CORDIVARI VNT2000 Design Run Fan Coil User Manual

Contents

CORDIVARI DESIGN

CORDIVARI VNT2000 Design Run Fan Coil

Product Information

Specifications

- **Models:**
  - **VNT2000:** Design Run
  - **VNT4000:** Design Run
  - **VNT6000:** Design Run
  - **VNT2000:** Design Seven Lines
  - **VNT4000:** Design Seven Lines
  - **VNT6000:** Design Seven Lines
- **Height:**
  - **VNT2000:** 593mm
  - **VNT4000:** 593mm
  - **VNT6000:** 593mm
- **Width:**
  - **VNT2000:** 715mm
  - **VNT4000:** 925mm
  - **VNT6000:** 1135mm
- **Net Weight:**
  - **VNT2000:** 17kg
  - **VNT4000:** 21kg
  - **VNT6000:** 25kg

Product Usage Instructions

General Information
Dear Customer,
Thank you for choosing our product. Carefully read the instructions before installing and/or using the appliance.

- The product is intended for the general public.

- It is recommended to have all installation and adjustment operations performed by qualified personnel.
- Once the product is removed from the package check its integrity. If the product is damaged, do not use it and contact the Cordivari assistance network.
- The unit must be installed in compliance with all local and national technical, plant and safety regulations.
- Before making any connection make sure the supply voltage corresponds to the voltage stated on the characteristic label placed on the appliance.
- If the power supply cable is damaged, contact the manufacturer or its technical assistance service to have it replaced, or, in any case, have the operation carried out by a person with similar qualification in order to prevent any risk.
- For correct operation, use a socket dedicated exclusively to the unit and always provide a grounding system.
- It is mandatory to use a suitable electric switch on the unit's power socket.

WARNING – Some parts of this product may become very hot and cause scalding. Pay extra care when children or vulnerable people are present.

- Unsupervised children under the age of 3 must be kept at a safe distance from the appliance.
- This appliance can not be used by children aged 8 years or older and by people with reduced physical, sensory and mental capabilities, or with no experience and the required knowledge unless they are supervised or they have received instructions on the safe use of the appliance and have understood inherent hazards.
- Children must not play with the appliance;
- Cleaning and maintenance operations is intended to be carried out by the user and must not be carried out by children without supervision.
- Do not install the appliance near curtains, other flammable materials, fuels or pressurised containers.
- The unit must be positioned so that the electronic control can perfectly detect the room temperature, far from external heat sources.
- Do not pour water or other liquids onto the unit, especially on the electrical and electronic components.
- Do not insert or drop objects through the upper air outlet slot. Do not insert objects into the lower air intake area where filters are housed.
- Do not obstruct or cover the upper and lower air passages. It is important to keep the unit well-ventilated.
- Do not sit or lean on or otherwise exert mechanical stress on the upper part of the unit.
- In operations involving the removal of the control panel and/or metal casing, handle with care.
- This manual is available in digital format on the website **www.cordivaridesign.com**.

Manufacturer liability
The manufacturer declines any liability for damages to persons and property caused by:

- use of the appliance other than intended
- non-observance of the user manual instructions
- tampering with even just one part of the appliance
- use of non-original spare parts.

Disposal
At the end of its working life, this appliance must be delivered to the special collection facilities for recycling, since it is not a standard domestic waste. In case of replacement, it can be delivered to your distributor. This management of the end of the life of a product allows us to preserve our environment and to limit the use of natural resources. This symbol, applied on the product, indicates the obligation to deliver the product at the end of

its working life to a special collection facility, in compliance with Directive 2002/95/EC.

User Information:
The user manual covers the Cordivari Design fan coil units, specifically the mentioned models with their respective technical specifications.

General information
The user instructions as per this booklet refer to Cordivari Design fan coils, in particular to models:

Height [mm]	Width [mm]	Depth [mm]	Net weight [kg]
VNT2000 DESIGN RUN / SEVEN LINES			
593	715	136	17
VNT4000 DESIGN RUN / SEVEN LINES			
593	925	136	21
VNT6000 DESIGN RUN / SEVEN LINES			
593	1135	136	25

The products presented and described in this manual are equipped with on-board control devices that enable their full use. In guaranteeing the full functionality of the machine in question, these control devices act with priority over IoT control modes (e.g. use of Apps). It is, however, possible to manage products from Smart devices via the Apps mentioned in this manual. Signing and agreeing to the terms and conditions of use of the App – including the processing of personal data – are exclusively to be understood as an existing relationship between the User and the Company owning the App. Cordivari S.r.l., in the latter case, is to be considered an external and extraneous party to the aforementioned relationship.

Technical Features

	VNT2000	VNT4000	VNT6000
Air Volume LOW features			
Sound power level [dB(A)] (1)	41	41	42
Electrical power input [W]	6	7	8
Air Volume MEDIUM features			
Sound power level [dB(A)] (1)	46	46	47
Electrical power input [W]	8	9	12
Air Volume HIGH features			
Sound power level [dB(A)] (1)	50	50	51
Electrical power input [W]	10	12	16
Air flow rate [m^3 / h]	130	250	370
HEATING performance (Water IN 45 / OUT 40 °C, Air 20°C, Air wet bulb 15°C, Air volume HIGH)			
HEATING power [W] (2)	720	1196	1738
Water flow rate [l / h] (2)	122	205	297
Pressure drop [kPa] (2)	1.1	3.3	7.5
COOLING performance (Water IN 7 / OUT 12 °C, Air 27°C, Air wet bulb 19°C, Air volume HIGH)			
Total COOLING power [W] (2)	544	979	1539
COOLING sensible power [W] (2)	426	774	1196
Water flow rate [l / h] (2)	95	170	265
Pressure drop [kPa] (2)	0.9	2.8	7.3

1. Sound power measured according to EN 16583 + EN ISO 3741
2. Heating and cooling capacity measured according to EN 1397

- Supply voltage 230 V AC 50 Hz
- Electrical insulation: Class I
- Fuse type: T5A 250V
- Power cable with Schuko plug L > 1000 mm
- Bypass solenoid valve management (optional)
- Modbus RS485 and WiFi connectivity
- Ambient operating temperature from 5°C to 32°C – 60% RH
- Water flow temperature from 6°C to 75°C
- Operating pressure from 1 Bar to 10 Bar
- Painted aluminium alloy casing
- Top cover made of high-strength V0 plastic
- Finned heat exchanger with hydrophilic coating, high heat exchange efficiency and G1/2″ connections
- Brushless motor DC310V 8P 13W 1400 rpm Class E
- Condensate collection tray with natural drainage complete with antidrip insulation

- Polypropylene mesh filters

User information
To clean the fan coil painted metal casing, use only a non-abrasive cloth soaked in water. Never use detergents or aggressive substances. Avoid any other base or acid solution, chemical, industrial or other substances, aggressive or corrosive substances (bleach, ammonia, baking soda, etc.). Use a dry cloth for cleaning the plastic parts (top cover, control panel and user interface). Do not use abrasive cloths or sponges.

Installer information

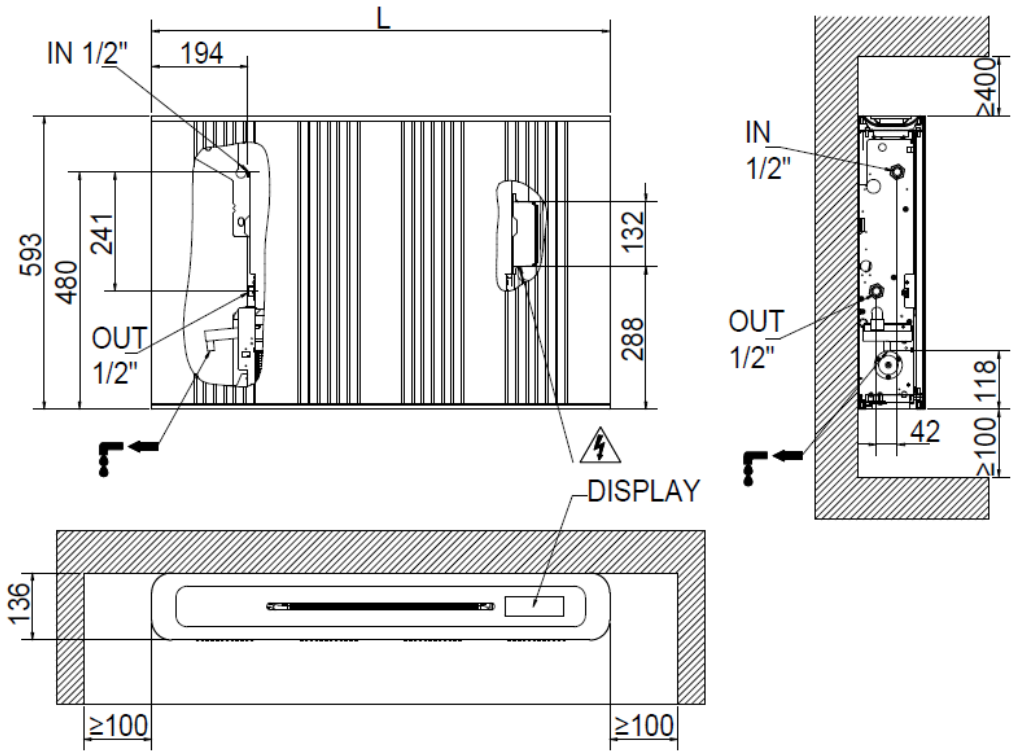
Do not open or tamper with the packaging before installation. The unit may only be handled by personnel who are specialised in these operations and have experience of the same. When opening the package, check that the unit has not been damaged during transport and that it is complete along with all its parts.

