



HRA-i PLUS

50/15 R HY

Self-contained air conditioning
unit with heat recovery

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.

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 60335-2-40:2003
- EMC Directive 2014/30/EU, by transposition of technical standards: EN 55014-1:2017 + EN 55014-2:2015 + EN 61000-3-2:2014 + EN 61000 3-3:2013
- RoHS Directive 2011/65/EU by transposition of the following technical standards: EN 50581:2012
- European ErP Ecodesign Regulation No. 1254/2014

Markings



CONTENTS

1	General information	<u>p. 5</u>
1.1	About the manual	<u>p. 5</u>
1.2	General Warnings	<u>p. 6</u>
1.3	Basic safety rules	<u>p. 6</u>
1.4	Disposal.	<u>p. 7</u>
2	Product introduction	<u>p. 8</u>
2.1	Identification	<u>p. 8</u>
2.2	Destination of use	<u>p. 8</u>
2.3	Description of the appliance	<u>p. 8</u>
2.4	List of external components	<u>p. 9</u>
2.5	List of internal components	<u>p. 10</u>
2.6	Compatible accessories.	<u>p. 11</u>
3	Installation	<u>p. 12</u>
3.1	Preliminary Warnings	<u>p. 12</u>
3.2	Reception.	<u>p. 12</u>
3.3	Dimensions and weights with packaging	<u>p. 12</u>
3.4	Handling with packaging	<u>p. 13</u>
3.5	Storage	<u>p. 13</u>
	Unpacking	<u>p. 13</u>
3.6	Handling without packaging	<u>p. 14</u>
3.7	Installation site.	<u>p. 14</u>
3.8	Minimum installation distances	<u>p. 16</u>
3.9	Positioning	<u>p. 17</u>
3.10	Condensate drain connection	<u>p. 18</u>
3.11	Aeraulic connections	<u>p. 20</u>
3.12	Electrical connections.	<u>p. 23</u>
4	Remote control	<u>p. 27</u>
4.1	Installation	<u>p. 27</u>
4.2	Electrical connections.	<u>p. 28</u>
4.3	Interface	<u>p. 30</u>
4.4	Warnings	<u>p. 32</u>
5	Start-up	<u>p. 33</u>
5.1	First start-up	<u>p. 33</u>
5.2	Plant delivery.	<u>p. 34</u>
5.3	Switching off for extended periods	<u>p. 34</u>
6	Maintenance	<u>p. 35</u>
	Routine maintenance	<u>p. 35</u>

7	Faults and remedies	<u>p. 39</u>
7.1	Preliminary Warnings	<u>p. 39</u>
7.2	Troubleshooting Table	<u>p. 40</u>
	Table of alarms indicated by the display	<u>p. 41</u>
8	Technical information	<u>p. 42</u>
8.1	Technical data	<u>p. 43</u>
8.2	Dimensions.	<u>p. 46</u>

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 company.

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 absolutely must not be done.
- 📌 **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.
 - ① 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

⚠ 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.

To perform work on the refrigeration circuit, the installer must comply with the provisions of Regulation 303/2008/EC, which defines, in accordance with Directive 842/2006/EC, the requirements for companies and personnel regarding fixed refrigeration, air conditioning, and heat pump equipment containing certain fluorinated greenhouse gases (F-gas Certificate).

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 itself.

The service personnel must comply with the provisions of Regulation 303/2008/EC, which defines, in accordance with Directive 842/2006/EC, the requirements for companies and personnel regarding fixed refrigeration, air conditioning, and heat pump equipment containing certain fluorinated greenhouse gases (F-gas Certificate).

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

It is addressed exclusively to the installer.

It contains specific warnings and all the necessary information for the positioning, installation, and connection of the appliance.

Commissioning, maintenance and troubleshooting

They are addressed exclusively to the Technical Assistance Centre.

It contains specific warnings 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.
- ⚠ The installation and maintenance of air conditioning equipment can be dangerous as they contain pressurized refrigerant gas and live electrical components. The installation, initial startup, and subsequent maintenance stages must be carried out exclusively by authorized and qualified personnel (see first startup request form attached to the equipment).
- ⚠ 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 Technical Assistance 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 accident-prevention 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, switch off the main power switch of the system and close the water valves. Promptly contact the authorized Technical Assistance Center 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.

Specific warnings for R410a

- ⚠ Do not release R410a into the atmosphere. R410a is a fluorinated greenhouse gas listed in the Kyoto Protocol, with a Global Warming Potential (GWP) of 2088.
- ⚠ When installing or relocating the system, ensure that no substances, such as air, other than the specified refrigerant (R410a), enter the refrigerant circuit. The presence of air or other foreign substances in the refrigerant circuit could cause abnormal pressure increase or equipment failure, resulting in potential harm to individuals.

1.3 Basic safety rules

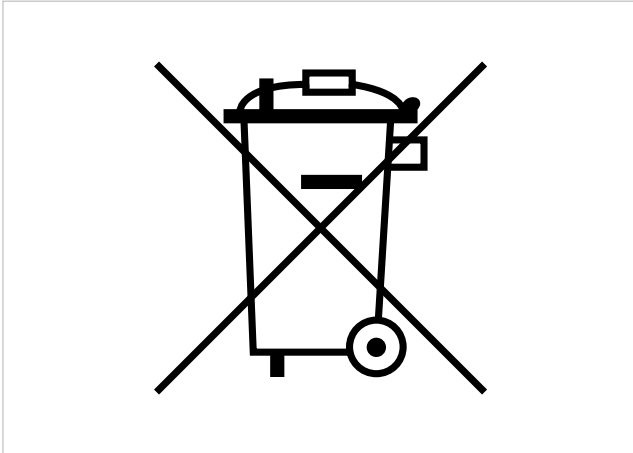
We would like to remind you that the use of products that use electricity and water involves observing certain basic safety precautions such as:

- ⊖ It is forbidden for children and unassisted disabled persons to use the appliance.
- ⊖ 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 air intake and outlet grilles.
- ⊖ 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 source of danger.

1.4 Disposal



The symbol on the product or its packaging indicates that the product must not be treated as normal household waste, but must be taken to the appropriate collection point for the recycling of electrical and electronic 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 city office, 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.

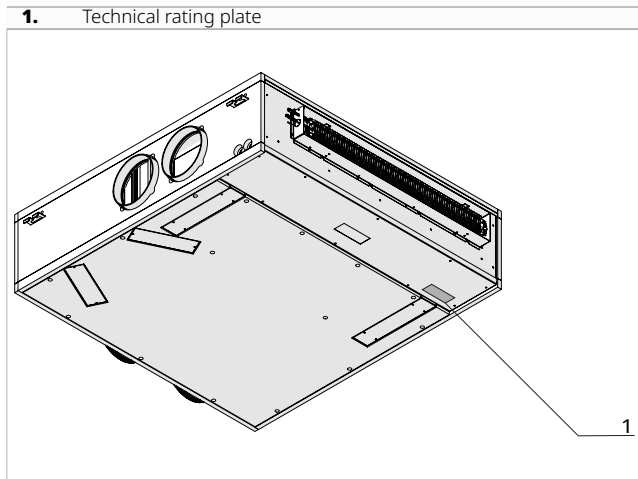
This provision is only valid in the EU Member States.

- ⚠ Avoid disassembling the appliance yourself.
- ⚠ This unit contains fluorinated greenhouse gases covered by the Kyoto Protocol. Maintenance and disposal operations must be carried out only by qualified personnel.
- ⚠ **Contact an authorised Technical Assistance Centre to disassemble the appliance.**

PRODUCT INTRODUCTION

2.1 Identification

The appliance can be identified by the rating plate:



Technical rating plate

This shows the technical and performance specifications of the appliance.

- ⚠ According to EU Regulation No. 517/2014 concerning certain fluorinated greenhouse gases, it is mandatory to indicate the total quantity of refrigerant present in the installed system. This information is available on the technical plate of the unit.
- ⚠ 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

HRA+ DOMO is an active recovery unit for heating, cooling, and air renewal in the environment.

The unit consists of a single block comprising all components for proper operation:

- fans with constant airflow function
- refrigeration circuit with horizontal BLDC compressor

- air filtration sections ePM1 80%
 - high-efficiency heat recovery unit
- HRA+ DOMO can function as a passive heat recovery system and as an air conditioner. It is particularly suitable for residential premises and is supplied as a plug-and-play unit for quick and simplified installation.

2.3 Description of the appliance

Structure: self-supporting sheet metal frame, 25mm thick sandwich panels made of galvanized sheet metal, insulated with polyurethane foam with a density of 42 kg/m³. Heavy-duty internal sheet metal framework and claddings.

Heat exchanger: Counterflow type, high-efficiency cross-flow 000 polypropylene heat exchanger.

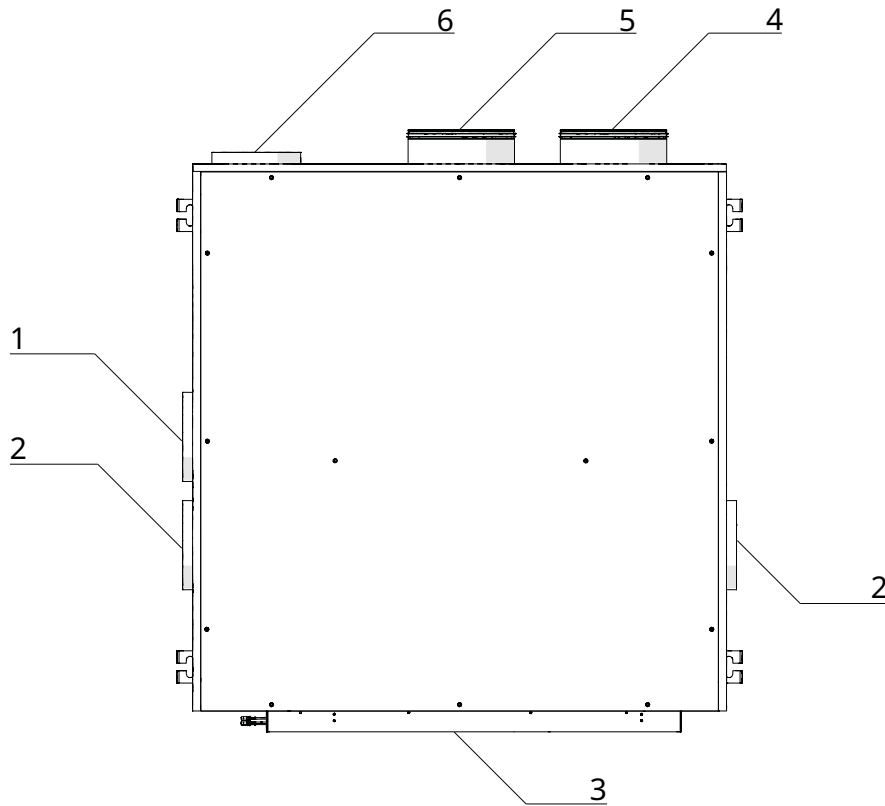
Brushless fans: DC fans regulated by inverters allow high levels of comfort and energy efficiency with constant flow function.

Filters: EPM1 filter on supply air and exhaust air with low pressure drop. Easily removable for routine maintenance.

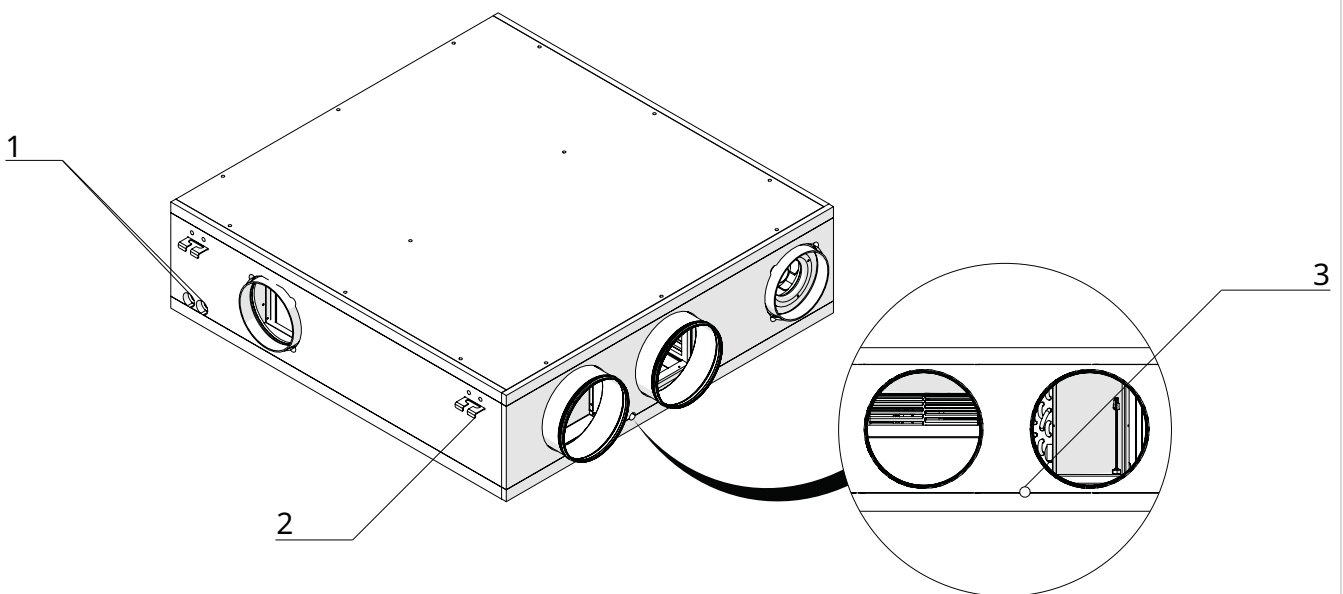
Refrigeration circuit: copper brazed with high-efficiency BLDC compressor, drier filter, finned coils, electronic expansion valve, and safety devices.

