QUICK MANUAL - ROOMMASTER

ekkoair by jeremias

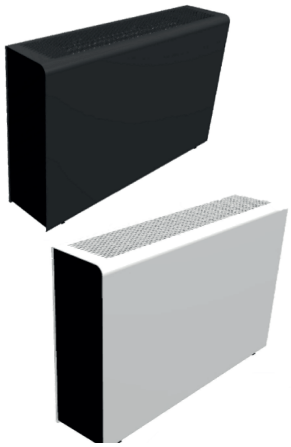
This quick guide will take you through the quick installation of the unit but is no substitute for the full manual. The complete The manual is available on our website www.jeremias.de/en or can be downloaded via QR code.

Check that there are no electrical cables, water, waste water or gas pipes in the area where you are installing the unit that could be damaged during installation. Make sure that the mains voltage to which you want to connect the unit corresponds to the power requirements of the unit (rating plate).

Ensure that the installation of the device does not compromise the building structure and complies with all applicable safety regulations. Before starting the installation, check that the condensate drain via the façade outlet does not damage the building or come into contact with live electrical equipment.

1. APPLICATION

The ROOMMASTER unit is an air handling unit with heat recovery (counterflow heat exchanger) and humidity recovery (enthalpy exchanger) with the option of independent room heating at the installation site of the appliance (depending on the selected appliance type).



Scan the QR code:

- The unit is as standard with a CO_2 air quality sensor (alternatively with an RH sensor), which only ventilates when necessary. The user only sets the output level and the unit ventilates and heats according to actual demand.
- Depending on the room, use with a maximum nominal flow rate of is recommended:
  - 100 m³/h (ROOMMASTER 100):
    standard living spaces, smaller offices, hotel rooms, etc.
  - 250 m³/h (ROOMMASTER 250):
    larger offices, classrooms, hospital rooms
- The unit is designed for horizontal installation on an external wall with access to the outside air and a minimum thickness of 180 mm.
- The unit is designed for covered indoor areas and dry areas with indoor temperatures of +5 °C to +30 °C and a maximum relative humidity of 70% without condensation.

The supply air temperature from outside can vary between -20 °C and +40 °C (applies to units with preheating). If the air supply temperature is below 20 °C, the unit can switch off automatically to prevent damage.

2. TECHNICAL PARAMETERS ROOMMASTER 100

Type of recovery exchanger			HRV	ERV	HRV	ERV	HRV	ERV	HRV	ERV	HRV	ERV	HRV	ERV
Parameter	pre-heater		-		-		-		electric		electric		electric	
	after-heater		-		water		electric		-		water		electric	
Airflow/Boost*		m³/h	100/125	90/205	100/215	90/205	100/215	90/205	100/215	90/205	100/215	90/205	100/215	90/205
Heat output**		kW	-		0,33-1,38	0,29-1,24	0,5		-		0,33-1,38	0,29-1,24	0,5	
Noise level**		dB	32,1											
Weight****		kg	16,3		18,3		19,3		16,8		18,8		19,8	
Water volume		l	-		0,51		-		-		0,51		-	
Power supply		V/Hz	1 ~ 230 / 50-60											
Nominal input power		W	30/167		30/167		530/667		300/437		300/437		800/937	
Nominal power		A	0,3/1,32		0,3/1,32		2,5/3,5		1,5/2,5		1,5/2,5		3,7/4,7	
Recovery efficiency	heat	%	up to 87	up to 90	up to 87	up to 90	up to 87	up to 90	up to 87	up to 90	up to 87	up to 90	up to 87	up to 90
	humidity	%	-	up to 85	-	up to 85	-	up to 85	-	up to 85	-	up to 85	-	up to 85
Protection type		IP	20											
Energy efficiency (ERP)*			cold climate A+ (-47 WT, -45,9 ET); middle climate A (-40,4 WT, -38,9 ET); warm climate A (-34,1 WT), warm climate B (-33,1 ET)											

