Installation Guide

Ceiling Suspended (without ERV option)

ephoca

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Unitary Small HP
AHRI Standard 210/240

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DISCLAIMER

IMPORTANT - TRAINING IS REQUIRED PRIOR TO PERFORMING INSTALLATION.

While this guide outlines the general installation requirements for the unit, it does not replace required installer training. Before commencing installation, the project manager must contact the Ephoca VIP Department at 216-710-1000 to coordinate training for the installer.

Failure to ensure that installation is performed by Ephoca-trained personnel may result in improper operation or equipment damage, and may void the warranty.

Training may be conducted in person or remotely (online).

This overview serves as the official installation training and may include overview videos, best practices, and system requirements

This documentation is intended for informational use only and should not be construed as a binding representation or contract. This documentation is provided “as is” without warranty of any kind, either express or implied. Ephoca and its affiliates disclaim all liability arising from the use or misuse of this documentation.

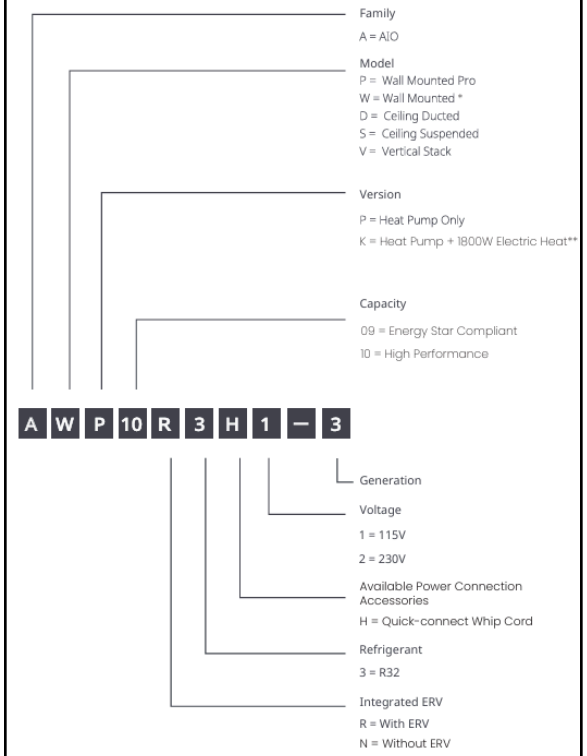
Illustrations may not be to scale, and all information and dimensions stated herein are subject to change at any time at the sole discretion of Ephoca. Benefits described herein apply only to the extent that the product is installed correctly in the correct application and used for its intended purpose.

Ephoca is constantly innovating and improving its products and reserves the right to modify product design and specifications without notice, and without incurring any obligations.

MODEL NUMBER NOMENCLATURE

The code identifies the family, model, version, size, voltage, accessories, refrigerant type, and ERV option. See the diagram below for details.

AIO Ceiling Suspended (without ERV option) nomenclature



* 8’ Vents : Just generation (e.g. = 3)
6’ Vents : Generation + SP (e.g. = 3SP)
** Field convertible to 900W

CONTENTS

1. READING THIS DOCUMENTATION

Some language and symbols in this documentation have specific meanings.

1.1 Documentation-specific language

Reference to the product
Any reference to "the unit" is meant to refer to the AIO Ceiling Suspended (without ERV option) unit.

Unit orientation
All directions in this guide (left, right, top, and bottom) are given from the perspective of facing the unit.

Role definitions
This guide is primarily intended for installers. The roles of end users and service technicians are also defined here for reference.

- **User:** a non-expert who can safely operate the unit and perform basic diagnostics and maintenance.
- **Installer:** a trained and certified HVAC installation technician responsible for the correct installation of the unit as indicated in the installation guide and in accordance with all local and national codes.
- **Service technician:** a trained and qualified HVAC service technician (including OSHA-required safety practices and industry best practices) as required by national and local codes.
- **Trained HVAC technicians:** a group term for both installation and service technicians.

1.2 Icons and symbols

Warnings and annotations are provided throughout this guide. It is essential to read each carefully and follow the instructions stated.

Warning panels
The warning panels represent the level and immediacy of risk. Each warning panel displays a background color and a signal word.

DANGER

The red panel with the **DANGER** signal word indicates a hazardous situation that, if not avoided, will result in imminent death or serious injury.

WARNING

The orange panel with the **WARNING** signal word indicates a potential hazard that, if not avoided, could result in death or serious injury.

CAUTION

The yellow panel with the **CAUTION** signal word indicates a hazardous situation that, if not avoided, could result in minor to moderate injury or property damage.

Warning pictograms
The warning pictograms represent the type of risk and are used in conjunction with any of the warning panels.

	The three vertical, S-shaped, parallel lines pictogram indicates information related to a hot surface or explosion hazard.
	The lightning-bolt pictogram indicates a warning related to electrical hazards.
	The three vertical, S-shaped, parallel lines pictogram indicates information related to a hot surfaces hazard.
	The hand injury pictogram indicates information related to a moving part and sharp surfaces hazard.
	The slippery surface pictogram indicates information related to a slipping hazard.
	The exclamation-mark pictogram indicates general hazards (environmental hazards, moving parts hazards, lifting hazards, and other categories).

Annotation icons
Annotations are provided throughout this guide. It is essential to read each carefully and follow the instructions stated.

Indicates critical information for correct operation or installation.

Indicates supplemental information, tips, or useful background information.

2. SAFETY GUIDELINES - READ BEFORE INSTALLING

This guide outlines the steps necessary to install the AIO Ceiling Suspended (without ERV option) unit safely and securely. By following these instructions, the risk of damage to the equipment can be significantly reduced.

The installer is responsible for ensuring that the unit is installed safely and securely, in full compliance with all applicable local and national codes.

The precautions in this guide supplement, rather than replace, established safety practices. In case of conflict, always follow the more stringent requirement.

Only a trained HVAC installation technician may install this unit.

Read the entire installation guide before installing the unit. Follow all safety notices, warnings, and labels carefully. Failure to do so may result in property damage, serious injury, or death.

2.1 Fire/explosion hazards

⚠WARNING

- The unit shall be stored in a room without continuously operating ignition sources (for example, open flames, an operating gas appliance, or an operating electric heater).
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- In the event of abnormal conditions (such as a strange or burning smell, noise, or smoke), turn off the unit and disconnect it from its power source immediately. Report the issue immediately to your Ephoca representative or distributor.
- Servicing shall be performed only as recommended by the manufacturer.

