

Installation Manual (installer & user)

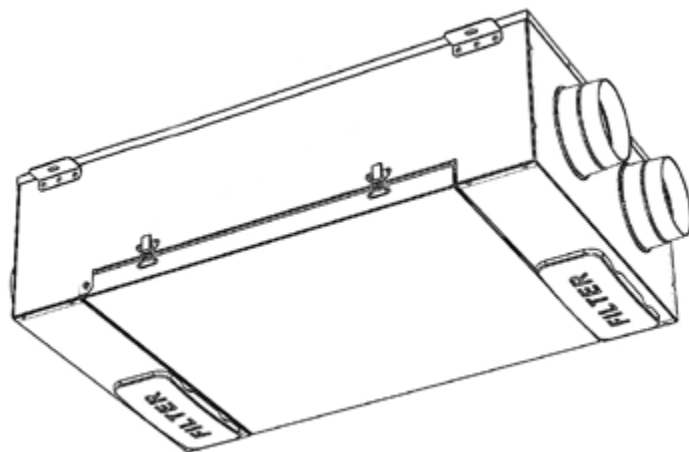
QR230E

Energy Recovery Ventilation Unit with enthalpic heat exchanger

Read this manual carefully before using the product and keep it in a safe place for reference as necessary.

This product was constructed up to standard and in compliance with regulations relating to electrical equipment and must be installed by technically qualified personnel.

The manufacturer assumes no responsibility for damage to persons or property resulting from failure to observe the instructions contained in this manual.



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2 PRECAUTIONS

WARNING

Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work!

WARNING

The installation and service of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulations.

WARNING

If any abnormality in operation is detected, disconnect the device from the mains supply and contact a qualified technician immediately.

TRANSPORT AND STORAGE

- Do not leave the device exposed to atmospheric agents (rain, sun, snow, etc.).
- Duct connections/duct ends must be covered during storage and installation.

INSTALLATION

- After removing the product from its packaging, verify its conditions. Do not leave packaging within the reach of children or people with disabilities.
- Beware of sharp edges. Use protective gloves.
- The device should not be used as an activator for water heaters, stoves, etc., nor should it discharge into hot air/fume vent ducts deriving from any type of combustion unit or tumble dryer. It must expel air outside via its own special duct.
- If the environment in which the product is installed also houses a fuel-operating device (water heater, methane stove etc., that is not a “sealed chamber” type), it is essential to ensure adequate air intake, to ensure good combustion and proper equipment operation.
- The electrical system to which the device is connected must comply with local regulations.
- Before connecting the product to the power supply or the power outlet, ensure that:
 - the data plate (voltage and frequency) correspond to those of the electrical mains
 - the electrical power supply/socket is adequate for maximum device power.
- For installation an omnipolar switch should be incorporated in the fixed wiring, in accordance with the wiring rules, to provide a full disconnection under overvoltage category III conditions (contact opening distance equal to or greater than 3mm).

USE

- The device should not be used for applications other than those specified in this manual.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- Do not touch the appliance with wet or damp hands/feet.
- The device is designed to extract clean air only, i.e. without grease, soot, chemical or corrosive agents, or flammable or explosive mixtures.
- Do not use the product in the presence of inflammable vapours, such as alcohol, insecticides, gasoline, etc.
- **The system should operate continuously, and only be stopped for maintenance/service.**
- Do not obstruct ducts or grilles to ensure optimum air passage.
- Do not immerse the device or its parts in water or other liquids.
- Operating temperature: 0°C up to +40°C.

SERVICE

- Although the mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges. Use protective gloves.
- Use original spare parts only for repairs.

3 PRODUCT INFORMATION

3.1 General

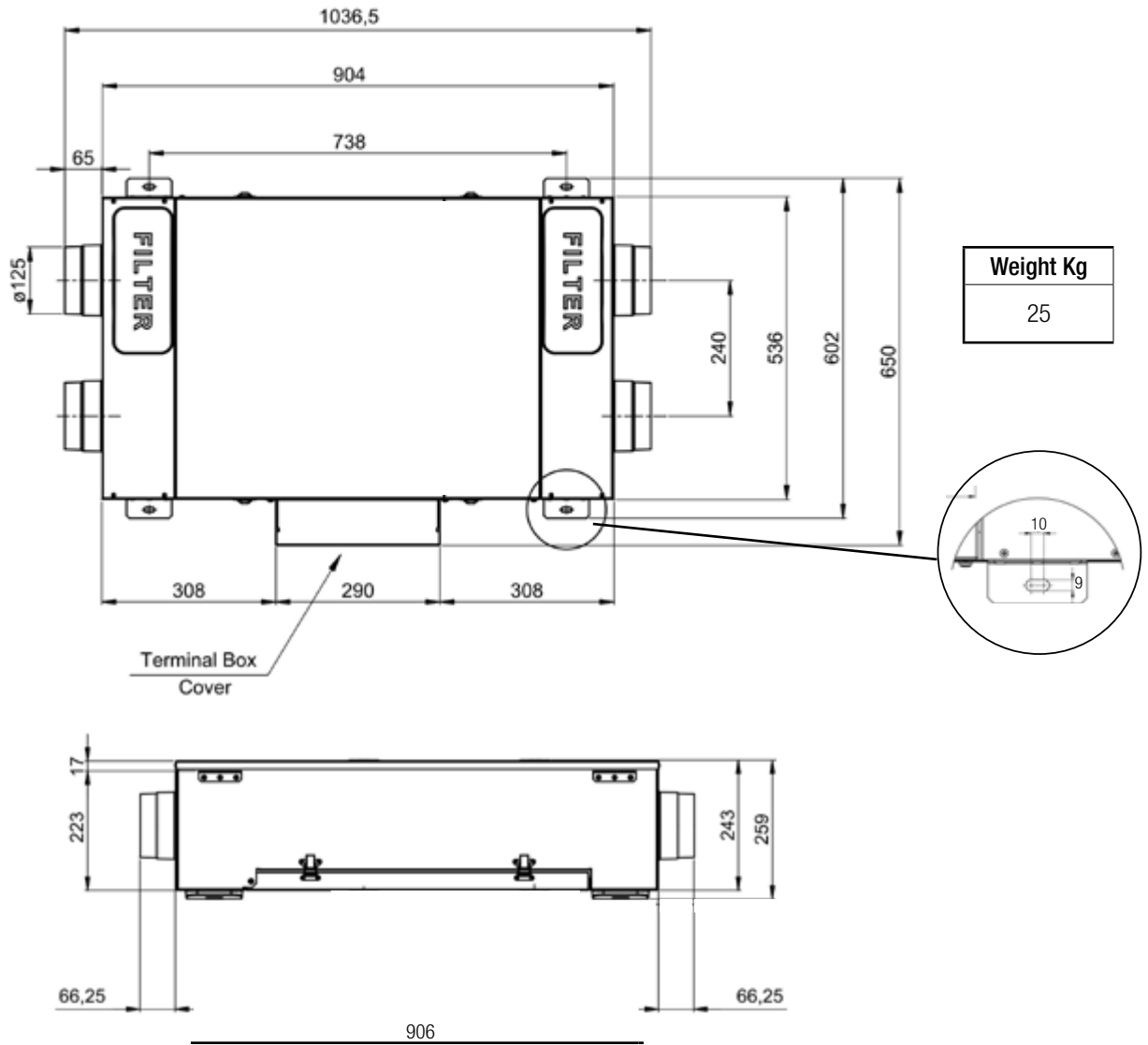
This is the Installation Manual of QR230E energy recovery ventilation unit.

This manual consists of basic information and recommendations concerning installation, commissioning, use and service operations to ensure a proper fail-free operation of the unit.

