Xvent s.r.o.
Poděbradská 289
53009 Pardubice-Trnová

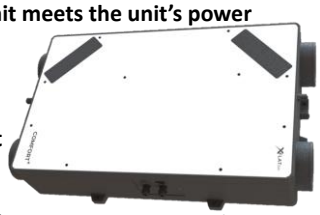
QUICK USER AND INSTALLATION GUIDE

XFLAT II Heat Recovery Units – XF2-020

This quick guide will walk you through the quick installation of the product, but it does not in any way replace the full user manual. The full user manual is available in the documents section on our website www.xvent.cz or you can download it using the QR code.

To scan the QR code, use a smart device (mobile phone, tablet, etc.) equipped with this technology

Check that there are no electrical or other pipes or cables (e.g. gas, water, etc.) running through the wall at the unit's installation point indoors, which you might damage during installation.
Check that the mains supply to which you intend to connect the unit meets the unit's power requirements
Ensure that the installation of the unit does not compromise the structural integrity of the building and complies with all statutory safety requirements.
Before starting the installation, check that it is possible to connect the unit to the drainage system for condensate drainage



1) Use of the unit

- The XF2 unit is a ventilation system utilising technology for heat recovery (temperature recovery heat exchanger) and humidity recovery (enthalpy heat exchanger), with the option of an integrated preheater or connection to an external preheater, which is powered and controlled directly by the unit's control system
- Standard control of the unit is possible via a web application (www.wifimodule.eu). The unit can also be connected to and controlled via a higher-level BMS system (Modbus RTU protocol). Individual unit parameters can be configured using a service application (by an authorised service technician)

The unit allows switching between two nominal flow rates – a flow rate of 150 m³/h at a static pressure of 200 Pa and a flow rate of 200 m³/h at a static pressure of 200 Pa (factory setting)

- The unit is designed for continuous operation, with the option of manual mode (ventilates continuously) or automatic mode (ventilates as required – based on air quality sensor (AQS) readings).
- It is designed for indoor, covered and dry areas with a room temperature ranging from +5 °C to +30 °C and a maximum relative humidity of 70% non-condensing.

The supply temperature of fresh air from the outdoor environment may range from -20 °C to +40 °C (applies to the version with preheating). If the supply air temperature falls below -20 °C, the air flow rate may be automatically reduced to protect the unit from potential damage.

- Prohibited environments, use and installation of the unit:

- The unit must not be used for extracting burning or smouldering substances, highly flammable or explosive gases, corrosive media, liquids of any kind, in environments with an increased risk of explosion, flammable substances and high levels of dust or air containing other harmful impurities, or where there is a high incidence of condensing moisture, such as in bathrooms, swimming pools, saunas, etc.,
- The unit must not be installed directly above an electrical socket or junction box, or beneath flammable ceilings.

Neither the manufacturer nor the supplier accepts liability for damage caused by the incorrect use of the units (e.g. drying out new buildings). The risk is borne solely by the user.

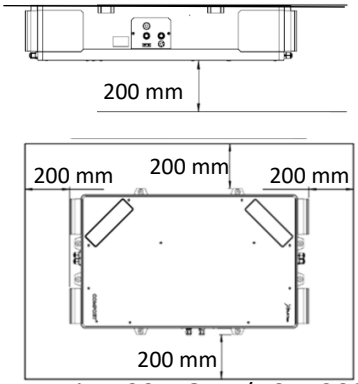
2) Technical specifications

Bussiness name			XF2-020			
			XF2-020-ECS0HRXUW-xA0	XF2-020-ECS0ERXUW-xA0	XF2-020-ECS0HRPxW-xA0	XF2-020-ECS0ERPxW-xA0
Type of recovery exchanger			HRV - temperature	ERV - Temperature/Humidity	HRV - temperature	ERV - Temperature/Humidity
Preheater			Without preheater	Without preheater	Integrated preheater	Integrated preheater
Nominal airflow*		m³/h	155 / 207			
Acoustic level**		dB(A)	31,4 / 35,1			
Weight***		kg	16		16,5	
Power supply		V / Hz	1 ~ 230 / 50-60			
Nominal input****		W	104 / 172 (181)		804 / 872 (1207)	
Nominal current****		A	0,74 / 1,22 (1,29)		3,8 / 4,3 (5,8)	
Thermal efficiency *****	Heat	%	89,3 / 88	80,5 / 78	89,3 / 88	80,5 / 78
	Humidity	%	-	43 / 40	-	43 / 40
Heating capacity of the integrated		W	-		700 (+10°C)	
Electric safety		IP	20			
Energy class (ERP)******		-	Cold climate A+, mid climate A, warm climate E /Cold climate A+, mid climate A+, warm climate E			