2.2 Refrigerant hazards

⚠DANGER

- Flammable refrigerant is used. Only trained HVAC technicians are authorized to handle refrigerant charging, recovery, or disposal.
- Do not puncture the refrigerant copper tubing.
- Do not expose the refrigerant copper tubing to heat sources, sparks, or open flames.
- Do not use open flame or high-heat sources for leak detection (for example, halogen lamps); fire or explosion can result. Only use approved electronic detectors when checking for refrigerant leaks.
- Refrigerant under pressure; handle with appropriate protective equipment (PPE).

⚠WARNING

- Do not leave refrigerant cylinders in confined spaces; always store and use them in well-ventilated areas. Keep ventilation openings clear of obstruction.
- Do not charge, replace, or mix the R32 refrigerant with any other refrigerant type. Using other refrigerant types may result in equipment damage and safety risks.
- An unventilated area where a unit using flammable refrigerants is installed shall be constructed so that, in the event of a refrigerant leak, gas will not accumulate to a level that creates a fire or explosion hazard. Be aware that leaking refrigerants may be odorless.
- Never store or transport refrigerant cylinders in temperatures above 122 °F (50 °C).
- During storage, protect cylinders and the unit from mechanical damage, tipping, or corrosion.

⚠CAUTION

- Leak testing must be completed after installation is complete.
- The unit uses flammable refrigerant (R32). If the unit does not cool or heat, it may indicate a refrigerant leak. If a leak is detected, do not touch the unit. Ventilate the area and immediately consult the building manager or unit manufacturer. Refrigerant may cause cold burns.
- When handling the unit, verify that no other substance (including air) other than the contained R32 refrigerant enters the refrigerant circuit.
- Do not release refrigerant into the atmosphere; follow environmental regulations. In the US, refrigerant handling must comply with the EPA Clean Air Act Section 608 (certified personnel, recovery, reclaim, and recycling requirements).
- Follow all local environmental regulations for refrigerant handling and disposal.

2.3 Hot surface hazards

⚠DANGER

- Only trained HVAC technicians are permitted to access internal components while the system is hot.
- Hot parts. Do not operate the unit with the cover removed. Certain components (compressor, coils, discharge piping, and other parts) may reach high temperatures during operation.

⚠CAUTION

- Allow sufficient time for surfaces to cool before handling or servicing. Contact with hot parts can cause burns or damage to equipment.
- Keep flammable materials away from hot surfaces at all times.
- Use appropriate PPE (gloves, protective clothing) when touching or working near hot components.

2.4 Electrical hazards

⚠DANGER

- Only trained HVAC technicians are authorized to install or service electrical components.
- Disconnect all electric power, including remote disconnects, before installation, maintenance, or servicing. Verify that power to the entire system is down, including any peripherals, third-party devices, power backup systems, and other devices operating in the unit network..

⚠WARNING

- All connections must be prepared only by a certified electrician.
- Wiring and grounding must comply with the National Electrical Code (NEC) and all applicable local codes and regulations. Improper wiring or loose connections may cause overheating, fire, or electric shock.
- Connect only to a dedicated branch circuit of proper ampacity, protected by a correctly sized overcurrent device (per unit nameplate and wiring diagram).

⚠CAUTION

- Follow OSHA-compliant Lockout/Tagout (LOTO) procedures.
- Use only standard circuit breakers and fuses that match the unit's rating.
- Do not use an extension cord or adapter plug, or connect multiple devices to a single outlet, as this may cause a fire or electric shock.
- Do not modify plugs or remove the grounding pin; always connect to a grounded 3-prong power supply.
- Do not bundle, pull, damage, or modify the power cord. Do not place heavy objects on it or heat sources on or near it, as this may cause a fire or electric shock.
- Do not operate the unit with damaged electrical cords or plugs. If the power cord is damaged, it must be replaced by the manufacturer or licensed service personnel.
- Do not connect the ground wire to gas pipes, lightning rods, or telephone ground.
- Ensure electrical panels are closed and secured before energizing equipment.
- In the event of a blackout or thunderstorm, turn the unit off and disconnect it from the power source immediately.
- Verify that the electrical supply voltage, electrical service, and power quality meet the equipment requirements before operating the unit. Do not operate the equipment under improper voltage conditions or with excessive Total Harmonic Distortion (THD). Damage or premature failure of the quoted equipment resulting from improper voltage conditions, inadequate electrical service, or operating the equipment with excessive THD (Total Harmonic Distortion) levels will void the Manufacturer's warranty.

2.5 Moving parts hazards

⚠ DANGER

- Moving parts. Do not operate the unit with the cover removed.
- Ensure power is disconnected and components have come to a complete stop before accessing the interior. Internal fans, motors, and other moving components may start automatically when power is supplied.

⚠ WARNING

- Keep hands, hair, tools, and loose clothing away from fans and moving components. Contact with moving parts can cause serious injury.
- Do not remove, bypass, or disable protective covers, guards, or safety interlocks..

⚠ CAUTION

- Only trained HVAC technicians are authorized to service the unit with the panels removed.
- Reinstall all panels before operation and keep hands away from the fan area to prevent injury.

2.6 Handling and mechanical hazards

⚠ CAUTION

- Heavy load. Two or more people are required to lift and mount the unit; respect safe lift limits to prevent injury.
- Protect control panel surfaces from being pressed with tools or sharp objects; use fingers only to prevent damage.

⚠ CAUTION

- Edges inside the unit may be sharp - wear hand protection when handling sheet-metal parts to prevent cuts.

2.7 Installation environment hazard

⚠ CAUTION

- Do not install above an elevation of 8,858 ft (2,700 m) unless specifically approved by the manufacturer — reduced air density may impair safe operation.
- Indoor installation only. Do not install outdoors or in locations exposed to rain, snow, or direct weather.
- When working at heights, follow all applicable fall protection regulations and guidelines. Use guardrails, harnesses, and barricade the area below to protect against falling objects.
- Verify the supporting structure can carry the full unit weight and operating loads, including vibration and dynamic loads.
- Install using proper anchors, fasteners, and torque.
- Keep the unit upright at all times; never lift it by its covers, panels, or refrigerant copper tubing.
- Protect the unit from impact, vibration, tipping, dust, and corrosive atmospheres during installation and operation.
- Do not install or store the unit in rooms with continuously operating ignition sources (for example, open flames, gas appliances, electric heaters).
- Maintain required service clearances and ensure ventilation openings remain unobstructed. Obstruction can cause malfunction or overheating.
- Dispose of all packaging materials safely to prevent suffocation, tripping hazards, or fire hazards.

⚠ CAUTION

- Follow all manufacturer instructions and applicable local building codes.