The key to proper, safe and smooth operation of the unit is to read this manual thoroughly, use the unit according to given guidelines and follow all safety requirements.

The QR230E is supplied with its CTRL-DSP remote multifunction control panel as standard.

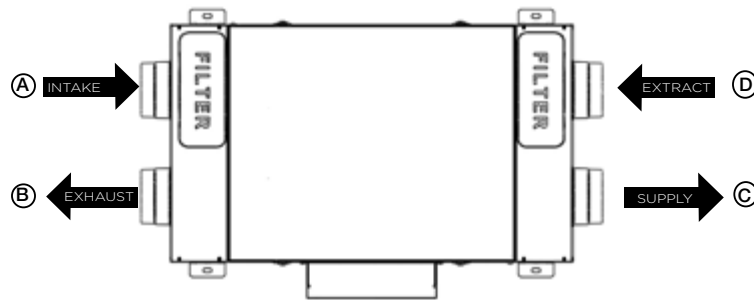
3.2 Dimensions (mm) and Weight



3.3 Connections

Fig. 3.a Connections

- Ⓐ Intake air from outside
- Ⓑ Exhaust air to outside
- Ⓒ Supply air to inside
- Ⓓ Extract air from inside



3.4 Space required

Make sure that enough space is left around the unit to allow easy maintenance (access to filters, terminal box and inspection panel removal).

3.5 Rating label

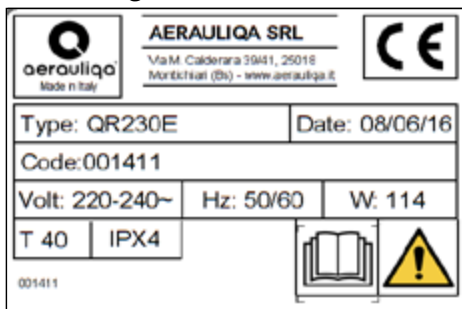


Fig.3.b Rating label

4 TRANSPORT AND STORAGE

WARNING

Make sure that specific warnings and cautions in Chapter 2 “Precautions” are carefully read, understood and applied!

The appliance is delivered in one carton box.

The appliance should be stored and transported in such a way that it is protected against physical damage that can harm spigots, casing, display etc...

It should be covered so that dust, rain and snow cannot enter and damage the unit and its components.

5 INSTALLATION

WARNING

Make sure that specific warnings and cautions in Chapter 2 “Precautions” are carefully read, understood and applied!

This section describes how to install the unit correctly.

The unit must be installed according to these instructions.

5.1 Unpacking

Verify that the unit (and eventual accessories) delivered is according to order before starting the installation. Any discrepancies from the ordered equipment must be reported to the supplier.

5.2 Where/how to install

- All QR units are meant for indoor installation in a heated space.
- The unit must always be mounted horizontally.
- Mount the unit on flat surface (ceiling).
- It's important that the unit is completely leveled before it is put into operation.
- Place the unit preferably in a separate room (e.g. storage, laundry room or similar).
- When choosing the location it should be kept in mind that the unit requires maintenance regularly and that the inspection door should be easily accessible.
- Leave free space for opening the removable panel and for removal of the main components (see 3.4).
- The outdoor air intake of the building should if possible be put in the northern or eastern side of the building and away from other exhaust outlets like kitchen fan exhausts or laundry room outlets.

5.3 Ceiling installation

The unit must be installed in the following position.

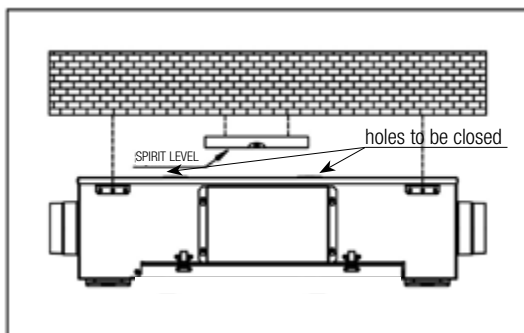


Fig 5.a

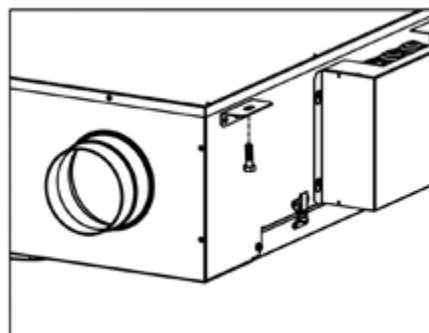


Fig. 5.b

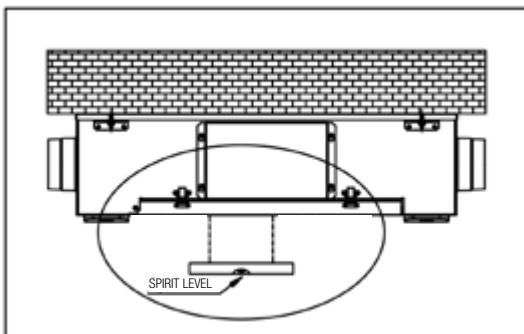


Fig. 5.c

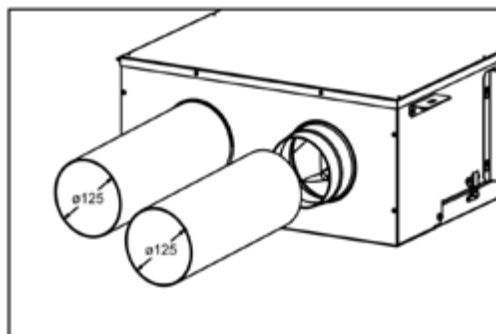


Fig. 5.d

5.a Prepare the surface where the unit is to be mounted. Make sure that the surface is flat, leveled and that it supports the weight of the unit. Perform the installation in accordance with local rules and regulations.

5.b Use appropriate plugs and rods or screws (not supplied) to fix the unit to the ceiling. It is recommended to fit the unit with anti-vibration mounts (not supplied).

5.c Assure that the unit is completely flat once mounted to the ceiling.

5.d Connect the unit to the duct system. Make sure that all necessary accessories are used to create a functional ventilation solution. Connect the unit electrically according to point 5.4. Check that it starts up correctly.

5.4 Electric Connections

WARNING

Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work!

WARNING

The installation and service of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulations.

The unit must be earthed.

The QR230E is wired internally from factory.

To connect the the CTRL-DSP to the mother board use a 4pole twisted-pair cable: max length 30m.

Figures below show the wiring diagram.