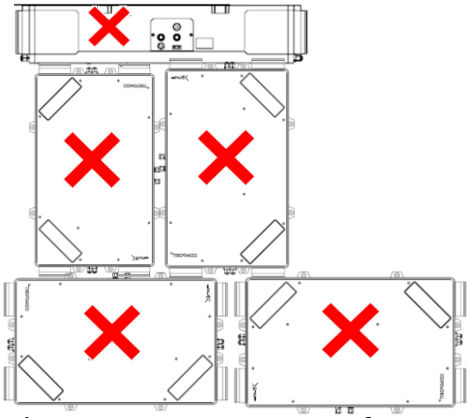
* Nominal airflow for 150/200 m3/h (power input, current) at external pressure drop of 200Pa,
** Sound pressure level in free space at a distance of 3m (Q2) - for an air output of 150/200 m3/h
*** Unit weight without packaging
**** Power consumption, current - for air flow 150/200 m3/h (max. possible power consumption, current)
***** Heat recovery efficiency stated at 70% of nominal flow according to EN 308 - for air output 150/200 m3/h
****** Energy efficiency class (ERP) - for air flow rate 150/200 m3/h

3) Installation of the unit

- minimum installation distances

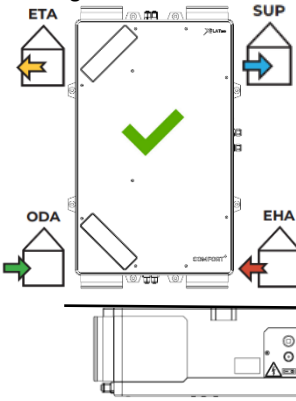


- Prohibited installation positions

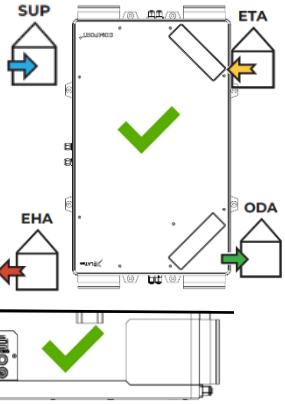


- Permitted installation positions

Right-hand version



Left-hand version of the



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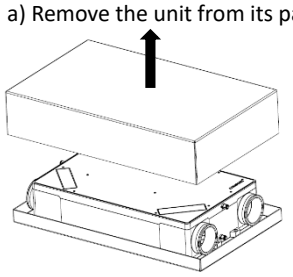
- The heat recovery unit must be installed and commissioned in accordance with general safety regulations and those applicable at the installation site, by a person with appropriate training, experience and knowledge of the relevant regulations, standards and any potential risks and hazards, or by a suitably trained service technician.

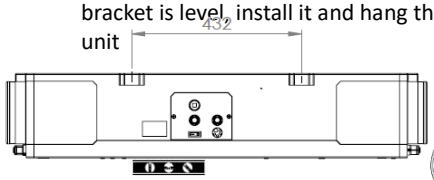
- Failure to follow the installation procedure may result in damage to the unit, malfunction, and possible injury or damage to property, or to the user of the unit. The unit must be installed and configured (right/left orientation) in such a way that the direction of airflow through the unit itself matches the airflow in the ventilation system.

- Unit installation procedure

a) Remove the unit from its packaging



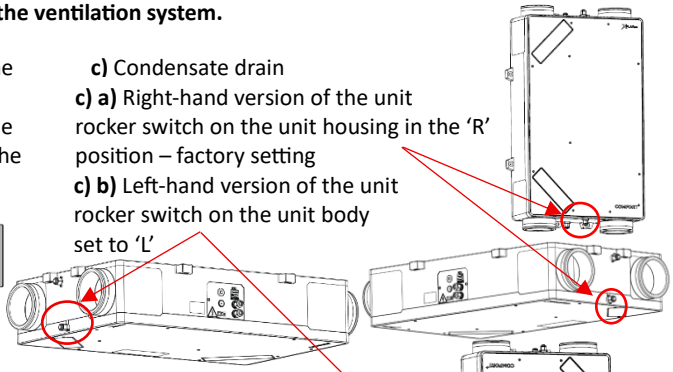
b) Align the mounting holes with the installation bracket (included in the pack), use a spirit level to ensure the bracket is level, install it and hang the unit



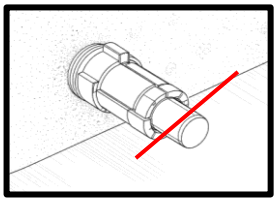
c) Condensate drain

c) a) Right-hand version of the unit rocker switch on the unit housing in the 'R' position – factory setting

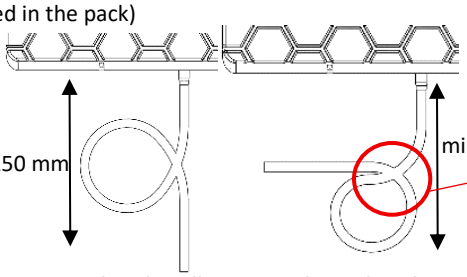
c) b) Left-hand version of the unit rocker switch on the unit body set to 'L'

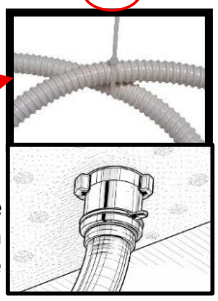


d) Select the appropriate condensate drain pipe depending on the unit's installation position and version, and cut the end of the condensate drain pipe to a length of 5 mm