* BOOST mode - intensive ventilation for 10 minutes
** at the temperature gradient of 75/60 and an inlet air temperature of 20 °C
*** Sound pressure level in free space at a distance of 3 m
**** unit weight, without water and packaging

ROOMMASTER 250

Type of recovery exchanger			HRV	ERV	HRV	ERV	HRV	ERV	HRV	ERV	HRV	ERV	HRV	ERV
Parameter	pre-heater		-		-		-		electric		electric		electric	
	after-heater		-		water		electric		-		water		electric	
Airflow/Boost*		m³/h	250/350	240/335	250/350	240/335	250/350	240/335	250/350	240/335	250/350	240/335	250/350	240/335
Heat output**		kW	-		1,34 - 3,49		1		-		1,34 - 3,49		1	
Noise level**		dB	32,6											
Weight****		kg	36		39,4		41,2		37		40,4		42,2	
Water volume		l	-		1,17		-		-		1,17		-	
Power supply		V/Hz	1 ~ 230 / 50-60											
Nominal input power		W	61/169		61/169		1061/1169		479/709		479/709		1480/1709	
Nominal power		A	0,6/1,42		0,61/1,42		5/5,8		3/3,8		3/3,8		7,3/8,2	
Recovery efficiency	heat	%	up to 87	up to 86	up to 87	up to 86	up to 87	up to 86	up to 87	up to 86	up to 87	up to 86	up to 87	up to 86
	humidity	%	-	up to 75	-	up to 75	-	up to 75	-	up to 75	-	up to 75	-	up to 75
Protection type		IP	20											
Energy efficiency (ERP)*			cold climate A+ (-47,5 WT, -47,2 ET); middle climate A (-40,5 WT, -40,2 ET); warm climate A (-34,6 WT, -34,4 ET)											

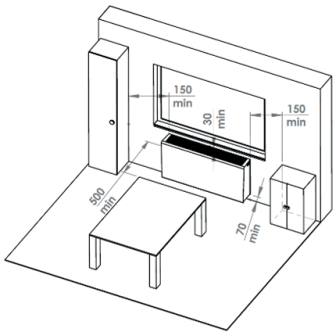
* BOOST mode - intensive ventilation for 10 minutes
** at the temperature gradient of 75/60 and an inlet air temperature of 20 °C
*** Sound pressure level in free space at a distance of 3 m
**** unit weight, without water and packaging

PROHIBITION OF USE

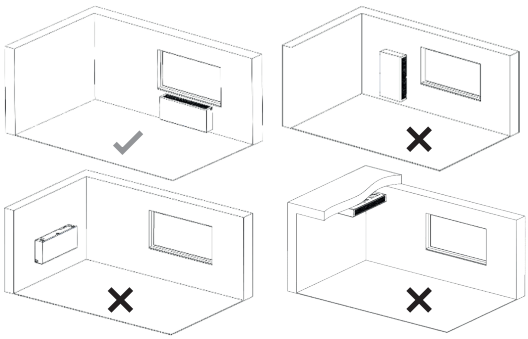
- The ROOMMASTER can not be used for extracting firing, burning, explosive or aggressive medias, gases or liquids.
- Unit can not be installed very close to electric socket, electric box or close to curtains, inflammable materials and in to the premises with higher risk of explosions, high dustiness or in to the premises with very high relative humidity like pools, bathrooms, saunas.
- For the damages caused by improper usage of the unit is responsible the user, not the distributor, neither manufacturer.

3. INSTALLATION OF THE ROOMMASTER

Minimum installation dimensions



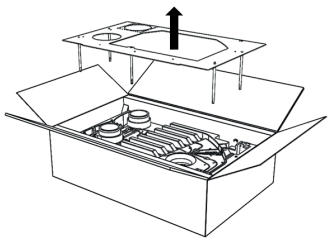
Installation position



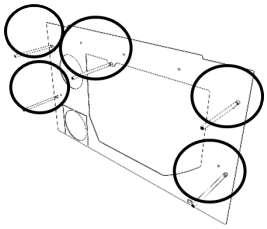
The unit has to be installed and commissioned in line with general and safety law instructions valid in the area of the installation and performed only by authorised person.

