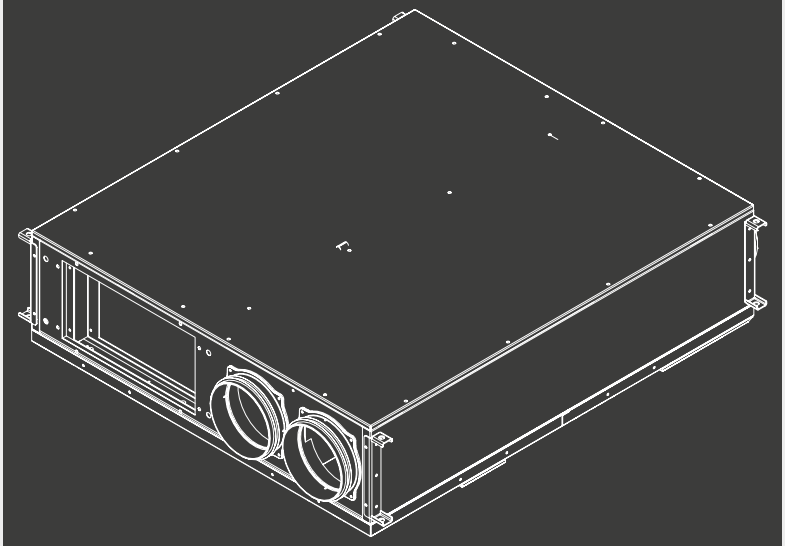
Installation operation and maintenance manual

EN



07/2026

GIACOMINI
WATER E-MOTION

KHRD-HP
Heat Recovery Unit
Dehumidification / Thermodynamic integration
Horizontal mounting

First of all, we would like to thank you for having chosen one of our units.

As you will realise, you have made a winning choice by purchasing a product that represents the state of the art in domestic air-conditioning technology.

Thanks to the product you have purchased and by following the suggestions in this manual, you will benefit from optimal environmental conditions with the lowest possible energy investment.

Giacomini SpA

Compliance

This unit complies with European directives:

- Low Voltage Directive 2014/35/EU by transposition of the following technical standards: EN 60335-1:2012 + EN 60335-2-80:2003
- EMC Directive 2014/30/EU, by transposition of technical standards: EN 55014-1:2021 + EN 55014-2:2021 + EN IEC 61000-3-2:2019+A1:2021 + EN 61000-3-3:2013+A2:2021
- RoHS Directive 2011/65/EU by transposition of the following technical standards: EN IEC 63000:2018
- European regulation ErP Ecodesign No. 1253/2014 and 1254/2014

Markings

CE

CONTENTS

1. GENERAL INFORMATION

1.1 About the manual

This manual was written to provide all the explanations for the correct management of the appliance.

⚠ This instruction manual is an integral part of the appliance and must therefore be kept in a safe place and must ALWAYS accompany the appliance even if it is passed on to another owner or user, or transferred to another plant. If it is damaged or lost, download a copy from the website.

⚠ Read this manual carefully before proceeding with any operation and follow the instructions in the individual chapters.

⚠ Specific warnings are given in each chapter of the document and should be read before starting operations.

⚠ The Manufacturer accepts no liability for damage to persons or property resulting from failure to observe the regulations contained in this booklet.

⚠ This document is confidential under the terms of the law and may not be reproduced or passed on to third parties without the express authorisation of the Manufactorer.

Editorial pictograms

The pictograms in the following chapter provide quick and unambiguous information necessary for the correct and safe use of the machine.

Related to safety

⚠ High risk warning (bold text)

- The operation described above presents a risk of serious physical injury, fatality, major damage to the appliance and/or to the environment if not carried out in compliance with safety regulations.

⚠ Low risk warning (plain text)

- The operation described above presents a risk of minor physical injury or minor damage to the appliance and/or to the environment if not carried out in compliance with safety regulations.

⛔ Prohibition (normal text)

- Marks actions that are prohibited.

ⓘ Important information (bold text)

- This indicates important information that must be taken into account during the operations.

In the texts

Purpose of the actions

► Actions required

Expected responses following an action

- Lists

In the figures

1 The numbers indicate the individual components.

A Capital letters indicate a combination of components and dimensions.

❶ The white numbers in black marks indicate a series of actions to be carried out in sequence.

Ⓐ The black letter in white identifies an image when there are several images in the same figure.

Pictograms on the product

Symbols are used in some parts of the appliance:

Related to safety

Read the instruction manual

Read the instructions carefully before performing any operation on the appliance.

Instruction manual

Read the information available in the technical documentation of the appliance.

Attention electrical hazard

- Warns relevant personnel of the presence of electricity and the risk of electric shock.

Recipients

User

Non-expert person capable of operating the product in safe conditions for people, for the product itself and the environment, interpreting an elementary diagnostic of faults and abnormal operating conditions, carrying out simple adjustment, checking and maintenance operations.

Installer

Expert person qualified to position and connect (hydraulically, electrically, etc.) the unit to the plant; this person is responsible for handling and correct installation according to the instructions provided in this manual and the national standards currently in force.

Service

Expert and qualified person authorised directly by the Manufacturer to carry out all routine and supplementary maintenance operations, as well as every adjustment, check, repair and replacement of parts necessary during the life of the unit.

Organisation of the manual

The manual is divided into sections each dedicated to one or more target groups.

General information

It addresses all recipients.

It contains general information and important warnings that should be known before installing and using the appliance.

Product introduction

Addressed to all recipients, contains general information on the product.

Installation and Operation

It is addressed exclusively to the installer.
Contains specific warnings and all information necessary for positioning, mounting, connecting the device and operation.

Commissioning, maintenance and troubleshooting

They are addressed exclusively to the Authorised Service Centre.
It contains specific warnings and useful information for the most common commissioning and routine maintenance.

Technical information

It addresses all recipients.
It contains detailed technical information about the appliance.

1.2 General warnings

⚠ Specific warnings are given in each chapter of the document and should be read before starting operations.

⚠ All personnel involved must be aware of the operations and dangers that may arise when beginning all unit installation operations.

⚠ Installation performed outside the warnings provided in this manual and use of the appliance outside the prescribed temperature limits will invalidate the warranty.

⚠ Any contractual or extra-contractual liability for damage caused to persons, animals or property, due to installation, adjustment and maintenance errors or improper use is excluded. All uses not expressly indicated in this manual are not permitted.

⚠ The installation of the appliances must be carried out by a qualified company which, on completion of the work, will issue a declaration of compliance to the person in charge of the plant in accordance with the regulations in force and the instructions provided in the instruction booklet accompanying the appliance.

⚠ First start-up and repair or maintenance operations must be carried out by the Authorised Service Centre or by qualified personnel following the provisions of this manual.

⚠ Do not modify or tamper with the appliance as this can lead to dangerous situations.

⚠ Use suitable personal protective clothing and equipment during installation and/or maintenance operations. The Manufacturer is not liable for the non-observance of the current safety and accident prevention regulations.

⚠ In case of liquid or oil leaks, isolate the main power supply of the system and close any water valves. Promptly contact the Authorised Service Centre or professionally qualified personnel, and refrain from personally intervening on the equipment.

⚠ When replacing components, use only original spare parts.

⚠ The Manufacturer reserves the right to make changes to its models at any time to improve its product, without prejudice to the essential characteristics described in this manual. The Manufacturer is not obliged to add such modifications to machines previously manufactured, already delivered, or under construction.

⚠ The appliance can be used by children aged 8 years and above and by persons with reduced physical, sensory, or mental capabilities, or those lacking experience or necessary knowledge, provided they are under supervision or have been given instructions concerning the safe use of the appliance and understand the hazards involved. Children should not play with the appliance. Cleaning and maintenance intended to be carried out by the user should not be done by children without supervision.

1.3 Basic safety rules

We would like to remind you that the use of products that use electricity and water involves observing certain basic safety precautions such as:

⛔ It is forbidden to touch the appliance with wet or damp body parts.

⛔ It is forbidden to carry out any operation before disconnecting the appliance from the power supply by setting the plant master switch to "OFF".

⛔ It is forbidden to modify the safety or adjustment devices without the authorisation and instructions of the appliance manufacturer.

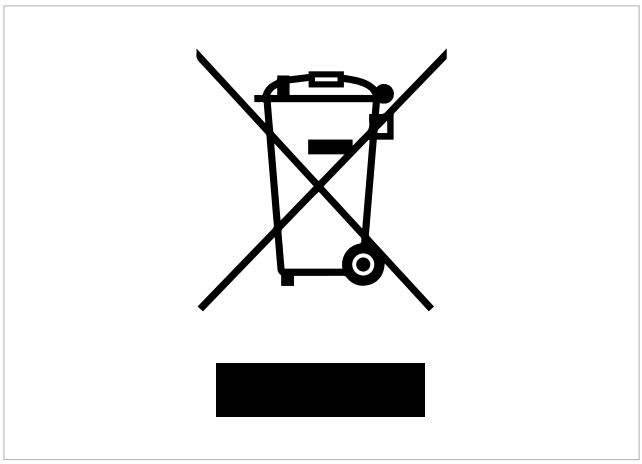
⛔ It is forbidden to pull, unplug or twist the electrical cables coming out of the appliance, even if it is disconnected from the mains supply.

⛔ It is forbidden to introduce objects and substances through the openings provided for the intake and delivery of air.

⛔ It is forbidden to open the access doors to the internal parts of the appliance without first setting the plant master switch to “OFF”.

⛔ It is forbidden to dispose of packaging material and leave it within reach of children as it can be a potential hazard.

1.4 Disposal



The symbol on the product or packaging indicates that the product should not be treated as normal household waste. Instead, it should be taken to an appropriate collection point for recycling of electrical, electronic, and battery equipment.
Proper disposal of this product avoids harm to humans and the environment and promotes the reuse of valuable raw materials.
For more detailed information about the recycling of this product, contact your local authority, your household waste disposal service, or the shop where you purchased the product.
Illegal disposal of the product by the user involves the application of the administrative sanctions provided for by the regulations in force.
This provision is only valid in the EU Member States.

⚠ Avoid disassembling the appliance yourself.

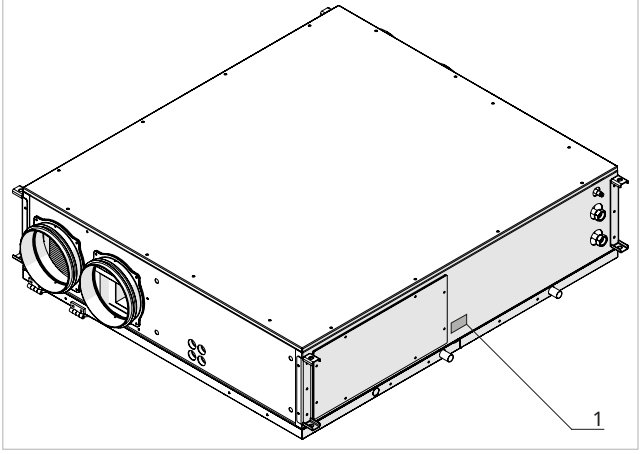
⚠ **Contact an Authorised Service Centre to disassemble the appliance.**

2. PRODUCT INTRODUCTION

2.1 Identification

The appliance can be identified by the rating plate:

1. Technical rating plate



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

⚠ 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.

2.2 Destination of use

The air conditioning unit is designed for specific dehumidification / air conditioning needs in low energy consumption environments.

The unit is particularly suitable for single-family homes, apartments, and offices where a radiant air conditioning system is present.

2.3 Description of the appliance

Structure: self-supporting in galvanized sheet metal, panel insulation is made with polyethylene insulant.

Fans: centrifugal EC with high-efficiency Brushless motor.

Filters: flat with Coarse filtration class. Easily removable for routine maintenance.

Refrigeration circuit: Made of brazed copper complete with high-efficiency compressor, filter drier, finned coils, water heat exchanger, solenoid valves, expansion device, liquid receiver, high-pressure switches.

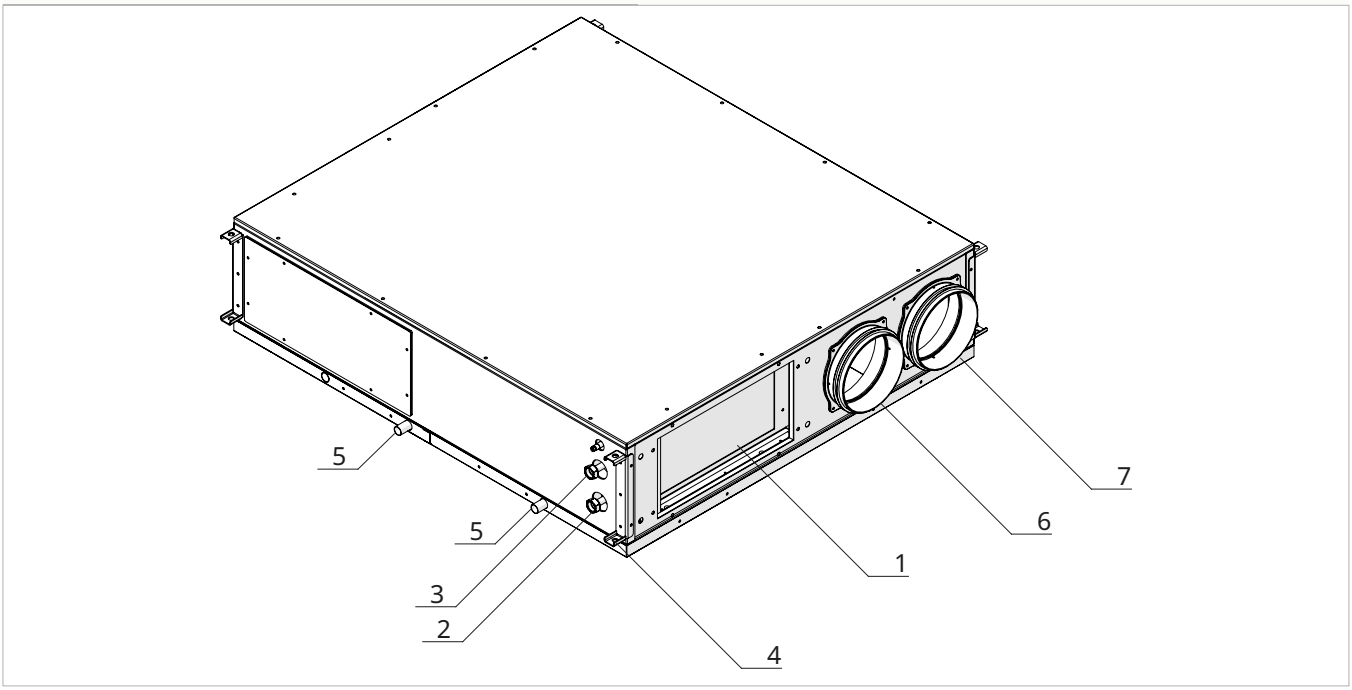
Models: 2 sizes with different flow rates are available.