2.4 List of external components

- | | |
|-----------------------------|---|
| 1. Extracted air | 4. Outdoor air exhaust (PDC) and stale air exhaust (VMC) |
| 2. Air recirculation | 5. Outdoor air intake (PDC) |
| 3. Supply air | 6. Outdoor air (VMC) |

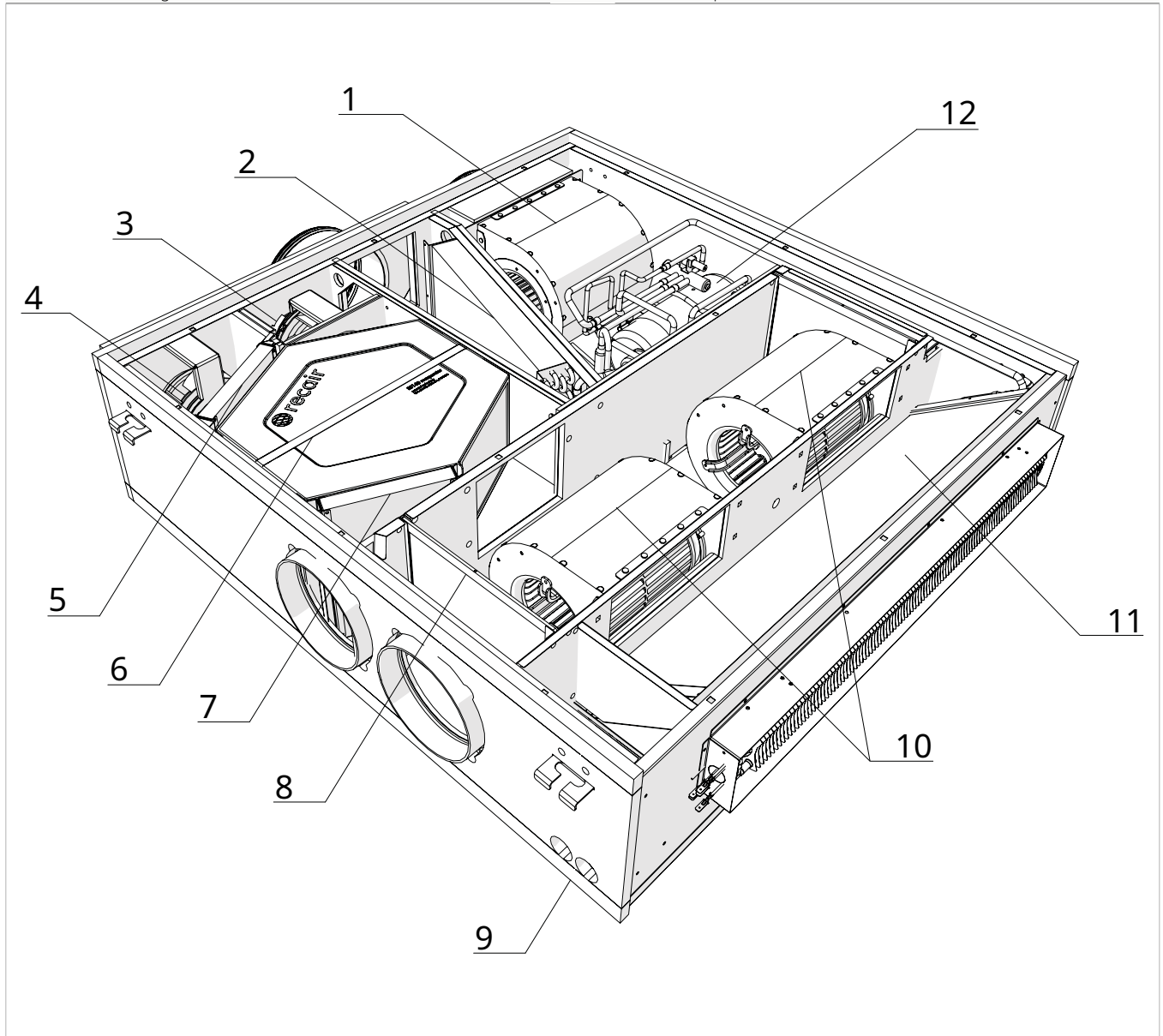


- | | |
|---|----------------------------|
| 1. Electrical connection passage | 3. Condensate drain |
| 2. Installation bracket | |

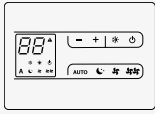
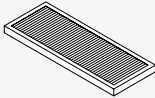
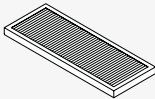
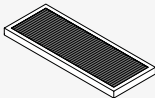
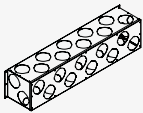
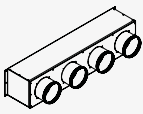
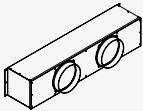


2.5 List of internal components

- | | |
|-------------------------------------|------------------------------------|
| 1. General expulsion fan | 7. VMC Extracted filter |
| 2. Outdoor side battery | 8. Air recirculation filter |
| 3. VMC Stale air exhaust fan | 9. Electrical panel |
| 4. VMC Outdoor air fan | 10. Supply fan |
| 5. VMC Outdoor air filter | 11. Indoor side battery |
| 6. Heat exchanger | 12. Compressor |



2.6 Compatible accessories

Description	Code
Commands for Y versions	
	CNT-B Smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Wi-Fi module, black color. AHRA0571
	CNT-W Smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Wi-Fi module, white color. AHRA0572
	CNT-B Smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Modbus communication module, black color. AHRA0581
	CNT-W Smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Modbus communication module, white color. AHRA0582
Spare filters	
	FDR - Kit 2 spare recirculation filters for HRA DOMO 50 - 15 AHRA0687
	FDR - Kit 2 spare filters ePM1 for HRA DOMO 50 - 15 AHRA0685
Active carbon spare filters	
	FCA - Activated carbon filter for HRA DOMO 50 - 15 AHRA0686
Exclusive accessories for HRA+ DOMO 50/15	
	Insulated plenum with unit connection flange and pre-cut holes for DN 75 / DN 90 corrugated pipes (4+16+4) (810x175x175 mm) AHRA0712
	Insulated plenum with unit connection flange and four DN 125 mm circular duct connections (810x175x175 mm) AHRA0713
	Insulated plenum with unit connection flange and two DN 160 mm circular duct connections (810x175x175 mm) AHRA0706

INSTALLATION

3.1 Preliminary Warnings

- ⚠ **For detailed information on the products, refer to chapter 8 p. 42.**
- ⚠ 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 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 different components could lead to water leakage, electric shock or fire.
- ⚠ Failure to apply the indicated rules may cause malfunctions of the appliances and relieves the manufacturer from any warranty and from any damage caused to persons, animals or property.

3.2 Reception

Preliminary Warnings

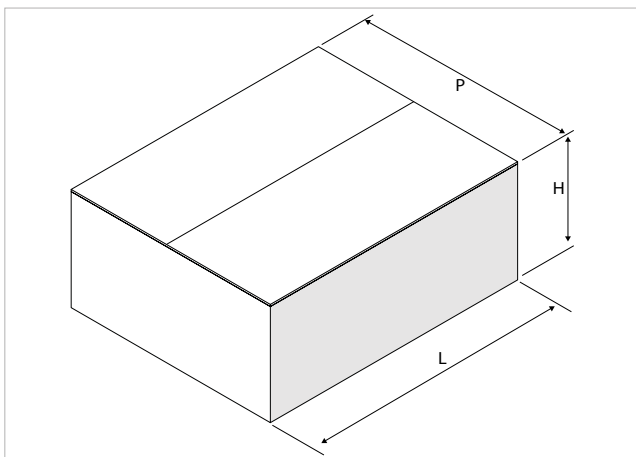
- ⚠ Upon receipt of the package check that it is not damaged, otherwise accept the goods with reserve, producing photographic evidence of any damage.
- ⚠ In the event of damage, notify the shipper by registered mail with return receipt within 3 days of receipt. Presenting photographic documentation, similar information should also be sent by 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.

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.	50/15-0
Packaging dimensions (1)		
Width	mm	1115
Length	mm	1240
Height	mm	375
Weight	kg	75,0
1. Excluding pallet		

3.4 Handling with packaging

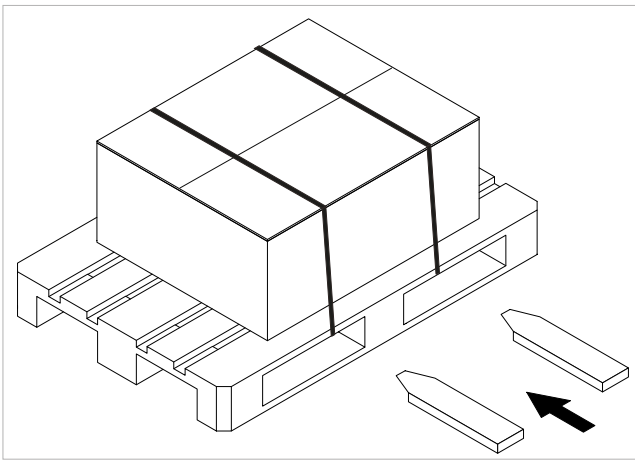
Preliminary Warnings

- ⚠ 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.

Handling

With pallet:

- use a forklift



- ⚠ 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 amount of stackable packages.
- ⚠ In manual operations, the maximum weight per person required by current legislation must always be observed.

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 people employed.

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.

- ⚠ Do not overturn the packaging.
- ⚠ Place the device only in a horizontal position.

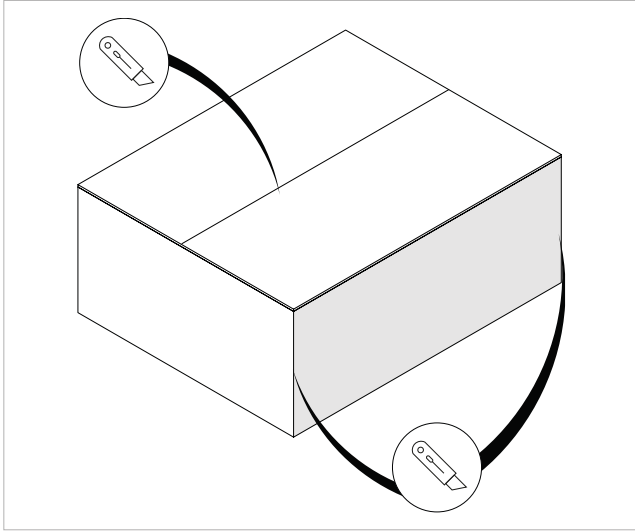
Unpacking

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 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 sur-

rounding environment and must be kept out of children reach, as it can be dangerous.

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:

- Control panel user manual
- Installer manual
- Energy efficiency label
- ⚠ Check the presence of the individual components.

3.6 Handling without packaging

Preliminary Warnings

- ⚠ The appliance must be handled only 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 amount of stackable packages.
- ⚠ In manual operations, the maximum weight per person required by current legislation must always be observed.

Movement methods

- use 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 people employed.

