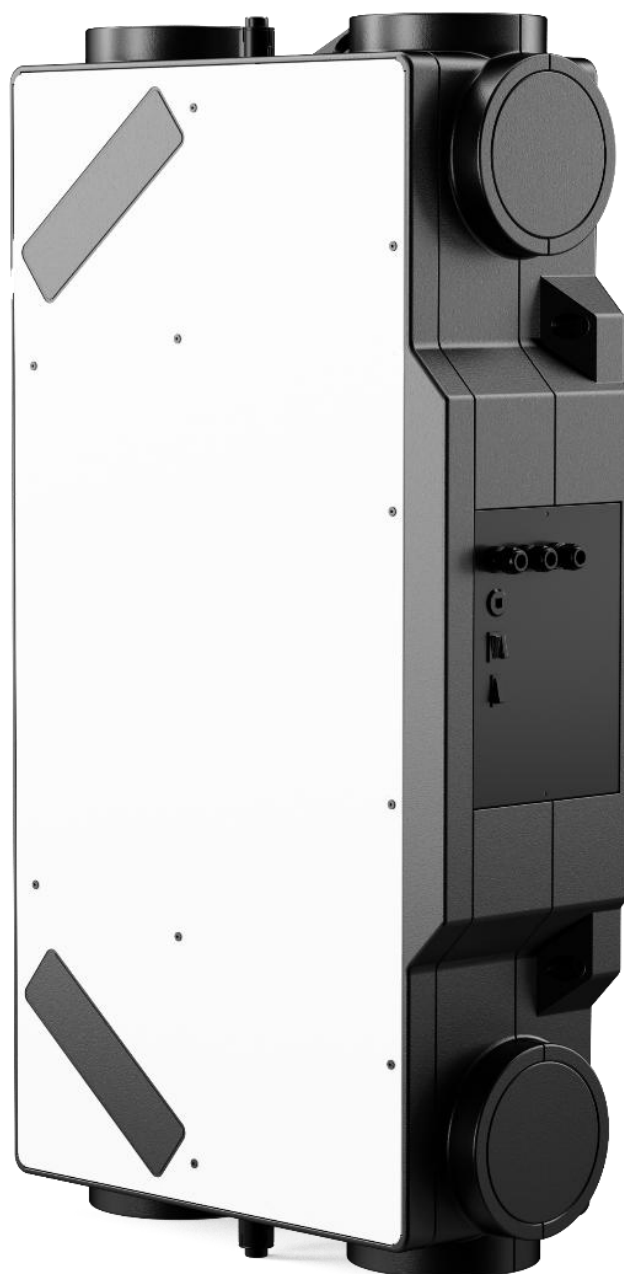




INSTALLATION AND OPERATION MANUAL

CENTRAL HEAT RECOVERY UNITS

GENIUS

G350 / G450

WIFI version

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1. General information

1.1. Entry

- This document "Operation and Installation Manual" is intended for second generation GENIUS central heat recovery systems with a nominal flow of 350 m³/h (**G350-XX-X-XX-BM-X**) and 450m³/h (**G450-XX-X-XX-BM-X**) hereinafter referred to as the "device". At the same time, it is better than the shortened manual located directly on the device, the so-called "Quick Guide".
-  **The device may only be installed and connected by a trained person with the appropriate authorization to connect electrical devices, and who has the appropriate tools and equipment. All instructions and recommendations contained in this manual must be followed during installation.**
- A thorough understanding of this document is essential for the proper and safe installation and operation of this device. Failure to follow the conditions specified in this document may result in improper operation of the device.
- After reading this manual, please keep it for future reference.
- Any interference with the internal wiring of the device beyond the scope specified in this manual is prohibited. Due to the continuous development of our products, we reserve the right to change this manual.
without prior notice.
- Children and persons with reduced physical, sensory or mental capabilities, or lacking experience and knowledge, may only use the appliance if they are supervised or have received appropriate training to use the appliance safely and understand the risks involved.
- Children must not play with the device.

1.2. Warnings and symbols

- The following names and symbols are used in the user manual, on the packaging and on the product to indicate particularly important information:



Warning. Please pay attention to all hazard warnings and precautionary instructions.



Danger. Heed all warnings as there is a risk of electric shock or a situation which, if not avoided, could result in death or serious injury.



Link to another part of the manual.



Care— read the user manual before use – separate the product (e.g. accessories)



Connecting the protective conductor.



Warning about correct position when handling and storing the packaging.



Warning about the need to protect against moisture. Product packaging marked with this sign must not be transported in open means of transport or stored in unroofed buildings or on the ground without a support.



Warning about the fragility of the product content and the need to handle the packaged product with care.

FRAGILE
KEEP DRY

Warning about the need to protect the product inside the packaging against moisture and fragility.

1.3. Using the GENIUS Unit – G350 and G450

1.3.1. Definition of unit

- The device is offered in 2 flow variants:
 - A) **G350-XX-X-XX-BM-X** (hereinafter referred to as the G350 unit) – Nominal flow of the unit 350 m³/h with the possibility of mechanical switching on the unit body to a nominal flow of 300 m³/h
 - B) **G450-XX-X-XX-BM-X** (hereinafter referred to as the G450 unit) – Nominal flow of the unit 450 m³/h with the possibility of mechanical switching on the unit body to 400 m³/h
- The GENIUS unit is an air exchange device using ventilation technology with heat recovery (heat recovery heat exchanger – G350-HR-X-XX-BM-X, G450-HR-X-XX-BM-X) and humidity (enthalpy heat exchanger – G350-ER-X-XX-BM-X, G450-ER-X-XX-BM-X) with the option of an integrated pre-heater built into the unit or with the possibility of connecting an external post-heater (not included in the unit), which is powered and controlled directly from the unit controller.



The unit is equipped with a mechanical bypass with an automatic opening/closing function depending on the unit inlet temperature. A description of this function can be found in a separate chapter, 5.3.3.1.

- The device can be operated in **two ventilation modes**:
 - o **Manual**– forced ventilation. The device ventilates continuously, according to the power set by the user.
 - o **Automatic**– Ventilation based on air quality sensors (AQS). Up to two independent AQS sensors – CO₂, RH, and radon (accessories). By default, a temperature sensor (V/C) can be connected to the device, allowing ventilation to occur only when needed. If more sensors are required, the "HUB8" accessory can be used to connect up to eight sensors for each measured parameter. The user sets the device's power (airflow) solely based on the required air exchange (number of people) in the ventilated rooms, and the device ventilates according to actual demand – proportionally adjusting power to ventilation needs.



The unit can be controlled:

- o **Using the web application – WIFImodule.eu**– default control. Functionality described in a separate chapter 5.2.2.
- o **Wired wall-mounted controller**– not included in the scope of delivery, must be ordered as an accessory – SK. Connecting accessories is described in a separate chapter 4.3.2.1.
- o **Wireless RF remote control**– not included in the standard scope of delivery, must be ordered as an accessory – RF REMOTE CONTROL. Connecting accessories is described in a separate chapter 4.3.2.2.
- o Using a higher-level BMS system via the Modbus RTU communication protocol. Discussed in a separate chapter 4.3.2.3.
- The device can be connected to the air supply from the right (right version) or from the left (left version) depending on the ordered device configuration:



- o Unit configuration without integrated preheater (XF2-xxx-xxxxxxXxW-1A0)
 - Changing the right/left version can be done as follows:
 - Rocker/mechanical switch on the controller housing (R/L) – the factory setting of the device is the correct design. Discussed in a separate chapter 4.2.1.
 - using the commissioning application – intended for authorized and trained technicians
- o In case of configuring the device with a built-in preheater (GXXX-XX-X-1P-BM-X), the specific version must be ordered
 - Right-hand version – GXXX-XX-R-1P-BM-X
 - Left version – GXXX-XX-L-1P-BM-X



Connecting the duct to the device from the front and side is described in a separate chapter 3.2.4.1.



The device also has the ability to switch the nominal flow as follows:

- o The rocker/mechanical switch is located on the device housing, on the control cover. The factory setting for the device is output 2. This is discussed in a separate section, 4.2.2.

- G350
 - Capacity 1 - 300 m3/h at available pressure 200 Pa
 - Capacity 2 - 350 m3/h at available pressure 200 Pa
- G450
 - Capacity 1 - 400 m3/h at available pressure 200 Pa
 - Capacity 2 - 450 m3/h at available pressure 200 Pa
- using the service application – intended only for authorized service technicians
 - Possibility to set the efficiency to 1 m3/h in the range from 30% to 100% of the nominal air flow
 - G350 – allows you to set the air flow rate from 105 to 350 m3/h
 - G450 – allows you to set the air flow rate from 135 to 450 m3/h
- The device is designed for vertical wall mounting only (only in versions without heater – GXXX-XX-U-XX-BM-X) and horizontal ceiling mounting.
- The device utilizes constant flow technology – the flow does not decrease as external pressure in the ducts increases (different pressure drops in individual ventilation systems). The device maintains the airflow rate desired by the user until the maximum external pressure is reached.
- The unit is designed for continuous operation with the option of using manual operation mode (continuous ventilation) or automatic operation mode (demand-controlled ventilation – depending on needs using air quality sensors – AQS).
- The device is intended for use in closed and dry rooms with a room temperature of +5°C to +30°C. and a maximum relative humidity of 70% non-condensing.
- The maximum operating altitude of the device is 2000 m above sea level.
- **The temperature of the fresh air supplied from outside can range from -20°C to +40°C (for the version with a connected preheater). If the supply air temperature is lower than -20°C, the unit may switch off automatically to protect against possible damage.**



1.3.2. Prohibited environments, use, installation of the GENIUS device:

- **for removing burning or glowing substances!**
- **for removing flammable or explosive gases,**
- **for the extraction of aggressive agents,**
- **for sucking up all kinds of liquids,**
- **in environments with an increased occurrence or risk of explosion, flammable substances and increased dust or in air containing other harmful pollutants,**
- **in environments with an increased risk of moisture condensation, such as bathrooms, swimming pools, saunas, etc.,**
- **the device should not be installed directly under an electrical socket or installation box,**

Neither the manufacturer nor the supplier is liable for damage resulting from improper use of the equipment (e.g., drying out new buildings). The user bears the risk.



1.4. Transport, delivery and storage control

1.4.1. Transport

- It is important to transport the product in the position indicated by the symbol on the packaging.
- The packaging must not be overloaded with additional weight beyond that permitted by the manufacturer.
- The packaging must not be exposed to external factors.
- The air temperature during transport must be between -25 and 55 °C.
- Relative humidity during transport must be between 10 and 90%, non-condensing.
- **Use appropriate transport tools to prevent damage to goods and harm to people's health and safety.**
- In the event of further transport without the original packaging or with changed original packaging, ensure that the device is optimally secured and protected against damage.



1.4.2. Supply control

- Before installation and removing the device from the box, inspect the packaging for any signs of damage. If the packaging is damaged, complete a damage report and contact the carrier.
- Please verify that the product you ordered is correct. After unpacking, check that the device and other components are in good condition. Please report any discrepancies to the supplier immediately. If a complaint about an order is not submitted immediately after its delivery, it will not be taken into account at a later date.

1.4.3. Storage

- If the device will not be installed immediately after purchase, it should be stored in an enclosed, non-condensing room at a temperature between +5 and +40°C. If the product will be transported at temperatures below 0°C, it should be stored at the installation site for at least 2 hours before installation.

1.5. GENIUS Package Contents

- | | |
|--|----|
| - GENIUS Unit | 1x |
| - Condensate drain hose Ø33/25 – length 1m | 1x |
| - 2.5x120 strip | 2x |
| - Short manual + safety of use | 1x |
| - Energy label for a nominal flow of 350 m ³ /h | 1x |
| - Energy label for a nominal flow of 450 m ³ /h | 1x |

1.6. Before starting the installation



- Check that there are no electrical cables or other lines (e.g. gas, water, etc.) running inside the installation location (ceiling, wall) that could be damaged during installation.



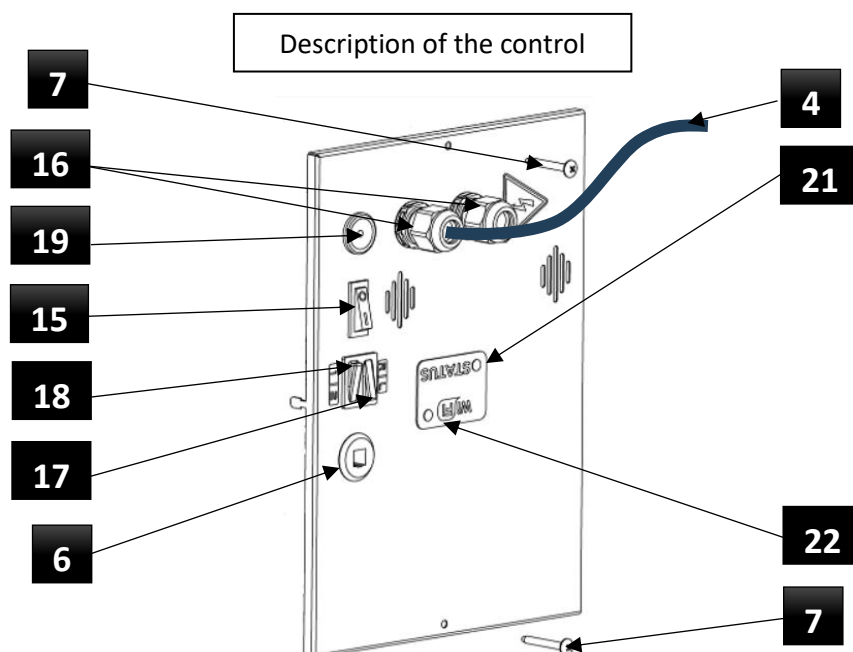
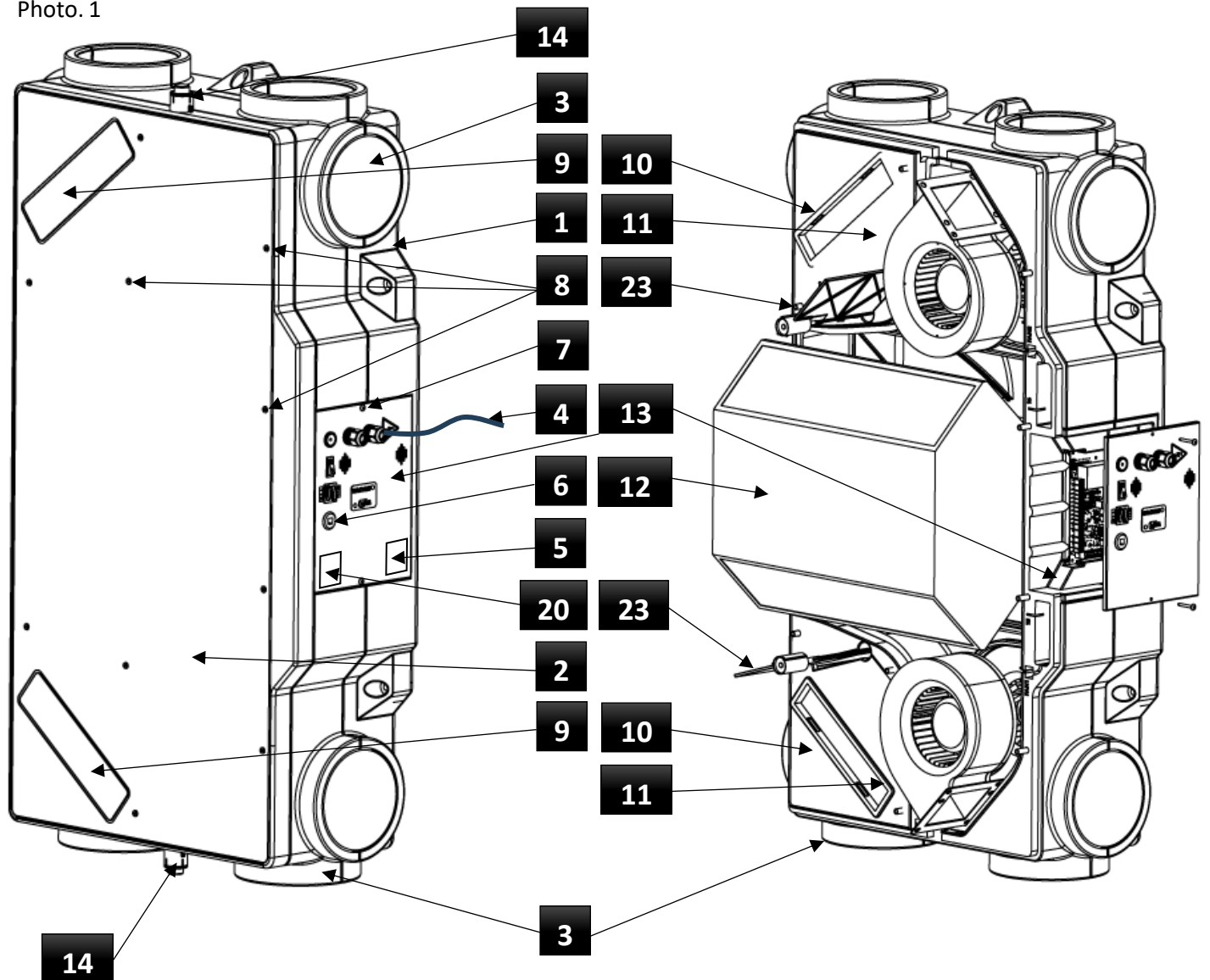
- It must be ensured that the installation of the device, including the holes in the wall (according to the selected installation position) for passing the connection cable, do not pose a threat to the statics of the building and meet all safety requirements specified by law.

- Check the method of draining condensate from the device to the sewer system or another method that will ensure trouble-free condensate drainage.

2. Technical parameters

2.1. Key parts of the unit

Photo. 1



2.1.1. Unit housing (item 1)

- The device's body is made of black, molded EPP (expanded polypropylene) plastic. The material itself is a technologically advanced material with a unique combination of strength and light weight, rebound elasticity, thermal insulation, chemical resistance, acoustic insulation, and recyclability.

2.1.2. Cover (Item 2)

- The device's cover is made of black, molded EPP (expanded polypropylene) plastic. The material itself is a technologically advanced material with a unique combination of strength and light weight, rebound elasticity, thermal insulation, chemical resistance, acoustic insulation, and recyclability. Additionally, a metal cover has been added to the front of the device.

2.1.3. Connection sockets (Item 3)

- Connection sockets ABOUT 160 / ABOUT 200 mm (inner/outer diameter) are made of EPP material. To increase connection flexibility, it is possible to connect channels both in the device axis and perpendicular to it. The connection can also be combined, **WITH THE EXCEPTION OF THE CONNECTOR WHERE THE HEATER IS LOCATED, IT MUST NOT BE TAMPERED WITH** (if the unit is equipped with one). This allows the duct to be connected directly to the unit without the need for an elbow (connecting the duct perpendicularly does not affect the declared ventilation parameters).

2.1.4. Power cord (item 4)

- Connects the device to the mains connection point. Cable length: approx. 1 m. CYSY cable type: 3x1.5mm² with 50mm rounded and marked ends.

2.1.5. Nameplate (Item 5)

- Shows the electrical and other technical parameters of the device.

2.1.6. RJ connector (item 6)

- The RJ connector is used to connect the controller to the device.

2.1.7. Self-tapping screw Ø4.2x35 (item 7)

- Self-tapping screw (2 pcs) is used to secure the adjustment cover plate. Size Pozidriv 1 (PZ1).

2.1.8. M6x25 screw (Item 8)

- Galvanized screw M6x25 (10 pcs.) with flat head and internal "star" socket TORX size 20.

2.1.9. Filter caps (item 9)

- Filter caps are used to seal filters in the device. They are made of black, molded EPP (expanded polypropylene) plastic.

2.1.10. Filters (item 10)

- The set includes M5 filters (ISO ePM10 55%). Filters can be supplied as accessories upon request:
 - o F7 (ISO ePM1 70%) – Order code -F7-2-G350-450
 - o F9 (ISO ePM1 85%) - Ordering Code – F9-2-G350-450
 - o G4 with activated carbon layer (ISO ePM2.5 60%) – order code G4ZWA-2-G35-450
- Filter evaluation according to ČSN EN ISO 16890

2.1.11. Fan (Item 11)

- A plastic radial fan with an EC motor from leading global manufacturers ensures smooth operation, minimal electricity consumption and long service life of the device.

2.1.12. Heat exchanger (item 12)

- The counterflow heat exchanger ensures maximum heat recovery (G350-HR-X-XX-BM-X, G450-HR-X-XX-BM-X...). In the version with an enthalpy heat exchanger (G350-ER-X-XX-BM-X, G450-ER-X-XX-BM-X...), it also enables moisture recovery into the ventilated space.

2.1.13. Motherboard (item 13)

- It ensures the connection of individual components and at the same time allows the customer to connect to the device

2.1.14. Condensate outlet (item 14)

- Plastic condensate drain made of ABS. Used to drain condensate from the device.

2.1.15. Power switch (item 15)

- The single-pole main switch is used to connect/disconnect the device from the mains.

2.1.16. Cable passage (item 16)

- It is designed to accommodate a communication cable (e.g., UTP) to connect the device to the master BMS system, as well as a power cable. Typically, the cables are routed through cable glands.

2.1.17. Right/left version switch (Item 17)

- Switching between the right (R marking - factory settings) and left (L marking) versions

2.1.18. Nominal air flow switch (Item 18)

- Switching between two nominal airflows:
- a) G350 300 and 350 m³/h
- b) G450 400 and 450 m³/h

2.1.19. Rubber grommet (item 19)

- Rubber grommet for routing cables from peripheral devices (e.g. EXT1, EXT2, AQS sensors).

2.1.20. Wi-Fi label (item 20)

- Wi-Fi identification label for logging in to the control via web application – APP (www.WiFiModule.eu)

2.1.21. LED Status (item 21)

- Status LED indicates device operating status

2.1.22. WIFI LED (item 22)

- The WIFI LED indicates the device's connection status to the local WIFI network and the Internet, allowing control via the app

2.1.23. Mechanical bypass (item 23)

- The unit is equipped with two bypass flaps that allow the free cooling system to be automatically started/stopped based on the air temperature difference between the outside and inside air. Material: ABS plastic, black.

2.2. Main dimensions of the G350; G450 unit:

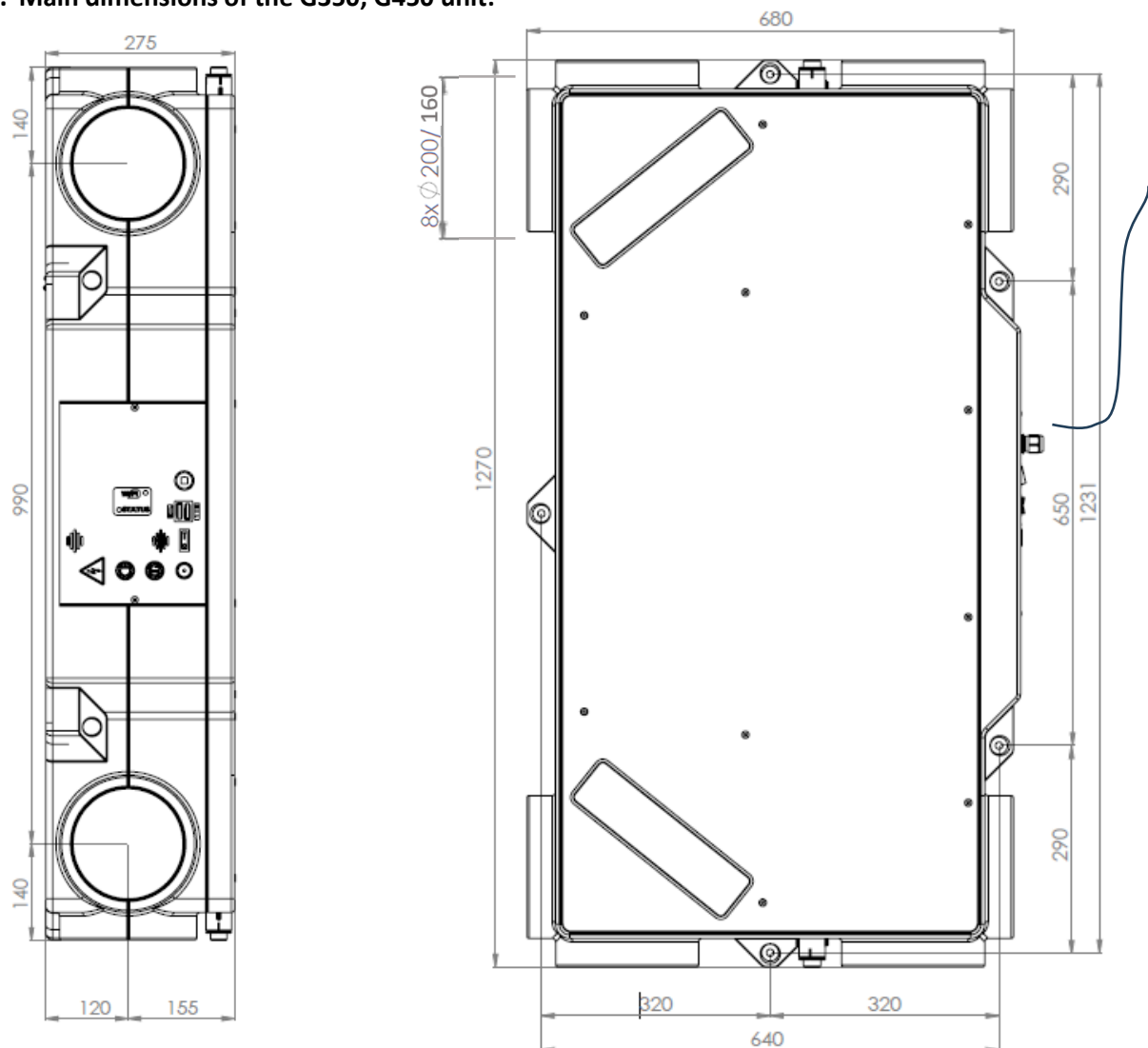


Photo 4

2.3. Technical parameters of GENIUS devices

2.3.1. Basic technical parameters

- Basic technical parameters – G350; G450

GENIUS type			GENIUS 350		GENIUS 450	
			G350-HR-X-XX-BM-X	G350-ER-X-XX-BM-X	G450-HR-X-XX-BM-X	G450-ER-X-XX-BM-X
Type of heat exchanger			HRV - temperature	ERV -Temperature/ Humidity	HRV - temperature	ERV -Temperature/ Humidity
Bypass type			Mechanical			
Nominal air flow*	m ³ /h our		300/350	300/350	400/450	400/450
Sound level LWA (**) nominal Q at 200Pa	dB(A)		57.2 (35.6) / 58.8 (37.3)	57.2 (35.6) / 58.8 (37.3)	57.1 (35.5) / 59.3 (37.7)	57.1 (35.5) / 59.3 (37.7)
Libra***	kg		26	28	27	29
Charger	V/Hz		1 ~ 230 / 50-60			
Nominal Entry****	IN		280 / 1900	280 / 1900	420 / 2050	420 / 2050
Nominal current****	AND		2 / 9	2 / 9	3 / 10	3 / 10
Thermal efficiency *****	Warm	%	86.4	72	85.6	70
	Humidity	%	-	49	-	45
Internal preheater	IN		1000W (+9°C)	1000W (+9°C)	1000W (+7°C)	1000W (+7°C)
Electrical safety	IP		20			
Central Energy Class Control (SEC) / Demand Control	-		-39.3 (A) / -42.5 (A+)	-38.8 (A) / -42.2 (A+)	-38.2 (A) / -41.8 (A)	-36.6 (A) / -40.8 (A)

* Nominal air flow at an external pressure drop of 200Pa,

** Sound pressure level in free space at a distance of 3 m (Q2)

*** Unit weight without packaging

**** Power consumption, current (at nominal air flow/200Pa)

***** Heat recovery efficiency given at 70% of nominal flow in accordance with EN 308

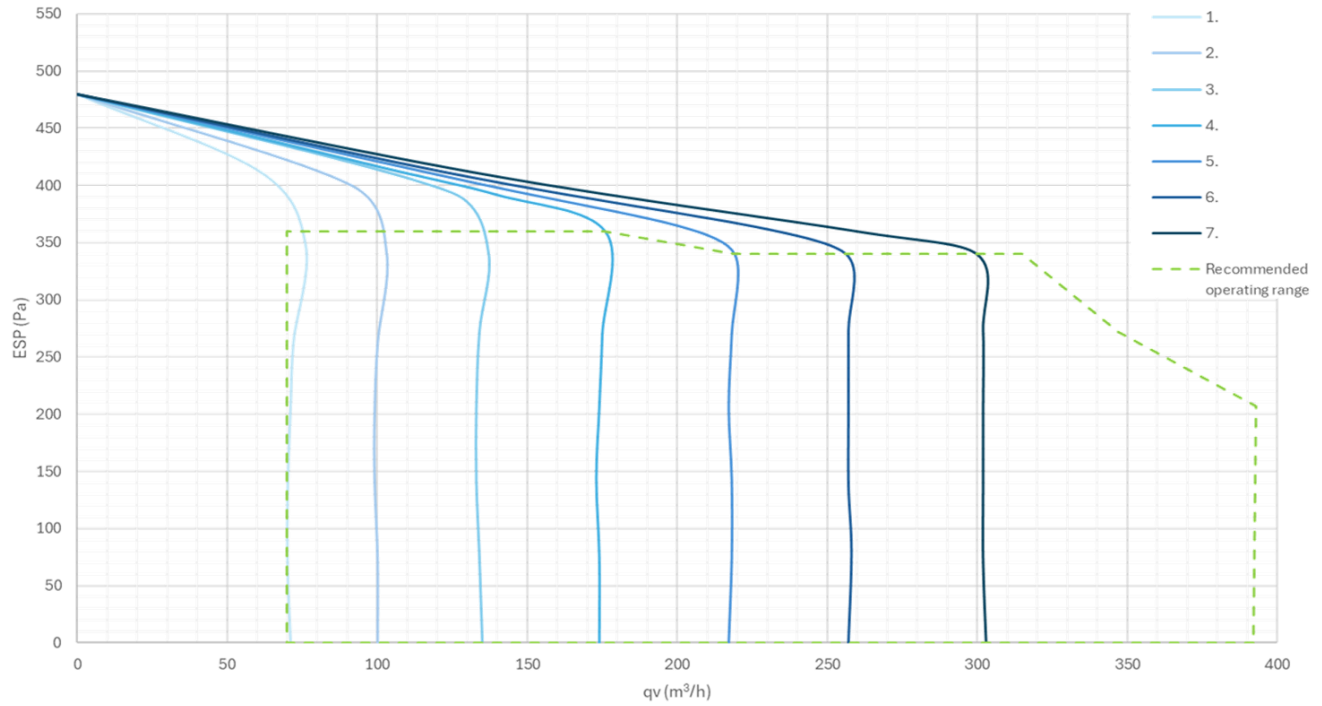
***** Energy efficiency class (SEC) – for lower/higher nominal flow rate (energy class)