Versions:

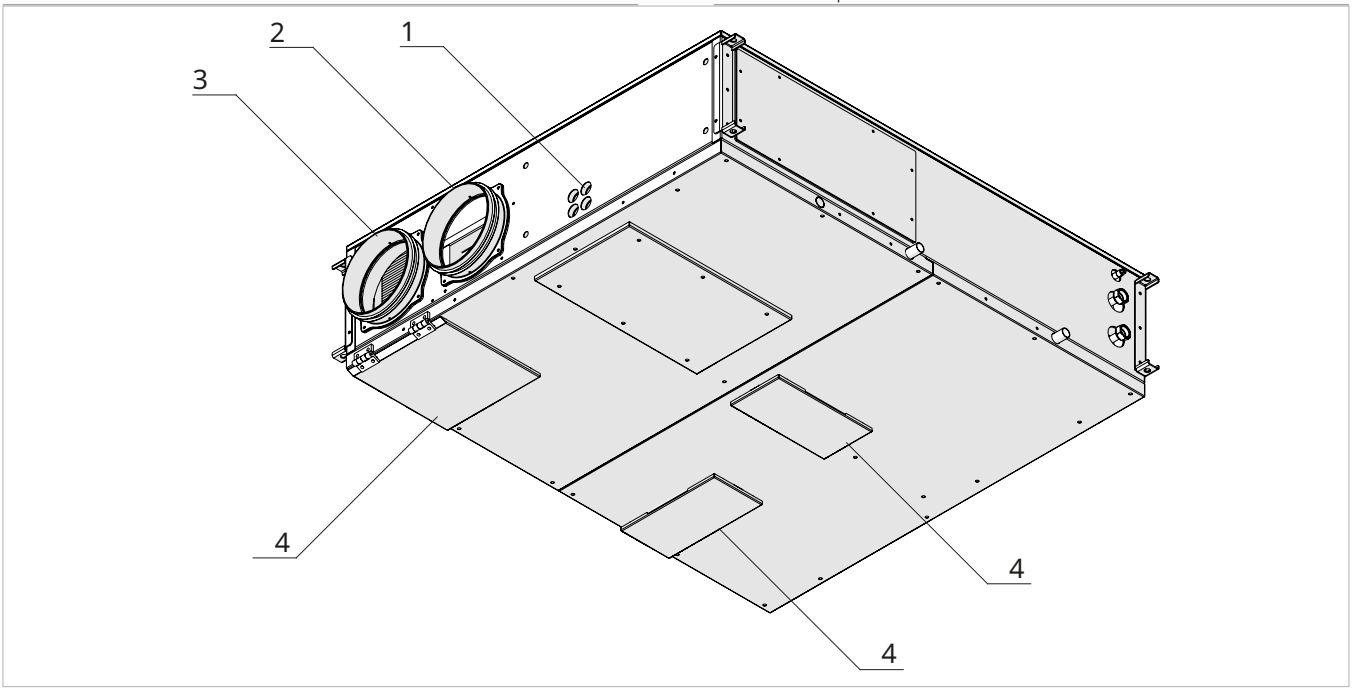
- KHRDHRIX311: 375 m^3/h
- KHRDHRIX511: 605 m^3/h

2.4 List of external components

1.	Supply air
2.	Hydraulic connection water inlet to the unit
3.	Hydraulic connection for water outlet from the unit
4.	Installation bracket
5.	Condensate drain
6.	Air recirculation
7.	Extract air

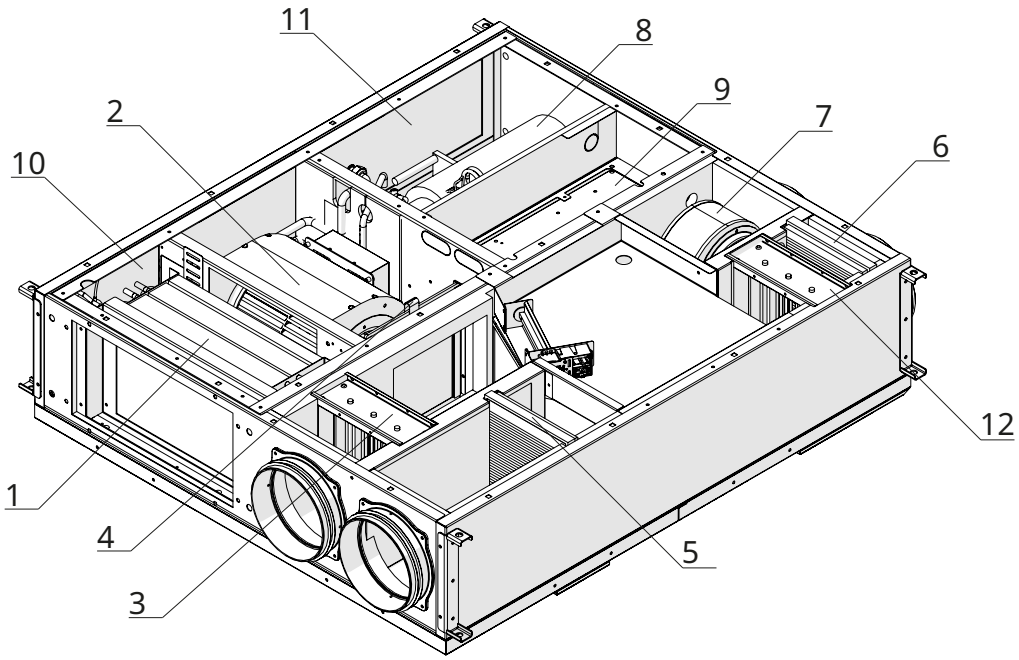


1.	Electrical cable entry
2.	Fresh air inlet
3.	Exhaust air
4.	Filter port

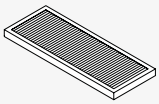


2.5 List of internal components

1.	Finned coils	**7.**	Exhaust fan
2.	Supply air fan	**8.**	Compressor
3.	Indoor air recirculation damper	**9.**	Electrical panel
4.	Air recirculation filter	**10.**	3-way valve
5.	Extract air filter	**11.**	Plate condenser
6.	Fresh air inlet filter	**12.**	Fresh air inlet damper



2.6 Compatible accessories

Description		Code
KHR-CD command		
	Electronic remote controller for energy recovery units	KHRCY502
KFR spare filters		
	KHRDHRIX311 replacement Filter Kit (3 pcs)	KFRY026
	KHRDHRIX511 replacement Filter Kit (3 pcs)	KFRY027

3. INSTALLATION

3.1 Preliminary warnings

⚠ The installation must be carried out by the installer. There is a risk of refrigerant or 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 manual, 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.

⚠ Using only the supplied installation-specific components is recommended. Use of alternative components could lead to refrigerant or water leakage, electric shock or fire.

⚠ Failure to apply the indicated rules may cause malfunctions of the appliance and relieves the Manufacturer from any warranty and from any damage caused to persons, animals or property.

3.2 Reception

Preliminary warnings

⚠ Upon receipt of the package check that it is not damaged, otherwise accept the goods with reservation, producing photographic evidence of any damage.

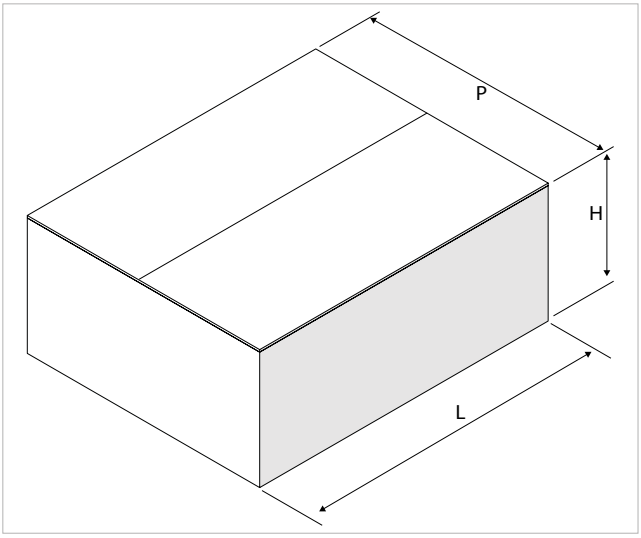
⚠ In the event of damage, notify the shipper by registered mail with return receipt within 3 days of receipt. Presenting photographic documentation, similar information should also be sent by email to the Manufacturer.

⚠ No reports of damage will be taken into account later than 3 days after delivery.

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.

3.3 Dimensions and weights with packaging



Models		u.m.	KHRDHRIX311	KHRDHRIX511
Packaging dimensions				
Width		mm	985	1.285
Length		mm	1.125	1.125

Models	u.m.	KHRDHRIX311	KHRDHRIX511
Height	mm	330	390
Weight	kg	74,0	88,0

3.4 Handling with packaging

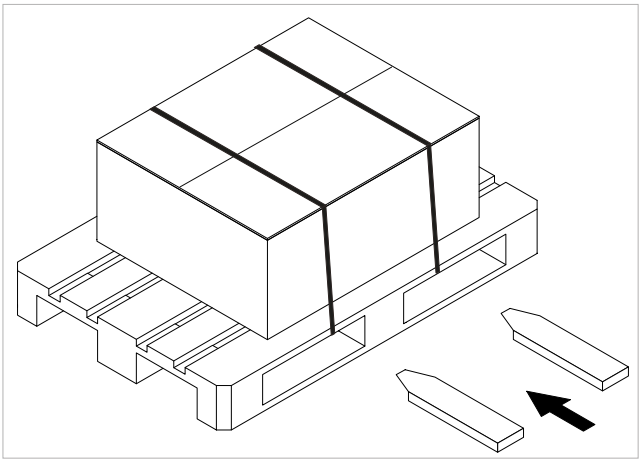
Preliminary warnings

⚠ The product should only be handled by qualified personnel, adequately equipped, and using tools suitable for the weight and dimensions of the product.
⚠ 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 amount of stackable packages.
⚠ In manual operations, the maximum weight per person required by current legislation must always be observed.

Handling

With pallet:

► use a forklift



Without pallet:

► use a forklift

⚠ The unit can only be moved manually for short trips in exceptional cases. In this case 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 persons employed.

3.5 Storage

Preliminary warnings

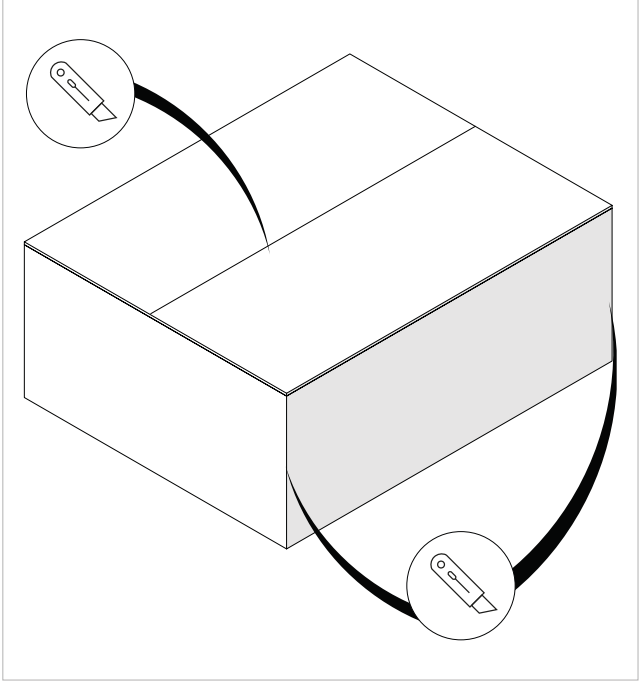
⚠ Stored in accordance with the applicable national regulations.
⚠ Store in a closed environment protected from the weather, off the ground by means of sleepers or pallets with temperatures not below 0 °C, up to a maximum of 40 °C.

3.6 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 local authority.
⚠ Handle with care.
⚠ The device must always be moved in a horizontal position.
⛔ The packing material (cardboard, staples, plastic bags, etc.) must not be dispersed or abandoned in the surrounding environment and must be kept out of reach of children due to risk of hazard.

Removing the packaging



To remove the packaging:

► Use a cutter

► Open the cardboard packaging

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

► Remove the accompanying components

► Remove the polystyrene elements

► Remove the appliance from the box

Accompanying material

They are included with the appliance, inside the packaging:

- Installer manual

⚠ Check the presence of the individual components.

3.7 Handling without packaging

Preliminary warnings

⚠ The unit must be handled using non-slip gloves.

⚠ The product should only be handled by qualified personnel, adequately equipped, and using tools suitable for the weight and dimensions of the product.

⚠ 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 amount of stackable packages.

⚠ In manual operations, the maximum weight per person required by current legislation must always be observed.

Movement methods

► Remove a fork lift, scaffolding or other suitable lifting system

⚠ The unit can only be moved manually for short trips in exceptional cases. In this case 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 persons employed.

3.8 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 not suitable for installation outdoors 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 resonances
- 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

⚠ **Pay particular attention when installing near the sea. Salt-laden atmospheres can cause corrosion and**

oxidation of internal components, compromising the unit's operation.

⚠ 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 the 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...)
- 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 the unit is installed incompletely or on an unsuitable surface, it could cause damage to persons or property if it becomes detached.

⚠ The appliance must not be in a position where the air flow is aimed directly at a person.

