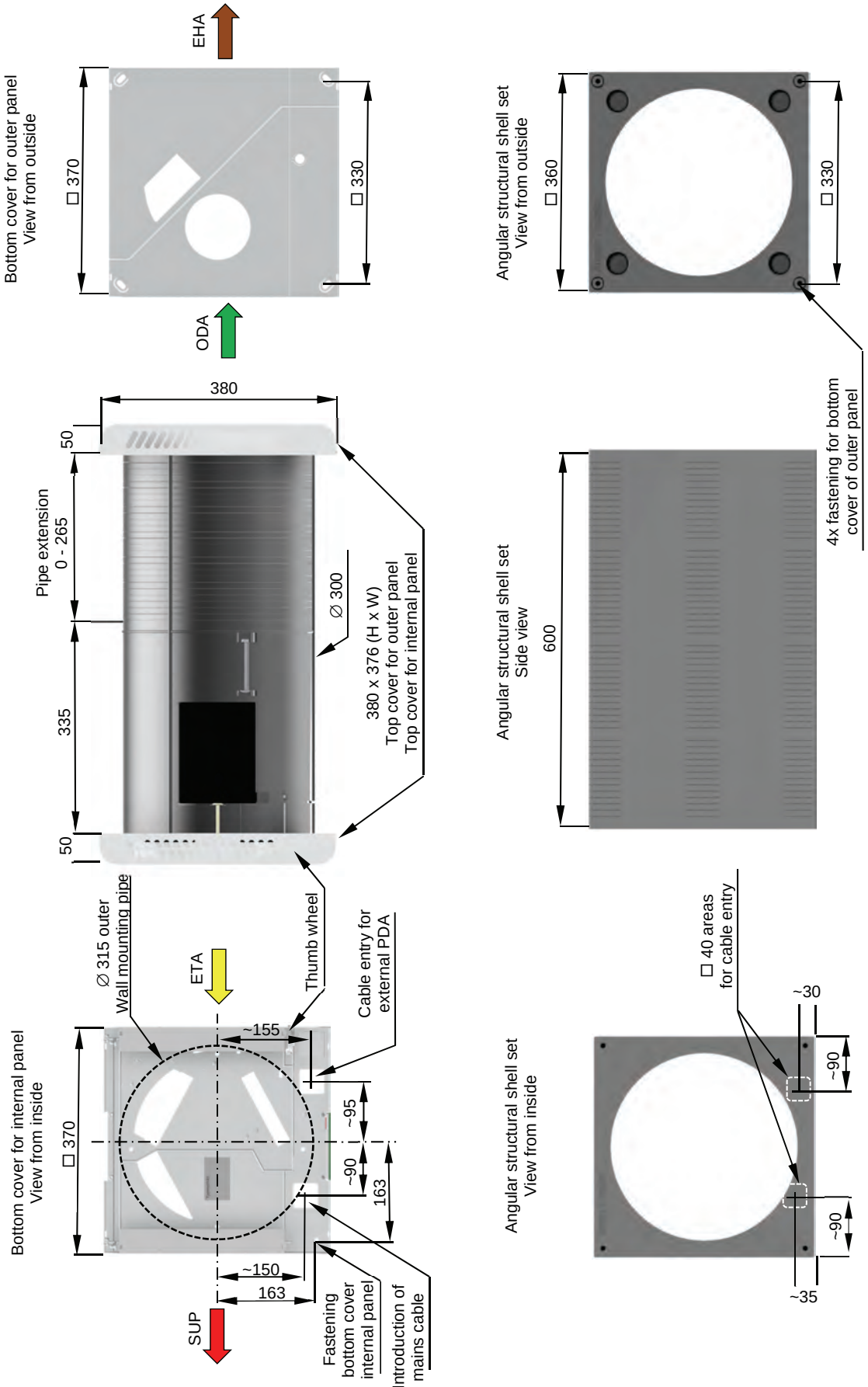
Sound pressure level L_{p3m} in [dB(A)], free-field conditions with 3 m clearance

Fan speed	On the room side	On the outside
FS1	5,2	19,0
FS2	14,7	26,9
FS3	23,2	36,1
FS4	29,0	40,4