SFP and SPI parameters

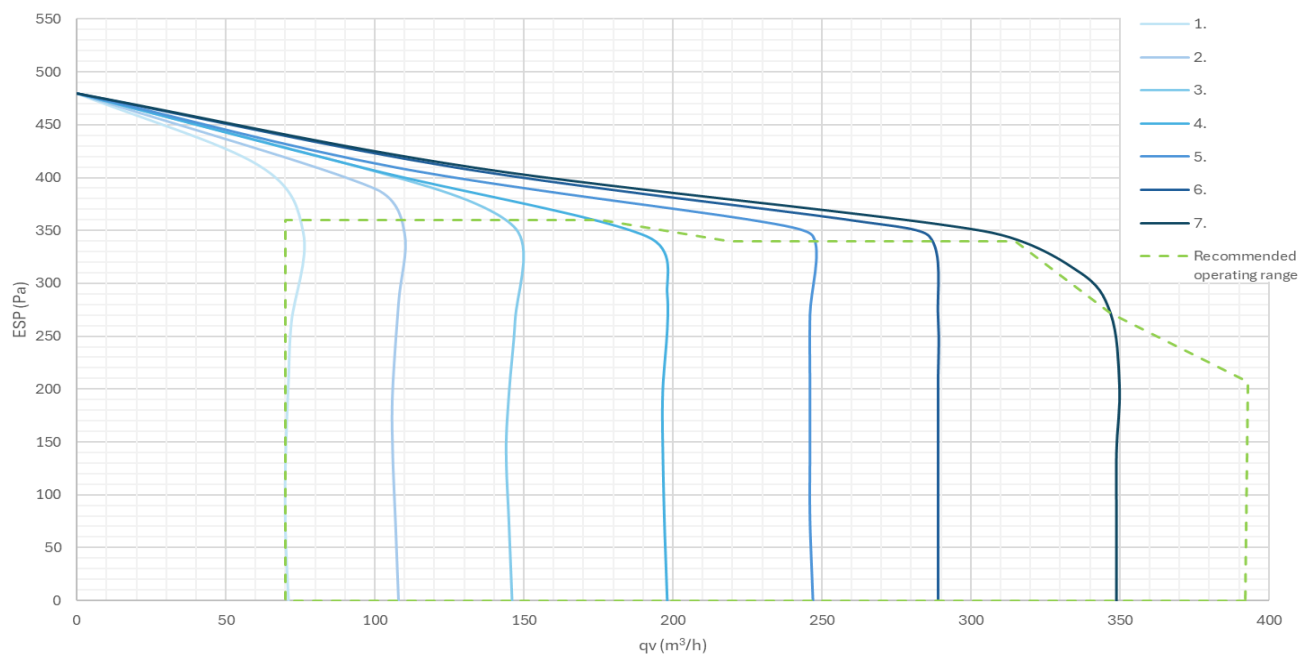
Unit	SFP (W/m ³ /h)	Nominal air flow - ECODESIGN (m ³ /h)	Fan rated power (W)	Computing power - control (W)	Computing power - total unit (W)	SPI (W/m ³ /h)
G350 (300m ³ /h)	0.258	210	54	3	54	0.26
G350 (350m ³ /h)	0.298	245	73		73	0.30
G350 (400m ³ /h)	0.293	280	82		82	0.29
G350 (450m ³ /h)	0.357	315	112		112	0.36

2.3.2. Air flow curves

- G350 – nominal flow 300 m³/h - (output 1)

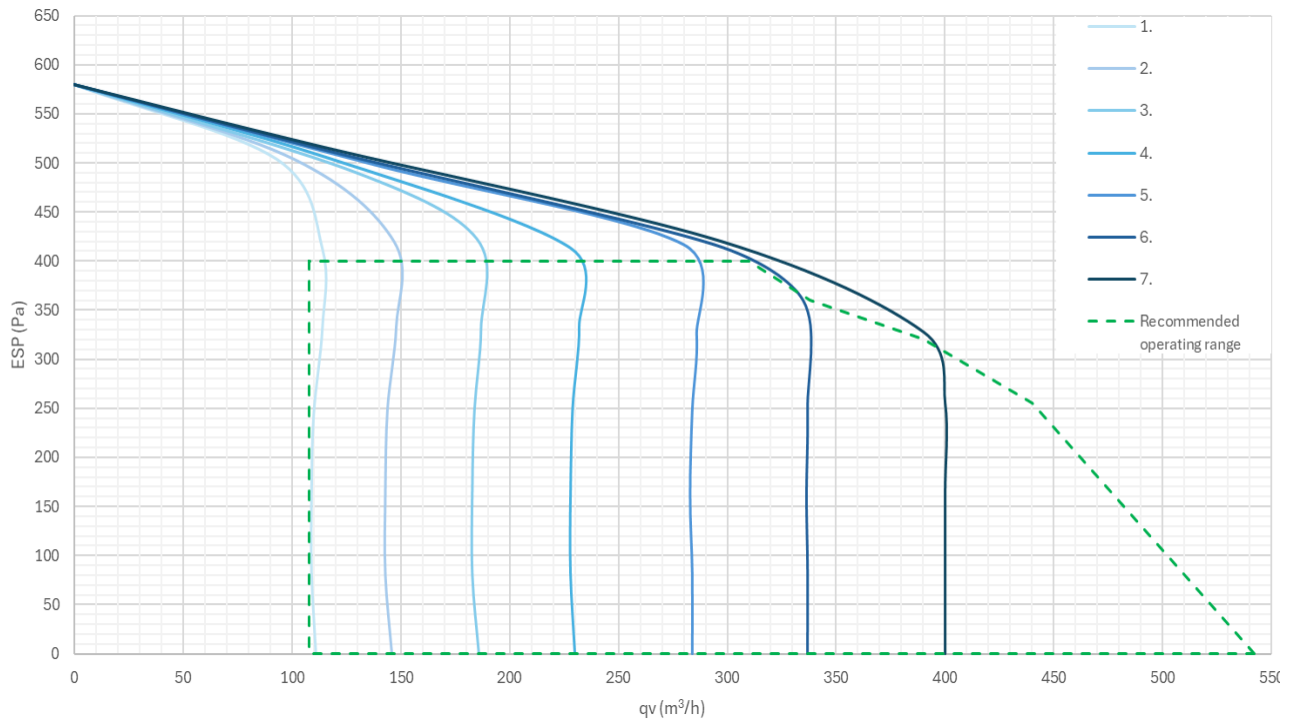


- G350 – nominal flow 350 m³/h - (output 2)



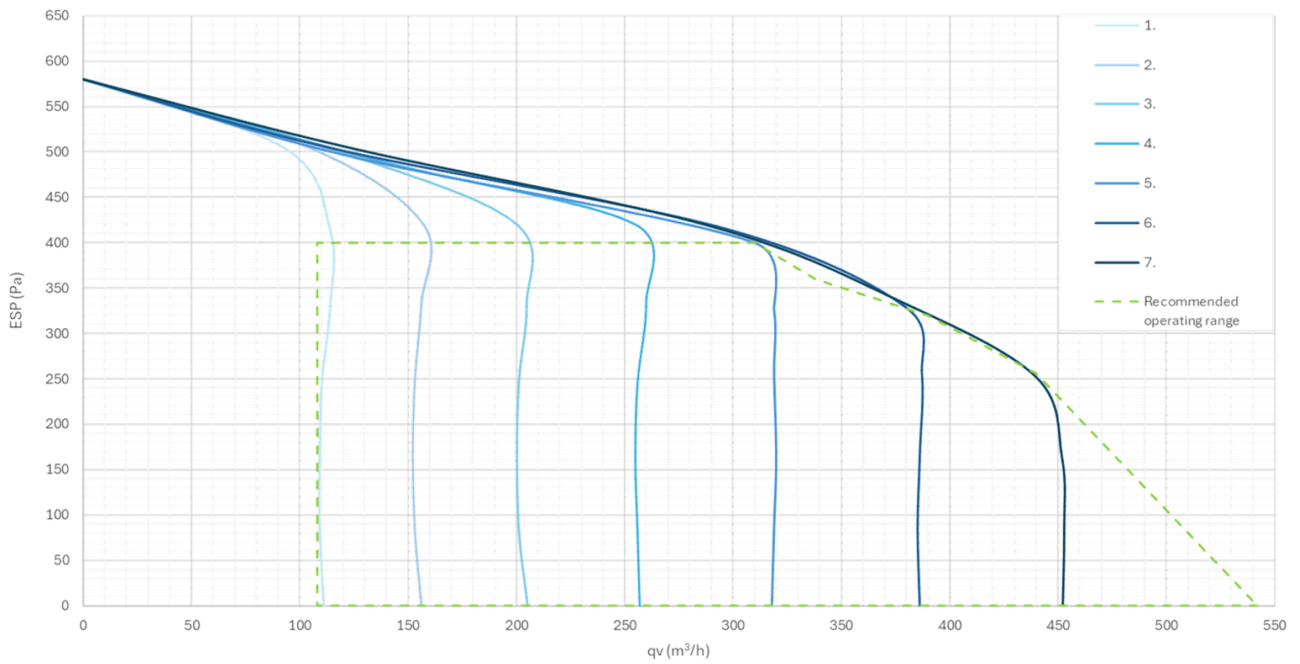
- **G450 – nominal flow 400 m³/h - (output 1)**

Chart 3



- **G450 – nominal flow 450 m³/h - (output 2)**

Chart 4



EC Declaration of Conformity– the current and complete version of the EC Declaration of Conformity can be found on our website www.ekkoair-by-jeremias.com

2.3.3. Acoustic data G350

- G350 - Nominal flow 300 m3/h - (capacity 1)

- Radiation of the unit into the interior (into the interior of the room)

Table

Air flow	Sound power level LWA [dB (A)]																							Sound pressure level in an open field at the reflection plane				
	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.25 k	1.6 k	2 k	2.5 k	3.15 k	4 k	5 k	6.3 k	8 k	10 k	LWA	1 m	3 meters	5 meters
	(dBA)																							(dBA)	LPA (dBA)	LPA (dBA)	LPA (dBA)	
MIN / 1.	6.9	13.0	15.5	13.6	13.0	16.7	30.8	30.7	23.0	39.4	27.5	26.7	30.2	26.3	21.7	19.3	18.7	15.7	12.6	11.6	11.7	11.8	11.6	11.3	41.6	27.6	20.0	<20
MID / 4.	14.8	22.5	29.2	29.7	35.3	36.7	34.9	37.5	34.2	35.3	32.7	34.2	40.1	38.9	33.1	33.5	32.4	28.5	23.4	21.7	18.8	17.2	15.4	12.4	47.4	33.4	25.8	21.9
MAX / 7.	23.0	28.8	35.2	35.3	42.5	44.8	45.1	47.8	45.8	42.2	40.5	38.3	45.2	52.0	46.8	45.3	40.9	38.0	34.9	33.6	30.8	29.2	27.1	21.2	57.2	43.2	35.6	31.7
ECODESIGN*	15.7	21.4	26.0	28.3	34.2	35.9	35.4	37.3	34.7	35.3	32.3	37.1	39.4	38.5	32.9	32.9	31.9	28.3	23.8	21.8	19.3	17.5	15.8	12.8	47.2	33.2	25.6	21.7

*70% of nominal airflow / 50 Pa

Unit Radiation to Duct - Nominal Air Output

Table 4

Airflow Departmen t	Air flow	Sound power level LWA [dB (A)]																										
		50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.2 5 k	1.6 k	2 k	2.5 k	3.1 5 k	4 k	5 k	6.3 k	8 k	10 k	LWA		
		(dBA)																										
ODA	MIN / 1.	13.8	19.8	19.6	26.5	25.7	19.6	22.5	21.6	14.7	25.8	16.6	18.1	15.5	12.9	7.7	4.0	6.9	3.7	1.9	1.0	0.4	1.9	3.5	4.8	33.1		
	MID / 4.	25.6	32.8	37.5	46.4	50.7	38.4	40.9	38.7	30.5	31.4	27.5	31.7	30.4	29.4	20.1	18.0	23.4	19.4	16.1	12.2	8.7	7.9	13.7	6.6	53.0		
	MAX / 7.	32.6	40.2	43.9	53.3	56.5	50.8	53.0	51.3	43.5	42.7	36.7	39.0	37.7	38.9	31.2	28.4	32.6	30.1	28.1	25.6	21.0	20.1	26.3	16.8	60.8		
	ECODE-SIGN*	26.9	32.7	35.7	47.3	46.5	38.0	41.5	39.0	31.3	32.0	29.0	34.2	32.9	29.9	21.5	19.1	24.2	20.8	17.2	13.8	9.3	8.4	13.7	7.8	51.6		
SUP	MIN / 1.	23.8	30.1	24.6	27.9	27.0	21.9	25.0	27.0	26.3	32.0	29.0	21.9	22.0	23.0	24.8	23.2	22.3	18.8	18.0	17.4	13.9	12.1	8.2	6.6	39.1		
	MID / 4.	41.3	48.5	45.0	52.4	47.2	49.0	50.4	49.5	47.8	46.4	45.4	40.5	43.7	47.0	46.6	45.5	47.6	43.9	44.4	43.7	41.0	39.5	35.5	31.8	60.5		
	MAX / 7.	44.9	54.0	54.6	58.9	58.9	60.1	62.1	59.8	57.5	53.7	48.5	50.5	52.6	57.4	57.9	55.3	53.1	55.7	55.3	52.6	51.9	48.2	45.3	70.0			
	ECODE-SIGN*	38.9	46.2	44.0	50.4	49.7	45.8	48.0	49.4	47.3	47.3	45.0	40.4	44.2	44.9	45.3	44.6	46.6	43.1	43.9	42.6	39.8	38.7	34.1	30.0	59.4		
ETA	MIN / 1.	13.7	19.5	19.8	25.8	24.9	19.1	22.2	20.3	14.8	28.3	17.6	18.2	15.4	13.4	8.0	3.8	6.2	4.0	2.9	1.4	0.3	2.0	4.0	4.9	33.4		
	MID / 4.	27.4	34.8	38.2	47.8	50.1	41.1	42.0	40.3	32.3	32.8	28.3	33.4	32.0	30.3	23.5	20.9	25.8	21.2	17.3	14.4	9.9	9.1	12.6	7.3	53.5		
	MAX / 7.	32.8	38.2	43.2	52.5	55.6	51.3	52.5	51.4	43.0	42.4	36.4	39.7	37.7	37.1	31.2	29.0	33.5	29.6	27.7	25.5	21.0	20.5	24.7	15.3	60.4		
	ECODE-SIGN*	25.7	31.5	34.7	47.4	47.1	38.6	41.8	39.3	31.2	32.3	28.3	33.3	31.9	29.3	23.0	20.1	24.8	20.3	17.3	14.2	10.0	9.2	11.8	7.0	51.8		
EHA	MIN / 1.	24.8	29.3	25.3	28.7	27.7	22.6	25.7	27.6	30.4	28.3	23.4	23.5	22.4	22.8	24.3	22.8	22.3	18.7	17.6	16.2	13.2	11.8	7.8	6.4	38.9		
	MID / 4.	41.7	45.0	50.2	52.0	46.4	48.4	49.4	47.0	46.5	45.3	38.9	42.3	46.2	47.4	47.4	46.3	47.7	43.9	44.5	44.6	41.9	40.9	36.3	33.0	60.2		
	MAX / 7.	44.3	53.2	53.0	56.7	57.9	55.8	58.2	61.4	59.0	56.4	53.4	47.2	49.1	52.1	57.0	57.6	55.6	53.7	56.0	55.8	52.8	52.7	49.5	47.0	69.4		
	ECODE-SIGN*	38.8	44.5	42.4	49.4	49.0	45.4	48.0	48.7	47.2	45.5	44.9	38.5	43.2	44.7	46.1	45.6	46.8	42.8	43.8	43.5	40.5	39.3	35.3	31.4	59.0		

- G350 - Nominal flow 350 m3/h - (output 2)

- Radiation of the unit into the interior (into the interior of the room)

Table

Air flow	Sound power level LWA [dB (A)]																								Sound pressure level in an open field at the reflection plane			
	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.25 k	1.6 k	2 k	2.5 k	3.15 k	4 k	5 k	6.3 k	8 k	10 k	LWA	1 m	3 meters	5 meters
	(dBA)																								(dBA)	LPA (dBA)	LPA (dBA)	LPA (dBA)
MIN / 1.	6.9	13.0	15.5	13.6	13.0	16.7	30.8	30.7	23.0	39.4	27.5	26.7	30.2	26.3	21.7	19.3	18.7	15.7	12.6	11.6	11.7	11.8	11.6	11.3	41.6	27.6	20.0	<20
MID / 4.	16.6	24.3	27.9	29.7	36.1	37.7	37.3	38.9	36.4	33.9	33.9	32.7	40.7	39.5	35.6	35.0	34.0	30.6	25.9	24.0	21.5	19.4	17.7	13.3	48.3	34.3	26.8	22.8
MAX / 7.	25.2	31.4	38.2	37.5	44.6	46.5	47.5	51.6	48.8	44.3	43.3	40.7	46.7	50.3	49.2	47.5	43.0	39.8	37.2	36.0	33.3	31.8	29.9	23.8	58.8	44.8	37.3	33.3
ECODESIGN*	14.2	23.4	28.3	29.6	36.3	38.0	37.5	40.4	37.0	35.9	34.4	33.8	41.6	40.0	34.9	35.2	34.0	30.6	26.9	24.6	21.6	19.9	18.1	13.5	49.0	35.0	27.4	23.4

*70% of nominal airflow / 50 Pa

- Duct Unit Operation - Nominal Air Output

Table

Airflow Departmen t	Air flow	Sound power level LWA [dB (A)]																								
		50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.2 5 k	1.6 k	2 k	2.5 k	3.1 5 k	4 k	5 k	6.3 k	8 k	10 k	LWA
		(dBA)																								(dBA)
ODA	MIN / 1.	13.8	19.8	19.6	26.5	25.7	19.6	22.5	21.6	14.7	25.8	16.6	18.1	15.5	12.9	7.7	4.0	6.9	3.7	1.9	1.0	0.4	1.9	3.5	4.8	33.1
	MID / 4.	28.2	35.7	37.9	47.7	49.8	41.1	43.9	41.5	33.0	34.0	30.5	34.3	33.6	31.6	23.2	20.9	26.0	23.0	19.2	16.0	11.7	10.6	16.3	8.9	53.6
	MAX / 7.	34.7	41.0	45.4	54.2	55.1	51.7	54.8	53.1	46.5	45.5	38.8	40.9	39.2	47.0	40.5	31.0	34.7	32.2	30.6	28.3	24.2	23.1	29.8	20.1	61.8
	ECODESIGN *	27.3	34.8	37.4	48.0	49.6	41.4	44.5	42.3	34.3	35.1	30.9	35.0	33.8	31.6	23.5	21.4	26.3	23.5	20.4	17.2	12.6	11.4	17.2	9.5	53.8
SUP	MIN / 1.	23.8	30.1	24.6	27.9	27.0	21.9	25.7	27.0	26.3	32.0	29.0	21.9	22.0	23.1	24.8	23.2	22.3	18.8	18.0	17.4	13.9	12.1	8.2	6.6	39.1
	MID / 4.	41.0	48.3	45.3	51.0	52.8	48.3	50.6	51.6	49.0	48.0	46.0	41.8	44.6	47.1	47.6	46.7	48.4	45.2	46.1	45.1	42.3	41.3	37.0	33.4	61.3
	MAX / 7.	45.1	55.5	55.8	58.4	59.7	58.1	61.8	64.3	62.5	60.5	56.7	52.1	52.1	54.9	58.8	60.6	58.4	55.6	58.2	57.9	55.9	55.0	51.3	48.2	72.1
	ECODESIGN *	40.5	50.3	46.2	51.0	53.4	49.2	51.1	52.9	51.7	49.7	47.4	43.1	45.9	47.7	48.4	47.6	49.0	46.4	48.1	46.6	43.9	43.1	38.7	34.8	62.4
ETA	MIN / 1.	13.7	19.5	19.9	25.8	24.9	19.1	22.2	20.3	14.8	28.6	17.6	18.2	15.4	13.4	8.0	3.8	6.2	4.0	2.9	1.4	0.3	2.0	4.0	4.9	33.4
	MID / 4.	27.8	35.3	37.8	47.0	50.4	41.8	43.9	41.3	33.3	33.2	29.6	34.2	32.7	30.6	24.5	21.9	26.8	22.5	18.9	15.9	11.5	10.7	14.2	7.8	53.7
	MAX / 7.	34.9	40.6	45.5	54.0	56.1	53.1	55.8	53.8	46.7	45.5	39.1	41.0	39.4	41.8	36.6	31.5	35.8	31.7	30.4	28.2	24.6	23.9	28.1	18.5	62.2
	ECODESIGN *	26.6	33.6	37.0	48.0	50.4	41.6	44.7	43.2	34.1	35.0	30.6	34.5	33.0	30.8	24.4	22.4	27.2	22.9	20.1	16.9	12.7	11.8	15.4	8.3	54.3
EHA	MIN / 1.	24.8	29.3	25.1	28.7	27.6	22.4	25.4	27.4	26.0	30.5	28.4	23.4	22.8	22.8	24.3	22.8	22.3	18.7	17.6	16.2	13.2	11.8	7.8	6.4	38.9
	MID / 4.	41.5	47.6	43.5	50.1	51.4	47.5	49.9	51.4	48.8	46.4	46.0	40.2	43.6	46.8	48.3	47.4	48.8	45.3	45.9	45.8	43.0	42.0	38.2	34.5	60.8
	MAX / 7.	46.0	54.7	55.2	58.0	59.0	57.6	61.3	64.3	63.0	59.7	56.0	50.5	51.1	56.1	58.6	60.3	58.7	55.7	58.6	58.3	55.6	55.4	52.3	49.9	72.1
	ECODESIGN *	40.1	47.8	45.0	50.6	51.1	48.0	50.7	52.5	50.8	48.3	47.2	41.1	44.4	47.1	48.7	47.9	49.3	46.2	47.5	46.9	44.2	43.2	39.5	35.9	61.7

2.3.4. G450 Acoustic Data

- G450 - Nominal flow 400 m3/h - (output 1)

- Radiation of the unit into the interior (into the interior of the room)

Table 7

Air flow	Sound power level LWA [dB (A)]																								Sound pressure level in an open field at the reflection plane			
	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.25 k	1.6 k	2 k	2.5 k	3.15 k	4 k	5 k	6.3 k	8 k	10 k	LWA	1 m	3 meters	5 meters
	(dBA)																								(dBA)	LPA (dBA)	LPA (dBA)	LPA (dBA)
MIN / 1.	11.1	15.3	19.3	19.4	21.6	21.6	24.6	27.7	28.4	39.3	29.9	28.0	32.0	29.7	27.2	23.2	20.5	14.8	13.1	12.1	11.4	11.9	11.6	11.4	41.9	27.9	20.4	<20
MID / 4.	16.3	21.6	25.8	27.7	34.4	35.2	36.5	40.0	38.8	37.4	35.3	36.8	41.4	40.5	37.9	35.5	34.1	31.4	26.6	25.1	23.2	22.1	19.3	14.4	49.2	35.2	27.6	23.7
MAX / 7.	22.3	27.7	33.2	35.0	40.8	42.5	44.4	48.5	46.8	43.8	43.8	43.5	47.6	47.1	46.5	47.4	43.3	41.2	36.8	35.4	33.6	32.8	30.1	23.8	57.1	43.1	35.5	31.5
ECODESIGN*	16.6	22.0	27.3	27.2	33.9	35.6	36.2	39.8	38.8	36.4	35.5	37.4	40.8	40.3	37.5	34.9	33.5	30.9	26.3	24.6	22.6	21.5	18.6	14.1	48.9	34.9	27.4	23.4

*70% of nominal airflow / 50 Pa

- Unit Radiation to Duct - Nominal Air Output

Table

Airflow Departmen t	Air flow	Sound power level LWA [dB (A)]																								
		50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.2 5 k	1.6 k	2 k	2.5 k	3.1 5 k	4 k	5 k	6.3 k	8 k	10 k	LWA
		(dBA)																							(dBA)	
ODA	MIN / 1.	17.2	24.8	24.5	33.1	32.2	24.5	28.1	27.0	18.3	32.2	20.7	22.6	19.3	16.2	9.6	5.0	8.6	4.7	2.4	1.3	0.6	2.3	4.4	6.0	39.0
	MID / 4.	28.5	36.1	37.1	45.3	46.0	40.6	43.4	42.6	36.7	36.3	32.0	36.3	33.8	32.1	25.0	22.4	25.4	22.9	19.0	17.3	12.8	11.4	15.4	8.4	52.1
	MAX / 7.	35.5	41.5	42.8	52.2	53.4	49.6	52.0	50.5	45.0	45.0	40.5	43.0	40.4	38.1	33.2	33.7	34.3	32.6	29.4	27.7	23.0	23.0	27.0	17.0	59.5
	ECODESIGN*	26.8	32.8	35.0	44.4	45.7	39.4	43.3	42.3	35.8	36.3	32.0	36.3	33.3	32.4	24.6	21.4	24.2	22.2	18.5	17.0	12.1	10.8	14.9	8.3	51.5
SUP	MIN / 1.	29.8	37.6	30.3	34.9	33.4	27.4	31.9	33.3	33.0	40.3	36.7	27.3	27.8	28.9	31.0	28.7	27.9	23.5	22.4	21.7	17.3	15.1	10.2	8.2	46.0
	MID / 4.	39.8	47.5	43.5	47.7	47.0	46.5	50.8	52.0	51.7	48.3	43.4	44.9	49.3	50.0	47.2	48.7	48.7	45.7	45.9	45.4	44.3	44.3	39.4	34.9	61.7
	MAX / 7.	46.1	53.5	51.6	55.5	55.4	54.4	58.6	61.0	61.6	57.7	53.5	52.6	54.6	59.9	59.5	58.6	58.0	56.0	57.1	56.5	55.5	51.8	48.3	71.0	
	ECODESIGN*	38.9	47.0	43.4	47.8	48.5	46.1	51.1	51.1	51.3	52.7	48.4	44.0	47.0	49.7	47.1	48.5	48.5	45.9	46.0	45.8	44.4	44.4	39.4	35.4	61.5
ETA	MIN / 1.	17.2	24.4	24.8	32.3	31.9	23.9	27.4	25.4	18.3	35.0	22.0	22.7	19.3	16.8	10.0	4.7	7.7	5.0	3.7	1.7	0.3	2.5	5.0	6.1	39.5
	MID / 4.	28.5	34.7	35.4	45.6	46.0	40.3	42.4	43.3	35.0	35.3	32.3	35.3	34.0	30.7	25.1	21.8	25.7	22.6	18.4	17.4	14.9	13.4	16.4	8.9	51.9
	MAX / 7.	35.9	40.8	42.5	53.2	53.4	49.1	51.2	51.2	44.4	44.9	41.1	43.6	41.3	37.8	33.6	32.3	35.1	32.3	29.0	28.0	23.8	24.3	27.5	17.9	59.7

	ECODESIGN*	26.4	30.6	33.3	45.8	46.6	39.5	41.8	42.8	35.3	35.9	32.6	35.5	33.8	30.5	24.7	21.3	25.4	22.1	18.1	17.4	13.0	13.5	16.0	8.7	51.7
EHA	MIN / 1.	31.0	37.3	31.7	35.1	34.6	28.3	31.8	34.3	33.1	38.7	35.5	29.4	27.9	28.5	30.4	28.5	27.9	23.4	22.0	20.2	16.5	14.7	9.7	8.1	45.7
	MID/ 4.	38.9	46.4	42.2	47.0	48.3	46.7	50.0	52.5	52.1	51.7	48.0	43.9	44.7	47.3	49.7	47.4	48.3	45.6	45.9	45.4	44.1	43.7	38.4	33.8	61.4
	MAX / 7.	45.2	52.9	49.9	55.2	55.0	54.0	58.0	61.7	61.2	60.8	57.3	53.3	52.2	54.8	60.0	60.2	58.5	56.1	57.3	56.5	55.4	55.8	51.5	48.2	70.9
	ECO DESIGN*	37.4	45.2	41.4	47.5	48.4	46.2	49.8	52.0	51.8	51.3	48.0	43.8	44.4	46.2	48.9	46.6	47.6	44.8	45.2	44.7	43.4	42.9	37.7	33.2	60.9

*70% of nominal airflow / 50 Pa

- **G450 - Nominal flow 450 m3/h - (output 2)**

- Radiation of the unit into the interior (into the interior of the room)

Table

Air flow	Sound power level LWA [dB (A)]																								Sound pressure level in an open field at the reflection plane			
	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.25 k	1.6 k	2 k	2.5 k	3.15 k	4 k	5 k	6.3 k	8 k	10 k	LWA	1 m	3 meters	5 meters
	(dBA)																								(dBA)	LPA (dBA)	LPA (dBA)	LPA (dBA)
MIN / 1.	11.1	15.3	19.3	19.4	21.6	21.6	24.6	27.7	28.4	39.3	29.9	28.0	32.0	29.7	27.2	23.2	20.5	14.8	13.1	12.1	11.4	11.9	11.6	11.4	41.9	27.9	20.4	<20
MID / 4.	17.0	23.6	27.4	29.4	35.8	38.4	39.5	43.2	41.1	40.5	37.8	39.2	43.9	42.2	41.7	38.9	37.1	34.6	30.0	28.5	26.5	25.6	22.9	16.8	51.9	37.9	30.4	26.4
MAX / 7.	25.1	28.7	34.2	37.1	44.4	44.9	46.8	51.0	48.9	46.2	45.7	46.0	49.4	49.1	48.4	49.3	45.9	43.5	39.2	37.8	35.9	35.0	32.7	26.5	59.3	45.3	37.7	33.8
ECODESIGN*	13.9	23.5	27.8	29.7	36.3	38.0	38.7	42.1	40.5	38.9	37.6	39.7	43.2	42.1	39.9	37.6	36.0	33.5	29.0	27.4	25.4	24.6	21.5	15.9	51.2	37.2	29.6	25.7

*70% of nominal airflow / 50 Pa

- Unit Radiation to Duct - Nominal Air Output

Table

Airflow Departmen t	Air flow	Sound power level LWA [dB (A)]																									
		50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 k	1.2 5 k	1.6 k	2 k	2.5 k	3.1 5 k	4 k	5 k	6.3 k	8 k	10 k	LWA	
		(dBA)																								(dBA)	
ODA	MIN / 1.	17.2 24.8	24.5	33.1	32.2	24.5	28.1	27.0	18.3	32.2	20.7	22.6	19.3	16.2	9.6	5.0	8.6	4.7	2.4	1.3	0.6	2.3	4.4	6.0	39.0		
	MIDDLE / 4.	30.5 38.3	38.8	47.1	48.3	42.3	46.3	45.2	39.1	39.5	34.7	38.6	36.0	33.9	28.7	25.1	28.5	26.2	22.6	21.0	16.5	15.4	19.7	11.3	54.2		
	MAX / 7.	38.1 42.7	44.2	54.0	54.9	51.0	53.9	53.0	47.1	47.2	42.6	45.4	42.4	40.3	34.9	34.1	36.5	34.7	31.9	30.3	26.1	25.2	30.3	19.9	61.4		
	ECODESIGN *	28.2 34.8	37.6	47.0	48.2	42.5	45.9	44.9	38.5	39.0	34.4	38.3	35.5	33.1	26.7	24.2	27.2	24.9	21.4	19.8	15.1	14.1	18.3	10.2	53.9		
SUP	MIN / 1.	29.8 37.7	30.9	34.7	33.4	27.4	31.9	33.8	33.2	40.3	36.3	27.4	27.9	28.9	31.0	28.9	27.9	23.5	22.4	21.7	17.3	15.1	10.2	8.2	46.0		
	MIDDLE / 4.	40.6 49.4	45.8	50.4	50.4	49.3	53.5	55.7	55.2	51.5	47.5	46.5	52.5	55.2	55.2	50.7	51.9	49.4	49.6	49.3	48.1	48.4	43.6	39.9	65.0		
	MAX / 7.	50.0 54.6	52.7	58.4	58.3	56.4	60.8	63.3	63.7	63.9	60.4	56.4	54.5	57.1	61.8	62.7	61.8	58.8	59.7	59.0	57.9	58.3	54.4	51.3	73.4		
	ECODESIGN *	39.7 50.1	46.7	51.2	51.0	49.3	53.2	55.5	55.0	55.0	51.3	47.3	46.3	51.3	52.5	49.7	51.1	48.4	48.8	48.5	47.3	47.3	42.5	38.8	64.5		
ETA	MIN / 1.	17.2 24.4	24.8	32.3	31.1	23.9	27.8	25.4	18.4	35.4	22.0	22.7	19.3	16.8	10.0	4.7	7.7	5.0	3.7	1.7	0.3	2.5	5.0	6.1	39.5		
	MIDDLE / 4.	30.2 36.7	37.0	48.3	48.3	42.3	44.8	45.6	38.6	39.2	35.1	38.3	36.2	33.2	28.6	24.5	29.0	25.8	21.9	21.0	17.3	17.5	20.1	11.6	54.2		
	MAX / 7.	39.0 42.5	44.1	54.6	55.0	50.7	52.9	53.5	46.4	47.3	43.4	45.7	42.9	39.7	35.6	34.2	37.7	34.5	31.5	30.4	26.6	26.8	30.1	20.5	61.5		
	ECODESIGN *	28.1 31.4	36.1	48.6	48.8	41.8	44.5	45.4	37.8	38.6	34.9	37.9	35.8	32.2	26.8	23.5	27.6	24.7	20.8	20.0	15.7	16.0	18.8	10.3	54.2		
EHA	MIN / 1.	31.0 37.3	31.7	35.3	34.2	28.3	31.8	34.3	33.1	38.7	35.5	29.4	27.9	28.5	30.4	28.5	27.9	23.4	22.0	20.2	16.5	14.7	9.7	8.1	45.7		
	MIDDLE / 4.	40.0 48.4	44.8	50.1	50.7	48.9	53.5	55.4	55.4	51.9	47.2	47.1	50.4	50.4	53.4	50.7	51.6	48.4	50.0	49.9	48.8	48.2	43.4	39.0	64.5		
	MAX / 7.	47.7 54.5	51.2	57.6	57.2	56.2	60.4	63.5	63.3	63.1	59.7	56.5	54.5	57.0	61.8	62.5	61.4	58.5	59.8	59.1	58.1	58.2	54.0	51.0	73.1		
	ECODESIGN *	39.3 48.7	45.5	50.2	51.4	48.9	52.6	55.0	54.7	54.3	50.9	46.9	46.6	49.3	52.0	49.6	50.6	48.0	48.6	48.0	46.8	46.6	41.8	37.6	63.9		