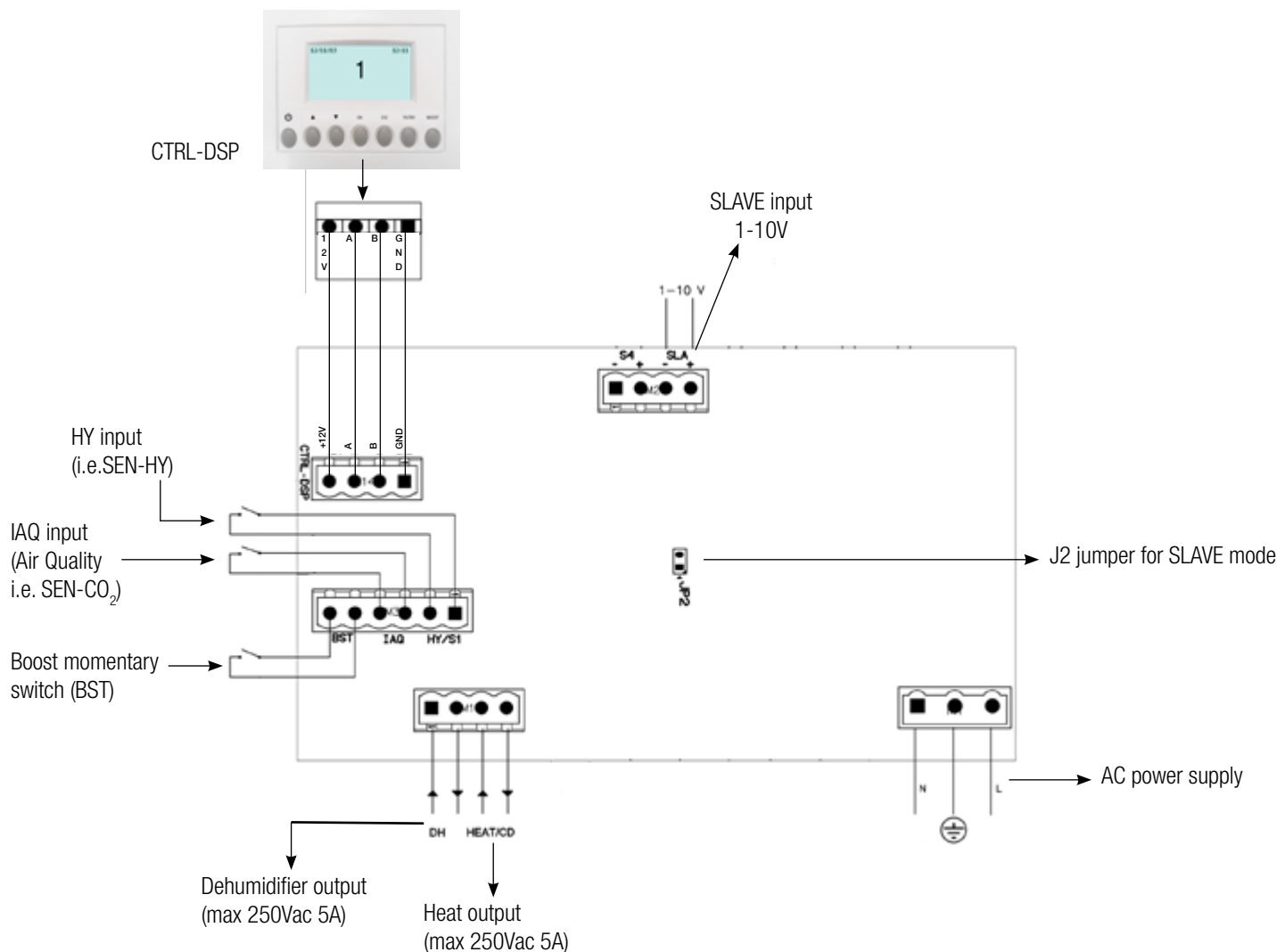


Fig. 5.e Electrical connections on the motherboard fitted in the connection box

Inputs/commands

N°1 AC supply connector

N°3 on/off inputs (volt-free contacts), two for ambient sensors (named HY, IAQ) and one for boost momentary switch (named BST).

N°1 1-10V analog input (named SLAVE).

N°1 jumper for SLAVE MODE selection.

N°1 4-pole connector for CTRL-DSP (RS485 plus 12Vdc supply).

Outputs

N°1 on/off output for pre-heating/post-heating (relay contact – 250Vac 5A).

N°1 on/off output for dehumidification (relay contact – 250Vac 5A).

6 COMMISSIONING

6.1 Setting Fan speed

The speed of the unit can be adjusted during installation according to required ventilation rate.

Figure 6.a below shows performance curves (for supply air and extract air) at different settings of the 0-10V signal to the motors. Airflow and consumption refer to one single motor.

Table 6.b indicates the sound level at the different speed.

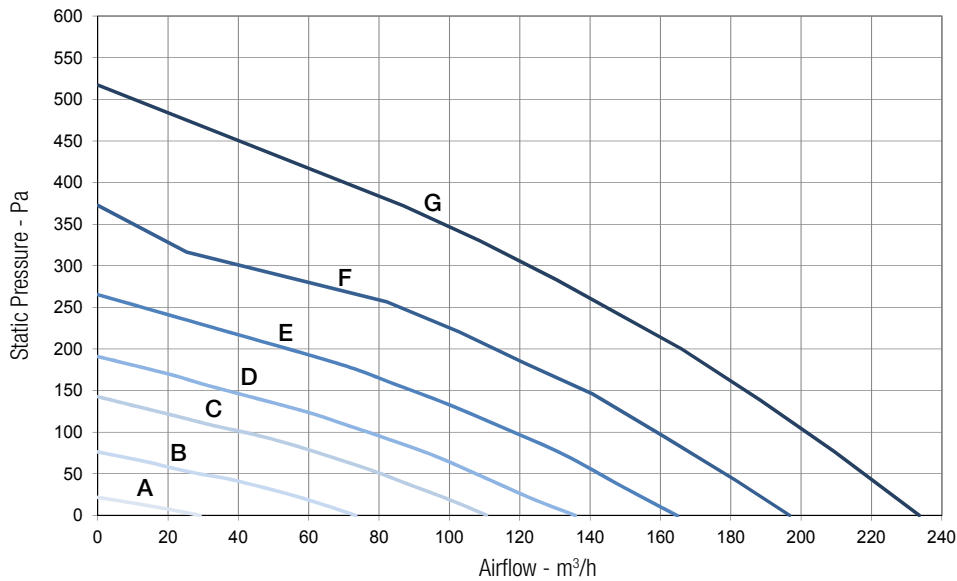
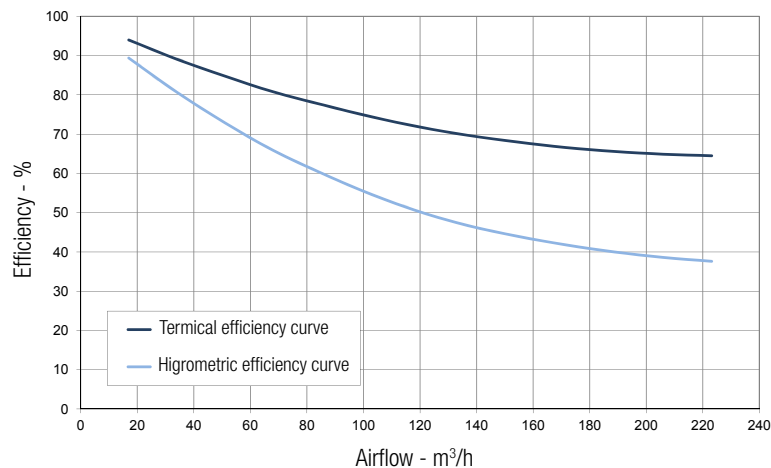


Fig. 6.a Performance curve

Curve	Speed %	W max	m³/h max
A (min)	20	10	29
B	40	16	73
C	53	26	110
D	60	36	136
E	72	51	165
F	84	76	197
G (max)	100	114	234

Intake curve according to Reg. 1253/2014 (ErP)



Data of the enthalpic heat exchanger
Test conditions:
Indoor air 25°C 50% RH
External air 5°C 70% RH

	Lw dB - SOUND POWER OCTAVE BAND									Lp dB(A) @3m
	63	125	250	500	1 K	2 K	4 K	8K	Tot	
100%										
Intake	57	62	69	64	58	56	49	46	71	45
Supply	56	62	65	61	55	50	40	31	68	41
Extract	57	61	65	60	55	49	41	32	68	41
Exhaust	59	64	68	62	57	57	54	47	71	44
Breakout	56	61	64	59	58	50	40	35	68	41

	Lw dB - SOUND POWER OCTAVE BAND									Lp dB(A) @3m
	63	125	250	500	1 K	2 K	4 K	8K	Tot	
80%										
Intake	55	59	65	60	53	50	44	40	67	41
Supply	55	59	62	57	51	44	35	28	65	37
Extract	55	58	62	55	51	43	35	28	65	37
Exhaust	58	61	65	58	53	52	49	41	68	40
Breakout	55	58	60	55	53	45	35	28	64	37

60%	Lw dB - SOUND POWER OCTAVE BAND									Lp dB(A)
	63	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
Intake	52	55	61	51	45	42	36	31	63	34
Supply	51	54	56	47	42	37	27	25	59	30
Extract	51	54	57	46	42	35	27	23	60	30
Exhaust	52	57	61	49	45	44	40	32	63	34
Breakout	51	54	55	45	44	37	29	24	59	29

40%	Lw dB - SOUND POWER OCTAVE BAND									Lp dB(A)
	63	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
Intake	47	50	50	42	35	32	25	22	54	24
Supply	47	48	48	38	33	27	22	20	53	21
Extract	47	49	48	37	33	25	20	20	53	21
Exhaust	49	51	54	40	36	34	28	23	57	26
Breakout	47	48	46	37	34	30	22	19	52	21

Table 6.b Sound level

dBA figures are average spherical free-field, for comparative use only.

