STIEBEL ELTRON
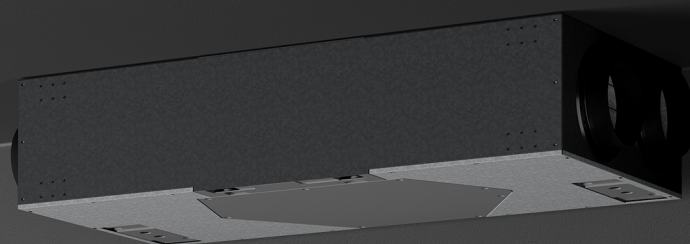
VRC-C 450 Trend
VRC-C 450 E Trend

Central ventilation unit with
heat recovery | 2

Table of contents

1 Special information

– Observe all applicable national and regional regulations and instructions during installation.

– The appliance may be used by children over 8 years of age and persons with reduced physical, sensory or mental capabilities or a lack of experience and expertise, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the potential risks. Children must never play with the appliance. Cleaning and user maintenance must not be carried out by children without supervision.

– To prevent injury and damage, only contractors authorised by the manufacturer may replace the power cable. Use an original spare part.

2 General information

▶ Read these instructions carefully before using the appliance and retain them for future reference.

2.1 Symbols in this document

Symbol	Meaning
!	This symbol indicates possible property damage, equipment damage, consequential damage or environmental damage.
i	General information is indicated by the adjacent symbol.
▶	This symbol indicates that you have to do something.
✓	This symbol indicates that you must fulfil certain prerequisites before you perform the following steps.
⇨	This symbol indicates a result or intermediate result.
□□■	These symbols show you the software menu level (in this example level 3).
[▶ 11]	This symbol indicates a reference to the corresponding page number (page 11 in this example).

2.2 Symbols on the appliance

Symbol	Meaning
	Outdoor air
	Exhaust air
	Extract air
	Supply air

2.3 Units of measurement

All measurements are given in mm unless stated otherwise.

2.4 Test mark

See type plate on the appliance.

2.5 Standardised output data

Information on determining and interpreting the specified standardised output data.

EN 13141-7

The output data specifically mentioned in text, diagrams and technical datasheets has been calculated according to the test conditions of the standard shown in the heading of this section.

Generally, the test conditions stated above will not fully match the conditions found at the installation site of the system user. Depending on the chosen test method and the extent to which this method differs from the test conditions defined in the first paragraph of this section, any deviations can be considerable. Additional factors that have an influence on the test values are the measuring equipment, the system configuration, the age of the system and the flow rates.

Confirmation of the specified output data can only be obtained if the test conducted for this purpose is also performed in accordance with the test conditions defined in the first paragraph of this section.

2.6 Target groups

Operator

Person without specialist expert knowledge

Qualified heating contractor

Person with specialist expert knowledge in the following areas: heating technology, heating media, building services and engineering, ventilation and air conditioning technology, measuring technology, heat pump technology, environmental technology, occupational safety and fire safety

Qualified electrical contractor

Person with specialist expert knowledge in the following areas: electrical engineering, measuring technology, occupational safety and fire safety

Apprentice

Apprentices may only carry out the assigned tasks under professional supervision and instruction.

Professional qualification

Subject to local regulations, a training course, a higher education qualification or further development training will be required.

Gender-sensitive documentation

We endeavour to follow language changes and use gender-aware linguistic form without compromising fluency. We aim to recognise, include and speak to all genders in our documentation.

3 Safety

3.1 Structure of the warning notices

3.1.1 Section-specific warning notices

Section-specific warning notices apply to all steps in the section.

Injury

CAUTION
⚠ **Type and source of risk** Consequence(s) of failure to observe the warning notice ▶ Hazard prevention measure(s)

Property damage, consequential losses, environmental pollution

NOTICE
ⓘ **Type and source of risk** Consequence(s) of failure to observe the warning notice ▶ Hazard prevention measure(s)

3.1.2 Embedded warning notices

Embedded warning notices apply only to the step immediately following the notice.

▶ **SIGNAL WORD: Consequence(s) of failure to observe the warning notice. Hazard prevention measure(s).** Step to which the warning notice refers

3.1.3 Key to symbols

Symbol	Type of risk
⚠	Injury
⚡	Electrocution
♨	Burns, scalding

3.1.4 Signal words

Signal word	Meaning
DANGER	Failure to observe this information will result in death or serious injury.
WARNING	Failure to observe this information may result in death or serious injury.
CAUTION	Failure to observe this information may result in moderate or minor injury.
NOTICE	Failure to observe this information may result in property damage, consequential losses or environmental damage.

3.2 Intended use

The appliance is designed as a mechanical ventilation unit with central supply and extract air routing.

The appliance is intended for domestic use. It can be used safely by untrained persons. The appliance can also be used in non-domestic environments, e.g. in small businesses, as long as it is used in the same way.

Observation of these instructions and of instructions for any accessories used is also part of the intended use of this appliance.

NOTICE
ⓘ **Misuse of the appliance by third parties** As the system operator, you must restrict physical access to the appliance and all connected programming units to a suitable and authorised group of people, in order to prevent misuse of the appliance (e.g. unwanted remote control or complete takeover of the appliance by third parties).

3.3 Foreseeable misuse

Any other use beyond that described shall be deemed to be outside the intended use.

The appliance is not designed for installation in the open air.

Cooker hoods and vented tumble dryers must not be connected to the ventilation system.

3.4 Safety instructions

Injury
- Only qualified contractors are permitted to carry out installation, commissioning, maintenance and repair work on the appliance.
- If you work on the appliance while it is still live, you may get an electric shock. Disconnect the appliance from the power supply before working on it.
- If there is a radio or police announcement ordering windows and doors to be kept closed, switch the "Enable fan" parameter in the "Settings" menu to "Off". Once the risk has passed, switch the "Enable fan" parameter back to "On". If the fans are switched off for a long period, humidity protection cannot be guaranteed.
- Unsuitable spare parts and accessories may jeopardise user and appliance safety. Only use original spare parts and original accessories.
- Opening the casing while the appliance is in operation may cause injury. Only operate the appliance with the casing closed.
- Observe all country-specific fire prevention regulations and requirements concerning the installation of ventilation systems. In Germany, these are particularly the building regulation guideline on fire prevention requirements of ventilation systems in its applicable version.

Property damage, consequential losses, environmental pollution
- Polluted ambient air can damage the appliance. Protect the appliance from dust and dirt during building work.
- Poor air quality can damage the appliance. Keep the appliance installation site free from air contaminated with oil or salt (chloride). Keep the installation site free from corrosive and explosive substances. Avoid contaminating the installation site with dust, hairspray or substances containing chlorine or ammonia.
- Changes in air flow rates may cause positive or negative pressure in the rooms. If combustion equipment is operating at the same time, combustion exhaust gases can enter the combustion equipment installation room. Never adjust the settings of supply and extract air vents inside the rooms. These have been set up by a qualified contractor during commissioning.

3.5 Operation of the appliance in buildings with combustion equipment (qualified contractors)

The term "combustion equipment" includes, for example, tiled stoves, fireplaces and equipment with gas combustion.

Ventilation units can generate negative pressure in the dwelling. If combustion equipment is operating at the same time, combustion exhaust gases can enter the combustion equipment installation room.

▶ It is therefore important to observe the following points when operating a ventilation unit simultaneously with combustion equipment.

The planning, installation and operation of the ventilation unit and combustion equipment must be carried out in accordance with national and regional regulations.

We recommend installing and regularly maintaining a carbon monoxide detector in accordance with EN 50291 for operation of any combustion equipment.

3.5.1 Planning safety measures

Together with the relevant authorities, engineers plan the safety measures that are required for simultaneous operation of a ventilation unit and combustion equipment.

Alternate operation

Alternate operation means that, when the combustion equipment is commissioned, the mechanical ventilation system is switched off and/or cannot be started. Alternate operation must be ensured by appropriate measures, e.g. automatically enforced shutdown of the ventilation unit.

Simultaneous operation

Do not use differential pressure switches in which the pressure differential between the outdoor air pressure and the pressure in the combustion equipment installation room serves as a response criterion. A fault can arise from excessively frequent switching.

For simultaneous operation of combustion equipment and a mechanical ventilation system, we recommend choosing approved room sealed combustion equipment (in Germany, with DIBt approval).

If open flue combustion equipment is operated in the dwelling at the same time as a ventilation unit, combustion exhaust gases must be prevented from penetrating the home as a result of possible negative pressure in the room.

The ventilation unit may only be operated in combination with intrinsically safe combustion equipment. This combustion equipment has, for example, a draught hood or an exhaust gas monitor and is approved for operation in conjunction with ventilation units.

Alternatively, external, tested safety equipment can be connected to monitor the operation of the combustion equipment. For example, you can install differential pressure monitoring to monitor the chimney draught and to switch off the ventilation unit in the event of a fault.

The equipment for differential pressure monitoring must fulfil the following requirements:
- Monitoring of the differential pressure between the connection piece to the chimney and the room where the combustion equipment is installed.
- Possibility of matching the shutdown value for the differential pressure to the minimum draught requirement for the combustion equipment
- Floating contact to switch off the ventilation function

- Option to connect a temperature capturing device to ensure that differential pressure monitoring is enabled only when the combustion equipment is in operation, and that unwanted shutdowns due to environmental influences are prevented

3.5.2 Commissioning in buildings with combustion equipment

When commissioning the ventilation unit, it is important to check and document in the commissioning log that combustion exhaust gases are not penetrating the dwelling in a quantity that is harmful to health.

Commissioning in Germany

Acceptance is carried out by the local flue gas inspector.

Commissioning outside Germany

Acceptance must be carried out by a specialist. In case of doubt, you must involve an independent expert in the acceptance procedure.

3.5.3 Maintenance of the combustion equipment

Regular maintenance of the combustion equipment is obligatory. Maintenance includes checking the exhaust gas extraction system, the free pipe cross-sections and the safety equipment. The qualified contractor responsible must verify that there is a sufficient flow of combustion air.

4 Appliance description

4.1 Standard delivery
- 1× condensate hose
- 1× hose clip
- 1× mounting bend
- Programming unit (with wall mounted enclosure) FEB 2.1

4.2 Accessories

You can obtain ventilation pipes, extract air and supply air vents and similar accessories from us.

4.2.1 Optional accessories
- Programming unit (with wall mounted enclosure) FEB 2.1
- Electric preheating coil: PTC heater C450
- LWZ-W 600 Leitung Unterdr.Sicherheitsab.: Adaptor cable for negative pressure safety cut-off switch
- WLAN module WLAN VRC .1

The WLAN module is not yet available in China.

4.2.2 Maintenance accessories
- Replacement filter set (see chapter *Filter [▶ 21]*)

4.3 Function description

The appliance draws in outdoor air with a fan. A second fan withdraws extract air from rooms that are subject to odours or moisture, e.g. kitchen, bathroom, WC. The extract air and outdoor air are routed through separate air ducts. The extract air and outdoor air are each passed through a filter.

The extract air and outdoor air flow through a cross-countercurrent heat exchanger. Heat is recovered from the extract air and transferred to the outdoor air. This enables a large proportion of thermal energy to be recovered.

Operating mode	Fan setting	Description
Humidity protection	0	Necessary ventilation to ensure that the building structure is protected under normal conditions of use with somewhat reduced moisture loads, e.g. during temporary absence of the user and no drying of washing in the residential unit
Reduced ventilation	1	Reduced ventilation is the ventilation necessary to meet hygiene standards and ensure protection of the building structure (moisture level) under normal conditions of use with partially reduced moisture and pollutant loads, e.g. due to temporary absence of the user.
Standard ventilation	2	Standard ventilation is the ventilation necessary to meet hygiene standards and ensure protection of the building structure when users are present.
Intensive ventilation	3	Intensive ventilation is ventilation at a higher flow rate to reduce load peaks, e.g. for rapid ventilation during or after a party. You can switch on intensive ventilation with the programming unit or with an optionally connectible external pushbutton.
Time program mode	0 - 2	Time controlled fan program with separately adjustable fan settings

Flow rate control

The qualified contractor sets the air flow rate for each fan setting during commissioning. Constant flow rate control ensures that the air flow rates through the supply air and extract air fans are achieved irrespective of the duct pressure.

4.3.1 Frost protection

The appliance has a frost protection controller, which ensures that it continues to work even at low outside temperatures.

A preheating coil can be integrated into the appliance as an accessory.

If the outdoor air temperature falls below the selected frost protection value, the integral electric preheating coil is switched on. This prevents the cross-countercurrent heat exchanger from freezing up. The integral electric preheating coil is referred to in these instructions simply as the "preheating coil". When the preheating coil is active, the "Frost protection" symbol appears on the display.

If there is a drop below the outside temperature limit, the appliance reduces the air flow rate. A preheating coil shifts the limit to a lower outside temperature range.

The frost protection function protects the appliance from frost, not the building.

4.3.2 Bypass mode

The appliance does not have a built-in bypass damper. As a bypass function, the appliance switches off the supply air fan.

Utilising cool outdoor air

Cool, fresh air is required on summer nights in particular. In such cases, in automatic mode, as much of the warm air in the home as possible is displaced by cooler fresh air. This function is also referred to as passive cooling.

Utilising warm outdoor air

In spring and autumn, the appliance can increase the room temperature by opening the bypass damper in automatic mode and drawing warmer outdoor air into the building.

4.4 WLAN

To operate the appliance via WLAN and app, you need our WLAN module as an accessory.

The WLAN module is not yet available in China.

4.4.1 App

Using the app you can pair the WLAN module with your mobile device.