3.7 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
- ⚠ **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.**

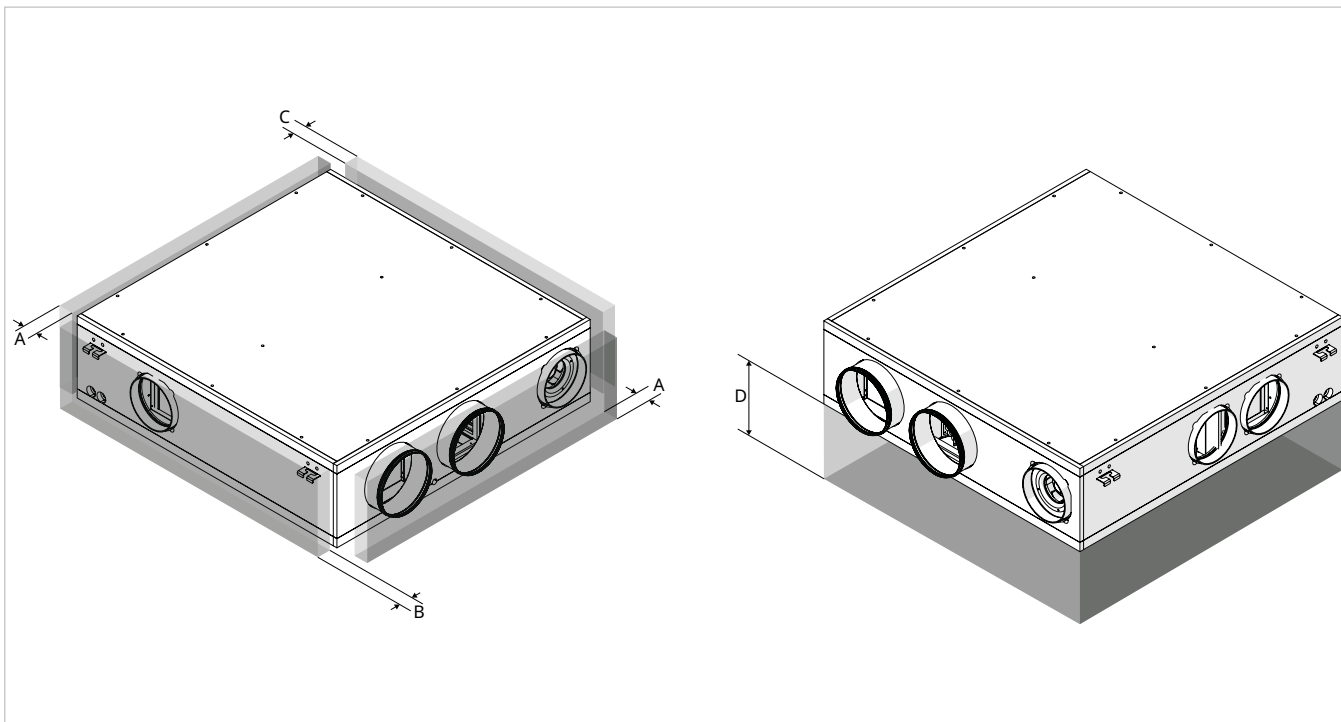
- ⚠ Avoid placing the unit within 1 metre of radio and video equipment.
- ⚠ Do not install above heat sources.
- ⚠ Ensure that:

- the installation site of the unit must be chosen with 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

3.8 Minimum installation distances

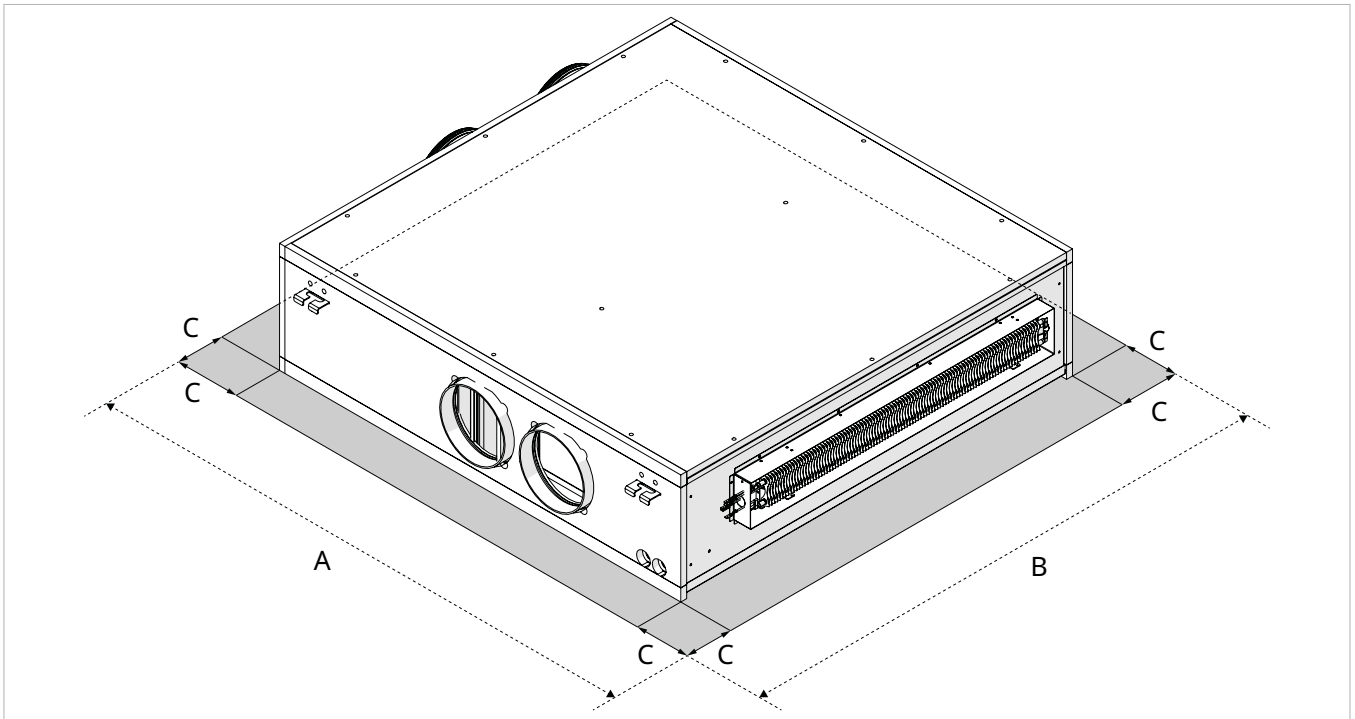
The clearance zones for the installation and maintenance of the appliance are shown in the figure. Established spaces are necessary to avoid barriers to airflow and allow for normal cleaning and maintenance.

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



Models	u.m.	50/15-0
Minimum distances		
A	mm	50
B	mm	50
C	mm	50
D	mm	300

Hatch dimensions



Models	u.m.	50/15
Hatch dimensions		
A	mm	1237
B	mm	1103
C	mm	50

3.9 Positioning

Preliminary Warnings

The unit must be installed on the ceiling.

⚠ 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

The external wall must be prepared with holes for air ducting.

To drill the holes:

- mark the position of the hole
- use a drill
- drill a guide hole
- use a core drill
- make a hole through the wall
- maintain a downward slope towards the outside

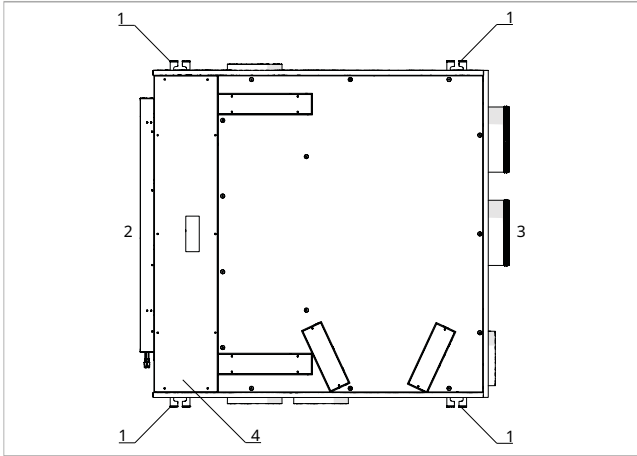
⚠ To avoid the release of large amounts of dust and debris into the room, you are advised to couple the core drill with a vacuum system.

⚠ Proceed with caution near the outside wall to avoid breaking the plaster around the hole.

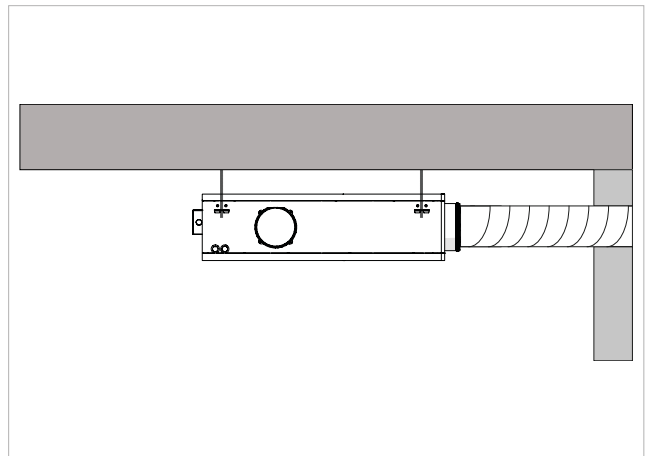
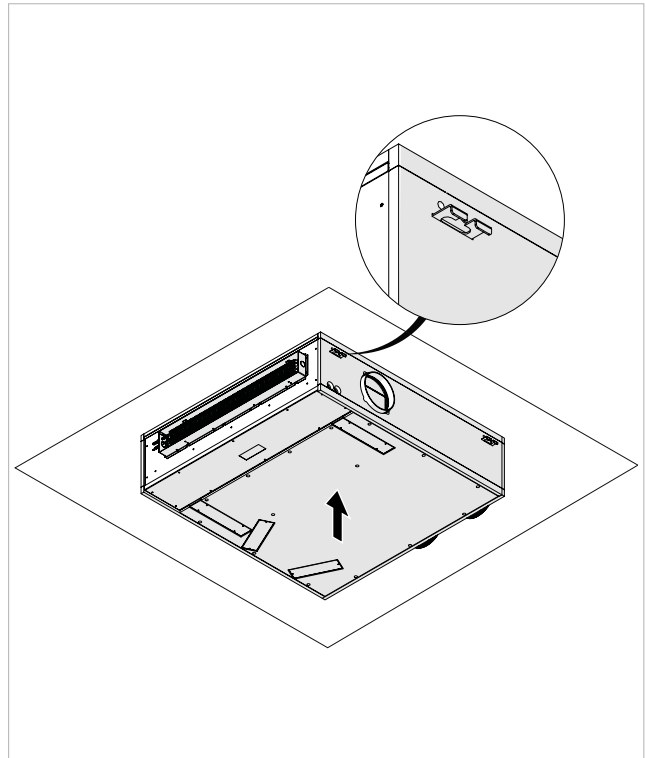
⚠ Take precautions so that the removed material does not hit people and objects below.

Positioning the unit

- 1. Installation bracket
- 2. Front side of unit
- 3. Rear side of unit
- 4. Electrical panel



- ⚠ Check the correct orientation of the unit.
- mark the position of the fixing holes



- 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.

3.10 Condensate drain connection

Preliminary Warnings

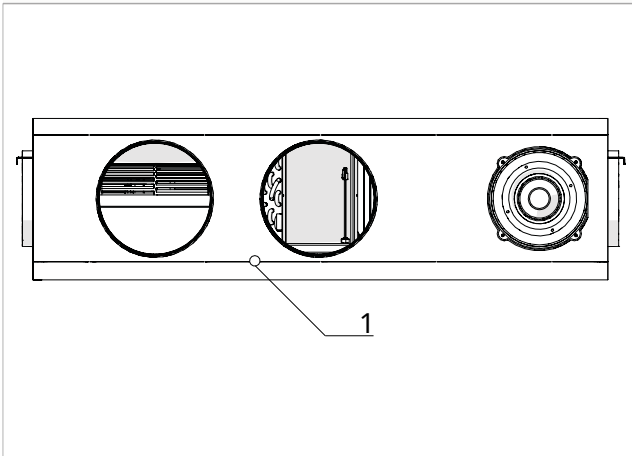
- ⚠ This appliance is equipped with trays for collecting the condensate that is produced during operation. Condensate must be routed to a suitable place for drainage.
- ⚠ The appliance is equipped with two condensate drainage connections. One of the two must be used depending on the chosen configuration.

- ⚠ 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.
- ⚠ When connecting the condensate drain, take care not to crush the rubber pipe.