6.2 Before Starting the System

When the installation is finished, check that:

- Filters are mounted correctly.
- The unit is installed in accordance with the instructions.
- The unit is correctly wired.
- Eventual outdoor and exhaust air dampers and silencers are installed and that the duct system is correctly connected to the unit.
- All ducts are sufficiently insulated and installed according to local rules and regulations.
- Outdoor air intake is positioned with sufficient distance to pollution sources (kitchen ventilator exhaust, central vacuum system exhaust or similar).
- The unit is correctly set and commissioned.

7 OPERATION

WARNING

Make sure that specific warnings and cautions in Chapter 2 “Precautions” are carefully read, understood and applied!

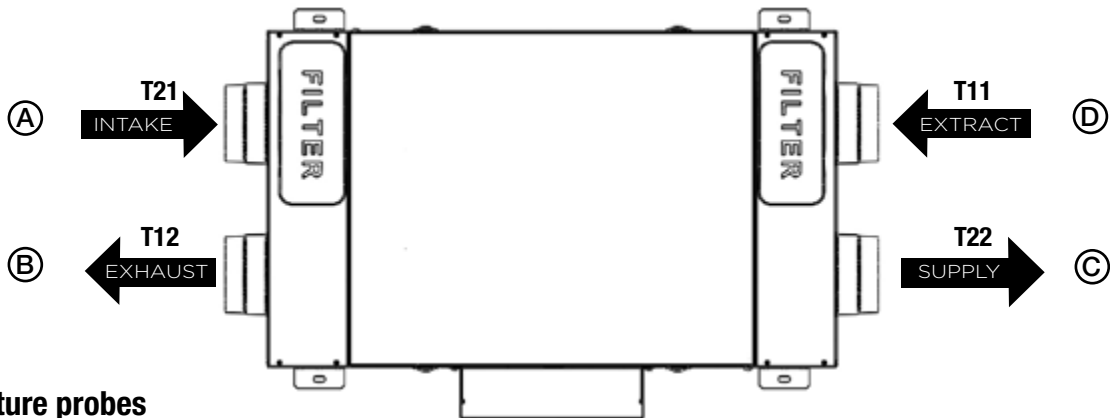


Fig. 7.a Temperature probes

- Ⓐ Intake air from outside
- Ⓑ Exhaust air to outside
- Ⓒ Supply air to inside
- Ⓓ Extract air from inside

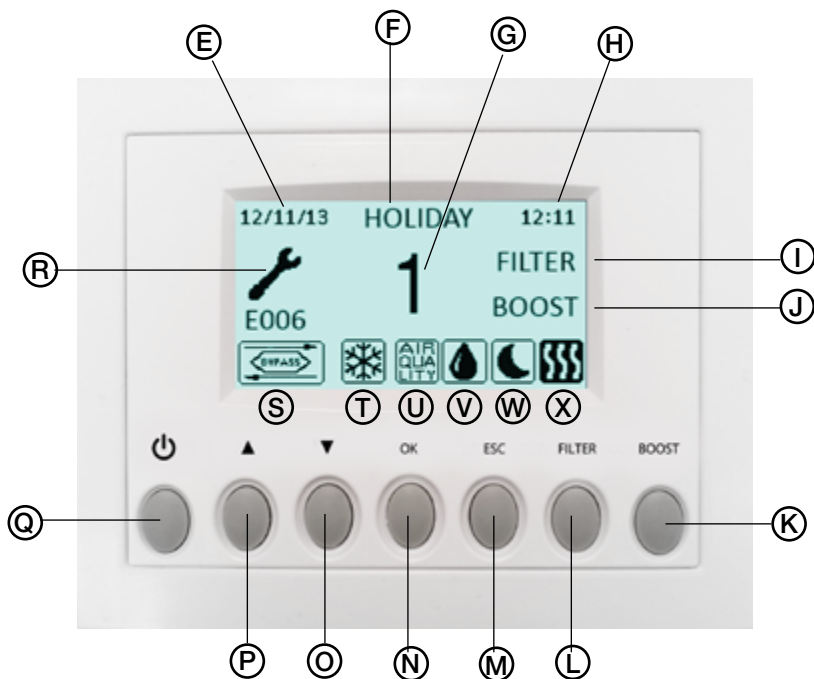


Fig. 7.b CTRL-DSP

- E** DATE: shows the current date
- F** MODE: shows the operation mode
- G** SPEED: shows the selected speed
- H** TIME: shows the time
- I** FILTER ALARM: shows that filters need to be maintained/replaced
- J** BOOST: shows that BOOST speed is activated
- K** BOOST KEY: to manually activate the BOOST speed
- L** FILTER RESET KEY: to reset the Filter Alarm
- M** ESC key: to exit and go back to the previous menu
- N** OK key: to enter the selected menu
- O** to go DOWN with the menu selection
- P** to go UP with the menu selection
- Q** to power off the ventilation unit
- R** shows ERROR ALARM - see point 7.3 to check the type of error
- S** this symbol shows if the “bypass” or “free cooling” function is active
- T** this symbol shows that ANTI-FROST is active
- U** this symbol shows that the IAQ input is activated, i.e.CO2
- V** this symbol shows that the HY input is activated.
- W** this symbol shows that NIGHT MODE is activated
- X** this symbol shows that Heating output is activated

Some operations can be selected either from the CTRL-DSP buttons or from the menu

When powered on, the CTRL-DSP displays as follows:



Fig. 7.c CTRL-DSP operation screen

7.1 User Menu on CTRL-DSP

To enter the user menu press OK or ESC.

To exit the user menu press ESC or wait for about 60 seconds.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

Use ▲ or ▼ to select the menu.

Press OK to enter.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

Mode selection allows the choice among 3V (three speed), OFF and HOLIDAY mode.
Press OK to enter.

Use ▲ or ▼ to choose the mode.

Press OK to select.

Press ESC to go back to the previous menu.



Mode selection
3V


3V mode (DEFAULT)

3V is flashing; press OK to select.

Once powered on, the unit runs at speed 1.

Press ESC or wait for about 60 sec to go back to the operation screen (Fig. 7.c).

In case of activation of either HY or IAQ sensor inputs (OR logic), the unit speed increases by 15%, and the sensor related icon  or  is displayed. Once all on/off sensors inputs are deactivated, the unit reverts back to selected speed.

In case the user has activated the NIGHT MODE , during nocturnal hours (from 8:00 p.m. to 8:00 a.m - fixed period of time) the sensor logic described above is ignored (the sensors have no effect and the unit runs at selected speed).

Mode selection
OFF

OFF mode

OFF is flashing; press OK to select.