⚠ WARNING

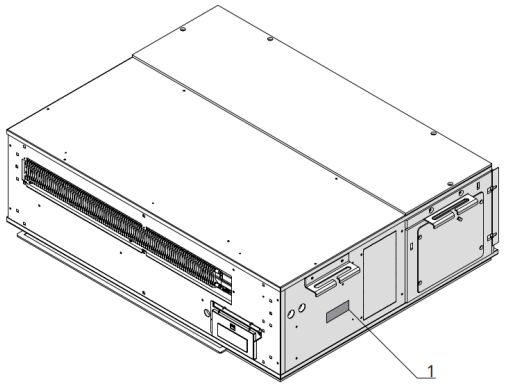
- Improper installation environments can result in fire, explosion, refrigerant leakage, equipment damage, or personal injury.
- Do not operate the unit in or near an environment under construction or renovation. Dust and debris can enter the unit, causing malfunctions and reduced performance..

3. PRODUCT INTRODUCTION

3.1 Identification

The appliance can be identified by the rating plate:

Figure 1. Rating plate



1	Technical rating plate

Technical rating plate
This shows the technical and performance specifications of the appliance.

- The rating label provides required information related to the electrical requirements and quantity of refrigerant.
- Tampering with, removing, or missing identification plates does not allow the product to be reliably identified by its serial number and, therefore, invalidates the warranty.

3.2 Destination of use

This appliance is an air-to-air conditioning unit designed for applications such as residential buildings, schools, clinics, offices, and any settings where air conditioning is needed without the possibility of installing external units or a supporting thermal plant.

The unit is a heat pump, capable of reversing the refrigeration cycle through a 4-way valve, enabling both cooling and heating functions.

The use of a compressor and brushless fans regulated by an inverter enables for high levels of comfort and energy efficiency.

3.3 Description of the appliance

Structure: High-strength structure with a self-supporting frame in sheet metal, materials with high thermal and acoustic insulation characteristics.

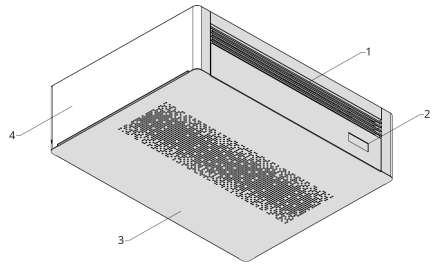
Fans: Inverter-regulated brushless fans allow for high levels of comfort and energy efficiency with constant airflow function.

Filter: Flat nylon filter with metal frame.

Refrigeration circuit: Copper brazed with high-efficiency BLDC compressor, drier filter, finned coils, electronic expansion valve, and safety devices.

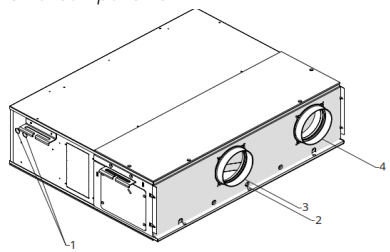
3.4 List of external components

Figure 2. External components



1	Air grille	3	Lower covering panel
2	On-board display	4	Side covering panel

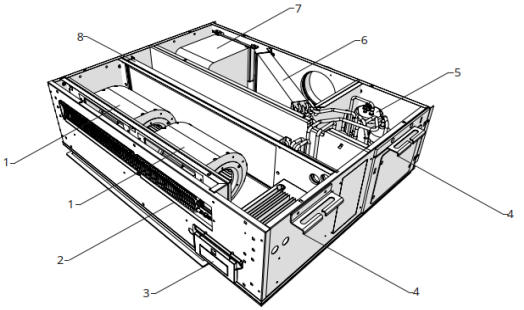
Figure 3. External components



1	Electrical connection passage	3	Outdoor air intake
2	Condensate drain	4	Outdoor air exhaust

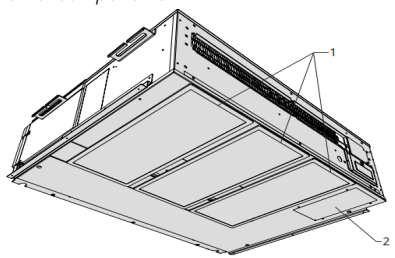
3.5 List of internal components

Figure 4. Internal components



1	Supply fan	5	Compressor
2	Electrical resistance	6	Outdoor side coil
3	On-board display	7	Expulsion fan
4	Installation bracket	8	Indoor side coil

Figure 5. Internal components



1	Filters	2	Electrical panel

4. INSTALLATION

4.1 Preliminary warnings

- **For detailed information on the products, refer to chapter 8.**
- The installation must be carried out by the installer. There is a risk of water leakage, electric shock, or fire if the installation is not performed correctly.
- During installation, it is necessary to observe the precautions mentioned in this guide, and on the labels affixed to the inside of the appliances, as well as to take every precaution suggested by common sense and the safety regulations in force at the place of installation.
- It is highly recommended to only use the supplied installation-specific components. Use of different components could lead to water leakage, electric shock, or fire.
- Failure to follow the indicated rules may cause malfunctions of the appliances and will relieve the manufacturer of any warranty and of any damage caused to persons, animals, or property.
- Air conditioners without an external unit are designed for indoor installation. The only components suitable for outdoor use are the external grilles for air intake and exhaust.

4.2 Reception

Preliminary warnings

- Upon receipt of the package, check that it is not damaged. If there is damage, be sure to note this on the shipping documents and take photos for evidence.
- In the event of damage, notify the shipper by registered mail with return receipt within 3 days of receipt. Presenting photographic documentation, similar information should also be sent by fax to the manufacturer.
- No reports of damage will be taken into account later than 3 days after delivery.
- The packaging should be transported in a horizontal position without tilting. If it is tilted, please notify the carrier immediately.
- If the unit is installed in an environment with salt, chemical, or acidic air exposure, apply a protective coil coating, such as DiversiTech Coil Guard, to protect the coil surfaces from corrosion and ensure long-term performance.

Package description

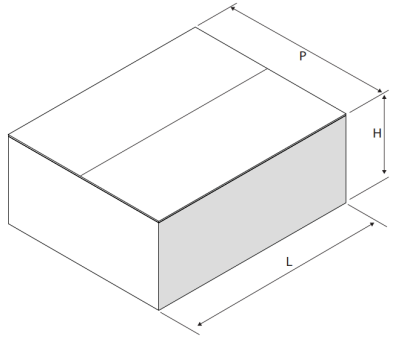
The packaging is made of suitable material and carried out by experienced personnel.

The units are all checked and tested and are delivered complete and in perfect condition.

