ekkoair by jeremias

HOUSE

Installation manual HOUSE

TABLE OF CONTENT

1. DELIVERY

1.1 CONTENTS / DELIVERY SCOPE

The HOUSE unit delivery includes:

1. HOUSE Ventilation Unit
2. Multi-function Controller
3. Eco-design Label
4. Declaration of Conformity
5. User Manual
6. Integrated ModBus Module
7. Filter M5 (Coarse 90% ISO 16890)

High efficiency with low energy consumption

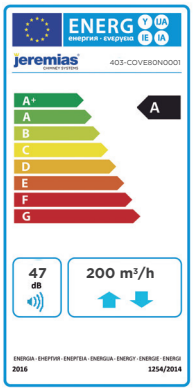
Guaranteed airtightness

Simple and customizable installation

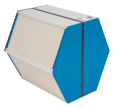
Space-saving design

Acoustic comfort

INCLUDED ACCESSORIES:



1.2 ACCESSORIES

ACCESSORIES		
Describtion	Picture	Code
2x Filters F7 for HOUSE 2x Filters M5 for HOUSE		403- COVE100N0010 403- COVE100N0009
Heat exchanger for HOUSE Enthalpy exchanger for HOUSE		403- COVE100N0018 403- COVE100N0017
Post-heater for HOUSE		403-COVE100N0019
SVC-H-Adapter Ø130/Ø150		684- SVCH1100130 684- SVCH1100150
Wifi-Module		403- COVE100N0011
External CO_2 Sensor		403- COVE100N0013
External humidity sensor (HR)		403-COVE100N0014
External CO_2/HR-Sensor		403-COVE100N0015
Connection module for 8 sensors		403- COVE100N0016
Siphon		403- COVE103N0001

2. APPLICATION

The HOUSE is a personalized, mechanically controlled ventilation system with heat recovery, boasting an efficiency of up to 92%. It offers a ventilation capacity of 250 m^3/h using energy-efficient EC motors.

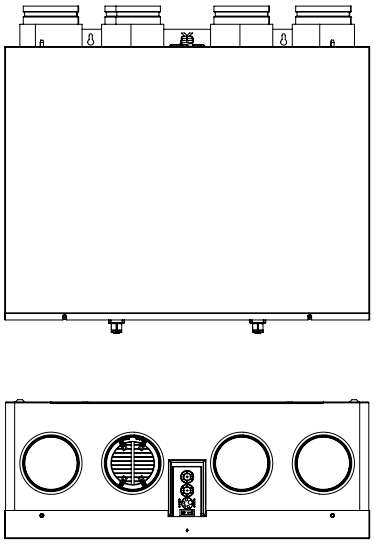
Features:

- Wired multi-function control with up to eight different speeds
- Frost protection through flow balance
- 100% automatic bypass
- EC motors with constant flow
- Tested with up to 92% efficiency
- Wide range of filters (M5 as standard)
- Integrated ModBus
- Low noise level
- Lightweight design minimizes vibrations
- Option to connect with a web application
- Connection options for CO_2 sensor
- Connection options for humidity sensor
- Connection options for CO_2 and humidity sensor
- Optional: Pre and post heaters
- Optional: Enthalpy exchanger

3. DEVICE

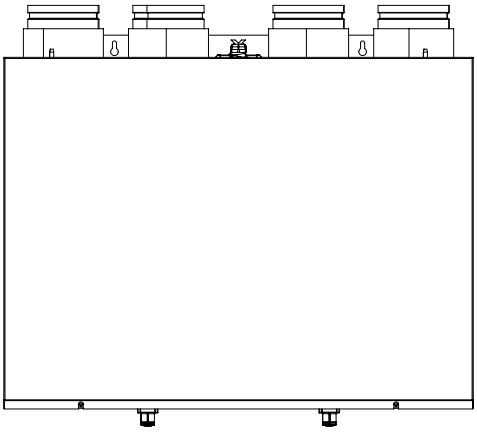
3.1 TECHNICAL DATA

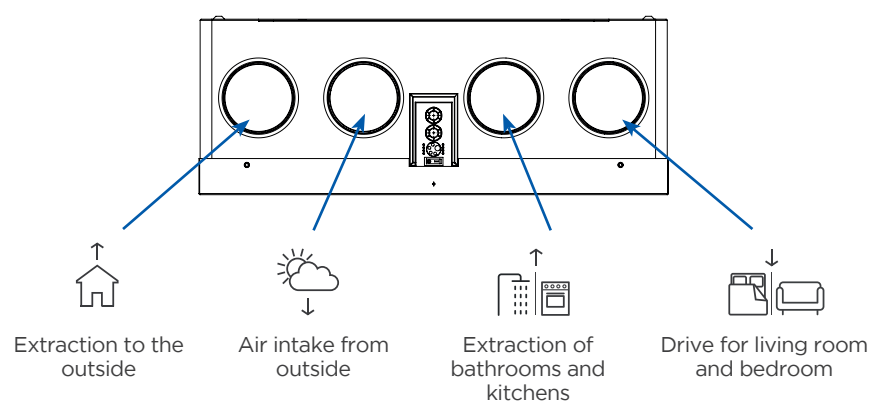
Parameters	Units	Values							
Airflow	m³/h	250 (200 Pa)							
Sound pressure LPa-3m*	dB	37,8							
Diameter connector	mm	4x 125							
Controller		8 Speeds							
Installation		Wall-mounted							
IP Classification		IP 20							
Filter type		M5 coarse 90% ISO 16890							
Weight	kg	17							
Dimensions	mm	800x600x300							
Multifunctional-controller		1	2	3	4	5	6	7	boost
	m³/h	50	75	105	145	190	235	250	250
Housing		EPP + Metal							
Performance**	%	88,3							



* Outdoors at the reflection level
** According to UNE EN 308 at 70% of the nominal volume