Attachment position

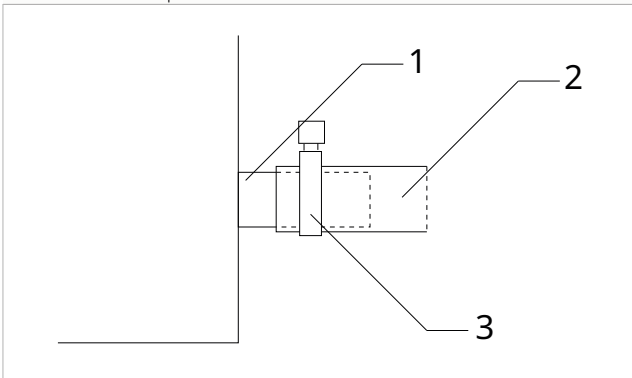
The size and position of the condensate drain attachments are shown below.

1. Condensate drain Ø 16

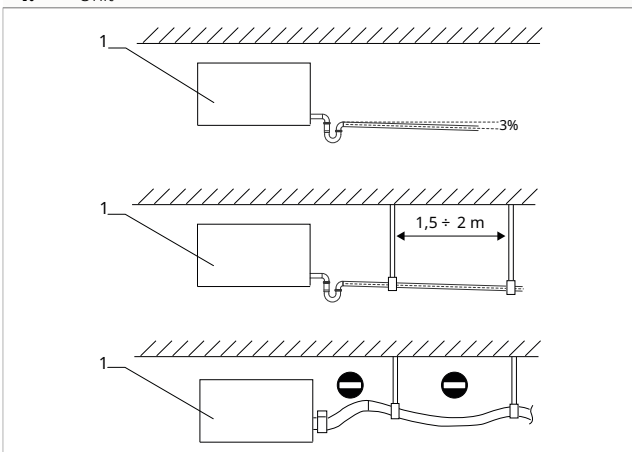


Connections

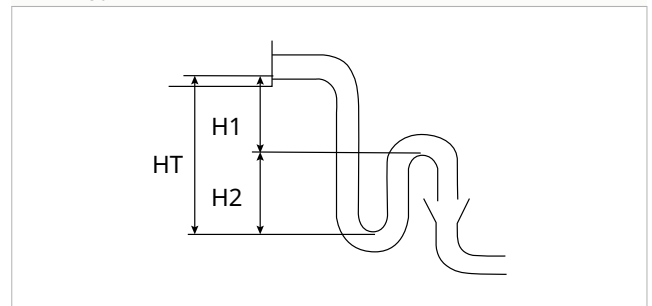
1. Condensate drain connection
2. Condensate drain pipe
3. Hose clamp



1. Unit



HT	100 mm
H1	50 mm
H2	50 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
- maintain 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.

3.11 Aeraulic connections

Preliminary Warnings

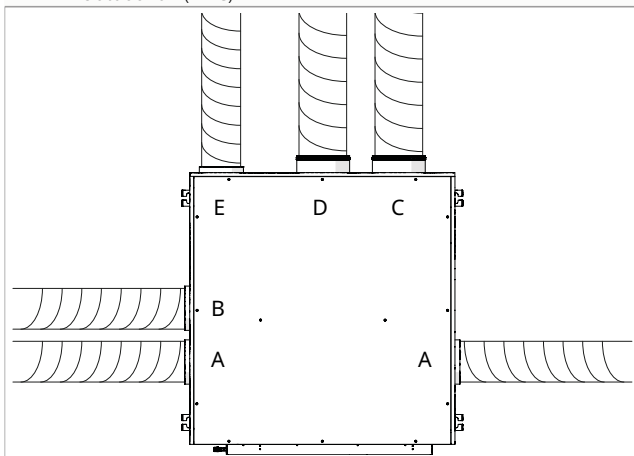
⚠ The sizing of ducting and supply and extract grids must be carried out by a professionally qualified person.

⚠ 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.

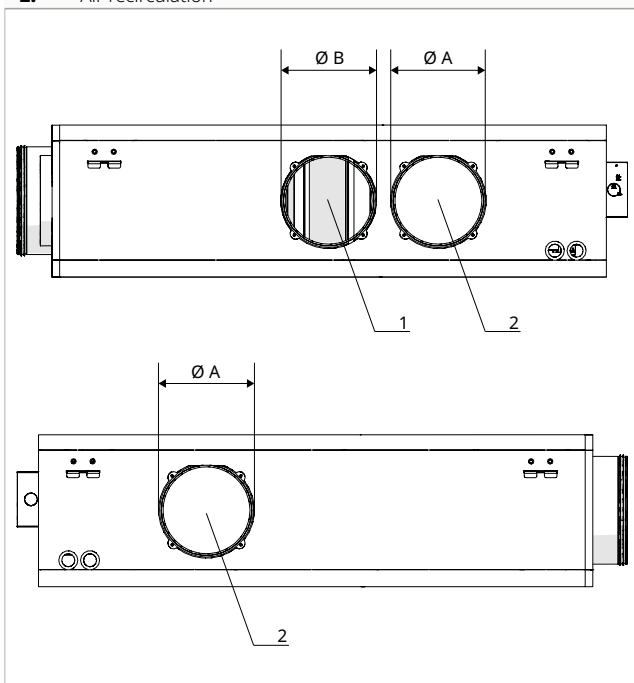
⚠ The connecting pipes must be of a suitable diameter and supported so that their weight does not put a strain on the appliance.

Connections

- A** Air recirculation
- B** Extracted air
- C** Outdoor air exhaust (PDC) and stale air exhaust (VMC)
- D** Outdoor air intake (PDC)
- E** Outdoor air (VMC)

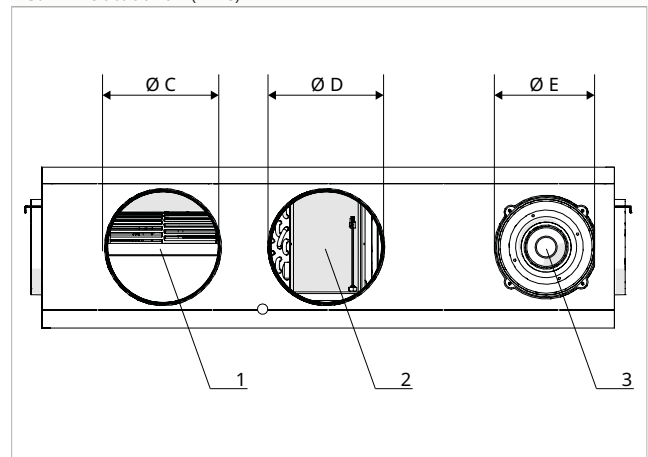


- 1.** Extracted air
- 2.** Air recirculation



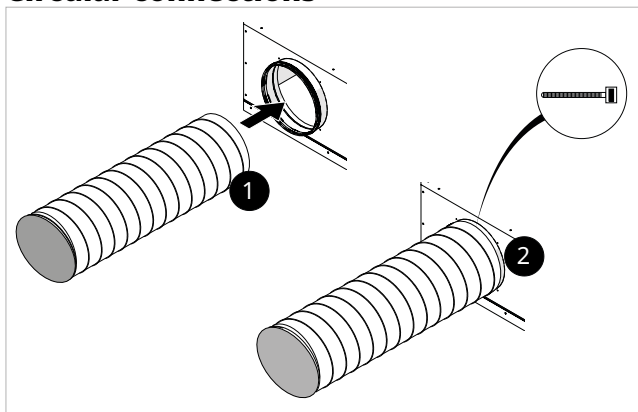
Models	u.m.	50/15-0
Product dimensions		
Air connection A	mm	160
Air connection B	mm	160

- 1.** Outdoor air exhaust (PDC) and stale air exhaust (VMC)
- 2.** Outdoor air intake (PDC)
- 3.** Outdoor air (VMC)



Models	u.m.	50/15-0
Product dimensions		
Air connection C	mm	200
Air connection D	mm	200
Air connection E	mm	160

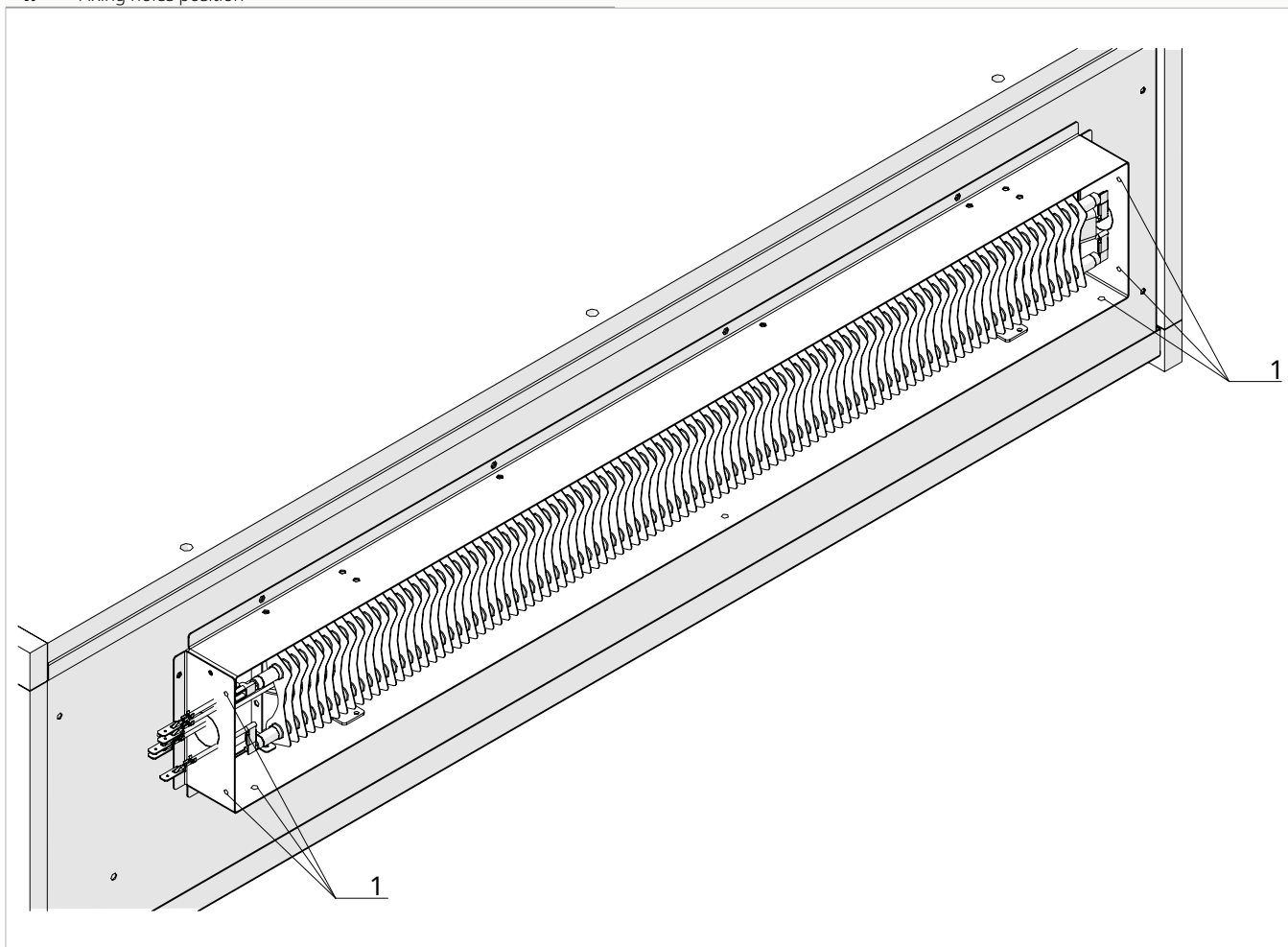
Circular connections

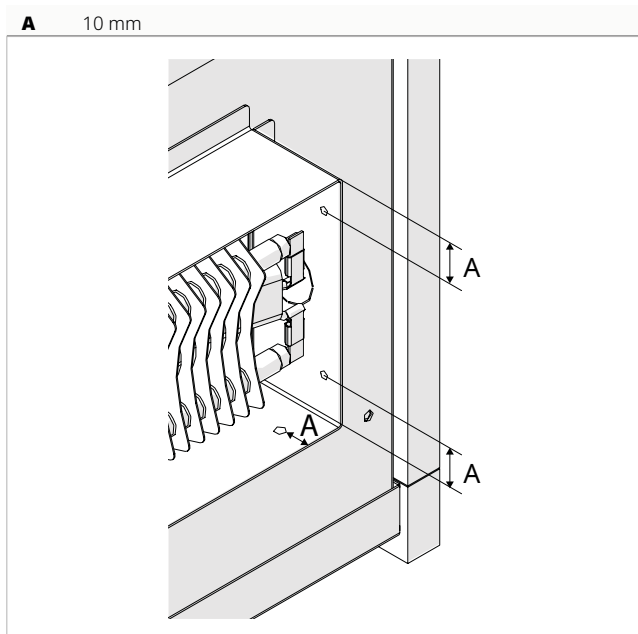


- position the ducts on the connections provided on the appliance
 - use a metal clamp or duct fixing collar
 - fix the ducts on the attachments
- ⚠ Use ducts lined with anti-condensation material of a suitable thickness.