The appliance is shipped in standard packaging consisting of a cardboard box and a set of polystyrene foam protectors, placed on a wooden pallet and secured with straps.

4.3 Dimensions and weights with packaging

Figure 6. Packaging dimensions



Packaging dimensions (excluding pallet)

- **Width**: 43.9 in (1115.1 mm)
- **Length:** 48.8 in (1239.5 mm)
- **Height:** 14.8 in (375.9 mm)
- **Weight:** N/A

4.4 Handling of packaging

Preliminary warnings

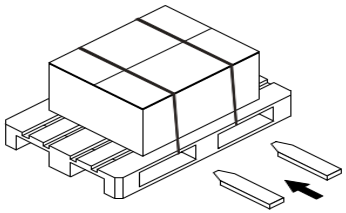
- The unit may only be handled by qualified personnel who are adequately equipped and with equipment suitable for the weight and dimensions of the unit.
- Before each handling operation, check the lifting capacity of the machinery used, in accordance with the indications on the packaging.
- The packaging must be transported in a horizontal position without being tilted.
- When the load is lifted from the ground, stay clear of the immediate and surrounding area.
- Check the information on the packaging for the number of stackable packages.
- In manual operations, the maximum weight per person required by current legislation must always be observed.

Handling

With a pallet:

1. Use a forklift.

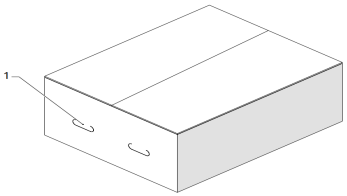
Figure 7. Handling with a pallet



Without pallet:

1. Use the handles provided on the packaging

Figure 8. Handling without a pallet



1	Handles

4.5 Storage

Preliminary warnings

- Stored in accordance with the applicable national regulations.
- Store in a closed environment protected from the weather, off the ground by means of sleepers or pallets with temperatures not below 32°F (0°C), up to a maximum of 105°F (40.6°C).
- Do not overturn the packaging.
- Place the device only in a horizontal position.

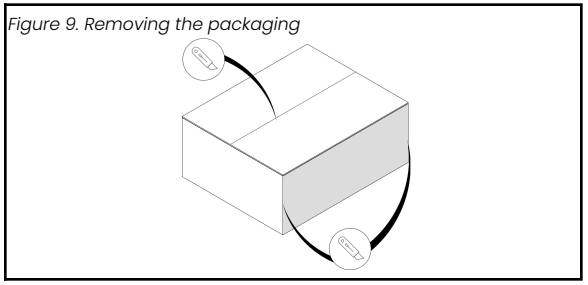
4.6 Unpacking

Preliminary warnings

- Check that the individual components are present.
- Check that no components were damaged during transport.
- Dispose of the packaging components following the applicable waste disposal regulations. Check for disposal arrangements with your municipality.
- Handle with care.
- The appliance must always be handled in a horizontal position.
- Check for the presence of refrigerant inside the packaging using an electronic leak detector suitable for the system's refrigerant. If present, it is likely that the refrigerant circuit is damaged. In this case, the appliance should NOT be installed, and it is necessary to contact the Technical Assistance Center.
- The packing material (cardboard, staples, plastic bags, etc.) could pose a risk of injury or a suffocation hazard for young children. Always dispose of packing materials properly.

Removing the packaging

Figure 9. Removing the packaging



To remove the packaging:

1. Use a cutter.
2. Open the cardboard packaging.

To aid in the removal of the product, also cut the vertical edges.

3. Remove the accompanying components.
4. Remove the polystyrene elements.
5. Remove the appliance from the box.

Accompanying material

They are included with the appliance, inside the packaging:

- 2 paper dimes for drilling.
- External grille for air intake.
- External grille for air exhaust.
- 2 internal flanges.

Check to ensure that all individual components are included.

4.7 Handling without packaging

Preliminary warnings

- The appliance must only be handled by qualified personnel, adequately equipped, and with equipment suitable for the weight and dimensions of the appliance.
- The unit must be handled using non-slip gloves.
- The unit may only be handled by qualified personnel adequately equipped and with equipment suitable for the weight and dimensions of the unit.
- Before each handling operation, check the lifting capacity of the machinery used in accordance with the indications on the packaging.
- When the load is lifted from the ground, stay clear of the immediate and surrounding area.
- Check the information on the packaging for the number of stackable packages.
- In manual operations, the maximum weight per person required by current legislation must always be observed.

Movement methods

1. Use a forklift, scaffolding, or other suitable lifting system.

⚠ WARNING

The unit can only be manually moved for short trips in exceptional cases. In such instances, it is necessary to carefully check that the weight of the unit does not exceed what is stipulated by the regulations with respect to the number of people employed.

4.8 Installation site

The location of the appliance must be determined by the plant engineer or a competent person, and must take into account both purely technical requirements and any national/local legislation in force.

The appliance is intended to be installed indoors in a horizontal position, fixed to the ceiling.

- The installation position must be chosen close to a wall connected to the outside.
- The appliance is declared IPX0 protected, therefore, it is not suitable for outdoor installation or in rooms with the presence of water (swimming pool, etc.).

Preliminary warnings

- Avoid installing the unit in the vicinity of:
  - Obstacles or barriers that cause recirculation of the exhaust air.
  - Narrow places where the sound level of the appliance can be enhanced by reverberations or resonance environments, with the presence of flammable or explosive gases.
  - Very damp environments (laundries, greenhouses, bathrooms with high humidity, etc.), to prevent the formation of condensation on the external panels of the unit.
  - Environments with the presence of flammable or explosive gases or flammable fluids.
  - Solar radiation and proximity to heat sources.
- Avoid installing the unit in the vicinity of the sea. Salty atmospheres cause corrosion and oxidation of the internal components, compromising the functioning of the unit.
- Avoid placing the unit within 1 metre of radio and video equipment.
- Do not install above heat sources.
- Ensure that:
  - The installation site of the unit must be chosen with utmost care to guarantee adequate protection from shocks and consequent damage.
  - The supporting surface is capable of supporting the weight of the appliance.
  - The supporting surface does not affect load-bearing building elements, piping, or power lines.
  - The functionality of load-bearing elements is not compromised.
  - There are no obstacles to the free circulation of air through the holes (plants, leaves, etc.).
  - The appliance must be installed in a position where it can be easily serviced.
  - The safety distances between the units and other appliances or structures are scrupulously respected, so that the air entering and leaving the fans is free to circulate.
- If improperly installed or placed on an unsuitable surface, the unit, if detached from its base, may cause damage to persons or property.
- The appliance must not be in a position where the air flow is aimed directly at a person.
- Provide the following:
  - A nearby drain for the outflow of condensation.
  - A nearby compliant power supply.