*70% of nominal airflow / 50 Pa

Heat and moisture recovery efficiency – G350

- G350 - Nominal flow 300 m³/h - (output 1)

Table

Trade name		G350 (nominal 300 m ³ /h)								
Unit type		G350-CX-XX-BM-X				G350-EX-XX-BM-X				
Nominal power		300 m ³ /hour				300 m ³ /hour				
Type of recuperator		HRV - temperature				ERV - temperature/humidity				
		Flow (m ³ /h)	Temperature efficiency % (EN308)	Current (A)	Consumption(W)	Flow (m ³ /h)	Temperature efficiency % (EN308)	Moisture efficiency % (EN308)	Current (A)	Consumption (W)
Airflow level	1	70	91.9	0.10	9	70	78.9	61.2	0.10	9
	2	100	91.3	0.15	14	100	77.3	58.7	0.15	14
	3	133	90.7	0.30	20	133	75.8	56.3	0.30	20
	4	174	90.1	0.55	32	174	74.2	53.7	0.55	32
	5	218	89.5	0.85	61	218	72.7	51.3	0.85	61
	6	257	88.9	0.99	121	257	71.3	49.1	0.99	121
	7*	300	88.4	1.12	165	300	69.8	46.4	1.12	165
	Airing**	350	87.7	1.26	179	350	68	43.8	1.26	179
	ECODESIGN***	210	89.5	0.34	54	210	73	51.7	0.34	54

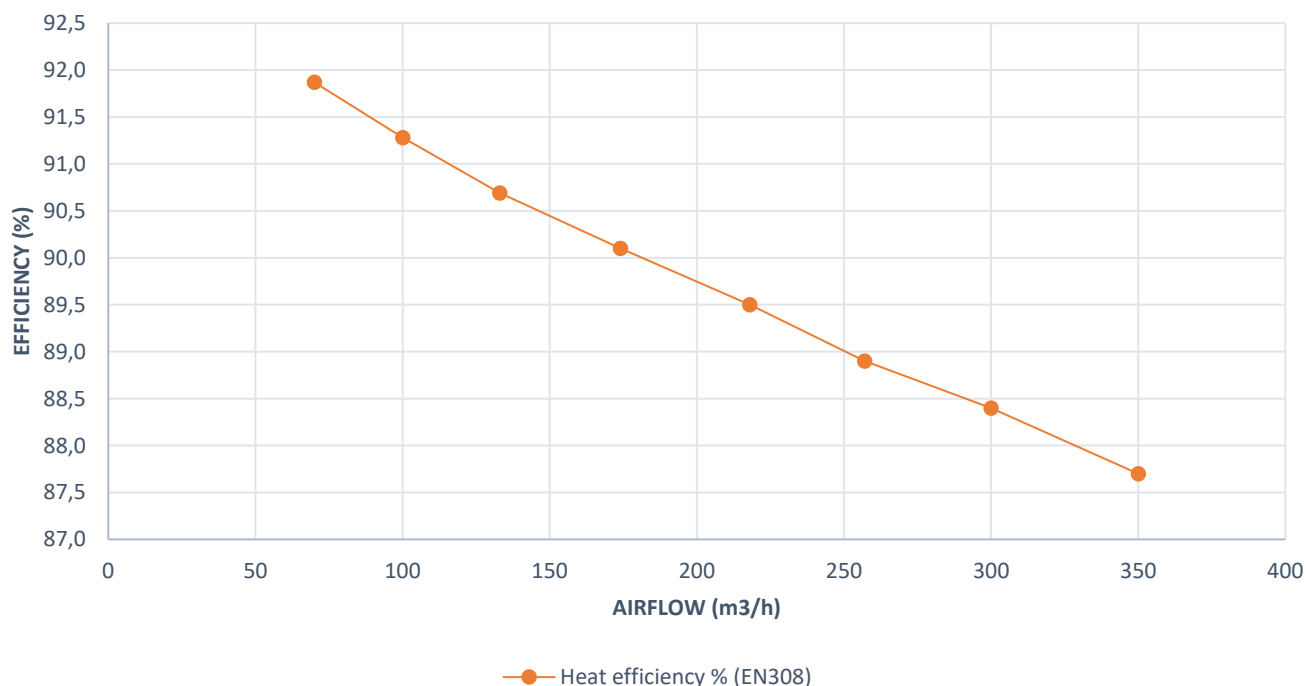
* Nominal air flow at 200 Pa internal pressure drop

** BOOST mode – intensive ventilation for a specified period of time

***70% of nominal airflow / 50 Pa

Chapter

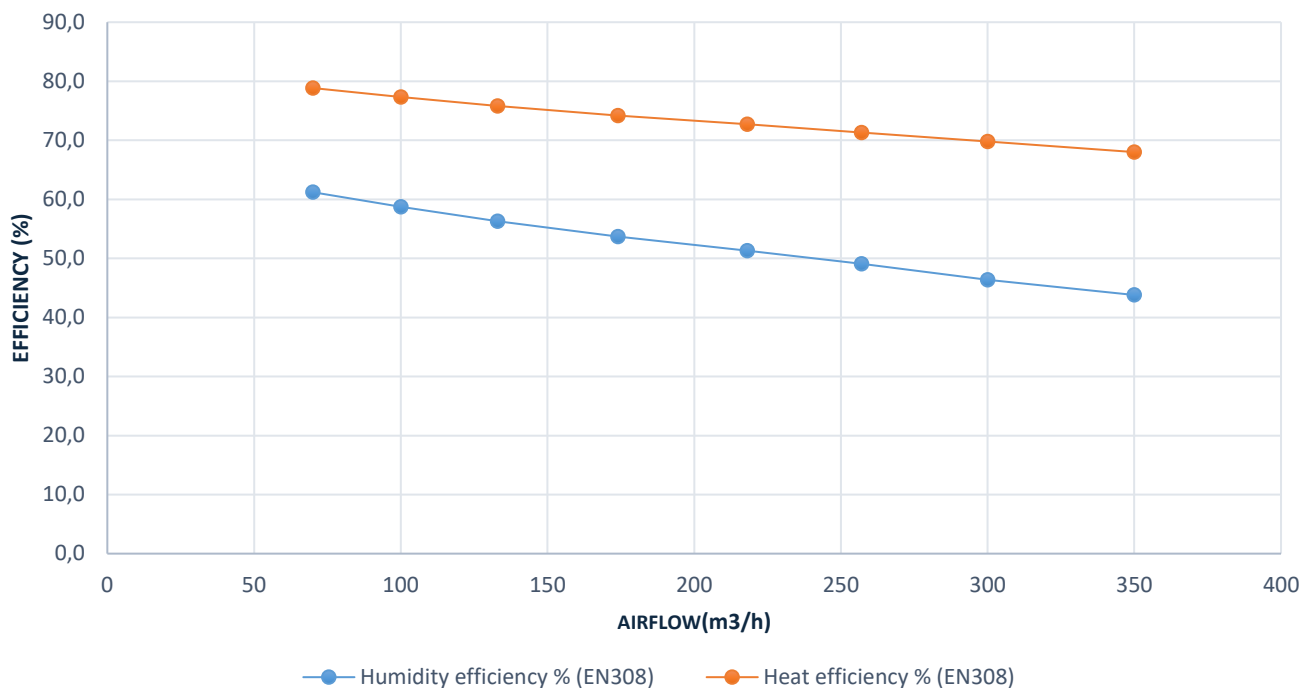
Efficiency diagram- HRV - G350-HR-X-XX-BM-X
nominal airflow 300 m³/h



Ch

EFFICIENCY DIAGRAM - ERV - G350-ER-X-XX-BM-X

nominal airflow 300 m³/h



- G350 - Nominal flow 350 m³/h - (output 2)

Table 12

Trade name		GENIUS 350 (nominal 350 m³/h)								
Unit type		G350-HR-X-XX-BM-X				G350-ER-X-XX-BM-X				
Nominal power		350m³/hour				350m³/hour				
Type of recuperator		HRV - temperature				ERV - temperature/humidity				
		Flow (m³/h)	Temperature efficiency % (EN308)	Current (A)	Power consumption (W)	Flow (m³/h)	Temperature efficiency % (EN308)	Moisture efficiency % (EN308)	Current (A)	Power consumption (W)
Airflow level	1	70	91.7	0.10	9	70	78.5	60.5	0.10	9
	2	105	91.0	0.16	15	105	76.8	57.8	0.16	15
	3	145	90.4	0.35	22	145	75	55	0.35	22
	4	198	89.7	0.65	38	198	73.4	52.4	0.65	38
	5	246	89.1	0.90	115	246	71.7	49.7	0.90	115
	6	290	88.5	1.08	160	290	70	47	1.08	160
	7*	350	87.7	1.26	179	350	68	43.8	1.26	179
	Airing**	390	87.2	1.85	270	390	66.5	41.6	1.85	270
	ECODESIGN***	245	89.1	0.55	66	245	71.7	49.7	0.55	66

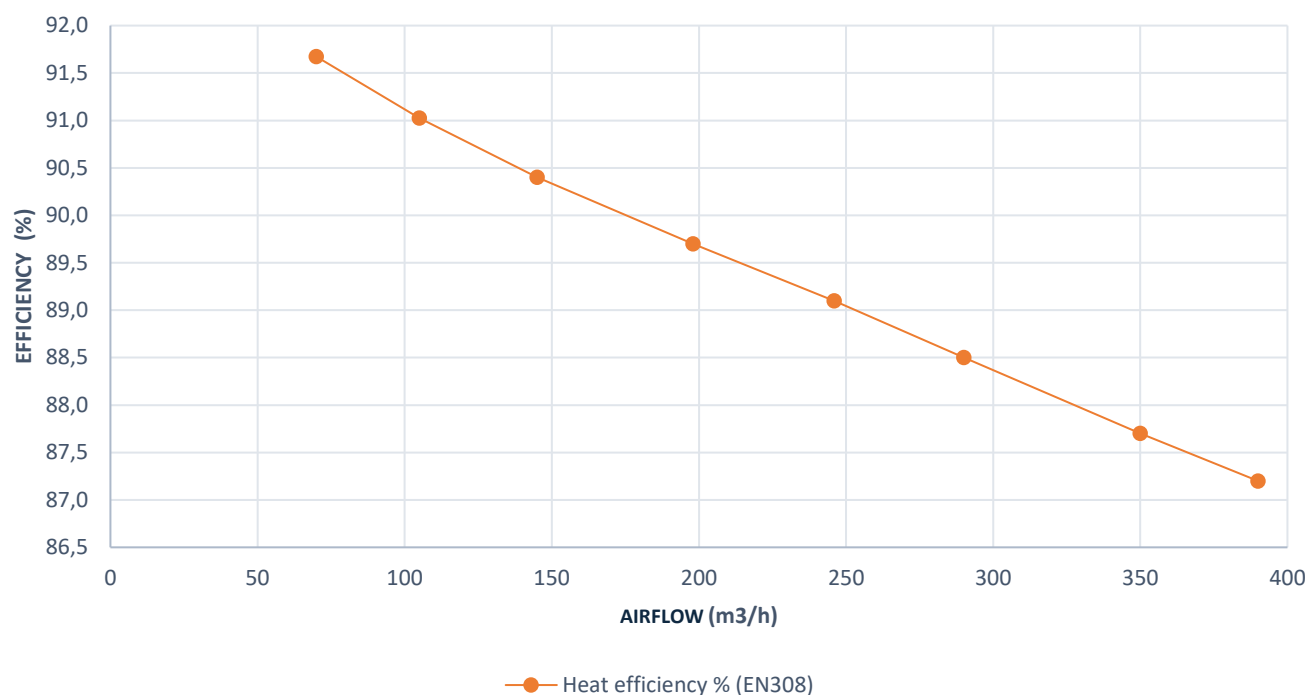
* Nominal air flow at an external pressure drop of 200 Pa

** BOOST mode – intensive ventilation for a specified period of time

***70% of nominal airflow / 50 Pa

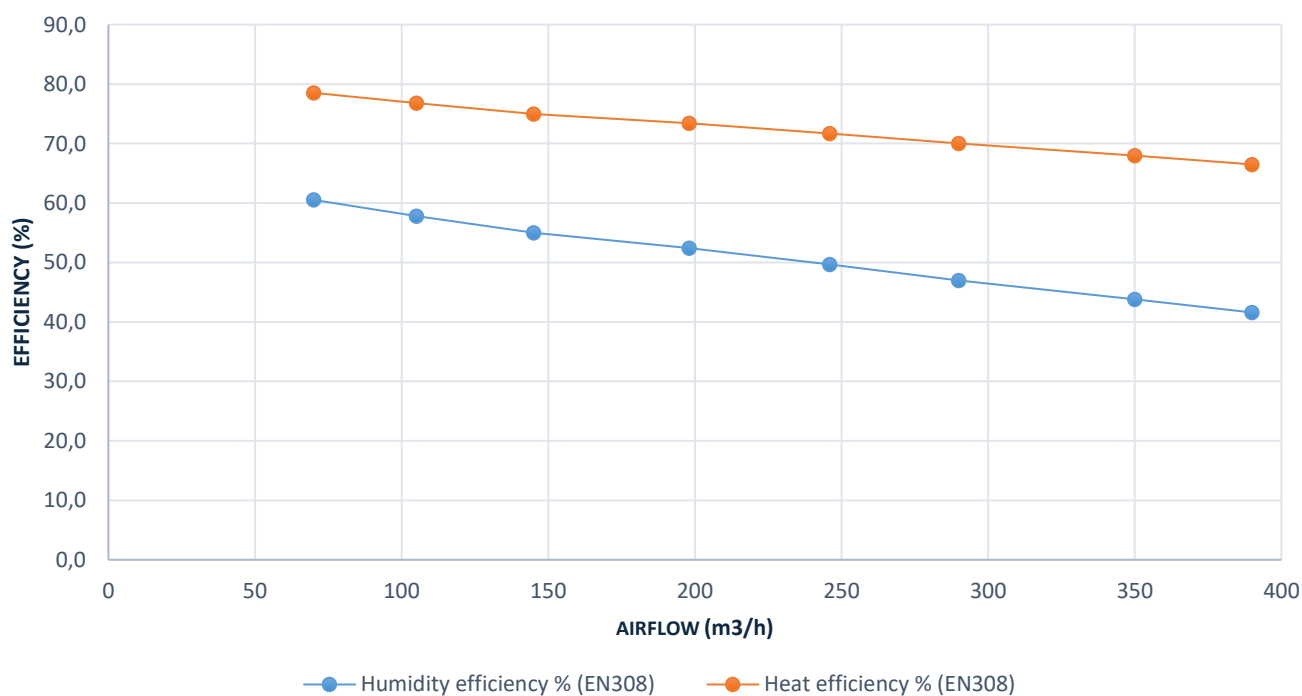
EFFICIENCY DIAGRAM - HRV - G350-HR-X-XX-BM-X

nominal airflow 350 m³/h



EFFICIENCY DIAGRAM- ERV - G350-ER-X-XX-BM-X

nominal airflow 350 m³/h



2.3.5. Heat and moisture recovery efficiency – G450

- G450 - Nominal flow 400 m³/h - (output 1)

Table

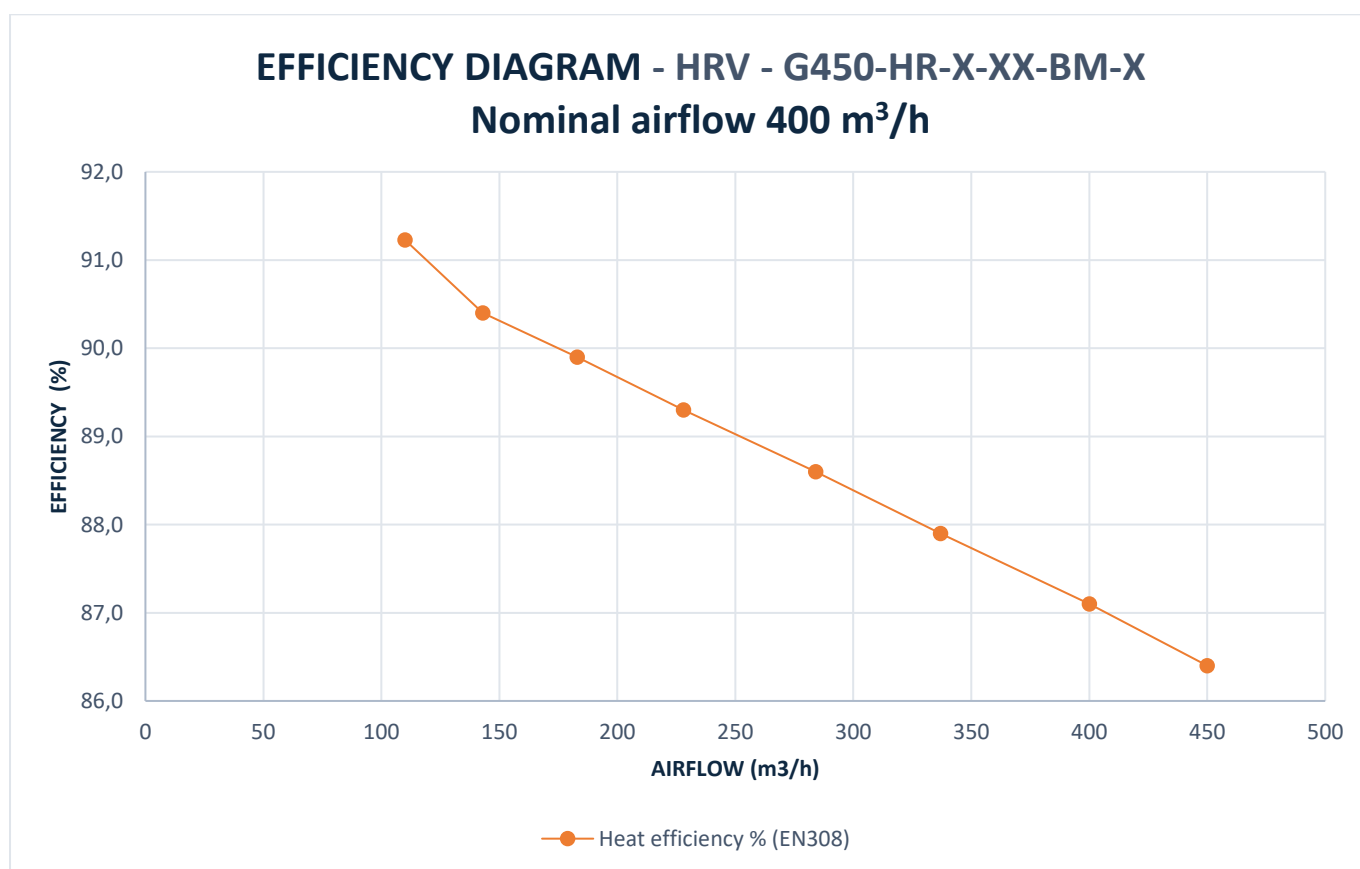
Trade name		GENIUS 450 (nominal 400m ³ /h)								
Unit type		G450-HR-X-XX-BM-X				G450-ER-X-XX-BM-X				
Nominal power		400m ³ /hour				400m ³ /hour				
Type of recuperator		HRV - temperature				ERV - temperature/humidity				
		Flow (m ³ /h)	Temperature efficiency % (EN308)	Current (A)	Power consumption (W)	Flow (m ³ /h)	Temperature efficiency % (EN308)	Moisture efficiency % (EN308)	Current (A)	Power consumption (W)
Airflow level	1	110	91.2	0.18	16	110	77.5	59.1	0.18	16
	2	143	90.4	0.25	25	143	75.3	55.5	0.25	25
	3	183	89.9	0.39	44	183	73.9	53.3	0.39	44
	4	228	89.3	0.55	70	228	72.3	50.7	0.55	70
	5	284	88.6	0.82	110	284	70.3	47.5	0.82	110
	6	337	87.9	1.20	167	337	68.5	44.5	1.20	167
	7*	400	87.1	1.80	250	400	66.2	41	1.80	250
	Airing**	450	86.4	2.30	320	450	64.5	38.2	2.30	320
	ECODESIGN***	280	88.6	0.66	82	280	70.5	47.8	0.66	82

* Nominal air flow at an external pressure drop of 200 Pa

** BOOST mode – intensive ventilation for a specified period of time

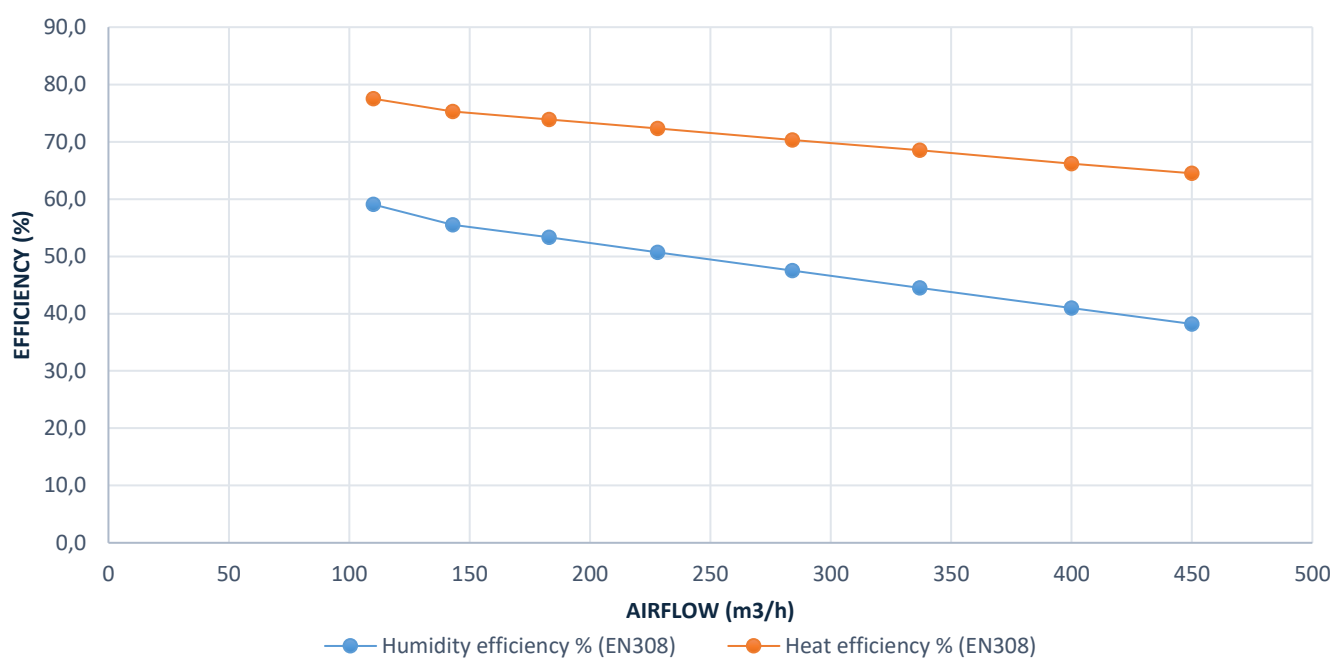
***70% of nominal airflow / 50 Pa

Ch



EFFICIENCY DIAGRAM - ERV - G450-ER-X-XX-BM-X

nominal airflow 400 m³/h



- G450 - Nominal flow 450 m³/h - (output 2)

Table 14

Trade name		GENIUS 450 (nominal 450 m³/h)								
Unit type		G450-HR-X-XX-BM-X				G450-ER-X-XX-BM-X				
Nominal power		450m³/hour				450m³/hour				
Type of recuperator		HRV - temperature				ERV - temperature/humidity				
		Flow (m³/h)	Temperature efficiency % (EN308)	Current (A)	Power consumption (W)	Flow (m³/h)	Temperature efficiency % (EN308)	Moisture efficiency % (EN308)	Current (A)	Power consumption (W)
Airflow level	1	110	91.2	0.18	16	110	77.5	59.1	0.18	16
	2	152	90.3	0.28	28	152	75	55	0.28	28
	3	200	89.7	0.45	51	200	73.3	52.3	0.45	51
	4	256	88.9	0.67	101	256	71.3	49.1	0.67	101
	5	319	88.1	1.10	150	319	69.1	45.6	1.10	150
	6	387	87.2	1.70	240	387	66.7	41.7	1.70	240
	7*	450	86.4	2.30	320	450	64.5	38.2	2.30	320
	Airing**	450	86.4	2.30	320	450	64.5	38.2	2.30	320
	ECODESIGN***	314	85.7	0.88	112	314	70	45.8	0.88	112

* Nominal air flow at an external pressure drop of 200 Pa

** BOOST mode – intensive ventilation for a specified period of time

***70% of nominal airflow / 50 Pa

Chart 11

EFFICIENCY DIAGRAM - HRV - G450-HR-X-XX-BM-X nominal airflow 450 m³/h

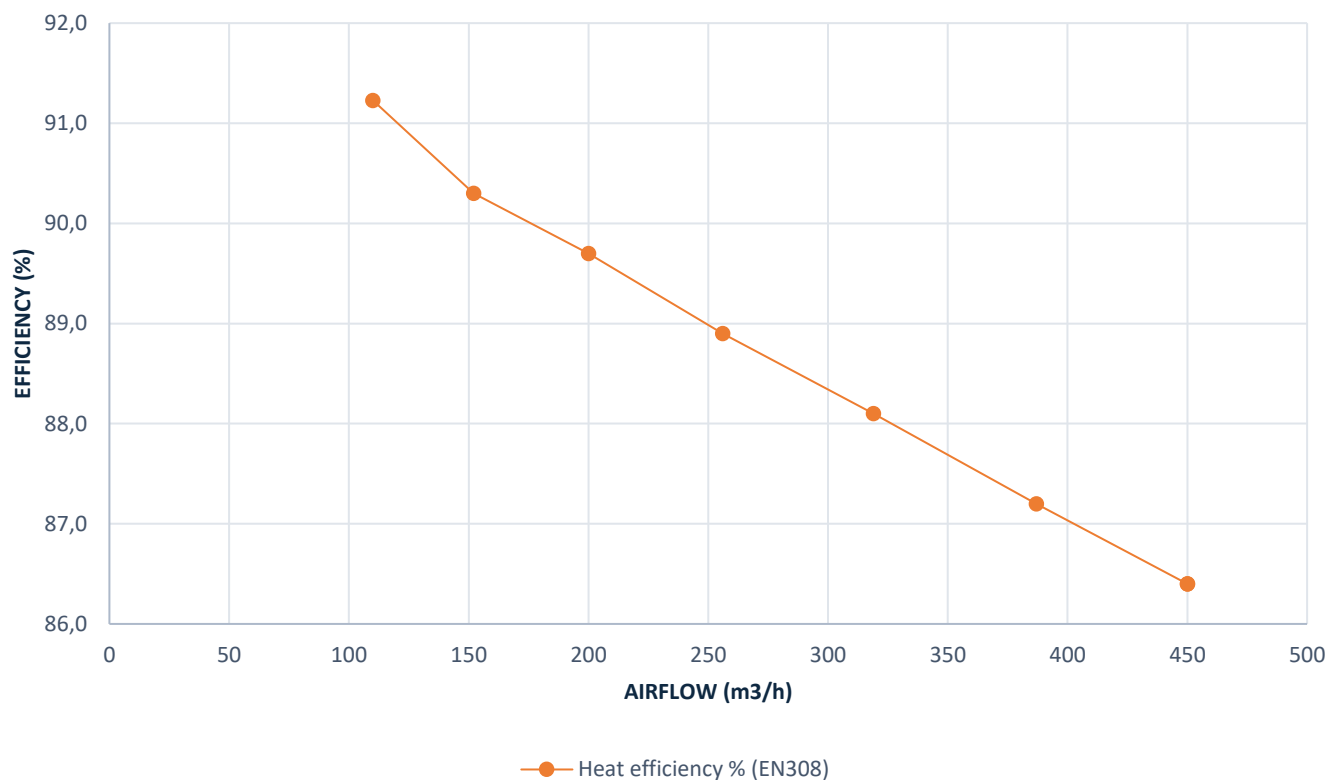
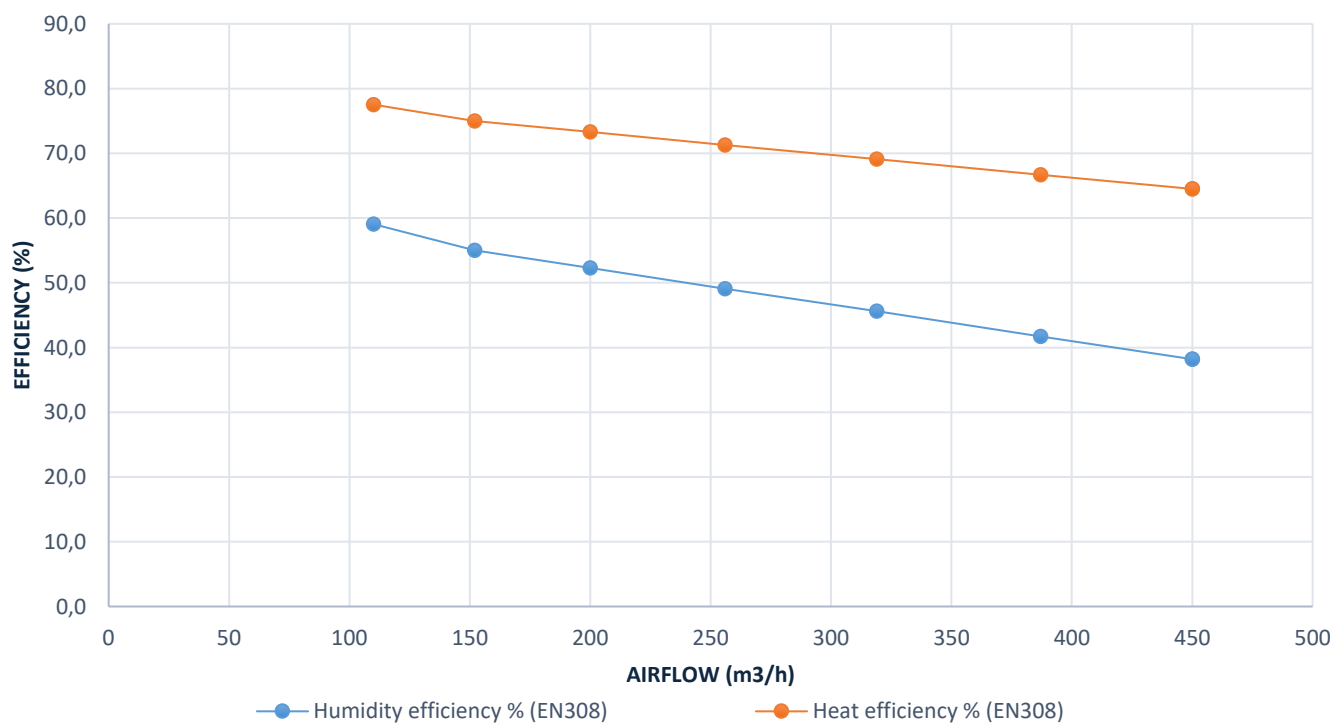


Chart 12

EFFICIENCY DIAGRAM - ERV - G450-ER-X-XX-BM-X nominal airflow 450 m³/h



3. Device installation

3.1. General information, recommendations and safety rules for installing the GENIUS device

3.1.1. Electrical safety before installing the device



- Before starting any installation work, make sure that the junction box or mains socket to which you wish to connect the device is equipped with a ground wire or contact (pin) (greenish-yellow).
- If you are using an electrical box to connect the device, you must turn off the power and make sure that the power supply is protected against accidental activation.