The fans are switched off (the power supply to the motors is interrupted).

Press ESC or wait for about 60 sec to go back to the operation screen: OFF is displayed.

Mode selection
Holiday

HOLIDAY mode

Holiday is flashing; press OK to select.

The unit works at HOLIDAY speed.

Press ESC or wait for about 60 sec to go back to the operation screen.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

It allows to select the Boost speed.

Press OK to select.


Choice NO or YES using ▲ or ▼.

Press OK to select.

Boost speed can be selected only if the Mode selection is 3V or HOLIDAY.

Boost function can be activated in these ways:

- In the user menu, with the Boost function

- via the BOOST button on the CTRL-DSP (Fig. 7.b - )

- Using a momentary switch connected to the BST ON/OFF (only if no dehumidifier is installed) - Fig. 5.f.

When Boost is active, the icon  is displayed on the LCD and the unit runs at 100% speed for the duration set in the "Boost duration" menu; afterwards the unit reverts to selected speed.

Boost can be deactivated by holding BOOST button on the CTRL-DSP for 2 seconds.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

It allows to set the duration of the boost speed.

Press OK to select.

The factory setting (DEFAULT) is 15'.

Time options are 15' - 30' - 45' - 60'.

Time is flashing; use ▲ increase the time and ▼ to decrease.

Press OK to select.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

It allows to reset the filter alarm after maintenance/replacement. It can be selected only if the FILTER icon is displayed (Fig. 7.b - ①). Press OK to select.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

It allows to deactivate the automatic operation of the speed increased via sensors during nocturnal hours.

It operates from 8:00 p.m. to 8:00 a.m (fixed period of time). The sensors have no effect and the unit runs at the selected continuous speed.

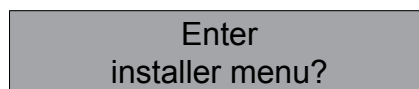
OFF is flashing; use ▲ or ▼ to change to ON.

Press OK to select.

The factory setting (DEFAULT) is OFF.

User menu
1 Mode Selection
2 Boost
3 Boost Duration
4 Reset FILTER Alarm
5 Night Mode
6 Installer menu

It allows to select the Installer menu.



Press OK to enter the Installer menu.

Press ESC to go back to the previous menu.

7.2 Installer Menu

The Installer menu can be selected either by selecting point 6) in the User menu or by holding OK+ESC for about 7 seconds. To exit the installer menu press ESC or wait for about 60 seconds.

Installer menu
1 Language
2 Date/Time
3 Bypass
4 Bypass settings
5 Free Cooling
6 Heating
7 Heating Threshold
8 Dehumidification
9 Speed Setting
10 Airflow Balancing
11 F7 filter
12 Filter Alarm interval
13 Working Hours Counter
14 Save settings
15 Load settings
16 Restore Default Settings
17 Contrast
18 Debug page

Use ▲ or ▼ to select the menu.

NOTE:

Menu 4 "Bypass settings" displays only if either Menu 3 "Bypass" or Menu 5 "Free Cooling" is set on "YES".

Menu 7 "Heating Threshold" displays only if Menu 6 "Heating" is set on PRE or POST.

Installer menu
1 Language
2 Date/Time
3 Bypass
4 Bypass settings
5 Free Cooling

It allows to select the language among English, Italiano, Nederlands, Français, Deutsch, Espanol.

Press OK to enter.

Language is flashing; use ▲ or ▼ to choose.

Press OK to select.

The factory setting (DEFAULT) is English.

Installer menu
1 Language
2 Date/Time
3 Bypass
4 Bypass settings
5 Free Cooling

It allows to set the date and the time
Press OK to enter.
Use ▲ or ▼ to choose.
Press OK for setting and again to confirm.
Press ESC to go back to the previous menu.

Installer menu
1 Language
2 Date/Time
3 Bypass
4 Bypass settings
5 Free Cooling

The factory setting (DEFAULT) is YES because the QR230E is equipped with an integral physical bypass.

Installer menu
1 Language
2 Date/Time
3 Bypass
4 Bypass settings
5 Free Cooling


It allows to set the Bypass/Free Cooling operation parameters.
Press OK to enter.
Use ▲ or ▼ to choose “Desired Temperature”, “Tmax Free Heating”, “Tmin Free Cooling”
For definitions see “Free Cooling”, paragraph 7.3.
Press OK to select.

The setting ranges are:
Desired Temperature: 15°C ÷ 30°C
Tmax Free Heating: 25°C ÷ 30°C
Tmin Free Cooling: 15°C ÷ 20°C
Use ▲ or ▼ to increase or decrease the temperature.
Press OK to select.
Press ESC to go back to the previous menu.

The factory settings (DEFAULT) are:
Desired Temperature: 23°C
Tmax Free Heating: 28°C
Tmin Free Cooling: 18°C



Installer menu
1 Language
2 Date/Time
3 Bypass
4 Bypass settings
5 Free cooling

To be selected only in case Bypass is set on NO.
Press OK to enter.
Use ▲ or ▼ to choose NO or YES.
Press OK to select.
The factory setting (DEFAULT) is NO.

This function is enabled only if FREE COOLING is set on YES. When it is operating, the icon  is displayed on LCD.
This function mitigates heat exchange when the combination of internal and external temperatures are such that the heat exchange is not recommendable.
For temperature settings see previous point 4.

Installer menu
6 Heating
7 Heating Threshold
8 Dehumidification
9 Speed Setting
10 Airflow Balancing

To be selected only in case an external heating element (not supplied) is present.
Press OK to enter.
Use ▲ or ▼ to choose NO/PRE/POST.
Press OK to select.
The factory setting (DEFAULT) is NO.

NO: HEAT output (Fig. 5.f) is never activated
PRE: the heating element is installed at “intake air side” (Fig. 7.a - **A**).
HEAT output (Fig. 5.f) is activated and heating icon  displays on LCD when T21 < HEATING THRESHOLD (Fig. 7.a)
POST: the heating element is installed at “supply air side” (Fig. 7.a - **C**).
HEAT output (Fig. 5.f) is activated and heating icon  displays on LCD when T11 < HEATING THRESHOLD (Fig. 7.a)

Installer menu

- 6 Heating
- 7 Heating Threshold
- 8 Dehumidification
- 9 Speed Setting
- 10 Airflow Balancing

This option displays only if “Heating” is set on PRE or POST.
It allows to set the heating threshold in case of PRE or POST heating.
Press OK to enter.
Use ▲ or ▼ to set the temperature.
Press OK to select.


Setting ranges:
PRE: $-20^{\circ}\text{C} \div 0^{\circ}\text{C}$
POST: $+15^{\circ}\text{C} \div +25^{\circ}\text{C}$

The factory settings (DEFAULT) are:
PRE: -10°C
POST: $+20^{\circ}\text{C}$

Installer menu

- 6 Heating
- 7 Heating Threshold
- 8 Dehumidification
- 9 Speed Setting
- 10 Airflow Balancing

To be selected only in case an external dehumidifier (not supplied) is present.
Press OK to enter.
Use ▲ or ▼ to choose NO or YES.
The factory setting (DEFAULT) is NO.

The DH relay output is activated when the HY input is activated (Fig. 5.f) and the icon  is displayed.
Note: in case dehumidifier is installed, the BST input (Fig. 5.f) is used as alarm output.

Installer menu

- 6 Heating
- 7 Heating Threshold
- 8 Dehumidification
- 9 Speed Setting
- 10 Airflow Balancing

It allows to adjust the various speeds.
Press OK to enter.
Use ▲ or ▼ to choose speed 1, speed 2, speed 3 or Holiday.
Press OK to select.