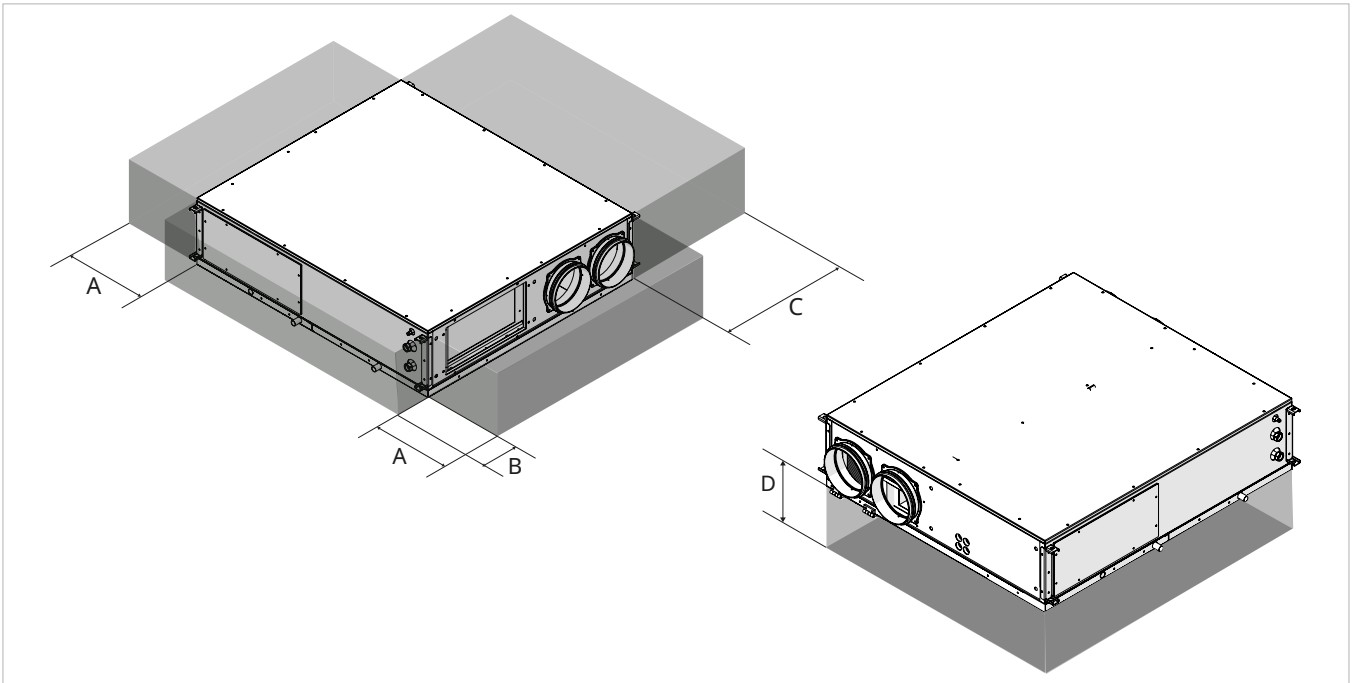
⚠ Provide the following:

- a drain nearby for the outflow of condensation
- a compliant power supply nearby

3.9 Minimum installation distances

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

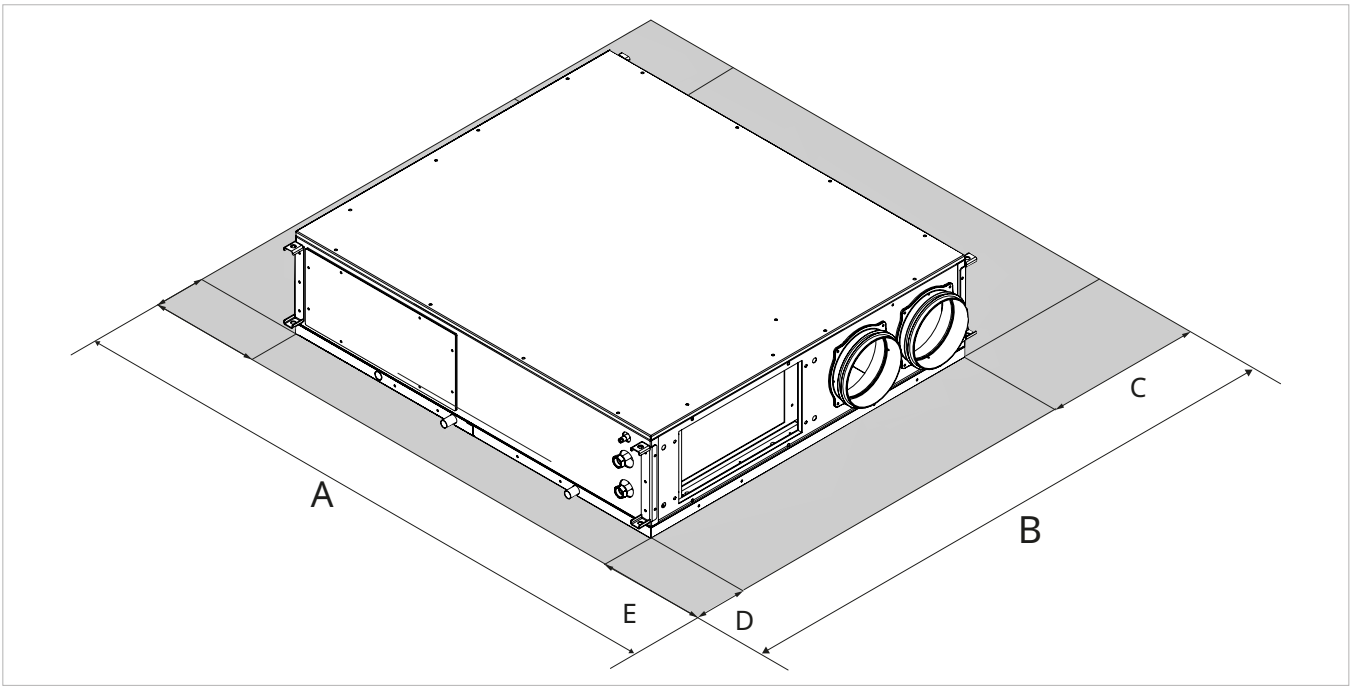
⚠ Make sure that there is sufficient space to allow the panels to be removed for routine and supplementary maintenance operations.



Models		u.m.	KHRDHRIX311	KHRDHRIX511
Minimum distances				
A		mm	400	400
B		mm	400	400
C		mm	100	100
D		mm	250	320

Hatch dimensions

⚠ For installation in a ceiling, it is mandatory to create an access hatch for the inspection and maintenance of the device.



Models		u.m.	KHRDHRIX311	KHRDHRIX511
Hatch dimensions				
A		mm	1.443	1.743
B		mm	1.580	1.580
C		mm	100	100
D		mm	400	400
E		mm	400	400

3.10 Positioning

Preliminary warnings

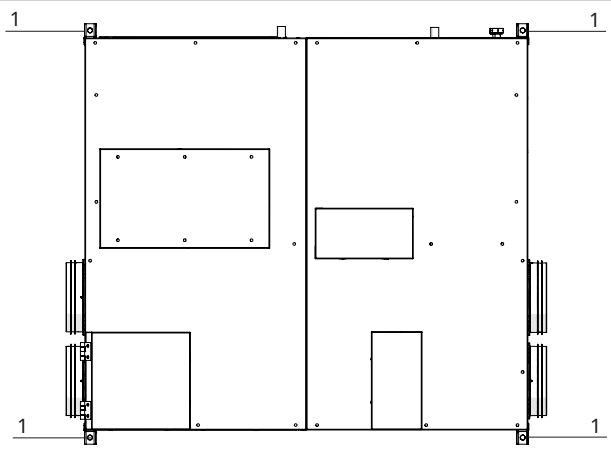
The unit must be installed to a secure structure above the unit.

⚠ 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

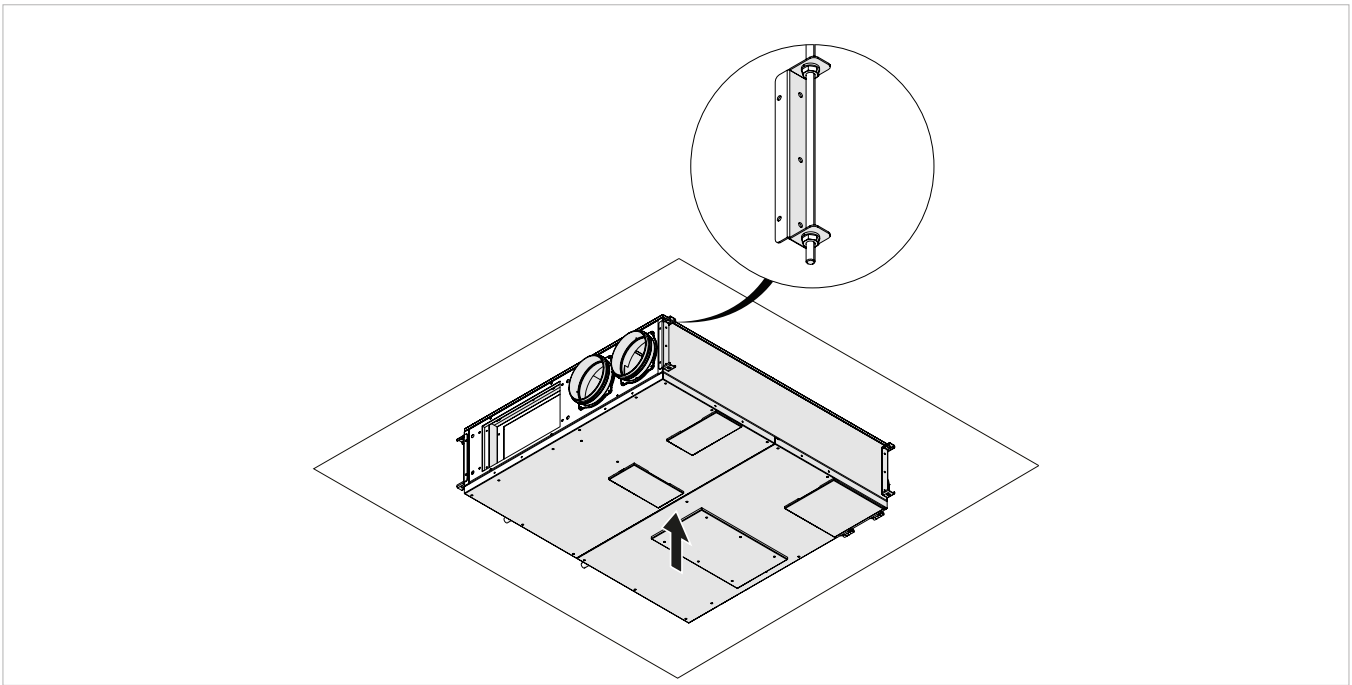
Positioning the unit

1. Holes for installing the fastening systems



► Mark the position of the fixing holes

⚠ Check the correct orientation of the unit.



► Use fixing systems appropriate for the type of supporting surface and the weight of the unit

► Secure the unit to the fixing system

⚠ Check the horizontal alignment of the installation using a bubble level.

3.11 Condensate drain connection

Preliminary warnings

⚠ This appliance is equipped with trays for collecting the condensate that is produced during operation. Condensate must be routed to a suitable place for drainage.

⚠ The appliance is equipped with a connection for the condensate drain.

⚠ 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.

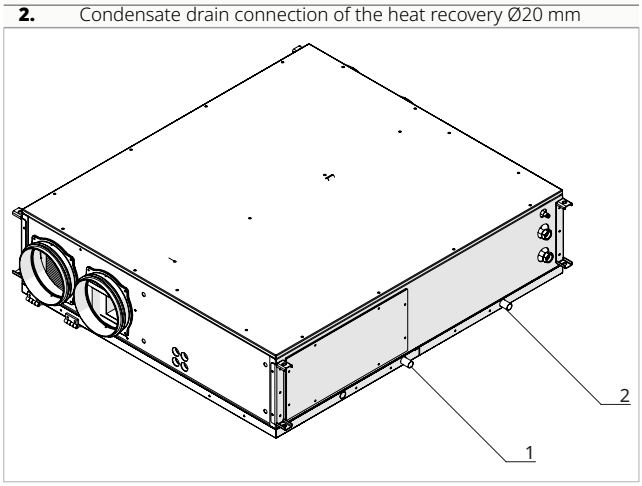
⚠ The hole for the condensate pipe must always have a downwards slope.

⚠ 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.

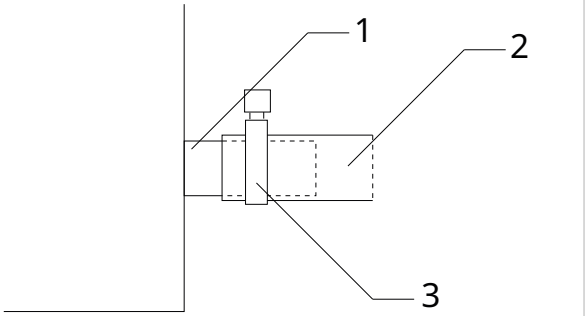
1.	Condensate drain connection for coils Ø 20 mm
2.	Condensate drain connection of the heat recovery Ø20 mm



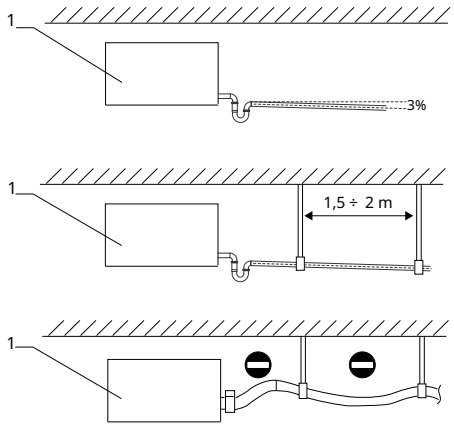
⚠ Apply the trap before joining the two drains by means of a T-junction.

Connections

1.	Condensate drain connection
2.	Condensate drain pipe
3.	Hose clamp

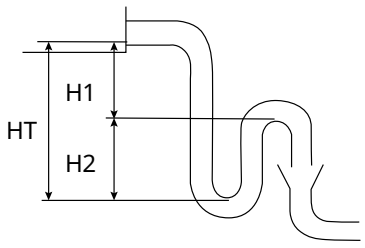


1.	Unit



⚠ Apply the trap before joining the two drains by means of a T-junction.

HT	60 mm
H1	30 mm
H2	30 mm



To connect the drain:

- ► Connect the drainage pipe to the connection provided on the unit
- ► Install a siphon on the condensate drainage pipe near the unit
- ► Direct the condensate drain pipe to a suitable place for draining
- ► Maiuntain a minimum slope of 3% towards the drain location
- ► Insulate junction points

⚠ **It is mandatory to install an adequate siphon 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 siphon to prevent unwanted air from entering the vacuum system. The siphon also prevents the entry of odours or insects.

⚠ The siphon must be fitted with a plug at the bottom or must in any case permit quick dismantling for cleaning.

⚠ Use plastic drainage pipes.

⚠ Avoid metal pipes.

⚠ Make sure all joints are sealed to prevent leakage of water.

⚠ Condensate drain pipes must be insulated for both indoor and outdoor sections to avoid condensation on the surface and/or frosting problems. The insulation must be inserted all the way to the condensate drain pipe connection on the unit.

3.12 Aeraulic connections

Preliminary warnings

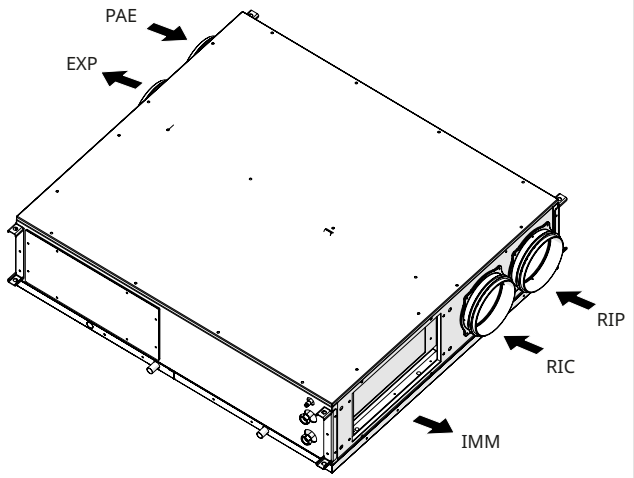
⚠ The sizing of ducting and supply and extract grilles must be carried out by a professionally qualified person.