Check that the electrical connection point (junction box, socket) meets the device's power supply requirements (voltage, current, etc.) as stated on the rating plate. For the electrical parameters required for device operation, see section 3.6.3. Viewing Electrical Parameters

3.1.2. Unboxing the GENIUS unit

- Always unpack your device in a place large enough to allow you to handle it comfortably after unpacking.
- We never unpack the device from the packaging immediately, the device is unpacked gradually, in accordance with the instructions, depending on the progress of installation work (protecting the device from damage and dust generated during construction).

1

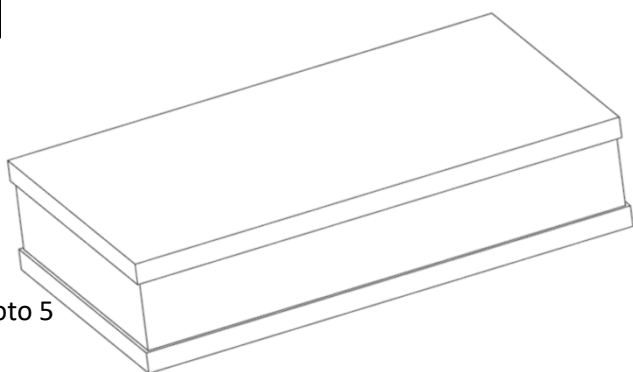


Photo 5

2

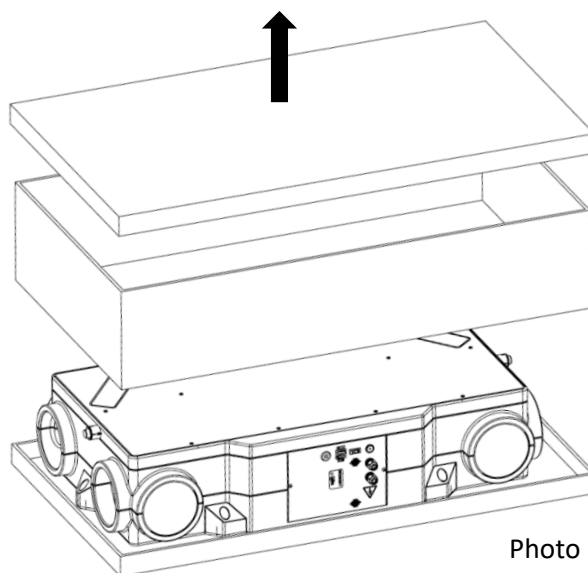


Photo 6

3

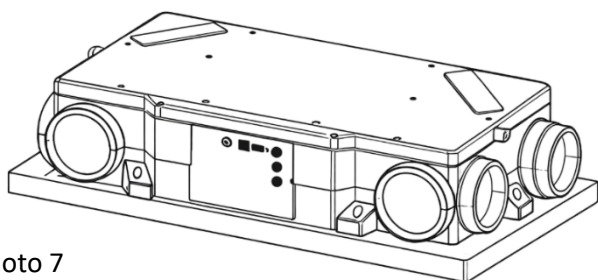


Photo 7

- Don't throw away the bottom of the box, there's a drilling template at the bottom to make mounting the device easier.



Please take all unwanted packaging to appropriate recycling points, where it will be professionally disposed of. Only packaging recycled in this way may be reused.



3.1.3. Unit location



- When selecting a location for the unit, always consider the layout of the entire ventilation system within the building (e.g., the location of dampers, supply and exhaust ducts, etc.). To ensure the proper design of the entire ventilation system, consult a ventilation designer or someone with expertise in this field. The manufacturer assumes no responsibility for the design of the air handling system.
- The device should be installed in a closed, dry room with a room temperature between +5°C and +30°C and a maximum relative humidity of 70% without condensation.



Consider locating the unit indoors, away from surrounding objects, in accordance with the recommended distances from the unit (e.g. when changing filters, opening the unit for service) given in section 3.1.4..

- Check the possibility of connecting the condensate drain to the drain.

3.1.3.1. Location and operation of the unit in a room with fireplaces

- If ventilation ducts are located in rooms with a fireplace, fan imbalance can be configured in the customer menu of the capacitive controller (must be ordered as an accessory – not included in the scope of delivery) or in the service application (available only to authorized service technicians) (more air is supplied than exhausted). Fan imbalance cannot in any way replace a separate air supply to the fireplace due to the possibility of control using AQS sensors.
- To ensure proper operation of the fireplace and appliance, consult a chimney sweep about the location. Failure to do so may result in appliance failure.

3.1.3.2. Location and operation of the device in the air conditioning area

- If the appliance is operated during the summer months and the air conditioning is used in a ventilated room, condensed water may accumulate inside the appliance on the opposite supply branch.
- To ensure trouble-free operation, we recommend installing a device equipped with an enthalpy heat exchanger (G350-ER-X-XX-BM-X, G450-ER-X-XX-BM-X).

3.1.4. Minimum installation distances

- General distances from fixed objects:

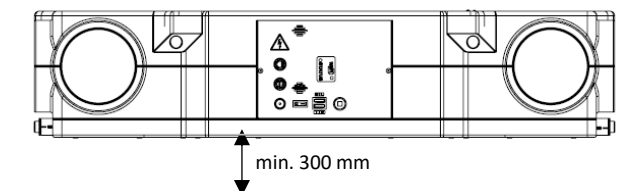


Photo 8

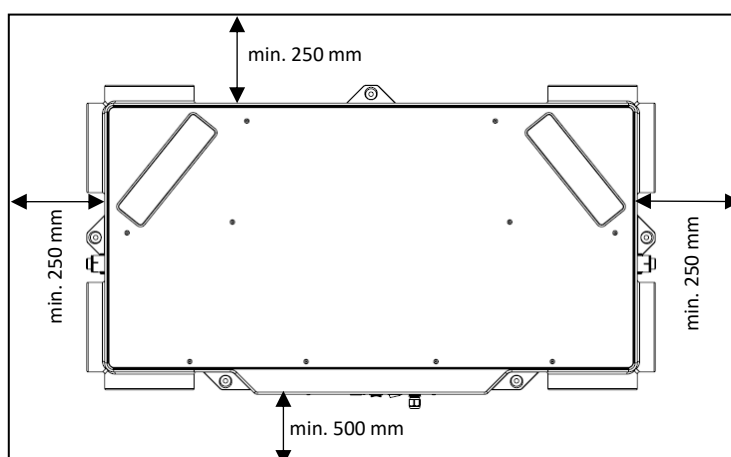


Photo 9

- The unit must be installed and adjusted (right/left configuration) so that the air flow direction through the unit itself is identical to the air flow direction in the air distribution system.
- Failure to comply with the specified distances may result in improper operation of the device, damage to the fan, increased noise level or prevent service access to the device.

3.1.5. Allowed GENIUS mounting positions according to the selected right/left configuration of the device

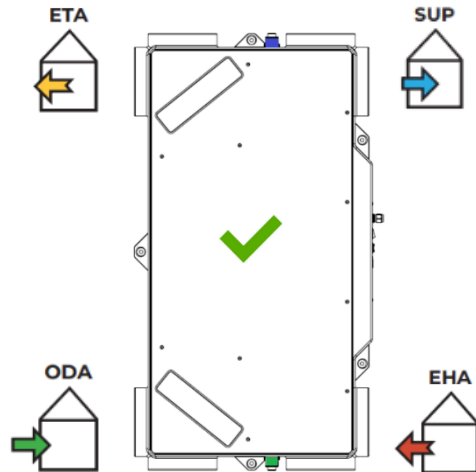
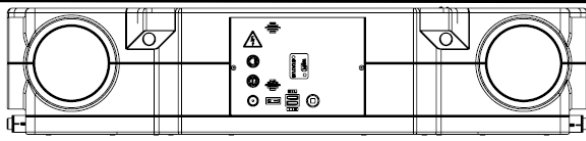
Switching the unit to the right/left version is described in a separate chapter 4.2.1.



3.1.5.1. Connector orientation - right version - factory setting

CEILING MOUNTING - COVER AT THE BOTTOM

ON THE WALL VERTICALLY



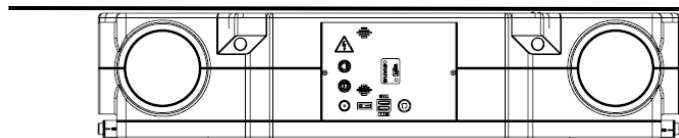
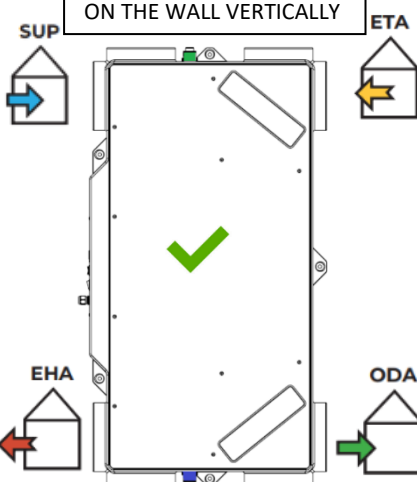
Photo

Photo

3.1.5.2. Connector orientation - left version of the device

ON THE WALL VERTICALLY

CEILING MOUNTING - COVER AT THE BOTTOM



Photo

Photo



- It is prohibited to place it in any other position.
- Access to the appliance must always be from the front (cover side) to allow access to the filters and any servicing. If the appliance is placed against a wall, the ceiling must be a wall, and the suspended ceiling must be equipped with an inspection opening allowing access to the appliance with the possibility of removing the cover.

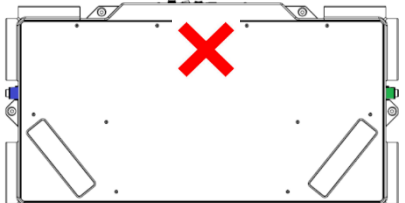
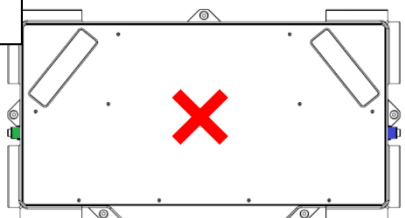
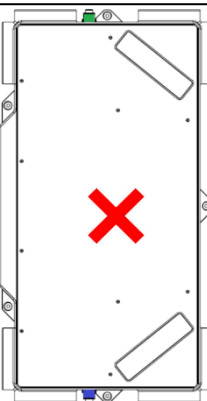
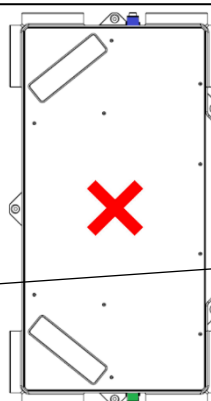
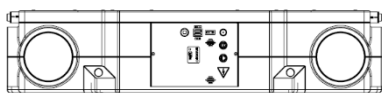
3.1.6. Prohibited mounting positions GENIUS 350/450

CEILING MOUNT - TOP COVER

ON THE WALL VERTICALLY - FILTERS ON THE LEFT SIDE only for left-hand

ON THE WALL VERTICALLY - FILTERS ON THE RIGHT SIDE Only for the right version

ON THE WALL HORIZONTALLY



Photo

Control orientation

3.2. Installing the GENIUS unit

- The device should be operated in a closed and dry room, at a room temperature of +5°C to +30°C.
- The heat recovery unit must be installed in accordance with general and local safety regulations.
- The installation, connection, commissioning and repair of the heat recovery device may be performed by a person with appropriate education, experience and knowledge of the relevant regulations, standards, as well as possible risks and hazards, or by a properly trained service technician.
- **Failure to follow the installation procedure may result in damage to the device, its improper operation, and even potential risk to the user's health and property.**
- **Exercise extreme caution when draining condensate using the condensation trap (included) into the sewer pipe. The appliance manufacturer is not liable for damage caused by improper installation of the condensate drain, drain pipes, and other peripheral components necessary for its operation.**



3.2.1. Mounting Hardware Required for GENIUS Installation – General Requirements

- To install the device, please prepare additional mounting hardware (not included):
 - o Anchoring elements (e.g. dowels, dowel screws) 5 pcs.
- The anchoring material should be selected taking into account the wall or ceiling structure, the weight of the device and the weight of connected peripherals.

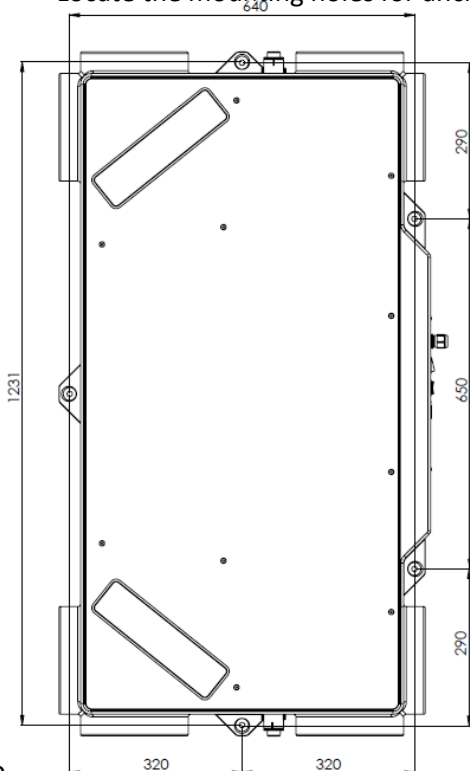


The weights of individual unit variants are given in section 2.3.1. "Basic technical parameters"

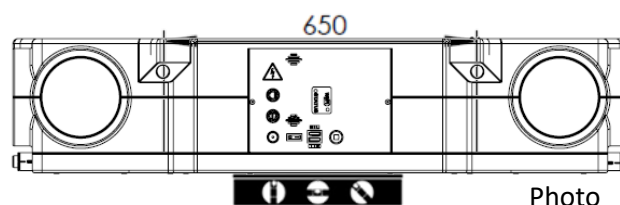
The dimensions of the device are given in section 2.2. "Main dimensions of the device G350; G450"

3.2.2. Installing wall or ceiling unit

- Select the appropriate anchoring material (not included) depending on the wall or ceiling structure. To use the suspension system, select a screw with a maximum diameter of Ø6 mm.
- **The wall or ceiling to which you anchor the device must always be strong and sufficiently cohesive. If necessary, consult an expert in this field – a structural engineer.**
- Use a spirit level to measure the anchor holes for mounting the device. To make measuring the mounting holes easier, use the mounting template found on the bottom of the package. Alternatively, place the device on the wall or ceiling and level it with a spirit level.
- **Under no circumstances should the device be tilted.**
- Locate the mounting holes for anchoring the device.

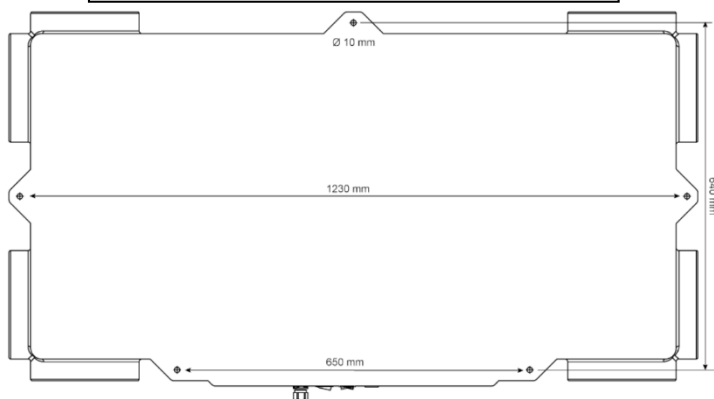


Photo



Photo

Assembly template - bottom of the box



Photo

- Drill anchor holes and secure with appropriate anchoring material (plugs). Use the mounting feet (5x) located around the perimeter to secure the device. The mounting feet are equipped with spacers to better define the pressure during installation – DO NOT REMOVE THE SPACERS FROM THE DEVICE, as this may damage the mounting feet and the device body.
- **The anchor bolts must be properly tightened to protect the unit against uncontrolled movement – falling.**
- Make sure the device is properly LEVEL using a spirit level. NEVER TILT THE DEVICE in any direction.



3.2.3. Condensate drain connection - siphon

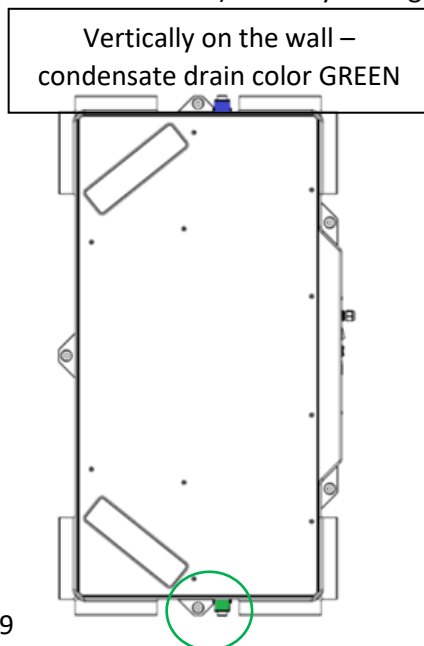
- The device must always be equipped with a siphon (included) with connection to the sewage system.
- Before starting the device for the first time or after switching it off (if the device has been switched off for a longer period of time), always check the tightness of the siphon irrigation and condensate drain after restarting.
- The unit is equipped with a condensate drain for each version:
 - o Right hand version – 1x output for both permitted positions – condensate output marked in green
 - o Left hand version – 1x outlet for both permitted positions – condensate outlet marked in blue
- Condensate wiring diagram located on the device along with socket orientation



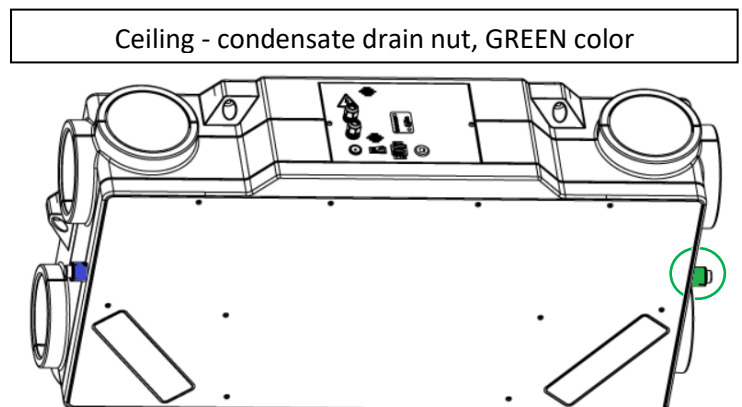
Pic 18

3.2.3.1. Condensate drain unit right version

- rocker switch on the device housing in the "R" position or set in the service application (by an authorized technician) - factory settings



Pic 19

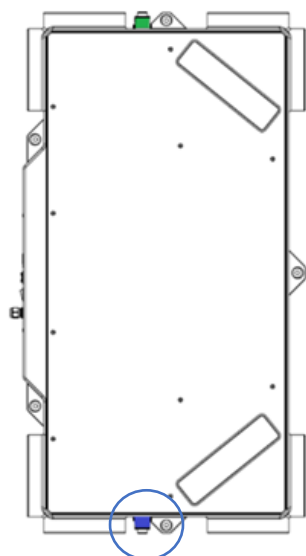


pic 20

3.2.3.2. Left version of the device with condensate drain

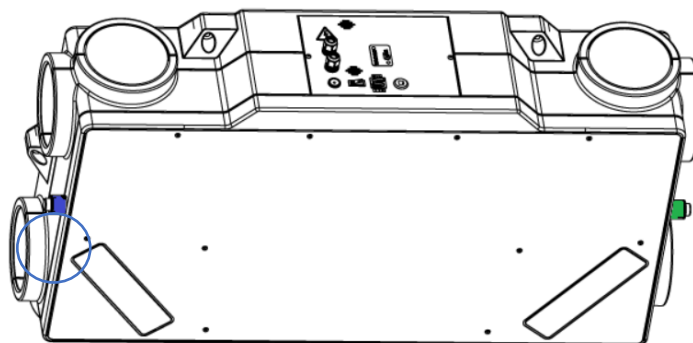
- rocker switch on the device housing in the "L" position or set in the service application (authorized technician)

Vertically on the wall -
condensate drain, BLUE color



Pic 21

Ceiling - condensate drain, BLUE color



Pic 22



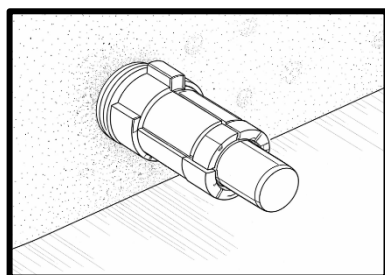
- The siphon must always be filled with water, properly connected, and sealed at the appliance outlet. Otherwise, there is a risk that condensate will not be drained from the appliance and will consequently accumulate in the appliance, which could lead to the condensate tank overflowing. This could result in property damage.



3.2.3.3. Connecting the condensate drain to the siphon

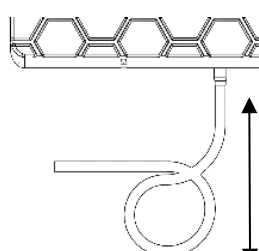
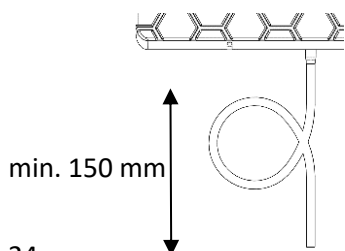
Depending on the installation location and device version, select the appropriate condensate drain. Correctly specify the condensate drain according to sections 3.2.3.1., 3.2.3.2.

- Cut off the end of the condensate drain to a length of 5 mm



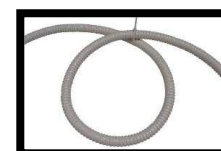
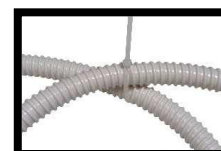
Pic 23

- Remove the PVC siphon hose $\varnothing 33/25$ – 1m and 2 pieces of hose clamps 2.5x120mm from the device packaging.
- Approximately halfway along the siphon hose, make a loop with a diameter of 150 mm.
- Secure the loop with 1 piece of tightening tape to prevent it from moving on its own, but at the same time to prevent the siphon hose from being deformed (torn)



min. 150 mm

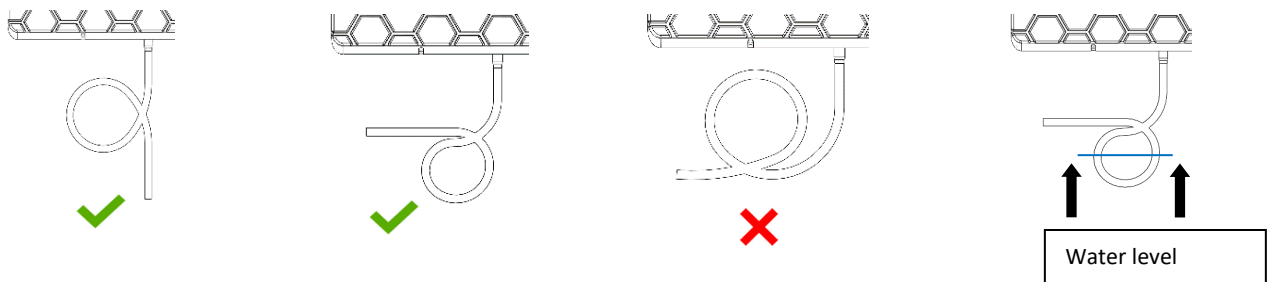
Pic 24



- Special care must be taken to maintain the loop diameter of 150 mm and to use appropriate force when tightening the clamp. Failure to do so may result in condensate not draining from the device, which may

lead to condensate accumulating in the device and, consequently, to the condensate tank overflowing. This may result in property damage and a health hazard for the user.

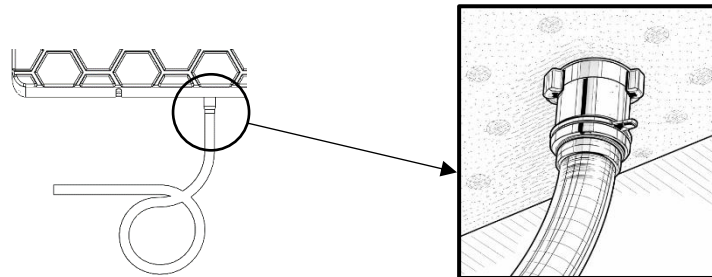
- Watering the siphon – pour water into the siphon from the drain connection side of the appliance until the water flows out the other side of the siphon.
- Place the siphon on the main drain
- The formed siphon loop should be positioned so that it acts as a water seal.



Pic 25

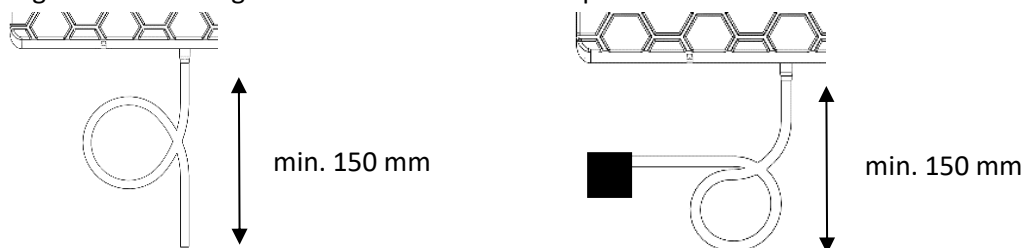


- When making a bend in the siphon hose, pay attention to the correct bending radius of the hose to avoid "breaking" it, which could pinch the hose and prevent the condensate from draining.
- Secure the created trap to the main drain located on the unit using a second 2.5 x 120 mm cable tie (included).



Pic 26

- The other end of the siphon hose should be adjusted lengthwise and connected to the sewer system, maintaining a minimum height difference between the siphon hose and the sewer connection.



Pic 27



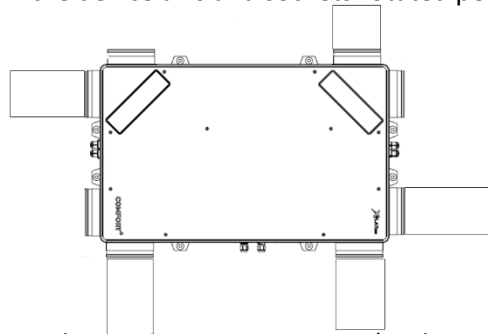
- Siphon hose extensions are only permitted beyond the loop formed. Hose extensions should be made with a hose of the same or larger diameter using a connector. Always ensure that the hose's internal diameter is minimally reduced by the connector.

3.2.4. Connecting the air duct to the device

- To connect the air duct to the device, use the connectors located in the corners of the device.
- To connect the duct, you can use either the internal diameter of the outlet 160mm and an outer outlet diameter of 200mm.

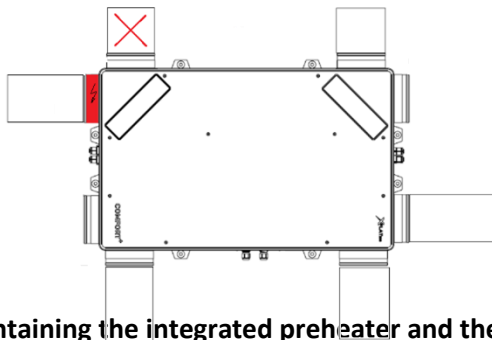
3.2.4.1. General conditions for connecting ventilation ducts

- Sockets (connectors) located in the corners of the device enable the connection of channels both in the axis of the device (factory setting) and perpendicular to the device.
 - o Using an outlet perpendicular to the device (on the side) significantly reduces the required space at the installation site
 - o The opening of any connector in the corner of the device depends on the selected device type:
 - Device without heater (GXXX-XX-BN-BM-X) - any output can be opened, regardless of the number of sockets in the device axis and sockets rotated perpendicular to the device.



Pic 28

- Device with built-in pre-heater (GXXX-XX-ZN-BM-X) – the output with the built-in pre-heater must remain in its factory configuration – IT CANNOT BE MODIFIED OR MOVED IN ANY WAY.



Pic 29



Any tampering with the outlet containing the integrated preheater and the sealed side outlet is strictly prohibited – it must remain sealed. Otherwise, there is a risk of irreversible damage to the device, and consequently, material and health damage.

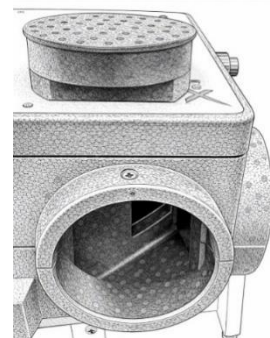
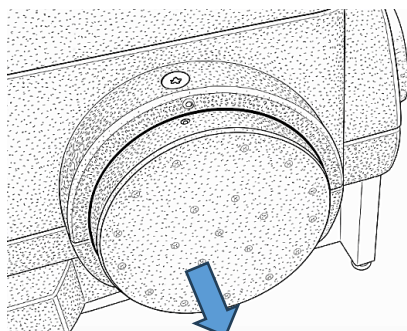
3.2.4.2. Removing the plug from the socket

- Each outlet plug is secured to the device body with a screw to prevent spontaneous removal. Before inserting the conduit into the through-hole, the plug must be removed. To remove the plug, follow these steps:

1. Unscrew the self-tapping screw (TORX 25) from the blind hole

2. Use a free outlet to push the plug out of the socket.

3. The removed plug can also be used to cover the socket in the opposite way.



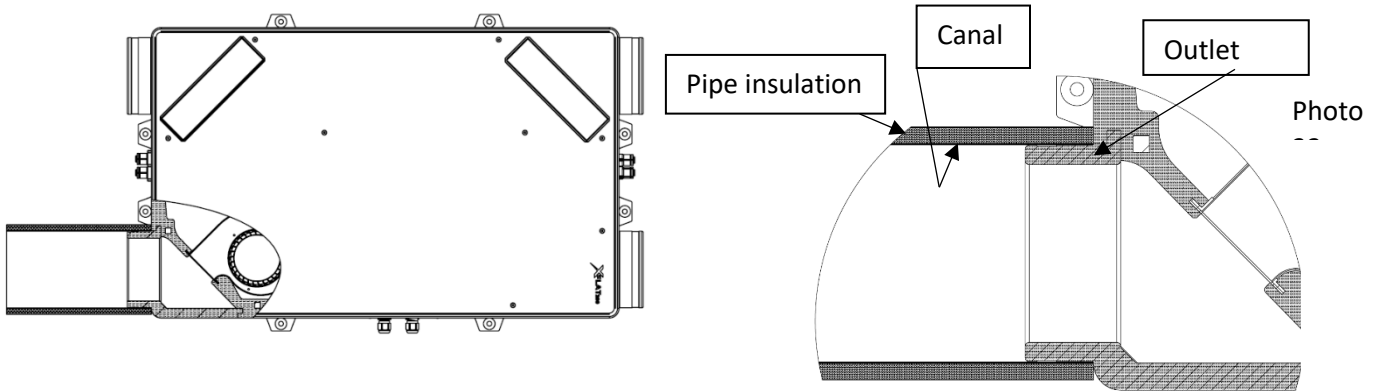
Pic 30

- The use of outlets perpendicular to the device does not affect the flow rate or reduce external pressure losses.