The app is available for iOS® and Android®.
- MyStiebel

Once pairing is completed, you can use the app to control a number of functions that would normally be controlled with the ventilation appliance's programming unit.

4.4.2 Conditions

Router requirements
- Supported encryption:
  - WPA™ PSK
  - WPA2™ PSK
  - WPA3™ PSK
- Port 443 must be open

Mobile device requirements
- Check in the Apple App Store® or Google Play Store™ that your mobile device meets the requirements specified for the app.

General requirements
- You accept the app's conditions of use.
- Internet access is available
- Company networks are not supported.
- Do not pair the WLAN module with unsecured or public networks.
- Do not use WLAN guest access for the pairing. Some WLAN networks with guest access do not allow the pairing of WLAN modules with mobile devices.

5 Transportation (qualified contractors)

- The appliance casing is not designed to withstand strong forces.
- ▶ Protect the appliance against heavy impact during transport.
- ▶ If the appliance is transported without packing and without using a pallet, take care not to damage its outer casing.

6 Installation (qualified contractors)

6.1 Installation site

The discharged cold air can cause condensation to be formed in the vicinity of the air discharge.

- ▶ At low temperatures, ensure that there is no risk of slipping due to wet conditions or ice formation on adjacent footpaths and driveways.

The installation site must fulfil the following requirements:
- Free from the risk of frost
- Sufficient load bearing capacity (for weight of the appliance, see chapter *Data table [▶ 29]*)

A plasterboard or metal framed wall is inadequate. Additional measures such as a double skin or additional supports are needed in such cases.

The installation room must have an adequate condensate drain with siphon.

The type and location of the outside air intake must ensure that the least polluted outdoor air in the area of the building and surroundings is drawn in.

- ✓ The outside air intake for controlled mechanical ventilation must be at least the following height above ground level: 700 mm.
- ▶ In addition, you must observe the minimum suction height from the standard applicable to you.
- ▶ Avoid outdoor air intake in locations with polluted air:
- – car parks and roads
- – under bushes and trees
- – in the proximity of waste containers
- – locations contaminated with microorganisms, dust or ash

6.2 Unpacking the appliance

- ▶ Remove the packaging.
- ▶ Put the accessories supplied aside for use later.

6.3 Installation versions

	VRC-C 450 Trend	VRC-C 450 E Trend
Installation below the ceiling	x	x
Wall mounted installation	-	x

VRC-C 450 E Trend: Permissible installation position for wall mounting

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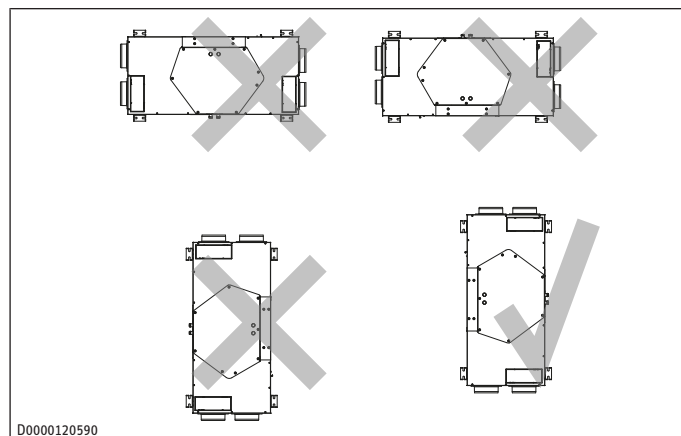
6.4 Minimum clearances

Installation below the ceiling
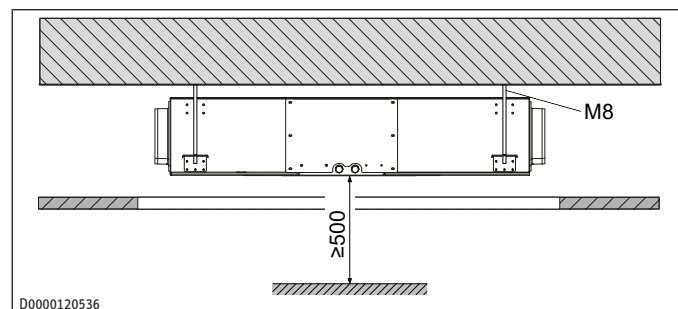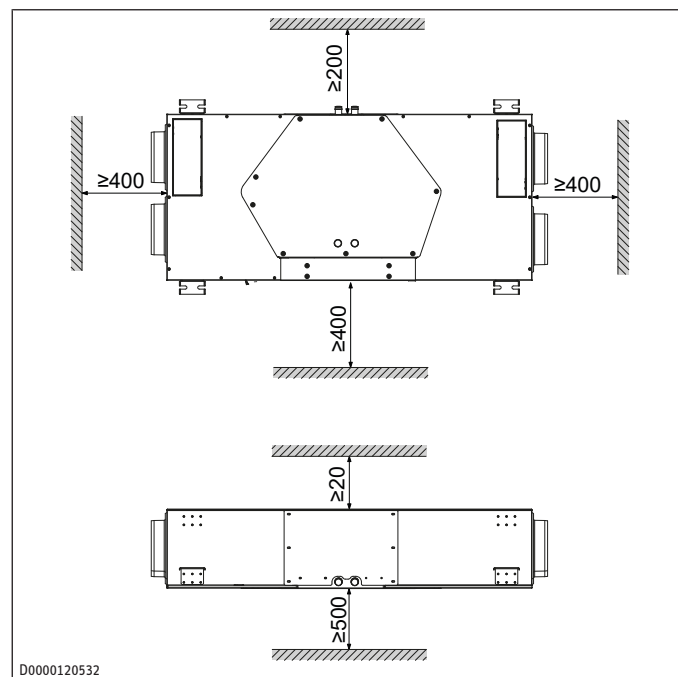
D0000120532

D0000120536

Ensure that the appliance is accessible for filter replacement and maintenance. Fit a flap (600 × 1420 mm) beneath the appliance or design the suspended ceiling in such a way that it is removable under the appliance.

Wall mounted installation
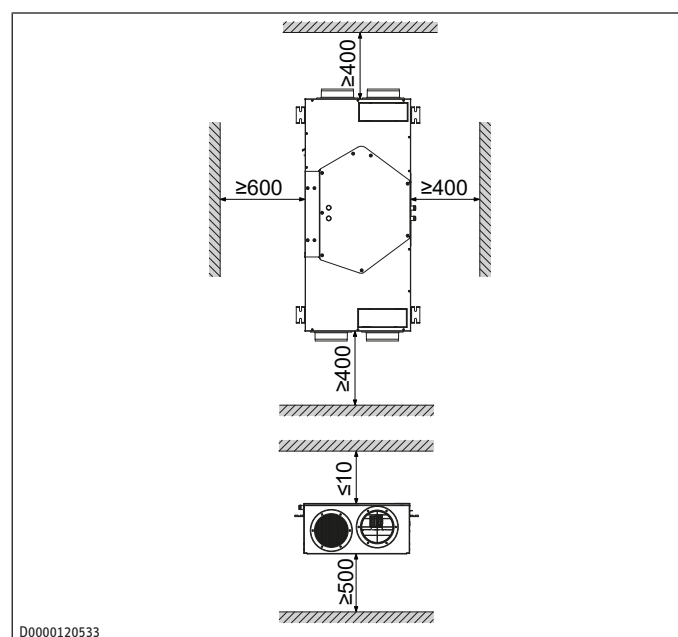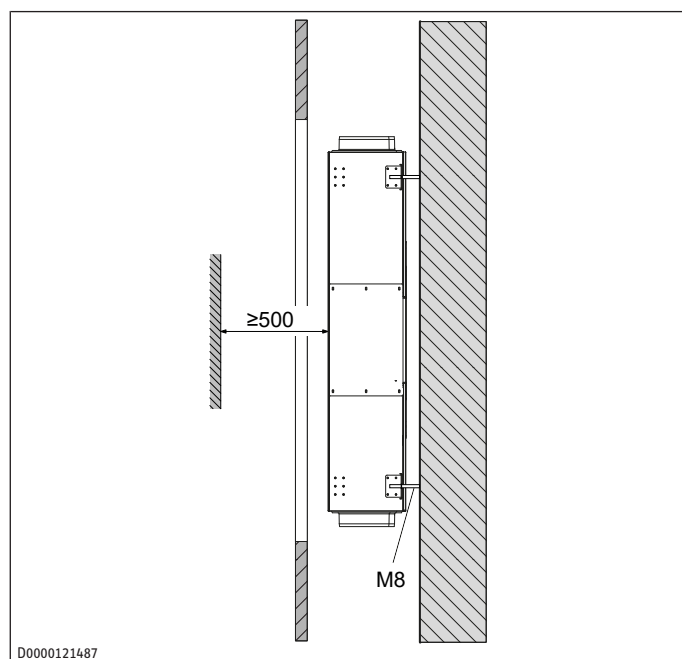
D0000120533

D0000121487

Ensure that the appliance is accessible for filter replacement and maintenance. Fit a flap (600 × 1370 mm) in front of the appliance.

6.5 Mounting the appliance

The filter cassettes are located at the bottom of the appliance.

▶ Check whether the ceiling or wall can bear the weight of the appliance.

▶ Install the appliance before mounting the ceiling panels of the suspended ceiling.

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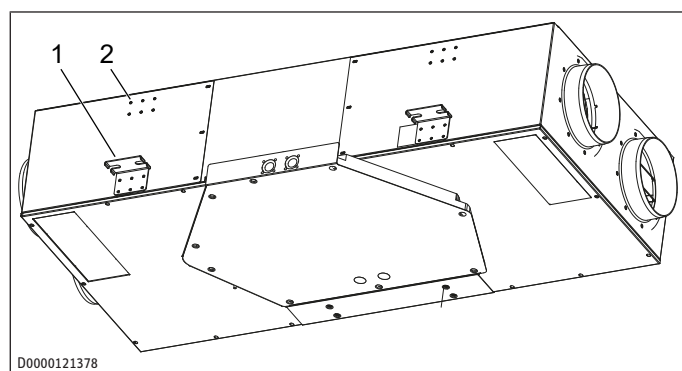
1 Appliance mount	2 Position for appliance mount for wall mounting

▶ If you are mounting the appliance on the wall, first fit the appliance mounts to the new position on the appliance.

▶ Drill holes in the ceiling or wall for mounting the appliance with threaded pins or hanger bolts.

▶ Fit the following parts onto each threaded pin in the sequence described.

Installation below the ceiling

D0000121452
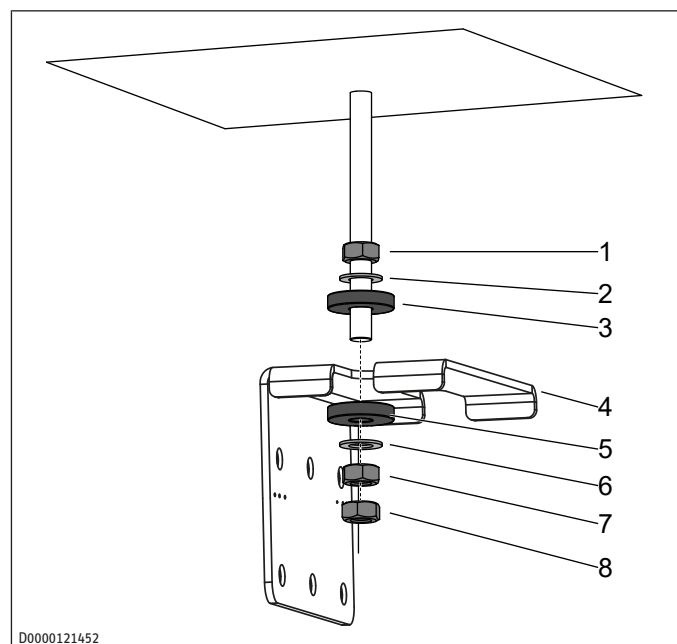
1	Nut	2	Washer
3	Anti-vibration mount	4	Appliance mount
5	Anti-vibration mount	6	Washer
7	Nut	8	Nut (lock nut)

Wall mounted installation

D0000121453
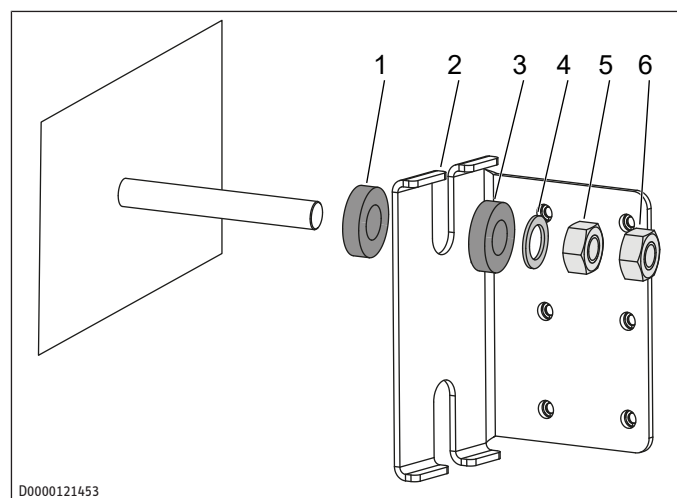
1	Anti-vibration mount	2	Appliance mount
3	Anti-vibration mount	4	Washer
5	Nut	6	Nut (lock nut)

Aligning the appliance

▶ Use a spirit level to check that the appliance is straight.

▶ Level the appliance horizontally by turning the nuts.

6.6 Connecting the condensate hose

<table>
<tr><td colspan="2" align="center">NOTICE</td></tr>
<tr><td>!</td><td>Property damage
Condensate escaping in an uncontrolled manner can damage the floor or items in the vicinity of the unit.

▶ Do not kink or twist the condensate hose during fitting.