By breaking the installation rules might lead to the damage of the unit, improper function and damage of healthiness and property of the user.

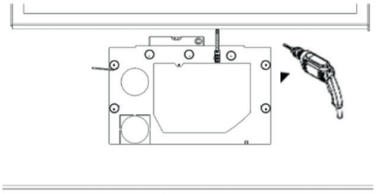
1. Remove the template.



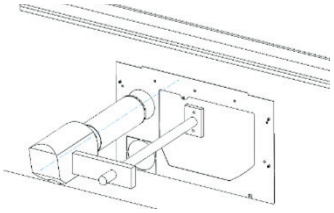
2. Unscrew the bolts.



3. Align the template and attach it to the wall using a suitable method.

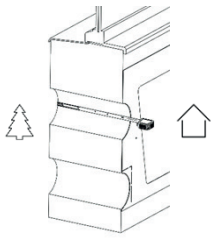


4. Drill the holes in the wall according to the template: Roommaster 100 – Ø 152 mm, Roommaster 250 – Ø 182 mm.

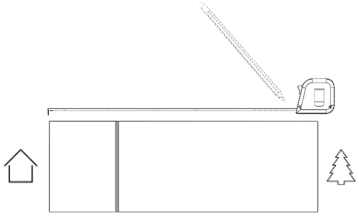


It is necessary to drill the holes leveled and in 90° angle to the inside part of the periphery wall. Make sure the diameters of the holes are correct. In other case there is a risk of improper installation and thus wrong function of the unit.

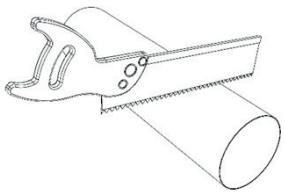
5. Measure the wall thickness in the top hole.



6. Transfer the dimensions and mark the pipe.



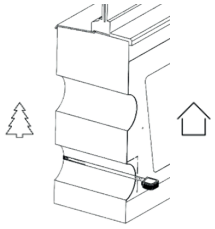
7. Adjust the pipe according wall thickness.



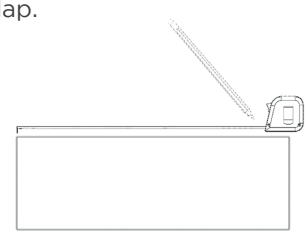
When cutting the plastic pipe, the cut must be clean and at right angles to the pipe axis!

- Installation accessories which is standardly supplied with the unit as the mandatory accessories is for maximum wall thickness 0,5 m.
- Pipe extensions for greater wall thicknesses are described in the full manual in chapter 3.2.4.1.
- Use MS polymer sealant.

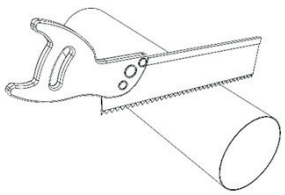
8. Measure the wall thickness in the bottom hole.



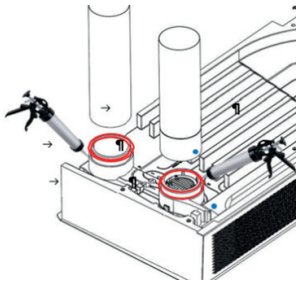
9. Transfer the dimensions and mark the pipe without flap.



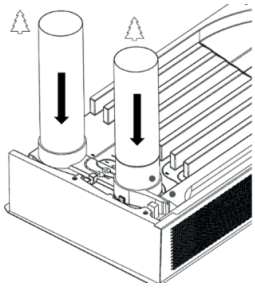
10. Adjust the pipe according wall thickness.



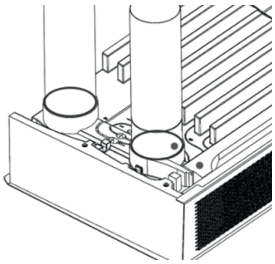
11. Apply the sealant to the grooves and the outer edge of the spigot of the appliance.