3.2.4.3. Duct installation and insulation

- To move a channel, follow these steps:
 - o Slide the cable over the entire outlet
 - o Seal connections with aluminum tape or connecting sleeves to prevent vibration transmission.
 - o Then insulate the connected ducts with thermal insulation material (wool, butyl rubber, etc.)
 - o Pull the duct insulation over the entire outlet of the appliance and secure it to prevent accidental movement.
 - o This prevents the formation of a thermal bridge at the connection point.

Pic 31



- All duct connections connected to the appliance must be properly sealed to prevent unwanted leaks and related problems such as condensation.

3.3. Cabling - connecting to the network

3.3.1. General information - safety



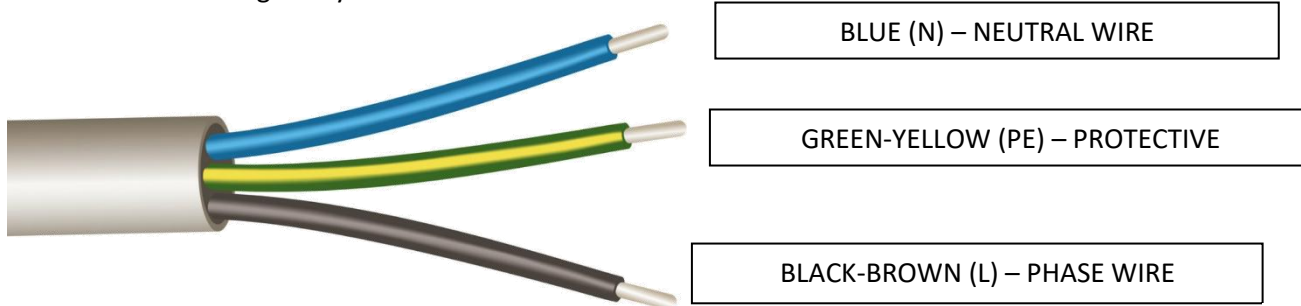
- Before starting any installation work, make sure that the electrical box or socket to which you wish to connect the device is equipped with a grounding wire or contact (greenish-yellow).
- If you use a mains plug to connect the device, it must be accessible at all times so that the device can be safely disconnected from the mains in the event of a fault.



- Check that the power supply meets the device's power requirements (voltage, current, frequency, etc.) listed on the device's nameplate. Section 3.3.3. Displaying electrical parameters.
- The relevant circuit in the electrical distribution must be protected by a maximum current of 16 A.
- The electrical cable used to connect to the mains must not be broken.
- Always follow local electrical regulations.
- The device may only be connected to the electrical network by persons qualified for this activity, with valid authorizations and knowledge of the relevant standards and directives in force in a given country.
- Before beginning any installation work, disconnect the power supply. The switch must be secured against unauthorized reconnection during installation. The minimum contact separation between the switch contacts is 3 mm.
- A double-pole circuit breaker must be connected to the power source of the device.
- Any interference with the internal wiring of the device is prohibited; unauthorized interference with the device may result in loss of warranty rights.
- This device belongs to the Y-connection product group. If the power supply is damaged, it must be replaced by the manufacturer, its service agent or a similarly qualified person in order to avoid a hazardous situation.
- The device is classified as a Class 1 device for protection against electric shock.
- Do not modify the device's power supply voltage of 1~230V/50-60Hz in any way, otherwise there is a risk of damaging the electrical components of the device.

3.3.2. Connecting to the network

- The device is equipped with a separate Licna power cable. The individual wires are shortened by 50 mm. Each wire is equipped with push-in terminals.
- The power cord is approximately 1 m long and can be shortened by a qualified person if necessary.
- The individual wires are color-coded
 - o Brown/Black – Phase Wire – L
 - o Blue – neutral wire – N
 - o green-yellow – Protective conductor – PE



Photo

3.3.2.1. Connecting the device to the electrical box

- The power cable is prepared by the manufacturer for connection to the electrical installation box.
- To connect the power cable to the mains, use appropriate connecting elements (e.g. terminal block, spring terminals, etc.)
- **The installation of the power cable in the electrical installation box and its connection to the power supply network should be performed by a qualified person who has legal authorization for this type of work and knowledge of the standards and directives in force in a given country.**



3.3.2.2. Connecting the device to an electrical outlet

- The power cord may be equipped with a plug with a protective conductor (pin) - it is not included in the set.
- **Connection – the installation of the plug on the power cable must be performed by a qualified person who is authorized to do so and is familiar with the relevant standards and directives in force in a given country.**



3.3.2.3. Recommendation for unit fuses G350; G450

- We recommend protecting the device with a 1-phase fuse link (1x230V) with appropriate current values.
- **The correct value of the safety element must be designed by a qualified electrician, taking into account the conditions at the installation site, e.g. (cable length).**

Table 5

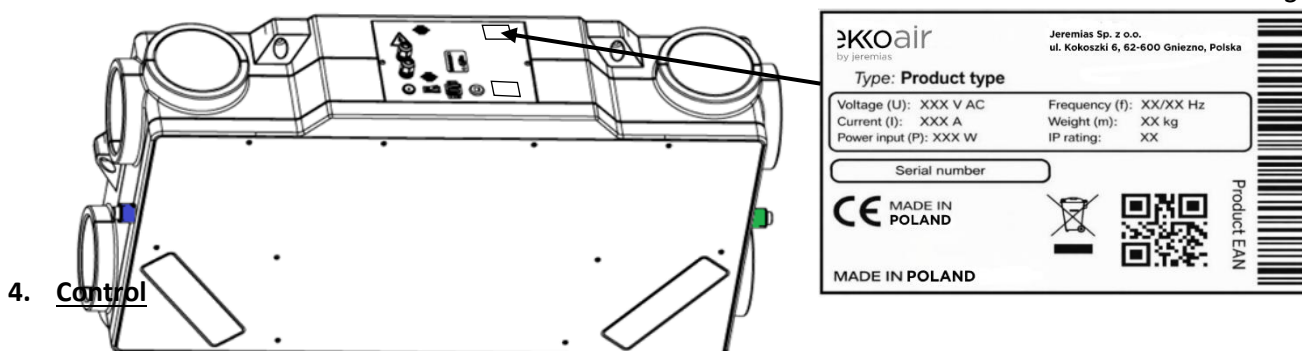
Unit type		Circuit breaker	Number of phases × voltage
G 350; G 450	G350-XX-X-ZN-BM-X	16 A	1 x 230V
	G450-XX-X-ZN-BM-X		
	G350-XX-X-BN-BM-X	6 A	
	G450-XX-X-BN-BM-X		

3.3.3. Display of electrical parameters

- All electrical parameters of the device are given on the nameplate.

Photo

34



4. Control

4.1. General information - safety

- No additional connections are required for the device to operate properly (in manual mode). The device is ready for use immediately after installation.
- **To ensure efficient device control, the installation site must have access to a Wi-Fi network with internet connectivity. The device is controlled via a web application in the "WIFImodule.eu" domain. Without an internet connection, the device cannot be controlled via the app.**
- To operate in automatic mode, it is necessary to connect the CO2 or RH air quality sensor accessories.
- **Before accessing the controls, always turn off the device using the main switch (position 15).**

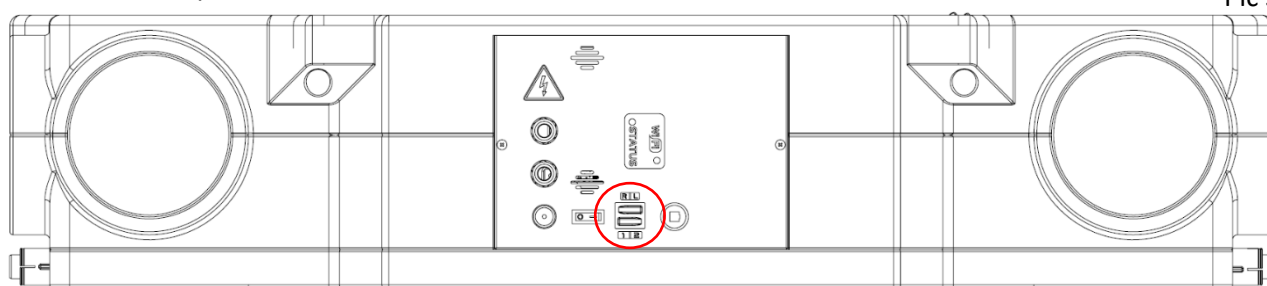


4.2. Setting the unit using mechanical switches

4.2.1. Right/left unit switching



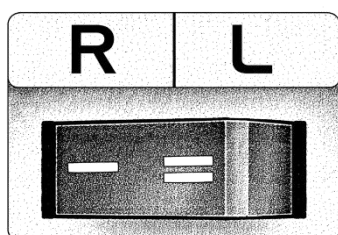
- The unit control allows you to switch between right and left versions
- The orientation of the sockets in the right or left version of the device is explained in a separate chapter 3.1.5.
- The version is set by turning the switch (position 17) to the position:
 - o Position "R" - Right version - Factory setting
 - o position "L" – left version



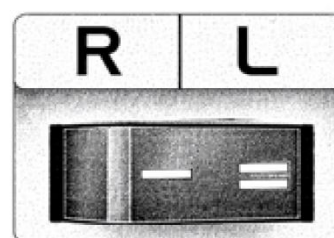
Pic 35

Right version- factory settings

Left version



Pic 36

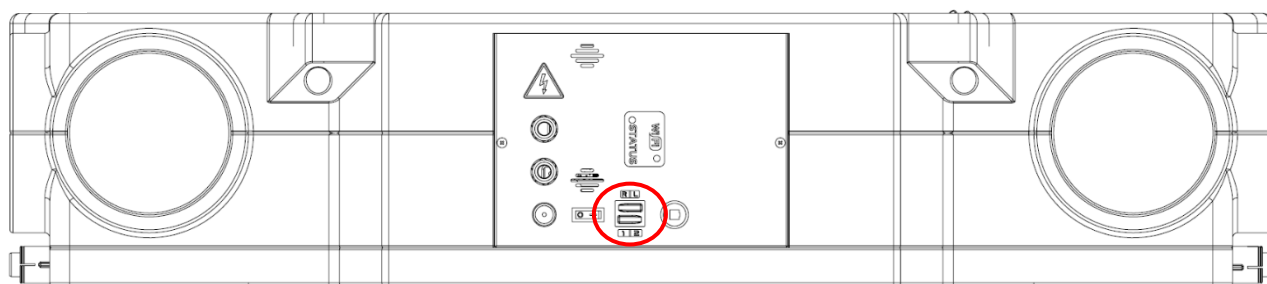


Pic 37

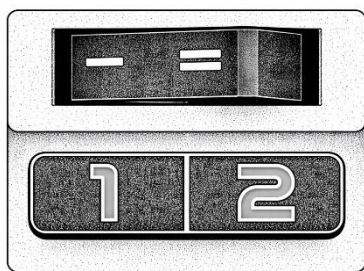
4.2.2. Settings – switching the device's rated power

- On the device, the nominal air output can be switched using the rocker switch (position 18):
 - o G350:
 - Position 1 – nominal flow 300 m3/h
 - Position 2 – nominal flow 350 m3/h
 - o G450:
 - Position 1 – nominal flow 400 m3/h
 - Position 2 – nominal flow 450 m3/h

Pic 38

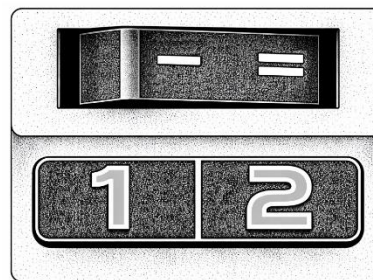


Item 1.



Pic 39

Position 2 -factory settings



Pic 40

4.3. Connecting accessories to the control

- The accessories listed below are not included and must be ordered separately.

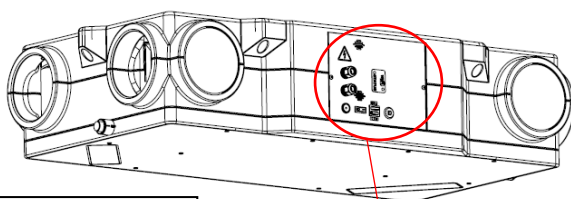
4.3.1. Access to the control board

- Connect the device settings and electrical accessories to the control board
 - o Unscrew the Ø3.5x20 flat head screw securing the control box cover twice.
 - o Unscrew the sleeve nuts from the power and communication cables.
 - o Remove the control board cover
 - o Connect the necessary electrical accessories
 - o The controller is equipped with two sizes of connectors. Each connector pin is marked with a number, which is also located on the controller's motherboard.
 - o **Do not confuse the parity of the individual connector numbers with the markings on the control board. Otherwise, there is a risk of damaging the device.**
 - o To connect individual elements, spring connectors with a manual wire-to-wire lock are used (a permanent clamp is required) and a solid wire within the permissible cross-sections and blades:
 - Small connector 0.2 to 0.5 mm²
 - Large connector 0.2 to 2.5 mm²
 - o Before inserting the wire into the terminals, press the orange locking button. Then insert the wire, release the locking button, and gently pull on the terminal to ensure it is securely fastened. If you need to remove the wire from the terminal, the procedure is the same, but in reverse.

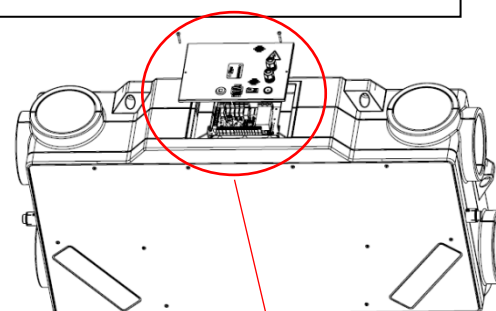


Pic 41

A) Remove the screws securing the control



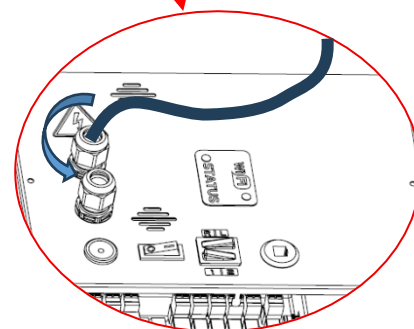
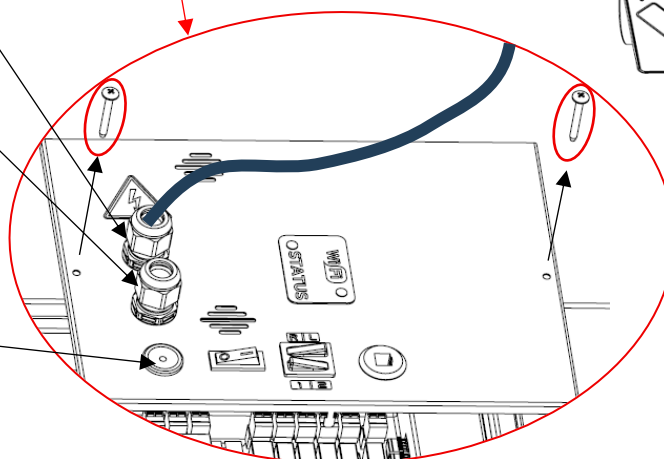
B) loosen the grommets and carefully remove the control cover



Modbus cable grommet

Power cord grommet

Grommet for connecting accessories, e.g. air quality sensors, heater connections, etc.



Pic 42

- The membrane opening should be used to connect accessories.



- The communication cable used to connect the device to the master Modbus system is connected directly to the device control system on the control board – terminals no. 30/31/32 – specified in a separate chapter 4.3.2.3.



- **The optimal cable cross-section should be selected based on the actual length of the cable route, but the maximum cable cross-section can be:**

- Small connector – 0.5 mm²
- Large connector - 2.5 mm²



- **All wires must be connected to the individual connector pins with sufficient force to prevent damage to the pins or the electrical board. Face wires must have a crimped terminal (ferrule).**

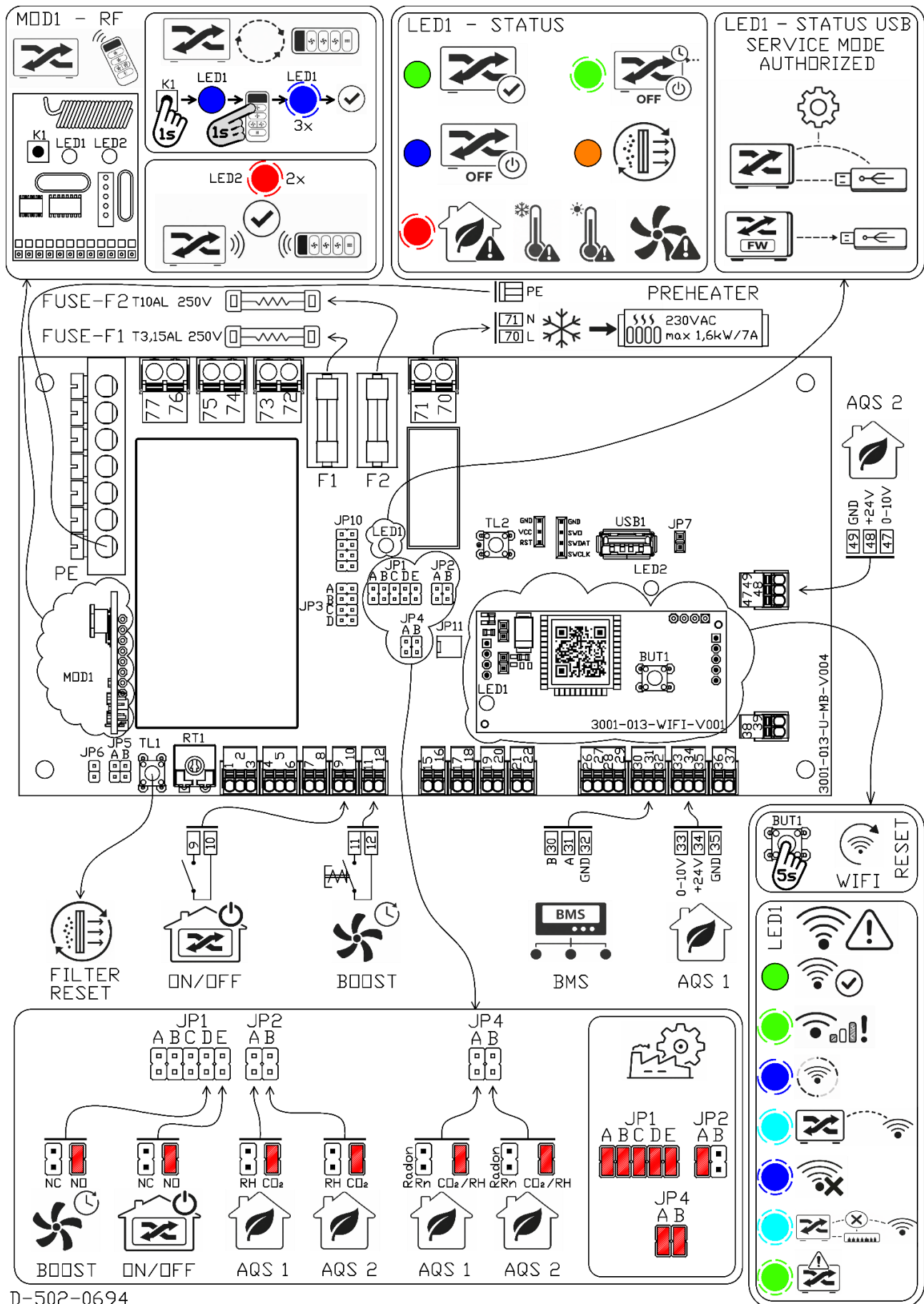


- **By default, the control element is integrated into the device housing and must not be used in any other way than specified in this manual.**

4.3.2. Connection of electrical equipment, signaling

- Arrangement of terminals in the control unit for connecting electrical equipment + signaling

Pic
43



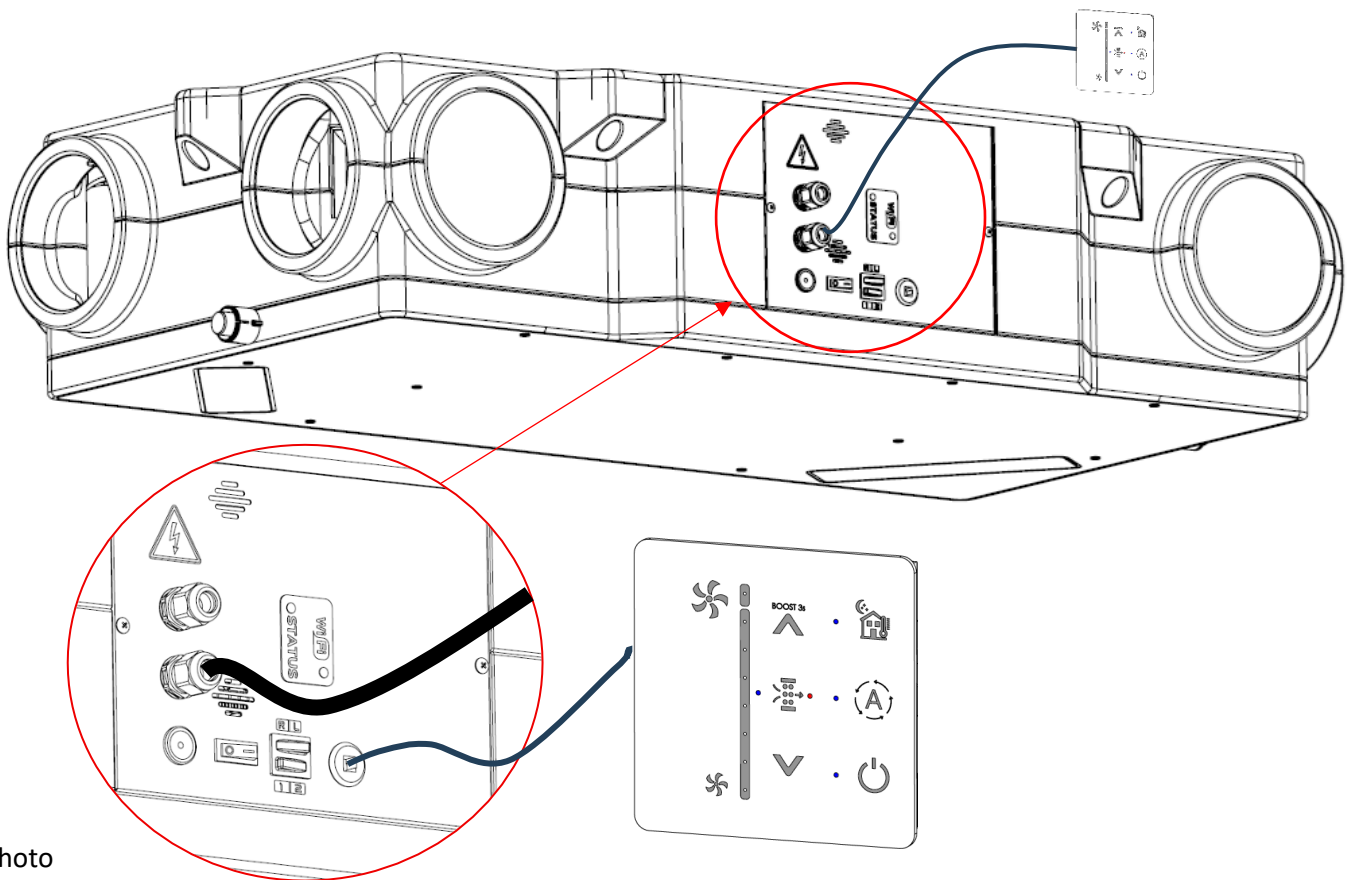
D-502-0694

4.3.2.1. Wired wall controller- Order code - SK

- A wired wall controller (hereinafter referred to as the "controller") can be connected to the device as an accessory, allowing full control of the device. The controller allows you to:
 - 7-speed air flow adjustment
 - To run the functions:
 - Intensive ventilation – Boost
 - Night ventilation – activation of automatic night ventilation.
 - Customer menu allowing you to set individual device parameters
 - Unit error indication
- The controller is also supplied with a 10-meter connection cable, which connects to the controller on one end and has an RJ (male) connector on the other end for connection to the device.
- To connect the controller to your device, follow these steps:
 - Turn off the device using the power switch
 - Remove the cap from the RJ (female) connector on the control board on the device.
 - Insert the RJ (male) end of the controller cable into the RJ (female) connector on the control board
 - Turn on the device and follow the instructions for use of the wall controller – SK



Pic 43



Photo

- By combining several types of control – communication (e.g. WIFI, RF, BMS), each controller is equal and independent of the other, i.e. the controller that sends the last command changing the unit's behavior behaves accordingly.



For installation and operating instructions for the controller, please refer to the separate "MN-SK" manual, which is included with the accessories or shipped with the device. www.ekkoair-by-jeremias.com

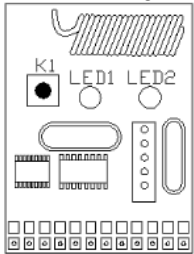
4.3.2.2. Wireless RF Remote Controller– Order Code – RF REMOTE CONTROL

- You can also connect a wireless RF remote controller (hereinafter referred to as the RF controller) to the device as an accessory to control it. The RF controller allows you to:
 - Three-speed airflow control (Individual airflow speeds are always uniformly recalculated according to the selected nominal flow)
 - Min (OFF)
 - mediocre

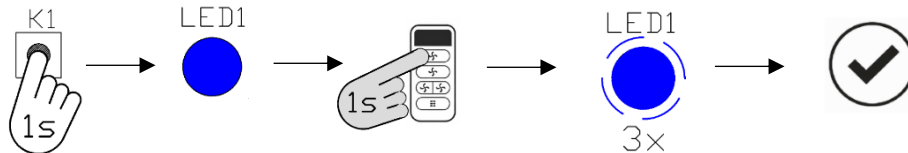
- max. (10 min gain) – nominal flow
 - Resetting the filter
 - Unit error indication
- The range of the wireless RF controller is 50m in open space.
- To connect the RF controller, you must perform the pairing process with the control unit according to the following procedure:



- Referring to point 4.3.1, remove the unit control cover
- On the control board you should find the RF receiver (marked MOD1) – see the diagram in chapter 4.3.2.
- Pairing the receiver and RF controller

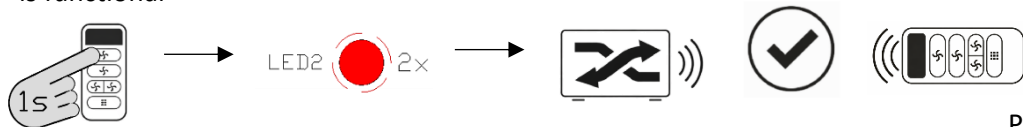


- On the RF receiver board, press the K1 button for 1 second → LED 1 will light up blue → press the first button on the controller → LED 1 will flash blue 3 times – the pairing process is complete



Pic 46

- Pic 45
- Checking the functionality of the RF controller connection to the unit
 - Press any button on the RF controller → LED2 on the receiver board will flash red twice → the device will respond to the change → the connection between the RF controller and the device is functional



Pic 47



- If different from point 4.3.1, install the unit control cover

- By combining several types of control – communication (e.g. WIFI, RF, BMS), each controller is equal and independent of the other, i.e. the controller that sends the last command changing the unit's behavior behaves accordingly.



For installation and operating instructions, please refer to the separate MN-RF manual included in the accessory kit or on the packaging. www.ekkoair-by-jeremias.com

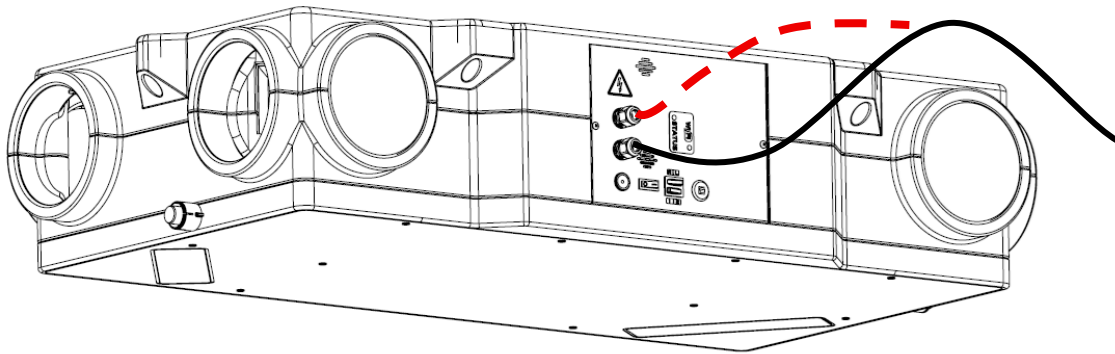
4.3.2.3. Connecting the unit to the main BMS system

- The device is equipped with the ability to connect to a superior BMS system (hereinafter "BMS") and an external WIFI module (in the event that the integrated WIFI module available as a separate accessory proves insufficient, e.g., in the event of insufficient WIFI signal range). Communication with the device is via the Modbus RTU communication protocol.
- The connection of the device to the superior BMS system must be performed by a qualified person with knowledge in this field.
- Connecting the WifiModule and subsequent control of the web application must be performed by a person with at least basic knowledge of computer technology and web browsers.

- To connect the device to a superior BMS system or WIFI module, follow these steps:



- First, turn off the power switch located on the device housing.
- Referring to point 4.3.1, remove the unit control cover
- Route the communication cable through a free grommet in the control sheet – use the free screw grommet



Pic 48

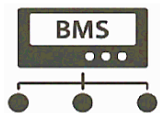


Connect the communication cable to the connector marked 30 / 31 / 32, following the wiring logic – see diagram in chapter 4.3.2.

- By combining several types of control – communication (e.g. WIFI, RF, BMS), each type of control is equal and independent of the others, i.e. the controller that sends the last command changing the unit's behavior behaves accordingly.



- The unit communicates with the master BMS system using the Modbus RTU communication protocol. A description of the protocol can be found in a separate user manual."D-502-0707 - MN-ULTIMATE-MODBUS" - <https://www.xvent.cz/dokumentace>



Pic 49

BMS

4.3.2.4. Connecting AQS sensors

- Up to two AQS sensors can be connected directly to the unit controller → AQS1 and AQS2 in any combination of CO₂, RH, and Rn – Radon. AQS sensor selection, in accordance with the price list, is available upon request from your dealer.
- Thanks to the connected sensors, the device can operate in automatic mode, which automatically controls the unit's operation and airflow according to the current demand in the room where the sensors are installed. This control method is also the most effective in terms of energy savings – ventilation occurs only when needed.
- The automatic mode is activated directly in the WIFI module.eu web application or can be activated by pressing a button on the wired wall controller – SK (if not included in the set – it must be ordered as an accessory)
- Technical parameters of AQS sensors intended for connection to the generator:
 - Sensor power supply 24VDC
 - Analog output 0-10V DC
 - Maximum sensor power consumption 5 W
 - Analog input resistance sensor 100 kΩ
- Device functionality after connecting AQS sensors:
 - The unit responds seamlessly to the need for ventilation triggered by real-time sensors:
 - Once the concentration value of the monitored substances is reached, ventilation is switched on to the minimum flow:
 - CO₂ – 800 ppm,
 - Relative humidity – 65%.
 - Rn – 350 Bq/m³
 - If the intended level of reduction in the concentration of monitored substances in the room cannot be achieved, the control system increases the flow rate to the maximum value set by the user.
 - The control unit will begin to gradually reduce the flow again as the concentration decreases.