⚠ To prevent the transmission of any vibrations of the machine into the room, an anti-vibration joint should be placed between the fan outlets and the ducts.

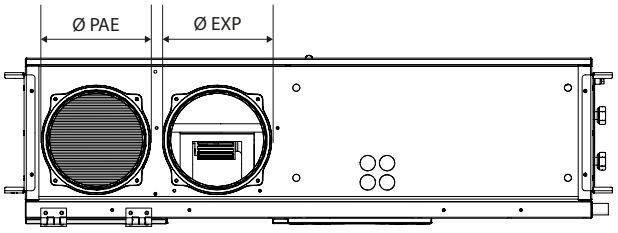
⚠ The connecting pipes must be of a suitable diameter and supported so that their weight does not put strain on the appliance.

Connections

IMM: Supply air
EXP: Exhaust air
PAE: Fresh air inlet
RIP: Extract air
RIC: Indoor air recirculation

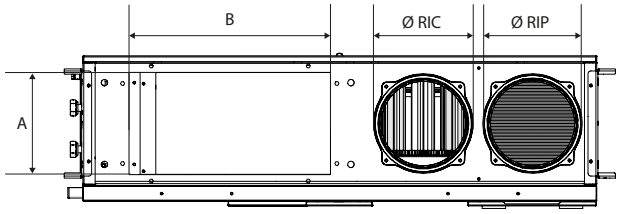


EXP: Exhaust air
PAE: Fresh air inlet



Models	u.m.	KHRDHRIX311	KHRDHRIX511
Connections			
Outdoor side air connection	mm	160	160
Hydraulic connections	"EK	1/2	1/2
Condensate drain connection	mm	18	18

IMM: Supply air
RIC: Indoor air recirculation
RIP: Extract air



Models	u.m.	KHRDHRIX311	KHRDHRIX511
Connections			
Supply air connection (B x H)	mm	345 × 175	515 × 240
Air recirculation connection Ø	mm	160	200
Extract air connection Ø	mm	160	160

3.13 Hydraulic connections

Chemical and physical characteristics of water

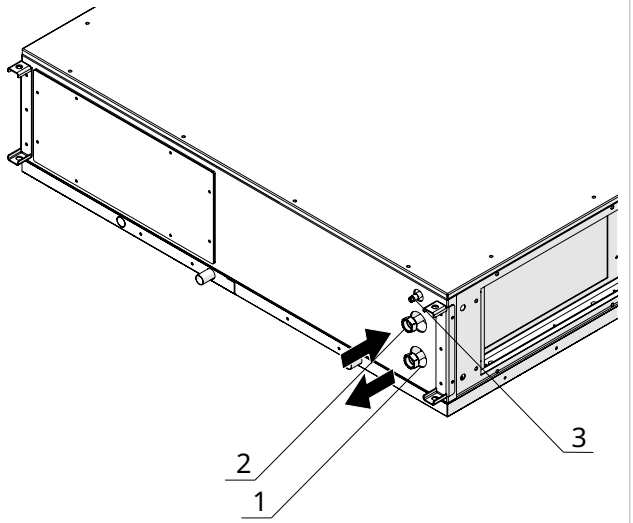
The quality of the water used must comply with the characteristics listed in the following table; otherwise, a treatment system should be provided.

Water content	Unit of measure	Concentration
Chlorides (Chloride)	ppm	< 50
Dissolved oxygen	ppm	< 0,1
Ammonia (NH_3)	ppm	< 0,5
Sulfate (SO_4)	ppm	< 70
Bicarbonate (HCO_3)	ppm	70 ÷ 300
Bicarbonate/Sulfate ratio (HCO_3/SO_4)	-	> 1,0
pH	-	7,5 ÷ 9,0
Total hardness	dH	4,5 ÷ 8,5
Phosphate (PO_4)	ppm	< 2,0
Free chlorine (Cl_2)	ppm	< 0,5
Iron (Fe^{3+})	ppm	< 0,2
Manganese (Mn^{2+})	ppm	< 0,05
Free carbon dioxide (CO_2)	ppm	< 5
Electrical conductivity	µS/cm	10 ÷ 500
Nitrate (NO_3)	ppm	< 100
Aluminum (Al)	ppm	< 0,2
Ratio of [Ca^{2+}, Mg^{2+}] to [HCO_3^-]	-	-
Chlorides (Cl)	ppm	< 50
Hydrogen sulfide (H_2S)	ppm	< 0,05

⚠ Incompatible chemical and physical characteristics could compromise the integrity of the hydraulic components of the unit.
⚠ Well or groundwater not sourced from the public water supply must always be carefully analyzed and, if necessary, treated with appropriate conditioning systems.
⚠ If the hardness of the starting water exceeds the value indicated in the table, a water softening system must be used.
⚠ Excessive softening of the water (total hardness < 1.5 mmol/L) could generate corrosive phenomena in contact with metallic elements (pipes or parts of the boiler). Additionally, keep the conductivity value within 600 µS/cm.
⚠ Check the chloride concentration in the output after the regeneration of the resins.
⛔ It is prohibited to introduce acids into the washing circuit.
⛔ It is prohibited to constantly or frequently top up the system, as this can damage the heat exchanger of the device.

Position and dimensions

1. Water outlet
2. Water inlet
3. Relief valve



System connection

To make the connections:

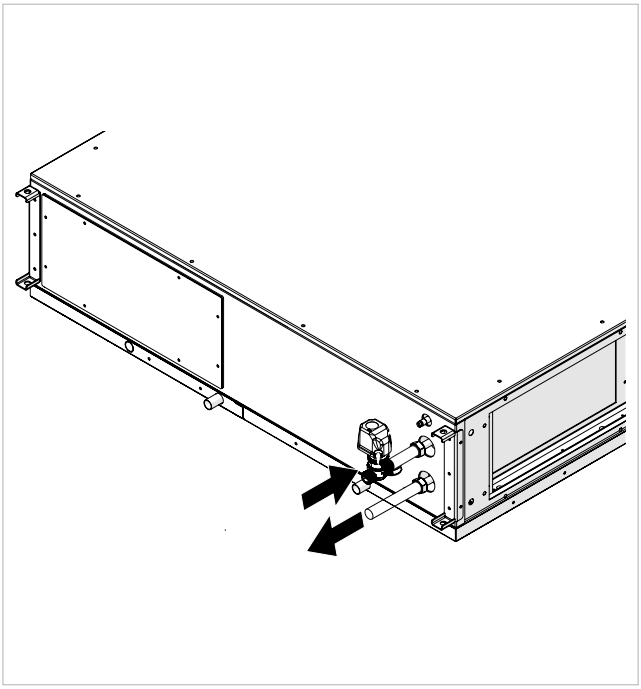
► position the hydraulic lines
► support the body of the connection with an additional wrench or spanner to avoid damage
► tighten the connections
► check for any leaks
► insulate the connections with insulation material

⚠ The hydraulic lines and joints must be thermally insulated.
⚠ Avoid partial insulation of the pipes.
⚠ Do not overtighten the connections to avoid damaging the insulation.
⚠ Carefully check the insulation seals to prevent condensation formation and dripping.

Connection with 2-way valve

In case of choosing the 2-way valve option:

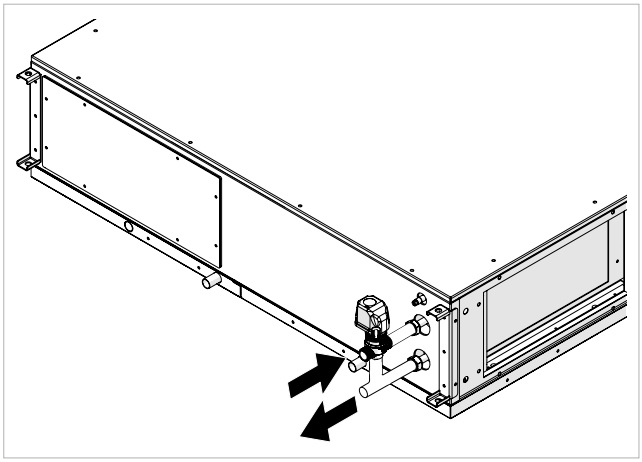
- electrical connections are required



Connection with 3-way valve

In case of choosing the 3-way valve option:

- electrical connections are required



3.14 Electrical connections

The appliance leaves the factory fully wired and only requires connection to the power supply, control and any accessories.

Preliminary warnings

⚠ All operations of an electrical nature must be carried out by suitably qualified personnel having the necessary legal knowledge and informed about the risks related to such operations.

⚠ All connections must be made in accordance with the relevant regulations in force in the country of installation.

⚠ Before carrying out any work, make sure that the power supply is switched off.

⚠ The unit should only be powered after the refrigerant, plumbing, and electrical work has been completed.

⚠ References:

- for electrical connections please refer to the wiring diagrams in this manual, especially for the part concerning the power terminal board

⚠ Check that:

- the main supply characteristics are adequate for the power consumption of the appliance, also taking into account any other machinery in parallel operation
- the power supply voltage and frequency correspond to those specified on the nameplate of the appliance
- the cables are suitable for installation in accordance with the IEC standards in force
- the power supply is adequately protected against overloads and/or short circuits
- the disconnection device is positioned in an easily accessible place to enable intervention in the event of an emergency

⚠ It is mandatory:

- to connect the appliance to an effective grounding system
- for units with three-phase power supply, check the correct phase connection
- provide an all-pole switch with a contact opening distance of at least 3 mm that allows complete disconnection under overvoltage category III conditions
- Install a ground fault circuit interrupter (GFCI). Failure to install this device could result in electric shock

⚠ Ensure that a connection to earth is made. Do not ground the appliance to distribution pipes, surge arresters or the ground of telephony systems. If not performed correctly, grounding can cause an electric shock. Momentary high voltage surges caused by lightning or other causes could damage the heat pump.

⚠ Use a dedicated power supply circuit. Never use a power supply to which another appliance is also connected due to risk of overheating, electric shock or fire.

⚠ For the electrical connection, use a cable of sufficient length to cover the entire distance without any connection. Do not use extension cables. Do not apply other loads on the power supply.

⚠ After connecting the interconnection and power supply cables, ensure that the cables are arranged so that they do not exert excessive forces on the covers or electrical panels. Install the covers on the cables. Incomplete

connections of the covers can lead to overheating of the terminals, electric shock or fire.

⚠ Any replacement of the power cable must only be carried out by qualified personnel and in accordance with current national regulations.

⚠ The Manufacturer is not liable for any damage caused by the lack of earthing or failure to comply with the specifications in the respective diagrams.

⚠ The appliance is equipped with a noise filter as required by current regulations. Use selective residual current circuit breakers to compensate for the micro leakage to earth of this device.

⛔ Using gas and water pipes to ground the appliance is prohibited.

Power line dimensioning

Use the tables below for the sizing of the power supply line and its protection device.
These are not average draw or transient peaks, but values to be considered for the correct sizing of the plant and the request of the contractual power (excluding loads due to the normal operation of the building).

⚠ Maximum power is reached only in exceptional cases. Therefore, the indicated trip current is suggested to guarantee a balance between machine absorption and incidence in the general system.

⚠ The indicated minimum cable cross-section area must be verified according to the actual conditions of the installation: length of the cable, characteristics of the electrical supply, etc.

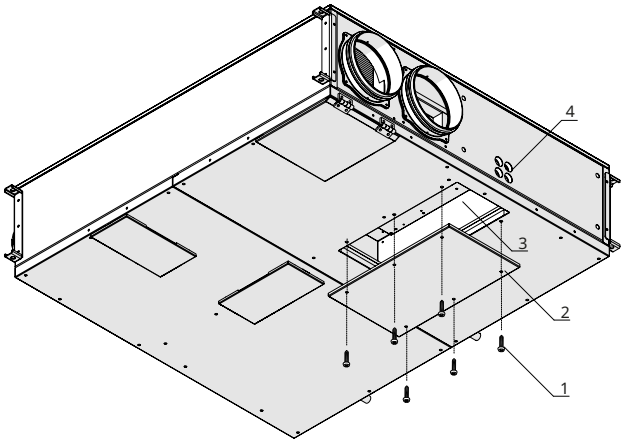
⚠ For units equipped with electrical heating elements, the draw values of the units must be added to those of the heating elements shown in the following tables.

Access to the electrical panel

⚠ Access to the electrical panel is only permitted to qualified personnel.

⚠ Before carrying out any work, ensure that the power supply is switched off.

1.	Fixing screw
2.	Electrical panel closing panel
3.	Electrical panel
4.	Electrical connections passthrough



To access the connections:

► undo the fixing screws

► Remove the electrical panel closing panel

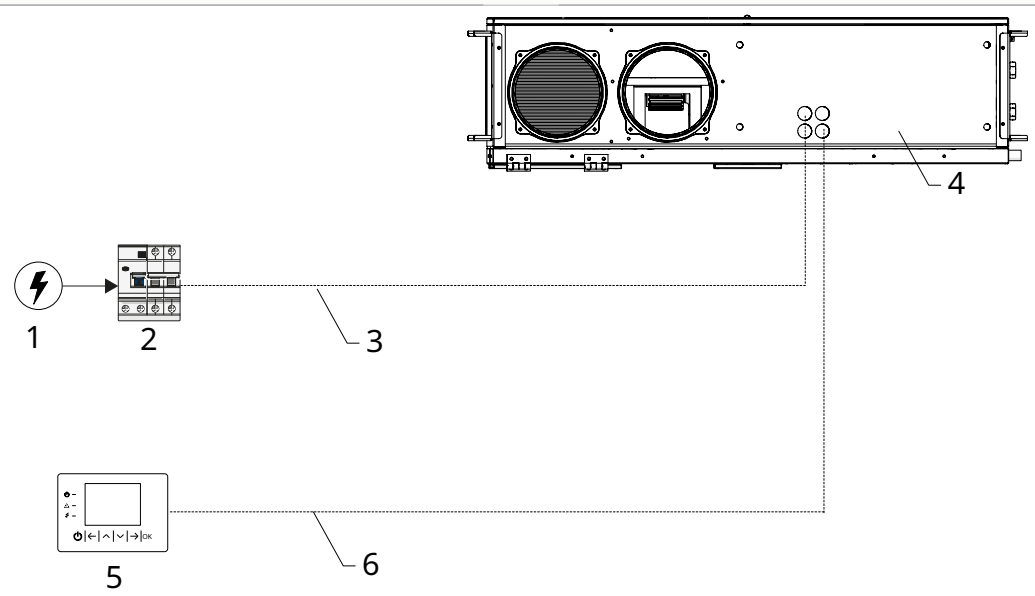
Connections

Before connecting the unit to the mains power supply, make sure that the isolator is open. The power supply of the single-phase unit must be connected to the appropriate terminals, subjected to the action of the isolating switch.