To open the packaging follow the instructions below:

- Check for visible damage
- Open the package
- Check that all the components are correctly present
- Do not throw away the packaging: the installation template is on the back of the box (see next paragraph)
- After proper installation, dispose of the packaging materials in compliance with the municipal regulations of the area you are based in

The unit must be handled carefully to avoid damaging the external structure, internal mechanisms and electrical components. Make sure that there are no obstacles on the way to the installation site that could cause the risk of collision, falling or overturning of the unit. All the operations described below must be performed in compliance with all prevailing health and safety at work regulations. This product is subject to the general warranty conditions set forth in the current official Cordivari catalogue. The warranty is valid from the date of delivery and is void if the production batch label is tampered with and/ or removed. The warranty applies after the examination of defects and their causes. The material to be replaced or repaired shall be delivered ex-warehouse at the dealer. The commitment to provide the warranty is subject to the conditions and requirements described below. The radiator has not been damaged during transport, handling or installation and no repair and/or tampering has been carried out by third parties without express authorisation. Before installation, the material has been stored in good conditions and under shelter form the weather. Product installation must be carried out by qualified personnel and in compliance with these instructions and all national and local regulations concerning installation and safety.

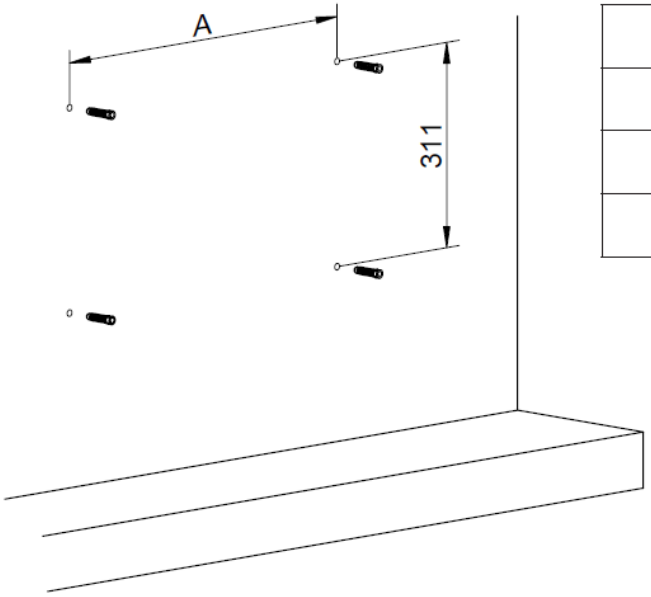
Wall mounting
Wall mounting of the unit must be carried out according to the instructions below. Wall mounting of the unit must be carried out according to the instructions contained in the fastening support package and the figures below. The fastening systems (screws+blocks) are suitable for compact walls or hollow brick walls. For walls made of different materials, the installer is responsible for the use of suitable fastening systems. The minimum distance between the floor and the base of the unit must not be less than 100 mm, in order to allow proper air intake. The minimum distance between the sides of the metal casing and the walls must not be less than 100 mm, in order to allow for proper removal. Finally, the minimum distance between the top of the unit and any wall and/or obstacle must not be less than 400 mm, in order to allow for proper air expulsion.



There is an installation template on the back of the product box.

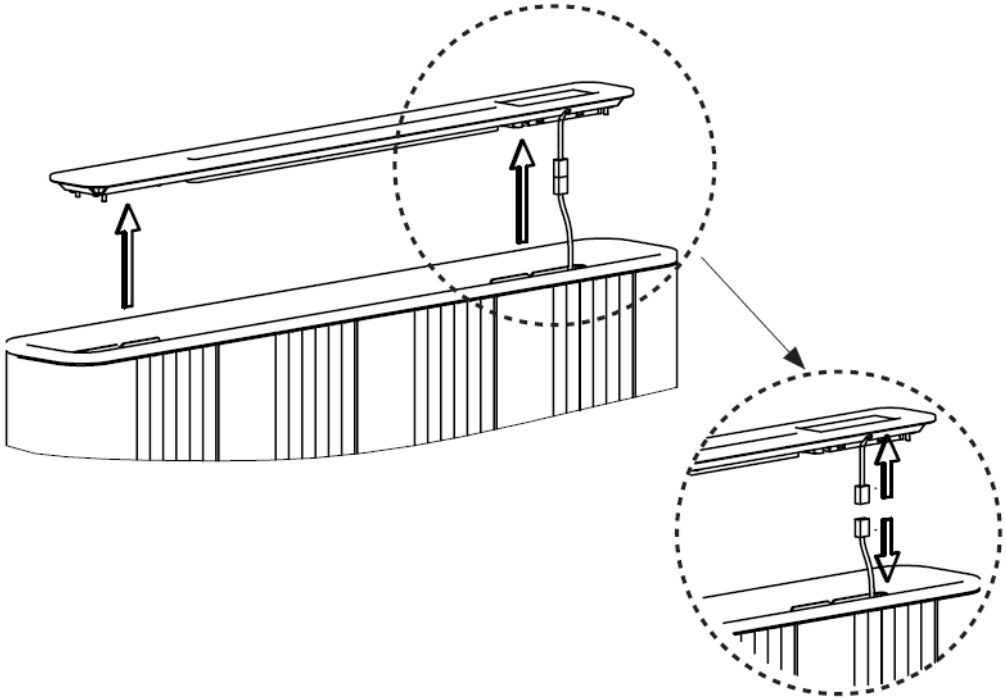
Procedere come segue:

1. Cut out the box to obtain the installation template.
2. Position the template on the wall and/or use the dimensions shown in the table below to drill the holes at the points indicated and apply the expansion plugs.