- The goal of a ventilation control system is to find the ideal ventilation rate (flow) depending on the concentration of the monitored substance in the ventilated room. This allows the device to ventilate for a long time until a safe concentration is reached or the monitored substance is completely ventilated.
- When the concentration decreases to a certain value, the ventilation turns off and goes into standby mode:
 - CO₂ – 700 ppm,
 - Relative humidity – 60%.
 - Rn – 250Bq/m³

- If ventilation is required based on data from more than one sensor, the control system prefers the sensor with the higher ventilation requirement.
- The ventilation switching level and AQS sensor type settings can be changed in the service application (intended for authorized technicians) or in the superior BMS system (Modbus RTU).

- Connecting AQS sensors to control the unit



- First, turn off the power switch located on the device housing.
- Referring to point 4.3.1, remove the unit control cover
- When using wired sensors, the connecting cable should be routed through the grommet with the rubber membrane in the control housing.
- Connect the AQS sensors according to the diagram – see diagram in chapter 4.3.2.



- Setting the sensor type AQS1 and AQS2

- The sensor type is set directly in the controller by changing the terminal (jumper) setting in the fields marked JP2 and JP4 – as shown in the diagram. Available AQS sensor type selection options are:

- AQS1 input
 - JP2/A – **CO₂/RH** Switching
 - JP4/A – **CO₂+RH/** Rn-radon switching
- AQS2 input
 - JP2/B – **CO₂/RH** Switching
 - JP4/A – **CO₂+RH/** Rn-radon switching



Pic 50



Pic 51

- Factory settings – values marked in bold



- **When setting the AQS sensor type using the service application (intended for authorized technicians) or in the superior BMS system (Modbus RTU), setting it directly in the controller does not work.**

- To connect multiple sensors to one variable, it is possible to use the accessory "Signal splitter for air quality sensors" - HUB 8
- With this accessory you can connect up to 8 sensors of one parameter to one input on the control board (e.g.: 1 sensor = 8 CO₂ sensors)



- **Sensors for only one variable must be connected to a single HUB 8 accessory, never in combination. Otherwise, there is a risk of incorrectly evaluating the measured variable concentration and device behavior.**

4.3.2.5. Connecting the external contact EXT1 – ON/OFF

- The unit control allows you to connect an external contact to remotely turn the unit on/off (remote ON/OFF).
- The external contact is designed as potential-free and can be switched, for example:
- Using a magnetic door contact (a contact used in security systems). The contact can be mounted, for example, on a window. When the window is opened, the device stops and restarts when the window is closed.
- Using a remote switch, electrical devices in the building are turned off with a single button (total stop system). A device using this contact can be incorporated into this system.
- Using a time relay. The device can be turned on and off using a time relay located in the control cabinet.
- Technical parameters of the external contact EXT1
 - Switching voltage 24VDC / 5mA



- The contact can change the switching logic by switching the terminal bridge to NC or NO switching logic (factory setting) - see the following article "Connecting EXT1 to the unit control"

Functionality of the device when controlled by the external EXT1 contact

- An external contact turns the unit on and off with logical termination or re-enablement of all current processes upon shutdown or on.
- If the unit is turned on/off via an external contact, it can be turned off/on via the web app, BMS (if installed) or accessories:
 - Wired Wall Controller - Order Code - SK
 - Wireless RF Remote Control - Order Code - RF REMOTE CONTROL
- Example of external contact operation – a timer is used as an external contact:
 - EXT1 turns on the device at a set time (in the morning) – the device works according to the user settings,
 - during operation, the device is turned off by the controller on the device – the device turns off,
 - EXT1 turns off the device at a specific time (in the evening) – the device remains turned off all the time,
 - EXT1 turns on the device at the specified time (the next morning) – the device works according to the user settings.



- Connecting EXT1 to the control unit

Pic 52

- First, turn off the power switch located on the device housing.
- In accordance with point 4.2.3.1, the control cover of the device must be removed
- Route the connecting cable to the controller through the rubber membrane grommet in the controller housing
- Connect the external contact EXT1 according to the diagram – see the diagram in chapter 4.3.2.



- Configure EXT1 switching logic

- The external contact switching logic is set by changing the jumper (terminal) settings in the field marked JP1/E – as shown in the diagram. Setting options:
 - Closed contact – NC – jumper, terminal not connected
 - Open contact – NO – jumper, terminal – factory settings

4.3.2.6. Connecting the external EXT2 – Boost pin

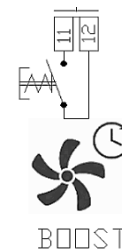
- The control unit allows for the connection of an external button (a switch with automatic flap return – e.g. a bell button with a return spring) to activate the boosted ventilation mode for a set period of time – BOOST (hereinafter BOOST)
- BOOST mode is designed for sudden ventilation for a specific period of time in rooms where there is an immediate need for ventilation, e.g. bathroom, toilet, etc.
- Boost mode can also be activated without connecting an external button directly in the web app or using accessories:
 - Wired wall controller – order code – SK – adjustable operating time (factory setting - 1 min)
 - Wireless RF remote control - Order code - RF REMOTE - for 10 min
- Technical parameters of the external contact – Boost
 - The external contact is designed to be potential-free
 - Switching voltage 24 VDC / 5mA.
- Boost mode functionality activated by a connected external button
 - After pressing the button (switch with automatic flap return), the BOOST mode is activated
 - The BOOST mode is activated and the device starts working with the set air power and working time of 1 minute.
 - After the set time in BOOST mode has elapsed, the device returns to the previous mode
 - If you want to exit BOOST mode before setting the runtime.
 - Hold the button for about 2 seconds
 - BOOST mode will automatically turn off and the device will return to the previous mode
 - To restore BOOST mode to factory settings when starting via an external button:
 - Air power in BOOST mode – maximum air power of the unit
 - BOOST mode duration – 1 min

- You can change the Boost mode settings in the web app
- Connecting EXT2 – Boost to control the unit

Pic 53



- First, turn off the power switch located on the device housing.
- Referring to point 4.3.1, remove the unit control cover
- Route the connecting cable to the controller through the rubber membrane grommet in the controller housing
- Connect the external contact EXT2 – Boost according to the diagram – see the diagram in chapter 4.3.2.



- Pass the communication cable connecting the unit to the BMS and WIFI module through the free grommet
- The device should be connected to the BMS system and the WifiModule using a UTP cable equipped with terminals – RJ45 8/8 connectors. The RJ connectors on the UTP cable should be connected directly (both connectors are connected identically).
- Setting the EXT2 Switching Logic
 - The external contact switching logic is set by changing the jumper (terminal) settings in the field marked JP1/D – as shown in the diagram. Setting options:
 - Closed contact – NC – jumper, terminal not connected
 - Open contact – NO – jumper, terminal – factory settings

4.3.2.7. External electric heater – (PREHEATER)– Order code– see price list

- It is possible to connect an external electric heater – a heater with a maximum power of 1600W, a maximum current of 7A and a voltage of 1x230V.
- Recommended heater power 1000 W
- The pre-heater is powered directly from the unit's control board via wiring.
 - Phase L – Terminal 70
 - Neutral N – terminal 71
 - PE grounding wire – Wago terminal led out from the grounding bridge
- The switching logic of the preheater is subordinated to the temperature indicated by the anti-freeze sensor, which is located in the device's recuperator and measures the actual freezing temperature of the device.
- If the preheater is not sufficient to defrost the heat exchanger, additional frost protection logic is activated when the preheater is switched on.
- The unit's control unit does not detect the presence of an external preheater and therefore assumes it is always connected. If the external preheater is not connected, the heat exchanger is protected from freezing by other frost protection systems.
- We recommend using an unregulated radiator directly connected to an appliance controller with safety thermostats. The radiator control is replaced by an appliance controller with an ON/OFF switch (100% power / 0% power).
- To ensure trouble-free and long-lasting operation of the external heater, we recommend using a filter box in front of the heater to capture larger impurities.

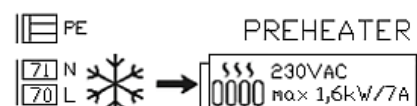


- **Do not connect anything other than an external pre-heater to the power supply terminals – resistive load with a maximum nominal value of 1.6 kW / 7 A / 230 V**

Pic 54



- Connecting the external pre-heater to the device controller
 - First, turn off the power switch located on the device housing.
 - In accordance with point 4.2.3.1, the control cover of the device must be removed
 - Route the connecting cable to the controller through the rubber membrane grommet in the controller housing
 - Connect the heater according to the diagram – see diagram in section 4.3.2.





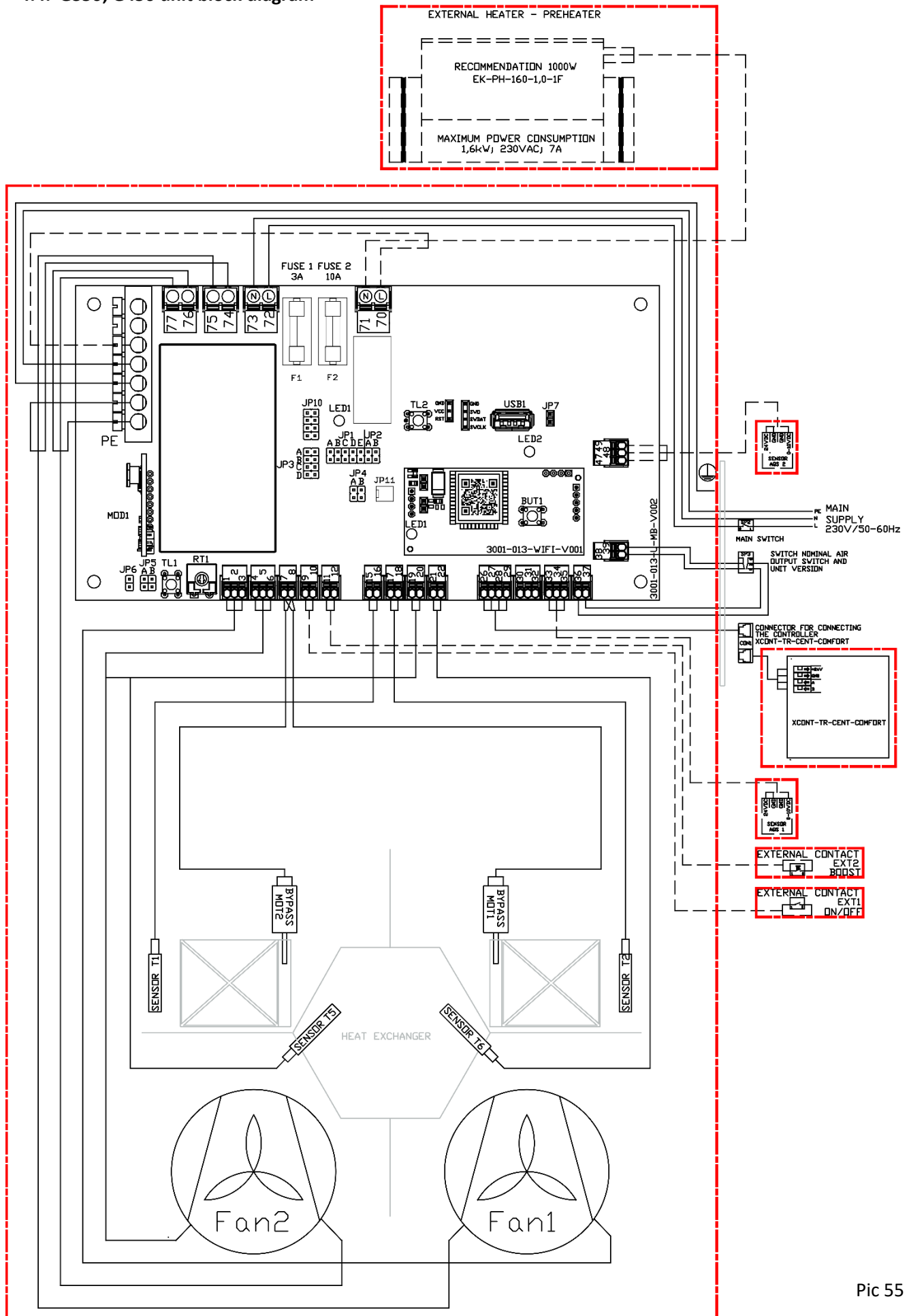
- The heater - pre-heater should be installed in accordance with the heater manufacturer's recommendations, e.g.: flow direction, distance from the device, heater location, distance of the temperature sensor from the heater, etc.
- If the heater manufacturer requires a minimum flow rate in the duct for proper heater operation, this must be achieved using a separate component (e.g., a differential pressure sensor). The device must not be used for this purpose under any circumstances.
The manufacturer of the device is not responsible for incorrect installation, any faults or damage caused by the operation of the heater.

4.3.3. Connecting an external electric post-heater – (POSTHEATER)– Order code– see price list

- An electric heater is a separate heating system that is used to heat the air supplied to the building (differential heat output heating)
- The electric heater is not connected to the unit control in any way = it does not control it in any way
- The recommended power of the electric heater is 600 W
- We recommend using a heater with a duct sensor for separate temperature control.
- **Consult with a ventilation designer or someone familiar with this topic for proper design for optimal heater performance, taking into account the specific installation and possibilities in the building.**
- **The wiring for the post-heater must be done using a separate power supply. Under no circumstances should the post-heater be powered by the appliance.**
Install the heater – secondary heater in accordance with the heater manufacturer's instructions, e.g.: flow direction, distance from the device, heater position, distance of the temperature sensor from the heater, etc.
- If the heater manufacturer requires a minimum flow rate in the duct for proper heater operation, this must be achieved using a separate component (e.g., a differential pressure sensor). The device must not be used for this purpose under any circumstances.
- The manufacturer of the device is not responsible for incorrect installation, any faults or damage caused by the operation of the heater.



4.4. G350; G450 unit block diagram



Pic 55

5. Activation

5.1. Before you start for the first time, check:



- that all installation work has been properly carried out in accordance with the instructions in Chapter 3.
- whether the device's power cord is properly connected to the mains,
- If there is a WiFi network with Internet access to which you log in your device
- If you know the WIFI network name and password to log in to your device
- whether the connected electrical accessories are connected correctly
- whether the condensate trap is watered and the condensate drain is connected to the sewage system
- whether the unit contains clean filters

5.2. Starting the device

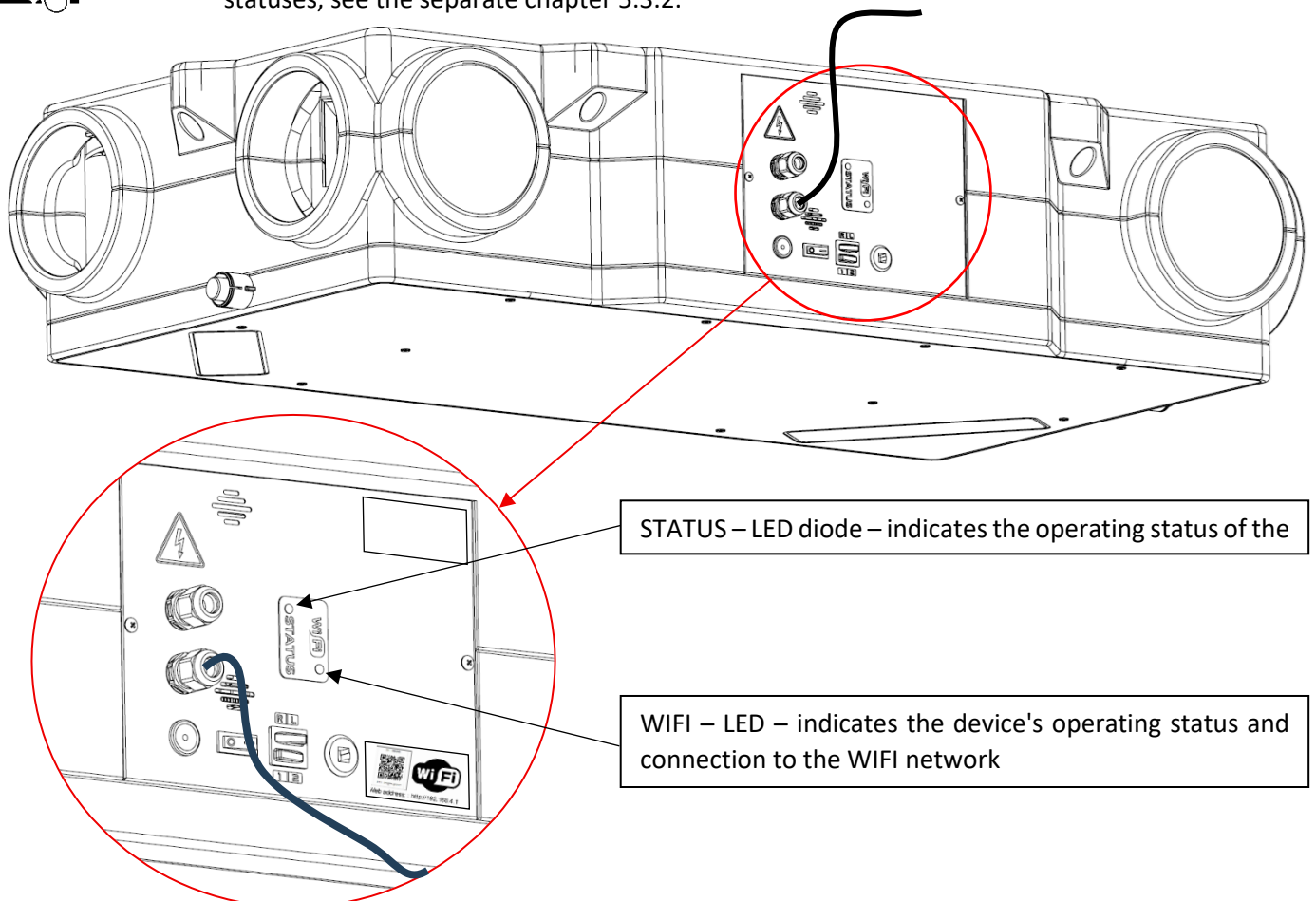


- **To properly activate the device, a Wi-Fi network with internet access must be available at the installation site. To access it, you must know the network name and password.**
- **Check if your Wi-Fi network security settings allow another device (the unit) to be connected. If you do allow another device (the drive) to be connected, consult your network administrator.**
- **To run the device, you need a device that allows you to connect to the WIFI network – the Internet, containing a web browser and preferably equipped with a web camera – smartphone, tablet, laptop**
- **If you do not have a WIFI network with Internet access or a device that would be suitable for this purpose according to the previous point, you can activate the device using accessories:**
 - o **Wired Wall Controller - Order Code - SK**
 - o **Wireless RF Remote Control - Order Code - RF REMOTE CONTROL**

5.2.1. Turning on the device



- Turn the power switch from 0 (OFF) to 1 (ON) and wait:
 - o The STATUS LED is solid blue – the device is powered on but turned OFF. For a detailed description of Wi-Fi statuses, see the separate chapter 5.3.2.
 - o The WIFI LED will flash cyan – the device is ready for pairing. For a detailed description of WIFI statuses, see the separate chapter 5.3.2.

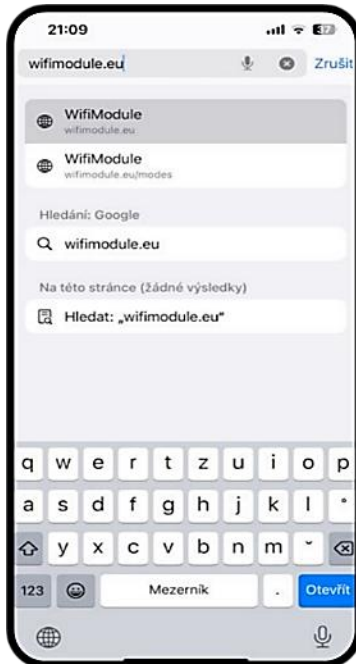


5.2.2. Create an account in the WiFimodule.eu web application

- To activate the device, you must create a user account using the web application (hereinafter referred to as the "APPLICATION") on the WiFimodule.eu website to control the device.
- The application is created as "native" → i.e. it adapts to any device equipped with a web browser and access to the Internet.
- To create a user account, follow these steps (instructions are displayed in smartphone resolution):

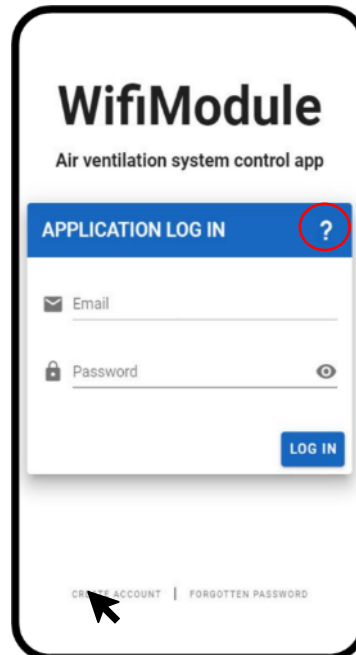
1

In your web browser, enter the website address www.WiFiModule.eu



2

Open a new account
In this case, you can check the video tutorial by clicking the help icon



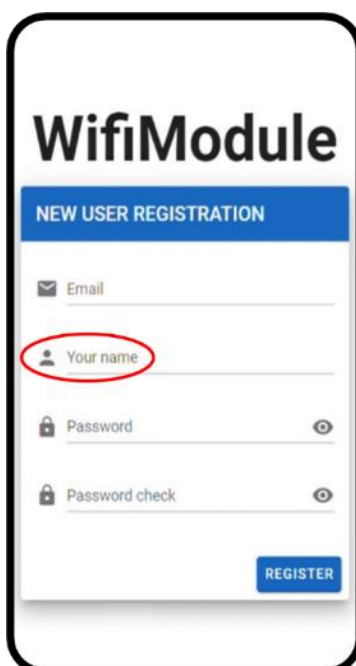
3

Enter the email address you provided during registration. Select the address you use frequently – your device will send notifications.



4

Enter your name



5

Enter your password to log in to the app.
To view the password, click



6

Please re-enter your password.
To view the password, click



7

Confirm registration

WifiModule

NEW USER REGISTRATION

Email
demo.xvent@xvent.cz

Your name
John Smith

Password
Xvent001

Password check
Xvent001

REGISTER

8

After successful registration, a confirmation email will be sent to the email address provided during registration.

The confirmation message was sent to your email address. Please complete your registration by clicking on link in the email. If you can not find the message please check SPAM folder as well. You can close this page now.

5.2.3. Registration confirmation via email

- After successful registration, you will receive a confirmation email to the email address you provided

Email address verification

 Od odesílatele **WifiModule** komu **demo.xvent@xvent.cz**

To finish registration on wifimodule.eu please confirm your email address by clicking on following link:
<https://wifimodule.eu/verification?email=demo.xvent%40xvent.cz&code=FVC3krng4ekbEFk>

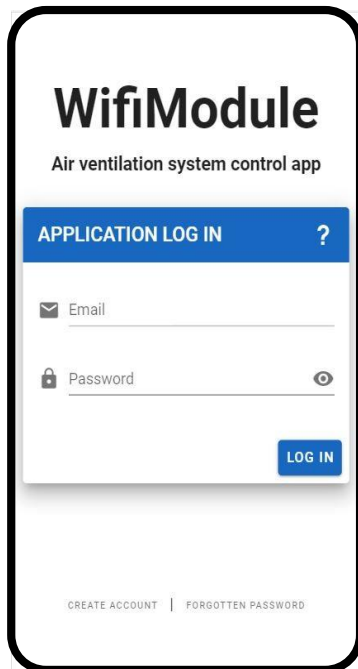
Do not click on the link and please ignore this email in case you did not make any registration on wifimodule.eu

- To complete your registration, you must confirm the link provided in the email.

5.2.4. Log in to the application

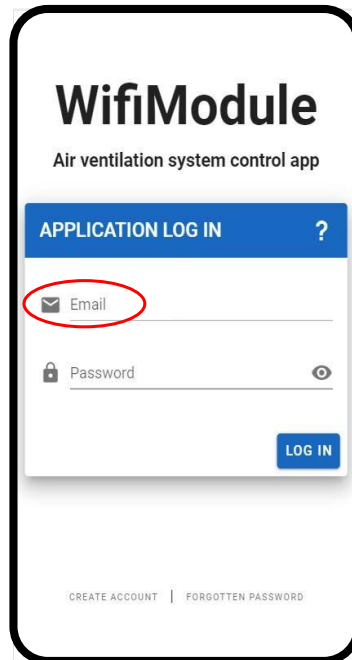
1

Return to
www.WiFiModule.eu



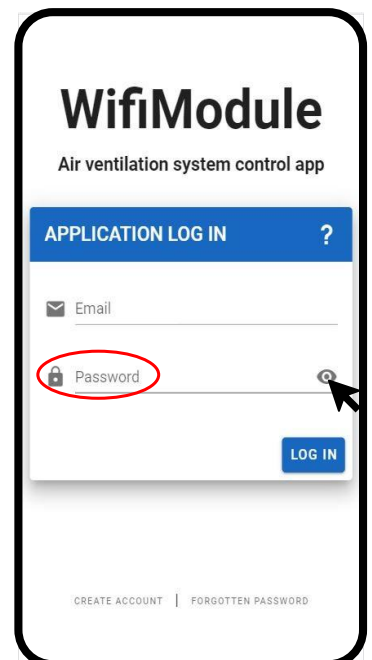
2

Enter your registered
email address



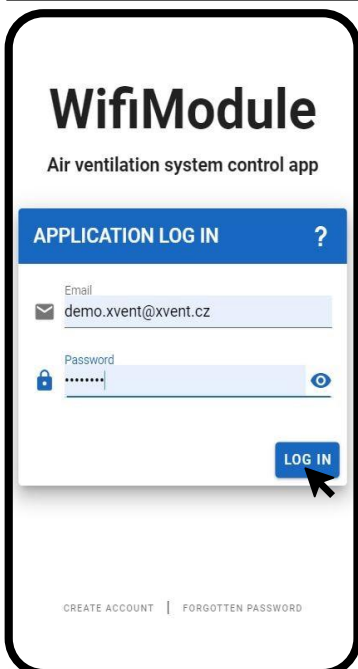
3

Enter your password
To view the password,
click



4

Confirm



5

You have successfully
logged in to the
application

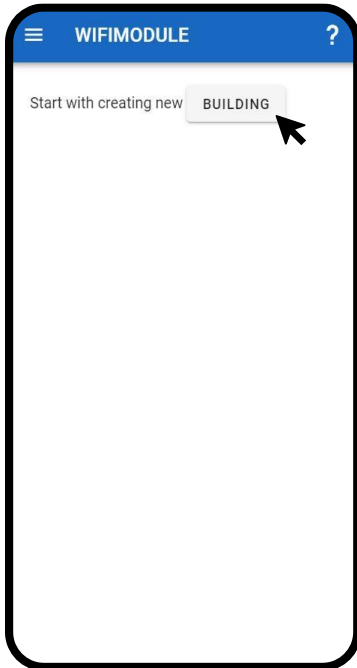


5.2.5. Initial application setup

5.2.5.1. Building arrangement

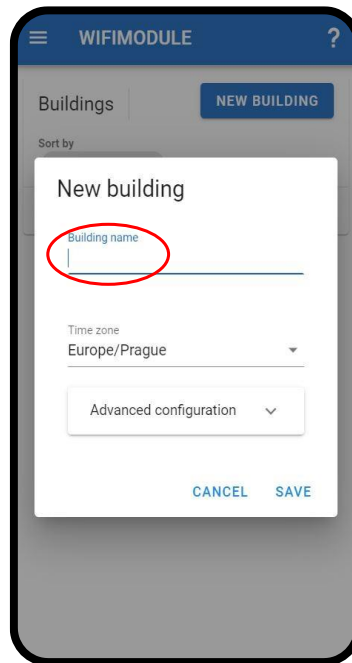
1

Determine – provide the name of the building (room, apartment) that the unit will serve



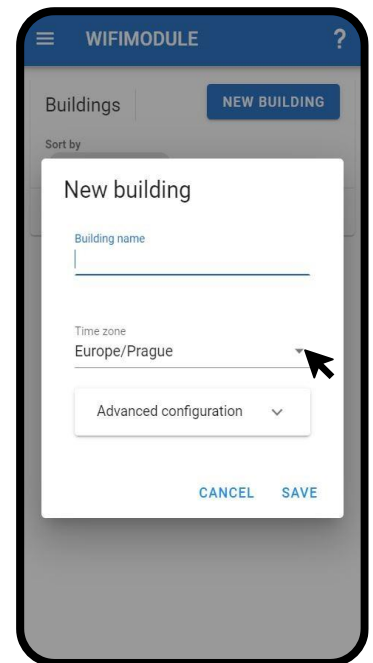
2

Provide the name of the building (apartment) where the unit will be located



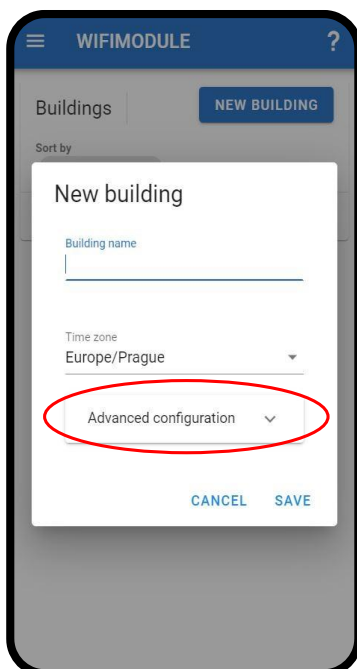
3

Select the closest time zone to where you are located



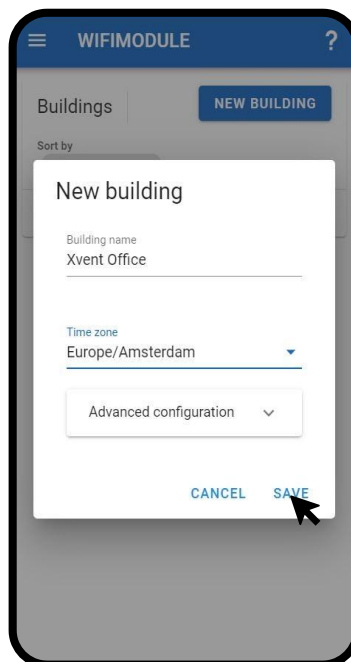
4

!!! Advanced settings – only set if you know what you are doing!!



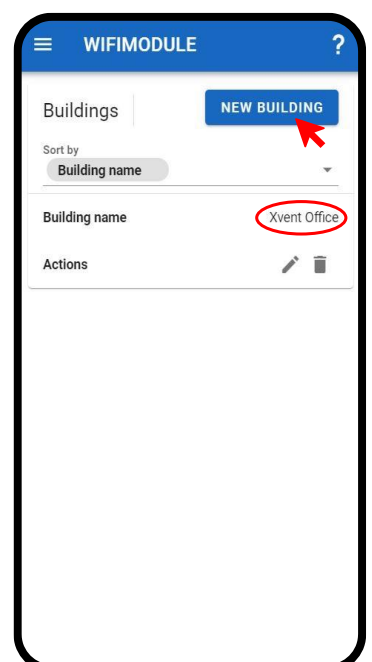
5

Save settings
Returning to building settings is possible at any time.