▶ Arrange the condensate hose with a minimum fall of 10 %.</td></tr>
</table>

NOTICE

Property damage

The weight of the condensate hose and condensate pump must not exert a leverage effect on the appliance "Condensate drain" connection. This could cause the „Condensate drain" connection to leak or break off.

▶ Secure the condensate hose, e.g. to the ceiling.

If installing appliances with enthalpy heat exchangers below the ceiling, you do not need to connect a condensate hose to the long side of the appliance.

The appliance is equipped with two condensate connections. Connect a condensate hose to both condensate connections. When warm humid air meets cold surfaces, condensation can result. For example, condensation can form on the exhaust air side when the outside temperature is low in winter. The second condensate connection is required in locations with a tropical outdoor climate (humid air and high outdoor temperatures).

The condensate hose may contain only one siphon. The condensate must be able to drain freely downstream of the siphon.

▶ Drain the condensate into the domestic sewer system.

The pipes of the domestic sewer system must not rise downstream of the siphon. The condensate drain must be free from the risk of frost.

A float switch prevents condensate from reaching live parts in the unit. If the condensate hose is installed incorrectly, the float switch cannot prevent the uncontrolled leakage of condensate.

To ensure the unit is airtight, there may be no interruption in the condensate drain between the unit and the trap. Use the condensate hose and mounting bend supplied as standard delivery.

▶ Remove the condensate seal from connection "Condensate drain".

▶ **NOTICE: Prevent air from being drawn in through the condensate drain.** Install the condensate hose in such a way as to create a siphon with a water trap height of at least 80 mm.

▶ Fill the siphon with water.

▶ Secure the external hose to connection "Condensate drain" with the hose clip.

6.7 Pipe bend with condensate drain

If the appliance is mounted vertically on the wall, the "extract air" connection must be replaced with a pipe bend with condensate drain.
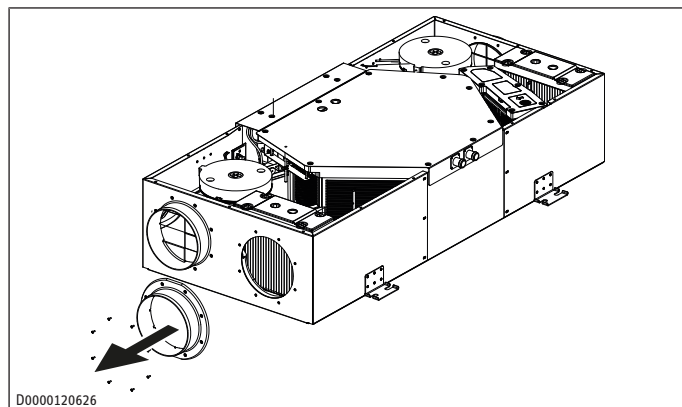
▶ To remove the "extract air" connection, undo the screws.

▶ Remove the "extract air" connection and its gasket.
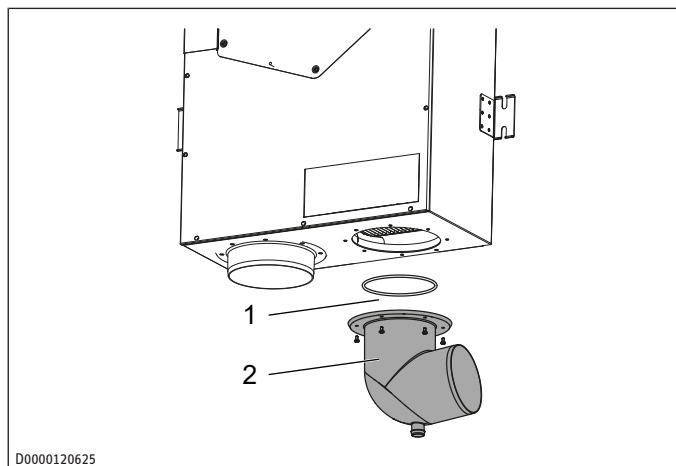
1 O-ring   2 Pipe bend with condensate drain

▶ Check that the preassembled O-ring is seated correctly to ensure that it seals the pipe bend to the appliance.

▶ Attach the pipe bend to the extract air opening on the appliance with screws.

Connecting the condensate hose

The condensate hose may contain only one siphon. The condensate must be able to drain freely downstream of the siphon.

▶ Drain the condensate into the domestic sewer system.

The pipes of the domestic sewer system must not rise downstream of the siphon. The condensate drain must be free from the risk of frost.

To ensure the unit is airtight, there may be no interruption in the condensate drain between the unit and the trap. Use the condensate hose and mounting bend supplied as standard delivery.
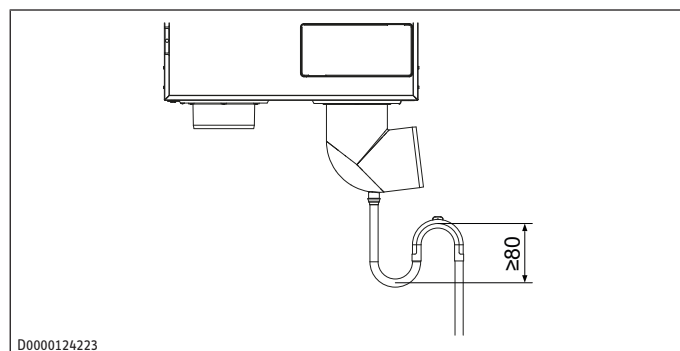
▶ Prevent air from being drawn in through the condensate drain. Install the condensate hose in such a way as to create a siphon with a water trap height of at least 80 mm.

▶ Fill the siphon with water.
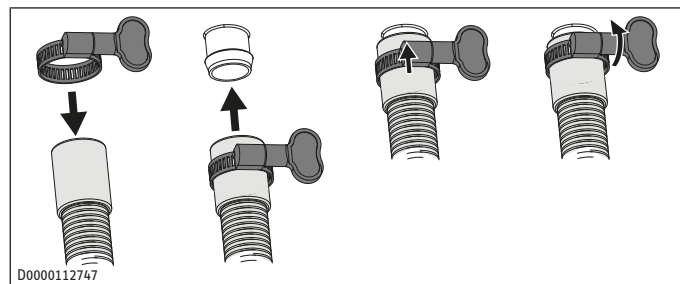
▶ Secure the condensate hose to the condensate drain of the pipe bend using the hose clip provided.

6.8 Installing the programming unit

If the air quality in specific zones or rooms is intended to affect the operation of the ventilation unit, install the programming unit in these rooms and activate the environment sensor.

The length of the bus cable between the programming unit and ventilation unit must not exceed 20 m.

Route a 4-core bus cable from the ventilation unit to the mounting position of the programming unit. Use a screened electronic cable such as LiYCY 2x2x0.8 mm². Do not route the cable parallel to a three-phase cable.

The BUS cable must protrude 20 to 30 cm out of the wall to allow installation.

Remove programming unit from the wall mounted enclosure

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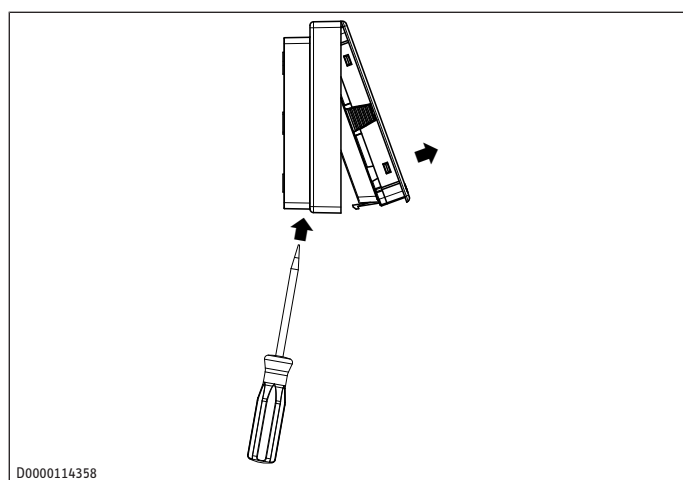
▶ Release the locking tab found in the opening on the underside of the wall mounted enclosure. Press the locking tab with a screwdriver.

Installation with a flush box

For securing to a wall we recommend using a flush box, which can hold the part of the bus cable protruding from the wall.

▶ Make sure that the screws supporting the flush box are arranged either vertically or horizontally opposite one another.

▶ Route the bus cable through the aperture in the wall mounted enclosure from the back.

Installation without a flush box

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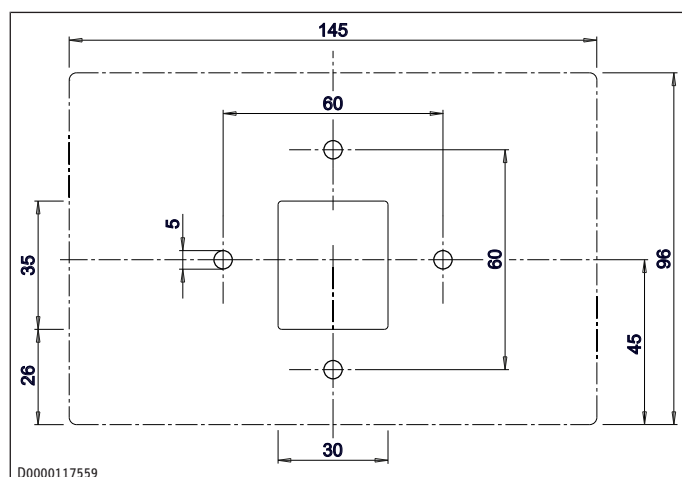
▶ To secure the wall mounted enclosure, drill four holes (Ø 5 mm).

▶ When routing the BUS cable, be careful not to damage the cable when drilling the fixing holes.

In the area around the cable entry (behind the wall mounted enclosure), a reservoir needs to be made to hold 20 to 30 cm of data cable.

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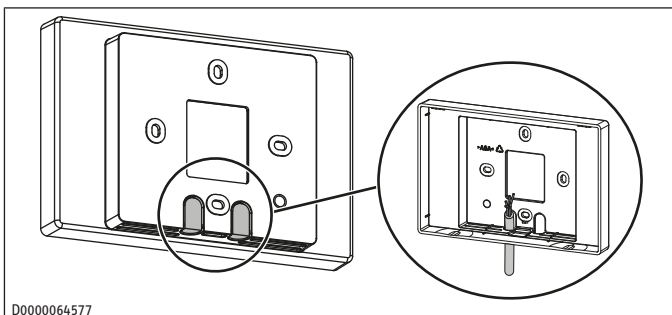
▶ Break out one of the knock-outs in the wall mounted enclosure.

▶ Route the bus cable through the aperture from the back.

Installing the wall mounted enclosure

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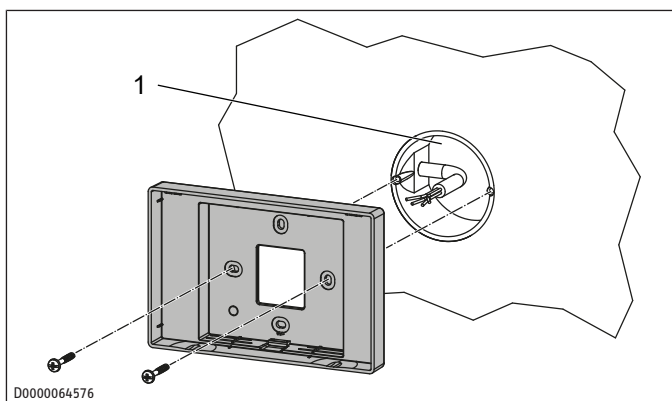
1 Flush box

▶ Secure the wall mounted enclosure to the flush box or to the wall using the screws provided.

Electrical connection

▶ Connect the bus cable to the ventilation unit. See chapter *Connections in the control panel* [▶ 12].

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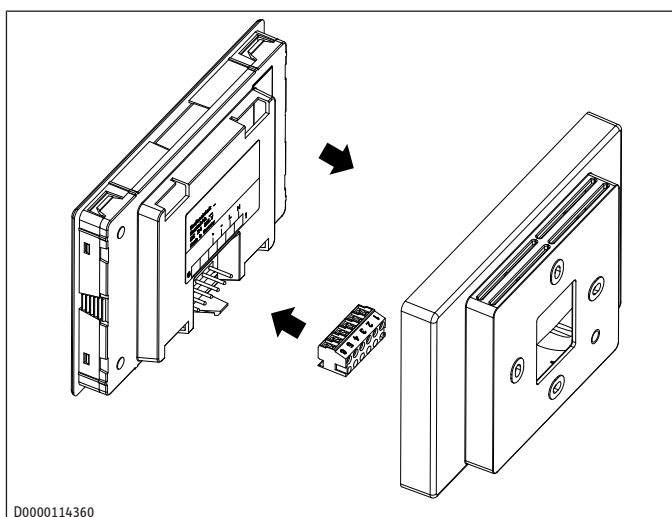
▶ Connect the bus cable to the female connector.

6-pin female connector	Safety extra low voltage
1	Not assigned
2	Not assigned
3	GND
4	+5 V DC
5	SDA
6	SCL

▶ Connect the female connector to the back of the programming unit.

Completing the installation

▶ Carefully push the programming unit into the wall mounted enclosure until it engages.

6.9 Air ducts

> **NOTICE**
>
> ⚠ **Property damage**
>
> Objects in the airflow can damage the fans.
>
> ▶ During installation, ensure that no metal swarf enters the pipework.

▶ Remove any contamination.

▶ For installation, use materials that can be obtained from us.