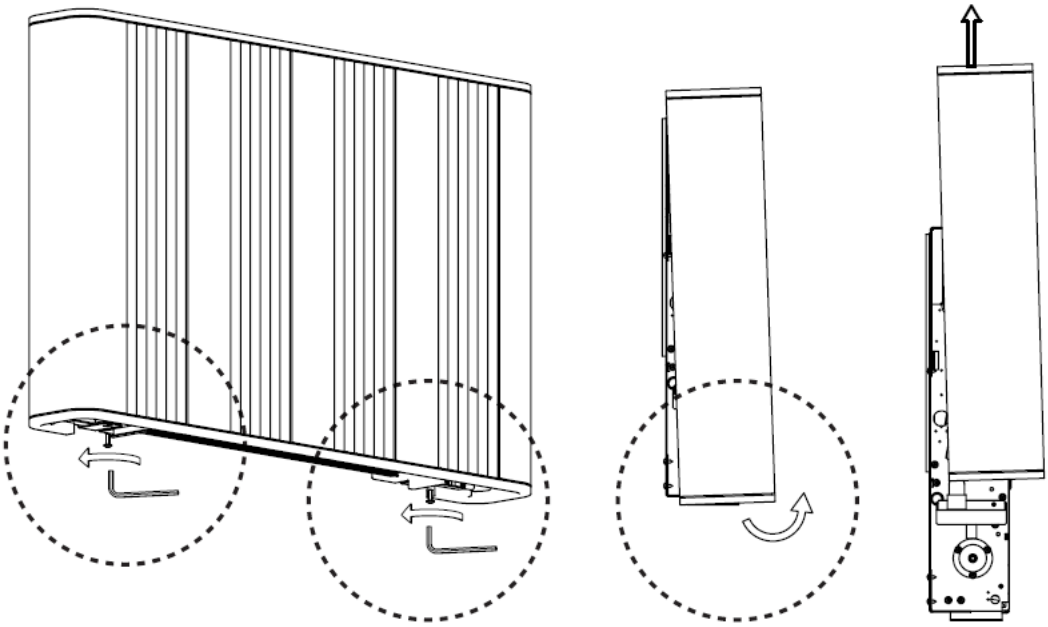


Mod.	A
2000	364
4000	564
6000	764

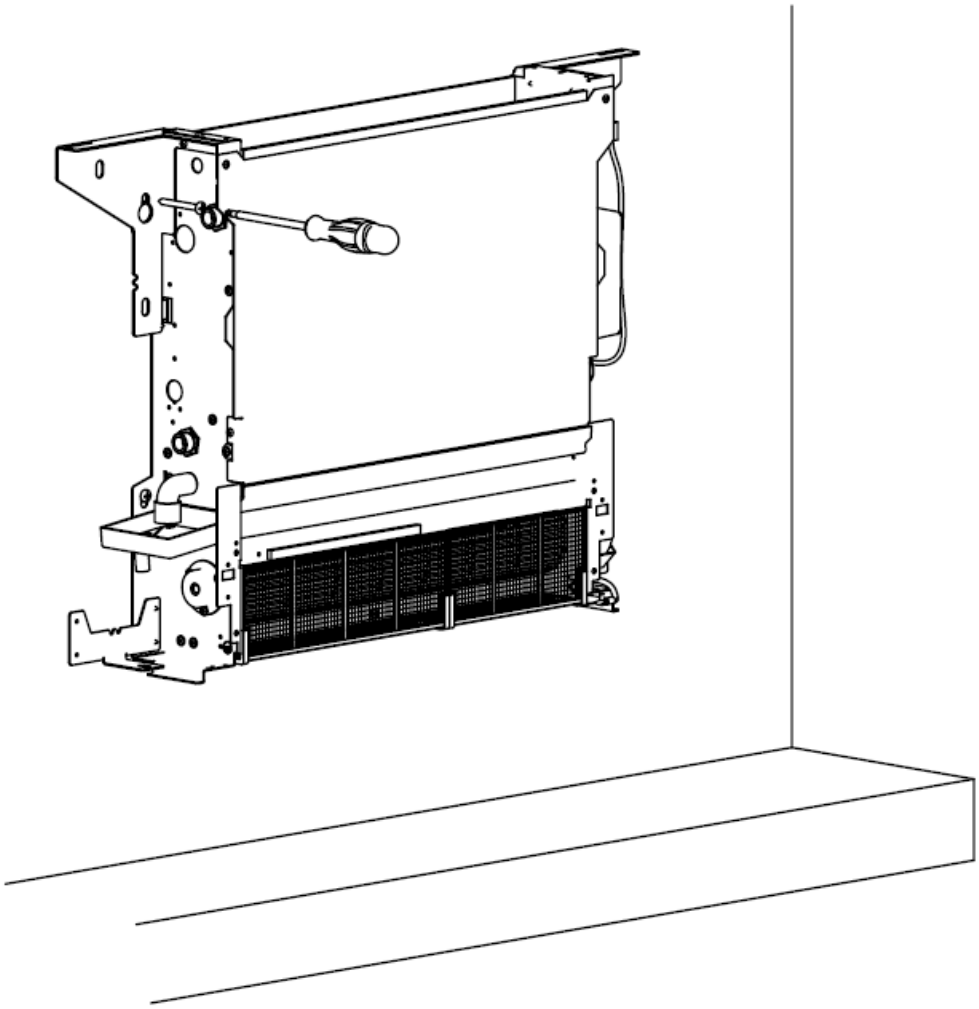
3. Lift the control station and disconnect the connection cable to the user interface. Take care not to damage the control station.



4. Loosen the screws at the bottom using the hexagonal key. Slightly rotate and lift the front casing, disengaging it from the heat exchange unit. Take care not to damage the casing.



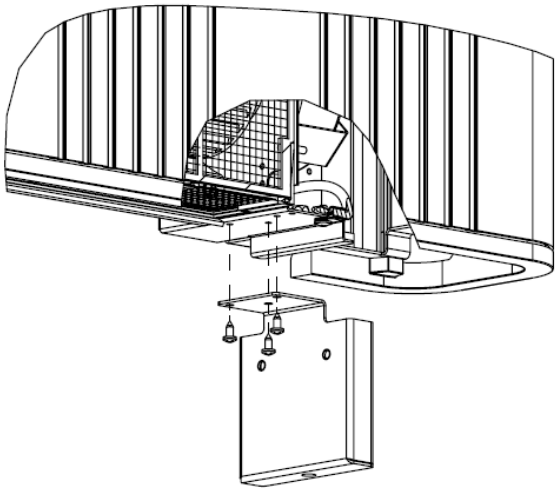
5. Fasten the heat exchange unit using the self-tapping screws.

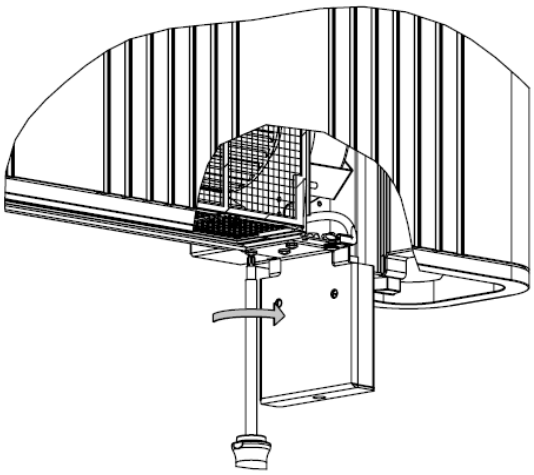


To reassemble the front casing, follow steps 3 and 4 in reverse order. A wall mounting kit with floor anchors and covers, which are useful for concealing pipes and plumbing drains coming from the floor, is also provided as an optional.

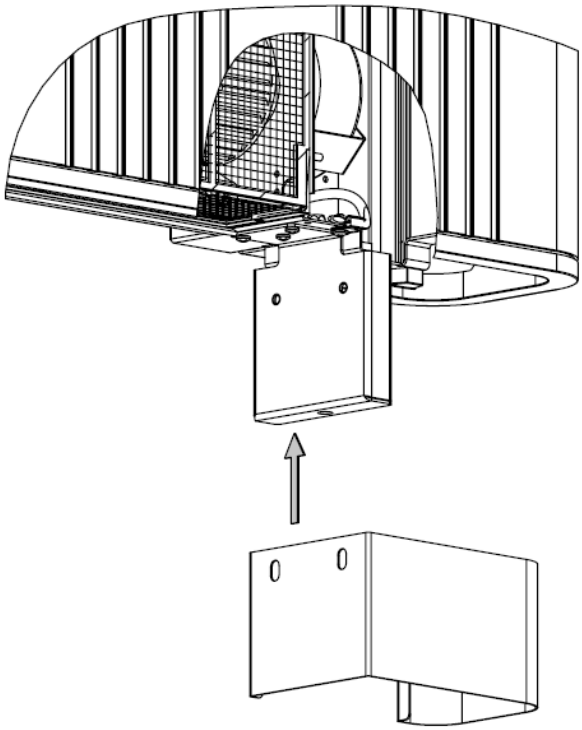
Please refer to the kit instructions or proceed as follows:

1. Fasten the foot supports on the bottom of the unit using the self-tapping screws.





2. Secure the covers on the supports using the metric screws and adjust the vertical stroke according to the installation height from the floor.



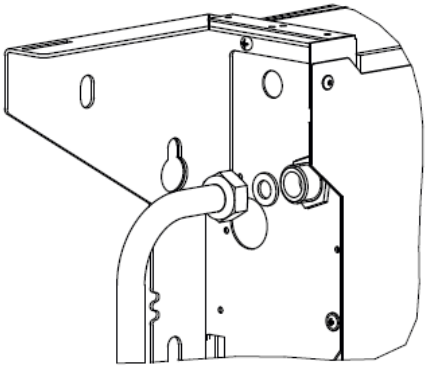
Hydraulic connection

Connection to system pipes

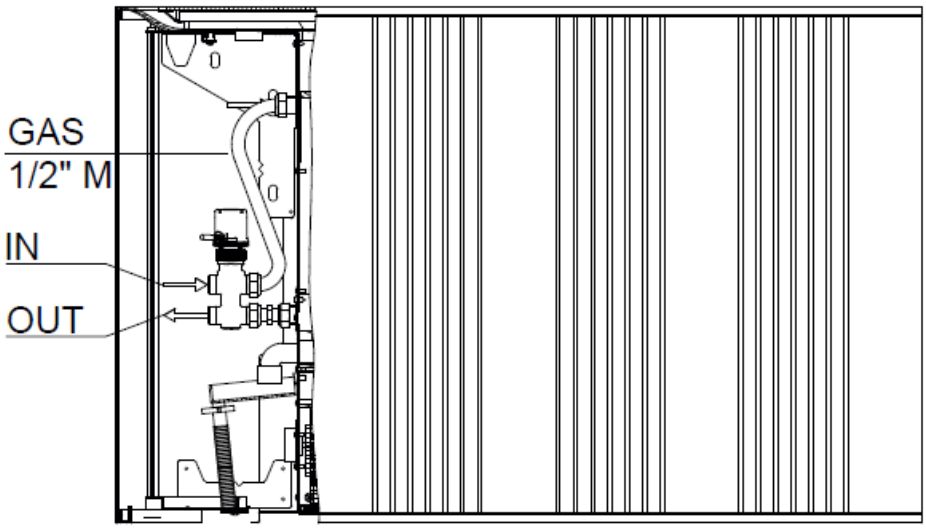
The hydraulic connection can be made either with system pipes from the wall or from the floor. Install the suitable

unit shut-off valves. Proceed as follows:

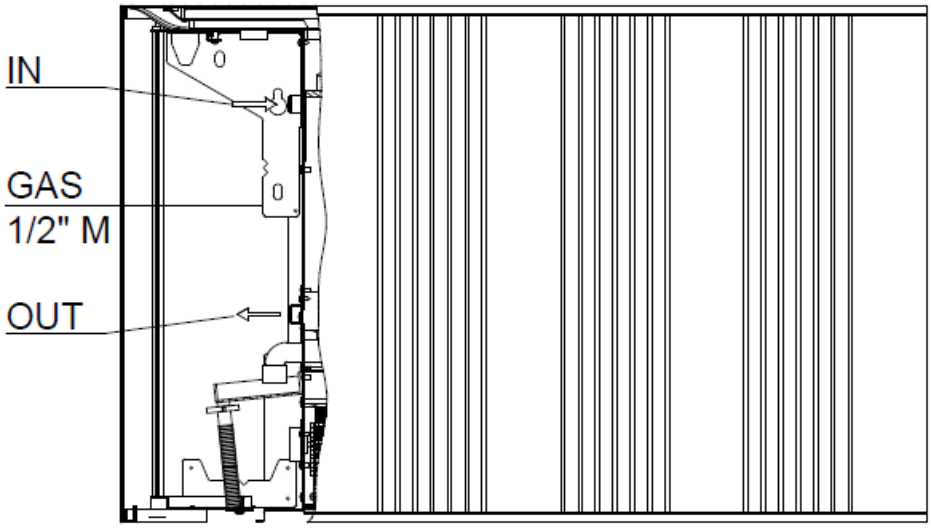
1. Remove the protective caps from the connectors.
2. Connect system pipes using a G1/2” swivel nut and the gasket supplied with the kit.



Perform the inlet/outlet connections as shown in the figure.



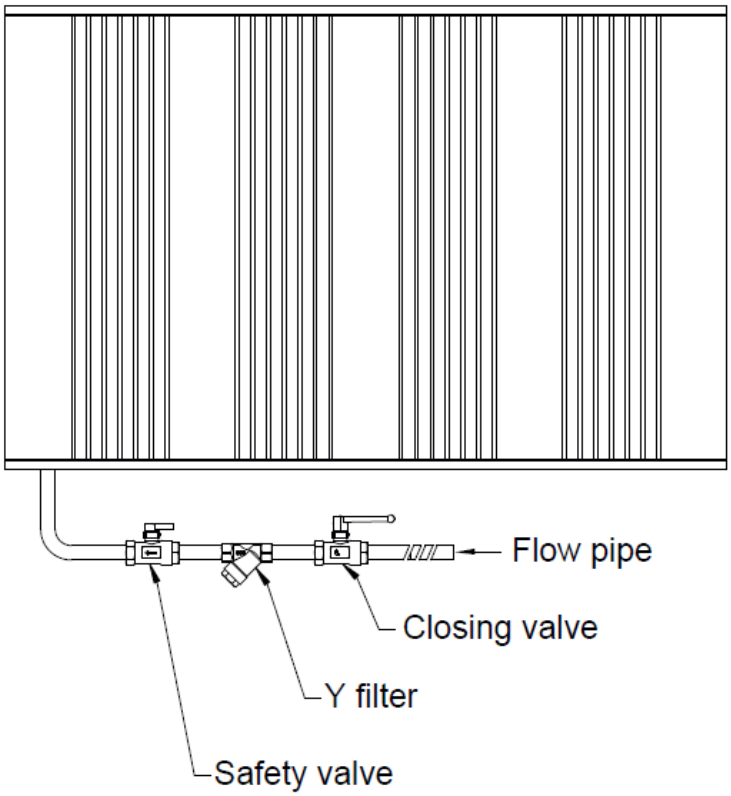
A 3-way bypass solenoid valve is also provided as an optional kit. Please refer to the kit instructions for further details.



All the pipes must be insulated with insulation not less than 9mm thick. Also insulate the fittings and hoses connecting the valves and the radiator front panel for about 15 cm on the valve side. The insulating sheath must be fixed and closed with tape without leaving empty spaces.

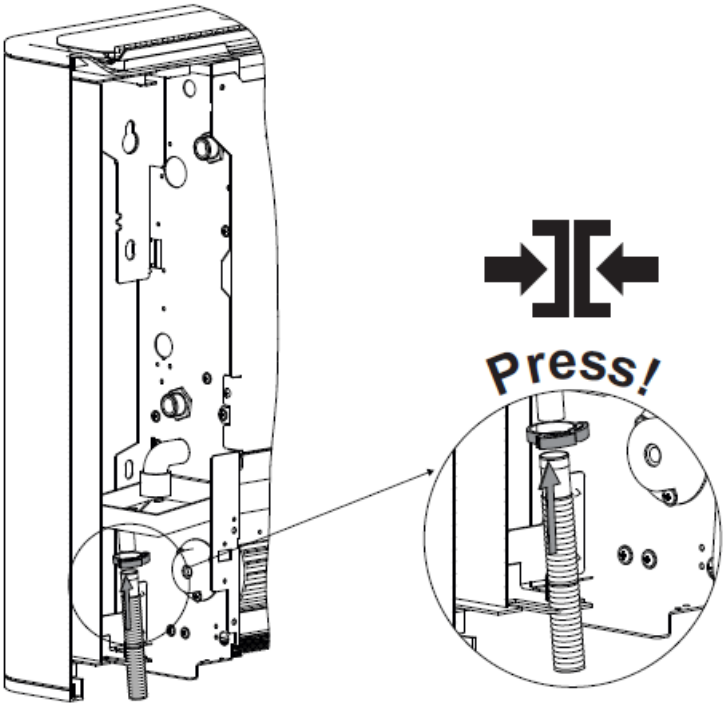
Using a “Y” filter

It is advisable to use a Y filter on the unit delivery to prevent any impurities in the circuit from entering and depositing inside the heat exchanger. Be sure to install the filter opening and purging system facing down. To ensure easy maintenance and cleaning of the filter, it is advisable to install a check valve downstream the filter and a closing valve upstream it.

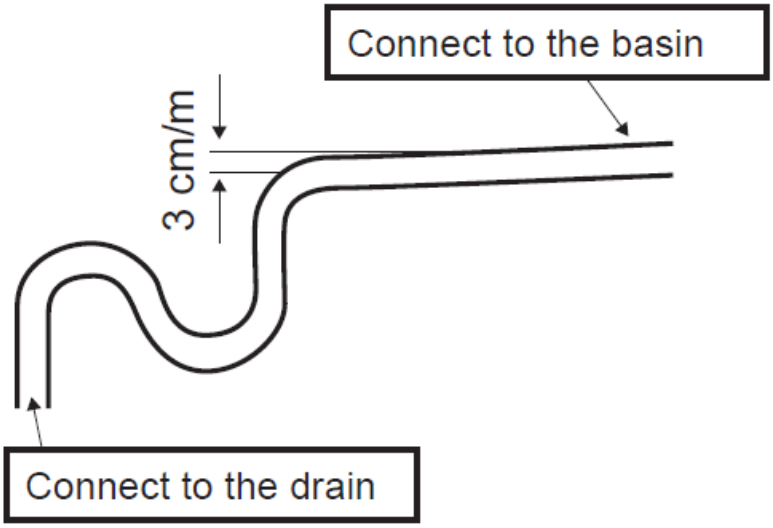


Condensate drain connection

Connect the drain pipe to the condensate collection tray using the pipe clamp.



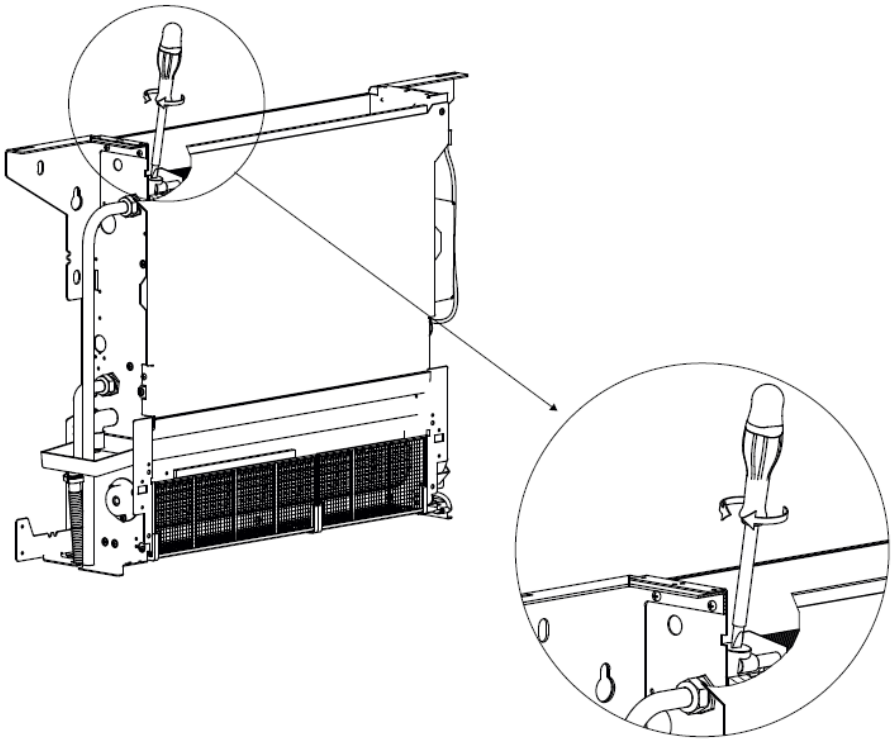
The condensate drainage system must be installed with a suitable slope to ensure the correct flow of condensate to the drain.