6

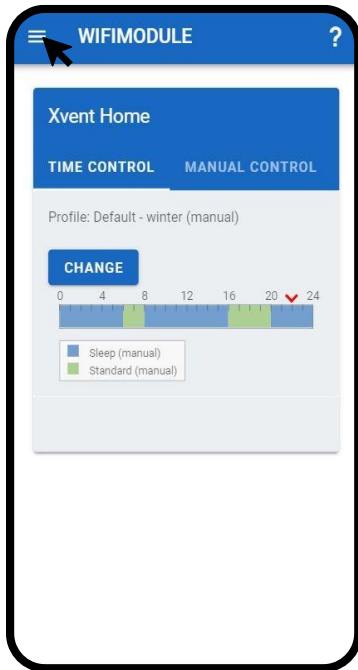
The building was successfully created and named
You can add another building if needed



5.2.5.2. Add unit

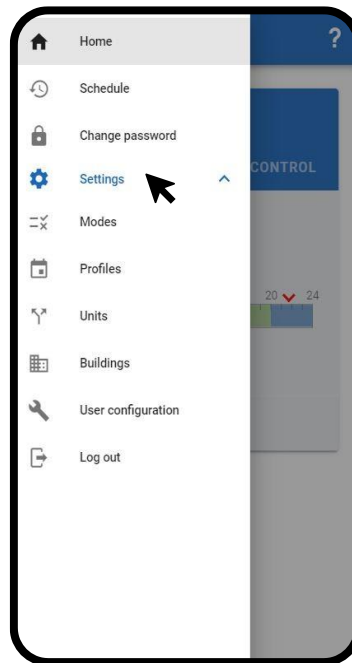
7

Menu



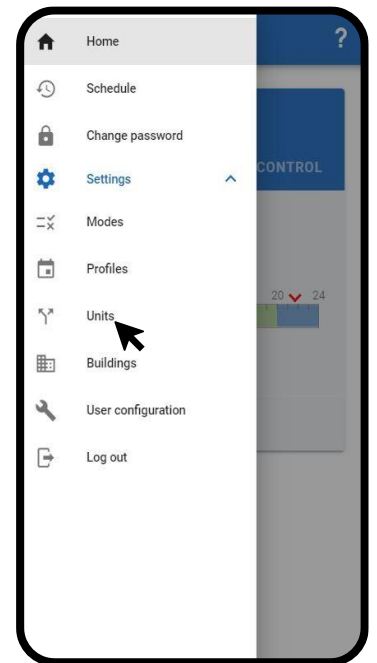
8

Settings



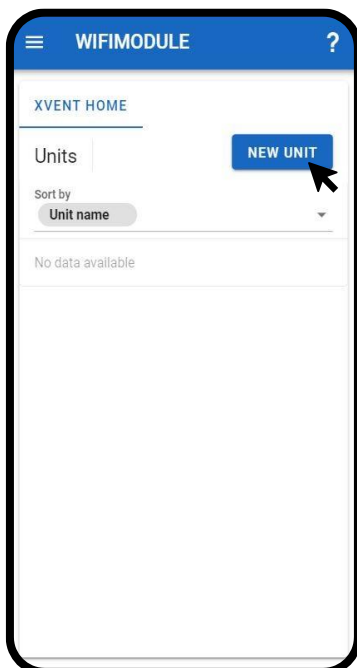
9

Units



10

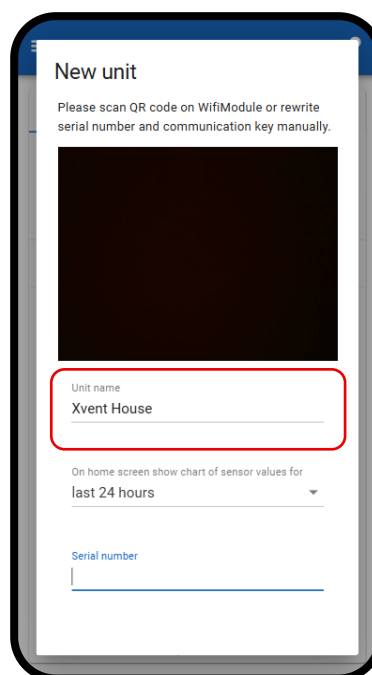
New unit



11

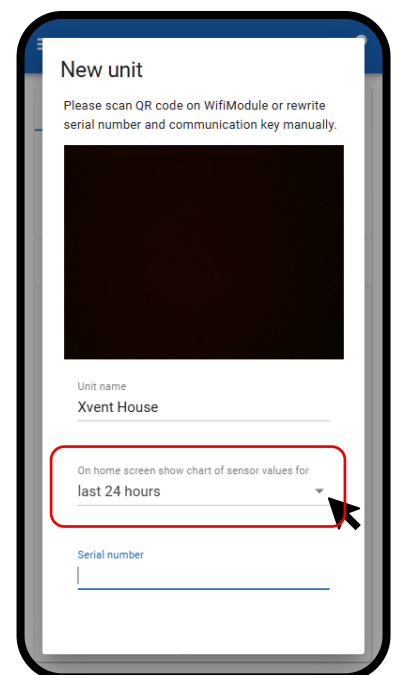
Allow your device to
access your camera -
camera

Name the unit

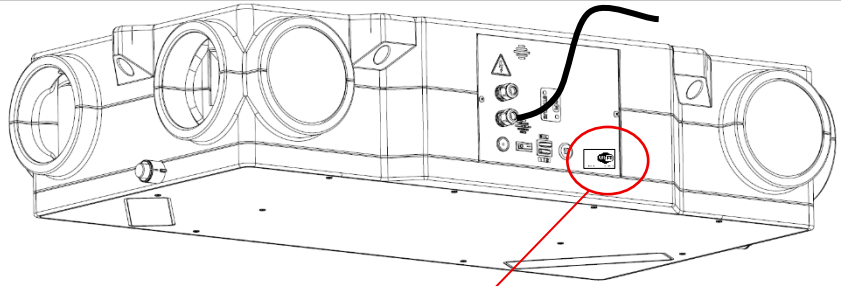
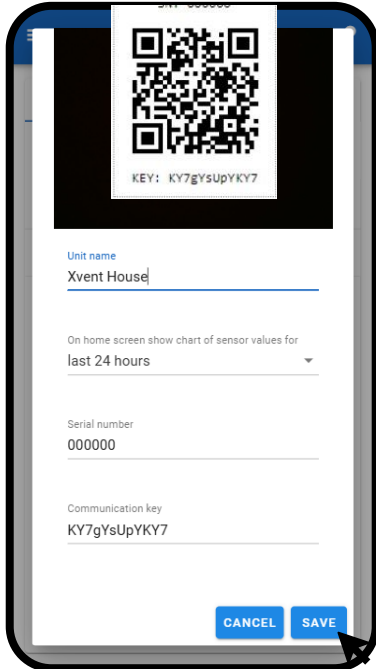


12

Set the time it takes to
display the AQS sensor
concentration summary
graph



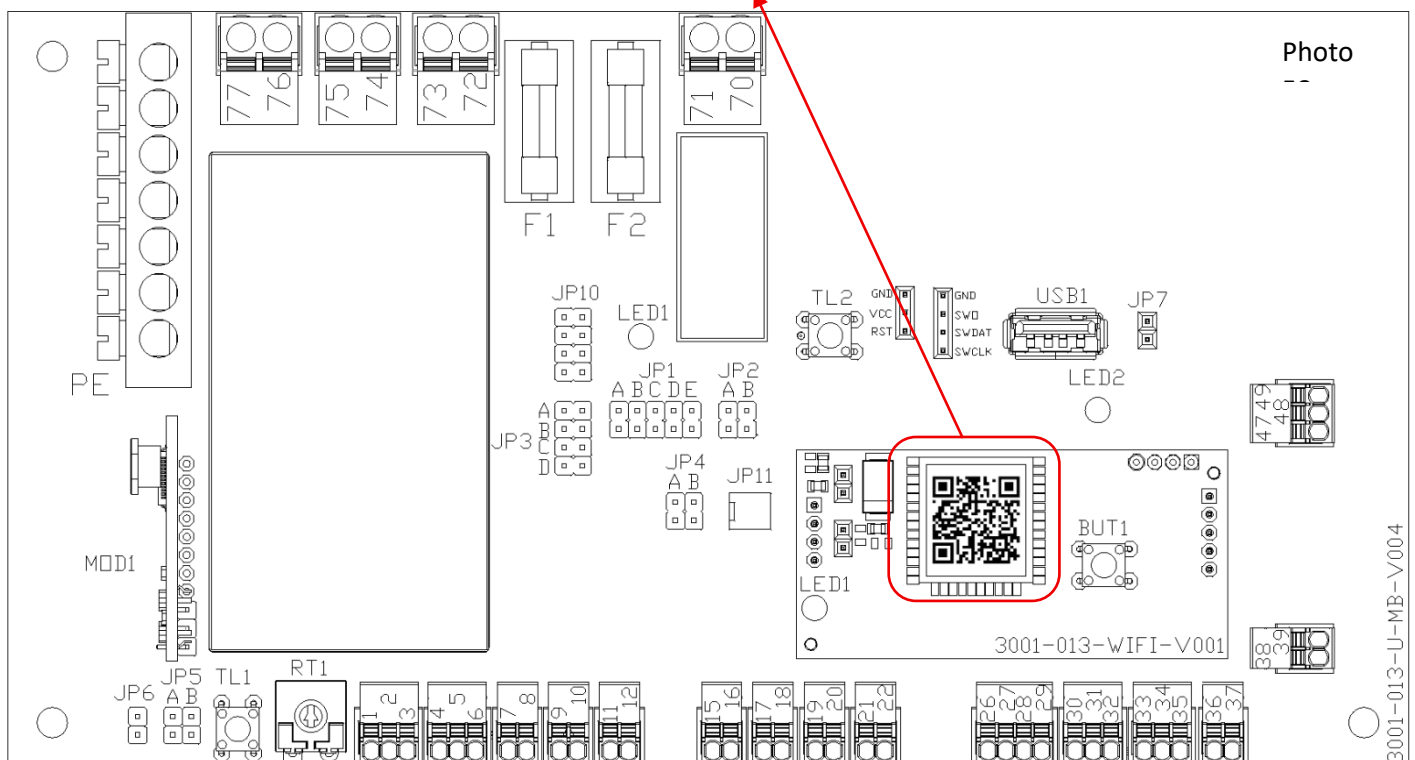
- Use your device's camera to scan the QR code on the control board
- QR code - the code is automatically loaded into the application
 - o Serial number – SN:
 - o Key – KEY:
- In case of unsuccessful loading (damaged QR code) or no webcam on the device, please enter the data manually directly into the application
- Save your settings



Photo

--

- If the label is lost or damaged beyond the point of reading the QR code or reading the stored data, a replacement label is placed on the control board. To access it, follow these steps:
 - o Turn off the power using the switch on the device housing.
 - o Referring to point 4.3.1, remove the unit control cover
 - o Read or copy the data from the backup QR code located on the WIFI control module



Photo

--

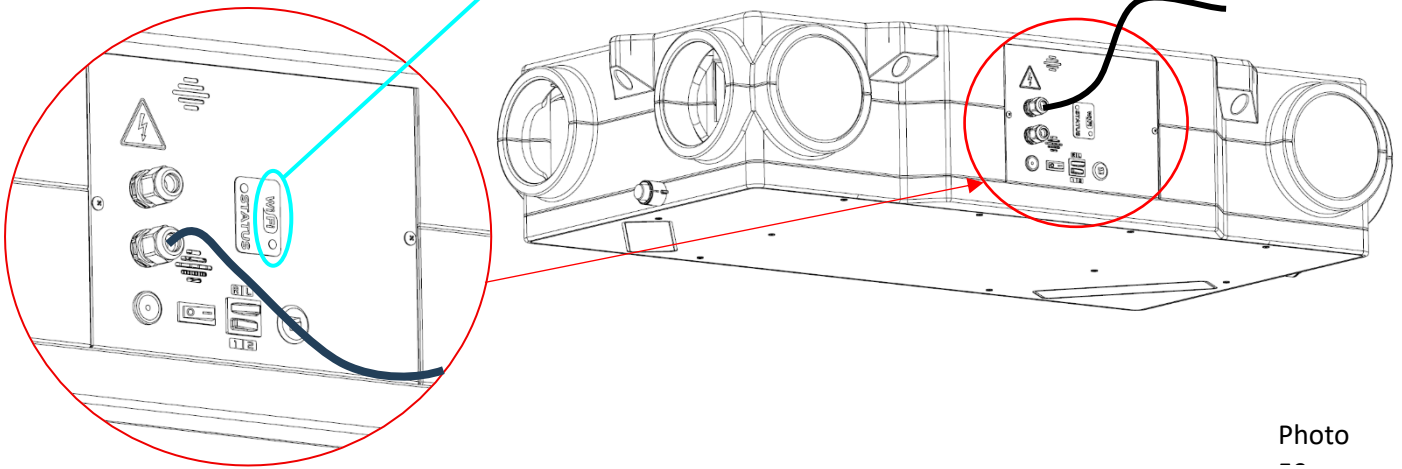
5.2.6. Pairing the device with the application – APP



- The following procedure assumes you have completed the steps in the previous sections. If you missed a step, you must repeat it; otherwise, you will not be able to continue with the next procedure.

1

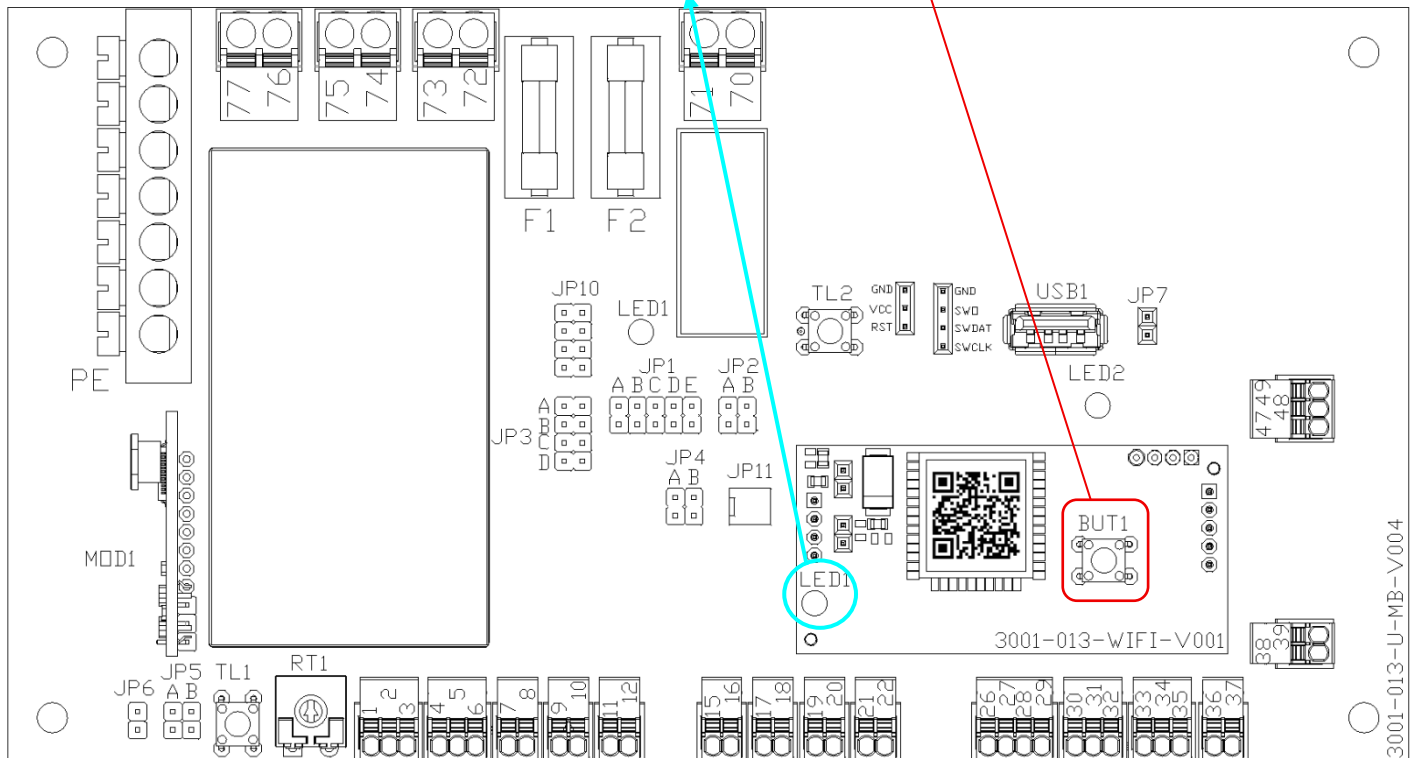
- Check if the WIFI STATUS LED is flashing blue
- The device is ready to be paired



Photo



- If the WIFI STATUS LED indicates otherwise, you need to restart pairing mode - follow these steps:
 - o Turn off the device using the power switch located on the control cover of the device.
 - o Using extreme caution, remove the unit control cover as described in section 4.3.1.
 - o Turn on the device using the power switch on the open housing. **BE EXTREMELY CAREFUL – the device is powered by 230V while resetting to pairing mode. You can also contact a licensed electrician.**
 - o Wait for the WIFI STATUS LED to light up or flash in any color
 - o On the WIFI module, press the BUT1 button for about 5 seconds.
 - o After approximately 5 seconds, the WIFI STATUS LED will flash cyan – pairing mode

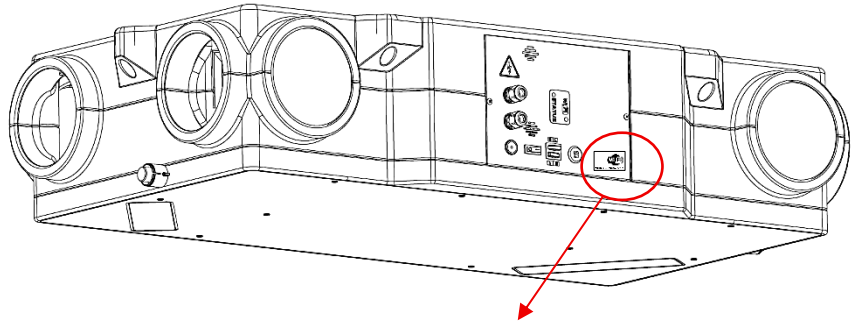
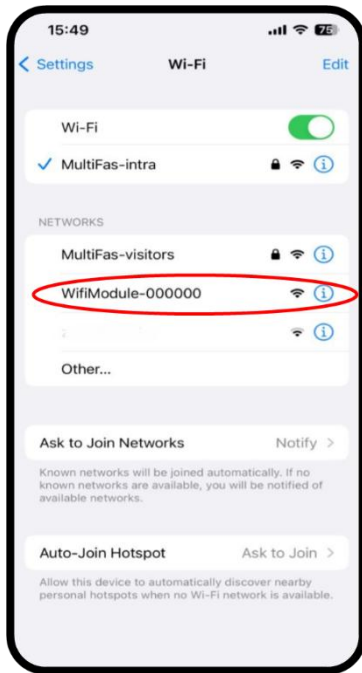


Pic 60

- o Leave the control panel open until the entire pairing process described in this article is complete. Then, turn off the device using the main power switch and reinstall the control panel cover.

2

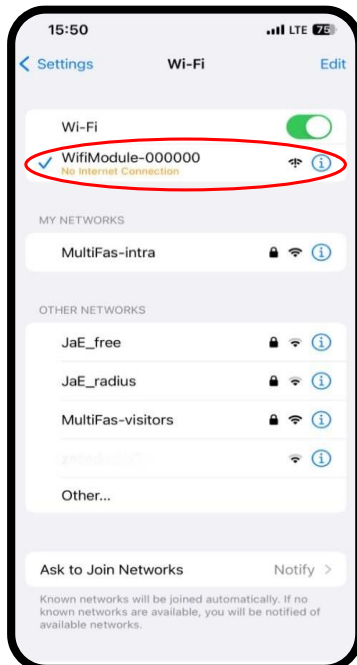
- On your device, find the WIFI network whose name matches your device's serial number - SN: 000000
- the network name is displayed on the control cover next to the QR code



Photo

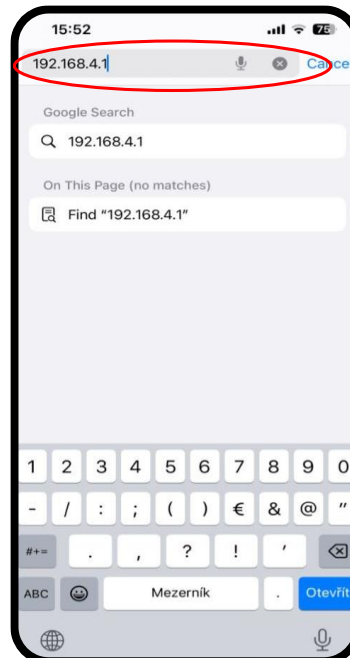
3

Connect to this WIFI network - the network is without connection and internet



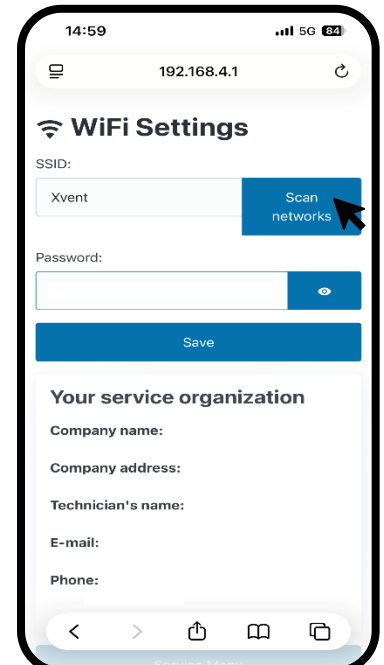
4

In your web browser, enter the web address 192.168.4.1, which is located under the QR code sticker



5

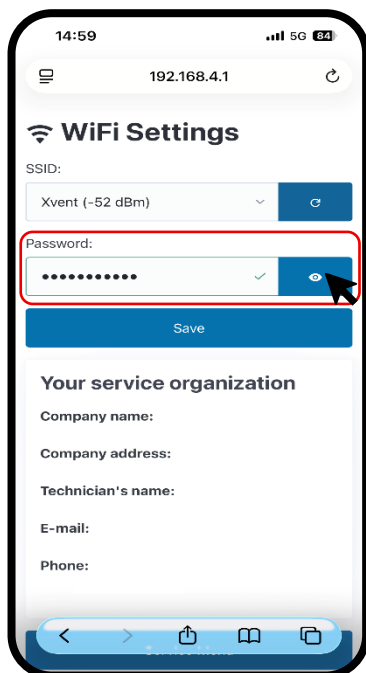
Find a WIFI network to which your device will be permanently connected



6

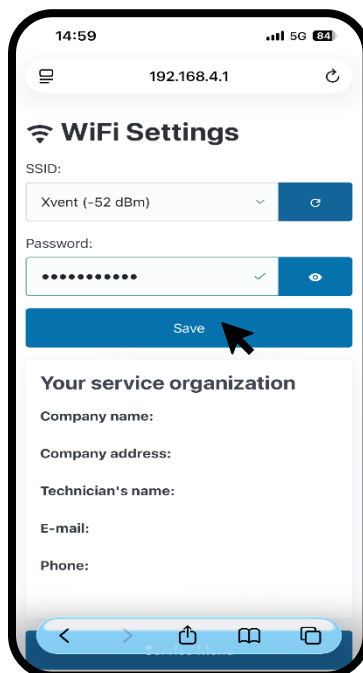
Enter the password for the network to which the drive will be connected

Click to see



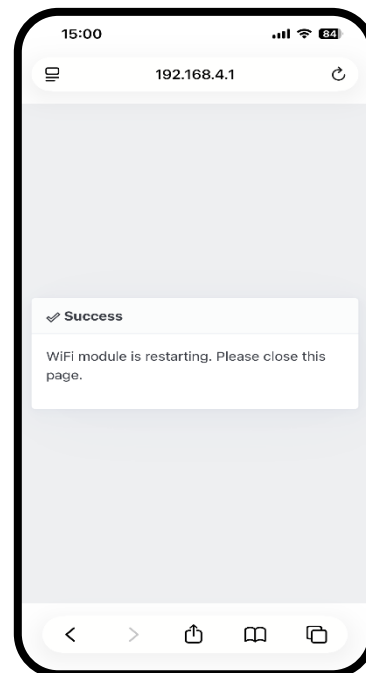
7

Confirm settings



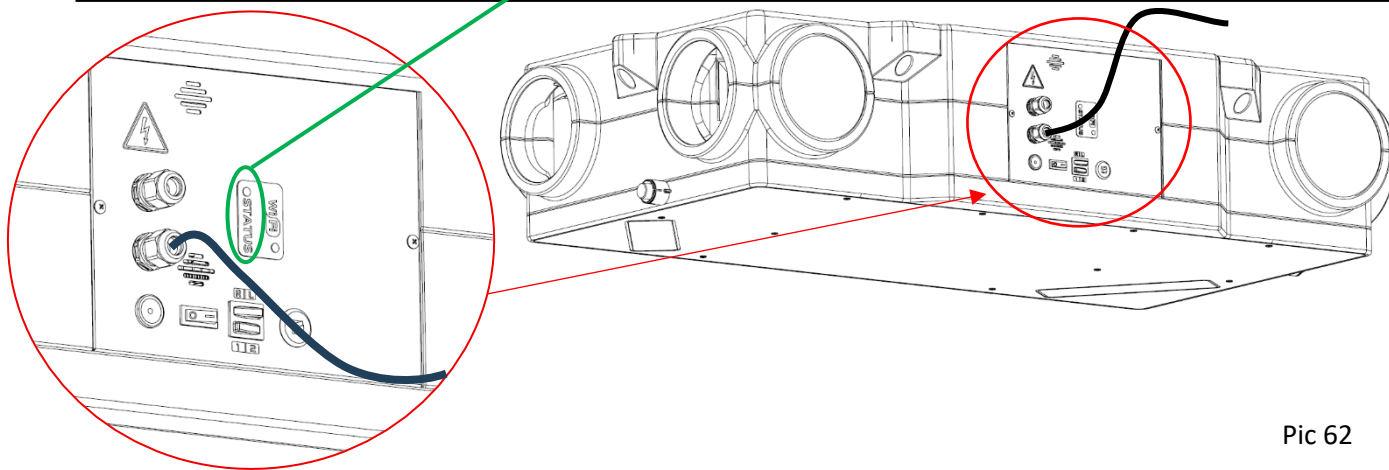
8

Close the WIFI settings page



9

The WIFI LED turns solid green (flashing green indicates a weak WIFI signal) – the pairing process may take up to 10 seconds



Pic 62

- The pairing process is complete. You can now control your heat recovery unit using the WIFImodule.eu web app.



If pairing fails, repeat the process – section 5.2.6.

If you need to restore pairing mode, then after it is complete - when the WIFI LED is green (flashing green - weak WIFI network signal) and you still have the device control cover open, do the following:

- Turn off the device using the power switch located on the device housing.
- Reassemble the control cover
- Turn the device back on using the power switch located on the device cover.

5.2.7. Verification of unit functionality and control



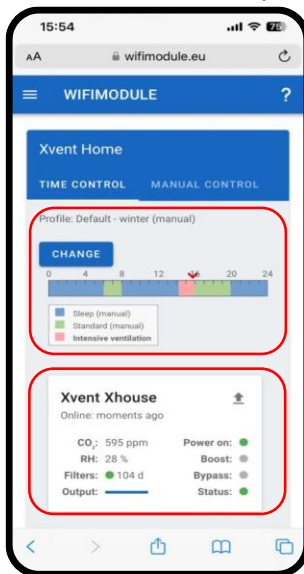
The device is factory-set to OFF, to check the operation of the control, perform the following installation steps:

- You must have a user account – Section 5.2.2.
- The device must be paired with your account and connected to a WIFI network with Internet access – the WIFI LED is green (flashing green – weak WIFI signal) – Chapter 5.2.6.
- The device must be turned on using the power switch - the STATUS LED lights up solid blue

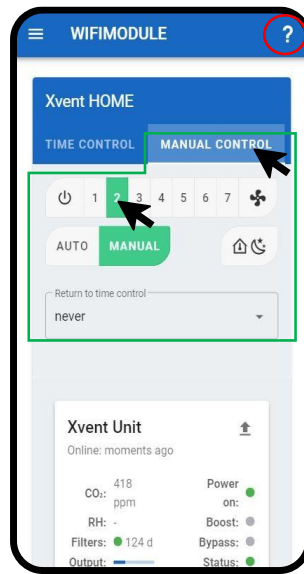


If all previous steps have been completed, follow these steps:

- Open the website www.WIFImodule.eu
- Log in to your account
- The app will take you to the main screen. If everything is OK, you'll see:
 - Connecting the device with the currently set operating mode – calendar in default settings
 - Operating status of the connected unit
- Switch to manual control
- Select the second speed on the fan scale.



Photo



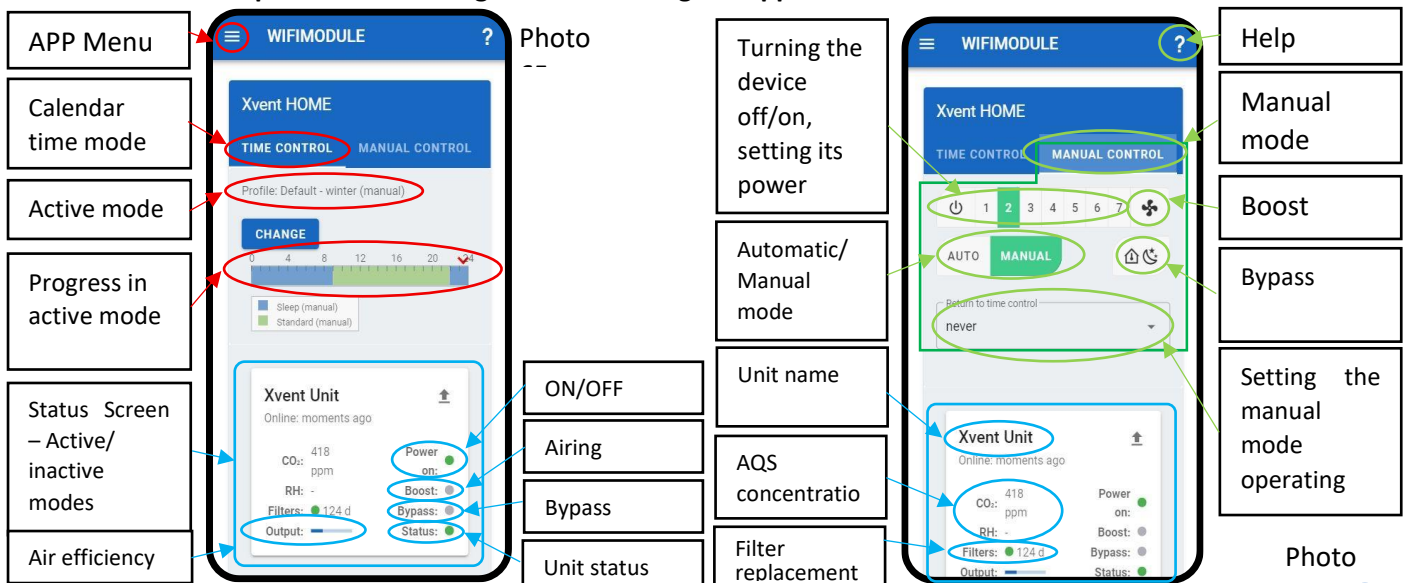
Photo



For faster access to device controls, we recommend creating a shortcut on the desktop of the device from which you will control the device.

- The STATUS LED will light up green (the device is working) – the device will start in 2nd gear.
- Physically check if the device is in use. If so, the device has completed booting.

