

Heat recovery ventilation unit with counterflow exchanger **HRU-PremAIR**

Control

Ventilation units can be controlled in several ways:
4-button controller



HRQ-PremAIR-BUT-LM11



HRQ-PremAIR-BUT-LM04

This controller allows you to choose between 4 modes. The LM04 model has an AUTO button (instead of PARTY), recommended when there is at least 1 CO₂ or RH sensor in the system. Signalling of operation and errors by means of a LED diode.

Controller LCD, flush-mounted (HRQ-PremAIR-BUT-LCD)



This version has an LCD display, allows you to select 1 of 7 operating modes, program the calendar and read additional operating parameters such as temperatures, current fan speeds or the by-pass status. It also allows you to configure

ventilation speeds (according to user preferences).

Application for Android, iOS and via a browser (via the HRQ-PremAIR-GATE internet gateway)



Application



HRQ-PremAIR-GATE

The gateway is connected to the local network via the Ethernet port. Communication with the device is wireless. On-line control is possible after installing the application on Android and iOS or via a browser on a computer. The application graphically illustrates the operation of the device, allows you to change modes and read basic parameters.

NOTE!

Controller is not included in the kit. During purchase, choose the controller that is right for you. Multiple controllers can be connected at once - e.g. 4-button controller and an Internet gateway.

Control via CO₂ and RH sensors (we recommend as additional control).



HRQ-PremAIR-SENS-CO2



HRQ-PremAIR-SENS-RH



HRQ-PremAIR-SENS-I-CO2
(flush-mounted)

Each sensor also functions as a controller - it allows you to select from manual modes and, of course, engage AUTO mode. Indicates errors or dirty filters, but there is no filter status reset option.

Modbus gate (HRQ-PremAIR-MODBUS),


























HRQ-PremAIR-MODBUS gate, which allows to control the device using the universal modbus protocol and RS485 data transmission.

Each sensor also acts as a controller - it allows you to select modes manually and, of course, triggering AUTO mode. Indicates errors or dirty filters, but there is no filter status reset option.

Heat recovery ventilation unit with counterflow exchanger

HRU-PremAIR

Control options table:

Model	Photo	Communication with unit	Power supply	No of modes	AUTO mode*	Display	Calendar	Dirty filter signalization	Changing speed settings
HRQ-PremAIR-BUT-LM11		wireless 	battery 	4	no	no	no	yes	no
HRQ-PremAIR-BUT-LM04		wireless 	battery 	4	yes	no	no	yes	no
HRQ-PremAIR-BUT-LCD		wireless 	230 V 	7	yes	yes	yes	yes	yes
HRQ-PremAIR-GATE		wireless 	230 V 	6	yes	yes	no	yes	no
HRQ-PremAIR-SENS-CO2		wireless 	230 V 	5	yes	no	no	yes	no
HRQ-PremAIR-SENS-I-CO2		wireless 							
HRQ-PremAIR-SENS-RH		wireless 	battery 	4	yes	no	no	yes	no
HRQ-PremAIR-MODBUS		wireless 	n/d	7	yes	no	no	yes	no

* requires at least 1 CO₂ or RH sensor

Demand Control Ventilation, DCV

The AUTO mode is the most energy-efficient and demand driven mode of PremAIR units. Operation in the AUTO mode is possible when at least one carbon dioxide CO₂ or relative humidity RH sensor operates in the system.

In AUTO mode, the sensor (or several sensors) generates the so-called ventilation demand based on ambient air measurements. This request is sent wirelessly to the control board, which sets the efficiency of the fans in the range defined by AWAY and HOME(+ offset) speeds. It means, that in the case of factory settings, the range will be 15-70%.

- the RH sensor will guard against excessive moisture.

If there is a sudden increase in relative humidity (more than 3% within 24 seconds) or the reading exceeds 85%, the sensor will send 100% demand to the control panel to effectively and quickly reduce the RH level.

- the CO₂ sensor will keep the carbon dioxide concentration below the specified level (the factory default is 800 ppm, you can choose between 700,800,900,1000 and 1100 ppm) thanks to the proportional PID algorithm. This means that the request sent to the control board will change gradually over time until the CO₂ concentration decreases. HRU-PremAIR-SENS-CO₂ sensors have 2 AUTO modes

- Comfort and Eco. Comfort is the basic setting (i.e. 800 ppm by default), while Eco increases the limit by 250 (i.e. 1050 by default).