CONNECTIONS

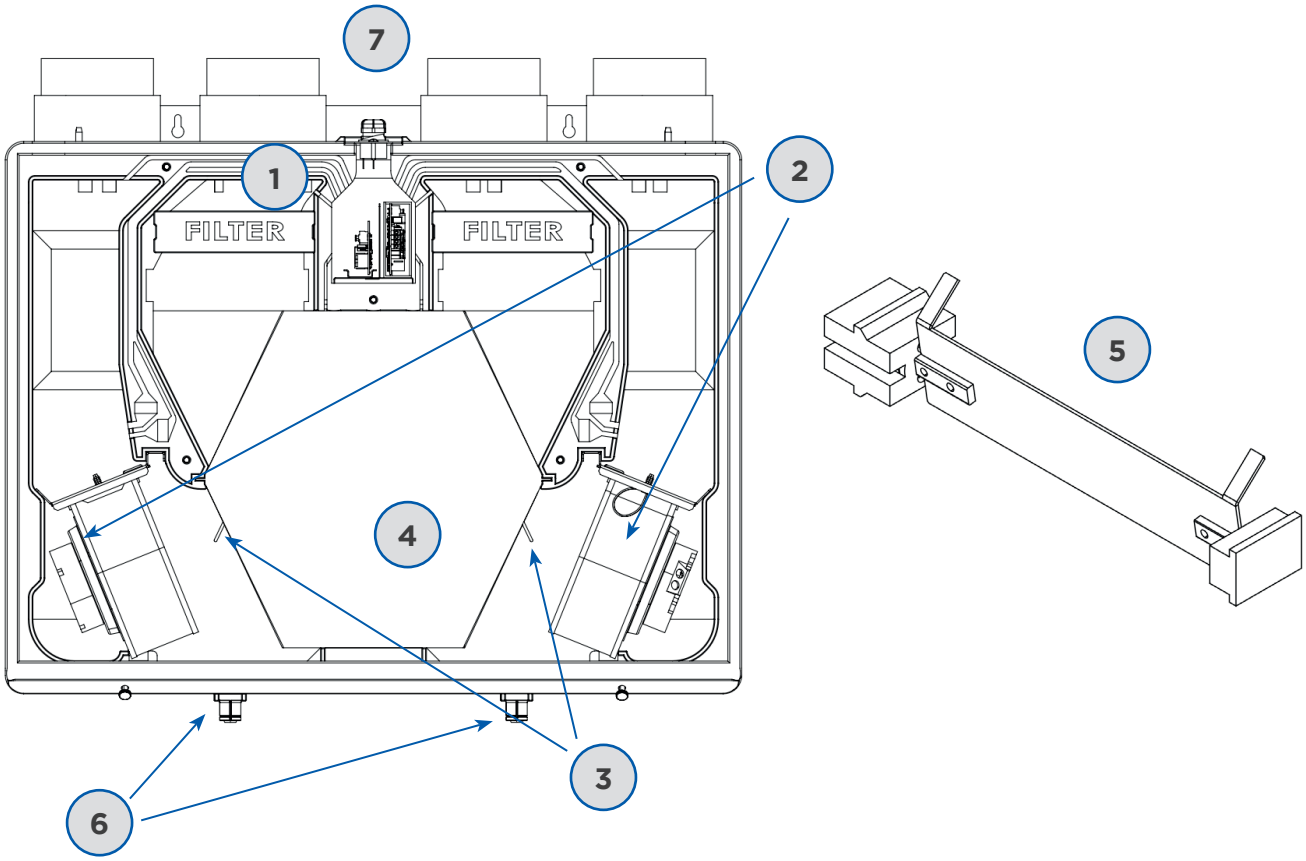




3.2 DETAILED VIEW OF THE DIVICE

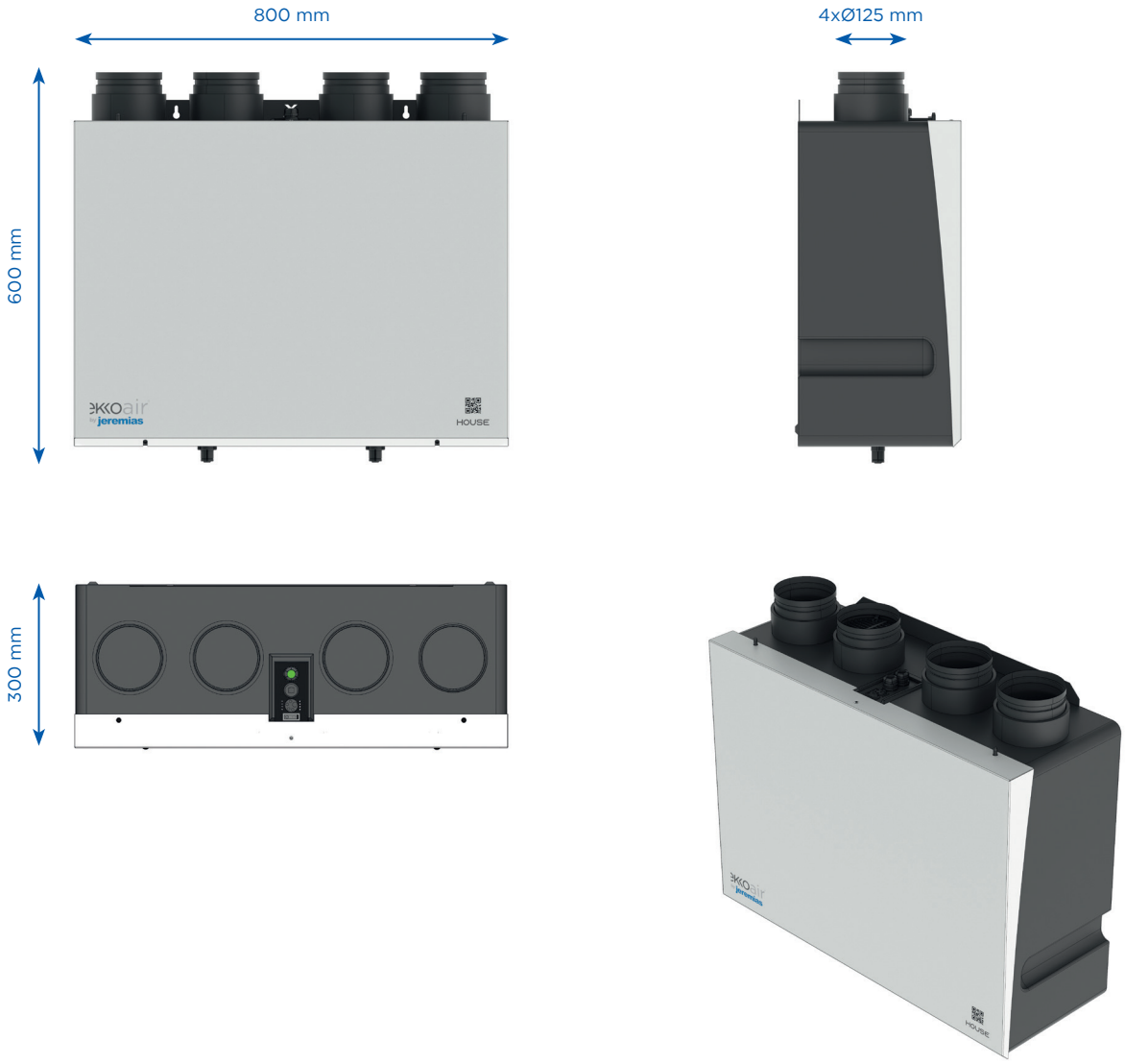
HOUSE

1	High-performance filter
2	Energy-efficient EC motors
3	Temperature sensors
4	High-performance heat exchanger
5	Automatic bypass
6	Condensate Drain
7	Electrical Connections



3.3 DIMENSIONS

The HOUSE stands out with its compact design, thoughtfully crafted to maximize air capacity for climate control in a single-family home. Its size makes it a unique device in its class, offering excellent thermal efficiency while maintaining quiet operation. The inlets with a diameter of 125mm are perfect for standard installations.



4. OPERATION

4.1 DESCRIPTION

The device is delivered ready to use and operates fully automatically. The exhausted air from inside transfers its thermal energy (heat or cold) to the incoming fresh air from outside. This process results in energy savings for air conditioning, as the temperature of the clean air entering the house is adjusted as needed (cooler in summer and warmer in winter).

You can select from 8 fan speed levels using the included multifunction controller.

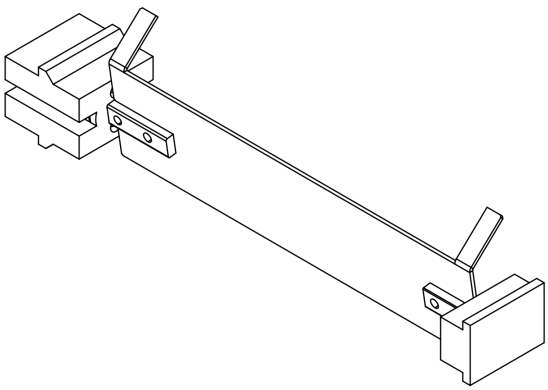
With the constant volume control, you can adjust the air volume flow of the exhaust and supply fans independently of the duct pressure.

4.2 CONDITIONS FOR SUMMER BYPASS

The factory-installed automatic bypass allows direct fresh air intake from outside without passing through the heat exchanger. This is used at specific times, like cooler summer nights, to cool down the house interior. The bypass activates automatically when certain conditions, listed in the table below, are met.

Bedienung	
Bypass activated	The following 3 conditions must be met: • Outside temperature is higher than 17ºC • The outside temperature is lower than the exhaust air temperature of the house. • Indoor temperature is higher than 24ºC
Bypass deactivated	• If any of the above conditions are not met, the bypass remains deactivated

Our automatic bypass system always ensures a comfortable indoor temperature, whether it's summer or winter.



The temperature of the incoming outside air can range from -20°C to +50°C. If it drops below -20°C, the device may shut off automatically to prevent potential damage.