Supply air

1. Fixing holes position





- fix the duct to the intake flange
- use self-drilling screws

⚠ Use exclusively short screws; the use of longer screws could damage the device or compromise its performance.

3.12 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 qualified personnel having the necessary legal requirements, trained 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 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
 - for the supply voltage, please refer to the nameplate on the appliance
- ⚠ Check that:
 - the mains 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 on the appliance
 - the cables are suitable for the type of laying in accordance with the IEC standards in force
 - the cable terminals are provided with ferrule terminals, of a cross-section proportionate to the connecting cables, before inserting them into the terminal board
 - the power supply is adequately protected against overloads and/or short circuits
- ⚠ It is mandatory:
 - to connect the appliance to an effective grounding system
 - for units with three-phase power supply, check the correct phase connection
 - install a dedicated disconnecter equipped with delayed fuses or an all-pole magnetothermic circuit breaker complying with IEC-EN standards, suitable for the absorption of the appliance, with differential relay with a maximum setting equal to that specified by the individual electrical regulations
- ⚠ Ensure that a connection to earth is made. Do not ground the appliance to distribution pipes, surge arresters or the ground of the telephone system. If not performed correctly, grounding can cause an electric shock. Momentary high voltage surges caused by lightning or other causes could damage the ventilation unit.
- ⚠ A ground dispersion breaker is recommended. Failure to install this device could result in an electric shock.
- ⚠ Electrical connections must be carried out in accordance with the instructions in the manual and the standards or practices governing the connection of electrical appliances at national level. Insufficient capacity or incomplete electrical connections could lead to electric shock or fire.
- ⚠ The power supply line must be adequately dimensioned to avoid voltage drops or overheating of cables or other devices placed on the line.
- ⚠ 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.

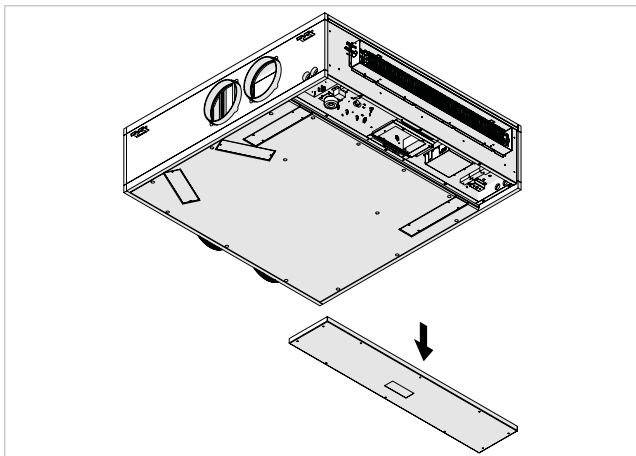
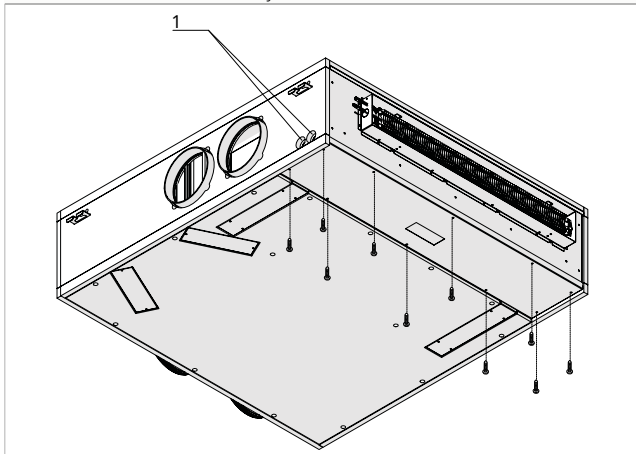
These are not average draw or transient peaks, but values to be considered for the correct sizing of the plant and the request of the contractual power (excluding loads due to the normal operation of the building).

- ⚠ 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. Connection cable entry



To access the connections:

- undo the fixing screws on the panel of the electrical panel

- remove the panel

Connections

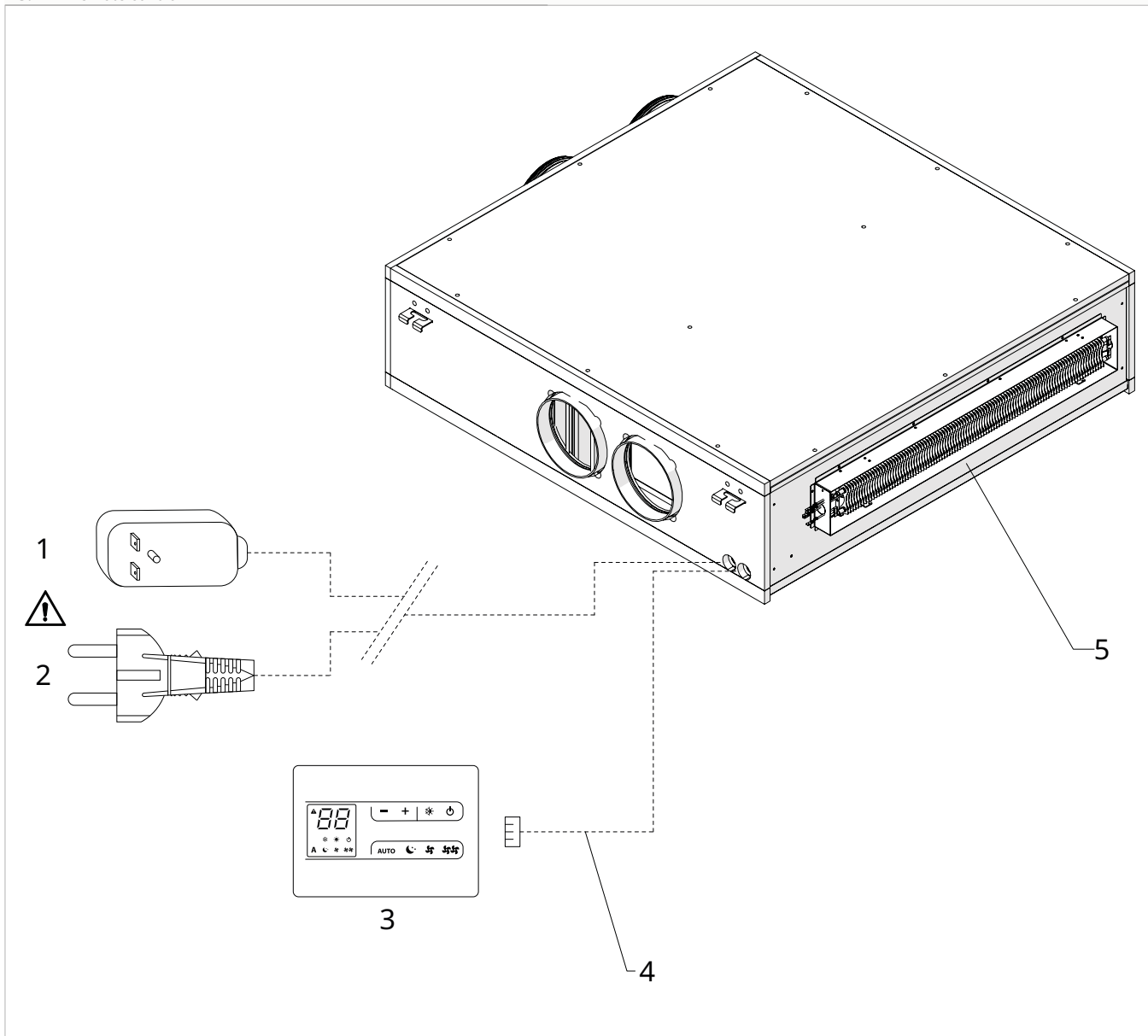
Before connecting the unit to the mains power supply, make sure that the disconnecter is open. The power supply of the single-phase unit must be connected to the appropriate terminals, subjected to the action of the isolating switch.

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

Connection diagram

- 1. Unit power supply with LCDI plug
- 2. Unit power supply with Schuko plug
- 3. Remote control

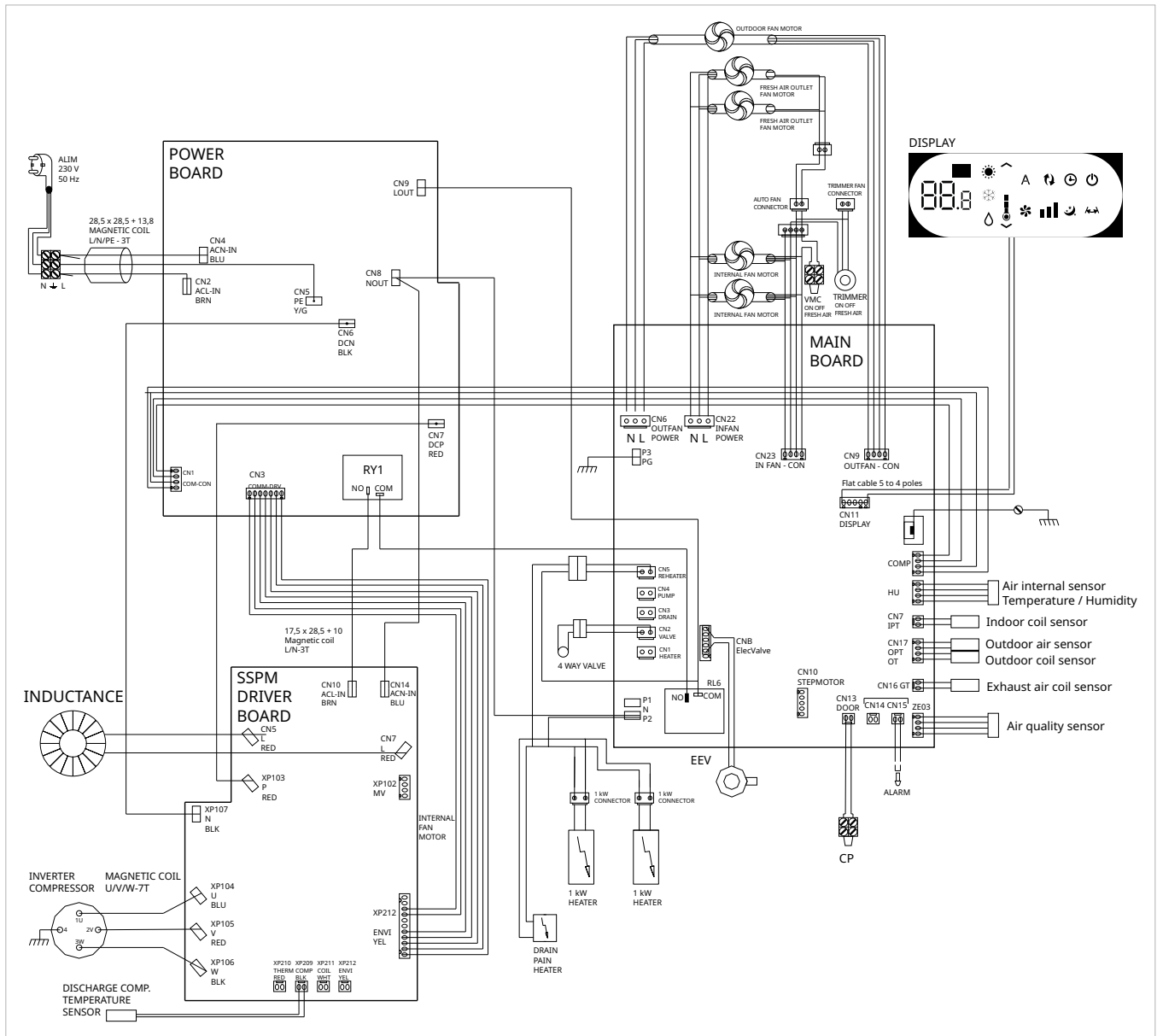
- 4. Control panel communication cable
- 5. Unit



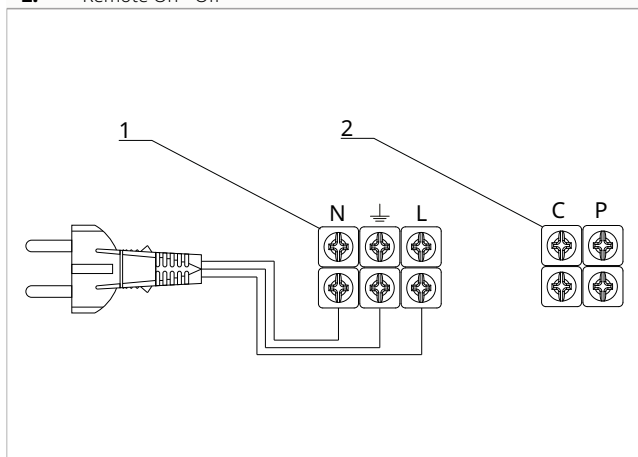
⚠ Depending on the destination country, the unit can be supplied with one of two types of electrical plugs.