⚠ Use properly sized cables to avoid voltage drops or overheating.

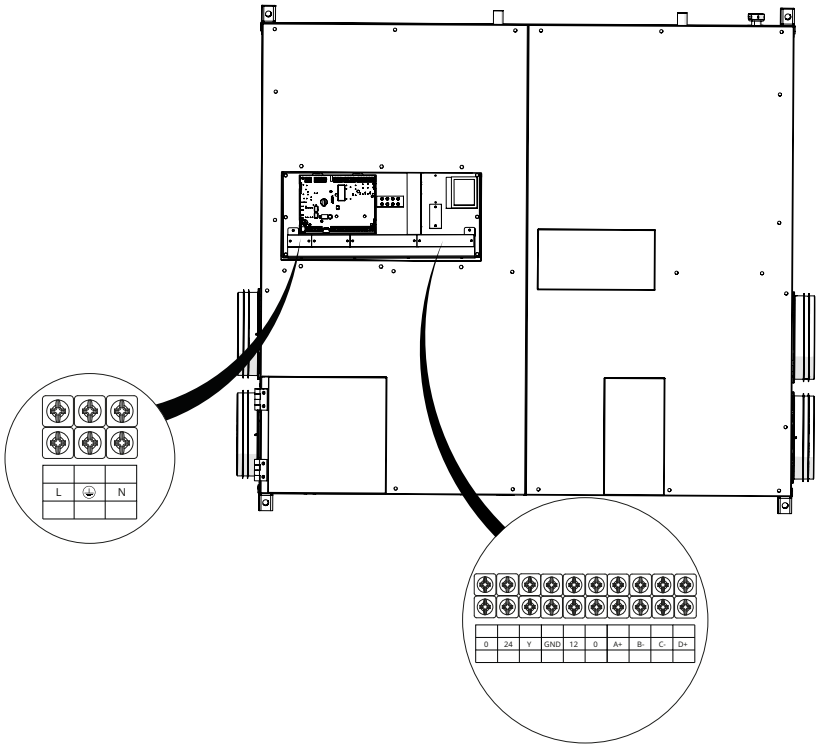
Connection diagram

1.	230/1/50 power supply	**4.**	Unit
2.	Isolator	**5.**	Remote control
3.	Power cable	**6.**	Wired controller communication cable



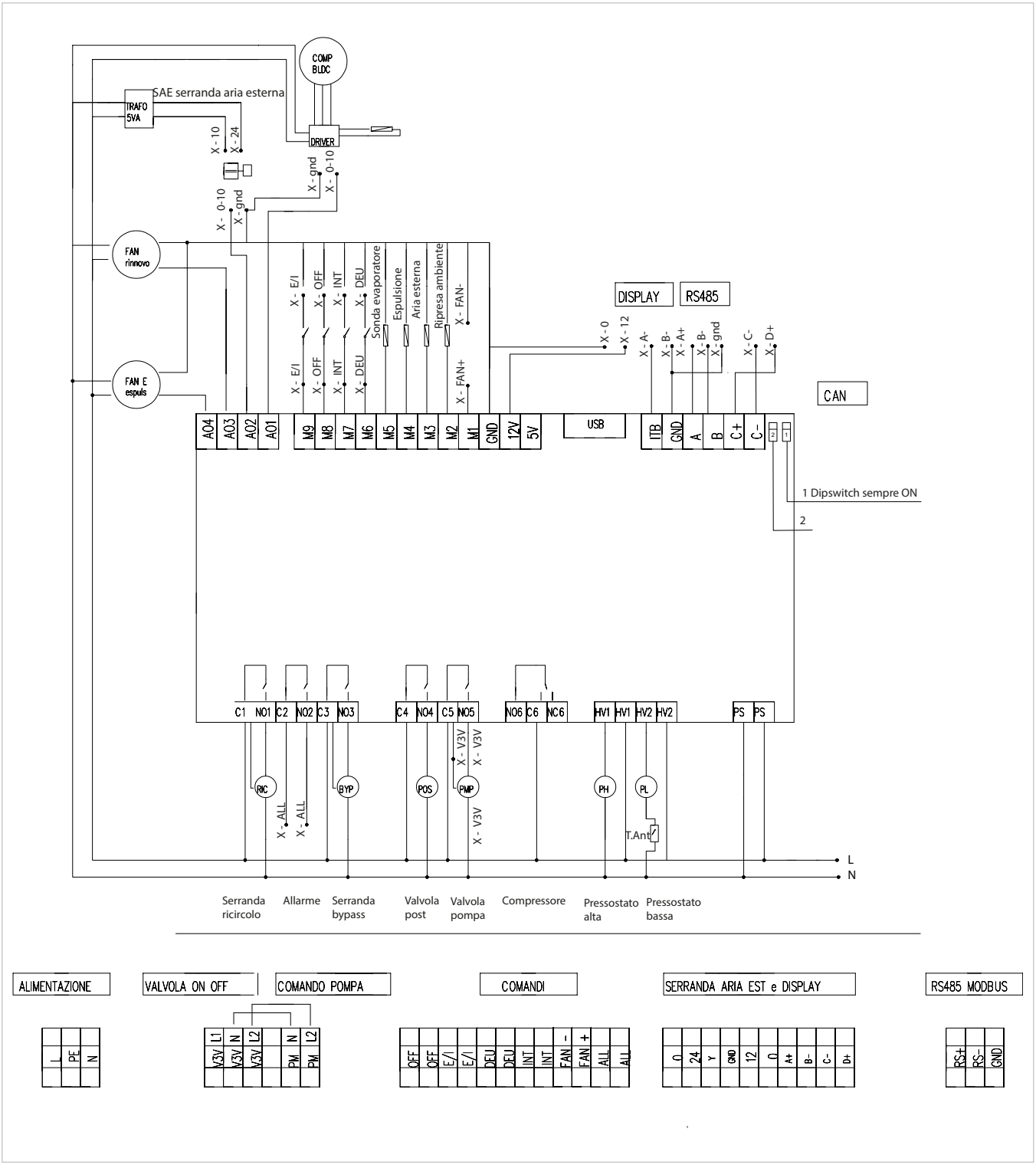
On-board electrical panel

Connection terminal board



⚠ Terminals 12, 0, A+, B- are reserved for connection of the KHR-CD device only. Improper use may cause system damage or communication malfunctions.

Wiring diagram

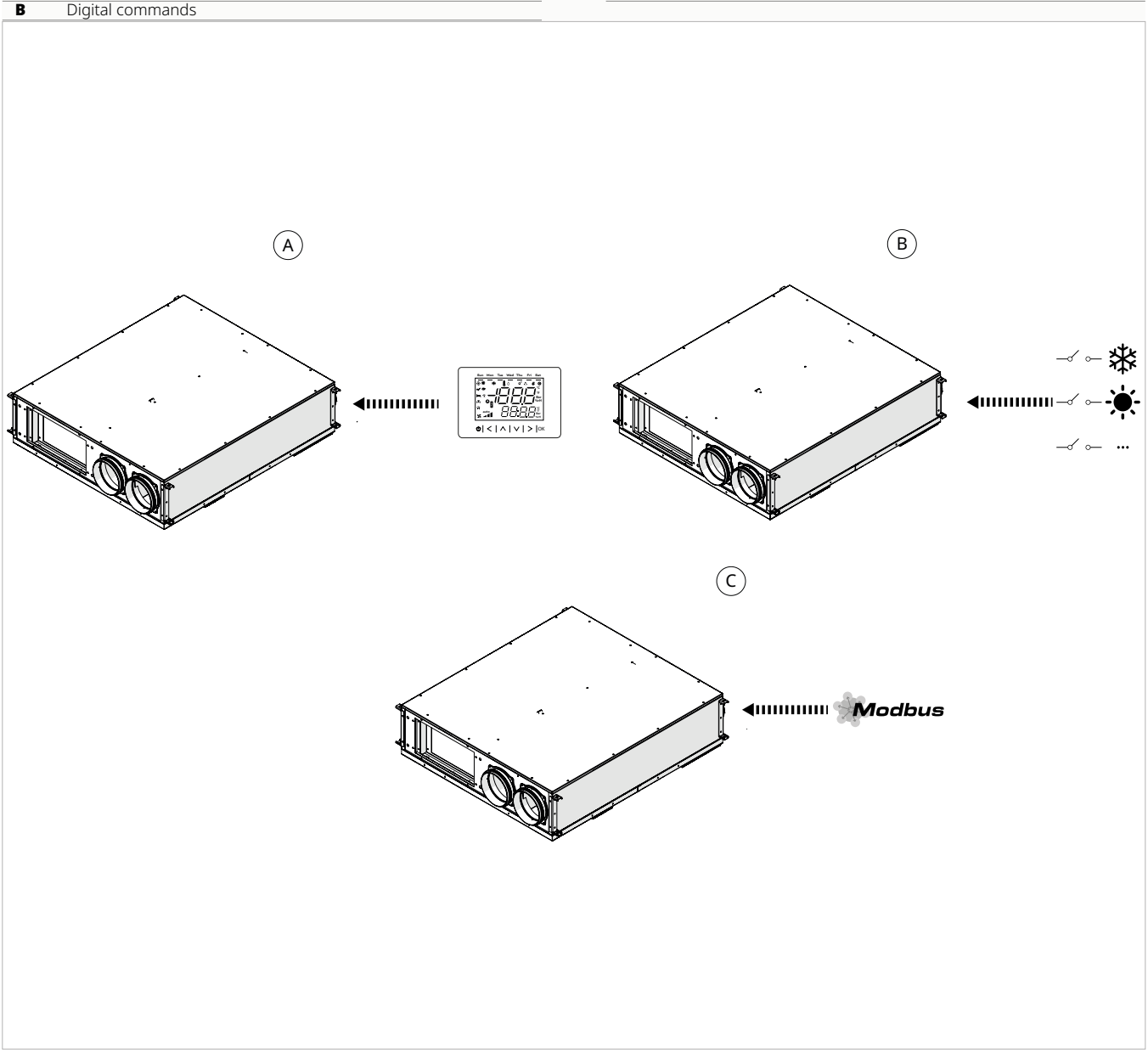


CONNECTIONS TO BE CARRIED OUT BY THE CUSTOMER		
L - PE - N	Unit power supply	230/1/50
V3V (L1) - V3V (N) - V3V (L2)	2-point valve control	L1-N Fixed voltage L2 – Control
PM - PM	Pump control	230/1/50 Max (2A)
OFF - OFF	Remote On Off control	Closed contact unit ON
E/I – E/I	Summer / winter control	Closed contact / winter
DEU – DEU	Dehumidification control	Contact closed / function active
INT – INT	Integration control	Contact closed / function active
FAN- FAN+	Air flow regulation	Input 0-10vdc signal
ALL – ALL	Unit generic alarm or high humidity alarm signal	Closed contact unit in alarm
0 – 24 – Y - GND	Modulating external air damper control	24Vac power supply - 0-10vdc signal
RS485	Modbus RTU	RS485 RTU connection
12 – 0 – A+ B-	Remote display connection (optional)	12-0 Power supply A+ B- Communication

4. KHR-CD CONTROL

The unit can be operated through three different operation modes:

A	Remote control	**C**	Modbus RS485 RTU
B	Digital commands		



4.1 Interface

Description

The LED electronic control panels with touch interface for wall installation allow:

- adjustment of the room temperature
- management of the main functions of the device
- temperature and humidity measurement
- adjustment of the fan speed

They are equipped with:

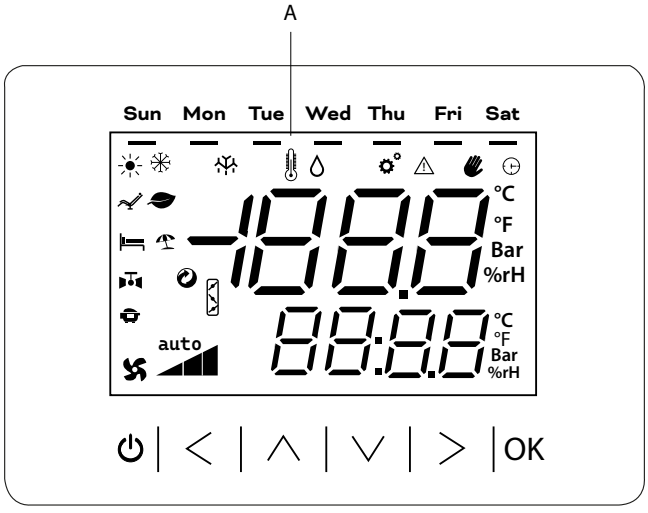
- internal memory with data storage even in the event of abnormal shutdown or power failure

⚠ 20 seconds after the last action, the panel brightness is reduced, and only the room temperature is shown on the display.

⚠ Maximum brightness is restored when any button is pressed.

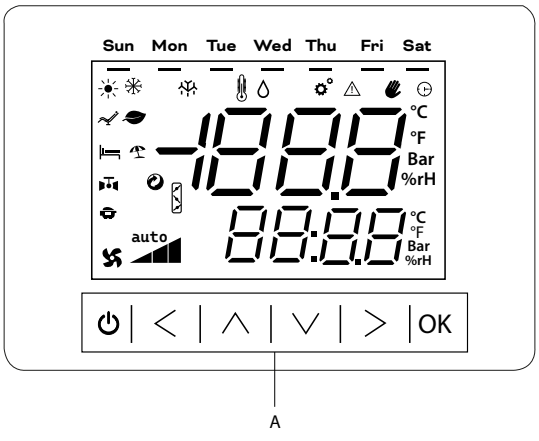
Display

Statuses and alarms displayed.



A	Display area
	Indicates that the machine is operating in summer mode
	Indicates that the machine is operating in winter mode
	Alarm signals
	Indicates the settings menu
	Indicates that the machine is operating in manual mode
	Indicates that the time bands are active
	Indicates that there is a dehumidification request
	Indicates the fan status:
	Indicates the status of the compressor
	Indicates that the heat recovery unit is active
	Indicates that the water valve is open
	Indicates the de-ice status
	Indicates the day of the week
	Comfort mode active
	Indicates the active Economy band
	Night mode active
	Holiday mode active
	Indicates an actual heat integration request
	Indicates the current speed of the supply fan
	Indicates that at least one damper is open (external air or recirculation)

Key functions



A	Keypad area
	Allows parameter changes or cursor movement
	Allows parameter changes or cursor movement
OK	Allows confirmation of the selected value, execution of the command associated with the item highlighted by the cursor, alarm reset, and access to the main menu
	Allows switching the machine on or off, deletes the value, recalls the default page or opens the list of active alarms.
	Allows displaying pages at the same level.
	Allows displaying pages at the same level.