5. INSTALLATION

5.1 GENERAL INFORMATION

Installation must be carried out following these guidelines and regulations:

1. Ensure room ventilation quality meets the standards outlined in the Technical Building Code (CTE), specifically in section HS3 of the 2007 Regulation on Thermal installations in Buildings (RITE) 11

2. Follow quality requirements for balanced ventilation in homes as per section HS3 of the CTE

3. Adhere to the ventilation guidelines for rooms and homes according to section HS3 of the CTE

4. Comply with safety regulations for low-voltage installations

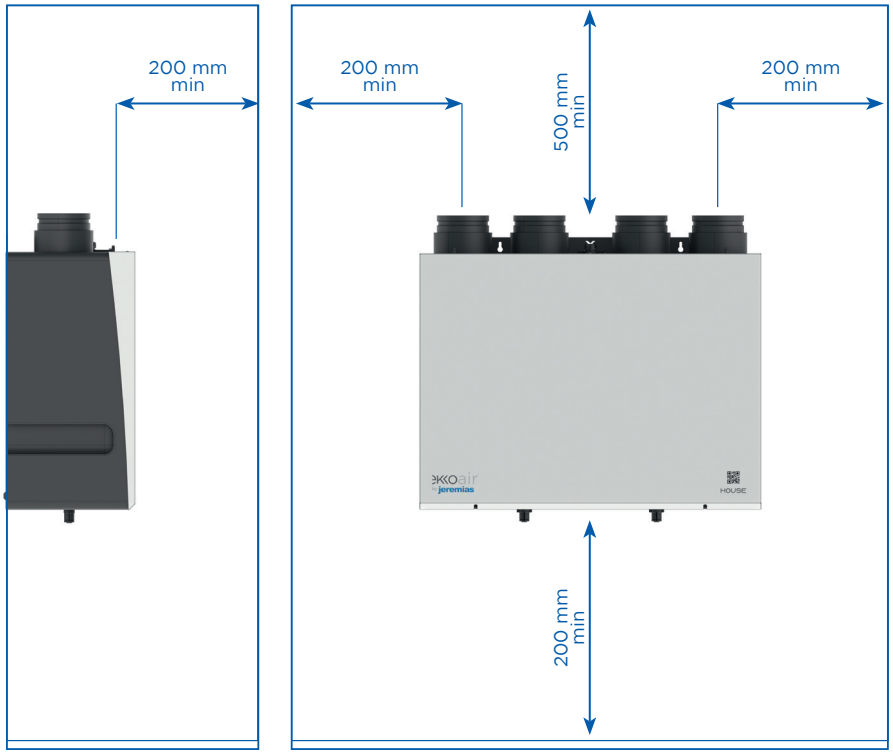
5. Follow the guidelines for connecting wastewater drainage systems to sewer networks in rooms and homes

6. Consider any additional guidelines from local energy providers

7. Electrical connections should always use residential power, never construction power

8. Special regulations for installing the GENIUS device

9. 5.2 MINIMUM DISTANCES



5.3 INSTALLATION

Installation and connection may only be carried out by a specialist who has the appropriate authorization for electrical connections and the appropriate tools and resources. During installation, all instructions and recommendations contained in the manual should be followed.

The installation location of the device must be checked to ensure that there are no electrical or other cables (e.g. gas, water, etc.) that could be damaged during installation.

It must be ensured that the installation of the device, including the wall openings (depending on the selected installation position) for the connection cable, does not endanger the statics of the building and meets all legal requirements with regard to safety.

Failure to observe the specified distances can lead to malfunctions of the device and thus to fan damage, increased noise or difficult service access to the device.

Only the positions specified in the manual apply; any other form is prohibited.

In order to access the filters and carry out maintenance work, the device must always be accessible from the front (cover side).

The wall to which the device is anchored must be sufficiently stable and load-bearing.

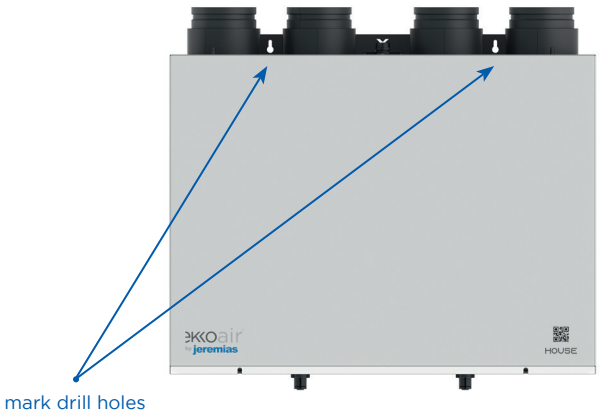
If necessary, you should contact a structural engineer.

5.4 STEPS FOR WALL MOUNTING

1 Take the HOUSE out of the box and place it on the wall where you want to install it

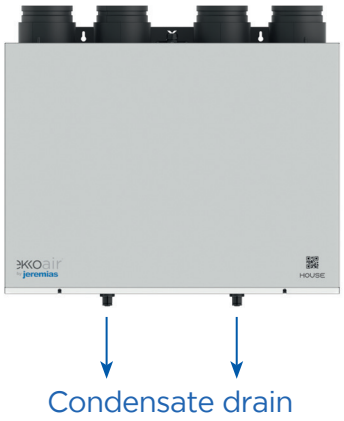
2 Mark the spots for the drill holes with a pencil, then proceed to drill

fastening the brackets



6. CONNECTING THE CONDENSATE DRAIN

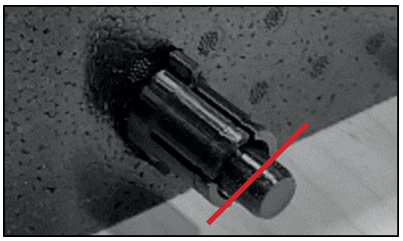
During installation, select one of the two condensate drains located at the bottom of the unit.



How to Install the Drain with a Trap

As an accessory, we offer a siphon that can be easily installed thanks to various adapters and can therefore be adapted to different types of pipes.

A) Cutting and deburring the closure

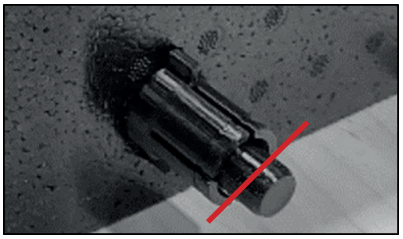


B) Connect one end of the supplied hose to the condensate drain and the other end to the siphon. Ensure the siphon is as vertical as possible. The siphon should never be installed horizontally.

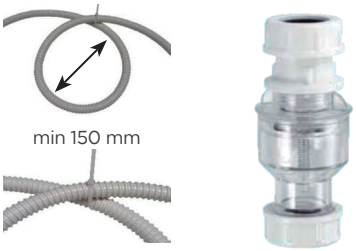
Jeremias assumes no responsibility for any malfunctions caused by an incorrect siphon connection or by installing the drain outlet on the wrong side of the device!

How to install the drain without a siphon

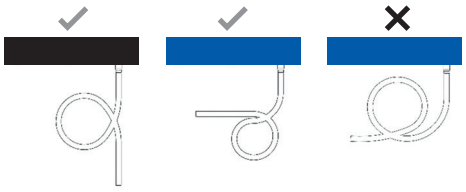
A) Cutting and deburring the closure



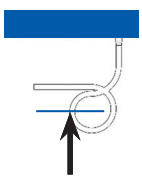
B) Create a siphon by attaching the hose and clamps.



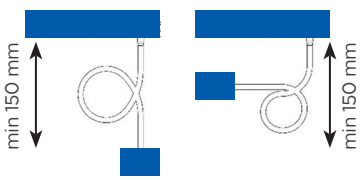
C) Make sure the siphon is installed correctly!