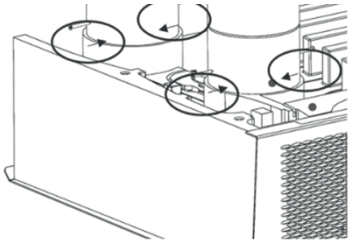
12. Slide the prepared tube into the grooves, the blue dots must be aligned - perpendicular to the unit!



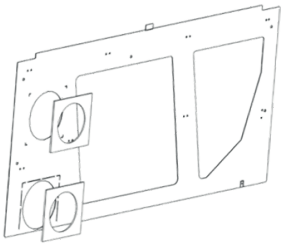
13. Apply the sealant to the outer joint.



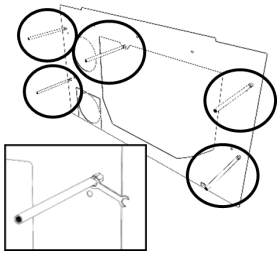
14. Fasten the pipe with quick-cutting screws (2 screws per spigot, opposite each other), 20 mm the edge of the spigot. Cut open the cardboard box in which the unit is packed and remove the unit.



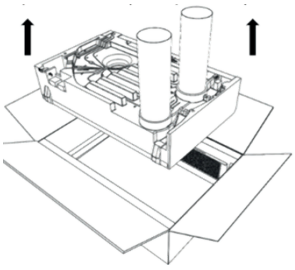
15. Glue the insulation pads to the installation template according to the markings.



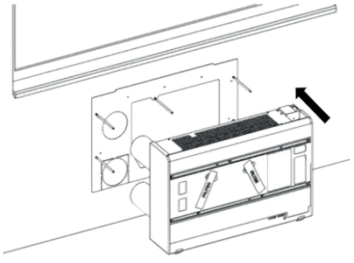
16. Screw the removed mandrels back onto the installation template.



17. Remove the unit with the piping from the box - the front cover must remain in the box.

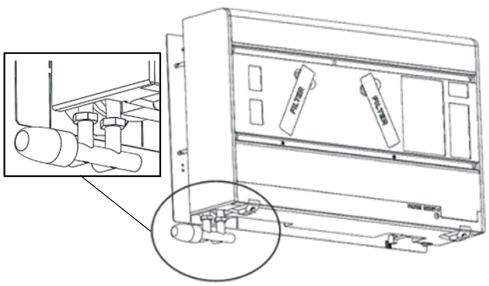


18. Place the unit on the bolt and guide the duct through the wall.

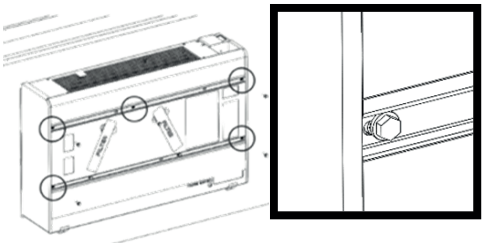


19a. Place the unit partially on the bolts and connect the earthing cable to the connection on the template.

19b. For a unit with water heat exchanger, place the unit about 0.1 m from the wall and connect the heat exchanger with flexible hoses with external thread G ¾" (8mm wrench).

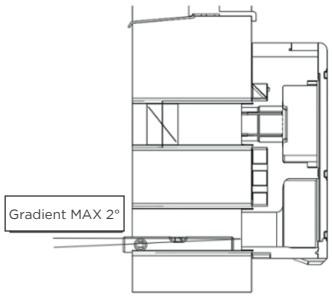


20. Fasten the unit to the mounting rails using M6x25 screws.

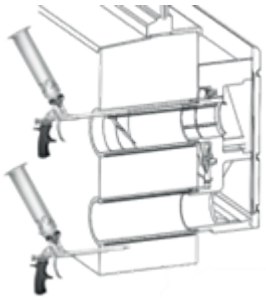


Tighten the bolts to a maximum of 5 Nm. Otherwise, there is a risk of damage.