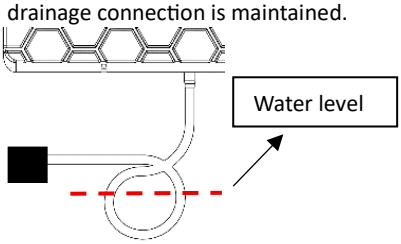


e) Remove the siphon hose and, approximately halfway along its length, form a loop with a diameter of 150 mm. Secure the loop with one cable tie to prevent it from moving, whilst ensuring that the siphon hose is not deformed (broken). Fit one end onto the outlet in the unit and secure it with a cable tie (included in the pack)





f) Connect the other end of the siphon hose to the drainage system, ensuring the minimum height difference between the siphon hose and the drainage connection is maintained.

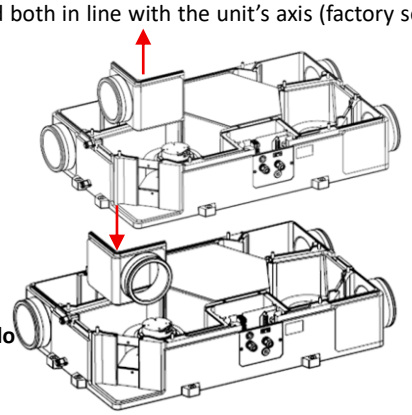


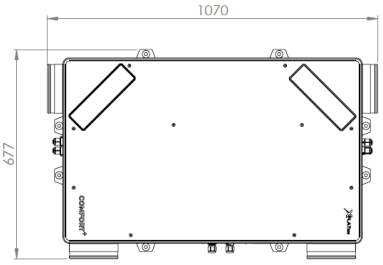
When creating a bend – elbow – in the siphon hose, ensure the correct bend radius is maintained to prevent the hose from 'kinking', which could cause a blockage and prevent the condensate from draining.

Extending the siphon hose is only permitted at the point beyond the formed hose loop. Use a hose of the same or larger diameter, connected via a hose coupling. Always ensure that the reduction in internal diameter caused by the hose coupling is as small as possible.

g) The unit's connections allow pipework to be connected both in line with the unit's axis (factory setting) and at right angles to the unit – known as MULTIFLEX.

1. Unscrew the 10 M6x25 bolts on the cover
2. Remove the cover – working round the circumference
3. Slide out the outlet you wish to reposition
4. Rotate the outlet to a perpendicular position and press it into the groove
5. Replace the cover – press it into place gradually around the circumference of the cover
6. Secure the cover with 10 M6x30 bolts.

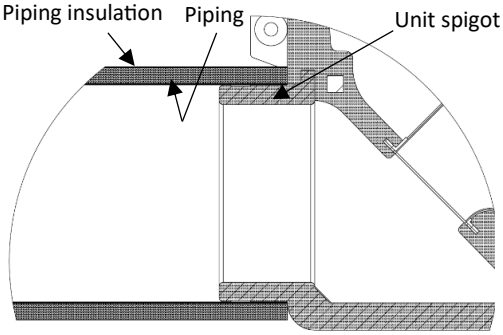




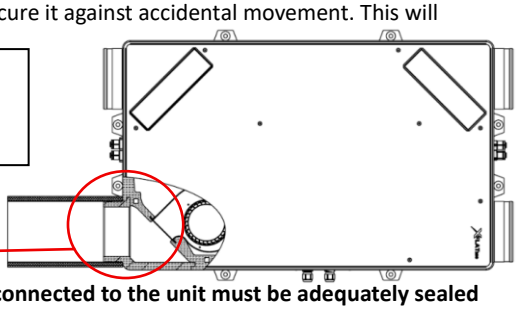
Any tampering with the neck in which the integrated preheater is located. Failure to do so may result in irreversible damage to the unit, with possible consequences for property and personal injury.

h) To fit the pipework, slide the pipework onto the entire connection, seal the joints with aluminium tape or connecting sleeves, and then insulate the connected pipework with thermal insulation material

- Pull the pipe insulation over the entire socket all the way to the unit and secure it against accidental movement. This will prevent a thermal bridge from forming at the connection point



Connection dimensions of the spigot → internal Ø130 mm; external diameter Ø160 mm



All pipework connections connected to the unit must be adequately sealed to prevent unwanted leaks and the resulting problems, such as condensation.

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4) Electrical installation – connection to the mains

- Before commencing any installation work, ensure that the mains socket you intend to use to connect the unit is fitted with a protective earth pin

- If you use a mains plug to connect the unit, it must always remain accessible so that the unit can be safely disconnected from the mains in the event of a hazard.

- The relevant circuit must be protected by a fuse rated at a maximum of 16 A in the electrical distribution system.

- This unit falls into the category of products with a Y-type connection. If the power lead is damaged, it must be replaced by the manufacturer, its service centre or a qualified electrician with the relevant qualifications and knowledge of the applicable standards and directives in the country in question, in order to prevent a hazardous situation from arising.