4.2 Installation

Description

The wall remote control is an electronic LED thermostat with a touch interface, capable of controlling multiple devices equipped with the same electronic board. It is equipped with a temperature and humidity sensor.

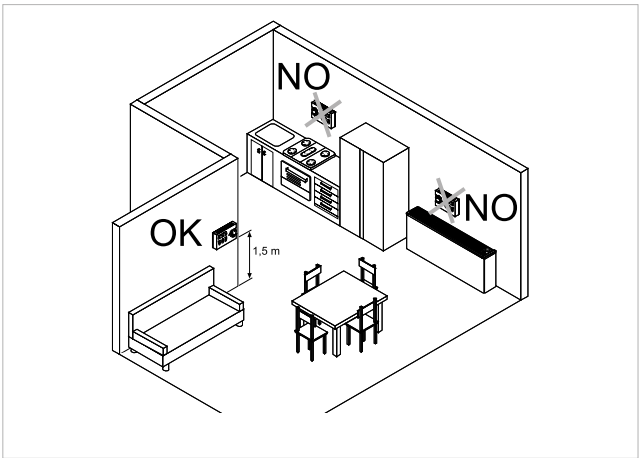
Mounting

⚠ The control panel for wall control must be installed above a 503 electrical box or on the wall.

⚠ Before proceeding with the installation of the wall control panel, it is necessary to prepare the wall for housing the 503 electrical box.

⚠ Make sure that:

- the wall supports the weight of the appliance
- the section of wall does not contain pipes or electrical lines
- the functionality of load-bearing elements is not compromised



Wall installation

► detach the rear shell from the front using a screwdriver in the appropriate slot

► place the rear shell against the wall in a suitable position

► pass the connection cables through the appropriate opening

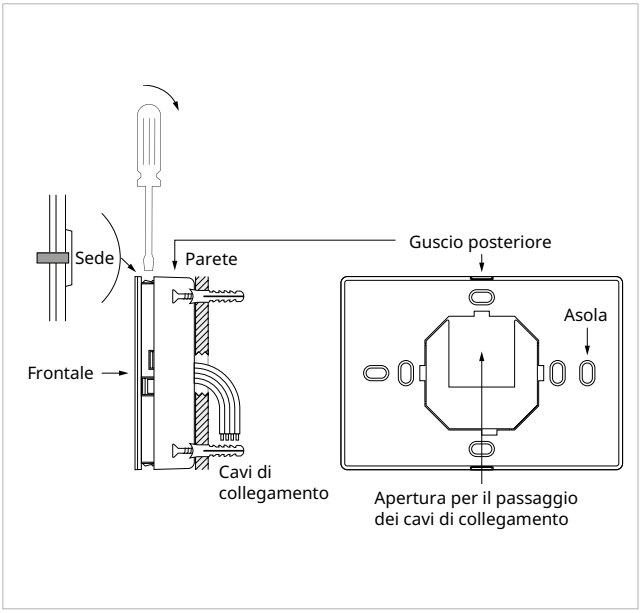
► use the slots in the rear shell as a guide to drill 4 holes of a diameter suitable for the anchor.

► insert the anchors into the holes drilled in the wall

► fasten the rear shell to the wall with 4 screws

► make the electrical connection without powering the device

► fasten the front of the device to the rear shell



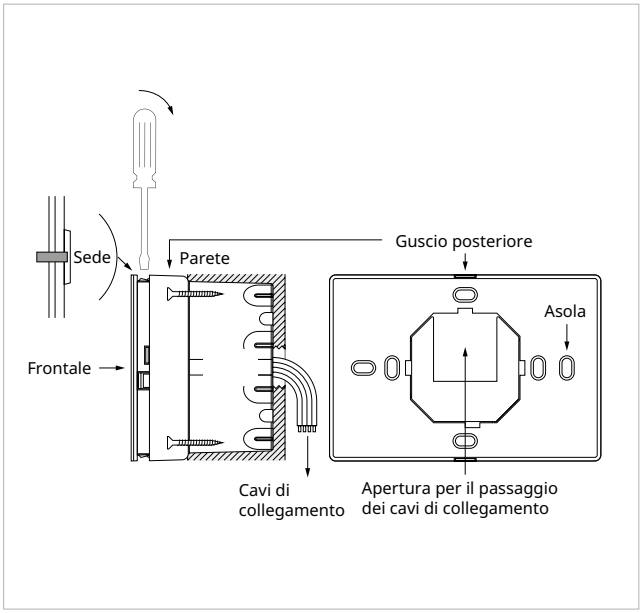
Installation in wall recessed box

► detach the rear shell from the front using a screwdriver in the appropriate slot

► fasten the rear shell to the box with 4 screws

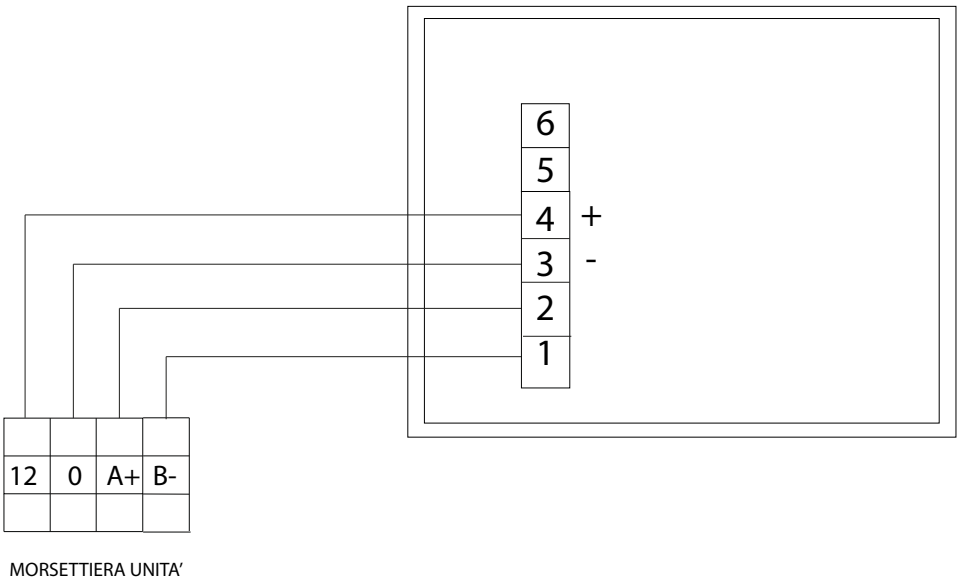
► make the electrical connection without powering the device

► fasten the front of the device to the rear shell



4.3 Connection diagram

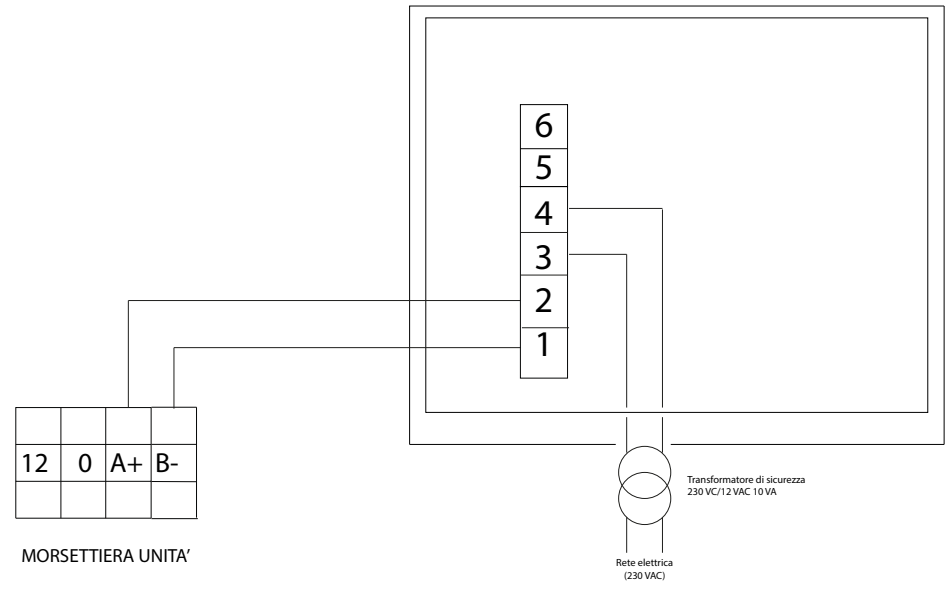
Connection diagram up to 15 m with direct power supply from the unit



The display can be connected directly to the unit up to distances of 15 m.
This connection provides both the power supply and the communication signal to the display.

⚠ Do not reverse the connections on the display, as this may damage the display and the unit

Connection diagram beyond 15 m up to 100 m with external power supply



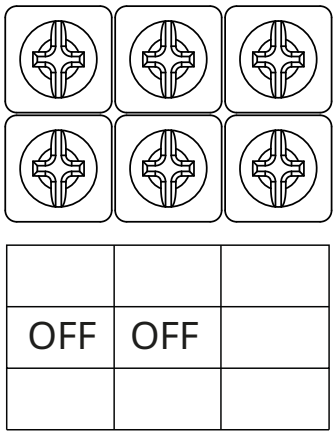
If the connection distance exceeds 15 m, the display must be powered by an external power supply to be provided by the installer.
The power supply must be:

- Voltage: 12vdc
- Power: 10VA

⚠ Do not reverse the connections on the display, as this may damage the display and the unit

4.4 Digital commands

Remote unit ON/OFF connection

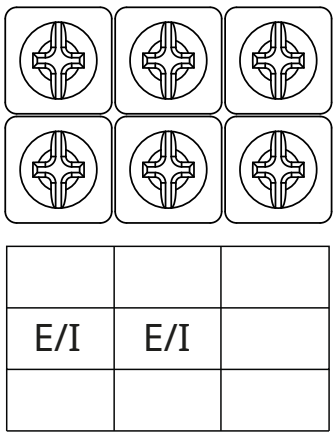


The unit is set up for remote ON/OFF control by means of a dry contact.
It is possible to connect an external device, such as a switch or a timer, to manage the unit status remotely.
The control operates according to the following logic:

- Closed contact → the unit switches on (ON status)
- Open contact → the unit is forcibly switched off remotely (OFF status)

The dry contact must be voltage-free and sized according to the specifications given in the electrical connection chapter.
The connection must be carried out by qualified personnel, with the unit disconnected from the power supply.
⚠ Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

Summer and winter connection

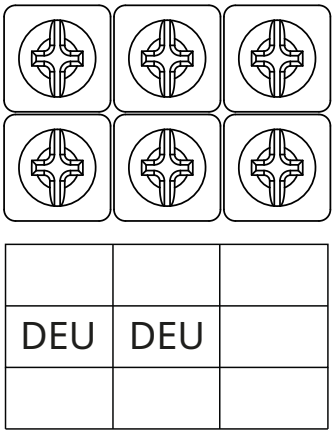


The unit can be connected to an external device equipped with a dry contact for selecting the operating season.
Operation takes place according to the following logic:

- Contact closed: winter mode
- Contact open: summer mode

⚠ To be enabled in the installer menu
⚠ This function can be enabled or disabled through the remote control.
⚠ Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

Dehumidification request connection

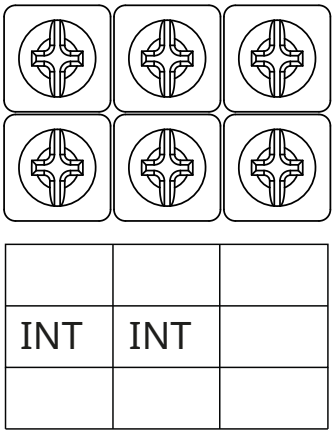


It is possible to connect to the unit a humidistat or dehumidification control that provides forcing of the unit into dehumidification mode.
A contact is provided through a standard thermostat with dry contact output.

- Closed contact: unit in dehumidification

⚠ This function can be enabled or disabled through the remote contact.
⚠ Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

Temperature request connection

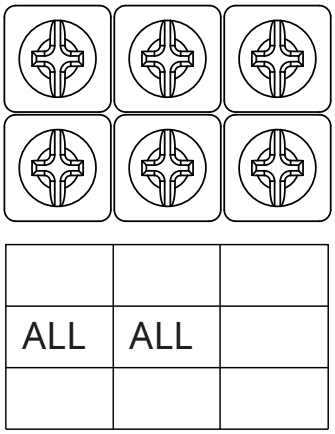


It is possible to connect to the unit a thermostat that provides forcing of the unit into integration mode.
A contact is provided through a standard thermostat with dry contact output.

- Closed contact: integration unit

⚠ This function can be enabled or disabled through the remote contact.
⚠ Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

Generic alarm signaling connection

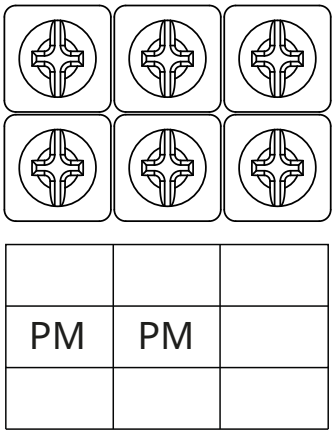


The unit is equipped with a generic alarm dry contact for remote signaling of operating anomalies.

- Closed contact: alarm signal active

⚠ Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

Pump / generator control

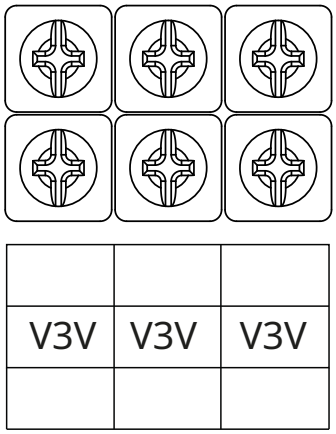


The unit provides control of a generator or a post heater coil and a 230v control on the terminal block

- Closed contact: 230v present with active request

⚠ Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

2/3-point valve control

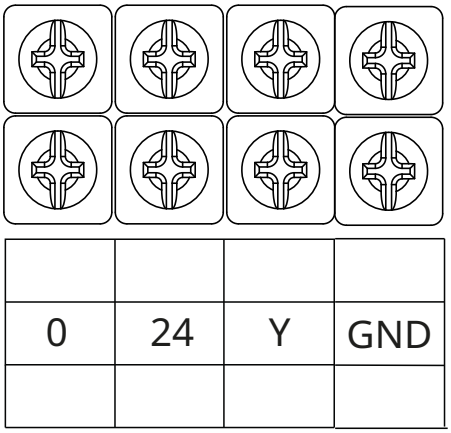


The unit is set up to control a valve or regulating coil with 2- or 3-point On-Off logic or 3-point modulating logic.
Control takes place through the outputs provided on the terminal block.