D) Fill the siphon with water and connect it to the device

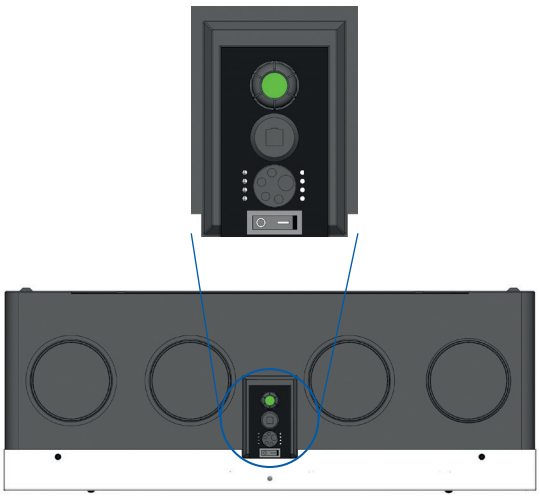


E) Connection to the downpipe



7. CONNECTIONS

7.1 VENTILATION DEVICE



The electrical installation must properly comply with all relevant regulations.

Before starting installation work, make sure that the junction box or socket to which you want to connect the device is equipped with a protective cable or plug (earth).

Also make sure that the socket is not live during installation.

The HOUSE includes:

- On/off switch
- 1 m 220V power cable

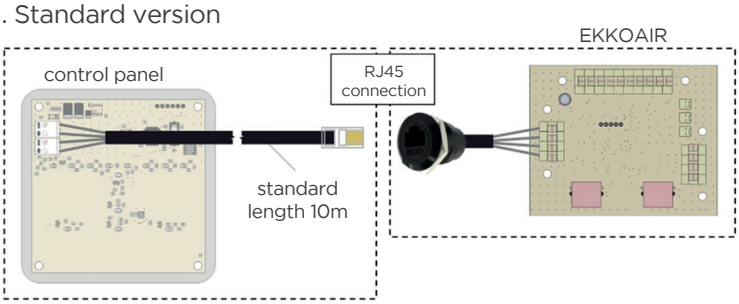
The two cable glands on the panel allow easy passage of the power and sensor cables and ensure the device is sealed.

The HOUSE also has 2 external connections that work as follows:

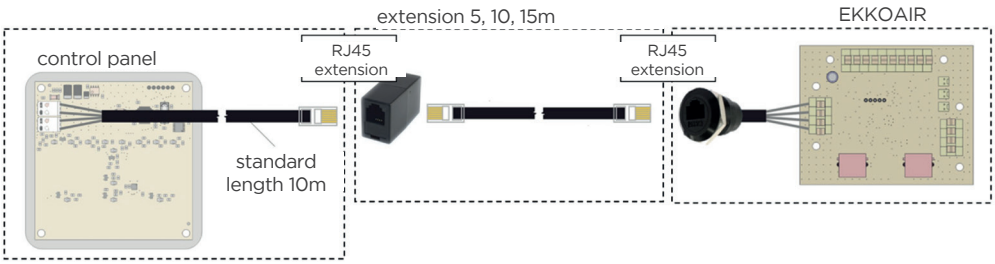
- **EXT1:** Connected to the bathroom lighting via a relay, it increases the extraction power to the maximum up to 1 minute after the light is turned off.

- **EXT2:** Connected to the extractor hood via an inductive relay, it increases the flow rate during operation to the maximum up to 1 minute after the extractor hood is turned off.

1. Standard version



2. Ausführung mit Kabelverlängerung

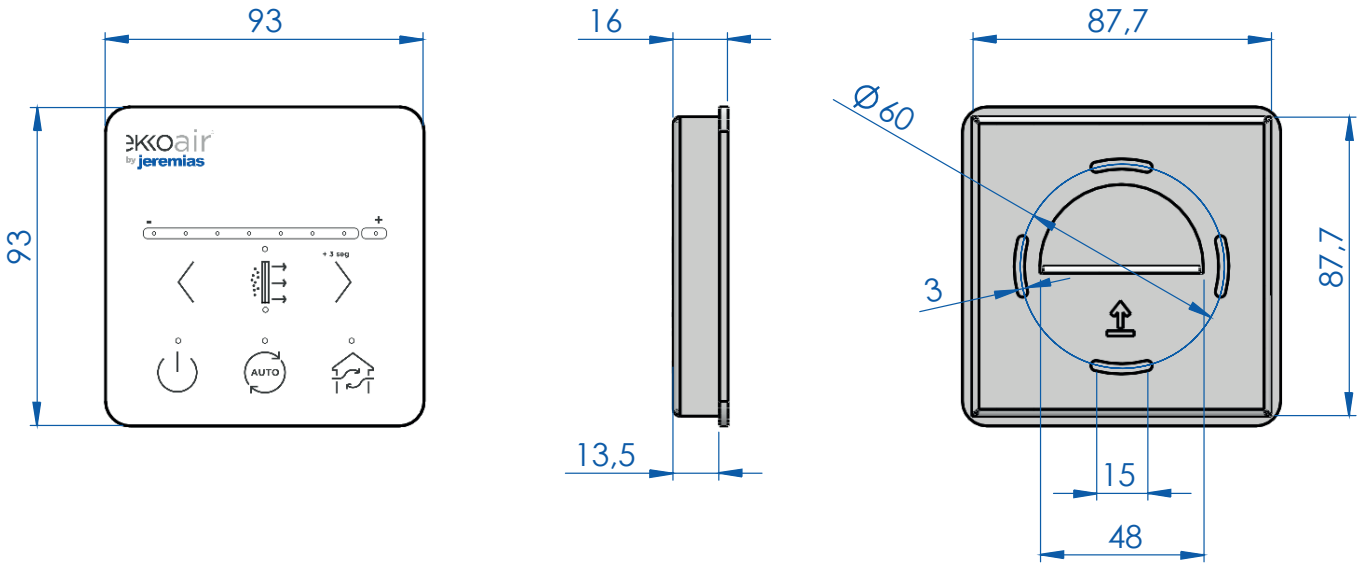


7.2 CONTROL

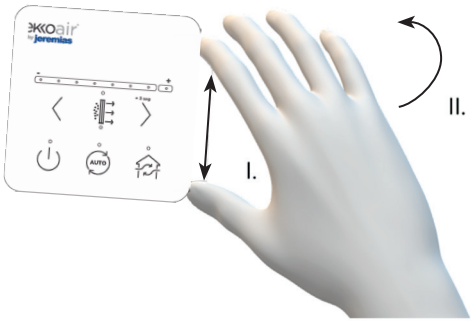
- **Required Cable**
  An 8-core UTP cable without connectors is included. The length of the connection cable is 10 meters.

- **Concealed Cable Installation**
  The cable from the device to the control panel should be installed under plasterduring construction preparation and end in a flush-mounted box.