- The supply voltage to the unit (1–230 V, 50–60 Hz) must not be altered in any way, as this may damage the unit's electrical components.

- In terms of protection against electric shock, the unit is classified as a Class 1 appliance.

5) Control – connecting accessories to the unit

- For the unit to operate correctly (in manual mode), no additional equipment needs to be connected to it. Once installed, the unit is ready for immediate use.

- For the unit to be controlled effectively, a Wi-Fi network with internet access must be available in the installation area. The unit is controlled via a web application on the 'wifimodule.eu' domain. Without an internet connection, the unit cannot be controlled via the application

- For operation in automatic mode, you must connect a CO_2 or RH air quality sensor

- Always switch off the unit at the main switch before making any adjustments to the control settings

- Unit settings on the control panel

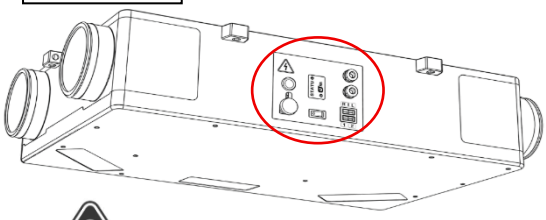
a) Switching between the right-hand and left-hand versions of the unit:

- Position 'R' – right-hand version – factory setting
- Position 'L' – left-hand version

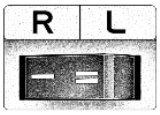
b) Switching the unit's rated output between position 1 and position 2

- 1 → 150 m³/h / 2 → 200 m³/h – factory setting

DETAIL A

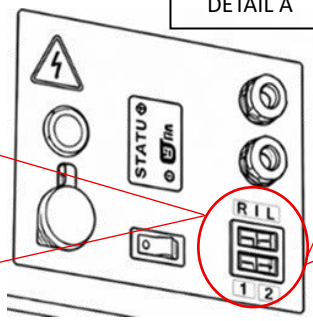


Right version – switch position R **FACTORY SETTING**

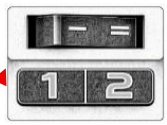


Left version – switch position L

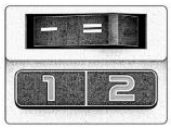
DETAIL A



Position 2. factory setting



Position 1.

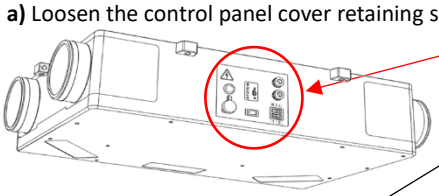


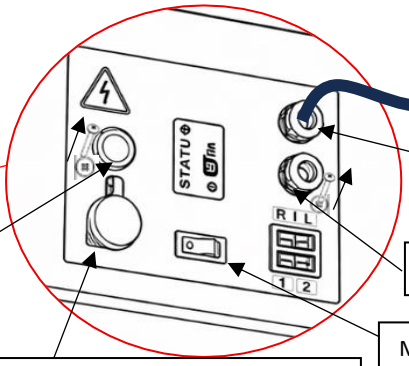
This functionality is not available on the unit version with integrated preheating (XF2-020-ECS0xxPxW-xA0**). The unit must be ordered as a specific type – right-hand (**XF2-020-ECS0xxPRW-xA0**) or left-hand (**XF2-020-ECS0xxPLW-xA0**) – depending on the installation layout.**

- Access to controls – opening the unit

- Connect the unit settings and electrical accessories to the control box.

a) Loosen the control panel cover retaining screws





Power cable grommet

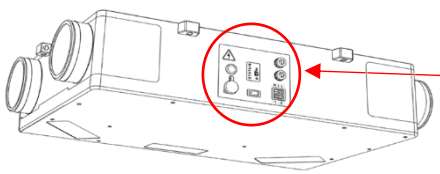
Modbus cable gland

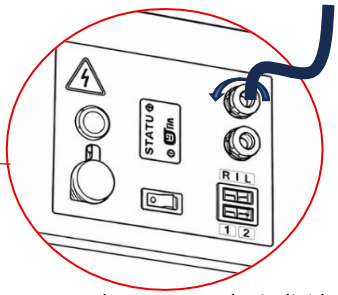
Main switch

Cable gland for connecting accessories, e.g.: air quality sensors, pre-heating, air postheating, etc…

Controller connection connector

b) Loosen the grommets and carefully remove the





Connection of electrical accessories

- The control unit is fitted with two sizes of connectors; each pin on the connector is marked with a number, which is also indicated on the control unit's circuit board.
- The correspondence between the individual connector numbers and the markings on the controller's circuit board must not be mixed up. Otherwise, there is a risk of damage to the unit

- Spring-loaded connectors with manual wire locking are used to connect the individual components; these are suitable for both stranded wire (which must be fitted with a fixed terminal) and solid wire within the permitted cross-sectional area and stripping length ranges:
  - Small connector: 0.2 to 0.5 mm²
  - Large connector: 0.2 to 2.5 mm²
- Before inserting the conductor into the connector terminals, first press the orange locking button. Then insert the conductor, release the lock and, by gently pulling on the conductor away from the terminal, check that it is correctly secured. If you need to remove the conductor from the terminal, the procedure is the same but in reverse.