4.9 Minimum installation distances

The clearance zones for the installation and maintenance of the appliance are shown in the figure. Established spaces are necessary to avoid barriers to airflow and allow for normal cleaning and maintenance.

Make sure that there is sufficient space to allow the panels to be removed for routine and supplementary maintenance operations.

Figure 10. Minimum installation distances

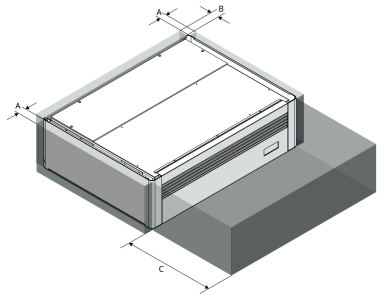
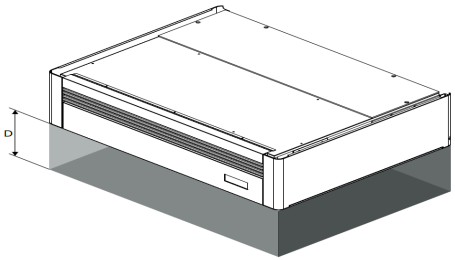


Figure 11. Minimum installation distances



Minimum distances

- **A:** 1.2 in (30.5 mm)
- **B:** 1.2 in (30.5 mm)
- **C:** 19.7 in (500.4 mm)
- **D:** 9.8 in (248.9 mm)

If the unit is installed without flanges, place the appliance flush against the wall, disregarding the minimum installation distance 'B' mentioned earlier.

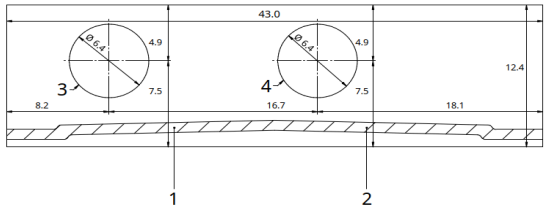
4.10 Positioning

Preliminary warnings

- The unit must be installed on the ceiling.
- The appliance comes with two paper templates for marking the holes required for installation:
  - A template for the passage holes of the air ducts.
  - A template for the mounting holes of the unit to the ceiling.
- Hold the templates in the correct position with adhesive tape.
- Check that:
  - The surface supports the weight of the appliance.
  - The surface does not affect piping or power lines.
  - The functionality of load-bearing elements is not compromised.

Drilling the outside wall

Figure 12. Drilling the outside wall



1	Condensate drain area	**3**	Outdoor air exhaust
2	Condensate drain hole Ø 0.8 in (20.3 mm)	**4**	Outdoor air intake

- The external wall must be prepared with holes for air ducting.
- The appliances are supplied with a paper template for marking the holes required for installation.

To drill the holes:

1. Place the paper template

Secure the template in the correct position with adhesive tape.

2. Mark the position of the hole
3. Use a drill
4. Drill a guide hole
5. Use a core drill
6. Make a hole through the wall
7. Maintain a downward slope towards the outside

The maximum length of the holes is 1 meter.

To avoid the release of large amounts of dust and debris into the room, you are advised to couple the core drill with a vacuum system.

⚠CAUTION

- Proceed with caution near the outside wall to avoid breaking the plaster around the hole.
- Take precautions so that the removed material does not hit people and objects below.

Removal of the air grille

1. Position of the grille mounting hole

Figure 13. Grille mounting hole position

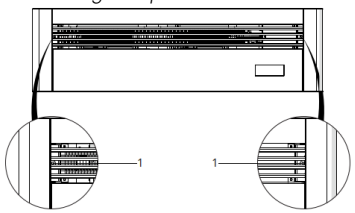
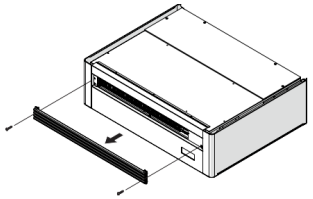


Figure 14. Grille mounting hole position



To remove:

1. Remove the screws from the grille
2. Extract the grille

Removal of front panels

1. Position of the lower front panel mounting hole

Figure 15. Removal of front panels

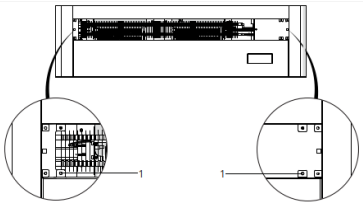
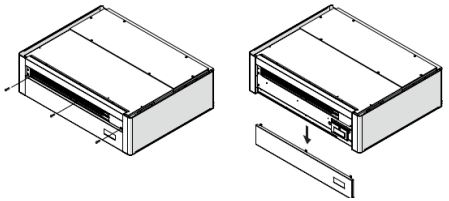


Figure 16. Removal of front panels



To remove:

1. Remove the screws from the panel
2. Take out the panel

Removal of the side covering panels

1. Position of the mounting holes for the side panels

Figure 17. Removal of the side covering panels

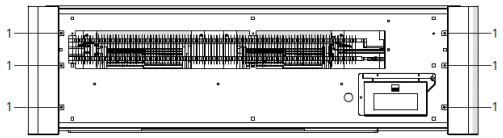
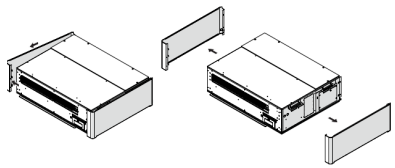


Figure 18. Removal of the side covering panels

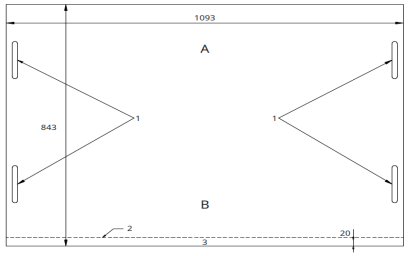


To remove:

1. Remove the fixing screws
2. Open the panel slightly
3. Slide the panel to detach it
4. Remove the panel

Positioning the unit

Figure 19. Positioning the unit



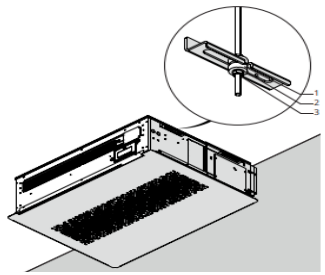
A	Front side of the unit	**2**	Rear edge
B	Rear side of the unit	**3**	Insulation
1	Eyelets for Ø 0.31 in.(7.9 mm) dowels		

1. Use the paper template

Check the correct orientation of the unit.