The CO₂ sensor is available in the following versions:

surface
HRQ-PremAIR-SENS-CO

flush-mounted
HRQ-PremAIR-SENS-I-CO₂



In case of having several sensors, the unit control board will operate according to the highest indication (highest request). In the absence of any demand from the sensors, the ventilation unit will run at AWAY speed (lowest setting).

Heat recovery ventilation unit with counterflow exchanger

HRU-PremAIR

Constant Flow (CF)

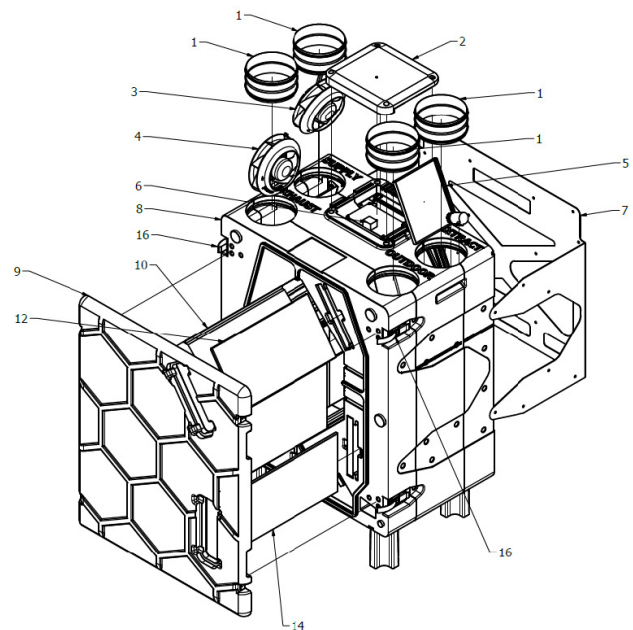
PremAIR air handling units optionally can be equipped with the Constant Flow system, whose task is to maintain a constant air flow in the installation. CF works by reading the difference between the dynamic pressure around the fan and the static pressure in the duct in front of the fan. The CF system constantly monitors the pressure in the ducts and if the resistance increases, it increases the speed of the fans to maintain a constant flow, such as on the first day when the ventilation unit was commissioned. During exploitation, the installation pressure is naturally disrupted (dirty filters, condensation of water in the heat exchanger, temperature difference changing the air mass). CF counteracts to those changes, thanks to which the airflows remain sustainable, and only a sustainable system takes full advantage of the air handling unit's capabilities.

Performance

Key performance features:

- Heat recovery:
 - HRU-PremAIR-350 - up to 90,3%
 - HRU-PremAIR-350E - up to 91.2%
 - HRU-PremAIR-450 - up to 90,3%
 - HRU-PremAIR-450E - up to 91,2%
 - HRU-PremAIR-500 - up to 82,6%
- Entalphy exchangers with antimicrobial properties of the membrane, sesistant against mold and bacteria
- Hi-tech modern casing made of Expanded Polypropylene- EPP
- High mechanical resistance
- High thermal and acoustic insulation
- Modulated by-pass
- Constant Flow system
- Free-cooling functions – also referred as Passive Cooling (no energy is needed) or Night Cooling (mostly happens during night), can be used to cool a building with outdoor air, when the room temperature is higher than the outside temperature
- Free-heating functions - also referred as Passive Heating (no energy is needed), can be used to heat a building with outdoor air, when the room temperature is lower than the outside temperature
- Performance tested according to EN 13141-7 standard
- Complies with ErP2018
- Wall mounting racks and feet included
- Replaceable duct connections
- Wireless control through mobile application or web browser
- Remote control possible by any CO₂ or RH wireless sensor
- Light weight construction – only 32 kg!
- POLISH product

Design



1. NSL connector (4pcs.)	9. Front cover
2. Control circuit cover	10. Heat exchanger
3. Supply fan	11. Extract filter cover
4. Extract fan	12. Extract filter G4
5. Bypass damper	13. Supply filter cover
6. Control circuit	14. Supply filter G4
7. Handling chassis	15. Mounting foot (4pcs.)
8. HRU housing	16. Clamp (4pcs.)