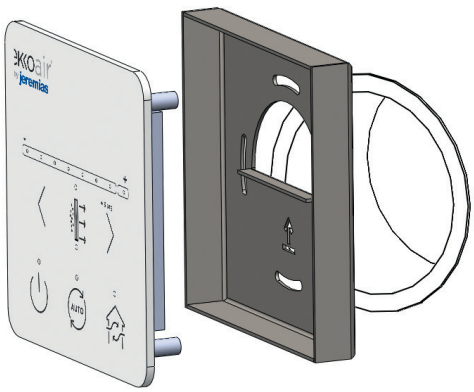
Controller dimensions



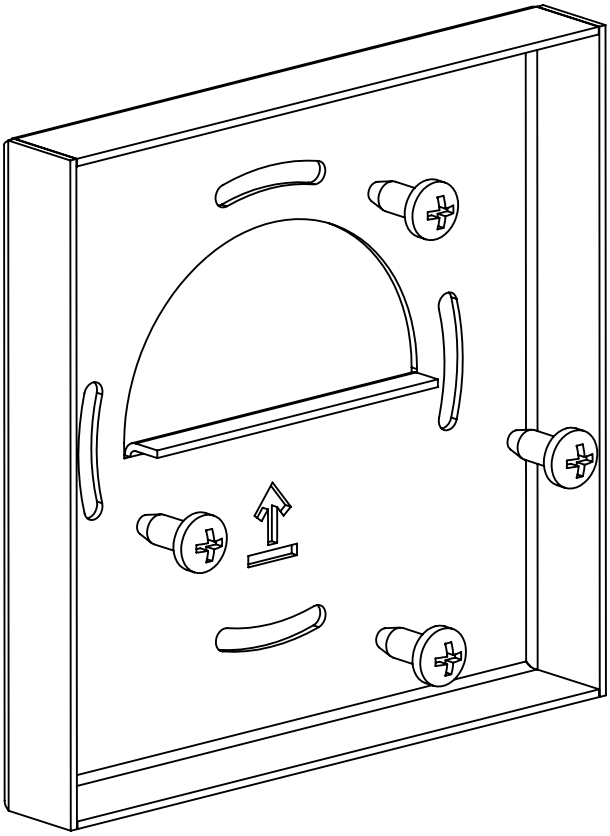
A) open the controller



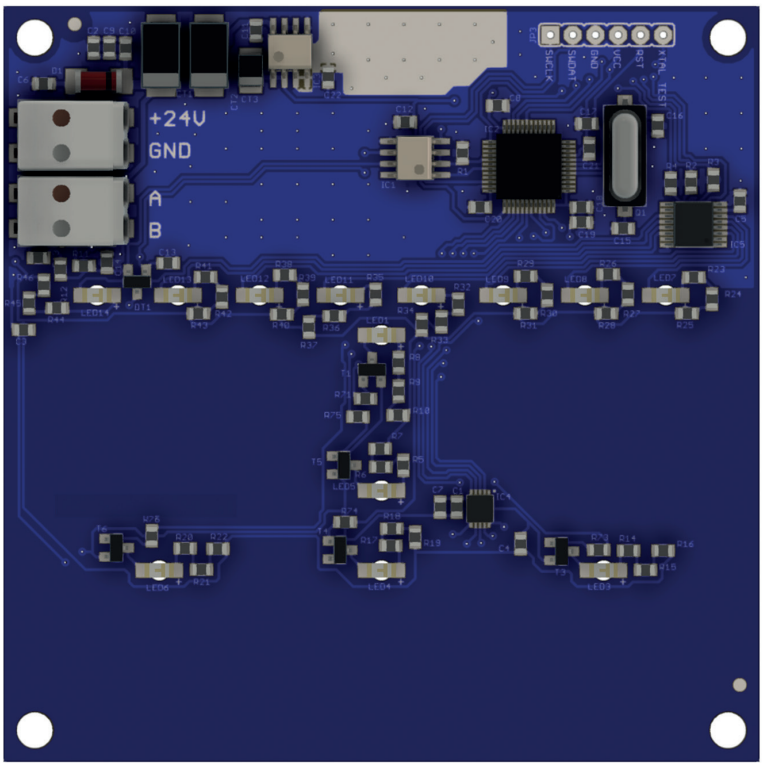
B) Lay the cables



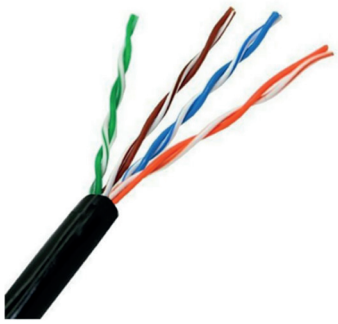
C) Attach the housing to the wall



D) Command connection



+24 V: Brown and white/brown
GND: Orange and white/orange
A: Blue and blue/white B:
Green and white/green



Network cables are
included with the
control unit

8. COMMISSIONING

Once the ventilation unit is installed, the system can be started for the first time.

First, we switch on the GENIUS using the on/off switch (f). The LEDs on the control unit then light up for one second, followed by the buttons for the bypass, filter status and automatic operation flashing.

Please wait 30 seconds before pressing the power button on the remote control for 3 seconds. From this point, the device starts working at speed 4.

Controller function

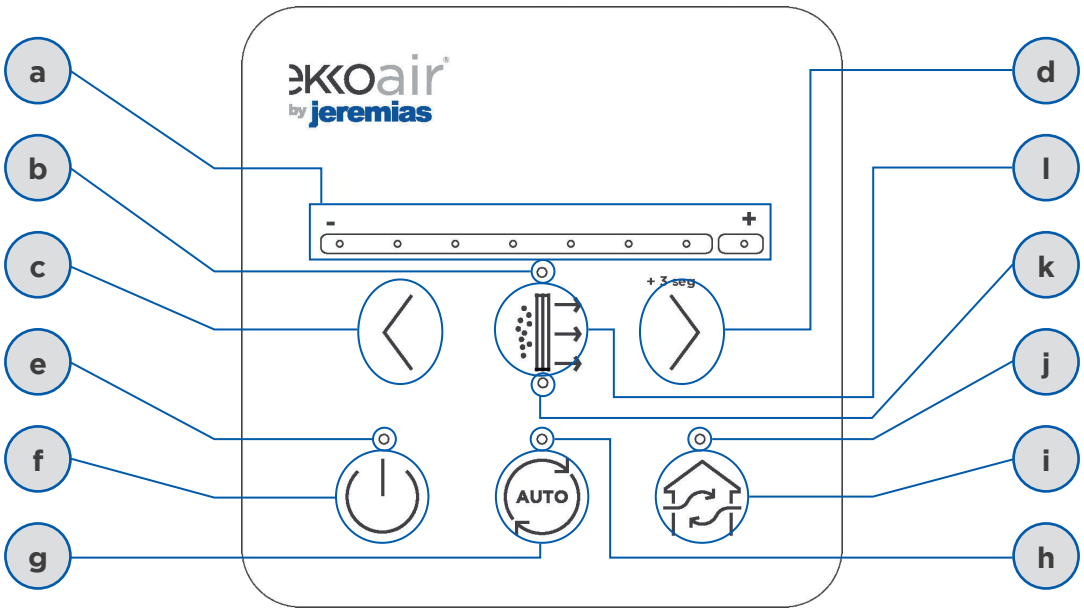
1. Controller operating states:

a) Normal operating mode
Only the operating state is displayed - the device is switched on and the LED (e) is lit. The device is fully functional and works according to the user settings.

b) Control mode - 1 click on any button
Shows the active functions and settings of the device (ventilation performance). The display lasts about 4 seconds, then the controller returns to sleep mode.

c) Adjustment mode - 2 clicks
Setting or activating some functions is only possible in this mode. Activating the adjustment mode is done by double-clicking on the corresponding button whose function you want to change.

2. Controller diagram



3. Description of the buttons, LEDs and their functionality:

a) Display of the device air flow setting using LEDs

LED 1-7: standard flow rate (low - high)

- LED 1 flashing: EXT1 mode (bathroom) is active. Lights up for 1 minute after the bathroom light is switched off.

LED 8:

- short flashing: boost mode is active
- long flashing: EXT2 mode (extractor hood) is active. Lights up for 1 minute after the extractor hood is switched off.

b) Signaling of the set flow rate (LED diodes 1 to 7)

c) Button for reducing the device flow rate

d) Button for increasing the device flow rate

- Pressing for approx. 3 seconds starts the boost functionality for 1 minute (8 LEDs flash briefly). Pressing again for 3 seconds stops the boost function.

f) ON/OFF switch

- Simply press to switch on the ventilation unit.
- Press the button for approx. 3 seconds when the unit is running, then the required cooling starts automatically for approx. 3 minutes and the LED (e) flashes quickly. After cooling, the LED (e) goes out and the unit continues to work at a minimum flow rate.
- By pressing the button for approx. 6 seconds, the ventilation unit automatically starts the required cooling for approx. 3 minutes, the LED (e) flashes slowly. After cooling, the LED (e) goes out and the unit is switched off.
- When the appliance is switched off, it returns to the previous mode as soon as the ON/OFF switch is pressed for approx. 3 seconds.

g) Automatic mode button - control according to AQS sensors

- Automatic mode is activated by pressing the button (g), LED (h) lights up. The appliance now reacts to the ventilation requirement in a gently controlled manner according to the real-time sensors. After reaching CO2 = 800 ppm, HR = 65 %, ventilation continues at the flow rate preset by the user.
- The aim of ventilation control is to find the optimum ventilation level (flow rate) based on the concentration of the controlled substance in the ventilated room. For this reason, the device can ventilate over a long period of time until the safe concentration limit or complete ventilation of the controlled substance is reached. As soon as the concentration has fallen to the set value of CO2 = 700 ppm and HR = 60 %, the ventilation is switched off and goes into standby mode.
- If several sensors are used, the control unit prioritises the sensor with the highest ventilation requirement.
- If the LED (h) flashes 3 times after pressing the button (g), no AQA sensor is connected or the AQA sensor is defective

i) Button for activating the summer bypass:

- Pressing the button (i) activates the bypass when the bypass conditions are met (page 10) or switches it off again.