2. Mark the position of the fixing holes

Figure 20. Mark the position of the fixing holes



1	Vibration isolator
2	Washer
3	Nut

3. Use fixing systems appropriate for the type of supporting surface and the weight of the unit
4. Push the unit towards the outer wall to create a seal on the air ducts
5. Secure the unit to the fixing system
6. Reposition the aesthetics and the grille (see Removal of the air grille)

- Check the horizontal alignment of the installation using a bubble level.
- The unit must lean slightly to the right (at a slope of 1.25% or around ⅛" [3.2 mm] per foot) to ensure proper drainage from the drain pan. Do not exceed a slope of 2% (or ¼" [6.4 mm] per foot) to avoid the unit appearing misaligned.
- Keep the unit detached from the ceiling by at least 10 mm.

Do not mount the unit with the sides in direct contact with the walls to avoid noise and vibrations.

4.11 Condensate drainage provision

Due to the thermodynamic heat recovery system of the dehumidification coils, the humidity in the air condenses inside the unit.

This unit comes with a condensate collection tray that must be directed to a suitable drainage location.

The dimensions and positioning of the exhaust are outlined below.

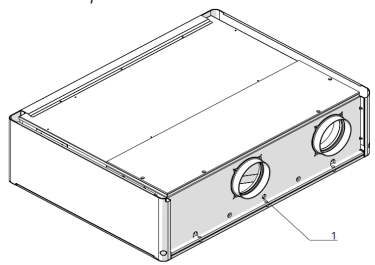
Preliminary warnings

- If the drainage line runs into a container (tank or other), it must be ensured that the container itself is hermetically sealed, and most importantly, it must be ensured that the drainage pipe is not immersed in water.
- The hole for the condensate pipe must always have an outwards slope.
- The precise position where the tube inlet should be placed with respect to the machine is specified on the drilling template.
- In this case, pay attention to ensure that the expelled water doesn't cause any damage or inconvenience to objects or people. During the winter period, this water could lead to ice formations outside.
- When connecting the condensate drain, take care not to crush the rubber pipe.

Attachment position

The size and the position of the condensate drain connection are shown below.

Figure 21. Attachment position



1	Condensate drain Ø 0.7" (17.8 mm)

Connections

If the pipe stub is not long enough:

- Remove the plug from the discharge connection
- Connect the drainage tube
- Direct it towards a suitable discharge location
- Maintain a minimum slope of 2% towards the drainage point
- Insulate junction points

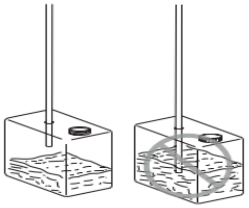
- **It is mandatory to install an adequate P-trap on the condensate drainage pipe to prevent the negative pressure generated by the fans from obstructing the proper flow of condensate, which could lead to spillage inside the premises.**
- Use plastic drainage pipes.
- Avoid metal pipes.
- Make sure all joints are sealed to prevent leakage of water.
- The condensate drain pipes must be insulated both for sections inside and outside the buildings

to prevent condensation on the surface and/or freezing issues.

- If necessary, the condensate collection tray can be emptied through a safety drain located on the base of the appliance. Please refer to the "Extraordinary Maintenance" chapter.

In case of using a tank for condensate collection:

Figure 22. Tank for condensate collection

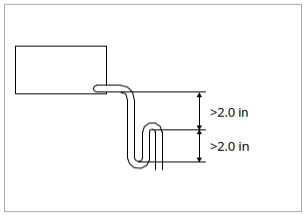


⚠ WARNING

- Avoid airtight sealing of the container.
- Prevent the end of the drainage tube from being below the water level.

If connected to the sewer system:

Figure 23. Connected to the sewer system



- **It is mandatory to install an adequate P-trap on the condensate drainage pipe to prevent the negative pressure generated by the fans from obstructing the proper flow of condensate, which could lead to spillage inside the premises.**
- The drainage system must include a suitable P-trap to prevent unwanted air from entering the vacuum system. The P-trap also prevents the entry of odours or insects.
- The P-trap must be fitted with a plug at the bottom, or must, in any case, permit quick dismantling for cleaning.
- The P-trap must be installed at a distance of 6" (152.4 mm) or less from the drain outlet on the unit.

If using free drainage:

- In the absence of collection, condensate accumulates on the support surface. In below-freezing temperatures, it may freeze and pose a danger. Be sure to provide appropriate barriers to prevent people from approaching the area.

Condensate Drain Maintenance

To reduce the risk of zooglea biofilm formation and maintain effective drainage, apply a coil-safe drain line cleaner (such as Valterra PowerMax) to all drain line components during installation. This helps inhibit early microbial growth within the system.

For ongoing maintenance, clean all condensate drain line components, including drain pans, collection boxes, pumps, and associated tubing, at least once every six months. In more demanding environments, more frequent cleaning may be necessary.

Always use coil-safe cleaning products to protect system components and ensure long-term performance.

4.12 Electrical connections

Preliminary warnings

- Before connecting the unit, make sure that:
  - The voltage and frequency values of the power supply comply with the specifications on the nameplate data of the appliance.
  - The power supply line must have an effective grounding connection and be correctly sized for the maximum absorption of the unit.
  - The socket used is compatible with the supplied plug.
- The appliance must be connected to the electrical power supply at 230V/60Hz through a double-pole switch with a minimum contact opening distance of at least 0.1" (2.54 mm), or by a device that allows the complete disconnection of the appliance under category III surge conditions.
- However, it is necessary to verify that the electrical supply is equipped with adequate protections against overloads and/or short circuits (it is recommended to use a delayed fuse of type 10 A or other devices with equivalent functions for the exclusive use of the unit).
- To prevent the risk of electric shock, it is essential to disconnect the main switch before making electrical connections and performing any maintenance operations on the appliances.
- Make only the necessary electrical connections by consulting the electrical diagram in this guide.
- Verify that the electrical components chosen for the installation (main switch, circuit breakers, cable size, and terminals) are suitable for the electrical power of the installed unit, and they take into account the starting currents of the compressor as well as the maximum achievable load. The relevant data is indicated on the attached electrical diagram and on the unit's nameplate.
- Avoid running electrical cables in direct contact with pipes or components inside the unit.
- Access to the electrical panel is required only in case of cable replacement or when using the presence contact.