- V3V (N): Neutral
- V3V (L1): Fixed power supply
- V3V (L2): Opening control

⚠ Recommended cable: 3 x 0.75 mm / 3 x 1 mm

Modulating external air damper control



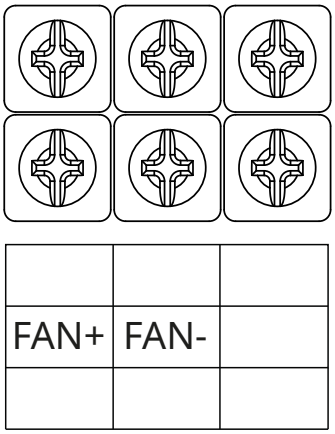
The unit is set up to control and manage a modulating damper to be installed on the external air.
Control takes place by means of a 0–10 V signal, available on the terminals provided on the terminal block.

- 0: Power supply
- 24 Power supply
- Y 0-10vdc signal
- Gnd: Reference signal for 4-wire dampers

The damper regulates the quantity of incoming external air.
Regulation takes place according to the summer relative humidity.
The purpose is to increase the dehumidification capacity of the unit.

⚠ Recommended cable: 3 x 0.75 mm or 4 x 0.75 mm

FAN+ / FAN- connection



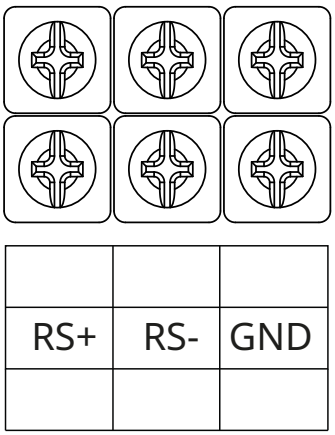
The unit can be managed through a 0-10vdc signal to increase and decrease the fan speed.
Each unit phase, ventilation, dehumidification and integration, includes a minimum and a maximum.
The input signal is linear and ranges from:

- Min fan: 10%
- Max fan: 100%

Recommended cable: 2 x 0.5 mm / 2 x 0.75 mm

4.5 Modbus RS485 RTU

The unit is equipped with a Modbus RS485 interface, allowing control via serial communication from an external master device.
This mode allows activation and modification of all unit functionalities via Modbus RTU protocol, with 9600, N, 8, 1 configuration.



⚠ Refer to the unit Modbus manual for registers and connections

4.6 Functions

General menu

To access the general menu:

► press and hold OK for about 2 seconds
The USER menu appears on the screen
► press ∨ ∧ to scroll through the available menus
► select the desired menu
User
Time bands
Maintenance technician
Installer
Manufacturer
Rtc
Alarms
History
Save parameters
restore parameters
Info
► press OK to confirm
► press ⏻ to exit the menu

User menu

Modify the parameters in the user menu

► press the OK key for 2 seconds
The user menu appears on the screen
► press OK to enter the user menu
The MODE parameter appears on the screen

► press ∨ ∧ to scroll through the available parameters
► press OK on the parameter to be modified
► press ∨ ∧ to set the desired value
► press OK to confirm
► press ⏻ to exit the menu

User menu parameters

MOD: Summer / winter operation

STH: Set point for winter operation

SCC: Comfort range cooling set point

OEC: Economy range cooling offset

ONC: Night range cooling offset

SDC: Cooling set point forced by DI

FSC: Comfort range fan set point

FSN: Night range fan set point

BYU: Display backlight percentage

BYU: Cooling set point forced by DI

PS1: User password

STC: Set point for summer operation

UO1: Indoor humidity set point

SCH: Comfort range heating set point

OEH: Economy range heating offset

ONH: Night range heating offset

SDH: Heating set point forced by DI

FSE: Economy range fan set point

BYN: Display backlight mode

BYT: Display backlight timeout

BYT: Heating set point forced by DI

Display alarms on the wall control panel

SeeTo display and manage alarms

► press ⏻ to access the alarms menu
The ALM PAGE menu appears on the screen
► press OK to display the current alarms

2 types of messages are displayed:

- No ALar: no alarm present
- ALm ALxx: active alarm with error code "xx"

Types of alarms:

- alarms with automatic reset: they reset automatically when the conditions return to normal
- alarms with manual reset: they require user intervention to be reset

To reset an alarm with manual reset:

► select the alarm page to be restored with ∨ ∧
► press and hold OK for about 2 seconds
► the message "No ALAr" is displayed
the message "No ALAr" appears if no other alarms are present
the alarm icon switches off and the machine returns to normal operation
if other alarms are present: the page of the next active alarm is displayed
► press ⏻ to exit the menu

⚠ The order of display follows the alarm activation sequence.
⚠ The alarms are visible even when the machine is off.
⚠ In the event of problems or failures, note the error code shown on the controller or remote control display, write down the model and serial number of the unit (shown on the identification plate), and contact the installer
⚠ Refer to table "Troubleshooting table" ***p. 36***

5. START-UP

5.1 Preliminary warnings

⚠ **This section is dedicated to the Authorised Service Centre. The specifications of the Authorised Service Centre are described in chapter "Recipients"** *p. 5***.**

⚠ **Initial commissioning must be carried out by the Authorised Service Centre.**

⚠ **For detailed information on accessories, please refer to the relevant instruction sheets.**

See chapter "Compatible accessories" *p. 11*

⚠ 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 works (electrical, hydraulic and airflow connections) must have been completed.

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 manual
- 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 made
- grounding is correctly performed
- the electrical connections have been established correctly
- all control wires are connected and that all electrical connections are secure

Hydraulics

- the hydraulic pipes are connected
- the water circuits are open
- the air has been vented correctly

5.3 Plant delivery

Once all the 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:

► Deactivating the device

► Isolate the power supply

⚠ To restart the appliance after it has been out of use for a long period, call in the Authorised Service Centre.

6. MAINTENANCE

6.1 Routine maintenance

Annual operations

The once-a-year maintenance plan includes the following operations and checks and must be carried out by the Authorised Service Centre or by qualified personnel.

Electrical circuit
Check:

- electrical supply voltage
- the electrical absorption
- tightening connections
- that there is no damage or excessive wear to electrical cables
- that the gaskets and sealing materials have not deteriorated to such an extent that they are no longer suitable for the purpose of preventing the development of flammable atmospheres inside
- the correct fixing of cable glands
- safety devices

Mechanical checks
Check:

- tightening of the screws, fans and electrical box, of the unit's external panelling
- the state of the structure

⚠ Bad fixings result in abnormal noise and vibration.
⚠ If oxidised parts are present, treat them with suitable paints to eliminate or reduce oxidation.

Hydraulic controls
Check:

- the regular drainage of condensate
- cleaning the condensate collection trays
- cleaning the exhaust ducts

Airflow controls
Check:

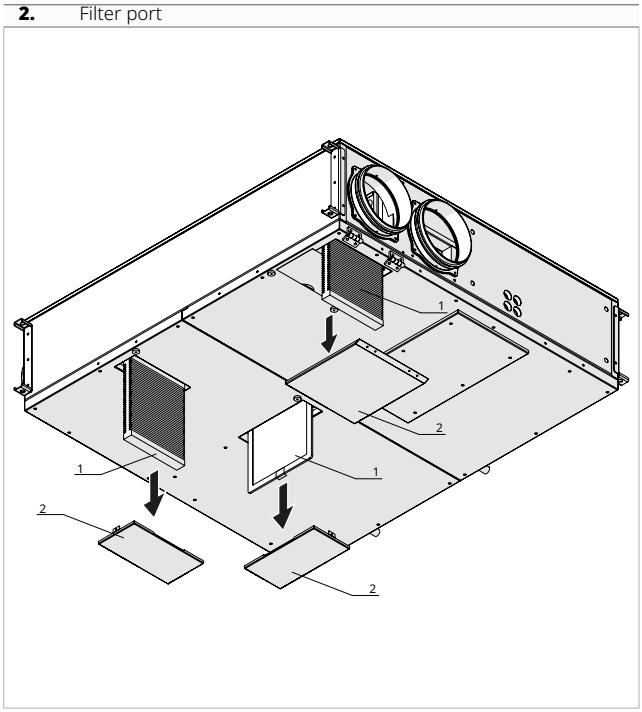
- the regular flow of air
- cleaning of any intake grilles
- cleaning the ducting

Cleaning

- cleaning of aesthetic cover
- cleaning or filter replacement
- cleaning the heat exchanger

Cleaning or filter replacement

1. Filters
2. Filter port



To remove:

► Isolate the power supply to the unit

► Open the filter access door

► extract the filters

⚠ Pay attention to sharp surfaces
ⓘ **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:

► Perform in reverse order

7. FAULTS AND REMEDIES

7.1 Preliminary warnings

If one of the following faults is found:

- ventilation does not activate
- the appliance makes excessive noise
- there is dew formation on the front panel

Follow the instructions below:

► Immediately isolate the power supply

► contact an Authorised Service Centre or professionally qualified personnel

⚠ The intervention must be carried out by a qualified installer or an Authorised Service Centre.

⛔ Personal intervention is prohibited.

7.2 Troubleshooting table

DESCRIPTION OF FAULT	CAUSE	REMEDY
Display off	No power supply (light switch off)	Check the electrical connection to the power supply
Low or absent air flow	Clogged filters	Replace filters
	Dirty fan	Clean the fan
	Clogged fan ducts	Clean the ventilation ducts
High noise level	Noise coming from the unit	Check for cracks and/or air leaks from the unit panels
		Check if the motors are running correctly (bearings)
	Noise coming from the ducts	Check for the presence of cracks on the intake/exhaust ducts
High vibrations	Vibrating panels	Check the integrity of the unit panels and profiles
		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
Condensate leak	Clogged condensate drain	Clean condensate drain
	The condensation does not flow from the drainage pipe into the collection tray	Check that the unit is perfectly level
		Check the siphon connection
		Ensure that the condensate drain connections are not clogged

7.3 Table of alarms shown on the display

Table of alarms indicated by the display

CODE	DESCRIPTION OF ALARM	RESET	CONSEQUENCE
AL01	High humidity warning	Automatic Manual after PA22 events/hour	Stops the return fan Closure of the external air damper if digital Partial closure of the external air damper if analog
AL02	High humidity alarm	Manual	Display only
AL03	High water temperature in summer	Automatic	Heat integration inhibition Dehumidification inhibition if PU03=0
AL04	Low water temperature in winter	Automatic	Heat integration inhibition
AL11	Compressor low pressure switch.	Manual after PA32 events/hour	Stops the compressor
AL12	Compressor high pressure switch.	Automatic Manual after PA35 events/hour	Stops the compressor
AL16	Antifreeze	Automatic	Stops the fans
AL22	Dirty filters alarm	Manual	Signal only
AL25	I/O configuration error	Automatic	Switches off all devices
AL26	RTC clock faulty or disconnected	Auto/Manual	Time band management inhibition
AL28	Room/return temperature sensor faulty or disconnected	Automatic	Inhibition of dependent controls
AL29	External temperature sensor faulty or disconnected	Automatic	Inhibition of dependent controls
AL30	Water temperature sensor faulty or disconnected	Automatic	Inhibition of dependent controls
AL31	Exhaust temperature sensor faulty or disconnected	Automatic	Inhibition of dependent controls
AL34	Room/return humidity sensor faulty or disconnected	Automatic	Inhibition of dependent controls
AL36	Remote fan potentiometer faulty or disconnected	Automatic	Inhibition of dependent controls
AL32	Freecooling sensor faulty or disconnected	Automatic	Inhibition of dependent controls
AL39	Evaporation sensor faulty or disconnected	Automatic	Inhibition of dependent controls

⚠ The order of display follows the alarm activation sequence.

⚠ The alarms are visible even when the machine is off.

8. TECHNICAL INFORMATION

8.1 Technical data

Models	u.m.	KHRDHRIX311	KHRDHRIX511
VMC airflow performance			
Nominal air flow rate	m^3/h	375	605
Available pressure	Pa	100	100
Nominal air flow for ventilation	m^3/h	210	299
Nominal air flow recirculation	m^3/h	165	306
Dehumidification performance (1)			
Dehumidification capacity	L/24h	75,00	99,00
Heat recovery performance (A 7; A 20) (2)			
Sensible recovery efficiency	%	77	73
Heating performance (W 35; A 20) (3)			
Total capacity	kW	3,30	1,25
Water flow rate	L/h	150	200
Pressure drop	kPa	12,00	9,00
Cooling performance (W16; A 25) (4)			
Total capacity	kW	3,30	4,35
Water flow rate	L/h	150	200
Pressure drop	kPa	12,00	9,00
ECODESIGN ErP data (5)			
SEC class		A	B
Supply fan			
Type		Backward-curved radial blades	Backward-curved radial blades
Number	No.	1	1
Maximum absorbed power	W	150	280
Outdoor side fan			
Type		Backward-curved radial blades	Backward-curved radial blades
Number	No.	1	1
Maximum absorbed power	W	70	180
HRV fresh air filter			
Type		Epm1	Epm1
Number	No.	1	1
Efficiency		80%	80%

1. External air temperature 33°; relative humidity 50%. Room temperature 25°C; relative humidity 50%, nominal air flow, nominal water flow, inlet water temperature 16 °C.
2. Efficiency according to UNI EN 13141-7 Outdoor temperature 7 °C - Outdoor humidity 72 % - Indoor temperature 20 °C - Indoor humidity 28 %.
3. Water temperature in finned coil 35 °C; Indoor air temperature 20 °C
4. Finned coil water temperature 16 °C; Room temperature 25 °C / 60 % RH
5. Product fiche for RVU per EU Regulation No. 1254/2014

