IMMERGAS

USER'S MANUAL

RAPAX 200 V4
RAPAX 300 V4
RAPAX 200 SOL V4
RAPAX 300 SOL V4

IE

Instructions and recommendations

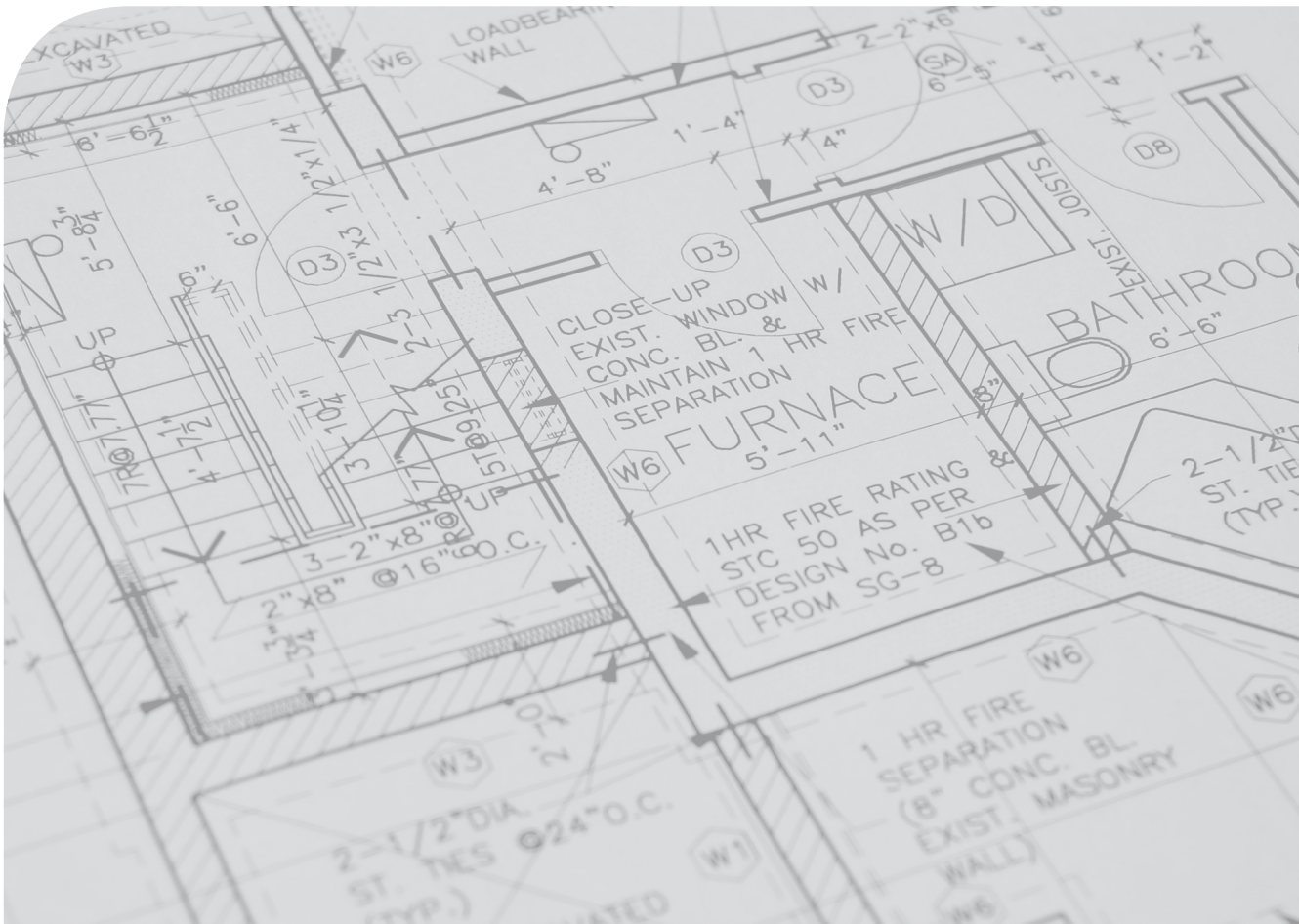
Installer

User

Maintenance technician

Technical Data

1.052184ENG



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Dear Customer

Congratulations for having chosen a top-quality Immergas product, able to assure well-being and safety for a long period of time. As an Immergas customer you can also count on a Qualified Authorised After-Sales Technical Assistance Centre, prepared and updated to guarantee the constant efficiency of your products. Read the following pages carefully: you will be able to draw useful tips on the proper use of the device, compliance with which will confirm your satisfaction with the Immergas product.