- Signal (j) lights up: Bypass function is activated.

- Signal (j) flashes: Bypass function cannot be started. The device is in frost protection mode.

- Signal (j) does not light up: Bypass is not active.
- Child safety lock

- Protection against unauthorized use can be activated by pressing the bypass button (i) for 6 seconds. The LEDs (j), (h) and (b) flash 3 times. Nothing can then be set using the buttons (c) and (d); when these buttons are pressed, the LEDs (j), (h) and (b) flash 1 time.

- The EXT1 and EXT2 functions remain active. The child safety lock can be deactivated by pressing the bypass button (i) again for 6 seconds.

k) Filter signal

- As soon as the LED (k) flashes red, both filters of the device must be cleaned or replaced. This is necessary after approx. 4400 operating hours (approx. 1/2 year). The function of the device is not restricted in any way. By pressing the buttons (g) and (i) at the same time, the filter display is reset and the red LED (k) goes out.

Error table

No.	Error message	possible cause	solution
1	The device does not start	The power cord is not connected	Check network connection / Check activation of security function
		The main switch is in position 0	Set the switch to position 1
		The entire driver loading process was not completed filter clogging indicator	Turn the device off and on again using the main switch, wait until the controller is fully charged. The controller stops flashing
2	The red indicator light above the filter symbol flashes	Clogged pipes or heat exchanger defect	Replace the filter
3	Even at maximum device performance, there is little or no ventilation	Clogged filters	Replace the filter
		Verstopfte Rohre oder Wärmetauschedefekt	Check the appliance's outlets or pipes for blockages that prevent free air circulation.
4	Device becomes too loud	Clogged filters	Replace the filter
		Fan distribution incorrectly configured	Check and clean the device
		Device outlets clogged	Turn off the appliance using the main switch and wait 5 minutes before turning it back on. Visually inspect the thermal protector and contact the supplier if the problem persists.
5	The external electric heater of the device does not heat (preheating, post-heating)	Clogged filters	Replace the filter
		Fan distribution incorrectly configured	Check and clean the device
		Device outlets clogged	Turn off the appliance using the main switch and wait 5 minutes before turning it back on. Visually inspect the thermal protector and contact the supplier if the problem persists.
6	The night cooling function cannot be activated. The signal button flashes 3x and the function does not switch on.	Does not meet the start requirements of the function, the outside temperature is too low	Wait until the outside temperature rises. The function is only active at the programmed temperature.
7	The bypass function cannot be activated, all LEDs flash once, the function does not switch on.	BOOST mode activated	Wait until the boost function has finished or turn off the boost as explained in the user manual
		Parental controls activated	Disable parental controls
8	BOOST mode cannot be activated, the LEDs flash 1 or 3 times	3 flashes: very low outside temperature	Wait until the outside temperature rises
		1 flash: Child lock function activated.	Disable parental controls
9	Auto mode cannot be activated by pressing the button 3 times	3 x flashes: The device is not equipped with a sensor	Check that the sensor is connected and that the wiring is OK.
10	When any function is pressed, the LEDs flash once	Parental controls activated	Disable parental controls
11	The device does not work and the LEDs for controlling the speed of the heat exchanger are constantly flashing	LEDs 1,2,3,4 flash (supply air fan)	Schalten Sie das Gerät am Bedienfeld und am Hauptschalter aus, lassen Sie das Gerät etwa 10 Sekunden lang ausgeschaltet - starten Sie das Gerät neu!
12		LEDs 5,6,7,8 flash (exhaust fan)	
13		LEDs 3,4,5,6 flash	If the error persists after resetting the device, contact the device supplier.

9. AIR QUALITY - SENSORS

The GENIUS can be equipped with various accessories:

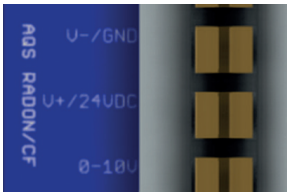
- External CO2 sensor (not included)
- External humidity sensor RH (not included)
- External combined sensor for CO2 and HR (not included)

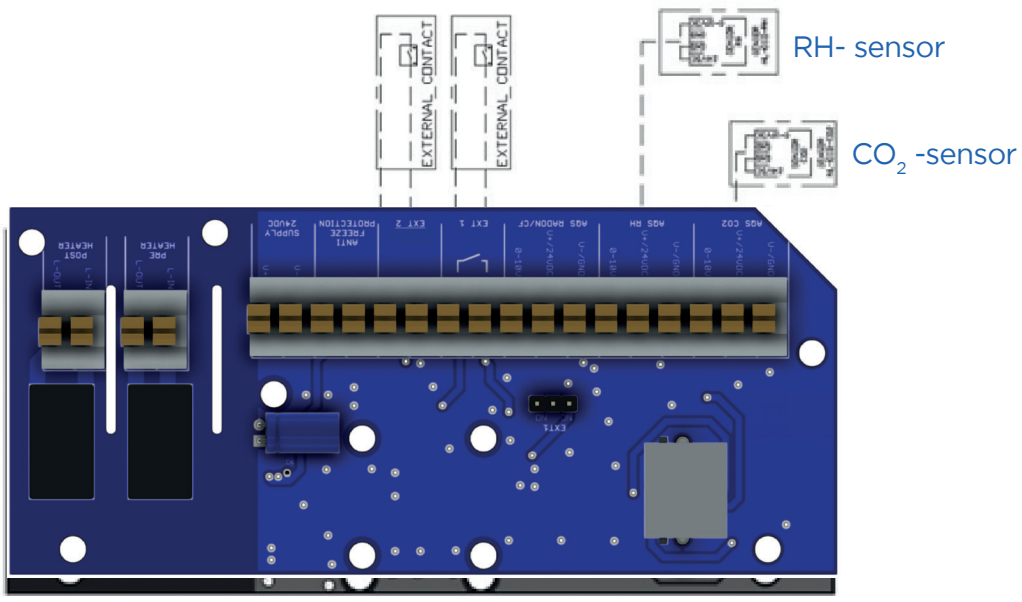
The HOUSE has the option of installing a CO2 sensor. This measures the carbon dioxide (CO2) content in the air in a house in the various rooms and transmits its measurements to the HOUSE system. The device is able to adjust and change the ventilation flow according to the information provided by the CO2 sensor in order to ensure the air quality in the interior.

With a humidity sensor (RH), measurements can be taken in relation to the air humidity in various areas of the house and the data can be transmitted to the HOUSE. The device then adjusts the ventilation flow accordingly in order to create or maintain the ideal humidity concentration in the room air.