21. Install the exhaust air pipe with a maximum gradient of 2° (¼ bubble on the spirit level).



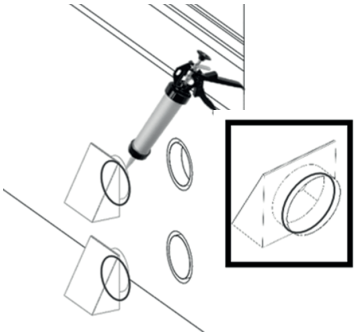
22. Fix the pipe in the slope - fix it from the outside with low-stretch foam.



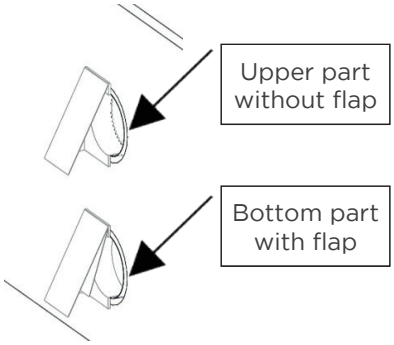
Ensure that the foam is applied over the entire length and circumference of the pipe. Otherwise, condensation may form on the pipe and cause leaks in the wall and indoors.

- As soon as the installation foam has hardened, cut it flush with the outer façade.
- Clean the cut to prevent water from entering the drill hole.

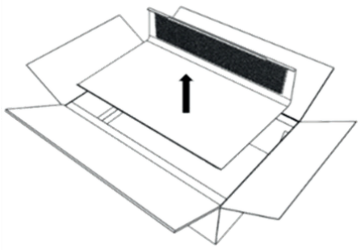
23. Apply sealing compound around the entire circumference of the outlet nozzle.



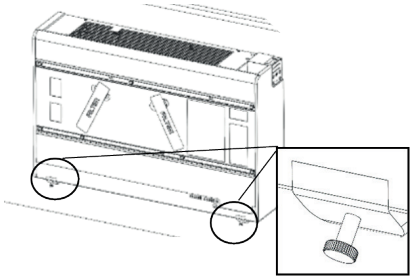
24. Insert the outlets into the pipes.



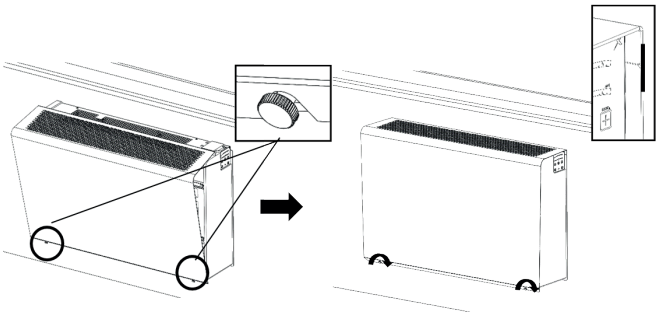
25. Remove the front cover from the packaging.



26. Drehen Sie die Schrauben M6x20 mit Kunststoffkopf teilweise ein.



27. Setzen Sie die Frontabdeckung auf und ziehen Sie die Schrauben M6x20 von Hand fest. Richten Sie sie an der Vorlage aus.

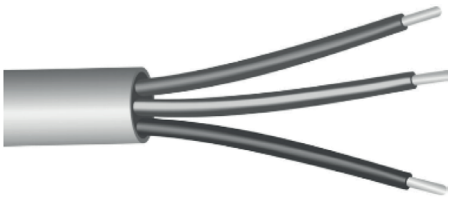


Correct sealing between the damper spigot and the pipe ensures proper condensate drainage through the outlet.