To check that the condensate is drained correctly, slowly pour a small amount of water into the condensate collection tray and check that it flows slowly and continuously towards the drain. If necessary, adjust the slope.

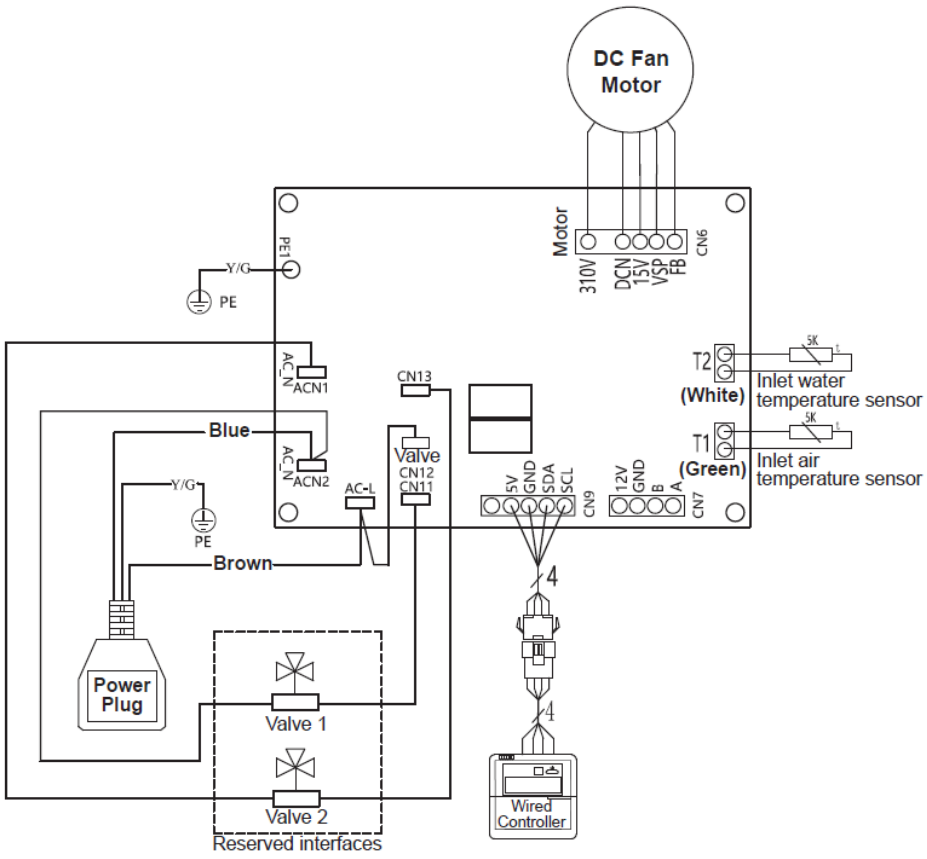
Venting
Once installation is complete, proceed as follows to vent the unit circuit.

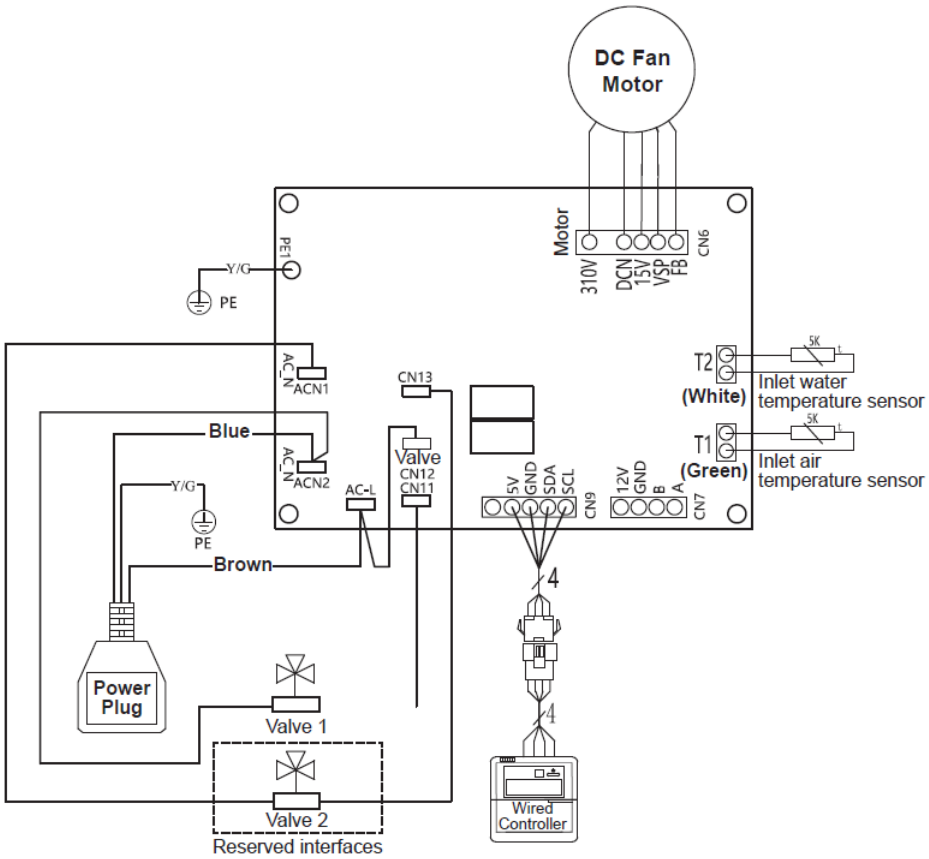
1. Open the flow and return valves so that the water flows inside the circuit.
2. Vent the circuit by opening the valve in the indicated position. Close the valve when there is no more air leakage.



Electrical connection
Before making the electrical connection, check the nominal voltage of the unit (230 V AC 50 Hz) is equal to the mains voltage, and that the socket is able to provide the rated current corresponding to the maximum power of the model selected. Moreover, such socket must be controlled through a double-pole switch used to switch the radiator on and off. In case of damage, the power cable of these radiators can be replaced. Such repair must be carried out solely and exclusively by the manufacturer. Refer to the following wiring diagrams, with and without

solenoid valve.





In case of damage, the power cable of these radiators can be replaced. Such repair must be carried out solely and exclusively by the manufacturer.

Start-up checklist

Before starting the unit, some checks must be made to make sure that the unit operation is correct.

The following checklist represents a minimum list of checks to be performed before the system is started up:

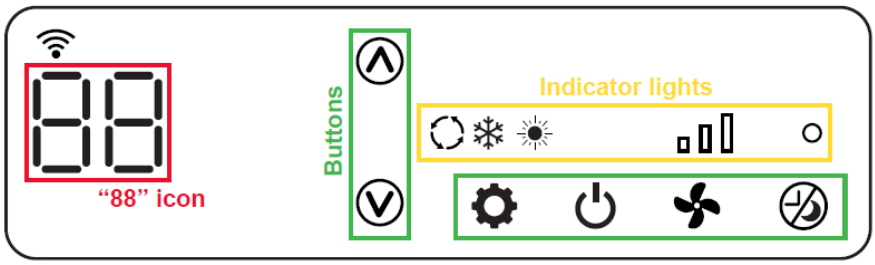
1. Make sure the fans are unlocked and can rotate freely without encountering obstacles;
2. Check the correct water flow in all the pipes;
3. Check that the entire system is in the correct operating conditions as required for correct installation;
4. Check the correct voltage of the power supply system and check that it is within the operating limits allowed by the unit;
5. Check that the unit is correctly connected to the electrical grounding system;
6. Check the correct presence of cut-off devices and electrical protection;
7. Check that the electric cable connections are duly performed and tightened;
8. Check for any leaks on all connections and hydraulic fittings;
9. Check that the unit is positioned so as to obtain good ventilation;

After carrying out all the pre-start checks and making sure that the electrical connections comply with all the regulations in force in the country of installation, the unit can be started. Connect the unit to the power supply and follow the start-up instructions as described below. If loud noises or sounds are heard after starting the unit, disconnect the power supply to secure the unit.

Operating instructions

User interface display

The user interface display is organised as follows:



	WiFi Operation		"88" Icons Display		Auto Mode Light
	Up Button		Mode Setting Button		Cooling Mode Light
	Down Button		Timing & Sleep Button		Heating Mode Light
	ON/OFF Button		Air Volume Button		Air Volume Lights

When the unit is connected to the power supply but not switched on, the icon shows the current inlet air temperature (ambient temperature). When the unit is started up, all icons light up and an acoustic signal is emitted.