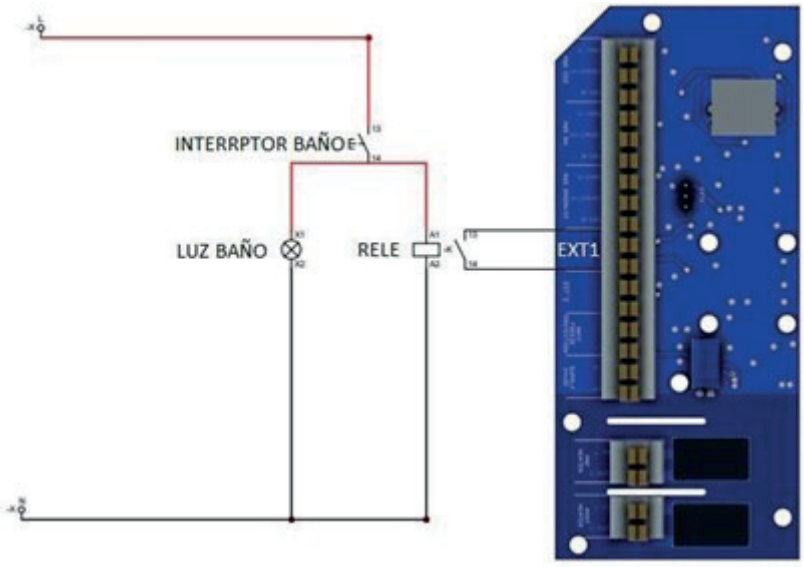
Connection of external outputs

- Negative 0V
- Positive pole 24 V
- 0-10 V signal
- Analog input resistance 100,000 Ω





Solid state relay circuit with service lighting

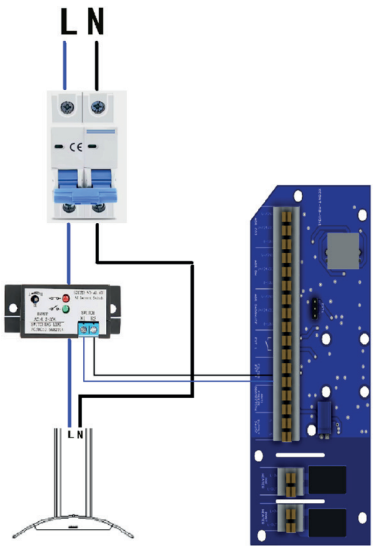


The system enables the bathroom extractor to be activated at maximum power by switching on the bathroom light. After switching off the light, the extractor remains active for 1 minute.

To implement this system correctly, compatible relays that fulfil the following characteristics must be used:

- Type: Electromechanical
- Control voltage: 230 V AC
- Number of contacts: 2 changeover contacts (SPDT)
- Current carrying capacity: 8 A
- Example model: Contactor 2P 25A 2NO 230V 1 module Hager ESC225S Silent

Inductive relay circuit for the kitchen extractor bonnet



An inductive relay can be connected to the EXT2 input, which ensures that the ventilation unit runs at maximum power in the bedrooms and living rooms when the extractor bonnet is activated. The ventilation remains active for 1 minute after the bonnet is switched off. This ensures greater ventilation efficiency and prevents smoke or heat build-up, thereby optimising system performance. Valid option for installation: AC detection M3010 and M3056.

10. MAINTENANCE

10.1 FILTER

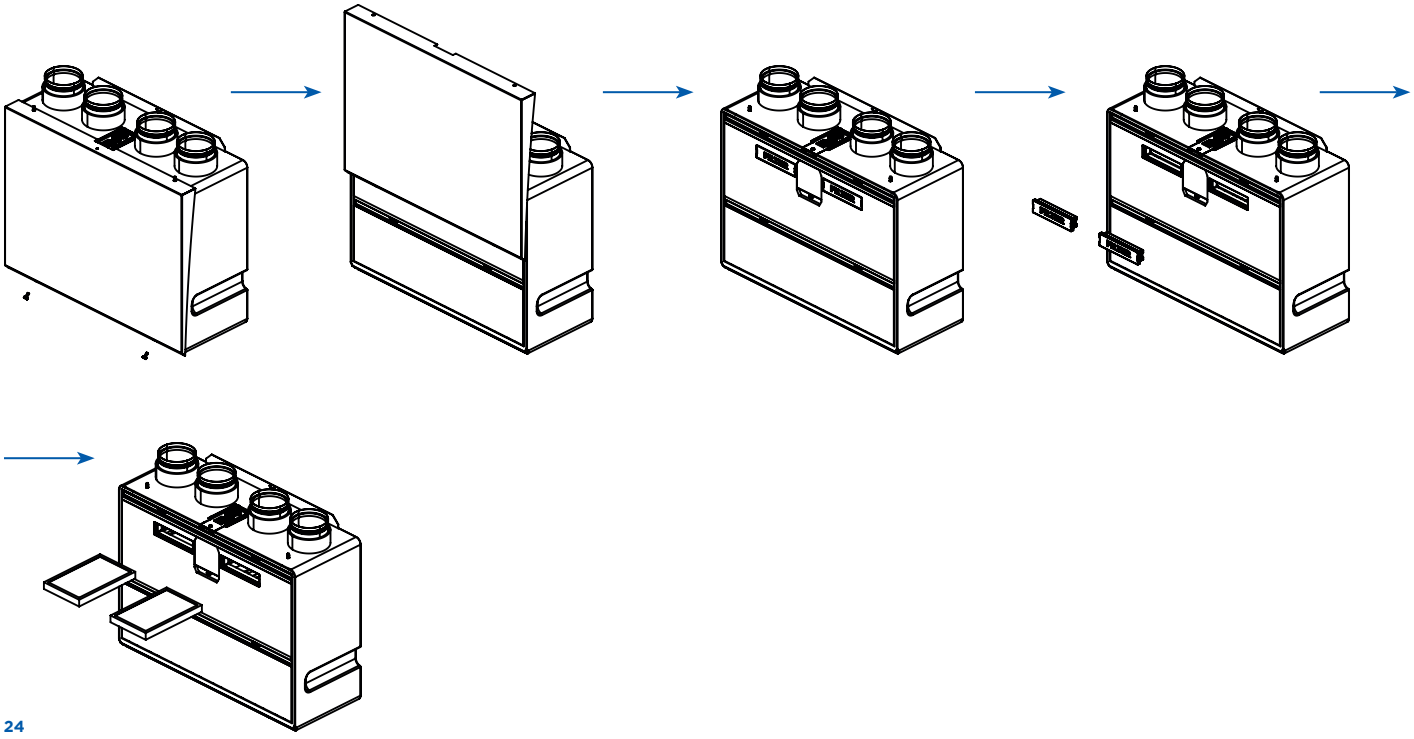
- If the filters are not replaced (cleaned) correctly, the functionality of the device may be reduced.
- Never operate the device without an air filter, otherwise the device may be damaged.
- FILTER CHANGE OR CLEANING (BY THE USER)
- Before starting any maintenance work, the power supply must be switched off. During installation, the switch must be secured so that it cannot be switched on again without authorization.
- In normal operation, a filter change is necessary after approx. 6 months (approx. 4400 operating hours).
- The filter blockage depends on the environment in which the device is operated.
- The more dust particles the ambient air contains, the faster the filter box becomes clogged. If a filter blockage is indicated, you should therefore always consider replacing the filter.
- The filter change indicator is indicated on the control panel by a red LED flashing under the filter function.
- Before you start replacing the filter, make sure you are using the correct filter (M5 and F7).
- Remove the plastic covers from the device lid.

1 LOOSEN THE SCREWS

2 REMOVE FRONT PANEL

3 REMOVE FILTER COVER

4 REMOVE DIRTY FILTERS, INSERT NEW ONES

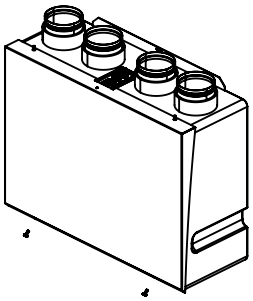


10.2 HEAT EXCHANGER (FOR THE INSTALLER)

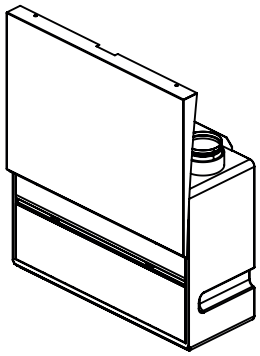
Visual inspection and cleaning of the heat exchanger

- Then visually inspect and clean the heat recovery exchanger (item 12).
- Vacuum the heat exchanger with a vacuum cleaner or use the vacuum cleaner brush attachment. Always vacuum the heat exchanger from the front to remove fine dust.
- This should be done at least once a year