4. CONNECTION TO THE MAIN POWER SUPPLY

- Make sure that the socket or connection box used for the unit is equipped with a safety wire (green-yellow) or a corresponding connection.
- If you use a plug, it must always be accessible so that the unit can be safely disconnected from the mains.
- The circuit used for the unit may be fused with a maximum of 16 A.
- The electrical connection must comply with the general and safety-related regulations that apply in the installation area and may only be carried out by authorized personnel.
- This unit belongs to connection class Y. If the connection cable is damaged, it must be replaced by the manufacturer, its service department or a similarly qualified person
- to avoid hazardous situations.
- The input voltage of the unit is 1~230V/50-60Hz. It must not be changed under any circumstances, otherwise the electrical components of the unit could be damaged.

Connection to the main power supply



BLUE (N) - NEUTRAL

GREEN-YELLOW (PE) - PROTECTIVE CONDUCTOR

BLACK/BROWN (L) -PHASE CONDUCTOR

Connecting the unit to the electrical installation box

- The supply cable is prepared by the manufacturer for connection to the electrical socket.
- Suitable connection elements must be used to connect the supply cable to the power supply.

(For example: plug connectors, spring terminals)

Connecting the unit to the socket

- The supply cable can be connected to a plug with a safety connection (pin) - this is not included in the scope of delivery.

The installation of the supply cable in the electrical installation box or the installation of the plug on the supply cable and the subsequent connection to the mains supply must be carried out by a qualified person who has valid authorization for this activity and has knowledge of the relevant standards and directives of the country concerned.

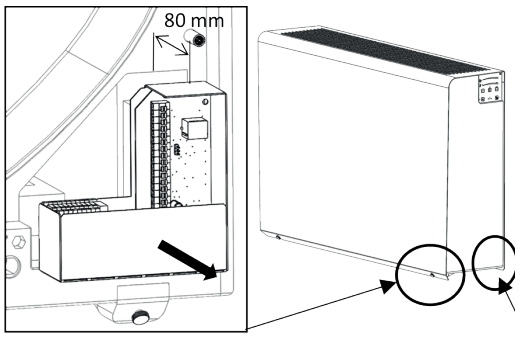
5. CONTROL SYSTEM – ELECTRICAL ACCESSORIES FOR THE ROOMMASTER

Nothing else needs to be connected for the unit to operate properly. The unit is supplied as standard with a complete integrated control and a CO_2 air quality sensor. It is therefore ready for use immediately after installation on the wall.

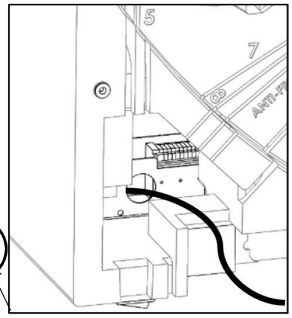
Connection of electrical accessories

- Before connecting electrical accessories, always switch off the appliance at the control panel and via the main switch.
- Connect the electrical accessories to the control box. If necessary, the box can be pulled out approx. 80 mm above the fitting level.
- Spring terminals with manual wire locking are used to connect individual components. The terminals can accommodate both stranded conductors (cable with cavity) and solid conductors (wire) with a cross-section of 0.5 to 1.5 mm² and a stripping length of 10 mm. Before inserting the cable into the terminals, first press the orange locking button. Then insert the cable, release the lock and check that the cable is properly secured by gently pulling it away from the terminal. If the conductor needs to be removed from the terminal, the procedure is the same. Select the optimum conductor cross-section according to the length of the cable route
- Feed the supply cables required to connect the accessories to the unit through the unit housing into the area of the AQA sensors.

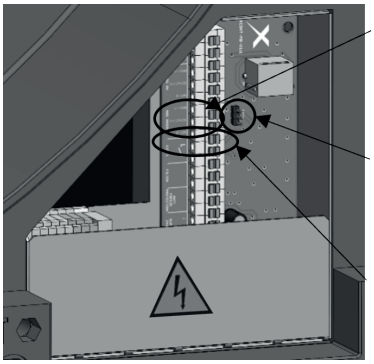
1. Pull out the control box



2. Pull through cable for electrical accessories



3. Set the control of the unit and connect the electrical accessories



Radon sensor, AQS RADON

Bridge for logic reconnection switching EXT1 - NC/NO

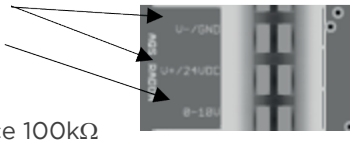
External contact EXT1

Connection of the radon sensor - AQS RADON

- A radon sensor can be connected to the unit to measure the radon concentration in the air where the device is installed. Thanks to the sensor, the radon is ventilated and the radon concentration in the room is reduced. Ventilation is the only way to effectively eliminate the radon contamination contained in the room air.