Set the desired temperature by clicking on . The icon that shows this set-point and then, after 5

seconds, return to showing the inlet air temperature. After 30 seconds of inactivity, the display freezes and the icon appears with reduced brightness. All icons for the current operating modes and settings are kept illuminated.

Operations

ON/OFF key
When the unit is in standby mode, press the ON/OFF key for 3 seconds to start it. When the display is unlocked, press it briefly to switch the unit on/off. Finally, when in a sub-menu, press it to return to the main menu.

UP AND DOWN KEYS
When the unit is switched on and the display is unlocked, the desired temperature can be set by pressing the UP/DOWN keys. You can also use the keys to scroll through the different operating settings or set parameters.

MODE key
When the unit is switched on and the display is unlocked, the desired operating mode can be set by pressing the MODE key. You can select HEATING, COOLING or AUTO. When the mode has been selected, the corresponding icon remains lit.

HEATING mode: in order for the unit to work in this mode, the water flow temperature in the circuit must be above 24°C. Otherwise, the icon flashes and ventilation stops.

COOLING mode: in order for the unit to work in this mode, the water flow temperature in the circuit must be below 21°C. Otherwise, the icon flashes and ventilation stops.

AUTO mode: the unit enters the COOLING mode if the ambient temperature exceeds the set-point by at least 2°C. Conversely, it enters the HEATING Mode if the ambient temperature is at least 2°C below the set-point. In the intermediate situation, the last set mode is maintained.

AIR VOLUME key
It allows the fan speed to be set to one of the following 4 classes: LOW, MEDIUM, HIGH, AUTO.
Depending on the selection made, the bar indicator lights up: one bar with LOW, two bars with MEDIUM, three bars with HIGH, three flashing bars with AUTO.

TIMING & SLEEP key
It allows access to the programming settings (TIMING) and the sleep mode (SLEEP). To program the switch-on, when the unit is switched off, briefly press TIMING & SLEEP: the indicator lights up brighter and the icon flashes. Use the UP/DOWN keys to select the switch-on time (0-24, in 1-hour intervals). Select “0” to quit programming. Only one programming can be set at a time. To program the switch-off, when the unit is switched on, briefly press TIMING & SLEEP: the indicator lights up brighter and the icon flashes. Use the UP/DOWN keys to select the switch-on time (0-24, in 1-hour intervals). Select “0” to quit programming. Only one program can be set at a time. To enter the sleep mode (SLEEP), press the button for 3 seconds. When this mode is active, the unit decreases (if in HEATING) or increases (if in COOLING) the set temperature by 2°C. The fan remains fixed at LOW speed. The unit remains in this mode for 8 hours, at the end of which it automatically stops. When the mode is selected, the indicator flashes for 1 second every 3 seconds.

WiFi key
It is possible to connect the product via WiFi and to use the control features provided by the Smart Life app, which can be downloaded on the main platforms. The connection can be made in two ways.

First way: if you need to connect the mobile device and the unit's WiFi module to the same external WLAN network, press + for a long time. The WiFi icon flashes quickly.

Second way: if you need your mobile device to act as a hotspot for the unit's WiFi module, press + for a long time. The WiFi icon flashes slowly.

Advanced programming

The fan coil unit operation is adjusted by 6 parameters:

Parameter number	Parameter name	Notes
T1	Air inlet T	Current value
T2	Water inlet T	Current value
Pr	Fan speed	Current value
Sr	SW version	(= speed [rpm] * 100)
D1	EE version	-
D2	Reserved	-
D3	Reserved	-

To access the parameter setting, with the unit on standby, press the UP/ DOWN keys simultaneously for 3 seconds, paying particular attention to simultaneity. Use the UP/DOWN keys to scroll to the desired parameter and use the MODE key to read the current parameter value.

Do not change parameters D2 and D3 as they are reserved for basic firmware programming by the manufacturer. It is possible to detect certain malfunction conditions recognised by the unit's electronic components, by means of error codes shown below. In the event of multiple malfunctions, the error codes will be shown in sequence on the display.

Code	Possible cause
E1	Fan inlet air temperature sensor
E2	Circuit inlet water temperature sensor
E3	Fan motor

Remote management with Smart Life app

The unit, equipped with WiFi connectivity, can be managed remotely with the Smart Life app, which can be downloaded from the main platforms.

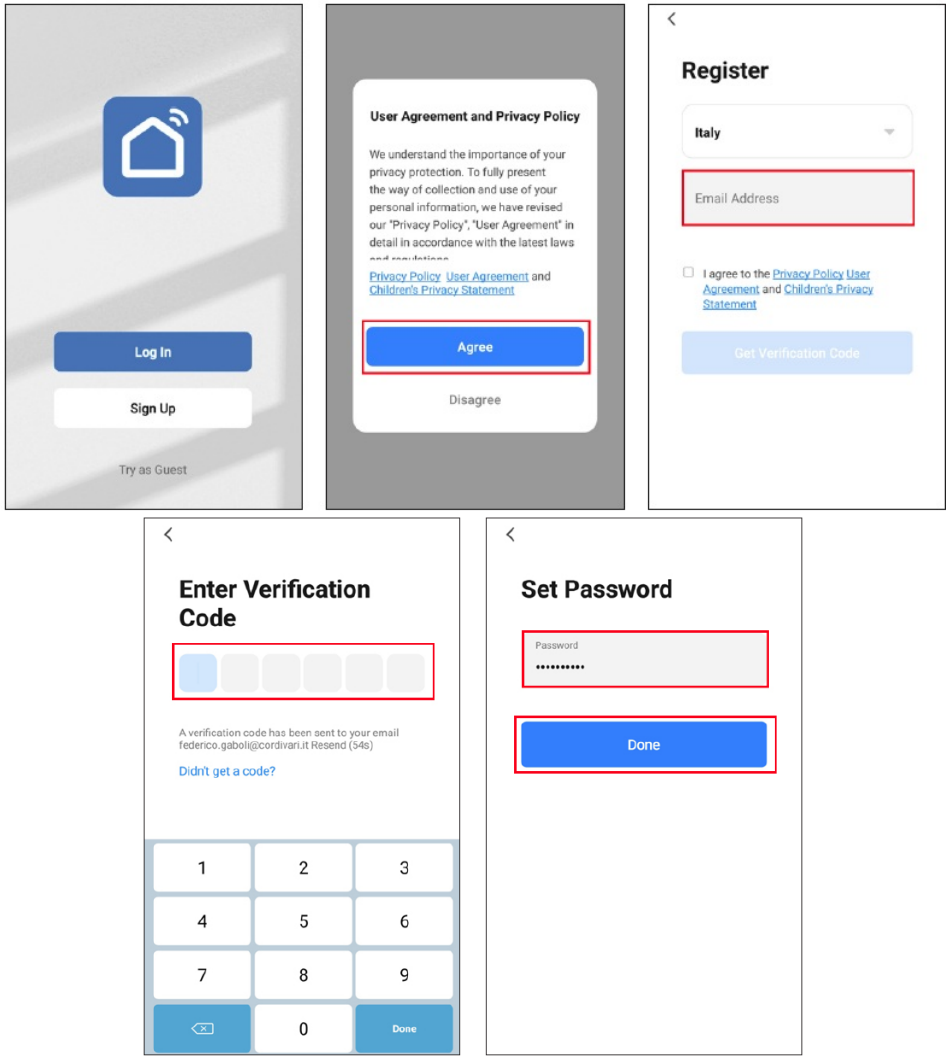
Proceed as follows.

1. Search for the Smart Life app from the selected store or scan the following QR code to access the website. Download and install the app.

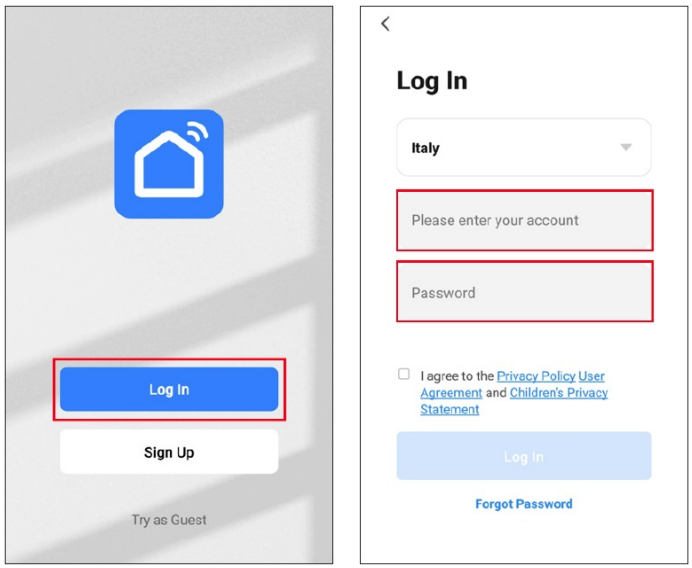
Android iOS

2. Log into the app and, if you do not already have an account, create one by following the instructions below:
    1. Click on SIGN UP, then AGREE.
    2. Enter telephone number or e-mail address.