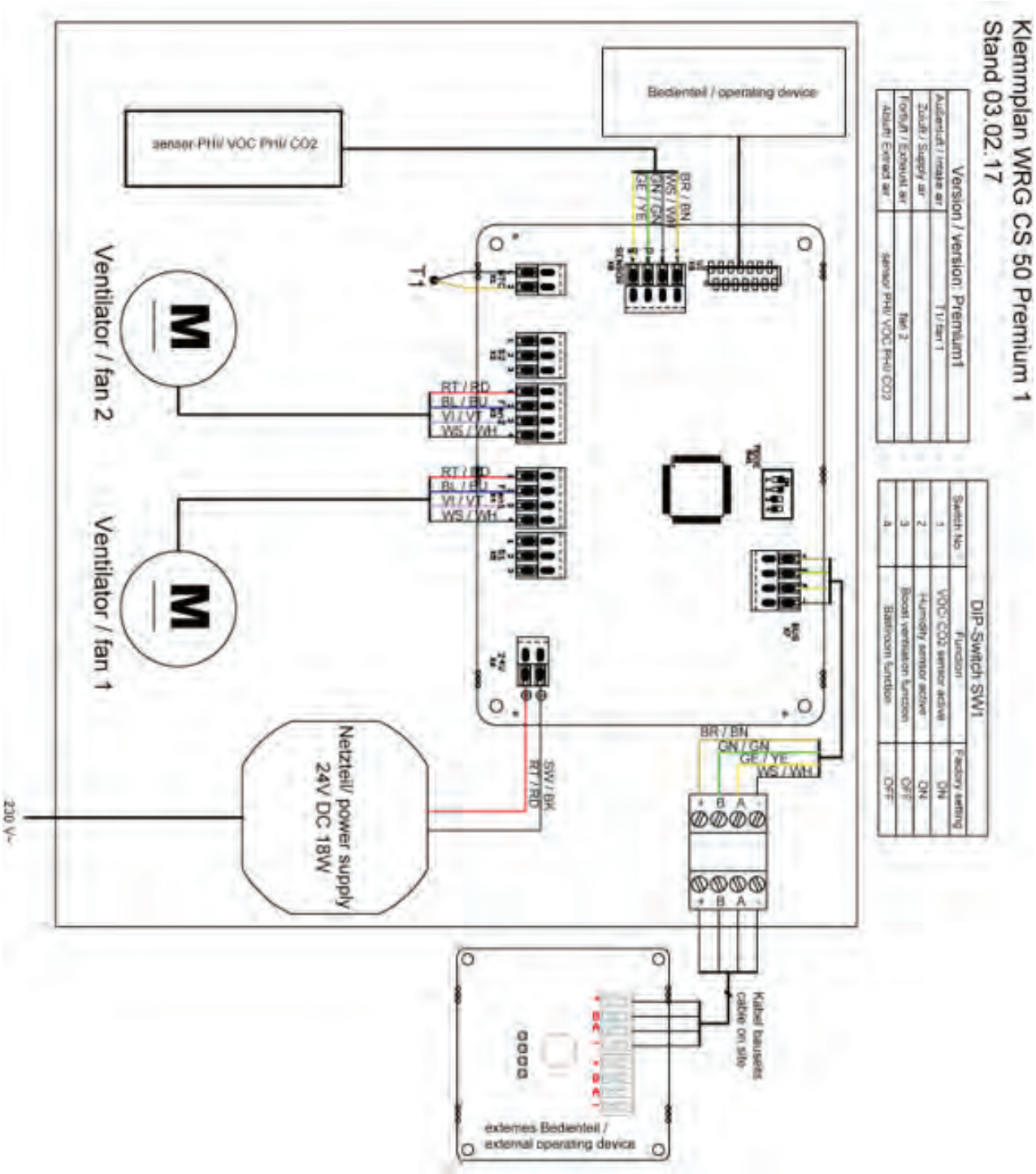
Sound data sound passage

Working condition of shutters	Weighted sound reduction index $R_{w,P}$ (C;C_{tr}) [dB]	Weighted normalized level difference $D_{n,\,e,\,w}$ [dB]
Shutters open	30 (-2; -4)	48
Shutters closed	32 (-1; -3)	51

3.5.1 Dimensions



3.5.2 Terminal scheme



4 Appendices

4.1 Checklist A Maintenance work for users

Maintenance work				Enter date in quarter
Change both filters in the HR unit (recommended filter replacement cycle: 90 days)				
Quarter / Year	**I**	**II**	**III**	**IV**
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
Quarter / Year	**I**	**II**	**III**	**IV**
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
Quarter / Year	**I**	**II**	**III**	**IV**
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				
20...				