Please contact our Authorised Technical Service Centre in your area to request a free initial operation check (necessary for the ***validation of the special Immergas's warranty****). Our technician will check the good working conditions of the appliance, make the necessary adjustments and explain the correct use. Furthermore, they will present to you the advantages of the "Formula Comfort" initiative, which includes an extension of the product warranty.*

For assistance and routine maintenance, contact Authorised Technical Service Centres: they have original spare parts and are specifically trained directly by the manufacturer.

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GENERAL RECOMMENDATIONS

This book contains important information for the:
Installer (section 1);
User (section 2);
Maintenance Technician (section 3).

- The user must carefully read the instructions in the specific section (section 2).
- The user must limit operations on the appliance only to those explicitly allowed in the specific section.
- The appliance must be installed by qualified and professionally trained personnel.
- The instruction booklet is an integral and essential part of the product and must be given to the new user in the case of transfer or succession of ownership.
- This manual must be stored with care and consulted carefully, as all of the warnings provide important safety indications for installation, use and maintenance stages.
- In compliance with legislation in force, the systems must be designed by qualified professionals. Installation and maintenance must be performed in compliance with the regulations in force, according to the manufacturer's instructions and by professionally qualified staff, intended as staff with specific technical skills in the system sector, as envisioned by the Law.
- Improper installation or assembly of the Immergas appliance and/or components, accessories, kit and devices can cause unexpected problems to people, animals and objects. Read the instructions provided with the product carefully to ensure proper installation.
- This instruction manual provides technical information for installing Immergas products. As for the other issues related to the installation of products (e.g. safety at the workplace, environmental protection, accident prevention), it is necessary to comply with the provisions of the standards in force and the principles of good practice.
- All the Immergas products are protected with suitable transport packaging.
- The material must be stored in a dry place protected from the weather.
- Damaged products must not be installed.
- Maintenance must be carried out by skilled technical staff. For example, the Authorised Service Centre that represents a guarantee of qualifications and professionalism.
- The appliance must only be destined for the use for which it has been expressly declared. Any other use will be considered improper and therefore potentially dangerous.
- If errors occur during installation, operation and maintenance, due to non-compliance with technical laws in force, standards or instructions contained in this booklet (or however supplied by the manufacturer), the manufacturer is excluded from any contractual and extra-contractual liability for any damages and the device warranty is invalidated.
- In the event of malfunctions, faults or incorrect operation, turn the appliance off and contact an authorised company (e.g. the Authorised Technical Assistance Centre, which has specifically trained staff and original spare parts). Do not attempt to modify or repair the appliance alone.

IMPORTANT

Thermal systems must undergo periodic maintenance and scheduled checks of the energy efficiency in compliance with national, regional or local provisions in force.

The company **IMMERGAS S.p.A.**, with registered office in via Cisa Ligure 95 42041 Brescello (RE), declares that the design, manufacturing and after-sales assistance processes comply with the requirements of standard **UNI EN ISO 9001:2015**.

For further details on the product CE marking, request a copy of the Declaration of Conformity from the manufacturer, specifying the appliance model and the language of the country.

The manufacturer declines all liability due to printing or transcription errors, reserving the right to make any modifications to its technical and commercial documents without forewarning.

SAFETY SYMBOLS USED

GENERIC HAZARD
Strictly follow all of the indications next to the pictogram. Failure to follow the indications can generate hazard situations resulting in possible harm to the health of the operator and user in general, and/or property damage.

ELECTRICAL HAZARD
Strictly follow all of the indications next to the pictogram. The symbol indicates the appliance's electrical components or, in this manual, identifies actions that can cause an electrical hazard.

WARNING FOR INSTALLER
Read the instruction booklet carefully before installing the product.

WARNINGS
Strictly follow all of the indications next to the pictogram. Failure to follow the indications can generate hazard situations resulting in possible minor injuries to the health of both the operator and the user in general, and/or slight material damage.

ATTENTION
Read and understand the instructions of the appliance before carrying out any operation, carefully following the instructions given. Failure to observe the instructions may result in malfunction of the unit.

COMBUSTIBLE MATERIAL WARNING
This symbol indicates that the appliance in question uses a flammable refrigerant. If refrigerant leaks and is exposed to an external ignition source, there is a risk of fire.

INFORMATION
Indicates useful tips or additional information.

EARTH TERMINAL CONNECTION
The symbol identifies the appliance's earth terminal connection point.

DISPOSAL WARNING
The user must not dispose of the appliance at the end of its service life as municipal waste, but send it to appropriate collection centres.