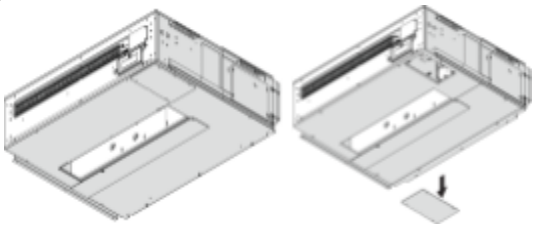
Access to the electrical panel

- Access to the electrical panel is only permitted to qualified personnel.
- Before performing any intervention, ensure that the unit is not powered.

To access the connections:

1. If installed, remove the lower covering panel (refer to the "unit preparation" chapter)
2. Unscrew the screws of the electrical panel cover
3. Remove the cover

Figure 24. Remove the cover



- We strongly recommend using our LCDI or Quick-connect whip cords.
- If customers choose not to use these options, any alternative electrical configuration must comply with all applicable local codes.
- All electrical connections must be performed by a licensed electrician and rated for the appropriate voltage and amperage.

The unit can ship with an optional LCDI plug or a hard-wired connection with our Quick-connect whip cord.

The plug is designed to exit from the rear of the unit through a Ø ⅝" (15.9 mm) hole.

In instances where it is not possible to connect the plug from the rear, it is possible to route the cable through the right side panel, using the pre-punched hole.

⚠ DANGER

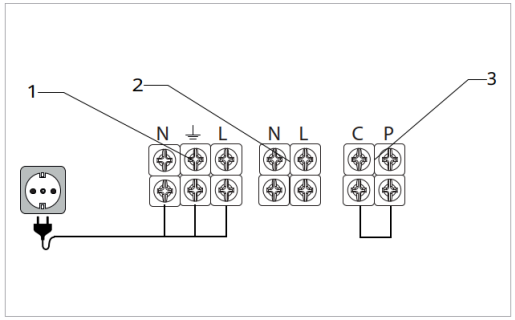
- In case of damage to the power cable, contact the Technical Assistance Center or qualified personnel for replacement.
- Any work on the electrical system must only be performed by qualified individuals and according to local codes.

POWER SUPPLY: The unit comes with an optional LCDI cord and Quick Connect whip cord, and the power supply is connected to the terminals N, L, and PE for 115V units and N, L1, and L2 for 230V units.

HT - EXTERNAL HEATER: Involves connecting the integrated electric heater to be inserted in the air supply duct.

CP - REMOTE ON-OFF: Involves an external connection to enable the unit with a presence or window contact. It comes as standard with a jumper.

Figure 25. Connections



5. START-UP

5.1 Preliminary warnings

- **For detailed information on accessories, please refer to the relevant instruction sheets.**
- The customer must be present when the appliance is tested and informed of the contents of the manual and procedures. After commissioning, the manual and the warranty certificate must be handed over to the customer.
- Before start-up, all work (electrical, hydraulic, and airflow connections) must be completed.
- The unit enables air exchange and energy recovery with the heat pump, which can integrate heating, cooling, and dehumidification of the environment. It cannot independently perform the heating and cooling functions.

5.2 First start-up

Preliminary Checks
Before commissioning, check that:

Operational checks

- All safety conditions have been met.
- The unit has been properly secured to the supporting surface or wall.
- The minimum technical spaces have been observed.

Airflows

- The airflow connections have been made according to the instructions in the guide.
- All airflow connections are correctly secured.
- The ducting is correctly supported.
- The ducting does not have any bottlenecks.
- The ducting is thermally insulated.

Electrical checks

- The cross-section of the power supply cables is adequate for the absorption of the appliance, and the length of the connection is made.
- Grounding is correctly performed.

- The electrical connections have been correctly established.
- All control wires are connected, and all electrical connections are secure.

Start-up
After all checks have been carried out, the unit can be put into operation.

To activate the appliance:

1. Please refer to the user manual.

Checks with the machine switched on
After starting up the unit, check the following.

Operational checks:

- Verify the different modes of operation.
- Verify that the appliance stops and then restarts.
- Switch the appliance off and on again, and check that it restarts correctly.
- The unit operates within the recommended operating conditions (see technical specifications table).
- Check that the air flow rates are correct.

Hydraulic Checks

- Check for proper condensate drainage.

Electrical Checks

- The current absorbed is less than the maximum indicated in the technical data table.
- The supply voltage value is within the set limits, and does not fall below the nominal value -10 % during operation.

5.3 Plant delivery

Once all checks and controls on the correct operation of the plant have been completed, the installer must explain the following to the user:

- The basic functional characteristics of the appliance.
- The instructions for use.
- The routine maintenance.

5.4 Switching off for extended periods

If the appliance is not used for a long period of time, the following steps must be taken:

1. Deactivating the device.
2. Disconnecting the power supply.

6. TROUBLESHOOTING

6.1 Preliminary warnings

If one of the following faults is found:

- Fan does not activate.
- The appliance makes excessive noise.
- There is dew formation on the front panel.

Follow the instructions below:

1. Immediately disconnect the power supply
2. Contact an authorised Technical Assistance Centre or professionally qualified personnel.

⚠ DANGER

Work must be carried out by a qualified installer or a specialised service centre. Personal intervention is prohibited.

6.2 Error codes and mitigations

The following section provides a list of error codes and their mitigations.

Error codes:

E1 - Faulty room temperature sensor (RT)

- The Room Temperature (RT) sensor is faulty.
- This sensor only monitors the antifreeze function on the indoor coil. The unit can still function in Cooling, Heating, and Dehumidification modes.

E2 - Faulty internal battery sensor (IPT)

- The Internal Pressure Temperature (IPT) sensor is faulty.
- The unit can still function in Cooling, Heating, and Dehumidification modes.

E3 - Faulty outdoor air temperature sensor (OT)

- The Outside Temperature (OT) sensor is faulty.
- The unit cannot operate in any mode.

E4 - Faulty external battery sensor (OPT)

- The Outdoor Pressure Temperature (OPT) sensor is faulty.

- It is not possible to activate any operation of the device or the Dehumidification functions. The regulation performs defrost cycles at fixed intervals.

E5 - Faulty indoor fan motor

- The internal fan motor is faulty.
- The unit cannot operate in any mode.

E6 - Faulty outdoor fan motor

- The external (condenser) fan motor is faulty.
- The unit cannot operate in any mode.

E7 - Lack of communication with the display

- There is no communication with the display.
- The unit cannot operate in any mode.

E8 - Faulty compressor discharge sensor

- The compressor discharge probe failed.
- The unit cannot operate in any mode.

CP - Open contact for presence detection (CP)

- The Contact Presence (CP) contact is open.
- The device only activates if the contact is closed. Please check the connection of the terminals.