The setting ranges are:
speed 1: $10\% \div 80\%$
speed 2: $20\% \div 90\%$
speed 3: $60\% \div 100\%$
Holiday: $10\% \div 40\%$
Use ▲ or ▼ to increase or decrease the speed percentage.
Press OK to select.
Press ESC to go back to the previous menu.

The factory settings (DEFAULT) are:
speed 1: 40%
speed 2: 70%
speed 3: 100%
Holiday: 20%

Installer menu

- 6 Heating
- 7 Heating Threshold
- 8 Dehumidification
- 9 Speed Setting
- 10 Airflow Balancing

It allows to adjust the balancing of the two airflows.
Press OK to enter.
“Supply airflow” is highlighted.
Press OK to enter.
The setting range is: $-20\% \div +20\%$
Use ▲ or ▼ to adjust supply airflow against extract airflow
Press OK to select.
Press ESC to go back to the previous menu.

The factory settings (DEFAULT) is 0%.

Installer menu

- 11 F7 filter
- 12 Filter Alarm interval
- 13 Working Hours Counter
- 14 Save settings
- 15 Load settings

To be selected only in case an F7 filter is installed at the supply air side (Fig. 7.a)
Press OK to enter.
Use ▲ or ▼ to choose “Not installed” or “Installed”.
Press OK to select.

The factory setting (DEFAULT) is “Not Installed”.

Installer menu

- 11 F7 filter
- 12 Filter Alarm interval
- 13 Working Hours Counter
- 14 Save settings
- 15 Load settings

It allows to set the Filter Alarm period: the system has a timer which activates the "Filter" warning on the LCD at regular intervals.

Press OK to enter.

Use ▲ or ▼ to choose among 2-3-6 months or OFF.

Press OK to select.

The factory setting (DEFAULT) is 3 months if F7 filter is "Installed" or 6 months if F7 filter is "Not installed".

Installer menu

- 11 F7 filter
- 12 Filter Alarm interval
- 13 Working Hours Counter
- 14 Save settings
- 15 Load settings

The system keeps trace of the actual working hours of the unit. This value cannot be changed. Data is saved both on the motherboard and on the control panel CTRL-DSP, to be safe in case of fault.

Press OK to enter.

Press OK or ESC to go back to the previous menu.

Installer menu

- 11 F7 filter
- 12 Filter Alarm interval
- 13 Working Hours Counter
- 14 Save settings
- 15 Load settings

It allows to save the setting of the #1 (prototype) installation in the internal memory of the CTRL-DSP to be loaded afterwards in other units.

Press OK to enter.

Use ▲ or ▼ to choose the position where to save the setting. Up to 8 different settings can be saved.

Press OK to select.

Press OK to confirm.

Press ESC to go back to the previous menu.

Installer menu

- 11 F7 filter
- 12 Filter Alarm interval
- 13 Working Hours Counter
- 14 Save settings
- 15 Load settings

It allows to load the saved setting on the next unit.

Press OK to enter.

Use ▲ or ▼ to choose the desired saved setting.

Press OK to select.

Press OK to confirm.

Press ESC to go back to the previous menu.

Installer menu

- 16 Restore Default Settings
- 17 Contrast
- 18 Debug page

It allows to restore all the factory settings (DEFAULT).

Press OK to enter.

Press OK to confirm.

Installer menu

- 16 Restore Default Settings
- 17 Contrast
- 18 Debug page

It allows to set the LCD contrast.

Press OK to enter.

Use ▲ or ▼ to increase or decrease the contrast.

Press OK to confirm.

Installer menu

- 16 Restore Default Settings
- 17 Contrast
- 18 Debug page

It shows the internal functional parameters of the unit.

Press OK to enter.

Press ESC to go back to the previous menu.

7.3 Additional functionalities

SLAVE MODE

In case the SLAVE jumper (Fig. 5.f - JP2) is short-circuited before powering the unit, the unit works in SLAVE MODE; the operating speed is determined by the 1-10V signal received at the SLAVE input. All the operating logics described in the Mode selection are ignored (paragraph 7.1).

FREE COOLING

The parameters “Desired Temperature”, “Tmax Free Heating”, “Tmin Free Cooling” (Menu 4 Bypass settings) are to be meant as follows:

“Desired Temperature” is the ambient temperature desired by the user

“Tmax Free Heating” is the maximum outside temperature allowed for free heating operation

“Tmin Free Cooling” is the minimum outside temperature allowed for free cooling operation.

FAULT HANDLING

Code error description (Fig. 7.b - **Ⓡ**)

E000 no RS485 connection

E001 no rotation of the exhaust air fan (Fig. 8.a - **⑦**)

E002 no rotation of the intake air fan (Fig. 8.a - **⑤**)

E003 thermistor T11 broken/disconnected (Fig. 7.a)

E004 thermistor T12 broken/disconnected (Fig. 7.a)

E005 thermistor T21 broken/disconnected (Fig. 7.a)

E006 thermistor T22 broken/disconnected (Fig. 7.a)

E007 dehumidifier alarm (BST INPUT)

E008 CTRL-DSP internal error

NOTE: the controller board verifies the presence of CTRL-DSP periodically; if CTRL-DSP is absent (or faulty), the unit works in 3V mode at speed 1 (DEFAULT condition).

ANTI-FROST

Intake Fan speed is reduced during very cold weather in order to prevent ice inside the unit which could damage the heat exchanger.

In this case the ANTI-FROST icon **❄** is activated on the LCD.

8 MAINTENANCE AND SERVICE

WARNING

Make sure that specific warnings and cautions in Chapter 2 “Precautions” are carefully read, understood and applied!

Maintenance can be carried out by the user.

Service must be performed only by an authorized installer and in accordance with local rules and regulations.

Questions regarding installation, use, maintenance and service of the unit should be answered by your installer or place of purchase!