3. Click on GET VERIFICATION CODE and then enter the code that was sent to validate the account.
4. Set your password and click on DONE.

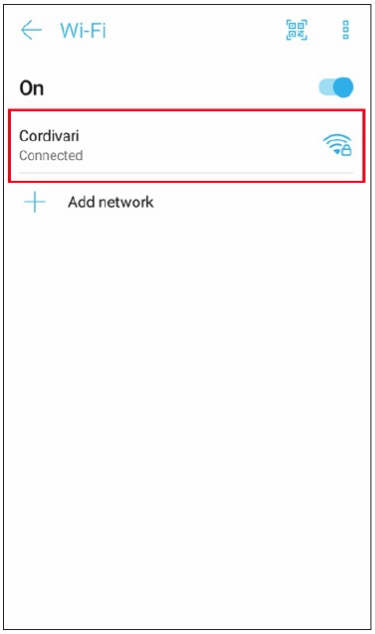


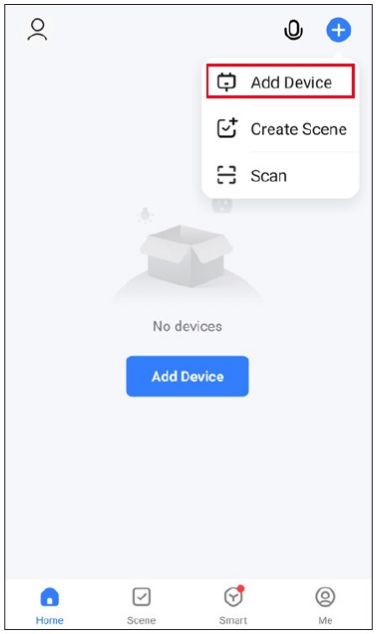
3. **If you already have an account, please proceed as follows:**
    1. Click on LOG IN and enter your account name and password.

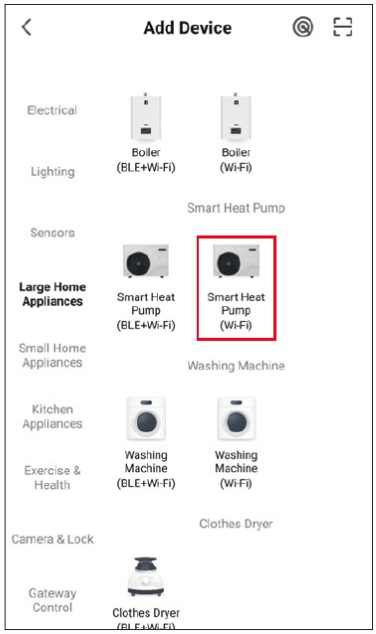


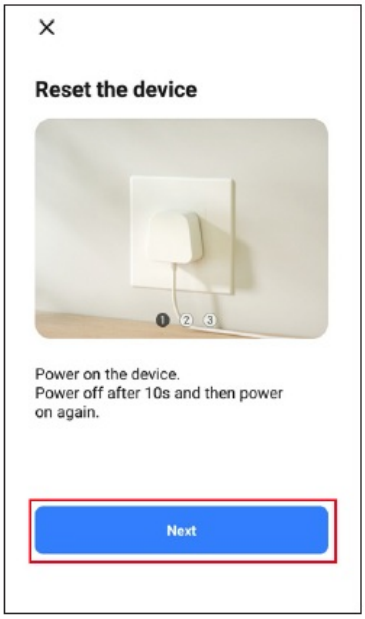
4. **Connect to the app in WiFi default mode (Method 1) by following the steps below:**
    1. Connect your mobile device to the available WiFi network.
    2. Enter the app and click on “+” or ADD DEVICE.
    3. Select the LARGE HOME folder and click on SMART HEAT PUMP (WIFI).
    4. Select the same WiFi network to which the mobile device is connected and enter its password. Click on NEXT.

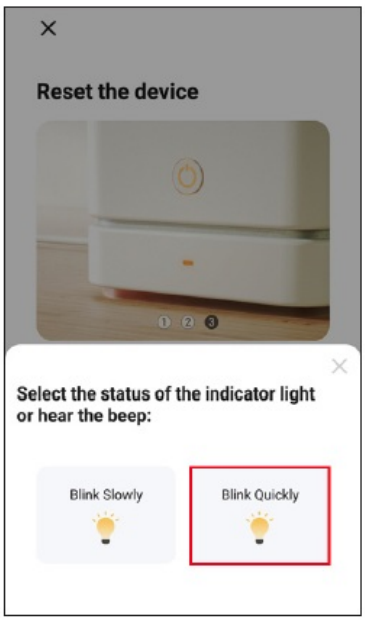
5. Reset the unit and press + for a long time.
    1. **The WiFi icon flashes quickly:** the unit is trying to synchronise. If this happens, click on CONFIRM THE INDICATOR IS BLINKING and then on BLINK QUICKLY.
6. The app will show that the unit has been added successfully. Click on DONE to end the procedure.

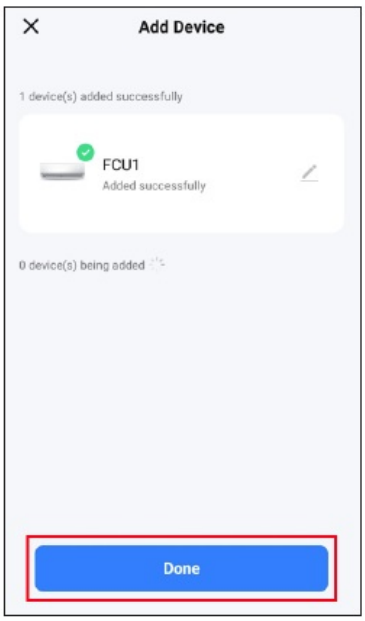




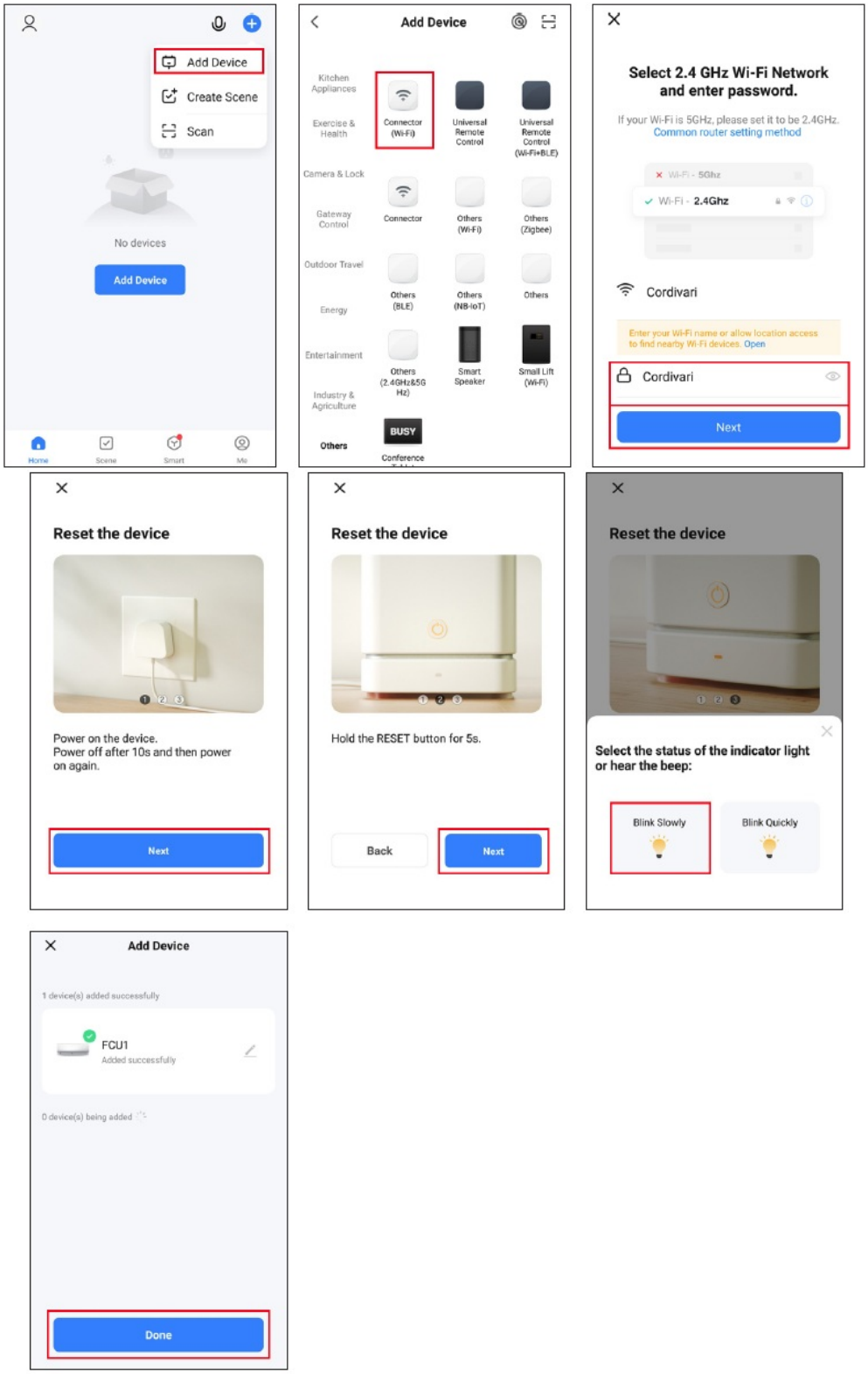








5. Connect to the app in WiFi default mode (Method 2) following the steps below
    1. Reset the unit and press + for a long time. The WiFi icon flashes slowly: the unit is trying to synchronise.
    2. Enter the app and click on “+” or ADD DEVICE.
    3. Select the OTHERS folder and click on CONNECTOR (WIFI).
    4. Close the pop-up window that appears by clicking on the “X”.
    5. Enter your WiFi network credentials and click on NEXT.
    6. Click on CONFIRM THE INDICATOR IS BLINKING and then on BLINK SLOWLY.
    7. The app will show that the unit has been added successfully. Click on DONE to end the procedure.