- The optimum conductor cross-section must be selected according to the actual length of the cable run; however, the maximum permissible cross-section is:

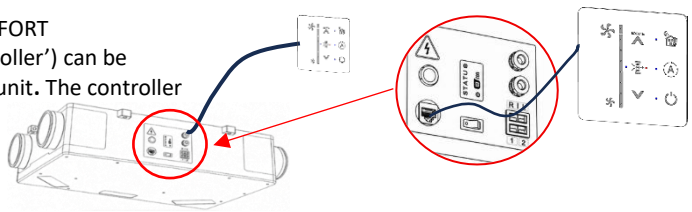
Small connector – 0.5 mm²
Large connector – 2.5 mm²

All wires must be connected to the individual connector pins with appropriate force to prevent damage to the wires or the circuit board. For flat-type wires, a crimped terminal (ferrule) must be used.

The control unit is integrated into the body of the unit as standard and must under no circumstances be tampered with in any way other than as specified in this manual.

- Wall-mounted wired controller – order code – XCONT-TR-CENT-COMFORT

- A wall-mounted wired controller (hereinafter referred to as the 'controller') can be connected to the unit as an accessory; this provides full control of the unit**.** The controller allows

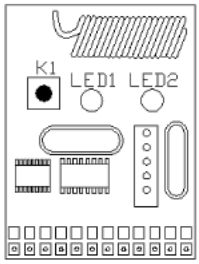


  - Night ventilation – activation of automatic night ventilation.
  - Customer menu for setting individual unit parameters
  - Display of unit error messages

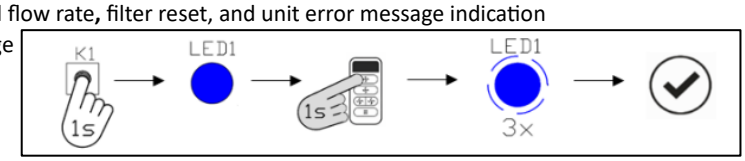
- The controller is supplied with a 10m connection cable, one end of which is connected to the controller and The other end is fitted with an RJ connector (male) for connection to the unit. Connect the end of the cable with the RJ connector to the RJ connector on the unit

- The controller installation and user guide are provided in the separate manual 'MN-XCONT-TR-CENT-COMFORT', which is included with the accessories

- Wireless RF remote control – order code – RF-REMOTE-CONTROLLER

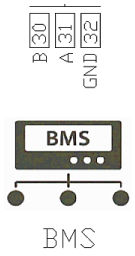


- A wireless RF remote control (hereinafter referred to as the 'RF remote control'), which is used to operate the unit, can also be connected to the unit as an accessory. The RF remote control allows you to adjust the airflow to three levels – min (OFF) / medium / max (Boost 10 min) – nominal flow rate – individual flow rates are always proportionally adjusted according to the selected nominal flow rate**,** filter reset, and unit error message indication
- The wireless RF remote control has a range of 50m in open space



- Connecting the unit to a BMS master system

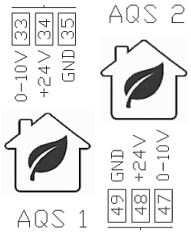
- The unit is equipped with the option to connect to a BMS (hereinafter referred to as BMS). Communication with the unit is provided via the Modbus RTU communication protocol. Connection of the unit to the BMS must be carried out by a qualified person with expertise in the field.
- Connect the communication cable to the connector marked 30 / 31 / 32, ensuring the correct wiring sequence is followed.
- To secure the cable against accidental disconnection from the unit's control panel, use the provided securing points in the control panel compartment. Route the connecting cable through the central feed-through of the unit into the control panel.



- Communication between the unit and the BMS master system is handled via the Modbus RTU communication protocol. A description of the protocol is provided in the separate user manual 'MN-XCONT-WIFI-MODBUS'

- Connecting AQS sensors

- Up to two AQS sensors → AQS1 and AQS2 can be connected directly to the unit's control system in any combination of the following parameters: CO_2, RH and Rn (radon).
- Technical specifications of AQS sensors for connection to the unit – sensor power supply 24 V DC, analogue output 0–10 V DC, maximum sensor power consumption 5 W, sensor analogue input resistance 100 kΩ



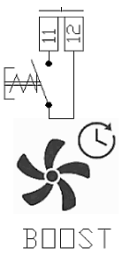
When configuring the AQS sensor type via the service application (intended for authorised technicians) or in the BMS (Modbus RTU) master system, the settings within the controller itself are disabled.