On-board electrical panel

Wiring scheme



1. Unit power supply
2. Remote On - Off



On - Off remote connection

Through this contact it is possible to connect an external device which inhibits the operation of the appliance, such as:

- Remote On - Off (on board)

Operation

When the contact connected to the CP input is closed, all units are switched off.

When a button is pressed on the display, the symbol flashes

- ⊖ It is forbidden to connect the CP input in parallel with other electronic boards. In this case, use separate contacts.

REMOTE CONTROL

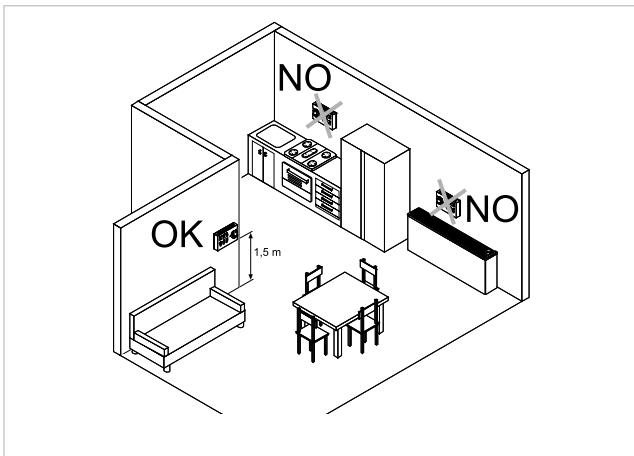
4.1 Installation

Description

The control panel is an electronic controller with humidity and air quality sensors inside, with the possibility of control over several devices equipped with the same circuit board. It is equipped with a humidity and air quality sensor.

⚠ The temperature probe can be remote-controlled in one of the connected units.

Mounting

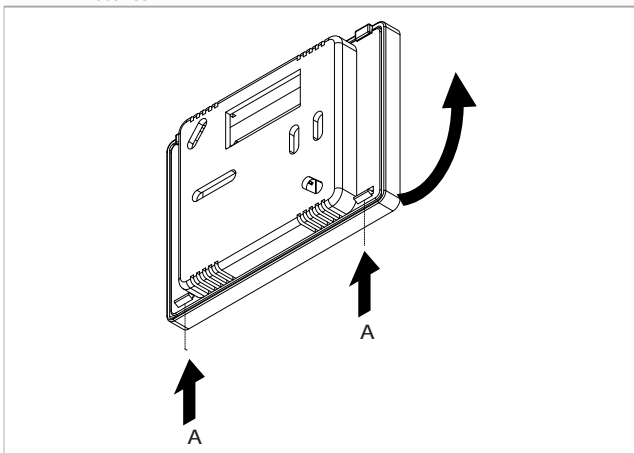


The control panel must be installed:

- on the outside walls
- at a height of approx. 1.5 m above the floor
- away from doors and windows
- away from heat sources such as radiators, fan coils, cookers, direct sunlight

⚠ The control panel is supplied in the package already assembled.

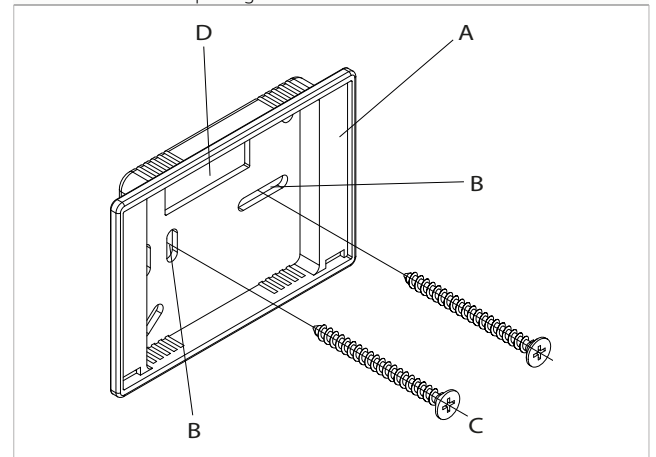
A Notches



Before mounting on the wall:

- release the fastening notches on the rear side of the control panel
- separate the base from the control panel
- use the base as a template to mark out the fixing points

A	Control base
B	Holes for fixing to the wall
C	Screws
D	Hole for the passage of electrical connections



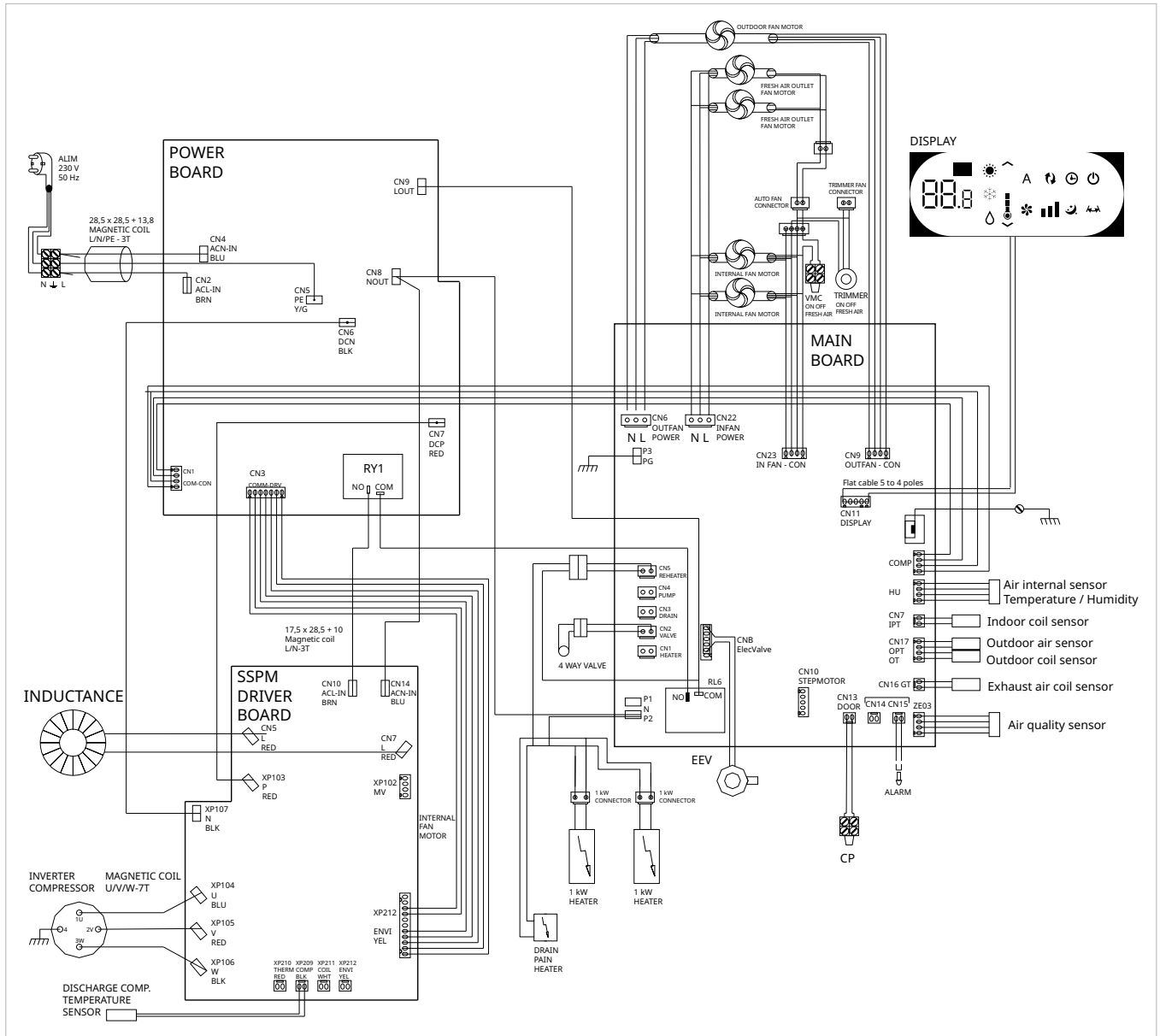
For wall mounting of the control panel:

- drill holes in the wall
- pass the electrical cables through the prepared hole
- fix the base of the control unit to the wall using suitable screws and dowels
- make electrical connections
- close the control panel

⚠ Take care not to crush the wires when closing the control panel.

4.2 Electrical connections

Connection diagram



Digital inputs		
CN13	Door	Presence contact for terminals CP
CN14	Drain pump start level	-
CN15	Drain alarm	-
Analog inputs		
ZE	Internal air quality sensor	-
HU	Internal air humidity and temperature probes	-
CN17 OT	External temperature probe	NTC 5.28k Ω a 25~C
CN17 OPT	Condenser probe	NTC 5.28k Ω a 25~C
CN7 IPT	Evaporator probe	NTC 5.28k Ω a 25~C
CN16 GT	Exhaust air probe	NTC 5.28k Ω a 25~C
XP209	Compressor discharge temperature probe	NTC 58k Ω a 25~C
Digital outputs		
CN2	Valve	Reversing valve summer/winter
CN5	Heater	External heater (230VAC/5A)
CN4	Pump	Drain pump
Analog outputs		
CN23	Infan	Driving signal 0-10V external fan
CN9	Outfan_con	Driving signal 0-10V external fan
CN19	Step motor	Driving step motor for damper
CN10	Step motor	Driving step motor for damper
CN11	Display	Display touch connection

Connection of the control panel

The remote panel is connected to the unit via the supplied cable, which features a white plug-in connector at the back of the display.

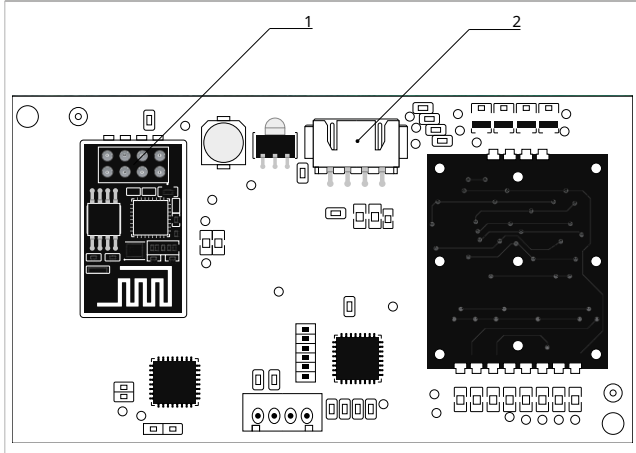
To connect the devices:

- Insert the cable into the panel

⚠ The cable is pre-wired on the unit.

Control panel with Wi-Fi board

1. Wi-Fi board
2. White plug-in connector



Control panel with Modbus board

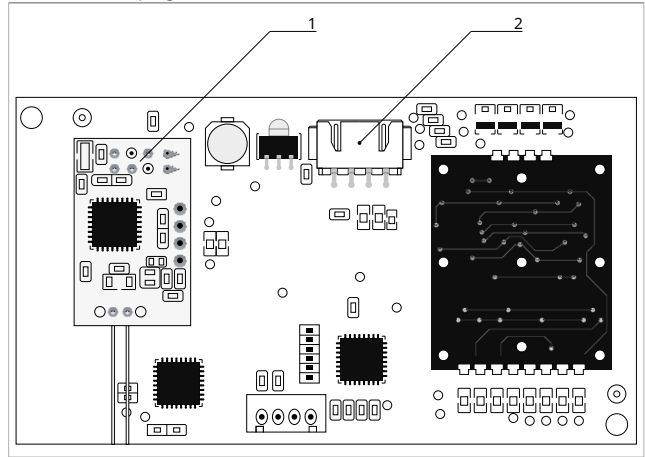
A communication card is provided inside the control panel to enable communication with the unit using the Modbus RTU protocol.

To connect the Modbus board

- Connect the Modbus connection to the two output wires

⚠ The connections for Modbus are indicated as A (+) and B (-).