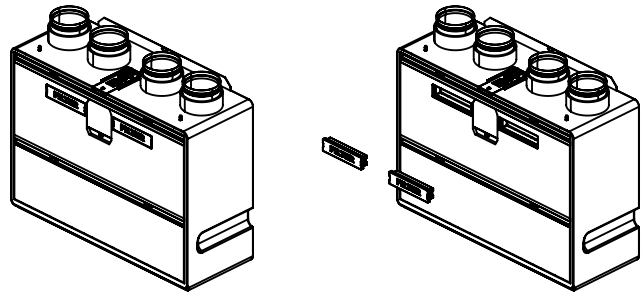
1 Removing the filter cover

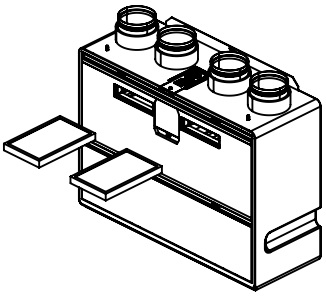


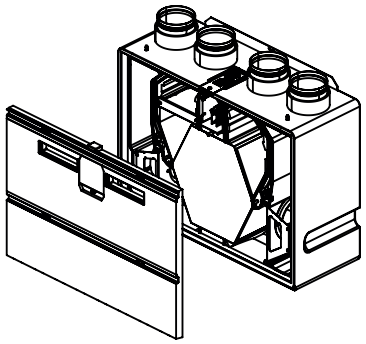
2 Removing the filters

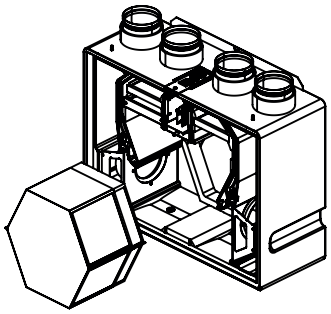


3 Unscrewing the outer cover









4 Remove the outer cover and the front polypropylene to expose the interior of the device

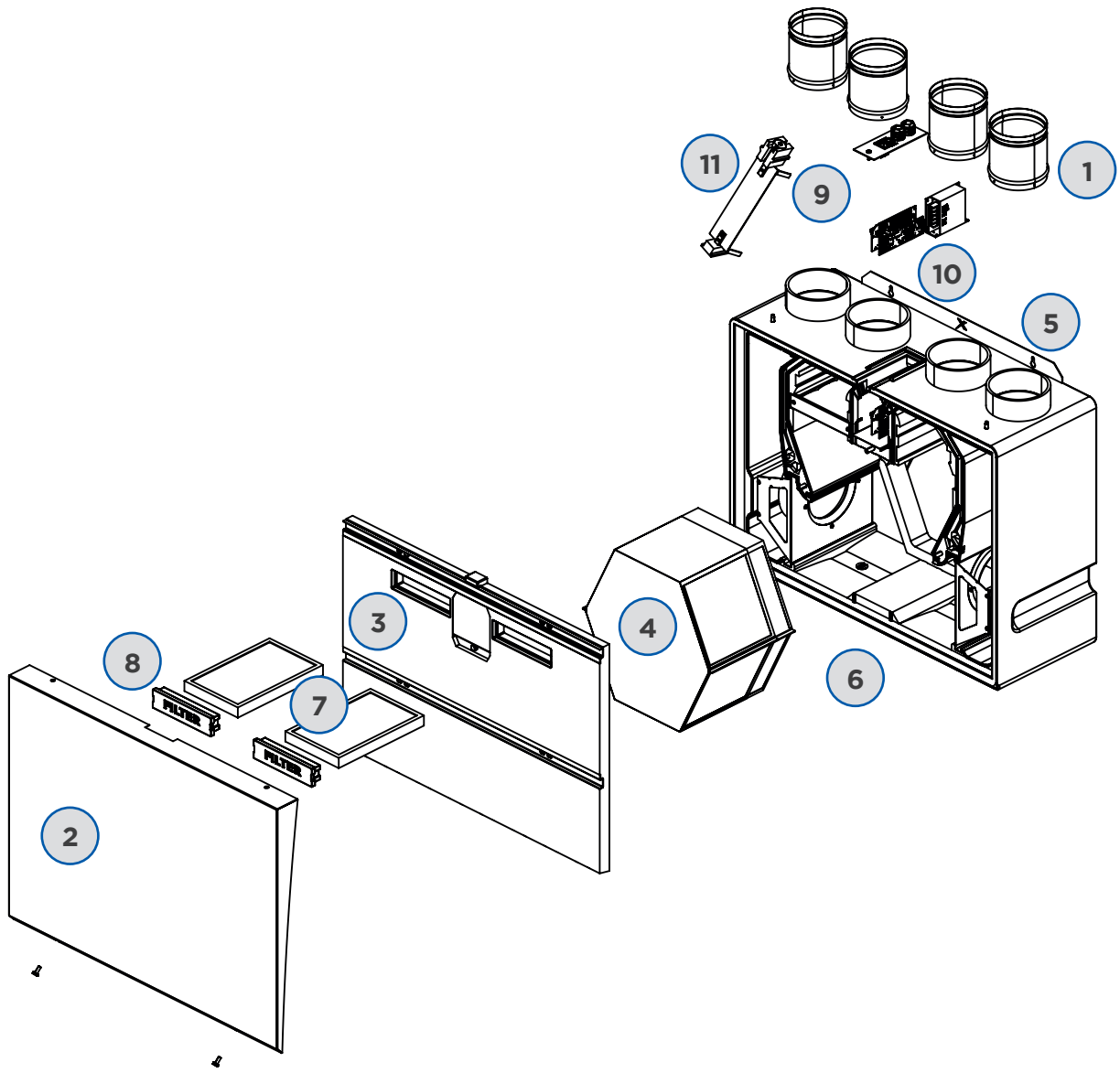
5 Remove heat exchanger

6 Clean heat exchanger with water

- Treat the disassembled heat exchanger with a disinfectant or antibacterial product suitable for cleaning and disinfecting aluminum and plastic. Allow the heat exchanger to dry thoroughly before reinstalling it in the appliance.
- Do not use sharp tools or brushes with hard bristles to clean the heat exchanger. Avoid high-pressure cleaning and chemicals. The heat exchanger could be permanently damaged.
- After cleaning, reinstall the heat exchanger in the body of the appliance.

11. Exploded view

Explosionszeichnung		
Number	Description	Pieces
1	Connector Ø125mm with seal	4
2	Front cover	1
3	Polypropylen front	1
4	Heat exchanger	1
5	Mounting brackets	2
6	Condensate drain	2
7	Filter	2
8	Filter cover	2
9	Connection plate	1
10	Electronic board	1
11	Automatic bypass	1



12. GUARANTEE

The guarantee per item is in accordance with the statutory provisions. The guarantee only applies if all installation and maintenance instructions have been followed. The guarantee covers manufacturing defects, material defects or functional defects of the device. We do not guarantee the suitability of the device for specific purposes; the determination of suitability is solely at the discretion of the customer.

The warranty does not cover defects caused by:

- Incorrect handling
- Transport damage - financial compensation must be agreed with the carrier
- Failure to comply with the service conditions
- Incorrect electrical connection or protection
- Incorrect operation
- Interventions on the product
- Normal wear and tear
- Due to a natural disaster
- Lack of or incorrect maintenance of the installation

When the warranty is claimed, a report (included in the product documentation) must be submitted containing:

- Details of the applicant/company
- Sales invoice
- Detailed description of the defect
- Data on the socket protection
- Photo of the product manufacturing label and, if applicable, the serial number
- Photo of the product installation location
- Measured product values: air temperature, voltage, current.

In both the case of warranty and post-warranty service, please contact the supplier or installation company that carried out the installation. A warranty repair is carried out at the place where the device was installed or by arrangement. The method of resolving warranty repairs is at the sole discretion of the company‘s service center. The complainant will receive a written notification about the outcome of the complaint - warranty repair. In the case of an unjustified complaint, all associated costs are to be borne by the claimant.

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Jeremias high quality products to be installed only by selected experts.