8.1 Components list

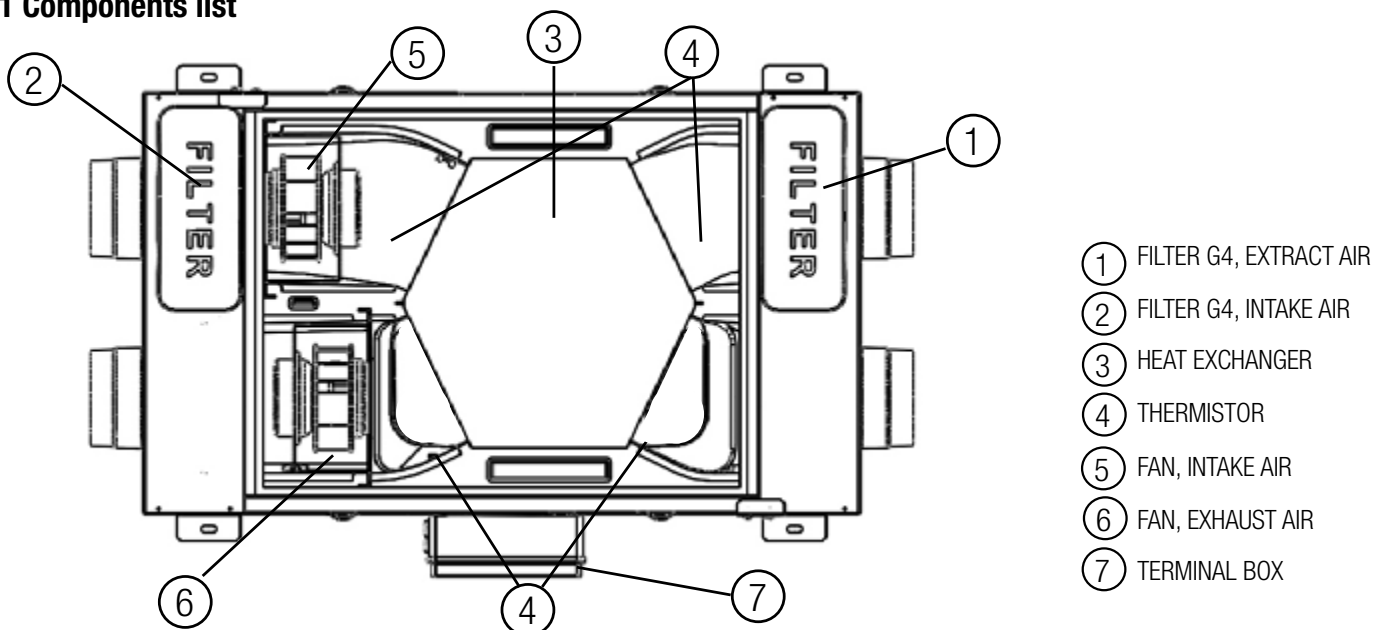


Fig. 8.a Internal components

8.2 Description of Components

Fans

The fans have external rotor motors of EC type which can be steplessly controlled individually between 10–100%. The motor bearings are life time lubricated and maintenance free. It is possible to easily disconnect and replace the fans if necessary.

Filters

The filters are of filter quality G4 for both the supply air and extract air filter. The filters need to be cleaned regularly (and replaced when polluted) during maintenance. New sets of filters can be acquired from your installer or wholesaler.

Heat exchanger

The unit is equipped with an enthalpic heat exchanger, suitable to transfer thermal energy and humidity from one airflow to the other. The heat exchanger is removable for cleaning and maintenance during service.


Thermistors

Temperature probes to implement temperature dependent functions.

8.3 Maintenance

WARNING

Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work!

- Keep the unit surface free from dust.
- Clean the filters with a vacuum cleaner following the below illustrations (Fig. 8b-c-d-e) when the FILTER signal is displayed on LCD. Their maintenance may differ per situation depending on the internal and external environmental conditions.
- Press FILTER button (Fig. 7.b - ) to reset the Filter Alarm.
- Filters must be replaced every year.

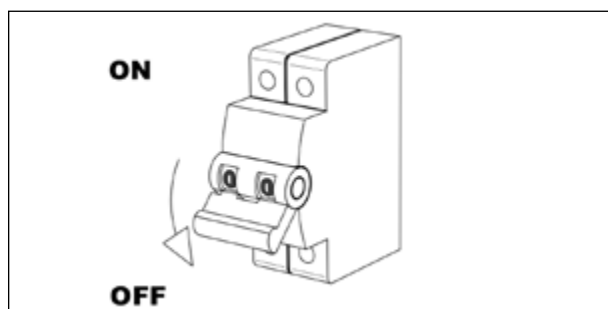


Fig. 8.b

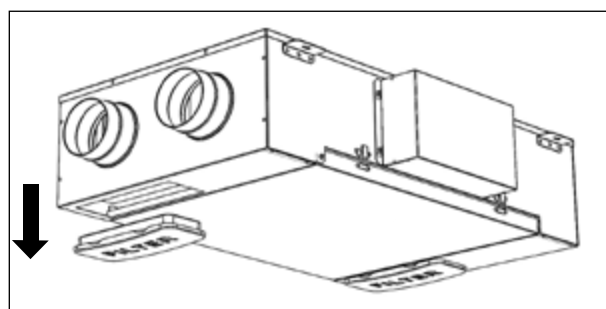


Fig. 8.c

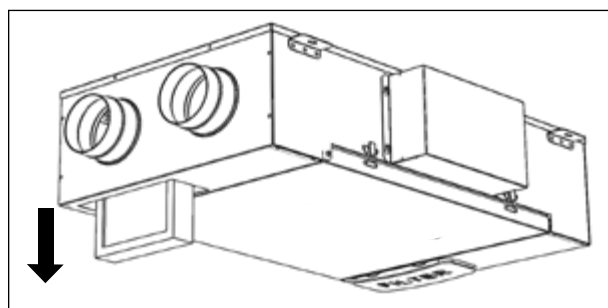


Fig. 8.d

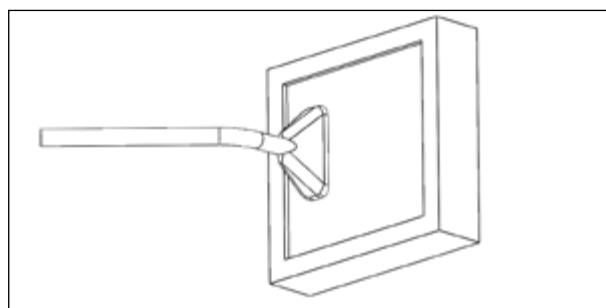


Fig. 8.e


8.4 Service

WARNING

Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work!

WARNING

The installation and service of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulations.

- Keep the unit surface free from dust.
- Clean the filters with a vacuum cleaner following the following illustrations (Fig. 8f-g-h-i) when the FILTER signal is displayed on LCD. Their maintenance may differ per situation depending on the internal and external environmental conditions. Press FILTER button (Fig. 7.b - ) to reset the Filter Alarm. Filters must be replaced every year.
- Clean the fans every year with a vacuum cleaner. This may differ per situation depending on internal and external environmental conditions and on frequency of filter cleaning. Do not move the balance clips of the fan (Fig. 8f-j-k-l)
- Clean the heat exchanger every year with a vacuum cleaner. This may differ per situation depending on internal and external environmental conditions and on frequency of filter cleaning. To remove the heat exchanger unlock the specific bracket by turning the yellow screw (Fig. 8f-j-k-m-n-o).