6.9.1 Insulation against condensation

> **NOTICE**
>
> ⚠ **Property damage**
>
> When warm air meets cold surfaces, condensation can result.
>
> ▶ For outdoor air and exhaust air ducts, use vapour proof thermally insulated pipes.
>
> ▶ In unheated rooms, insulate the supply and extract air ducts.

6.9.2 Connecting air ducts to the appliance

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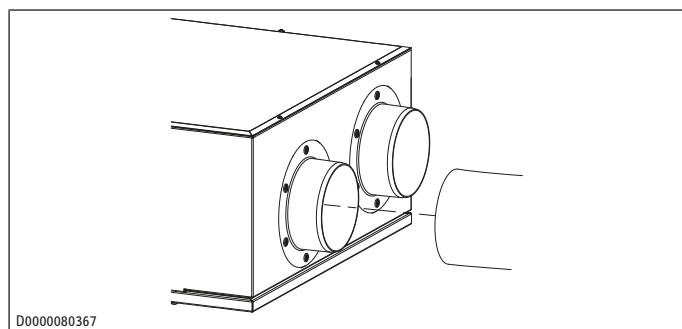
▶ Make an airtight connection between the air duct and the appliance, e.g. with a twin nipple.

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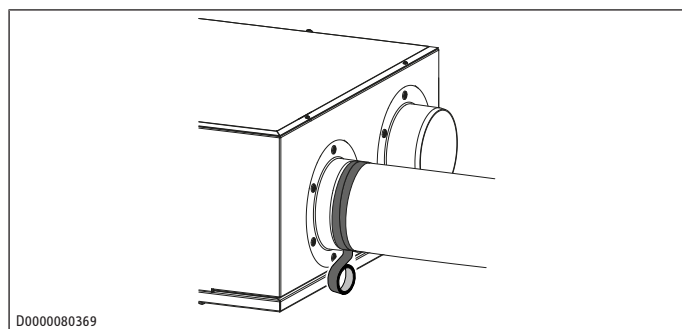
▶ Secure the air duct at the appliance air duct connection with self-adhesive aluminium sealing tape.

6.9.3 Sound reduction

▶ To prevent structure-borne sound transmission, ensure a flexible connection between the appliance and the air duct.

▶ To minimise noise from the appliance, fit silencers to the supply air and extract air ducting in the immediate vicinity of the appliance.

▶ To prevent sound transmission in the air ducting, fit inline silencers at appropriate points in a sequential distribution system or, in a star distribution system, on individual spokes of sufficient length.

▶ To keep the noise level low, design the system to keep the air flow rate per fan as low as possible. If necessary, install several fans each with their own inlet ducts.

6.9.4 Overflow apertures

Living rooms and bedrooms are only supplied with air. Air is only extracted from rooms where odours and moisture are generated. Ensure an unimpeded overflow and consequently air balancing.

▶ Fit ventilation grilles in internal doors or walls, or increase the air gap below the door to ≥ 8 mm to ensure an unimpeded air flow.

6.9.5 Cleaning apertures

▶ Fit cleaning apertures when installing the air ducts, so that the air ducts can be inspected and cleaned at regular intervals.

Cleaning apertures such as those on air distributors must be accessible for regular cleaning.

6.9.6 External wall outlets

▶ Position the air intakes on the building such that the air drawn in is not heavily polluted. Avoid drawing in dust, soot, odours, flue or exhaust gases, microorganisms and ash.

▶ Prevent short circuits between exhaust air and outdoor air. Position the external wall outlets and intakes around a corner from one another. If the outdoor air intake and the exhaust air outlet are on the same side of the building, there must be a minimum of 2 m between them. If this is impossible, create a separation between the air streams, e.g. by means of a separating wall or shrubs between the outdoor air intake and exhaust air outlet.

▶ Never install the apertures facing towards neighbouring living room or bedroom windows.

6.9.7 Supply and extract air vents

For living space, supply and extract air vents are provided for installation in a wall or ceiling.

In kitchens, install the extract air vents as far as possible from the cooker hob.

Supply air and extract air vents must be installed and set up in accordance with the manufacturer's instructions.

6.10 Electrical connection

WARNING

Electrocution

Electrical connection work must only be carried out by a qualified contractor and in accordance with these instructions. Incorrect electrical connection and installation work can lead to serious injury due to electrocution.

▶ Carry out all electrical connection and installation work in accordance with national and regional regulations.

NOTICE

Overvoltage

Overvoltage can cause damage to the appliance, and may destroy it.

▶ Ensure that the voltage specified on the type plate conforms with the mains power supply.

WARNING

Electrocution

The connection to the power supply must be in the form of a permanent connection. Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.

Power supply

The appliance is delivered with a power cable without plug.

▶ Connect the power cable to the power supply.

6.10.1 Connections on the control panel

Programming unit, connectivity

▶ Connect the programming units to this terminal.

X11.1	SDA
X11.2	+5 V
X11.3	GND
X11.4	SCL

6.10.2 Connections in the control panel

When routing the power cable, ensure a watertight fit where it passes through the cable grommet.

▶ Undo the screws of the control panel cover.

▶ Carefully remove the control panel cover.

▶ Connect the cable in accordance with the wiring diagram. See chapter *Wiring diagram [▶ 26]*.

Negative pressure safety cut-off switch

X30	A jumper is factory-fitted. Mains voltage is present at this terminal.

▶ To connect safety equipment, replace the jumper with the adaptor cable available as an accessory.

▶ Connect the adaptor cable to the safety equipment.

Closing the control panel

▶ Screw the control panel cover to the unit.

7 Operation

7.1 Programming unit

Two programming units can be connected to the appliance.

7.1.1 Display

D0000064711
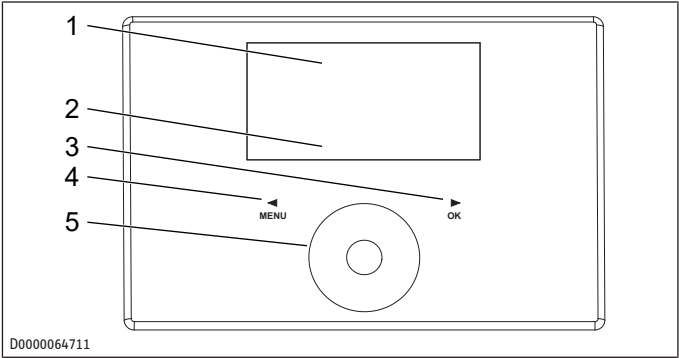
1	Text field	2	Appliance status symbols
3	"OK" button	4	"Menu" button
5	Touch-Wheel		

If you do not perform any settings for a while, the display illumination switches off and the home screen appears.

▶ Press any button to switch the backlighting on.

7.1.2 Symbols

Symbol	Meaning
0	**Time program mode** The set fan program is active. Depending on the setting, the unit is operated at various fan settings. The number indicates the fan setting.
1	
2	
	Intensive ventilation The unit runs at the highest fan setting for the set period of time.
	Filter change Change the filters when this symbol appears.
	Fault The symbol is displayed permanently in the event of faults that do not impair the basic function of the appliance.
	Bypass mode The unit switches the supply air fan off.
	Frost protection This symbol is displayed as soon as the frost protection function is active. Appliances with a preheating coil switch on the preheating coil. Appliances without a preheating coil reduce the air flow rate. If the symbol flashes, ventilation has been deactivated on the basis of the frost protection strategy.
	Fan disabled The symbol is displayed if the "Enable fan" parameter is set to "Off".
	Holiday program The set holiday program is active.

7.1.3 WLAN symbol

To operate the appliance via WLAN and app, you need our WLAN module as an accessory.

	Meaning
(WLAN symbol)	
permanently on	The WLAN module is connected to the home network.
Flashing slowly	Pairing mode activated
No symbol visible	Not connected

7.1.4 Controls

	Meaning
"Menu" button	Press this button for approx. one second to call up the menu from the home screen.
	Within the menu, press this button to go back one menu level at a time.
	When setting a parameter value, press this button to exit setting of the parameter. Any changes made will not be saved in this case.
"OK" button	Pressing the "OK" button within the menus confirms the selected parameter and takes you to the next menu level down.
	In order to set the parameter, you must first make it editable by pressing the "OK" button. Then you can change the value with the Touch-Wheel.
	Once you have set the parameter, confirm your entry with the "OK" button.
Touch-Wheel	From the home screen, you can select the following modes by turning the Touch-Wheel.
	▶ Confirm the selection with OK.
	Use the Touch-Wheel to select a parameter or value in the menu.
	If you turn the Touch-Wheel quickly, the increment size changes after a while.

Gloves, wet hands or moisture on the touch-sensitive operating controls make it more difficult to make entries.

7.2 Principles of operation

▶ Press the "Menu" button to access the menus from the home screen.

▶ Turn the Touch-Wheel to move to the next parameter.

▶ Press "OK" to change the value of the parameter displayed.

▶ Adjust the value with the Touch-Wheel.

▶ Press "OK" to save the selected value. If you do not confirm the change with the "OK" button, the change will not be saved.

If you do not make any changes for a while, the display automatically switches from the menu structure back to the home screen. Parameter changes made before this which had not yet been confirmed with OK are lost.

If the Touch-Wheel and buttons are not used for a while, the programming unit is locked.

▶ Touch the "Menu" button for 3 seconds to unlock the programming unit.

7.3 Modes that can be set from the home screen

Activating humidity protection

▶ On the home screen, turn the Touch-Wheel until "Humidity prot." appears.

⇨ Humidity protection control is active. The humidity of the extract air is measured and if it is high, the unit starts to ventilate.

Selecting the fan setting

▶ Select fan setting "Stage 1" or "Stage 2" using the Touch-Wheel.

⇨ The selected fan setting is active.

Activating time program mode

If you switch the unit to time program mode, a fan program must be entered in the "Programs" menu. Otherwise the unit continues to run without a time limit at fan setting 2.

The "Time program mode" symbol indicates that the fan program is activated.

▶ If the fan program is not activated, select "Time program mode".

⇨ The "Time program mode" symbol appears on the display.

Switching on intensive ventilation

▶ Switch on the intensive ventilation with the Touch-Wheel and the "OK" button.

⇨ When intensive ventilation is switched on, the "Intensive ventilation" symbol is shown.

After the period of time set in the "Intens. vent. time" parameter, the unit switches back to the previously set fan setting.

When intensive ventilation switches off, the "Intensive ventilation" symbol goes out.

Setting favourites

▶ Select "Favourites" using the Touch-Wheel.

⇨ This will take you from the standard view directly to the Favourites in the "Settings" menu.

The parameters currently selected as Favourites are marked as F1, F2 and F3.

▶ Select a parameter from the list that you wish to mark as a Favourite.

▶ Press "OK".

⇨ The Favourites list is displayed. The selected parameter is displayed as Favourite F1.

▶ Using the Touch-Wheel you can shift the selected parameter in the Favourites list to position F2 or F3.

▶ To save the selected parameter as a new favourite, press "OK".

▶ To delete a Favourite, use the "OK" button to switch a filled box to an empty box.

▶ To end the selection of Favourites, use the "Menu" button to switch to the higher menu level.

⇨ The set favourites F1, F2 and F3 are displayed on the home screen.

8 Commissioning (qualified contractors)

WARNING

⚠ **Injury**

If the unit is switched on without the air ducts connected and someone reaches through the air connectors into the unit, there is a risk of injury.

▶ Do not commission the unit until the air ducts are firmly connected to it.

8.1 Commissioning wizard

The device has a commissioning wizard that will take you through the most important settings the first time it is started.

▶ Follow the instructions displayed.

▶ Select one of the displayed options or amend the values of the displayed parameter if necessary.

▶ To move to the next screen, turn the Touch-Wheel clockwise until "Continue" is displayed.

▶ Press "OK".

⇨ The commissioning wizard moves on to the next screen.

You can restart the commissioning wizard at any time in the "Settings" / "Ventilation unit" menu.

8.2 Initial start-up

After entering a four-digit code, additional actual values and parameters become visible that were previously hidden from the appliance user.

▶ To enable actual values and parameters that are reserved for qualified contractors, enter the code "1000".

▶ Press "OK".

⇨ "Expert" is shown on the display once this has been entered correctly.

8.2.1 Enabling the fans

The fans are deactivated in the delivered condition.

✓ "Settings" / "Enable fan"

▶ Set the option "On".

8.3 Recommissioning

Never operate the unit without filters.

▶ Check that filters are fitted in the unit.

▶ If recommissioning after a long standstill, carry out a service.

▶ Check the condensate drain hose for damage or kinks.

9 Commissioning

9.1 Pairing the ventilation unit with the app

NOTICE

ⓘ **Misuse of the device by third parties**

We recommend that you strongly encrypt the wireless connection of the device. The device supports the following encryption methods: OPEN (not recommended), WEP™ (not recommended), WPA™ PSK (not recommended), WPA2™ PSK, and WPA3™ PSK.

▶ To set up the device, use at least WPA2™ PSK in CCMP mode or higher.

To operate the appliance via WLAN and app, you need our WLAN module as an accessory.

✓ Your mobile device is connected to the WLAN network.

✓ "Share location" is enabled on your mobile device.

✓ During the pairing process, the mobile device is a maximum of 3 m from the WLAN module. Obstacles can disrupt WLAN reception.

✓ During setting up and pairing, you must accept requests for app authorisation.

▶ Download and install the app from the Apple App Store® or Google Play Store™ to your mobile device.

– MyStiebel

▶ Start the app.

▶ Create a new account.

▶ To connect the WLAN module to your network, follow the instructions in the app.

⇨ Once pairing is complete, you will be able to control the ventilation unit with the app.

10 Settings

10.1 Menu

The menus, appliance parameters and values depend on the appliance version. Not all of the functions described here are always available.