PERSONAL PROTECTIVE EQUIPMENT

SAFETY GLOVES

EYE PROTECTION

SAFETY FOOTWEAR

1 UNIT INSTALLATION

1.1 INSTALLATION WARNINGS

Operators who install and service the appliance must wear the suitable personal protective equipment required by applicable law.

The installation of the appliance must be carried out by qualified personnel in compliance with current local regulations and the instructions in this manual. Improper installation may cause water leakage, electric shock or fire. Qualified personnel means: qualified plumbers, personnel from authorised electrical companies, and authorised service personnel.

- **Before use, this appliance requires proper earthing, failure to do so may result in serious injury or death.**
- **The appliance must be installed in compliance with current local regulations for electrical systems.**
- **Proper earthing and installation of the appliance must be carried out by qualified personnel. This appliance should not be installed unless you are sure that the power supply to your home is properly earthed.**
- **Electrical connection work must be carried out in compliance with current local regulations and the instructions in this manual.**

The maximum refrigerant charge quantity is 0.15 kg.

Application limit

This product is suitable for domestic use only, for preparing domestic hot water at 38-70°C. It must be connected to the domestic water supply and electricity supply systems. It is prohibited to use the equipment for other purposes such as industrial production, or to install it in any environment exposed to risks of corrosion and combustion.
The manufacturer is not responsible for damage to the equipment due to incorrect installation or improper use.

Installation warning

- Before carrying out any work on electrical or hydraulic systems, check the safety of the installation area (walls, floors, etc.) and that it is not exposed to risks deriving from the presence of water, unprotected electrical parts, and gas.
- Place the appliance in an accessible location.
- Do not leave flammable materials in contact with or near the appliance.
- If the appliance has an auxiliary electric heater, this must be installed at least 1 metre away from combustible materials.
- Install the appliance in a room protected from temperatures that can drop below 0°C. The warranty does not cover damage to the appliance due to excessive pressure caused by a blockage of the one-way valve.
- If the appliance is to be installed in a room with an ambient temperature exceeding 35°C, this room must be ventilated.
- The installed appliance must be securely fixed.
- Take lightning protection measures in the building in accordance with local legislation and/or ENV 61024-1 to ensure safe operation of the appliance.

Electrical system

- The electrical system must be installed by professional technicians and must comply with both current local regulations and the wiring diagram.
- The appliance must be effectively earthed. It is mandatory to install a safety device on the power supply line.
- Before proceeding with the installation, verify that the user's power supply line meets all the requirements of the appliance (including proper earthing, voltage drop protection, wire diameter, electrical load, etc.). If the electrical installation requirements of the appliance are not met, installation of the appliance is prohibited until the system is modified.
- The installation height of the wall socket, if used, must be greater than 1.8 m. If there is a risk of splashing water, separate the power supply unit from the water.
- Never use cables and fuses other than those recommended by the manufacturer; otherwise the appliance may malfunction and cause a fire.
- To avoid danger due to inadvertent resetting of the thermal switch, this appliance must not be powered through an external switching device, such as a timer, or connected to a circuit that is regularly turned on and off by the user.
- When several appliances are installed in a centralised manner, check the balancing of the three-phase power load and do not allow multiple appliances to be assembled on the same power supply phase.

Hydraulic connection

- The temperature of the water entering the appliance must not be lower than 4°C; the maximum temperature of the water produced by the appliance may be higher than 70°C.
- It is mandatory to install a domestic water vessel sized according to the heated volume and the temperature difference (between 4 and 70°C) of the water entering the appliance. This installation is intended to avoid possible openings of the safety valve.
- The minimum water pressure in the supply pipe system is 0.15 MPa. If the pressure exceeds 7 bar (0.7 MPa), it is necessary to fit a pressure reducer (not supplied) positioned on the cold water inlet.
- Connect the appliance to a drain pipe, using a pressure reducer, in a protected area where temperatures can drop below 0°C and with an adequate and constant downward slope. The drain pipe connected to the safety device must be installed with a continuous downward slope and in a frost-free environment. The purpose is to eliminate excess water that is produced due to expansion during heating.
- An incorrectly constructed draining system can cause flooding of the building, furniture, etc.
- A one-way valve, included in the supply, must be installed on the water inlet side (see par. 1.2).
- Do not connect hot water pipes directly to copper pipes. The system must be equipped with a dielectric connection (not included in the appliance supply).