5.3. Basic description of controlling the device using the application



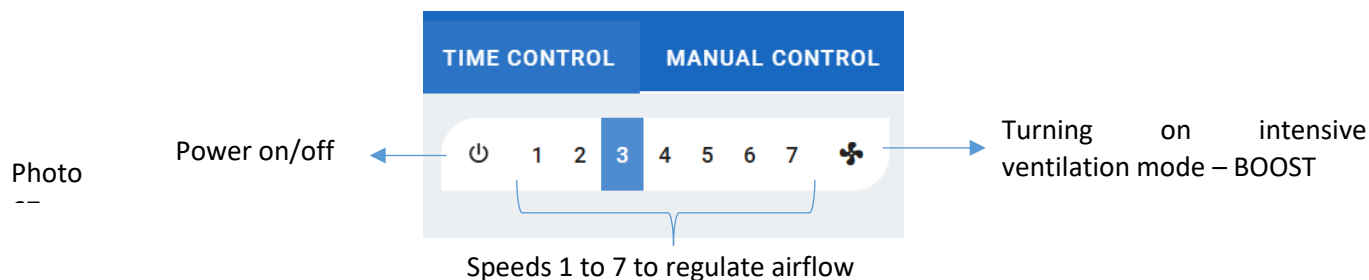
- To use all the application settings options, please use the help (video link) located under the symbol



- A full description of all application settings and functions can be found in the separate manual "Control – WIFI Module – Application".

5.3.1. Setting the device's air output

- In the app, in the manual control tab, you can set the power level of the device



- Setting individual air outlets depending on the device type – factory settings

Unit type	G350-XX-X-XX-BM-X		G450-XX-X-XX-BM-X	
Airflow level in APP	Nominal air flow 300 m3/h	Nominal air flow 350 m3/h	Nominal air flow 400 m3/h	Nominal air flow 450 m3/h
	m ³ /h	m ³ /h	m ³ /h	m ³ /h
1	70	70	110	110
2	100	105	143	152
3	133	145	183	200
4	174	198	228	256
5	218	246	284	319
6	257	290	337	387
7*	300	350	400	450
Increase	350	390	450	450

Table
16

* Nominal air flow at an external pressure drop of 200 Pa



- **Nominal flow (up to 70% of the nominal flow rate compared to the device's factory settings) can also be set using the service app (intended for authorized service technicians only). If the nominal flow is set using the service app, the individual power level settings will not correspond to the declared values, but will be calculated uniformly (the minimum power is constant).**

5.3.2. Description of the device's operating states – STATUS diode signals

- The description of the STATUS operating status is also presented graphically in the device control diagram.
- **STATUS LED signals**

Table 17

LED STATUS Indicator - Color	LED Status Indicator STATUS - Indicator Type	Control description
red	flashing	Overall unit error
green	ON	Everything's fine
	flashing	Shutdown phase has started - cooling - the unit will be shut down
blue	ON	The unit is turned off
orange	ON	Filter change indicator

WIFI LED Status Indicator - Color:	WIFI LED signal indication - signal type	Signal description
green	ON	Control via the OK app
	flashes slowly	Weak Wi-Fi signal
	fast flashing	Internal error in the converter, device, or server
blue	flashes slowly	Loading Wi-Fi network - everything OK
	fast flashing	The internet connection is not working
cyan (light blue)	flashes slowly	Pairing mode active – the device is ready to be paired with the user
	fast flashing	Modbus communication not working

5.3.3. Hidden control functions

- Control behavior includes automatic processes that ensure optimal device operation, emphasizing maximum service life and economical operation. These processes are part of the factory configuration and manufacturer's knowledge. They cannot be changed by the user. These automatic processes may cause the device to behave differently than the user intended.
- These are mainly automatic processes:
 - o unit preheating control – turns on only when necessary,
 - o activation of anti-freeze logic – actions preventing the heat exchanger from freezing,
 - o minimum preheating time – protective function,
 - o cooling after switching off the preheating – a function protecting against overheating of the heat exchanger
 - o unit control using AQS sensors – automatic functionality based on ventilation needs

5.3.3.1. Temperature conditions for automatic bypass activation

- The temperature conditions for opening/closing the bypass are evaluated based on the temperatures (factory settings):
 - o Outside air supply temperature: >19°C
 - o Room supply air temperature: >22°C
 - o Inside temperature > outside temperature
 - o Closing/opening hysteresis 2°C
- Auto Bypass Function:
 - o Once the above temperature conditions are met, the bypass opens/closes.
 - o If the temperature conditions for opening the bypass are met, but the minimum flow temperature difference (hysteresis 2°C) is violated, the bypass is closed
 - o The bypass is always opened provided that the outside temperature is at least 2°C lower than the inside temperature - hysteresis



- **The temperature conditions for activating the automatic bypass can only be changed using an additional wired wall controller - order code - SK**

6. Replacing filters



- Before beginning any service work, disconnect the power supply. The circuit breaker must be secured against unauthorized reconnection during installation.
- The device is equipped with a filter clogging timer that measures approximately 6 months (approximately 4,400 hours). The timer records the device's actual operation.
- Filter clogging depends on the environment the device is operating in. In particular, it depends on the dust content in the air – the more dust particles in the air, the faster the filters become clogged. Therefore, you should always consider replacing your filters as soon as they become clogged.
- The filter change indicator can be found on the control panel by a flashing red LED with the word "filter" written on it (position 5 on the controller).
- Before you start replacing your filter, make sure you have new filters:
 - o M5 filters M5-2-G350-450
 - o F7 filters F7-2-G350-450
 - o F9 Filters F9-2-G350-450
 - o G4 activated carbon filters G4ZWA-2-G350-450

6.1. Removing the filter

- Using the fabric strips, remove the plastic caps from the device cover marked FILTER.
- Remove filters, check or replace the filter with a new one

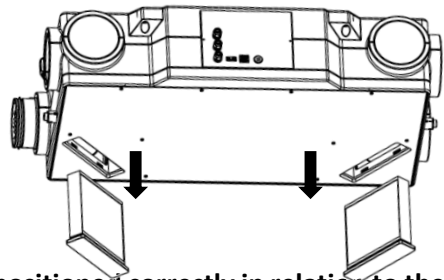
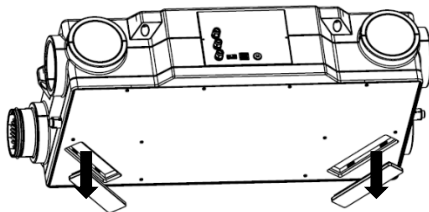
1

REMOVE FILTER HOODS USING STRIP MATERIAL

2

SLIDE OUT THE FILTERS USING

Pic 68



6.2. Filter description



- Before inserting the filter into the device, make sure it is positioned correctly in relation to the airflow.
- Insert new filters into the device.
- Align the filter holders so that they do not interfere with the plastic filter caps.
- Place the filter caps on the device cover so that they are flush with the device cover.

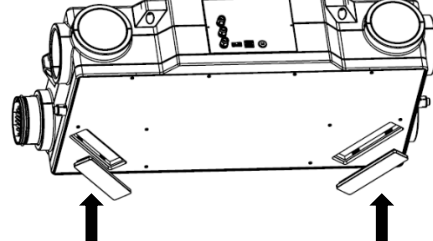
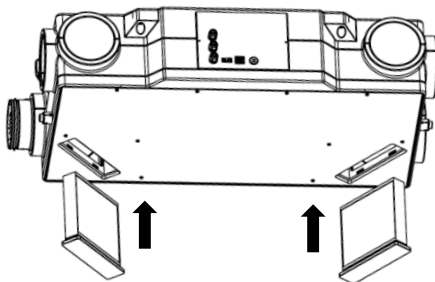
1

INSTALL NEW FILTERS

2

REPLACE FILTER CAP

Pic 69



6.3. Resetting the filter countdown

- The filter is always reset only when the STATUS LED in the orange knob lights up.
- Reset the filter to normal operating condition by following these steps:
 - o Turn off the device using the power switch located on the control cover of the device.
 - o Using extreme caution, remove the unit control cover as described in section 4.3.1.
- Turn on the device using the power switch on the open housing. **BE EXTREMELY CAREFUL – the device is powered by 230V while resetting the filter. You can also contact a licensed electrician.**





- Wait until the STATUS LED turns orange
- On the control board, locate the filter reset button (marked TL1) – see diagram in section 4.3.2.
- Press and hold the button for 6 seconds until the STATUS LED turns green (normal operation). At this point, the filter change countdown will begin again.
- Turn off the device using the main switch located on the control cover.
- Reinstall the control cover onto the device.
- Turn on the device using the power switch - the filter reset process is complete



- **If the filters are not replaced (cleaned) properly, the functionality of the device may be limited.**
- **Never operate the device without air filters as this may damage the recuperator.**

7. Regular maintenance and cleaning- flat units



- **Before performing any maintenance or cleaning on the device, disconnect the device from the power supply.**



- **Maintenance and cleaning must be performed regularly, otherwise the functionality of the device may deteriorate.**
- **Children must not perform cleaning and maintenance operations without supervision.**
- **Do not use compressed air, steam, solvents, aggressive chemicals, strong cleaning agents or sharp objects to clean the device.**
- To ensure hygienic operation of the device, it must be maintained and cleaned regularly. If the filters are replaced regularly (original manufacturer filters must be used) in accordance with the instructions, service intervals of a maximum of 2 years or at the intervals specified by relevant national regulations or customs must be observed.
- If the device will not be used for a longer period of time, it is necessary to disconnect the power supply to the device.
- Servicing work beyond the scope of normal maintenance must only be performed by an authorized service agent or the manufacturer.



- Regular maintenance must include:
 - o Visual inspection of the unit housing - Section 7.1.1.,
 - o Visual inspection of the power cable - section 7.1.2.,
 - o Cleaning the fan chamber and fans - Chapter 7.2.1.,
 - o Visual inspection and cleaning of the heat recovery heat exchanger - section 7.2.2.,
 - o visual inspection - cleaning of the external pre-heater, post-heater, if installed - chapter 7.2.4.,
- To clean the device from coarse dirt and dust, use a vacuum cleaner or a damp cloth with regular detergent (e.g. soapy water).

7.1. Inspection - cleaning the exterior of the device

7.1.1. Visual inspection of the unit housing

- The device can be cleaned on its entire surface.
- Visually inspect the device's outer casing for excessive dirt or damage:
 - o if the smooth surfaces of the housing are dirty, wipe them with a damp cloth and regular detergent (e.g. soapy water),

7.1.2. Visual inspection of the power cord

- Visually inspect the power cord for damage, looseness, or separation from peripheral connections.
- **If damage is found, seek advice from a person with appropriate qualifications, valid authorizations and knowledge of the relevant standards and directives.**



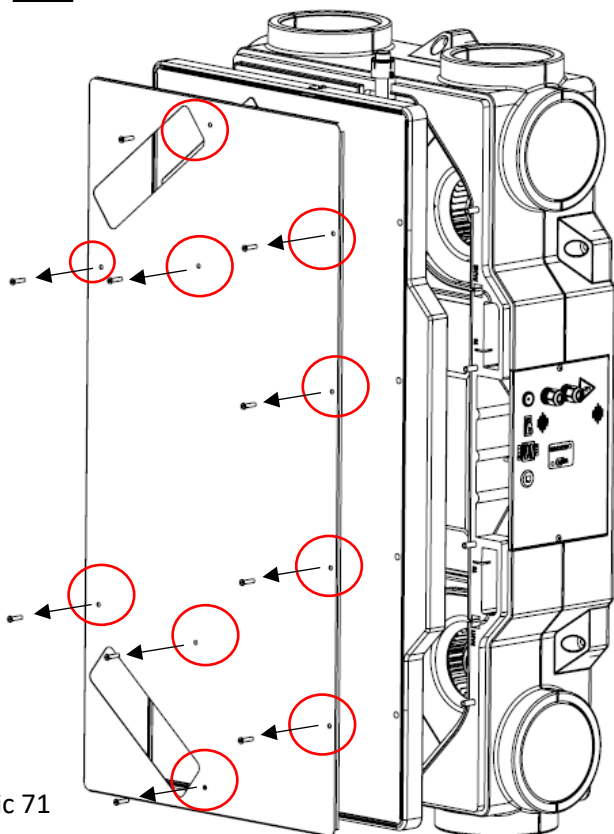
7.2. Inspection - cleaning the interior of the unit



- **Exercise extreme caution when disassembling the device's internal components. Improper disassembly may result in device malfunction or limited functionality.**
- Unscrew the 10x M6x20 screw to secure the device cover
- Remove the filter caps using the fabric straps
- Remove filters
- Remove the appliance cover using the holes in the filter cap (item 9).

1

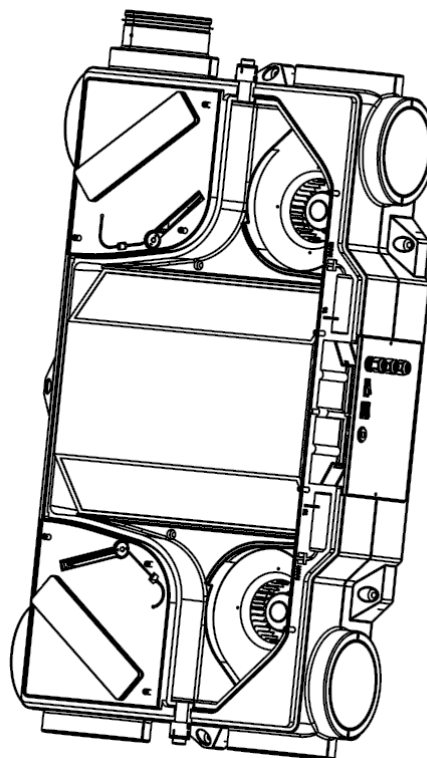
REMOVE THE SCREWS



Pic 71

2

OPEN THE DEVICE COVER TO ACCESS
INTERNAL COMPONENTS



Pic 72

- Exercise extreme caution when removing the device cover – the cover's connections to the device body are sealed where the heat recovery unit is located. After removal, the sealed connection may be difficult to remove.

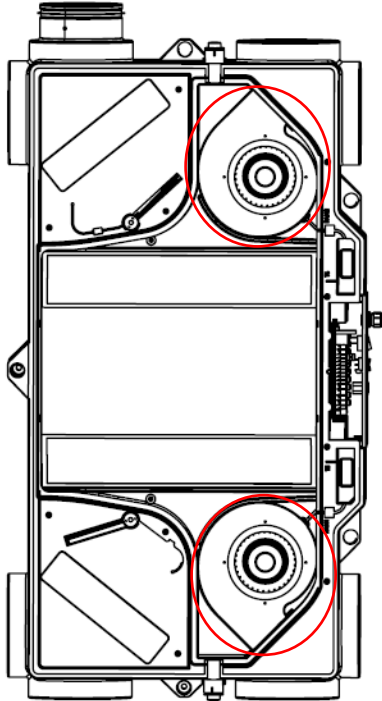


- **The next subcategories of instructions are the next steps that must be performed in the order given.**

7.2.1. Cleaning the fan compartment and fans

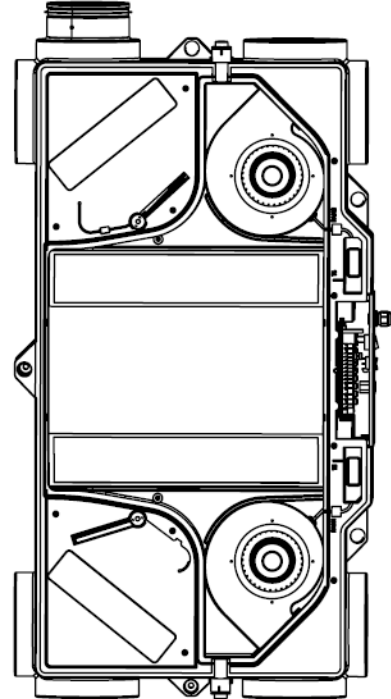
- For better cleaning experience, only clean one fan chamber with the fan at a time.
- Loosen the cables in the fan groove. Be careful not to damage the connector when removing them. The cables are secured with adhesive to prevent them from spontaneously falling out.
- Carefully slide the fan beam/fan assembly (item 11) out of the groove in the unit body.
- The fan beam can be rotated 180° together with the fan for better access.

1) Arrangement of fans in the device



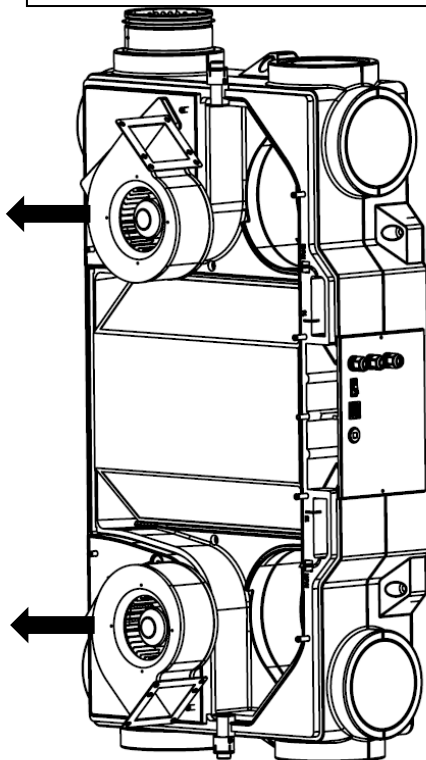
Pic 73

2) Disconnect the fan cables



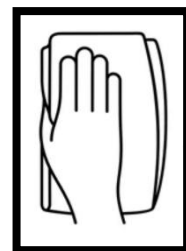
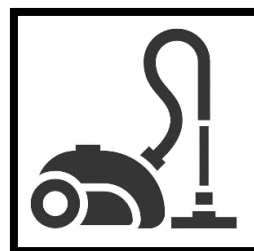
Pic 74

3) Expansion of fan components



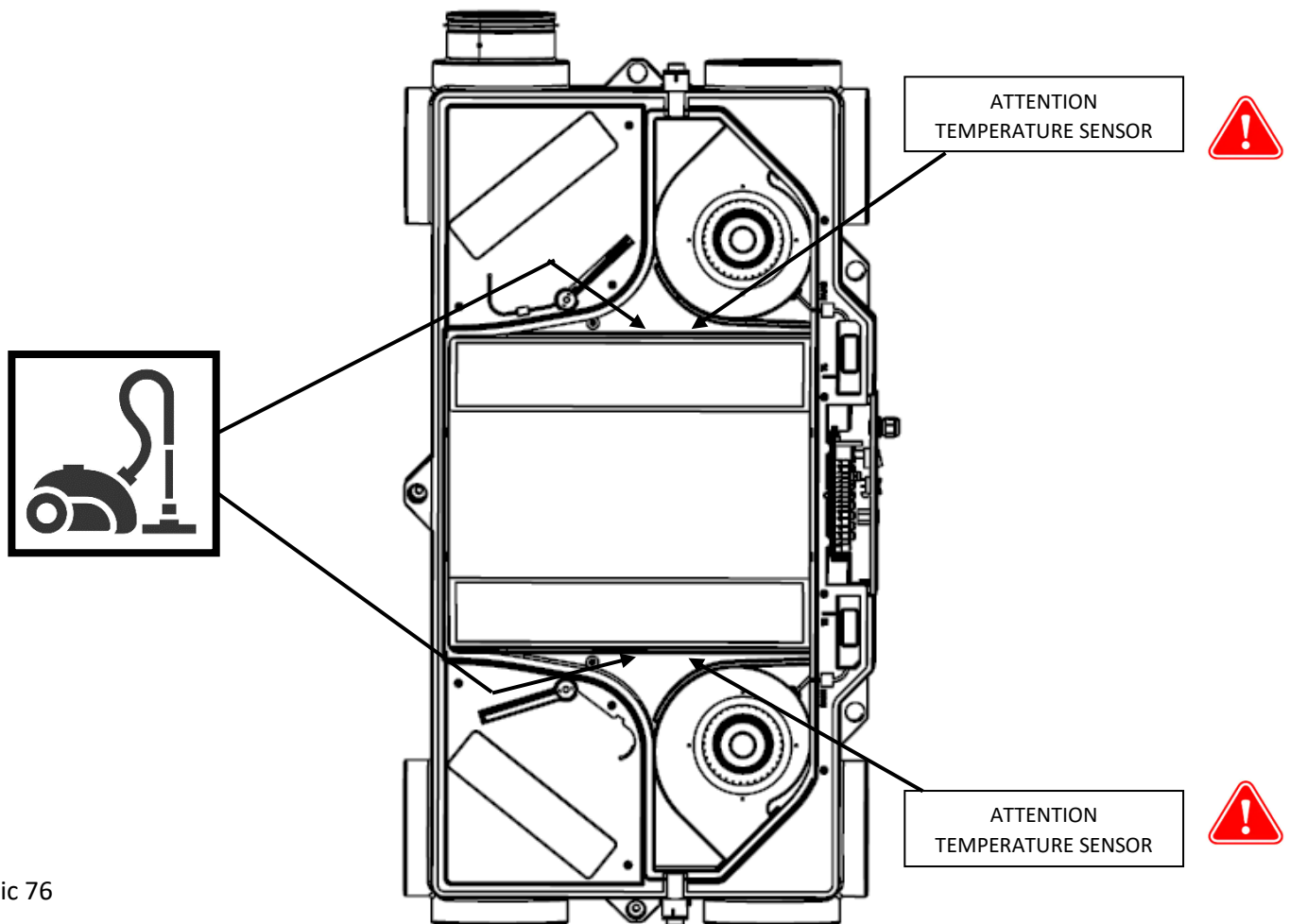
Pic 75

- Vacuum clean any dirt from the fan chamber or wipe it with a damp cloth and regular detergent (e.g. soapy water).
- Using extreme caution, vacuum dust from the fan assembly or wipe the assembly with a damp cloth and regular detergent (e.g., soapy water).
- After cleaning the fans and fan compartment, reverse the steps. Make sure the cables are properly routed in the groove to prevent them from being pinched by the cover.

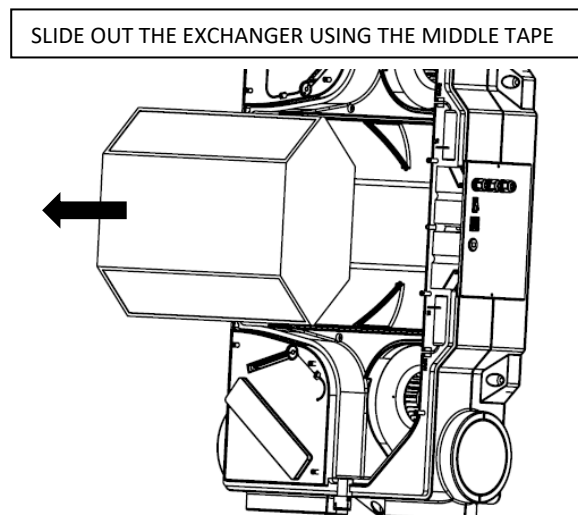


7.2.2. Visual inspection and cleaning of the heat exchanger

- Then perform a visual inspection and cleaning of the heat exchanger (item 12)
- Vacuum the heat exchanger or use a vacuum cleaner's brush attachment. Finally, always blow the heat exchanger clean with a vacuum cleaner to remove any fine dust.



Pic 76



Pic 77

- The removed heat exchanger should be cleaned with a disinfectant or antibacterial agent designed for cleaning and disinfecting aluminum and plastic. Dry the heat exchanger thoroughly before inserting it into the device!
- **Do not use sharp tools or hard-bristle brushes to clean the heat exchanger. Avoid pressure washing and chemicals. This can cause permanent damage to the heat exchanger!**
- After cleaning, slide the heat exchanger back into the device body.



7.2.3. Visual inspection and cleaning of the integrated preheater– GXXX-XX-ZN-BM-X

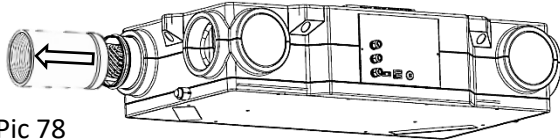
- To check and clean the integrated heater:
 - o Disconnect the cable from the ODA (outside inlet cable) socket where the preheater is mounted
 - o Remove the filter from the ODA outlet
- Visually inspect the integrated preheater or vacuum it from both the outside (duct connection) and the inside (filter side).
- **Never touch, remove or wipe the warmer with a damp cloth.**



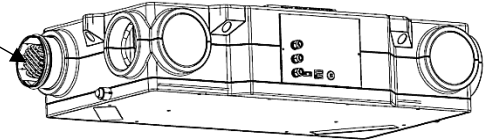
1) Disconnect the cable from the socket where the integrated pre-heater is located



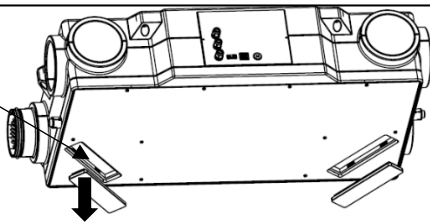
2) Vacuum the dust from the heater



Pic 78

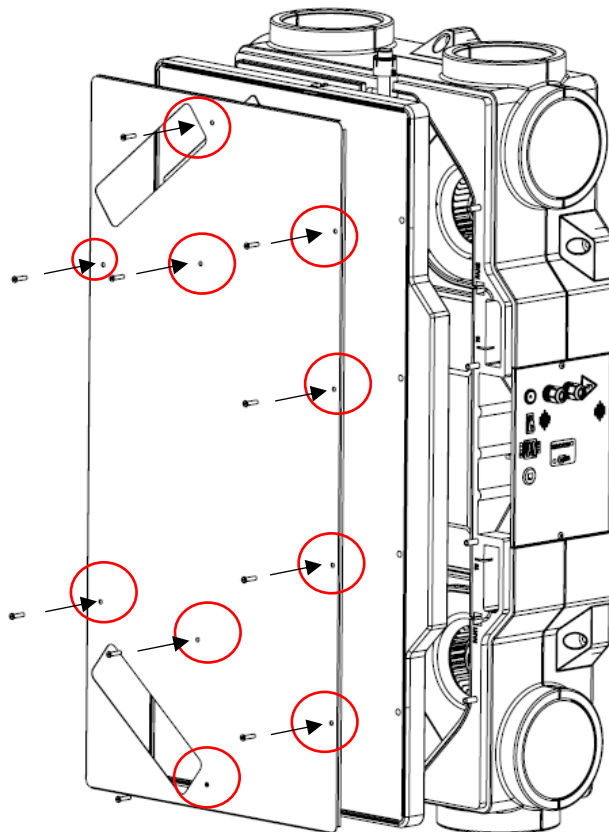


3) Remove the filter caps, vacuum the filter and heater



7.2.4. Reassembly - sealing of the G350; G450 unit

- After inspection and cleaning, reassemble the internal components of the unit following the instructions in the previous sections in reverse order.
 - o Place the cover back onto the device body and press it down. Make sure the cover is properly seated.
 - o Screw in the M6x20 screw 10x to secure and seal the device cover.



Pic 79

7.2.5. Visual inspection – cleaning of external pre-heater, post-heater- if installed

- The external pre-heater and post-heater are located in the ventilation ducts connected to the unit
 - Preheater - ODA air duct marking
 - SUP air duct marking – postheater
-  **Maintenance should be performed in accordance with the radiator manufacturer's recommendations.**
- General rules for cleaning duct heaters (pre-heaters and post-heaters):
 - Clean the radiator with a vacuum cleaner.
 - **Never clean a duct heater with a damp cloth.**
 - **Check the power cable and its connection to the heater power terminal block.**
-  **The manufacturer of the device is not responsible for improper or neglected maintenance of the external duct heater.**

8. Errors in the operation of the device



- Warranty and post-warranty repairs may only be performed by qualified and trained personnel using original spare parts.
- The manufacturer reserves the right to make changes to the device, but these changes do not affect its essential properties.

8.1. Error Messages - Troubleshooting Procedure

Table 19

Error number	Error message, malfunction	Possible cause of the fault:	Troubleshooting
1.	The unit does not start	The power cord is not connected.	- Check the electrical connection - Check if the safety switch is activated
		The main power switch is in position 0.	- Set the switch to the "I" position
2.	No airflow or very little airflow even when the unit is set to maximum power	Clogged filter.	- Replace the filter as described in chapter 5.
		Clogged or blocked ventilation duct, device outlet.	- Check the ventilation channels. Clean the device as described in Chapter 6.
3.	The device started working too loudly	Clogged filter	- Replace the filter as described in chapter 5.
		Incorrect fan speed settings	Please contact the service technician who set up your device.
		Damaged engine bearing	- Contact your device supplier
4.	Internal electric heating, external electric heating unit not working (pre-heater, post-heater)	Clogged filter - no air flow	- Replace the filter as described in chapter 5.
		Clogged or blocked ventilation duct, unit outlet	- Inspect and clean the device as described in Chapter 6.
		Heat exchanger overheating protection has been activated	- Turn off the appliance and the heater using the main power switch. Check the thermal protection – manual reset thermostat. If the problem persists, contact your appliance supplier.
5.	Night cooling function cannot be activated	The conditions for activating the function have not been met - the outside temperature is too low	- Wait until the outside temperature rises. This function is only active in the summer.
6.		BOOST function active	- Wait for BOOST mode to complete - Disable BOOST function
7.	The device is not working. The STATUS LED is flashing red.		- Wait for the email notification describing the fault. Then contact your service technician.
8.	The connection between the app and the device is not working - the Wi-Fi LED is blinking	Green light flashes slowly	You entered the Wi-Fi network name, password, etc. incorrectly.
9.		Green light flashes slowly	- Check your Wi-Fi connection and make sure the network password is correct;
10.		Weak Wi-Fi signal	- Check the Wi-Fi signal strength of your connection;
11.		Blue light flashing quickly	The internet connection is not working
		Green light flashes rapidly	- Check your internet connection;
		Unidentified fault	- Restart the device and server; - Contact the manufacturer

8.2. The error still persists

- Restart the device – turn off the device at the controller, turn off the device at the main switch. Wait approximately 30 seconds, and then restart the device.
- If the device malfunctions persistently, under no circumstances should you attempt to repair it yourself.
- Turn off the device using the main switch and disconnect it from the mains.
- Protect your device against restarting or unauthorized manipulation.
- Please contact your dealer.

9. Decommissioning, dismantling and recycling

- When the machine has reached the end of its useful life or when repair proves uneconomical, it must be completely dismantled.
- When dismantling the machine, generally applicable safety regulations must be observed to ensure that all work can be carried out safely.
- After the machine has been completely dismantled, its individual parts are disposed of in accordance with Directive 2012/19/EU and applicable national regulations.
- Sort metal parts by metal type and deliver them to the appropriate recycling collection organizations.
- Plastic parts that do not naturally decompose are sorted and offered for sale to an organization that collects these secondary raw materials.
- Parts of electrical equipment are transferred to an organization that collects electrical and electronic waste.



All unwanted or obsolete products, along with their packaging, should be taken to appropriate collection and recycling points. Professionally recycled products are reusable and contribute to environmental and health protection. Disposal must be in accordance with Directive 2012/19/EU and applicable national regulations. Do not dispose of this product in municipal waste – use a designated collection system.



10. Guarantee

The device warranty applies in accordance with legal regulations. The warranty is valid only if all installation and maintenance instructions are followed. The warranty covers manufacturing defects, material defects, or functional defects of the device. We do not guarantee the device's suitability for any specific purpose; assessment of suitability is the responsibility of the customer.

The warranty does not cover defects resulting from:

- improper handling,
- during transport (damage caused during transport – financial compensation should be agreed with the carrier),
- failure to comply with installation conditions,
- faulty electrical installation or protection,
- incorrect operation,
- by interfering with the product,
- normal wear and tear,
- due to a natural disaster.

When submitting a complaint, please submit a protocol (found in the product documentation) which includes:

- information about the complainant/company,
- Date and number of the sales document,
- detailed description of the defect,
- socket lock details,
- a photo of the product nameplate or serial number,
- photo of the product installation site,
- Measured product values: air temperature, voltage, current.

For warranty and post-warranty service, please contact the supplier or installation company that performed the installation. Warranty repairs are performed at the installation site or by arrangement. The method of resolving a warranty repair depends solely on the company's service center. The complainant will receive a written statement regarding the outcome of the complaint – warranty repair. In the event of an unjustified complaint, all associated costs will be borne by the complainant.

11. Contact

If you have any questions about the product, please contact us.

Contact address:

Jeremias Sp. z o. o.
Kokoszki Street 6
62-200 Gniezno



www.jeremias.pl

www.ekkoair.pl