- Connection of external contact EXT1 – ON/OFF

- The unit's controller allows the connection of an external contact for remotely switching the unit on and off (remote ON/OFF control)
- Using a remote switch or button. In the building, electrical appliances are switched off using a single button (total stop system). The unit can be integrated into this system via this contact.
- Technical specifications of the EXT1 external contact
  - Switching voltage 24 V DC / 5 mA; the contact can change the switching logic by reconnecting the terminal jumper to

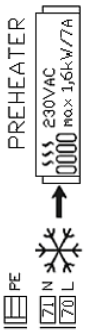
- Connection of external contact EXT2 – Boost

- The unit's control system allows the connection of an external push-button (a flap switch with automatic flap return – e.g. a bell button with a return spring) to activate the boost ventilation mode for a set duration – BOOST (hereinafter referred to as BOOST)
- BOOST mode is designed for short-burst ventilation for a specific duration in areas where there is an immediate need for ventilation, e.g. bathrooms, toilets…
- BOOST mode can also be activated without connecting an external button, either directly via the web application or using the following accessories: A wired wall-mounted controller – order code – XCONT-TR-CENT-COMFORT – with adjustable running time (factory setting – 1 min), Wireless RF remote control – order code – RF-REMOTE-CONTROLLER – for 10 minutes



- External electric preheater – (PREHEATER) – order code – see price list

- An external electric heater – preheater (accessory) with a maximum power of 1600W, maximum current of 7A and voltage of 1x230V can be connected to the unit. Recommended heater power: 1200W



Nothing other than the external preheater – a resistive load with a maximum rated value of 1.6 kW / 7 A / 230 V – must be connected to the power supply terminals

The design of the correct – optimal – preheater power, in combination with the setting of the unit's minimum speed for operation with the preheater, must be carried out by a designer or a person knowledgeable in the field of ventilation and air conditioning, taking into account the ductwork and all conditions at the installation site (e.g. pressure loss in the ductwork, duct diameter, minimum flow rate requirements in the ductwork, clearance distances from combustible materials, etc.).

- Install the preheater in accordance with the manufacturer's instructions, e.g. flow direction, clearance distances from the unit, position of the preheater, distance of the temperature sensor from the preheater, etc.

- If the manufacturer of the preheater requires a minimum air velocity in the ductwork to ensure correct operation of the preheater, this must be achieved using a separate component (e.g. a differential pressure sensor). The unit does not provide this.

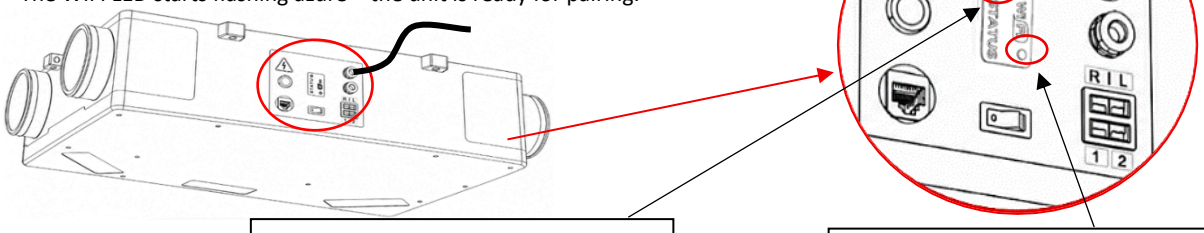
- If the minimum air velocity in the duct required by the manufacturer of the preheater cannot be ensured, operate the unit at a minimum of 50% of the rated air flow rate whilst using a duct diameter that corresponds to the diameter of the connection spigot.

- Under no circumstances shall the unit manufacturer be liable for incorrect design, installation or any malfunction, or for damage caused by the heater/preheater.

- Further information on installation, operation of the unit and servicing is provided in the full manual on the website www.xvent.cz

6. Starting the unit for the first time

- Switch the main switch from position 0 (OFF) to position 1 (ON) and wait until:
  - The STATUS LED starts to glow blue – the unit is powered up but switched off (OFF).
  - The WIFI LED starts flashing azure – the unit is ready for pairing.



STATUS – LED – indicates the unit's operational status

WIFI – LED – indicates the operational status of the unit's connection to the

- Creating an account on the wifimodule.eu web application

- To set up the unit, you must create a user account via the web application (APP), which you will use to control the unit.
- The app is designed as a 'native' app → meaning it adapts to any device that has a web browser and internet access.
- To create a user account, follow these steps (the instructions are shown in smartphone view):

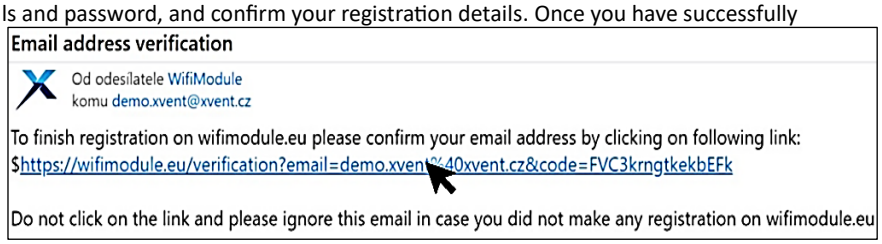
1. Enter the web address www.wifimodule.eu into your web browser

2. Create a new account, fill in your registration details and password, and confirm your registration details. Once you have successfully registered, a confirmation email will be sent to you.