If an open chamber boiler and a heat pump with unducted or unsealed vents are operated simultaneously, a strong vacuum could be created in the room; this vacuum can cause boiler exhaust gases to be sucked back into the room.
Avoid operating the heat pump at the same time as an open chamber boiler. Use only approved sealed combustion chamber boilers with separate combustion air supply.
Install a protective grille at both the inlet and outlet air vent connections to prevent foreign bodies from entering the equipment.

Operation warning

- **Make sure the earthing of the power outlet where the appliance will be connected is properly connected; make sure the power outlet and plug are sufficiently dry and firmly connected.**
- **Check that the socket and plug used to connect the power supply comply with current regulations and are suitable for supporting the product's loads.**

- Do not turn off the power supply; the antifreeze protection remains active in "Stand-by" mode.
- The appliance requires an adequate and continuous power supply for operation; the appliance switches on and off automatically according to the settings made on the control panel.
- Do not operate the appliance with wet hands. Danger of electric shock.
- Water heated above 50°C can cause serious burns if poured directly from taps. Children, disabled people and the elderly are particularly at risk. It is recommended to install a mixing valve on the system at the hot water outlet. Check the water temperature before bathing or showering.

- Do not insert fingers, sticks, or other objects into the air inlet or outlet. Be careful of the fan, which, rotating at high speed, can cause injury.
- Never use flammable sprays such as hairspray, fixatives or paints near the appliance. May cause fire.
- If the power cable is damaged, it must be replaced by the manufacturer or by a service technician or by a technician authorised to perform these operations.
- Do not leave packaging materials (paper clips, plastic bags, expanded polystyrene, etc.) within the reach of children; they can cause serious injury.
- After a long period of use, check the base and fittings of the appliance. If damaged, the appliance may fail and cause injury to the user.
- Do not touch the internal parts of the control panel.
- Do not disassemble the front panel. Some internal parts are dangerous if touched and may cause the appliance to malfunction.
- To preserve the duration of appliance efficiency features, in the presence of water whose characteristics can lead to the deposit of lime scale, installation of the "polyphosphate dispenser" kit is recommended.

- **Activating the safety switch (1 Fig. 36) indicates a potentially dangerous situation. Do not reset the switch until the water heater has been repaired by qualified personnel.**
- **Continuous water leakage from the valve may indicate a problem or fault within the water heater.**

If the appliance is not used for a long period of time (2 or more weeks), a small amount of hydrogen may form in the water pipe due to chemical reactions. Hydrogen is an extremely flammable gas. Under such conditions, to reduce the risk of injury, it is recommended to open the hot water tap in the kitchen sink for several minutes before using any electrical appliance connected to the hot water system. In the presence of hydrogen, you are likely to hear an unusual noise, like air escaping from a pipe when water begins to flow. When opening the tap, there must be no smoke or open flames near it.