4.2 Checklist B Maintenance work for qualified personnel

Maintenance work			Enter result					
– The listed maintenance work must be carried out in accordance with the components actually available. – Inspection of ventilation system in accordance with DIN 1946-6 Appendix E (normative) and Appendix F (informative) – Comments on status using informal protocol – Further annual tranches on separate sheet								
No.	**Components**	**Annually**	**Result**	**20...**	**20...**	**20...**	**20...**	**20...**
1	Fan / ventilation unit	Cleaning of components carried out? - Fan - Enthalpy exchanger - Air-contacting surfaces on unit	yes / no					
		Frost protection / dew device operational?	yes / no					
		Structure-borne sound transmission, are fasteners avoided?	yes / no					
		Are status displays operational?	yes / no					
2	Electrical engineering / control	Cable connections and clamping assemblies secure?	yes / no					
		Are the regulating and control units functional?	yes / no					
3	Ventilation tube / heat insulation	Has cleaning (if necessary) been carried out? Testing OK? For cleaning when needed, see VDI 6022	yes / no					
		Heat insulation and moisture barrier OK?	yes / no					
		Are flexible connections between unit and ventilation tube functional?	yes / no					
4	Fan, ventilation unit, filter, filter status	Stipulated filter class adhered to?	yes / no					
5	Fan / ventilation unit and fireplace if available	Safety device with fireplace operational?	yes / no					
6	Extract air / supply air passage	Seat and locking provided?	yes / no					
		Stipulated filter class adhered to?	yes / no					
		Filter, filter status OK?	yes / no					
		Air volumes acc. to protocol OK?	yes / no					
7	Overflow air vents	Open cross section provided?	yes / no					
		No structure-borne and airborne sound transmission?	yes / no					

4.3 Commissioning and handover protocol

Customer data		
Name:	First name:	Tel.:
Street:	Zip code:	City:
Construction project:		
Unit type:	Serial no.:	Year of construction:

Completeness			
No.	**Components**	**Version**	**Result**
1	Supply air duct	- Design as planned - Cleaning option provided	yes / no yes / no
2	Supply air vents	- Arrangement as planned - Design as planned - Cleaning option provided	yes / no yes / no yes / no
3	Overflow air vents	- Arrangement as planned - Design as planned	yes / no yes / no
4	Extract air vents	- Arrangement as planned - Design as planned - Cleaning option provided	yes / no yes / no yes / no
5	Extract air duct	- Cleaning option provided	yes / no
6	Extract air fan	- Cleaning option provided	yes / no
7	Control / regulation system	- Operational	yes / no
8	Filter, optional	- Replacement or cleaning option provided	yes / no
9	Heat exchanger for waste heat recovery	- Cleaning option provided	yes / no
10	Documentation	- Available	yes / no
Function			
1	Operational with rated ventilation, as planned	Result OK Action required	yes / no yes / no
2	Switching steps possible, as planned	Result OK Action required	yes / no yes / no
3	Electrical power consumption	Result OK Action required	yes / no yes / no
Note of confirmation			

Date: ..... Signature/stamp:.....
Commissioning personnel / installation technician

4.4 Air volume protocol

Customer data		
Name:	First name:	Tel.:
Street:	Zip code:	City:
Construction project:		

Unit type:	Serial no.:	Year of construction:

Measurement data		
Measuring instrument used:	Faults during measurement:	Indoor temperature:
		Outdoor temperature:

Filter status when measuring	Outdoor	Extract	Building moisture status: ..... % r.humidity without ventilation mode	Fan speed ratio Extract air / supply air: .....
clean				
approx. ... days used				
very dirty				

Supply air				Fan speed: %	
No.	Room name	Project data		Measurement data	
		m³/h	m³/s	m³/h	m³/s

Extract air				Fan speed: %	
No.	Room name	Project data		Measurement data	
		m³/h	m³/s	m³/h	m³/s

P_{el} = W

⇨ The listed measurement data must be determined in accordance with the components actually available.
⇨ Reference has been made to the hygienic requirements for operating the ventilation system.
⇨ Reference has been made to the influence of room air humidity for winter and summer operation.
⇨ To safeguard warranty claims, only original parts (e.g. filters) are allowed to be used.

Date: ..... Signatures: .....
Commissioning personnel / installation technician User

4.5 Product data sheet

Release data: 21/11/2017

Information requirement for RVUs as per EU Regulation No. 1254/2014 Heat recovery unit Zehnder ComfoSpot 50												
Supplier's name or trade mark	Zehnder Group			Zehnder Group								
Supplier's model identifier	ComfoSpot 50			ComfoSpot 50 Sensorik								
SEC [kWh/(m²a)] specific energy consumption (cold, average, warm)	-61,5	-30,1	-9,5	-73,3	-38,4	-15,7						
SEC Class	A+	B	F	A+	A	E						
Type of ventilation unit	Bidirectional RVU			Bidirectional RVU								
Type of drive installed	Multi-speed drive			Multi-speed drive								
Type of heat recovery system	Recuperative			Recuperative								
Thermal efficiency [%]	70			70								
Maximum flow rate [m³/h]	50			50								
Electric power input [W]	15			15								
Sound power level [dB(A)]	41			41								
Reference flow rate [m³/h]	35			35								
Reference pressure difference [Pa]	0			0								
SPI [W/(m³/h)]	0,23			0,23								
Control factor and typology	1 Manual control			0,65 Local demand control								
Declared maximum internal and external leakage rates [%]	Internal: 4,2			Internal: 4,2								
	External: 3,4			External: 3,4								
Mixing rate	U2			U2								
Position and description of visual filter warning	Symbolized message on control panel			Symbolized message on control panel								
Internet address for assembly and disassembly instructions	www.international.zehnder-systems.com			www.international.zehnder-systems.com								
Airflow sensitivity to pressure variations [%]	< 20			< 20								
Indoor/outdoor air tightness [m³/h]	inside to the outside: 4,4 outside to the inside:6,5			inside to the outside: 4,4 outside to the inside:6,5								
AEC [kWh/a] annual electricity consumption (cold, average, warm)	899	362	317	716	179	134						
AHS [kWh/a] annual heating energy saved (cold, average, warm)	7523	3846	1739	8245	4215	1906						