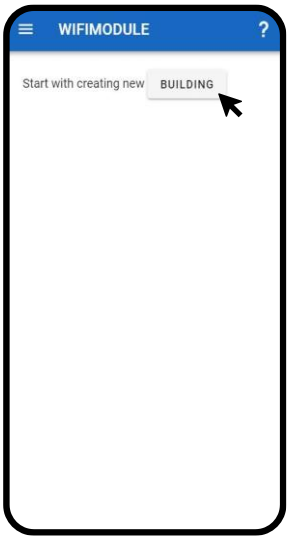
3. To complete your registration, you must confirm the link provided in the email

4. Log out and log back in to the website www.wifimodule.eu

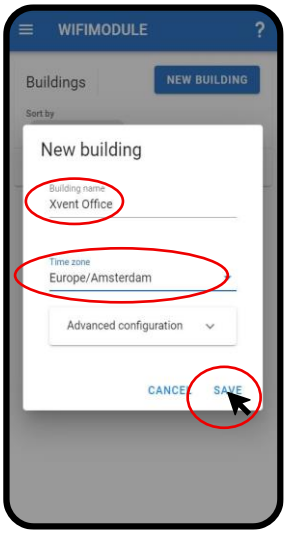
5. Enter your registered email address and password



6. You have successfully logged in to the app. Create a building

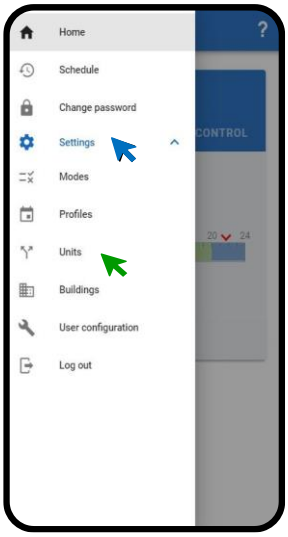


7. Name the building, select the nearest time zone, save



8. Linking the unit to your account Menu

9. Settings, unit



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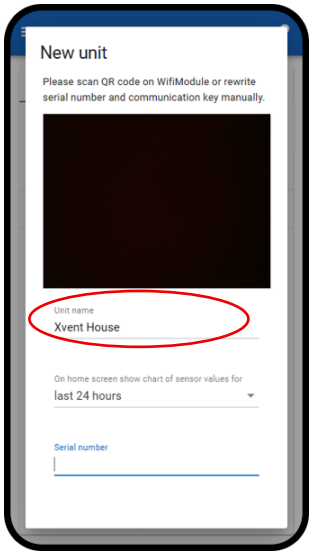
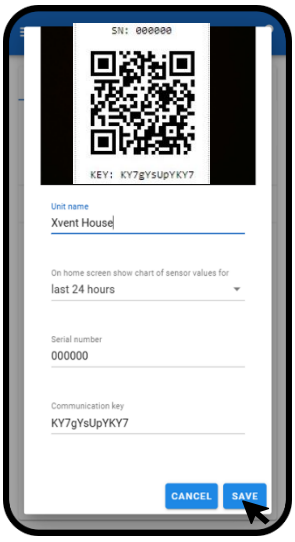
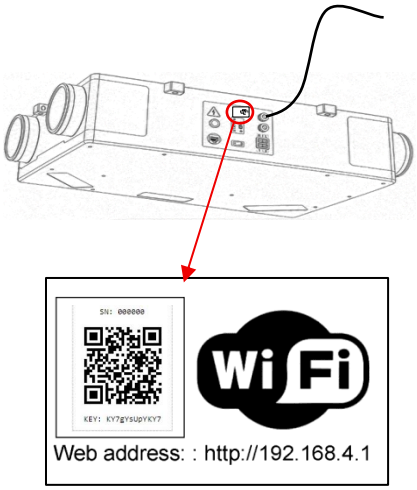
10. Add a new unit

11. Enable the camera and name the unit

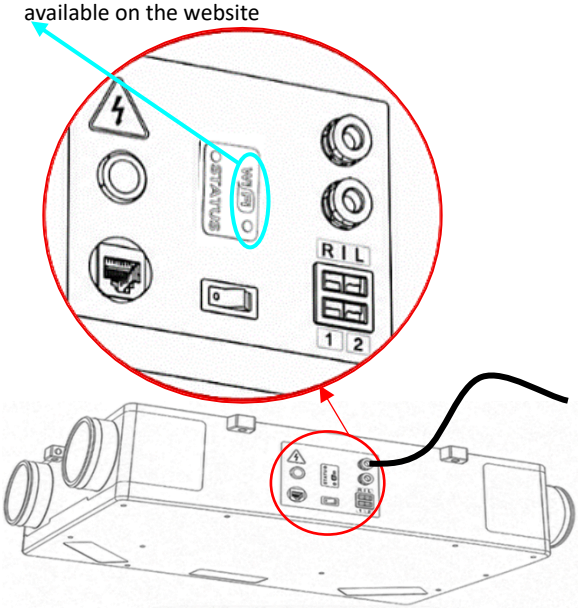


12. Use your camera to scan the QR code on the unit. If necessary, enter the SN and KEY manually into the app, then save



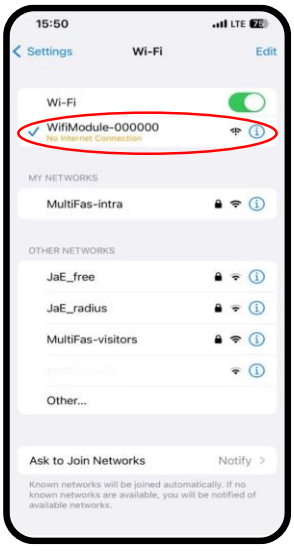


13. Check that the STATUS WIFI LED is flashing azure. If not, follow the instructions in the comprehensive manual available on the website