After the unit has been added, the name can be changed. The unit's management interface appears as in the figure below.

For further advanced features, please refer to the user guides related to the Smart Life app and available on the web.

Technical Specifications:
Detailed technical specifications for different air volumes, sound power, electric power consumption, heating and cooling capacities, airflow rates, and water flow rates are provided for each model.

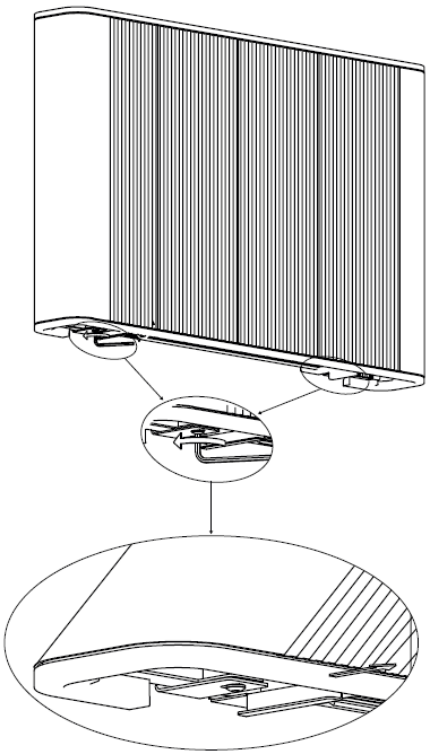
Installer Information:
Instructions for lifting the control island, disconnecting the connection cable, wall mounting, and hydraulic connections are detailed for proper installation.

Maintenance

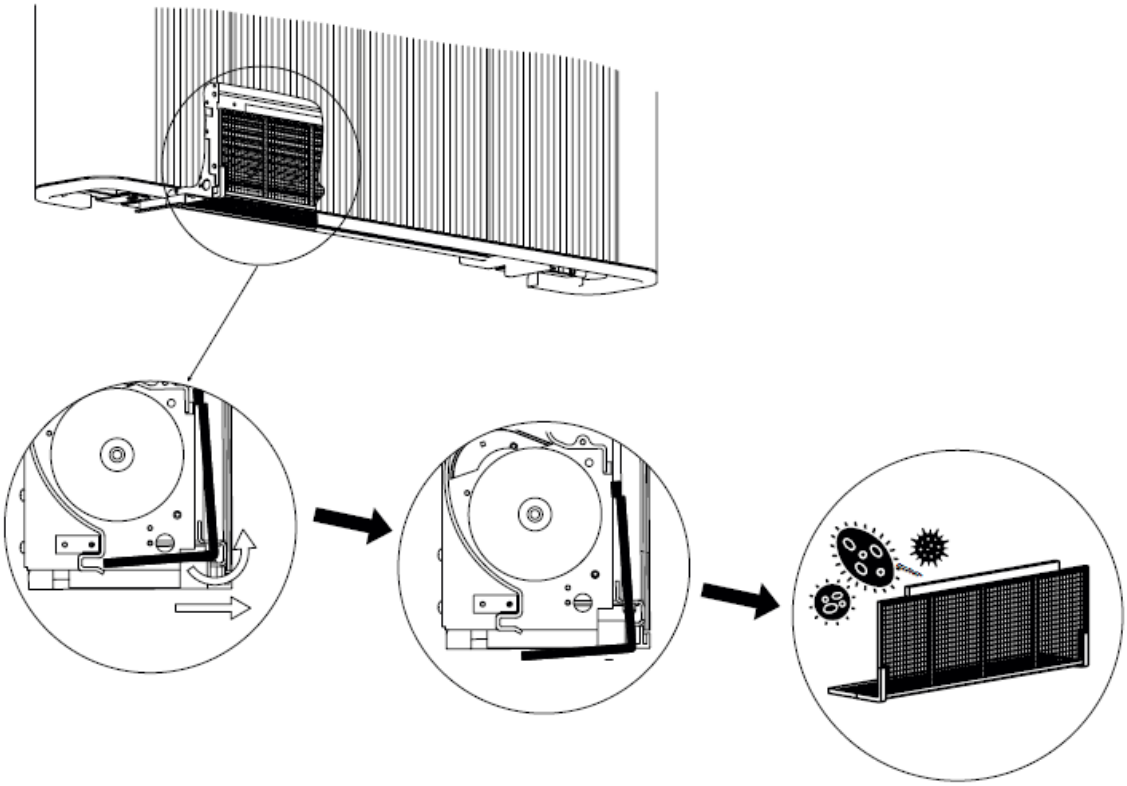
Modifying the structure, hydraulic layout or wiring of the appliance is prohibited. All maintenance work can only be carried out by trained and qualified personnel. The error codes shown in this manual can help identifying the nature of any anomalies or malfunctions.

Cleaning the dust filter
To ensure the correct air flow entering the unit, the dust filter must be cleaned monthly or more frequently if necessary (for example, in particularly dusty environments). Proceed as follows:

1. Remove the anti-tip screws at the base of the unit and tilt the metal casing slightly outwards.



2. Pull out the filter as shown below.



3. Cleaning should be done by removing all dust deposits with a vacuum cleaner and then by washing in warm water using a neutral, nonaggressive detergent.
4. Once cleaned, allow the filter to dry completely.
5. Refit the filter on the unit by following the previous steps in reverse order. Make sure to leave the filter tabs visible (do not insert them into the upper black guide).

Checking for the presence of air in the system

It is advisable to periodically check the airflow inside the system circuit to ensure that the unit always operates correctly. If necessary, vent as indicated in paragraph 7.4.

Drainage
In case of prolonged inactivity, it is advisable to drain the unit.

DECLARATION OF CONFORMITY

The company Cordivari S.r.l., with a registered office in Zona Industriale Pagliare, Morro d'Oro (TE), Italy, declares under its own responsibility that the electric Radiators referred to in para. 2 comply with the following standards:

- EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019 + A15:2021
- IEC 60335 1:2010+AMD1:2013+AMD2:2016
- EN IEC 60335-2-40:2023+ EN IEC 60335-2-40:2023/A11:2023
- IEC 60335 2 40:2022
- EN 62233:2008
- EN IEC 61000-3-2:2019+A1:2021
- EN 61000-3-3:2013+A1:2019+A2:2021
- EN IEC 55014-1:2021
- EN IEC 55014-2:2021
- EN 300 328 V2.2
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4

Health assessment according to EN 62479:2010

- EN 62311:2020
- EN IEC 63000:2018

and therefore comply with the essential requirements of European Directives:

- Directive 2014/53/EU
- Directive 2014/35/EU
- Directive 2014/30/EU
- Directive 2012/19/EU
- Directive 2009/125/EC
- Directive 2011/65/EU amended by 2015/863/EU and 2017/2102/EU
- Commission Regulation (EU) 2016/2281

Morro D'Oro, 25/11/2023

Cav. Ercole Cordivari
Amministratore unico

FAQ (Frequently Asked Questions)

Q: How should I dispose of the product at the end of its life?
A: Follow the instructions on the product label and dispose of it at a specialized collection point in compliance with directive 2002/95/EC.

Q: What are the power consumption values for different air volume settings?
A: The manual provides detailed information on power consumption at low, medium, and high air volume settings for each model.

Documents / Resources

	CORDIVARI VNT2000 Design Run Fan Coil [pdf] User Manual VNT2000 Design Run, VNT4000 Design Run, VNT6000 Design Run, VNT2000 Design Seven Lines, VNT4000 Design Seven Lines, VNT6000 Design Seven Lines, VNT2000 Design Run Fan Coil, Design Run Fan Coil, Run Fan Coil, Fan Coil, Coil

References

- Designer Radiators: modern style radiators | Cordivari Design
- Designer Radiators: modern style radiators | Cordivari Design
- User Manual