1. Modbus board
2. White plug-in connector



RS485 serial connection

The control panel can be connected via an RS485 line to one or more units directly to the control board on the unit or via the remote displays.

For the connection:

- respect the indications "A" and "B"
- connect appliances in series

⚠ Use a shielded two-core cable suitable for serial RS485 connection with a minimum cross-section of 0.35 mm².

⚠ Keep the two-core cable separate from the power supply cables.

⚠ Route in such a way as to minimise the length of deviations.

⚠ Terminate the line with the 120 Ω resistor supplied.

⊖ "Star" (y) connections are prohibited.

4.3 Interface

Description

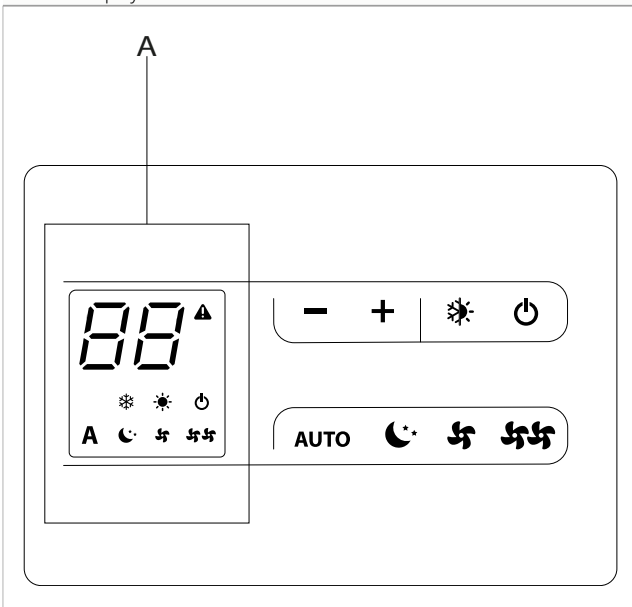
The control panel is an electronic controller equipped with internal memory that saves data even in the event of abnormal shutdown or power outage.

⚠ After 20 seconds of inactivity, the brightness of the panel reduces, and only the ambient temperature is displayed on the screen. Pressing any button restores the maximum brightness.

⚠ Refer to the User's Manual for operation on the control panel.

4.3.1 Display

A Display area

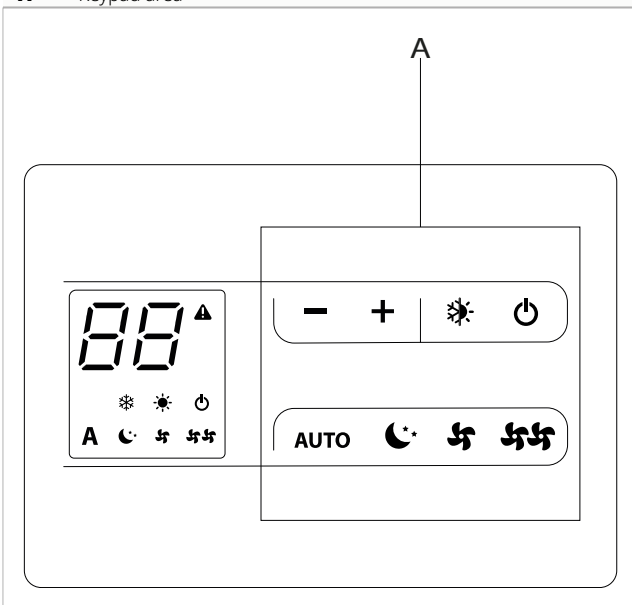


Status and alarms shown on the display.

- Alarm indication
Flashing with closed CP contact
Lit for alarm indication
- Summer mode active
- Winter mode active
- Unit in stand-by
- A** Auto function
- Minimum ventilation speed activated
- Rated ventilation speed activated
- Maximum ventilation speed activated

Keypad key functions

A Keypad area



Related keys and functions

- Decreases the set temperature
- Increases the set temperature
- Allows you to change the operating mode between summer and winter
- Allows the control panel to be switched on or put into stand-by mode
- AUTO** Makes ventilation speed adjustment fully automatic according to IAQ values is RH %
- Allows you to set the minimum ventilation speed
- Allows you to set the rated ventilation speed
- Allows you to set the maximum ventilation speed

General switch-on

Before switching on:

- Make sure that the control panel is connected to the power supply.
- If there is a main switch on the power supply line, switch the system on by pressing the switch.

To activate the device

- press and hold the button
- The symbol lights up

4.4 Warnings

Switching off for extended periods

In case of seasonal or long-term shutdown:

- deactivating the device
- set the system's main switch to off

⚠ The anti-freezing function is deactivated.

START-UP

5.1 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

Start-up

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

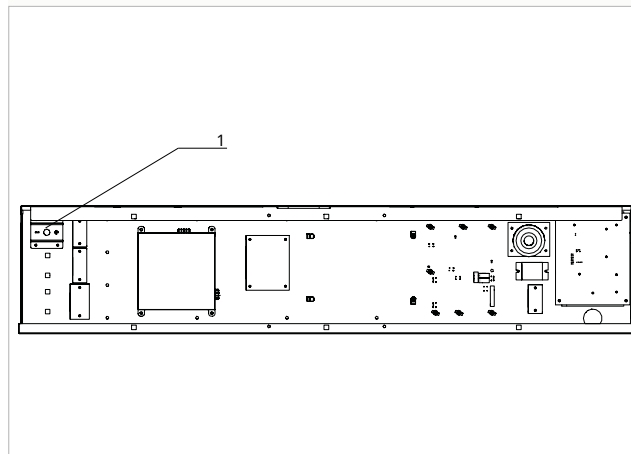
To activate the appliance:

- please refer to the user manual

Independent control of the VMC side

This board is used to disconnect the VMC-side fans from parallel operation and manage them independently through the potentiometer.

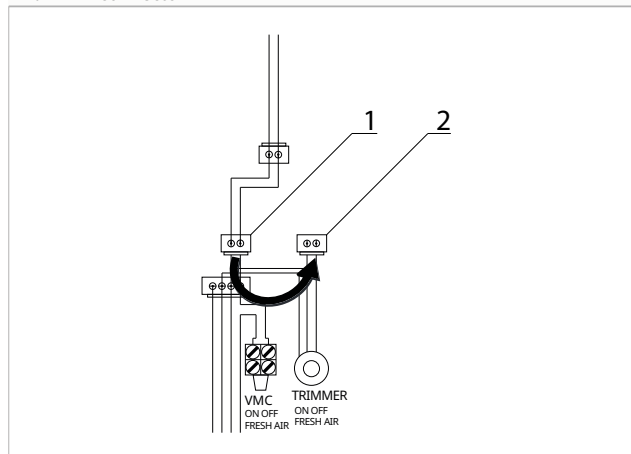
1. Potentiometer



⚠ This additional board is pre-wired and installed in the electrical panel.

To activate it:

1. A connector
2. T connector



- disconnect the A connector
- connect the A connector with the T connector

Checks with the machine switched on

After starting up, check that

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 appliance 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

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

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
- disconnect the power supply

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

MAINTENANCE

Routine maintenance

Annual operations

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

Electrical circuit

Check:

- electrical supply voltage
- the electrical absorption
- connections tightening
- 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 grids
- cleaning the ducting

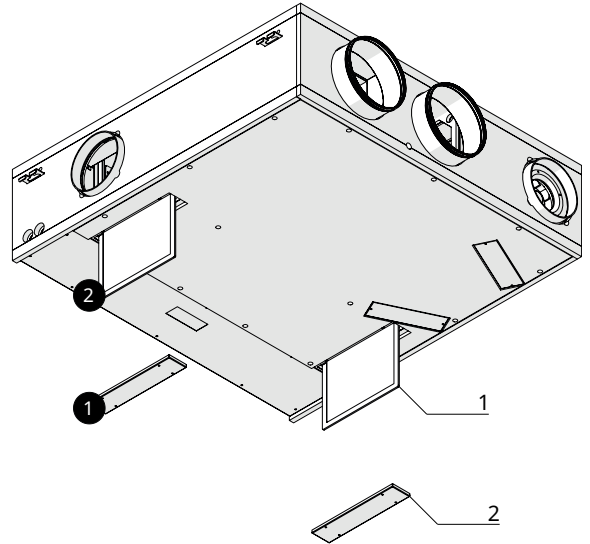
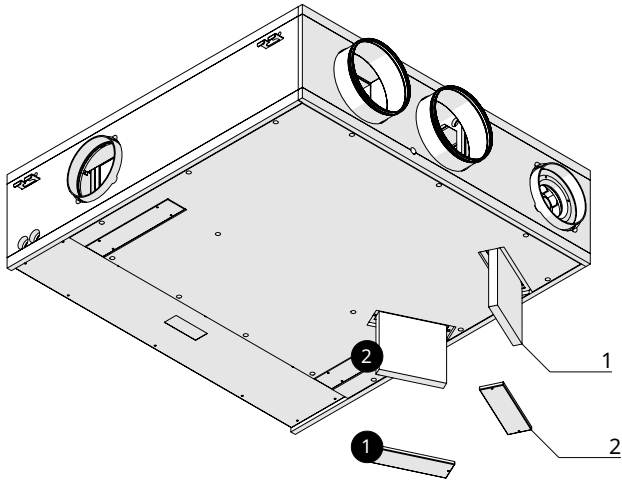
Cleaning

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

Cleaning or filter replacement

1. Filter

2. Filter access hatch



To remove:

- disconnect the power supply to the unit
- remove the filter access hatch
- take out the filter

⚠ 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:

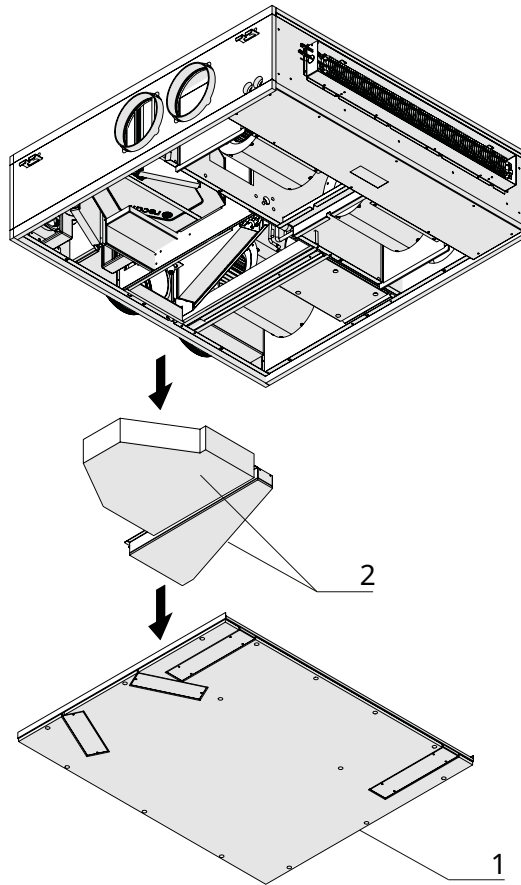
- proceed in reverse order

Cleaning the heat exchanger

Cleaning the heat exchanger

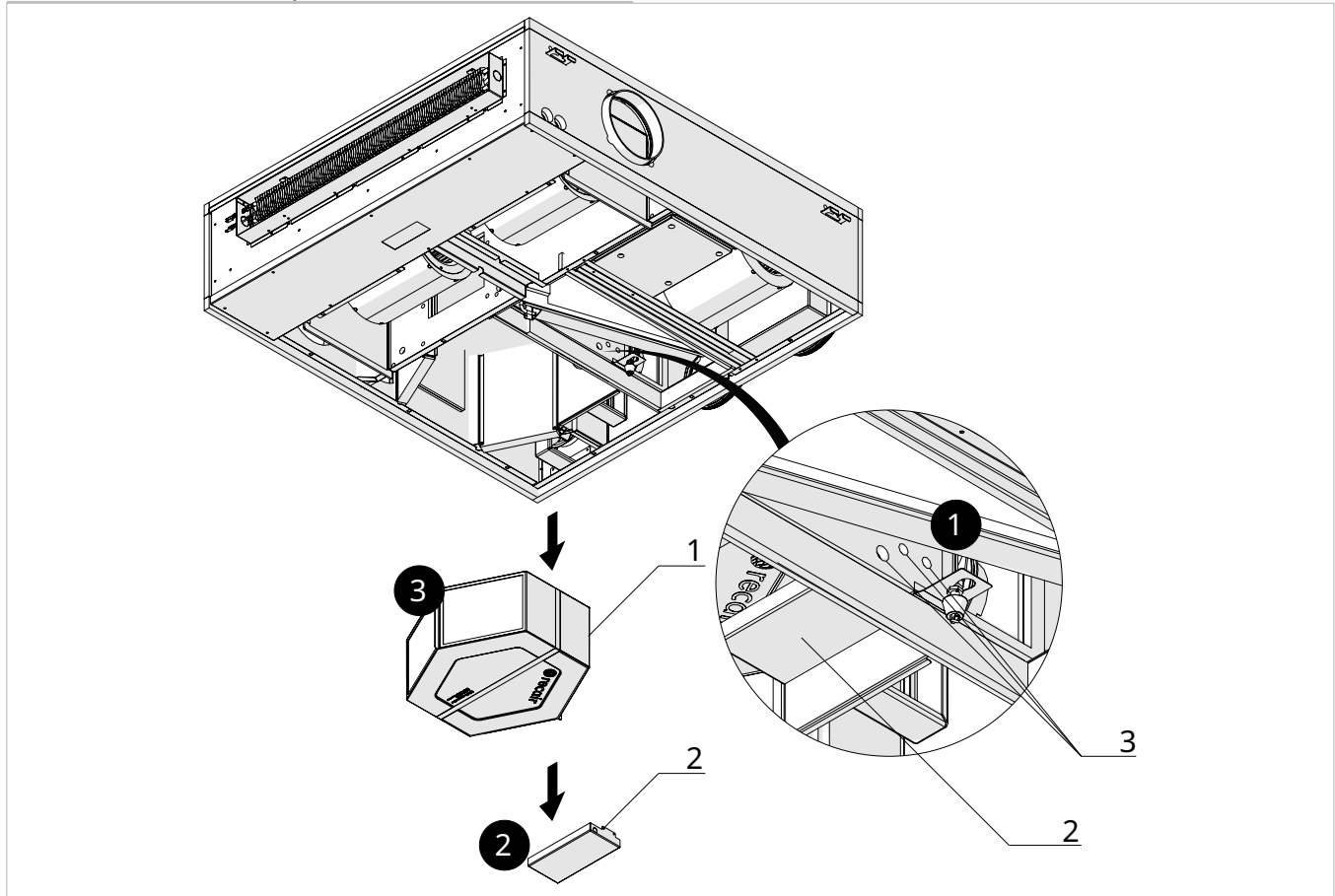
1. Lower panel

2. Insulation panels



- 1. Heat exchanger
- 2. Condensate collection tray

- 3. Holes for tray removal



- disconnect the power supply to the unit
- disconnect the condensate drain pipe
- remove the lower panel of the unit by releasing the fixing hooks and removing the screws
- remove the insulation panels
- remove the screws from the condensate collection tray
- remove the condensate collection tray
- take out the heat exchanger
- gently proceed with cleaning using a vacuum cleaner or a low-pressure compressor

To reposition:

- proceed in reverse order

⚠ Never touch the fins of the heat exchanger, handle only the closed sides.

- ⓘ **There is a special clamp/green strap for removing the heat exchanger.**
- ⓘ **To prevent dirt from entering the heat exchanger, clean in the opposite direction to the air flow.**

FAULTS AND REMEDIES


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 disconnect the power supply
- contact an authorised Technical Assistance Centre or professionally qualified personnel

 Work must be carried out by a qualified installer or a specialised service centre.

 Personal intervention is prohibited.

Troubleshooting Table

DESCRIPTION OF FAULT	CAUSE	REMEDY
Display 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” (Traduzione letterale)
Low or absent air flow, the rooms remain humid	Clogged filters	Replace filters
	Clogged heat exchanger	Clean the heat exchanger
	Frozen heat exchanger	Move the heat exchanger to a warm place and wait for it to defrost. Do not heat it directly with heat sources
	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
High noise level	Noise coming from the unit	Check for the presence of gaps and/or air leaks from the unit’s panels Check the siphon connection
		Check if the motors are running correctly (bearings)
High vibrations	Vibrating panels	Check for the presence of cracks on the intake/exhaust ducts
		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
High vibrations	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 that the condensate drain connections are not clogged
The appliance does not turn on	No power supply	Check if there is 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

Table of alarms indicated by the display

ALARM	CAUSE	OPERATION
<i>E1</i>	Faulty room temperature sensor (RT)	It is possible to activate Cooling, Dehumidification, and Heating functions regularly. The control only monitors the internal battery anti-freezing
<i>E2</i>	Faulty internal battery sensor (IPT)	It is possible to activate Cooling, Dehumidification, and Heating functions regularly
<i>E3</i>	Faulty outdoor air temperature sensor (OT)	It is possible to activate Cooling, Dehumidification, and Heating functions regularly
<i>E4</i>	Faulty external battery sensor (OPT)	It is possible to activate Cooling, Dehumidification, and Heating functions regularly. The control performs defrost cycles at fixed intervals
<i>E5</i>	Faulty indoor fan motor	It is not possible to activate any operation of the device
<i>E6</i>	Faulty outdoor fan motor	It is not possible to activate any operation of the device
<i>E7</i>	Lack of communication with the display	It is not possible to activate any operation of the device
<i>E8</i>	Faulty compressor discharge sensor	It is not possible to activate any operation of the device
<i>cP</i>	Open contact for presence detection (CP)	The device only activates if the contact is closed. Please check the connection of the terminals

TECHNICAL INFORMATION

Technical data

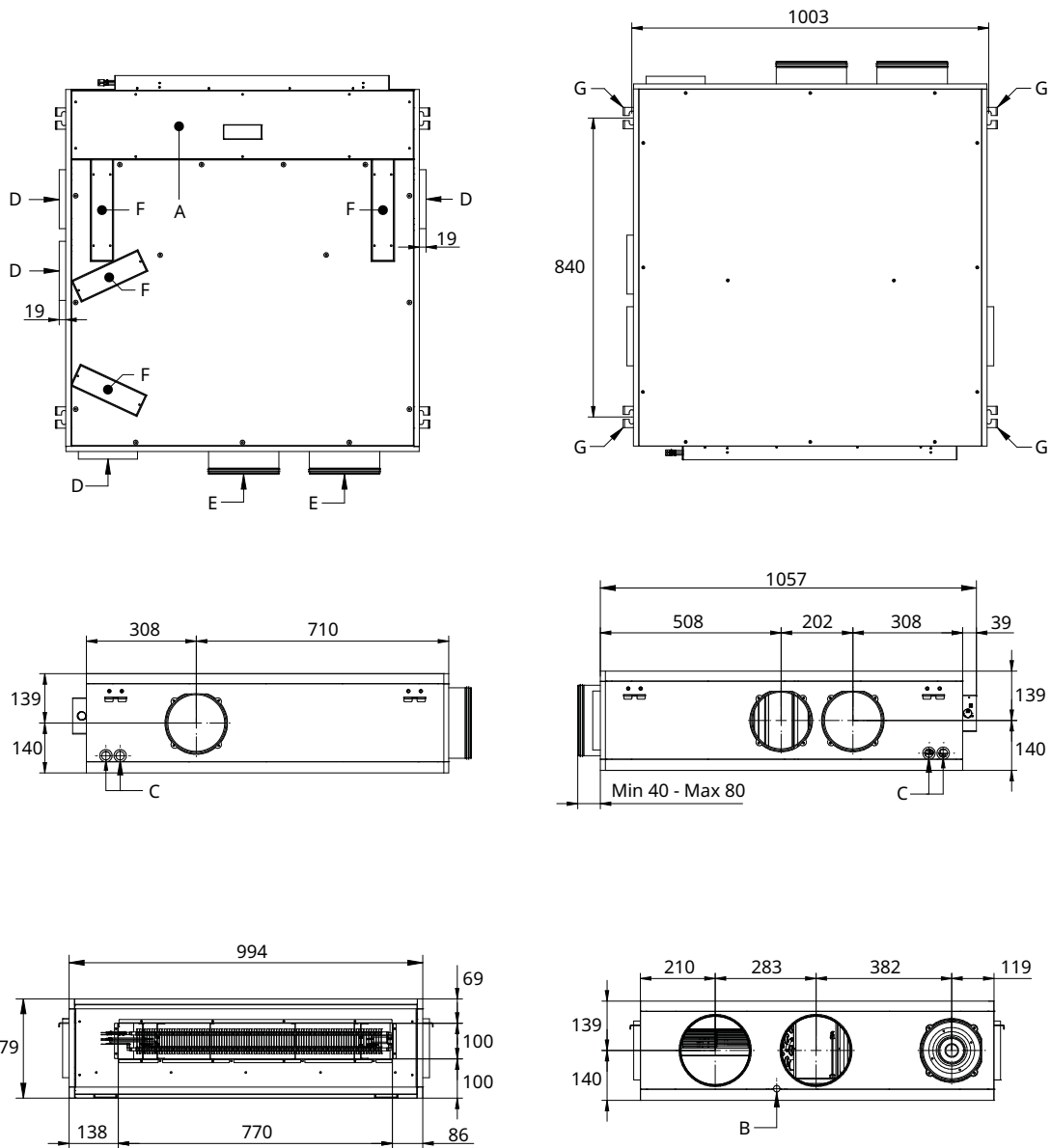
Models	u.m.	50/15
VMC airflow performance		
Nominal air flow for supply	m ³ /h	460
Nominal air flow for ventilation	m ³ /h	100
Nominal air flow recirculation	m ³ /h	360
Available pressure	Pa	100
Heating performance (A -5; A 20) (1)		
Total power output	kW	2,58
Net power output excluding ventilation load	kW	2,11
Power delivered in static recovery	kW	0,38
Power delivered in thermodynamic recovery	kW	2,20
Power absorbed in thermodynamic recovery	kW	0,77
COP		3,52
Cooling performance (A 35; A 27) (2)		
Total power output	kW	2,32
Net power output excluding ventilation load	kW	1,55
Power delivered in static recovery	kW	0,22
Power delivered in thermodynamic recovery	kW	2,10
Power absorbed in thermodynamic recovery	kW	0,73
EER		3,12
Heat recovery performance (A -5; A 20) (1)		
Sensible recovery efficiency	%	86,8
Heat exchanger		
Type		Cross-flow polypropylene in countercurrent
Number	No.	1
Room side fan		
Type		Forward-curved centrifugal fans with double EC brushless suction
Number	No.	4
Maximum absorbed power	W	260
Outdoor side fan		
Type		Forward-curved centrifugal fans with double EC brushless suction
Number	No.	1
Maximum absorbed power	W	140
Fresh air filter		
Type		Pleated flat filter
Number	No.	1
Efficiency		ePM1 80%
Extracted filter		
Type		Pleated flat filter
Number	No.	1
Efficiency		ePM1 80%
Air recirculation filter		
Type		Nylon flat filter
1. Outdoor air temperature -5 °C / 80 % RH; indoor air temperature 20 °C / 50 % RH 2. Outdoor air temperature 35 °C / 50 RH; indoor air temperature 27 °C / 60 % RH 3. Data refers to the UNI EN 3741 and UNI EN 3744 standards		

Models	u.m.	50/15
Number	No.	2
Efficiency		Coarse
Compressor		
Type		Rotary BLDC
Number	No.	1
Refrigerant type		R410a
Refrigerant quantity	kg	0,68
Maximum absorbed power	W	1400
Electrical characteristics		
Power supply	V / ph / Hz	220 / 1 / 50
Maximum total absorbed power	W	1780
Maximum total absorbed current	A	9,6
Protection rating	IP	20
Room side sound levels (UNI EN 3741; 3744) (3)		
Sound power transmitted to the Lw structure	dB (A)	64,0
Sound power radiated in the Lw channel	dB (A)	63,0
Average sound pressure at 1 m Lp	dB(A)	48,5
Average sound pressure at 3 m Lp	dB(A)	41,0
Product dimensions		
Width	mm	1003
Length	mm	1094
Height	mm	279
Weight	kg	75,0
1. Outdoor air temperature -5 °C / 80 % RH; indoor air temperature 20 °C / 50 % RH 2. Outdoor air temperature 35 °C / 50 RH; indoor air temperature 27 °C / 60 % RH 3. Data refers to the UNI EN 3741 and UNI EN 3744 standards		

Dimensions

- A** Electrical panel
- B** Condensate drain \varnothing 16
- C** Power supply
- D** Female aeraulic connection \varnothing 160

- E** Female air duct connection \varnothing 200
- F** Filter port
- G** Installation bracket



INNOVA S.r.l.
Via I Maggio 8 - 38089 (TN) - ITALY
tel. +39.0465.670104 - fax +39.0465.674965
info@innovaenergie.com