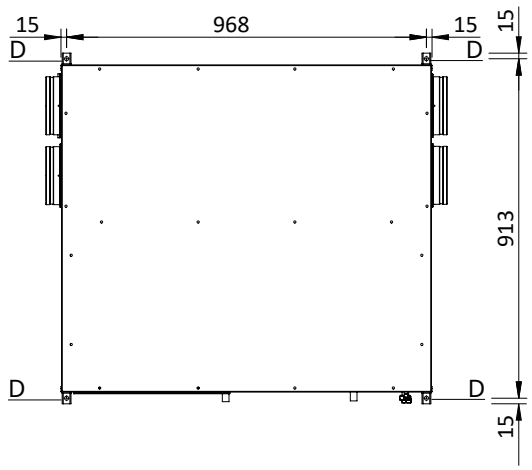
Models	u.m.	KHRDHRIX311	KHRDHRIX511
VMC Extract air filter			
Type		Epm1	Epm1
Number	No.	1	1
Efficiency		80%	80%
Air recirculation filter			
Type		Coarse	Coarse
Number	No.	1	1
Heat exchanger			
Type		Membrane	Membrane
Number	No.	1	1
Compressor			
Type		Horizontal BLDC rotary	Horizontal BLDC rotary
Number	No.	1	1
Refrigerant type		R410A	R410A
Refrigerant quantity	kg	0,48	0,55
Electrical characteristics			
Power supply	V / ph / Hz	230/1/50	230/1/50
Maximum total absorbed power	kW	1.610,00	1.730,00
Maximum total absorbed current	A	7,50	8,10
Protection rating	IP	IPX0	IPX0
Sound levels			
Sound power transmitted to the Lw structure	dB (A)	61,2	64,6
Sound power radiated in the Lw channel	dB (A)	63,0	67,5
Average sound pressure at 1 m Lp	dB(A)	46,7	49,9
Average sound pressure at 3 m Lp	dB(A)	39,7	43,2
Product dimensions			
Width	mm	943	1.243
Height	mm	257	316
Weight	kg	74,0	88,0

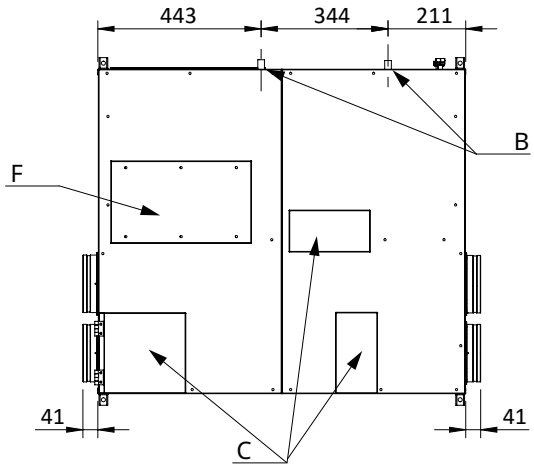
1. External air temperature 33°; relative humidity 50%. Room temperature 25°C; relative humidity 50%, nominal air flow, nominal water flow, inlet water temperature 16 °C.
2. Efficiency according to UNI EN 13141-7 Outdoor temperature 7 °C - Outdoor humidity 72 % - Indoor temperature 20 °C - Indoor humidity 28 %.
3. Water temperature in finned coil 35 °C; Indoor air temperature 20 °C
4. Finned coil water temperature 16 °C; Room temperature 25 °C / 60 % RH
5. Product fiche for RVU per EU Regulation No. 1254/2014

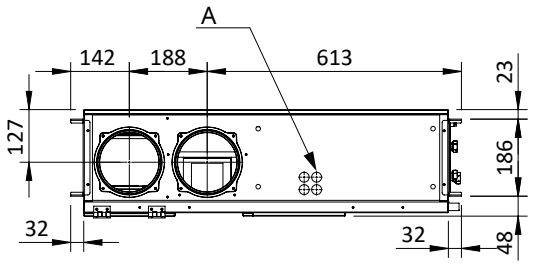
8.2 Dimensions

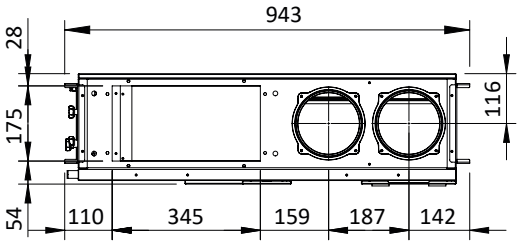
KHRDHRIX311

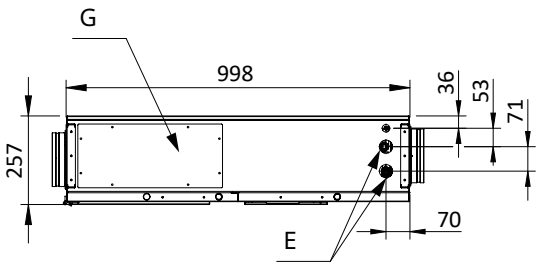
A	Power supply
B	Condensate drain
C	Filter port
D	Installation bracket
E	Hydraulic connections
F	Electrical panel
G	Compressor compartment door

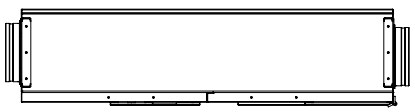






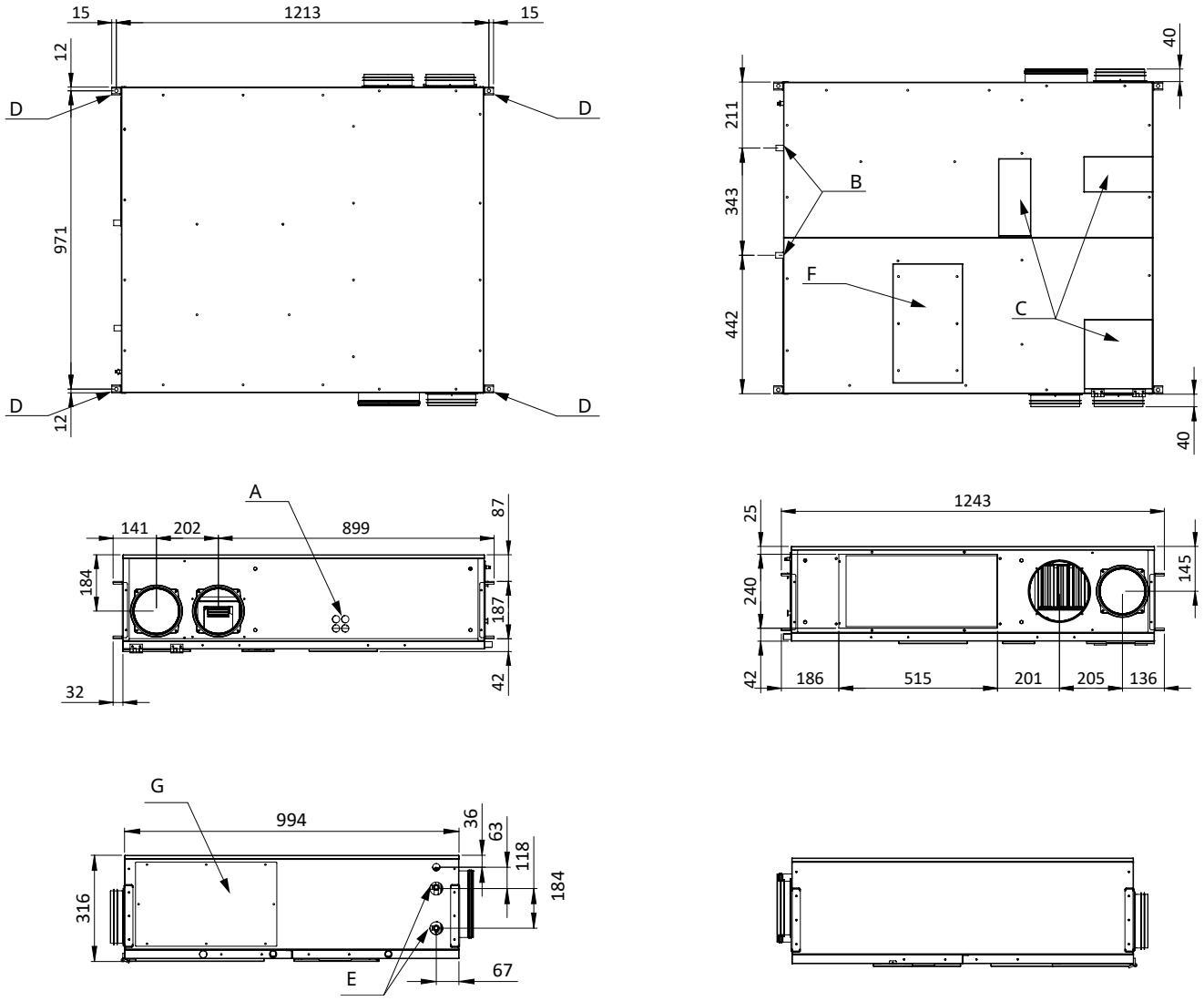






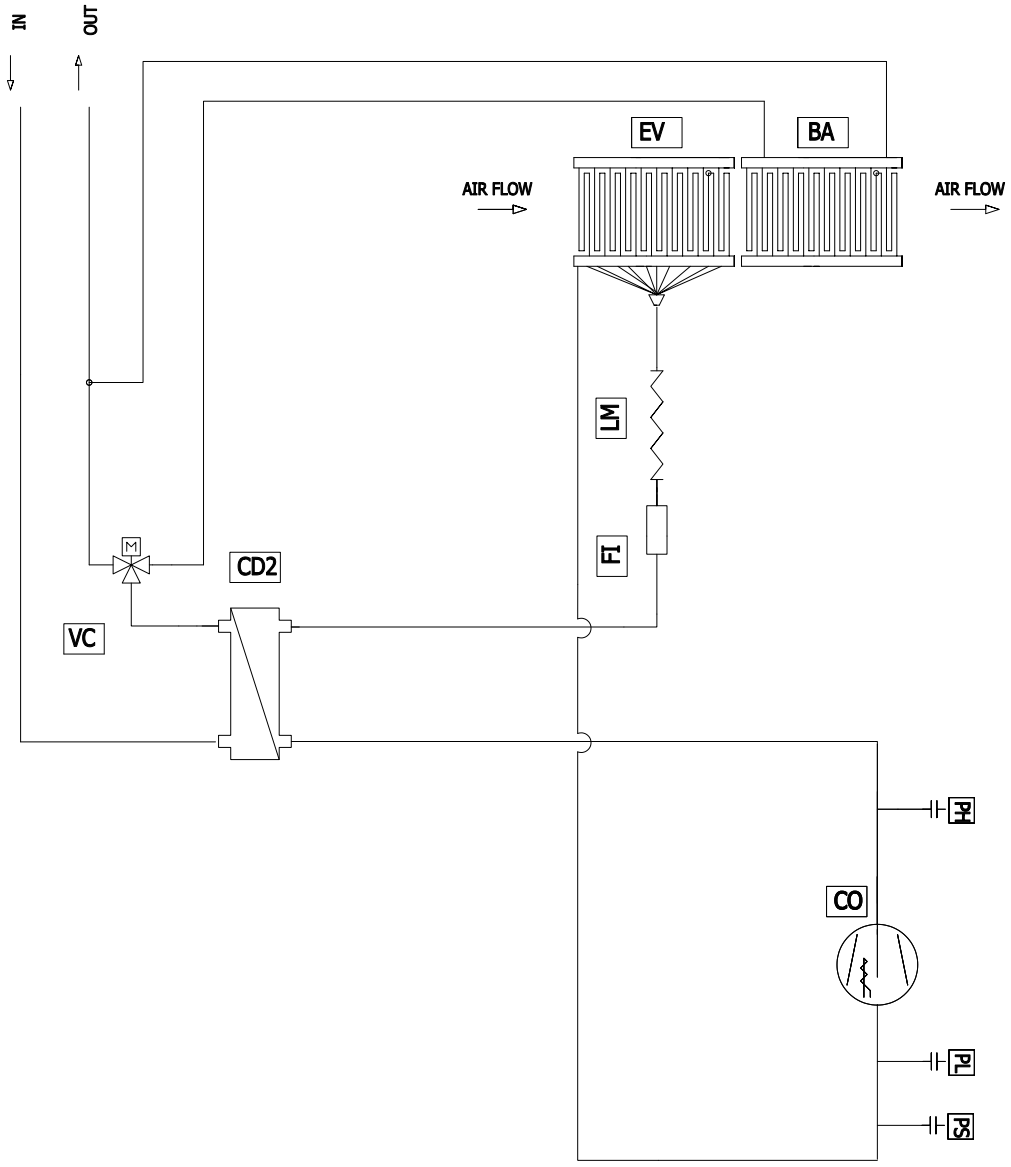
KHRDHRIX511

A	Power supply	**E**	Hydraulic connections
B	Condensate drain	**F**	Electrical panel
C	Filter port	**G**	Compressor compartment door
D	Installation bracket		



8.3 Refrigeration diagrams

CO	Compressor	**LM**	Expansion device
EV	Evaporator	**CD2**	Water condenser
BA	Water coil	**VC**	Solenoid valve
FI	Filter drier		



IT - AVVERTENZE PER IL CORRETTO SMALTIMENTO DEL PRODOTTO

Questo prodotto rientra nel campo di applicazione della Direttiva 2012/19/UE riguardante la gestione dei rifiuti di apparecchiature elettriche ed elettroniche (RAEE). L'apparecchio non deve essere eliminato con gli scarti domestici in quanto composto da diversi materiali che possono essere riciclati presso le strutture adeguate. Informarsi attraverso l'autorità comunale per quanto riguarda l'ubicazione delle piattaforme ecologiche atte a ricevere il prodotto per lo smaltimento ed il suo successivo corretto riciclaggio. Si ricorda, inoltre, che a fronte di acquisto di apparecchio equivalente, il distributore è tenuto al ritiro gratuito del prodotto da smaltire. Il prodotto non è potenzialmente pericoloso per la salute umana e l'ambiente, ma se abbandonato nell'ambiente impatta negativamente sull'ecosistema. Leggere attentamente le istruzioni prima di utilizzare l'apparecchio per la prima volta. Si raccomanda di non usare assolutamente il prodotto per un uso diverso da quello a cui è stato destinato, essendoci pericolo di shock elettrico se usato impropriamente. Il simbolo del bidone barrato, presente sull'etichetta posta sull'apparecchio, indica la rispondenza di tale prodotto alla normativa relativa ai rifiuti di apparecchiature elettriche ed elettroniche. L'abbandono nell'ambiente dell'apparecchiatura o lo smaltimento abusivo della stessa sono puniti dalla legge.

EN - IMPORTANT INFORMATION FOR CORRECT DISPOSAL OF THE PRODUCT

This product falls into the scope of the Directive 2012/19/EU concerning the management of Waste Electrical and Electronic Equipment (WEEE). This product shall not be dispose in to the domestic waste as it is made of different materials that have to be recycled at the appropriate facilities. Inquire through the municipal authority regarding the location of the ecological platforms to receive the product for disposal and its subsequent correct recycling. Furthermore, upon purchase of an equivalent appliance, the distributor is obliged to collect the product for disposal free of charge. The product is not potentially dangerous for human health and the environment, but if abandoned in the environment can have negative impact on the environment. Read carefully the instructions before using the product for the first time. It is recommended that you do not use the product for any purpose rather than those for which it was intended, there being a danger of electric shock if used improperly. The crossed-out wheeled dustbin symbol, on the label on the product, indicates the compliance of this product with the regulations regarding Waste Electrical and Electronic Equipment. Abandonment in the environment or illegal disposal of the product is punishable by law.

CE

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