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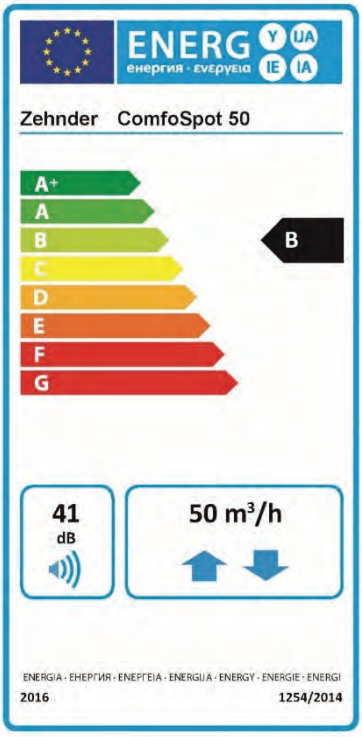
4.6 Product label

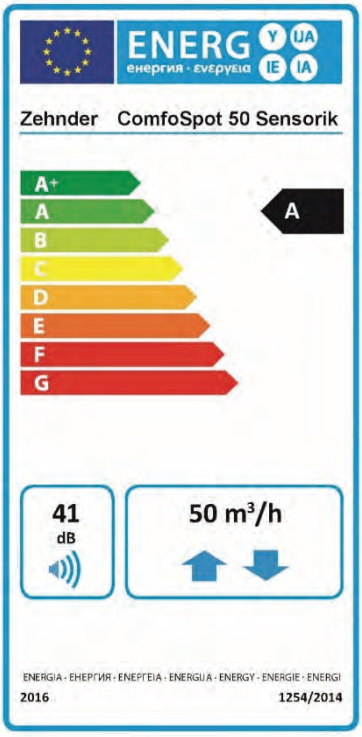
Depending on the application of the unit, there are various product labels for the ComfoSpot 50. The product label applicable for the ventilation system is based on the installation of the system and the model identifier from the product data sheet. The product label shows the following details from the product data sheet:

- Energy efficiency class for "average" climate zone
- Sound power level L_{WA} in internal spaces
- Maximum airflow volume

Standard



Sensor



4.7 Conformity

Manufacturer:

PAUL Wärmerückgewinnung GmbH
August-Horch-Straße 7
08141 Reinsdorf
Germany

EU DECLARATION OF CONFORMITY

We hereby declare that the product/series described below conforms to the relevant fundamental health and safety requirements of the applicable European Union Directives as outlined herein – both in its basic design and construction as well as in the version marketed by us – and that sole responsibility lies with the manufacturer.

Product designation: Decentralized heat recovery unit ComfoSpot 50 series

Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

Applied standards:

EN 60335-1:2012 + AC:2014 + A11:2014 Household and similar electrical appliances - Safety – General requirements

EN 60335-2-40:2003 + A11:2004 + A12:2005 + A1:2006 + A13:2012/AC:2013 + A13:2012 + A2:2009 + AC:2006 + AC:2010 Household and similar electrical appliances - Safety / Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

Applied standards:

EN 61000-6-1:2007 Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments

EN 61000-6-3:2007 + A1:2011/AC2012 + A1:2011 Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments

EN 55011:2009 + A1:2010 Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement

Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of
ecodesign requirements for energy-related products

Applied standards:

DIN EN 13141-8:2014 Performance testing of components/products for residential ventilation – Part 8: Performance testing of non-ducted mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for a single room

Further applied standards:

EN ISO 12100:2010 Safety of machinery – General principles for design – Risk assessment and risk reduction

EN ISO 3741:2010 Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Precision methods for reverberation test rooms

EN ISO 15186-2:2010 Acoustics – Measurement of sound insulation in buildings and of building elements using sound intensity – Part 2: Field measurements

EN ISO 717-1:2013 Acoustics – Rating of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation

Signed for and on behalf of:

Reinsdorf, 12/09/2017

Michael Pitsch
Managing Director

PDE-Manual_CS50_V1.8_V1117,EN, subject to change

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