6.3 Troubleshooting other issues

The following sections provide information about troubleshooting issues that do not cause error codes to be displayed on the unit.

Problem	Possible Causes	Solution(S)
The display is off	No power supply (light switch off)	Check the electrical connection to the power supply.
		Check, and if necessary, replace the fuse located on the power connector (black) on the side of the unit.
Low or absent air flow, the rooms remain humid	Clogged filters	Replace filters.
	Clogged heat exchanger	Clean the heat exchanger.
	Dirty fan	Clean the fan.
	Clogged fan ducts	Clean the ventilation ducts.
	Outdoor temperature below 0°C	The unit may be in anti-freeze mode. Wait until the outside temperature increases, or consider installing a pre-heating electric heater.
The unit is noisy	The noise is coming from the unit	Check for the presence of gaps and/or air leaks from the unit's panels.
		Check the P-trap connection.
		Check if the motors are running correctly (bearings).
	The noise is coming from the ducts	Check for the presence of cracks on the intake/exhaust ducts.
The unit is vibrating	Vibrating panels	Check the integrity of the panels and aluminum profiles of the unit.
		Check the proper closure of the unit's cover and the panel covering the electronic board.
		Check that there are no walls that could transmit vibrations to the wall/floor/ceiling.
	Imbalanced fan blades	Check the integrity of the fan blades.
		Clean the fans.
		Check that the small metal clips for balancing the fan blades are still present on the fans.

Problem	Possible Causes	Solution(S)
Condensate leak	Clogged condensate drain	Clean the condensate drain.
	The condensation does not flow from the drainage pipe into the collection tray	Check that the unit is perfectly level.
		Check that the condensate drain connections are not clogged.
		Verify that the P-trap has been properly constructed.
The appliance does not turn on	No power supply	Check if there is a power supply voltage.
		Check if the dedicated circuit breaker for the appliance has tripped (if so, reset it). If the issue persists, immediately contact the Service Assistance and avoid attempting to operate the appliance.
The appliance does not cool/heat sufficiently	The set temperature is too high or too low	Check and adjust the temperature setting if necessary.
	The air filter is clogged	Check the air filter and clean it if necessary.
	Check for any obstructions to the airflow inside or outside	Remove anything that could obstruct the airflow.

7. MAINTENANCE

7.1 Preliminary warnings

Before any cleaning or maintenance intervention:

1. Disconnect the device from the electrical network by setting the main switch of the system to "OFF."
2. Wait for the components to cool down to avoid the risk of burns.

⚠ DANGER

- Any technical or cleaning intervention is prohibited before disconnecting the unit from the power supply.
- Check for the absence of voltage before performing any operation.
- After performing the necessary maintenance operations, restore the original conditions.

7.2 Routine maintenance

The routine maintenance plan includes the following cleaning operations.

External cleaning

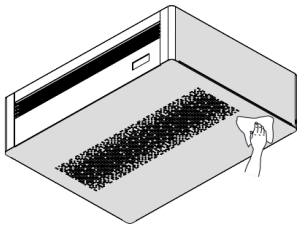
Clean the external surfaces of the appliance with a soft cloth dampened with water.

⚠ DANGER

- Before any cleaning or maintenance intervention, disconnect the unit from the electrical network by turning off the main power switch or unplugging the power plug.

Do not use abrasive sponges or abrasive or corrosive detergents to avoid damaging the painted surfaces.

Figure 26. External cleaning

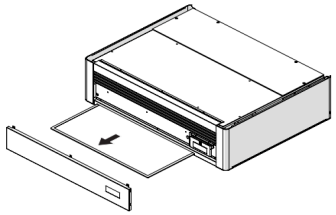


Cleaning or filter replacement

⚠ CAUTION

Pay attention to sharp surfaces.

Figure 27. Cleaning or filter replacement



To remove the filters:

1. Turn off the power to the unit by unplugging the plug
2. Remove the lower front panel (see Removal of front panels)
3. Gently pull the filter towards yourself
4. Take out the filter

Clean or replace filters at least once per month to ensure proper unit operation and maintain warranty coverage.

- If the condition of the filters is acceptable, they can be cleaned using a vacuum cleaner or a low-pressure compressor.
- If it is impossible to clean them, the filters must be replaced.

To reposition:

1. Proceed in reverse order

7.3 Cleaning drain line components

To reduce the risk of zooglea biofilm formation and maintain effective drainage, clean all condensate drain line components, including drain pans, collection boxes, pumps, and associated tubing, at least once every six months using a coil-safe drain line cleaner (such as Valterra PowerMax). In more demanding environments, more frequent cleaning may be necessary. Always use coil-safe cleaning products to protect system components and ensure long-term performance.

8. TECHNICAL INFORMATION

8.1 Dimensions

To view the dimensions as a high-resolution PDF, click the link below:

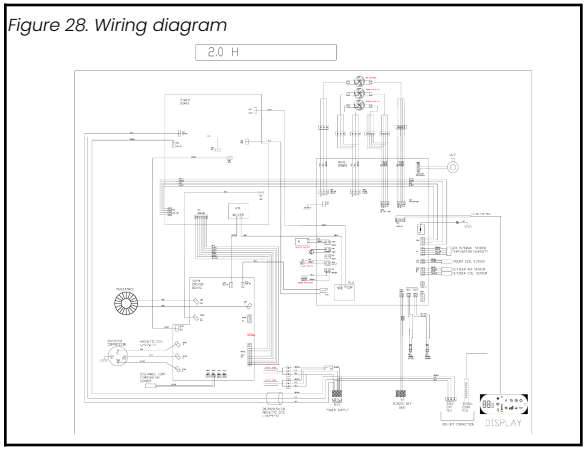
AIO Ceiling Suspended (Without ERV option) Dim...

8.2 Wiring diagram

To view the wiring diagram as a high-resolution PDF, click the link below.

AIO Ceiling Suspended (without ERV option) Wirin...

Figure 28. Wiring diagram



9. WARRANTY INFORMATION

For detailed terms and conditions, click the link below:

AIO Warranty Terms and Conditions - 2026 - Inn...

With over 20 years of experience in the climate comfort sector, we have a clear goal: growth through innovation. Our team is laser-focused on the conception, development, and production of innovative heating, ventilation, and air conditioning solutions. This mission has developed through bringing together technical skills, creativity, technology, design, Italian passion, and a global vision to achieve the best energy efficiency and performance.

Ephoca is the US subsidiary of Innova SRL -
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MADE IN ITALY

AIO Ceiling Suspended (without ERV option)
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