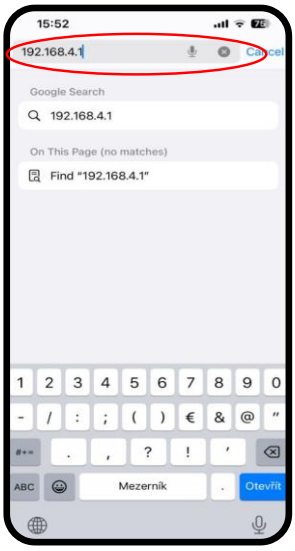


14. On your device, find the Wi-Fi network with a name that corresponds to your unit's serial number – SN: 000000. The network name is shown on the control panel cover next to the QR code

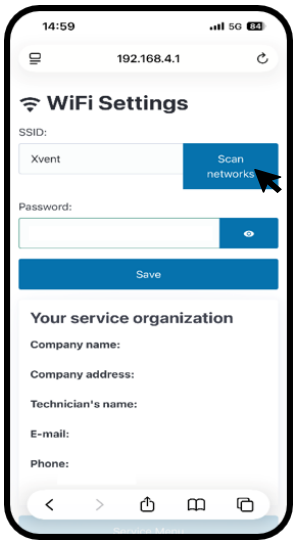
15. Connect to this Wi-Fi network – without an internet connection



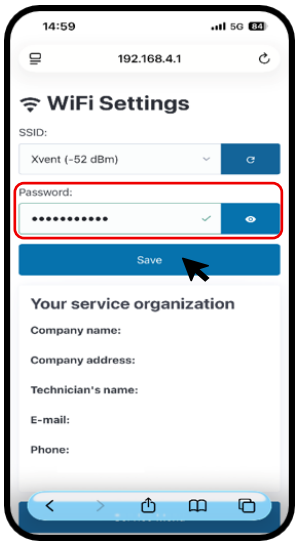
16. Enter the address 192.168.4.1 into your web browser



17. Find the Wi-Fi network to which the unit will be connected



18. Enter the password and save



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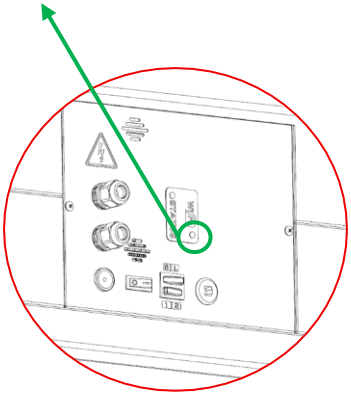
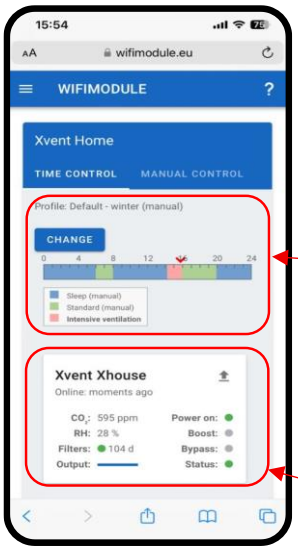
19. The Wi-Fi LED will start to glow green continuously (if it flashes green, this indicates a weak Wi-Fi signal) – the pairing process may take up to 10 seconds



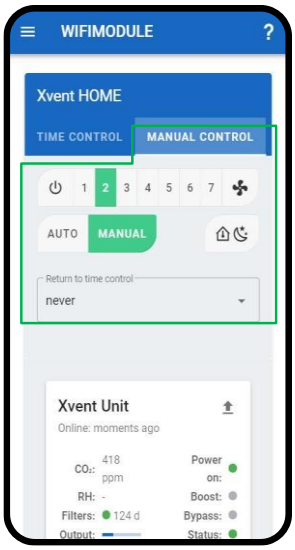
20. Connect to a Wi-Fi network – the internet. Log back into your account in the www.wifimodule.eu app. The initial automatic mode will be displayed. Switch to manual mode



- The main screen will appear

- Connection of the unit with the currently set operating mode – calendar in the default settings

- Operating status of the connected unit



- Select speed level 2 on the fan speed scale.

- The STATUS LED changes colour to green (unit in operation) – the unit starts up at speed level 2.

This completes the basic commissioning of the unit. If you have any queries or encounter situations other than those described in this manual, please refer to the full user manual available in the 'Documents' section of the Xvent website.

7. Block diagram of the XF2-020 unit with external preheater