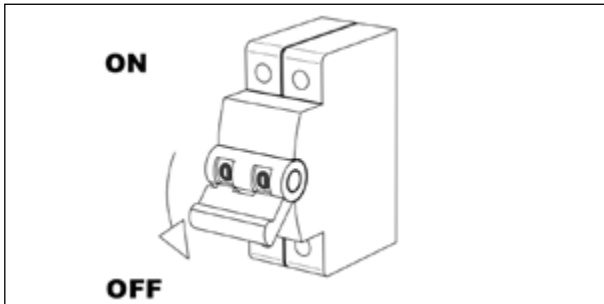


Fig. 8.f

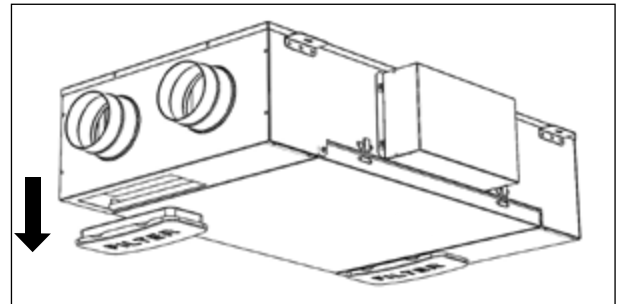


Fig. 8.g

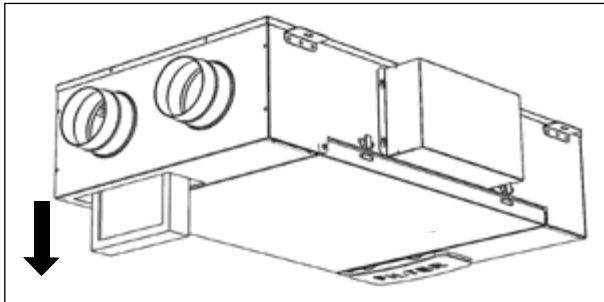


Fig. 8.h

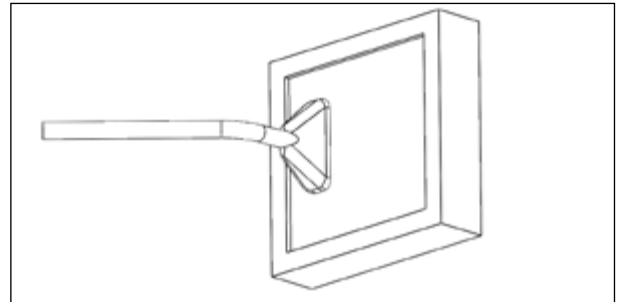


Fig. 8.i

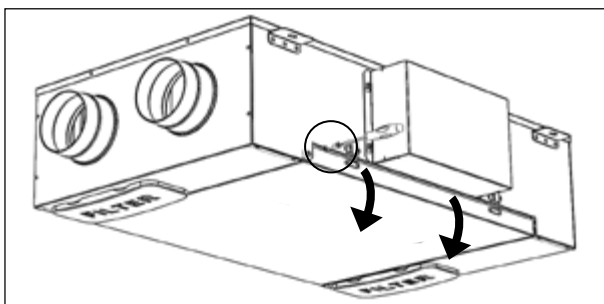


Fig. 8.j

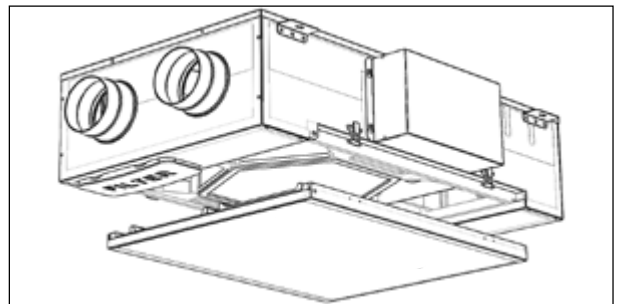


Fig. 8.k

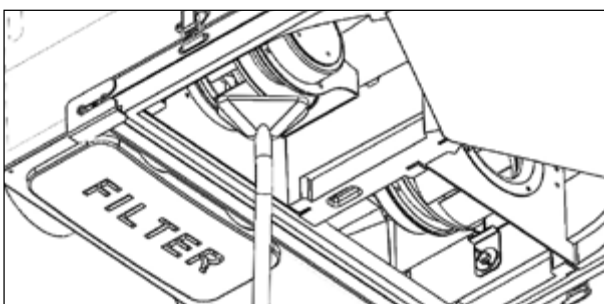


Fig. 8.l

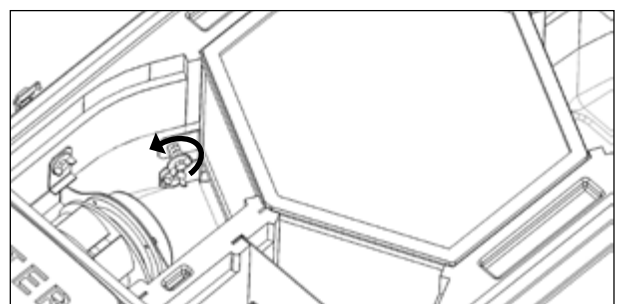


Fig. 8.m

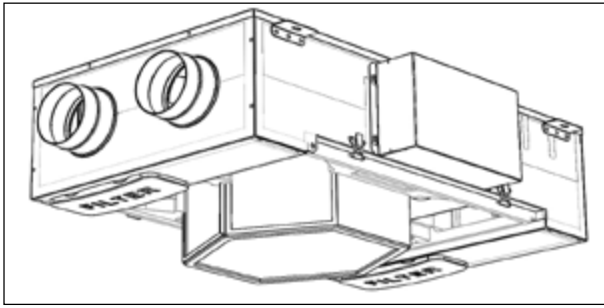


Fig. 8.n

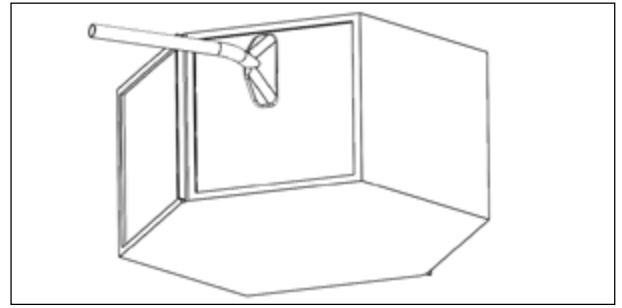




Fig. 8.o

8.5 Trouble shooting

Fans do not start

1. Check that main supply gets to the unit.
2. Check that all connections are working (all connections in terminal box and fast couplings of intake and exhaust air fans).

Reduced airflow

1. Check setting of fan speed on the CTRL-DSP (controller supplied).
2. Check filters. Change of filters required?
3. Check diffusers. Re-setting or cleaning of grilles and diffusers required?
4. Check fans and heat exchange block. Cleaning required?
5. Check if air intake and exhaust have been clogged.
6. Check ducting system for damage and/or dirt accumulation.
7. Check if the "free cooling" icon  is displayed on LCD.
8. Check if Anti-frost icon  is displayed on LCD.

Fan noise/vibrations

1. Clean fan impellers. Cleaning required?
2. Check that the fans are firmly in place within the unit.
3. Check that the unit has been installed with anti-vibration mounts.

Excessive air noise

1. Check setting of fan speed on the CTRL-DSP (controller supplied).
2. Check grilles and diffusers. Re-setting or cleaning of grilles and diffusers required?

Unpleasant smell

1. Check filters. Change of filters required?
2. Check ducting system and grilles and diffusers. Cleaning required?

ErP Directive - Regulations 1253/2014 - 1254/2014

a)	Mark	-	AERAULIQA		
b)	Model	-	QR230E		
c)	SEC class	-	A	B	B
c1)	SEC warm climates	kWh/m2.a	-14,6	-10,4	-6,6
c2)	SEC average climates	kWh/m2.a	-37,6	-32,3	-27,8
c3)	SEC cold climates	kWh/m2.a	-73,1	-66	-60,1
	Energy label	-	Yes		
d)	Unit typology	-	Residential - bidirectional		
e)	Type of drive	-	Variable speed drive		
f)	Type of Heat Recovery System	-	Heat recovery		
g)	Thermal efficiency of heat recovery	%	70		
h)	Maximum flow rate	m3/h	202		
i)	Electric power input at maximum flow rate	W	114		
j)	Sound power level (L_{WA})	dB(A)	50		
k)	Reference flow rate	m3/h	142		
l)	Reference pressure difference	Pa	50		
m)	Specific power input (SPI)	W/m3/h	0,359		
n1)	Control factor	-	0,65	0,85	1
n2)	Control typology	-	Local demand control	Central demand control	Manual control (no DCV)
o1)	Maximum internal leakage rate	%	2,5		
o2)	Maximum external leakage rate	%	1		
p1)	Internal mixing rate	%	N/A		
p2)	External mixing rate	%	N/A		
q)	Visual filter warning	-	Visual filter warning on display		
r)	Instructions to install regulated grilles	-	N/A		
s)	Internet address for preassembly/disassembly instructions	-	www.aerauliqa.com		
t)	Airflow sensitivity to pressure variations	%	N/A		
u)	Indoor/outdoor air tightness	m3/h	N/A		
v1)	AEC - Annual electricity consumption - warm climates	kWh	1,9	3,3	4,5
v2)	AEC - Annual electricity consumption - average climates	kWh	2,4	3,7	4,9
v3)	AEC - Annual electricity consumption - cold climates	kWh	7,7	9,1	10,3
w1)	AHS - Annual heating saved - warm climates	kWh	19,4	18,5	17,8
w2)	AHS - Annual heating saved - average climates	kWh	42,8	40,9	39,4
w3)	AHS - Annual heating saved - cold climates	kWh	83,7	80	77,2



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