Some parameters are protected by a code and can only be set by a qualified contractor or the service department. Depending on the set code, not all parameters may be displayed in the individual menus. The protected parameters are described in chapter *Settings (qualified contractors)* [▶ 17].

▶ Press the "Menu" button to access the menus from the home screen.

10.1.1 "Info" menu

■ **Info**

Information about the actual values of the appliance

	Unit	Value
Bypass status		On / Off
Extract air temp.	°C	
Extract air hum.	%	
Extract air dew pt	°C	
Outdoor air temp.	°C	
Outdoor air hum.	%	
Outdoor air dew pt	°C	

	Unit	Value
Supply air temp.	°C	
Exhaust air temp.	°C	
Supply air fan control	%	
Supply air fan speed	rpm	
Supply air flow rate	m³/h	
Supply air diff. press.	Pa	
Exhaust air fan control	%	
Exhaust air fan speed	rpm	
Exhaust air flow rate	m³/h	
Extract air diff. press.	Pa	
Heating coil control	%	
Extract air diff. press.	Pa	
Room temperature	°C	
Room humidity	%	
Air quality		1 (good) – 500 (poor)

10.1.2 "Diagnosis" menu

■ **Diagnostics**

□■ **Notification list**

The faults most recently registered by the appliance are stored in the notification list. The most recent fault is stored in #1, the oldest error in #10.

If no faults are entered, dashes are shown. Possible faults are listed in chapter *Troubleshooting (qualified contractors) [▶ 22]*.

□■ **Filter runtime**

This value is the time of the most recent filter change. The filter runtime is dependent on the conditions in which the unit is used. In parameter "Filter detection mode", if option "Time" is set, the appliance requests a filter change after expiry of the filter change interval. The qualified contractor can set the filter change interval.

□■ **Filter reset**

▶ After changing the filters, set this parameter to "On".

The appliance resets the filter runtime and the airflow counter to 0. The parameter "Filter reset" is automatically reset to "Off". The filter change warning signal goes out.

10.1.3 "Programs" menu

■ **Programs**

□■ **Fan program**

	Period
Fan program	Monday
	Tuesday
	Wednesday
	Thursday
	Friday
	Mo - Fr
	Sa - Su
	Mo - Su

For the fan programs, you can specify a fan setting, time, day of week or time block. At times for which there is no specified fan program, the unit operates at fan setting 2. You cannot switch on fan setting 3 via fan programs.

□■ **Setting switching time pairs**

You can set three switching time pairs for each day of the week or time block. The switching time pairs are shown on the display, to the right of the clock.

Each switching time pair consists of a start time and an end time. After a switching time pair has expired, the unit switches to the "Stage 2" operating mode.

□■ **Periods around midnight**

Switching time pairs can be programmed only up to 24:00. If you want to choose periods that extend beyond midnight, you will need to set an additional switching time pair for the following day.

▶ In the "Programs" menu, select "Fan program" using the Touch-Wheel.
▶ Select a day of the week or a time block.
▶ Select one of the three switching time pairs.
▶ Select "Stage".
▶ Select the fan setting.
▶ Select "Start".
▶ Set the start time.
▶ Select "End".
▶ Set the end time.
⇨ The fan program is now set.
▶ In standard view, select "Time program mode".
▶ Press "OK" to activate the fan program.

If there are fan programs with identical times, the higher level switching time pairs and individual days of the week have priority.

□■ **Example**

	Switching time pairs	Stage
Monday - Friday	08:00 - 17:00	1
	17:00 - 08:00	2
Saturday - Sunday	07:00 - 23:00	2
	23:00 - 07:00	1

Settings required:

	Start	End	Stage
Mo - Fr	08:00	17:00	1
Sa - Su	23:00	24:00	1
Sa - Su	00:00	07:00	1

For times where there is no fan program defined, the unit operates at fan setting 2.

□■ **Deleting switching time pairs**

▶ To delete a switching time pair, select the "Start" or "End" of a switching time pair.
▶ Turn the Touch-Wheel to the left beyond 00:00 until dashes "-- --" are displayed.
▶ Press "OK".

Resetting one of the times to "--:--" automatically resets the other time of the switching time pair.

Settings

☐■ Deleting day of the week or time block

▶ Delete all three switching time pairs to delete the fan program for the weekday or time block.

☐■ Holiday program

In the holiday program, the appliance runs for a freely selectable period at fan setting 0 (humidity protection).

During the holiday program, all other time programs (fan programs) are disabled.

The start day of the holiday period begins at 00:00. The final day of the holiday period ends at 24:00.

▶ Select the period for which you want to enable the holiday program.

▶ Select "Holiday beginning".

▶ Use the Touch-Wheel to select the field you want to change.

▶ Confirm the selection with OK.

▶ Use the Touch-Wheel to set the day, the month or the year.

▶ Confirm the selection with OK.

▶ Follow the same procedure in "Holiday ending".

Once the period has expired, the appliance switches to the previously set fan setting or to time program mode.

10.1.4 "Settings" menu

■ Settings

☐■ View

The only parameters displayed in the standard setting are those that are enabled for the appliance user and can therefore be accessed without a code.

Qualified contractors can use the "View" parameter to enable actual values and parameters that are reserved for qualified contractors.

☐■ General

☐☐■ Time/date

In this menu item you can set the current day of the week and the time.

☐☐■ Language

You can select the display language.

☐☐■ Contrast

You can adjust the contrast between the characters displayed and the background to the display.

☐☐■ Brightness

You can adjust the display brightness.

☐☐■ Touch sensitivity

You can adjust the touch sensitivity of the Touch-Wheel and sensor buttons.

☐☐■ Touch boost

You can adjust the speed of response of the Touch-Wheel and sensor buttons.

☐☐■ FES Software Version

Programming unit software version

☐☐■ FES Software Patch

This number shows the software version of the programming unit.

☐☐■ Unit format

▶ To display values in imperial units (e.g. °F), switch the option to "On".

☐☐■ Time format

You can choose whether to display the time in 24-hour or 12-hour (AM/PM) format. To display the time in 12-hour format, set the option to "On".

☐☐■ Favourites

In the "Favourites" parameter, you can select up to three parameters to be displayed in the home screen.

- Bypass status
- Outdoor air temp.
- Extract air temp.
- Extract air hum.
- Filter runtime
- Room temperature
- Room humidity
- Air quality

The parameters currently selected as Favourites are marked as F1, F2 and F3.

▶ Select a parameter from the list that you wish to mark as a Favourite.

▶ Press "OK".

⇨ The Favourites list is displayed. The selected parameter is displayed as Favourite F1.

▶ Using the Touch-Wheel you can shift the selected parameter in the Favourites list to position F2 or F3.

▶ To save the selected parameter as a new favourite, press "OK".

▶ To delete a Favourite, use the "OK" button to switch a filled box to an empty box.

▶ To end the selection of Favourites, use the "Menu" button to switch to the higher menu level.

⇨ The set favourites F1, F2 and F3 are displayed on the home screen.

☐■ Intens. vent.

☐☐■ Intens. vent. time

This parameter defines the runtime for intensive ventilation. After this time has expired, the unit switches back to the previously selected fan setting.

☐■ Enable fan

With this parameter you can switch off the fans, e.g. to disable ventilation in the case of a fire. Once the risk has passed, switch the "Enable fan" parameter back to "On". If the fans are switched off for a long period, humidity protection cannot be guaranteed.

Option	Effect
Off	The fans are disabled. The "Fan disable" symbol appears on the display.
On	The fans are enabled.

☐■ Connectivity

☐☐■ Activate pairing mode

With this menu item you can set up the WLAN Adaptor. The WLAN Adaptor opens an access point.

□□■ **Reset Wi-Fi Adapter**

If you wish to connect a new device (e.g. a smartphone) to the appliance, reset the WLAN module using this parameter.

□■ **Ventilation unit**

□□■ **Device software version**

Controller assembly software version

□□■ **Device software patch**

This number represents the software version of the controller assembly.

□□■ **Term. device serial no.**

The appliance acquires this number during production. The composition of this number includes the part number, the factory and the serial number.

10.2 Disconnecting from network

To operate the appliance via WLAN and app, you need our WLAN module as an accessory.

▶ Press the "Menu" button.

▶ Select the menu item "Settings".

▶ Select the menu item "Connectivity".

▶ Select the menu item "Reset Wi-Fi Adapter".

▶ Switch to "On" using the Touch-Wheel.

⇨ After resetting the WLAN settings, you can no longer control the ventilation unit with the app.

▶ To be able to control the ventilation unit remotely again, reconnect the WLAN module to your mobile device (pairing).

If you delete your account in the app, the connection to the WLAN module is similarly terminated.

▶ If you are taking over the WLAN module or the ventilation unit with built-in WLAN module from another owner or handing it over to a new owner, perform a reset of the WLAN module.

11 Settings (qualified contractors)

11.1 Menu

11.1.1 "Diagnosis" menu

■ **Diagnostics**

□■ **Clear notification list**

▶ To delete the notification list, set this parameter to "On".

▶ Confirm the selection with OK.

⇨ Afterwards, "Off" is displayed again and the fault messages are deleted.

□■ **Filter detection mode**

Time criterion	When the filter change interval expires, the appliance requests a filter change.
Volume criterion	Once the value set in the "Filter change volume" parameter has been reached, the appliance requests a filter change.

□■ **Filter change interval**

Set the number of days before a filter change request. The filter change interval applies if option "Time criterion" is set in the parameter "Filter detection mode".

□■ **Filter change volume**

Set the air flow rate after which the filter change request is displayed. This value applies if option "Volume criterion" is set in parameter "Filter detection mode".

□■ **Device operating time**

This value shows you the time elapsed since the appliance was commissioned.

□■ **Fan operating time**

This value is the sum total of all the time during which the fans have been rotating since the appliance was commissioned.

11.1.2 "Settings" menu

□■ **View**

The only parameters displayed in the standard setting are those that are enabled for the appliance user and can therefore be accessed without a code.

Qualified contractors can use the "View" parameter to enable actual values and parameters that are reserved for qualified contractors.

Standard	The only parameters displayed are those that have been released for the appliance user and can therefore be accessed without a code.
Expert	Parameters for contractors (code "1000")
Service	Parameters for service department

▶ To enable actual values and parameters that are reserved for qualified contractors, enter the code "1000".

▶ Press "OK".

⇨ "Expert" is shown on the display once this has been entered correctly.

If you switch to the actual values or parameters, you see the enabled parameters.

□■ **General**

□□■ **Temperature sensor**

If you want the current room temperature and room humidity to be displayed, you can enable the programming unit's internal temperature sensor with this parameter. We recommend enabling this parameter only if an external programming unit is connected.

□□■ **Environment sensor**

If you require demand-dependent ventilation, activate the CO_2/VOC sensor with this parameter. If the preset air quality limit is exceeded, the appliance increases the air flow rate to reduce the VOC value. We recommend enabling this sensor only in external programming units.

□■ **Air flow rate**

▶ Use parameters "Flow rate, stage 0" to "Flow rate, stage 3" to set the air flow rates for the individual fan settings.

Flow rate, stage 0	m³/h
Flow rate, stage 1	m³/h
Flow rate, stage 2	m³/h
Flow rate, stage 3	m³/h

□■ **Offset setting**

Use these parameters to match the air flow rates to fan settings during commissioning.

	Unit	Value
Calculate automatically		On / Off
Offset supply air flow rate level 2	m³/h	
Offset extract air flow rate level 2	m³/h	
Offset supply air flow rate level 0	m³/h	
Offset extract air flow rate level 0	m³/h	
Offset supply air flow rate level 1	m³/h	
Offset extract air flow rate level 1	m³/h	
Offset supply air flow rate level 3	m³/h	
Offset extract air flow rate level 3	m³/h	

In parameter "Calculate automatically", if you select the "On" option, the supply air flow rates and extract air flow rates are calculated internally for all fan settings on the basis of the stage 2 offset. Alternatively, you can enter an offset value individually for each fan setting.

Formula for calculating internal air flow rates

Internal supply air flow rate, stage 0 = offset supply air flow rate, stage 0 + supply air flow rate, stage 0

Example of automatic calculation

This example shows the automatic calculation of the internal set air flow rates on the basis of the offset for stage 2.

Nominal supply air flow rate (stage 2)	m³/h	315
Offset supply air flow rate stage 2	m³/h	45

Stage	Set supply air flow rate	Supply air flow rate off-set	Set supply air flow rate + supply air flow rate off-set	Offset factor	internal set flow rate = set supply air flow rate × offset factor
0	100				100 × 1.143= 114
1	180				180 × 1.143 = 206
2	315	45	315 + 45 = 360	360 / 315 = 1.143	315 × 1.143 = 360
3	450				450 × 1.143 = 514

□■ Humidity prot.

□□■ Enable humidity control

With humidity-dependent flow rate control, the air flow rate is increased or decreased depending on the humidity level.

Option	Effect
Off	inactive
On	active

□□■ Humidity prot. Interval

If you set fan setting 0, the appliance switches to a 24 hour dormant phase. Only after this will humidity protection control start. The appliance measures the humidity of the extract air for the period set at "Humidity capture delay". The unit compares the last measured value with the limit value set at "Humidity threshold". If the humidity threshold value is exceeded, the unit starts to ventilate. If the humidity threshold value is undershot again, the unit terminates ventilation. At this point, the humidity protection interval starts again, at the end of which the moisture is measured.

□□■ Humidity threshold

▶ Set the upper limit for humidity here.

□□■ Humidity capture delay

The appliance measures the humidity of the extract air for the set period. The unit compares the last measured value with the limit value set at "Humidity threshold".

□■ Heat recovery bypass

□□■ Set room temperature

Use this parameter to set the outside temperature from which the outdoor air bypasses the heat exchanger and flows into the building through open windows.