Technical parameters

- Sensor power supply 24VDC
- Analog output 0-10VDC
- Maximum sensor input 5W
- Sensor analog input impedance 100kΩ



The GND supply terminal is common with the GND of the analog input. If the wiring is not followed, there is a risk that the control board will be destroyed.

Functionality of the unit with radon sensor connected

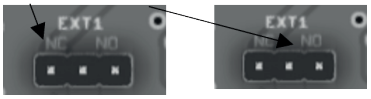
- The unit responds in real time through continuous control based on the ventilation demand triggered by the sensor
- Switch-on concentration level of radon in the room is 350 Bq/m³
- Radon deactivation concentration level in the room is 300 Bq/m³

Connection of the external contact – EXT 1

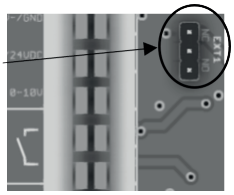
- The device control enables the connection of an external contact for remotely switching the unit on and off (remote ON/OFF control).
- External contact is potential-free and can be switched, for example, by: Magnetic contact, remote switch, time relay.

Technical parameters

- Switching voltage 24 VDC / 5mA
- Contact can change the logic by re-connection of the bridge to logic switching NC or NO (factory setting).



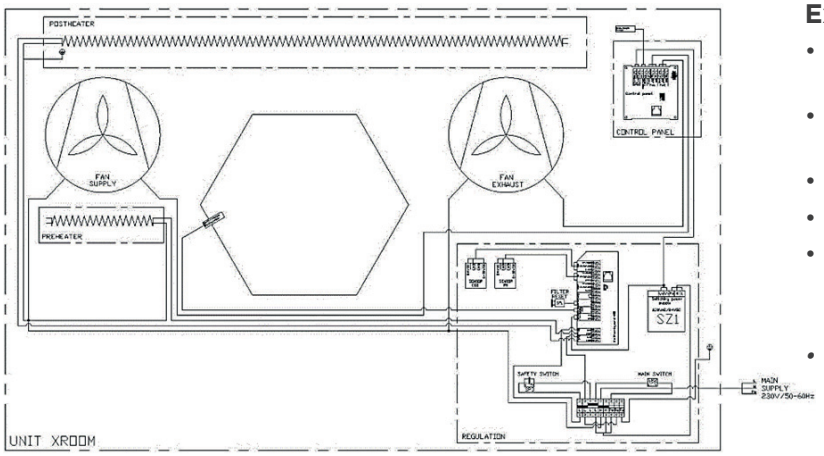
If the unit is ON/OFF by external contact, it can be turn on/off from the control panel of the unit.



Functionality of the unit when controlled by external contact

External contact turn on or off the unit. (Same functionality as on the control panel ON/OFF) with logic turning off or on all running processes in time when unit being turned off or on.

Block scheme of the unit connection



Examples of external contact behavior EXT1

- EXT1 turn on the unit in selected time(morning) – and the unit operates based on user setting,
- During operation the unit is turn of by the user – unit turns off,
- EXT1 turn of the unit in selected time (evening) –
- unit remains turned off,
- EXT1 turn on the unit in selected time (next morning) – the unit operates based on user setting.

- *If you would like to avoid controlling of the unit by user and to control the unit by external contact, we recommend set the child lock of the panel after operation parameters setting. (It is not possible to turn on/off the unit on the control panel – unit can be switch on or off only by external contact.*

Further information on controlling and maintaining the appliance can be found in the full manual.