▶ Select the preferred set room temperature using the Touch-Wheel.

▶ Press "OK".

□□■ Operating mode heat recovery bypass

Option	Effect
Disabled	Bypass mode is permanently disabled. Air flows through the cross-countercurrent heat exchanger.
Bypass/window contact	Bypass mode is active. The air flow by-passes the cross-countercurrent heat ex-changer.
	The "Bypass mode" symbol appears on the display.
Outdoor air routing automatic	Bypass mode operates with summer day detection. This option is set in the de-livered condition.
	The "bypass mode" symbol appears on the display as soon as bypass mode is auto-matically activated.

□□□■ Outdoor air routing automatic: Bypass mode with summer day detection

For bypass mode to be enabled, one of the following conditions must be met for 60 minutes:

- Set room temperature + Hysteresis for heat recovery bypass < Outdoor air temp.
- Set room temperature - Hysteresis for heat recovery bypass > Outdoor air temp.

If all the following conditions are met, the appliance switches to bypass mode.

- Extract air temp. - Hysteresis for heat recovery bypass > Outdoor air temp.
- Extract air temp. > Set room temperature

If one of the following conditions is met, the appliance terminates bypass mode.

- Outdoor air temp. < 8 °C
- Extract air temp. - Hysteresis for heat recovery bypass < Outdoor air temp.
- Extract air temp. < Set room temperature

□□■ Temperature to enable heat recovery bypass

To enable checking of the other parameters for bypass mode, the outdoor air temperature must be no less than the value set in this parameter.

□□■ Hysteresis for heat recovery bypass

To make cooling possible, the outdoor air temperature must be cooler than the extract air temperature by the value set in this parameter.

□□■ Cooling/heating, heat recovery bypass

▶ Set the purpose for which the bypass should be used.

Option	Effect
Cooling/heating	Depending on the temperature, use the outdoor air for cooling or heating.
Cooling	Summertime: use cool outdoor air.
Heating	Spring/autumn: use warm outdoor air.

□■ Frost prot.

□□■ Frost protection temp.

The frost protection temperature shows you the switching threshold at which additional heating levels are switched on.

□□■ Temp. to enable frost protection

The unit only activates frost protection if the outdoor air temperature drops to the value that can be set in this parameter.

□□■ Enable preheating

Option	Effect
Off	The internal preheater is completely deactivated.
On	The internal preheater is activated. To keep the cross-countercurrent heat exchanger free of ice, the preheater ensures a minimum temperature of the supply air.

□□■ Frost protection mode

Option	Effect
Outdoor air reg.	At this setting, the appliance operates solely in frost protection mode. The preheating coil control only measures the outside temperature.
Passive house reg.	The preheating coil is controlled to ensure that the supply air temperature does not fall below the 16.5 °C specified in the passive house criteria.
Eco	To save energy, the flow rate of the appliance is reduced when the preheating coil is enabled.

□□■ Frost protection stages

If the cross-countercurrent heat exchanger freezes up, you can combat this by increasing the frost protection level.

□□■ Frost protection volume reduction

The menu item is relevant only for troubleshooting purposes.

With this function you can select how the appliance should ensure frost protection at the output limit of the preheating coil or without the preheating coil. The appliance is pre-configured such that the ideal operating mode is preset.

Option	Effect
0	Off
1	No function
2	Symmetrical flow rate reduction for appliances with preheating coil
3	No function
4	Asymmetrical flow rate reduction for appliances without preheating coil
5	Symmetrical flow rate reduction for appliances without preheating coil

□■ Ventilation unit

□□■ Error output

No function

□□■ Factory reset

With this parameter you can return the appliance to its delivered condition.

□□■ V-ID

This parameter sets the appliance version. This parameter is set at the factory. The parameter can be adjusted only after the controller assembly has been replaced.

□□□■ commissioning

fast commissioning	
full commissioning	

12 Cleaning

Component	Activity	Frequency [months]
Casing top	Cleaning	As required

12.1 Cleaning the casing top

▶ Clean the casing top with a cloth moistened with water.

13 Cleaning (qualified contractors)

Component	Activity	Frequency [months]
Condensate pan	Cleaning	12
Cross-countercurrent heat exchanger	Cleaning	36
Preheating coil	Cleaning	36
Fan unit	Cleaning	36
Air ducts	Checking	Regularly
Air ducts	Cleaning	As required

▶ Isolate the appliance from the power supply.

13.1 Cleaning the condensate pan

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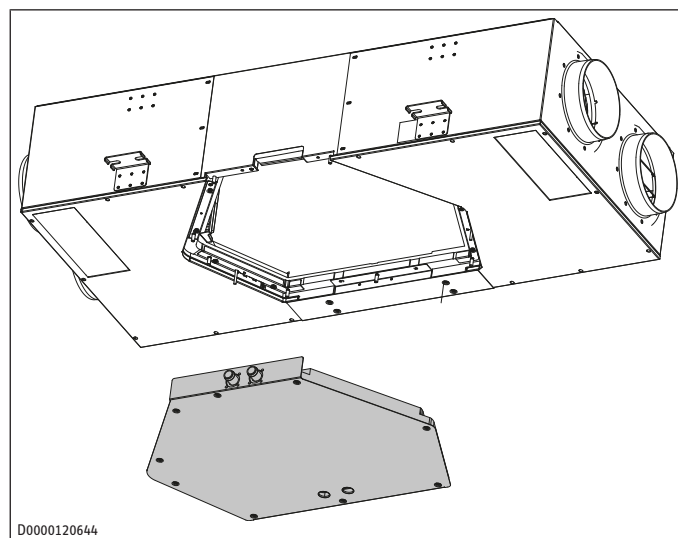
▶ Undo the fixing screws of the condensate pan.

▶ Remove the condensate pan from the appliance carefully as it may still contain water.

▶ Clean the condensate pan.

13.2 Cleaning the cross-countercurrent heat exchanger

D0000120645

| 1 | Fixing bracket of the cross-countercurrent heat exchanger | 2 | Wedge |

▶ Remove the wedge from between the appliance body and the cross-countercurrent heat exchanger.

▶ **CAUTION: After the fixing bracket has been removed, the cross-countercurrent heat exchanger may become detached and fall down. Support the cross-countercurrent heat exchanger with your hands or auxiliary aids.** Loosen the screw on the fixing bracket under the cross-countercurrent heat exchanger and remove the fixing bracket.

▶ Carefully pull the cross-countercurrent heat exchanger out of the appliance. Do not let it fall. Avoid damaging the EPS parts in the appliance.

▶ Use a commercially available vacuum cleaner to remove dust and other loose dirt particles from the intake and discharge surfaces.

▶ **NOTICE: Cleaning fluids can reduce the resistance to humidity of the EPS. This can result in loss of hygiene. Do not use cleaning fluids or solvents.** If necessary, clean the cross-countercurrent heat exchanger with warm water (max. 55 °C).
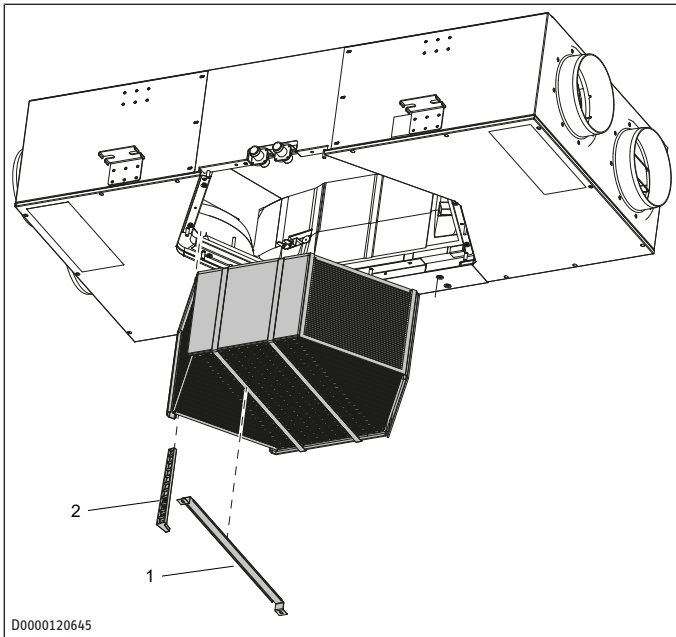
▶ Afterwards flush the cross-countercurrent heat exchanger with water.

13.3 Cleaning the fan units

You can clean the fans without disconnecting the cables leading to the fans. Nevertheless, we recommend removing the control panel cover. Then you can unplug the control cable and power cable from the printed circuit board.

▶ Undo the screws securing the fans.

▶ Clean the fans with a soft brush.

13.4 Cleaning the preheating coil

In principle, the preheater does not need to be cleaned. Inadequate filter changing can cause dust to build up in the appliance. In this case, the preheater does need to be cleaned.

▶ Slacken off the screws on the fan cover on the outdoor air side.

▶ Remove the fan cover from the appliance.

▶ Undo the screws in the preheating coil cover.

▶ To disconnect the mains cable of the preheating coil, press the spring element of the terminal and pull the wire out of the terminal.

▶ Pull the control cable plug out of the socket on the preheating coil.

▶ To release the preheating coil locking, move the two swivel levers anti-clockwise

▶ Draw the preheating coil out of the appliance.

13.5 Refitting the components

CAUTION

⚠ **Injury**

As long as the cross-countercurrent heat exchanger is not secured to the fixing bracket by screws, injuries and damage can be caused by the falling cross-countercurrent heat exchanger.

▶ Support the cross-countercurrent heat exchanger with your hands or auxiliary aids.

▶ Slide the cross-countercurrent heat exchanger into the appliance.

▶ Slide the wedge next to the cross-countercurrent heat exchanger.

▶ Slide one end of the fixing bracket under the eyelet on the edge.

▶ Secure the fixing bracket with a screw.

▶ Place the condensate pan under the cross-countercurrent heat exchanger and screw in the screws on the edge of the condensate pan.

13.6 Checking and cleaning the air ducts

Air duct inside the appliance

▶ **NOTICE: Cleaning fluids can reduce the resistance to humidity of the EPS. This can result in loss of hygiene. Do not use cleaning fluids or solvents.** Clean the air duct with a cloth moistened with water.

Extract and supply air

▶ Disconnect the air ducts from the appliance or check and clean them through the extract air and supply air vents.

Outdoor and exhaust air

▶ Disconnect the air ducts from the appliance and at the wall outlet or check and clean them through the outside wall outlet.

14 Maintenance

WARNING

⚠ **Electrocution**

If you put your hand, a tool or any object into the appliance while the power supply is connected, you may suffer an electric shock.

▶ Pull the mains plug out of the socket.

Component	Activity	Frequency [months]
Filter	Check	Depending on the set air flow rate
	Replace	12
Condensate drain	Check	6

We recommend checking the condensate drain before the onset of winter.

14.1 Filter

| Product title	Description	Air type	Suitable for	Filter class	Quantity
FMS COARSE 60-2 C450	Coarse particle filter mat	Extract air	Installation below the ceiling	ISO Coarse > 60 % (G4)	2
FMS COARSE 30-2 C450	Coarse particle filter mat	Extract air	Wall mounted installation	ISO Coarse > 30 % (G2)	2
FMS ePM1 50-2 C450	Fine filter	Outdoor air	Installation below the ceiling or on the wall	ePM1 ≥ 50 % (F7)	2

If you operate the appliance without filters, it will become dirty. This will result in loss of hygiene, extra work in cleaning, more noise and reduced efficiency. Never operate the unit without filters. Operate the appliance with at least the recommended filter class. Ensure that filters are fitted accurately so they can function properly.

▶ Check the filters for the first time three months after commissioning the appliance.

When the total fan runtimes reach the "Filter change interval" parameter set by a qualified contractor, the programming unit displays the filter change symbol. The qualified contractor can lengthen or shorten the interval for checking filters depending on the level of contamination.

If the qualified contractor has set the option "Volume criterion" in the parameter "Filter detection mode", the filter change symbol appears once the value set in parameter Filter change volume has been reached.

▶ Change the filters when the filter change warning signal appears.

▶ Change the filters if the surface is covered completely in dirt or the filter is discoloured throughout.

▶ Disconnect the appliance from the power supply.

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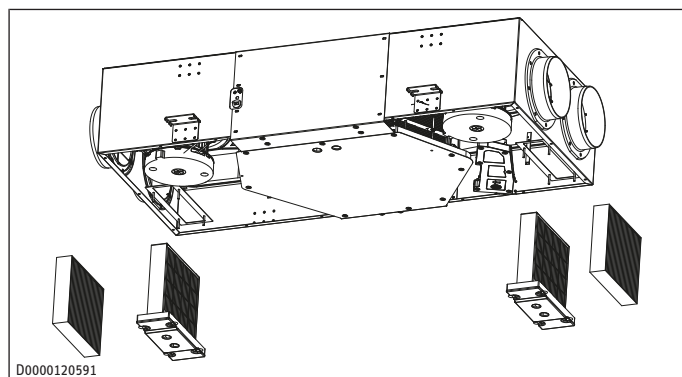
Extract air filter

▶ Undo the wing screws holding the filter cover to the unit.

▶ Remove the filter cover hooked onto the outside of the appliance.

▶ Remove the filter cassette from the appliance.

▶ Change the filters if the surface is covered completely in dirt or the filter is discoloured throughout.

▶ Change the filters at least every 12 months.

▶ Ensure that the filters are installed in the intended position.

▶ Ensure that the direction of air flow through the filter is correct.

F7: The direction of flow is indicated by an arrow on the side of the filter.

Coarse particle filter mat (black G2, white G4): This filter does not have a preferred direction of flow.

▶ Ensure that the filter cassette is installed in the intended position. The arrow on the filter cassette and the arrow on the appliance must point in the same direction.

▶ Push the filter cassette into the appliance.

▶ Hook the filter cover onto the appliance.

▶ To secure the filter cover, turn the wing screws clockwise.

Outdoor air filter

▶ Undo the wing screws holding the filter cover to the unit.

▶ Remove the filter cover hooked onto the outside of the appliance.

▶ Remove the filter cassette from the appliance.

▶ If necessary, place a new filter in the filter cassette.

▶ Ensure that the filter cassette is installed in the intended position. The arrow on the filter cassette and the arrow on the appliance must point in the same direction.

▶ Push the filter cassette into the appliance.

▶ Hook the filter cover onto the appliance.

▶ To secure the filter cover, turn the wing screws clockwise.

Filter reset

▶ Switch on the power supply to the appliance.

▶ After changing the filters, set the "Filter reset" parameter to "On".

⇨ The appliance resets the filter runtime to 0. The parameter "Filter reset" is automatically reset to "Off". The filter change warning signal goes out.

▶ Make a note of the filter change date.

▶ Order new filters in good time.

▶ If other filters are installed in the system, e.g. filters in the extract air vents or a filter box, check these and change the filters if necessary.

14.2 Checking the condensate drain

The appliance will only function correctly if the condensate drain is working and is filled. If there is insufficient water in the condensate hose, the appliance may draw in air through the hose.

▶ Open the hose clip fixing the condensate hose to the appliance.

▶ Pull the condensate hose out of the appliance.

▶ Check whether the condensate hose is soiled by pouring water through it.

▶ Clean or replace the condensate hose.

▶ Fill the trap in the condensate hose with water before you fit the hose to the appliance.

15 Troubleshooting

If the appliance registers a fault, this is clearly displayed with a message. If more than one fault occurs, it is always the most recently occurring fault that is displayed.

In the menu item "Diagnostics" / "Notification list", you can display a list of the faults most recently registered by the device.

▶ If you cannot remedy the fault, contact your qualified contractor.

▶ To facilitate and speed up your enquiry, please provide the qualified contractor with the number from the type plate.

Connection errors

Fault	Possible cause	Remedy
The ventilation unit cannot be controlled via WLAN.	Pairing was not completed. There is no WLAN connection. A software fault has occurred.	Check whether the WLAN symbol is displayed on the ventilation unit's programming unit. Reduce the distance between the WLAN router and the WLAN module. Extend the range of the WLAN router. Restart the ventilation unit.
Interrupted signal transmission	The WLAN router is too far away from the WLAN module. Reception is suffering interference, e.g. from other devices with lead casings.	Extend the range of the WLAN router. Wait for 10 minutes. The WLAN module reconnects to the WLAN network. Restart the ventilation unit.
The app does not respond.	A software fault has occurred.	Restart the app.
The menu item "Connectivity" is not visible in the programming unit.	The WLAN module is incorrectly connected.	Have the appliance checked by a qualified contractor.
	The WLAN module is faulty.	Have the appliance checked by a qualified contractor.

16 Troubleshooting (qualified contractors)

Fault	Possible cause	Remedy
The programming unit does not start.	I²C connection faulty	Check the cables and plugs. Replace damaged cables.

Message codes

Code	Message	Appliance response	Cause
10228	No RTC pulse	Time-dependent program sequences are disrupted.	Electronic assembly is faulty

Code	Message	Appliance response	Cause
10511	No speed feedback despite fan control		The system automatically restarts the fan PCB.
30172	Float switch has been triggered	Fans shut down	Float switch has been triggered
30397	Supply air temperature outside permissible range	No passive house comfort temperature control	Lead break, short circuit, faulty sensor, or appliance type (right/left-hand version) set incorrectly
30398	Exhaust air temperature outside permissible range	No effect	Lead break, short circuit or faulty sensor
30403	Communication error, fine dust sensor	Sensor control shut down	Lead break, short circuit or faulty sensor
30404	Supply air fan (no feedback on speed)	No effect	No speed feedback despite actuation
30405	Exhaust air fan (no feedback on speed)	No effect	No speed feedback despite actuation
30406	Communication error, outdoor air humidity and temperature sensor	The appliance cannot provide humidity protection. Automatic bypass mode is not possible. Manual changeover of the bypass damper is possible using the "Disabled" and "Bypass/window contact" options in the "Operating mode heat recovery bypass" parameter.	Lead break, short circuit or faulty sensor
30407	Communication error, extract air humidity and temperature sensor	The appliance cannot provide humidity protection. Automatic bypass mode is not possible. Manual changeover of the bypass damper is possible using the "Disabled" and "Bypass/window contact" options in the "Operating mode heat recovery bypass" parameter.	Lead break, short circuit or faulty sensor
30408	Faulty preheating coil (temperature too low, supply air fan switched off)	No effect	The preheating coil is not delivering enough energy to heat the outdoor air. Faulty heater or triac.
30410	Sensor voltage, ventilation		Collection of pressure, temperatures and humidity values not possible. Automatic bypass mode is not possible. Fans run at maximum value for set fan setting.
30416	Internal fault		No appliance type configured

Code	Message	Appliance response	Cause
30514	A fan (supply air or exhaust air) only reaches half of the target air flow rate, although it is controlled at full power.		The ventilation duct is blocked.
			The dampers in the air distributor are closed.
			Error in the design of the ventilation system
50400	Communication error, supply air differential pressure	The supply air fan and exhaust air fan are shut down.	Lead break, short circuit or faulty sensor
50401	Communication error, exhaust air differential pressure	The supply air fan and exhaust air fan are shut down.	Lead break, short circuit or faulty sensor
50409	Heater contact has been triggered	Fans are operated at 10 %, flow rate control disabled	The heater contact has been triggered.
			Negative pressure inside the building
50411	Maximum outdoor air temperature exceeded	The high limit safety cut-out may respond.	A triac of the preheater coil assembly is faulty.
			An external heat source has caused the temperature rise.

16.1 Sensor resistance values

When measuring with a multimeter, the resistance values serve only to identify faulty or incorrect sensors and are not used for checking accuracy.

	Sensor type
Supply air	PT 1000
Exhaust air	PT 1000

PT 1000

Temperature [°C]	Resistance [Ω]
-30	882
-20	922
-10	961
0	1000
10	1039
20	1078
25	1097
30	1117
40	1155
50	1194
60	1232
70	1271
80	1309
90	1347
100	1385
110	1423
120	1461

17 Shutdown (qualified contractors)

WARNING

⚠ **Mould growth**

If the appliance is taken out of use, no ventilation takes place. This can result in mould and damage to the building.

▶ Prevent the appliance being out of use for prolonged periods.

We recommend running the appliance at fan setting 1 even during prolonged absence.

▶ If you interrupt the power supply to the appliance, check that humidity protection is ensured for the building.

▶ If the appliance needs to be taken out of use for an extended period, disconnect it from the power supply by pulling the mains plug.

▶ Replace the filters.

18 Dismantling (qualified contractors)

▶ Interrupt the power supply by removing the fuse/switching off the miniature circuit breaker (MCB).

The following tools are required for disassembly and material separation prior to disposal:
- Personal protective equipment
- Set of screwdrivers
- Set of spanners
- Combi pliers
- Stanley knife

en

19 Specification

19.1 Dimensions and connections

Ceiling mounting

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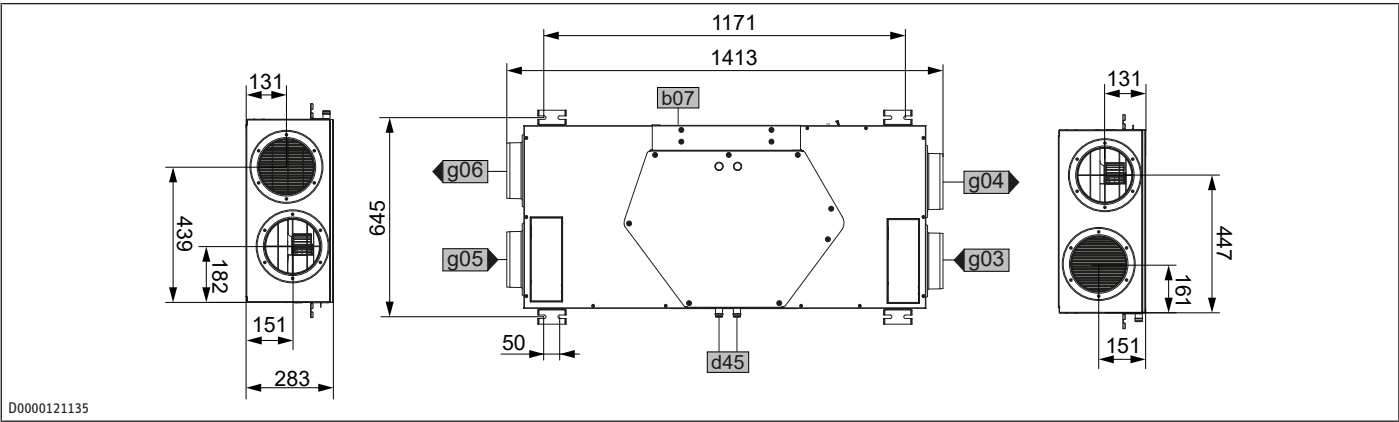
				VRC-C 450 Trend	VRC-C 450 E Trend
b07	Electrical connection				
d45	Condensate drain	Diameter	mm	22	
g03	Outdoor air	Diameter	mm	180	180
g04	Exhaust air	Diameter	mm	180	180
g05	Extract air	Diameter	mm	180	180
g06	Supply air	Diameter	mm	180	180

Wall mounting
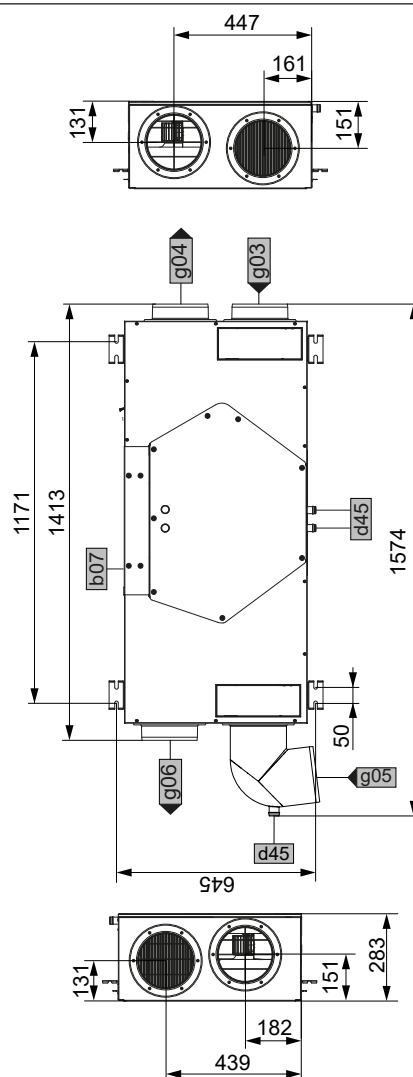
D0000121457

				VRC-C 450 E Trend
b07	Electrical connection			
d45	Condensate drain	Diameter	mm	22
g03	Outdoor air	Diameter	mm	180
g04	Exhaust air	Diameter	mm	180
g05	Extract air	Diameter	mm	180
g06	Supply air	Diameter	mm	180

19.2 Wiring diagram
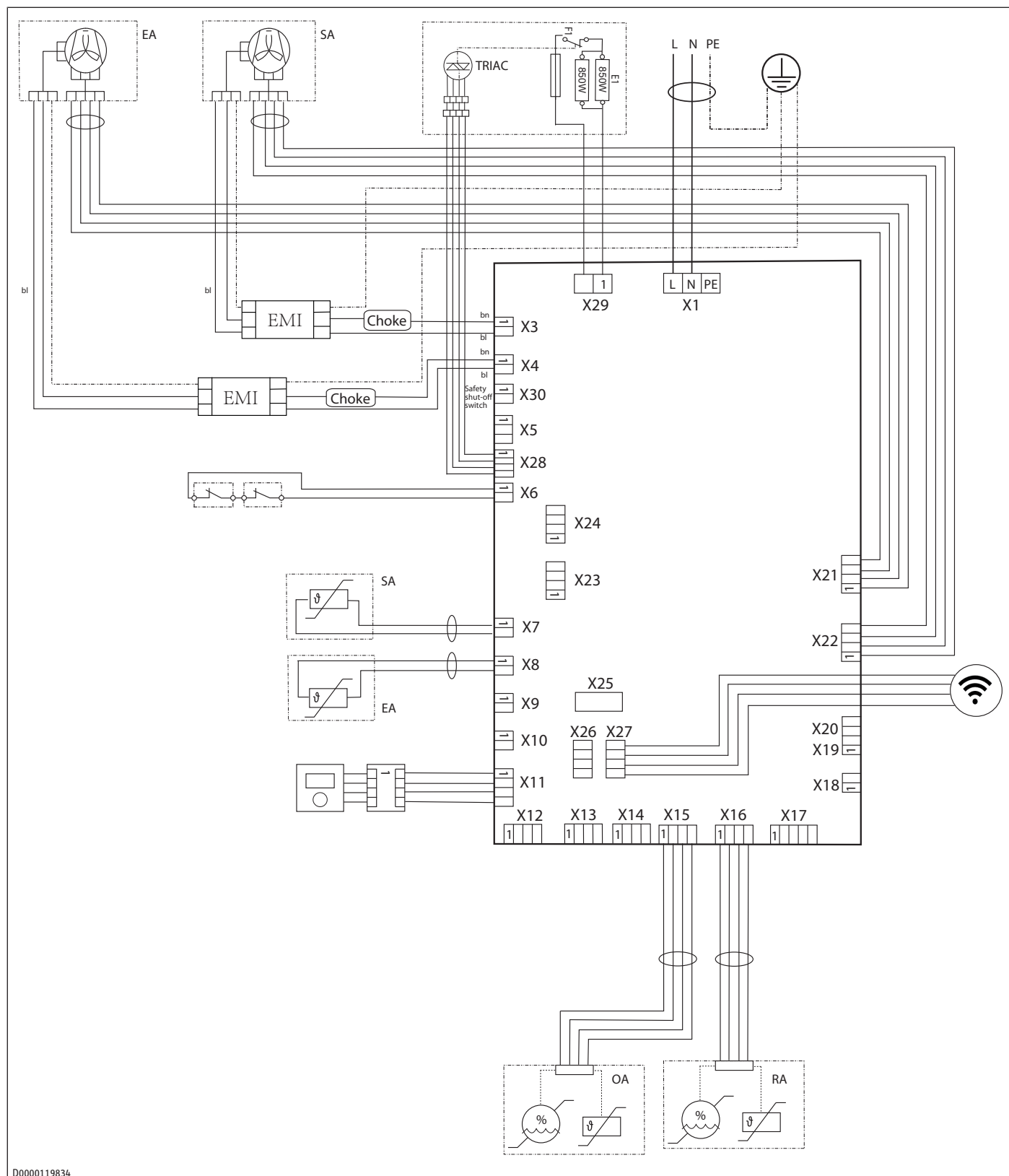
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Terminal	Designation
X1	Power supply
X3	Supply air fan power cable
X4	Exhaust air fan power cable
X6	Float switch
X7	Supply air temperature sensor
X8	Exhaust air temperature sensor

Terminal	Designation
X9	Preheating coil temperature sensor (not assigned)
X11	Programming unit, connectivity
X15	Temperature and humidity sensor, outdoor air
X16	Temperature and humidity sensor, extract air
X21	Exhaust air fan control cable
X22	Supply air fan control cable

Terminal	Designation
X27	WLAN
X28	Preheating coil control cable
X29	Preheating coil power cable
X30	Negative pressure safety cut-off switch (jumpered)
bn	Brown
bl	Blue
SA	Supply air
EA	Exhaust air
OA	Outdoor air
RA	Extract air
Choke	Restrictor
EMI	Interference suppression filter
L	Phase
N	Neutral conductor
PE	Earth
E1	PTC heating coil
F1	TRIAC switching contact

19.3 Fan diagram

D0000122934
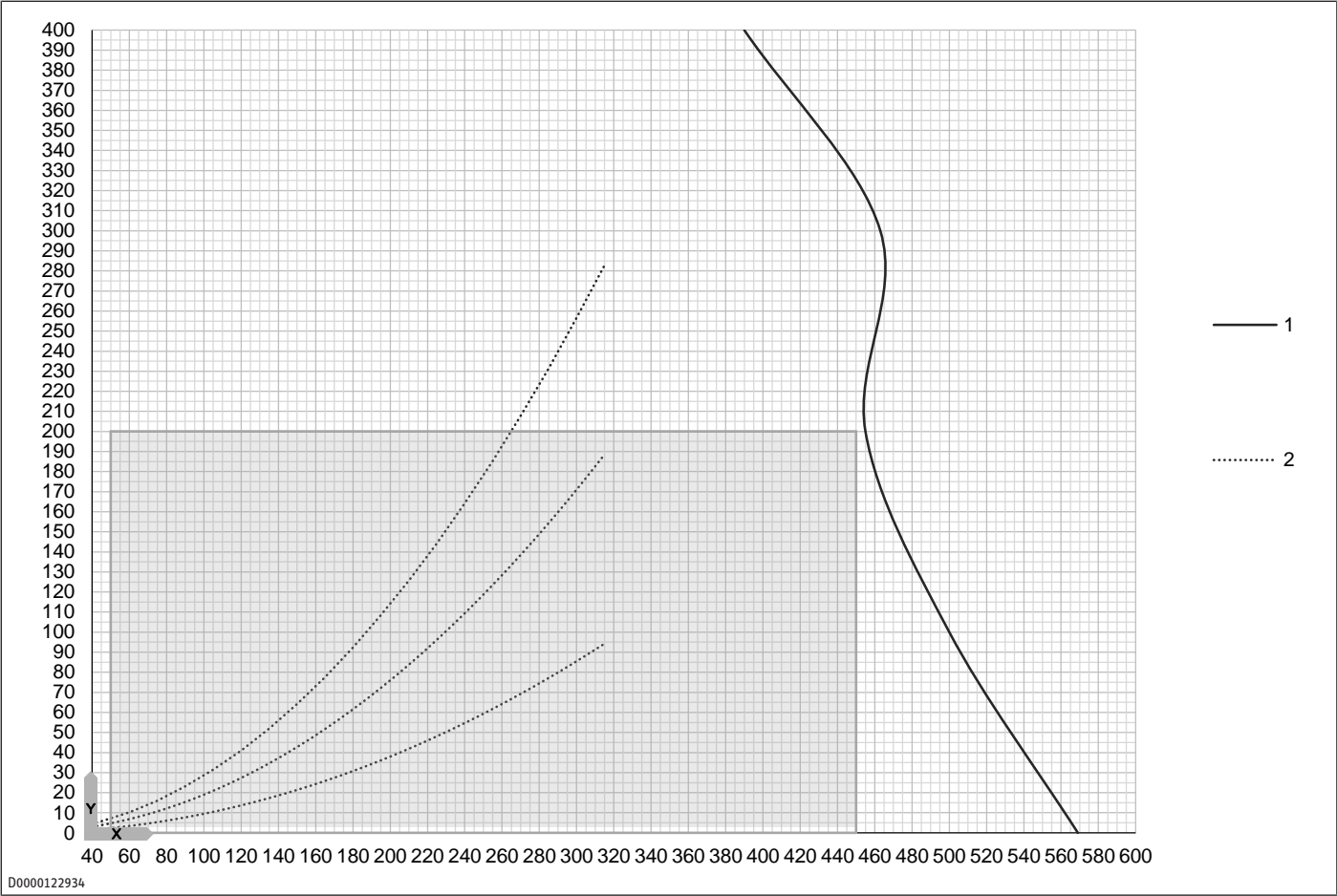
X	Air flow rate [m³/h]
Y	Average value, static pressure [Pa]
1	Maximum fan curve
2	System curves
	Application range

19.4   Data table

		VRC-C 450 Trend	VRC-C 450 E Trend
Product number		205767	205768
Sound emissions			
Sound power level with standard ventilation and 50 Pa, external	dB(A)	47.5	47.5
Sound power level (EN 12102)	dB(A)	47.5	47.5
Application limits			
Application range, outdoor air (temperature)	°C	-25 ~ 50	-25 ~ 50
Application range, extract air (temperature)	°C	15 ~ 35	15 ~ 35
Energy data			
Energy efficiency class		A	A
Electrical data			
Rated voltage	V	220 - 240	220 - 240
Phases		1/P/NE	1/P/NE
Frequency	Hz	50	50
Power consumption incl. preheating coil	A	9.9	9.9
Power consumption excl. preheating coil	A	2.5	2.5
Power consumption incl. preheating coil	W	2000	2000
Max. power consumption excl. preheating coil	W	400	400
Fuse protection (circuit breaker)		1*B16	1*B16
Max. mains impedance Zmax	Ohm		
Versions			
Filter class		ePM1≥50 % (F7) / Coarse > 60 % (G4)	ePM1≥50 % (F7) / Coarse > 60 % (G4)
IP rating		IP22	IP22
Dimensions			
Height	mm	280	280
Width	mm	590	590
Depth	mm	1413	1413
Weights			
Weight	kg	41	48
Connections			
Air connection diameter	mm	DN180	DN180
Condensate connection	mm	22	
Values			
Heat recovery level up to	%	89	89
Air flow rate	m³/h	100-450	100-450
Reference air flow rate	m³/h	315	315
Min. ambient conditions, installation room (temperature)	°C	5	5
Max. ambient conditions, installation room (temperature)	°C	45	45
Storage and transportation temperature	°C	-25 ~ 60	-25 ~ 60
Available external pressure at max. air flow rate	Pa	200	200
Heat recovery level	%	85	77.5
Maximum height for installation	m	2000	2000

20   Guarantee

The guarantee conditions of our German companies do not apply to appliances acquired outside of Germany. In countries where our subsidiaries sell our products a guarantee can only be issued by those subsidiaries. Such guarantee is only granted if the subsidiary has issued its own terms of guarantee. No other guarantee will be granted.

We shall not provide any guarantee for appliances acquired in countries where we have no subsidiary to sell our products. This will not affect warranties issued by any importers.

21   Warranty

Warranty Stiebel Eltron Australia Only - According to national regulations in Australia

Stiebel Eltron Warranty for Ventilation Solutions

Who gives the warranty

1.   The warranty is given by Stiebel Eltron (Aust) Pty Ltd (A.B.N. 82 066 271 083) of 294 Salmon Street, Port Melbourne, Victoria, 3207 ("we", "us" or "our").

The warranty

2.   This warranty applies to Stiebel Eltron Ventilation Solutions (the "unit").

3.   Subject to the warranty exclusions we will repair or replace, at our absolute discretion, a faulty component in your unit free of charge if it fails to operate in accordance

with its specifications, and you make a valid warranty claim in accordance with this warranty, during the warranty period.

4. If we repair or replace a faulty component to your unit under this warranty, the warranty period is not extended from the time of the repair or replacement.

5. The warranty period commences on the date of completion of the installation of the unit. Where the date of completion of installation is not known, then the warranty period will commence 2 months after the date of manufacture.

6. The warranty period for a unit used for domestic purposes is shown in the table below. Domestic purposes means that the unit is used in a domestic dwelling.

Component	Warranty period
All components	2 years

7. The warranty period for a unit used for commercial purposes is shown in the table below. Commercial purposes means that the unit is used for a non-domestic purpose and includes but is not limited to being used in a motel, hotel, mining camp or nursing home.

Component	Warranty period
All components	2 years

Your entitlement to make a warranty claim

8. You are entitled to make a warranty claim if:
   - you own the unit or if you have the owner's consent to represent the owner of the unit;
   - you contact us within a reasonable time of discovering the problem with the unit and in any event within 30 days.

How you make a warranty claim

9. To make a warranty claim you must provide us with the following information:
   - The model number of the unit;
   - A description of the problem with the unit;
   - The name, address and contact details (such as phone number and e-mail address) of the owner;
   - The address where the unit is installed and the location (e.g. in laundry);
   - The serial number of the unit;
   - The date of purchase of the unit and the name of the seller of the unit;
   - The date of installation of the unit;
   - A copy of the certificate of compliance when the unit was installed.

10. The contact details for you to make your warranty claim are:

Name:	Stiebel Eltron (Aust) Pty Ltd
Address:	294 Salmon Street, Port Melbourne, Victoria, 3207
Telephone:	1800 153 351
	(8.00 am to 5.00 pm AEST Monday to Friday)
Contact person:	Customer Service Representative
E-mail:	service@stiebel-eltron.com.au

11. We will arrange a suitable time with you to inspect and test the unit.

Warranty exclusions

12. We may reject your warranty claim if:
   - The unit was not installed by registered and qualified tradespeople.
   - The unit was not installed and commissioned:
     - in Australia;
     - in accordance with the Operating and Installation Guide; and
     - in accordance with the relevant statutory and local requirements of the State or Territory in which the unit is installed.
   - The unit has not been operated or maintained in accordance with the Operating and Installation Guide.
   - The unit does not bear its original Serial Number or Rating Label.
   - The unit was damaged by or is faulty due to any or any combination of the following:
     - normal fair wear and tear;
     - connection to an incorrect or faulty power supply;
     - connection to faulty equipment, such as a faulty circuit breaker;
     - accidental or malicious damage;
     - act of God, including damage by flood, storm, fire, lightning strike, cyclones, earthquakes, natural disasters or other similar actions of the elements;
     - wiring not to AS/NZS 3000 standards;
     - ingress of vermin.
   - The unit was damaged before it was installed e.g. it was damaged in transit.
   - An unauthorised person has modified, serviced, repaired or attempted to repair the unit without our consent.
   - Non genuine parts other than those manufactured or approved by us have been used on the unit.

13. We may charge you:
   - for any additional transport costs if the unit is installed more than 30 kilometres from our closest authorised service technician.
   - for the extra time it takes our authorised service technician to access the unit for inspection and testing if it is not sited in accordance with the Operating and Installation Guide or not readily accessible for inspection.
   - for any extra costs of our authorised service technician to make the unit safe for inspection.

14. You must ensure that access to the unit by our authorised service technician is safe and free from obstruction.

15. Our authorised service technician may refuse to inspect and test the unit until you provide safe and free access to it, at your own cost.

16. If we reject your warranty claim in accordance with clause 12, we may charge you for our authorised service technician's labour costs to inspect and test the unit.

17. In order to properly test the unit we may remove it to another location for testing.

Australian Consumer Law

18. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

19. The Stiebel Eltron warranty for the unit is in addition to any rights and remedies you may have under the Australian Consumer Law.

22 Environment and recycling

▶ Dispose of the appliances and materials after use in accordance with national regulations.

▶ If a crossed-out waste bin is pictured on the appliance, take the appliance to your local waste and recycling centre or nearest retail take-back point for reuse and recycling.

This document is made of recyclable paper.
▶ Dispose of the document at the end of the appliance's life cycle in accordance with national regulations.

PAP

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