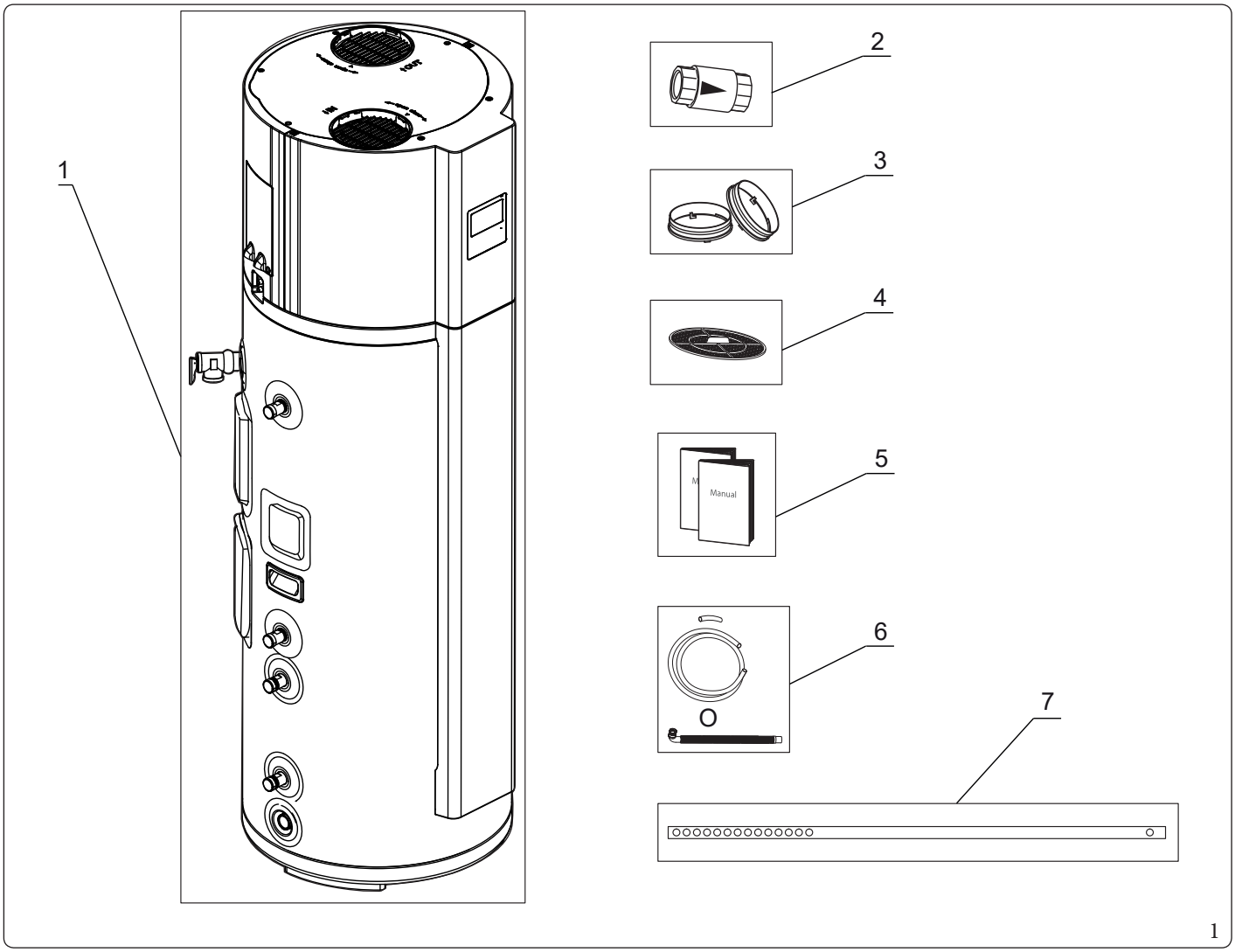
Operating attention

- Do not remove, cover, or deface any permanent information such as instructions, general labels, or data labels located on the outside of the appliance or inside the panels.
- It is normal for water to leak from the pressure relief device or EN 1487 safety device while the appliance is heating up. For this reason, it is necessary to install a drain, open to the air, with a pipe that slopes constantly downwards, in an area not subject to temperatures below zero. A condensate drain must also be connected to the same pipe with a special fitting.
- Be sure to empty the appliance when it is taken out of service in an area subject to temperatures that cannot drop below freezing.
- For the water draining procedure, see the following paragraphs of the manual.
- SMART mode is not recommended when water consumption is low or irregular. SMART mode analyses your water consumption habits so that the unit heats the water in advance to be ready based on your usage habits. This means that if usage is low and irregular, it is difficult to program recharges with a sort of self-learning system.
- After prolonged use, check the base and fittings of the appliance. If damaged, the appliance may fall, break and cause injury to the user.
- During holidays, do not disconnect the power supply and turn off the appliance but use the holiday mode (VACATION). If the appliance is switched off during long periods of non-use, please note that there will be no antifreeze protection. Take the necessary measures to prevent corrosion or freezing, such as emptying the appliance.
- Before installing, check that the available power supply meets all the requirements of the appliance (including proper earthing, leakage protection, cable diameter, electrical load, etc.). If the electrical installation requirements of the appliance are not met, installation of the appliance is prohibited until the system is modified.
- When several appliances are installed in a centralised manner, check the balancing of the three-phase power load and prevent multiple appliances from being connected to the same power supply phase.
- The appliance must be installed by fixing it securely to the wall and, if necessary, taking additional reinforcement measures.
- The wall socket, if used, must be installed at a height greater than 1.8 m; if there is a risk of splashing water wetting the socket, protect it with appropriate devices as indicated by current technical regulations.
- A one-way valve, included in the supply, must be installed on the water inlet side (see par. 1.2).

This product should not be disposed of with unsorted municipal waste at the end of its life. The used device must be returned to the municipal collection point for recycling together with electrical/electronic devices. For information on where to find a collection point, please contact your local authorities or contact the retailer where you purchased the product.
Correct disposal of used appliances helps prevent potential harm to the environment and human health.

1.2 PACKAGE CONTENTS

All images in this manual are for explanatory purposes only. They may be slightly different from the heat pump water heater you purchased (depending on the model). Please refer to the actual sample instead of the picture in this manual.



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Key (Fig. 1):

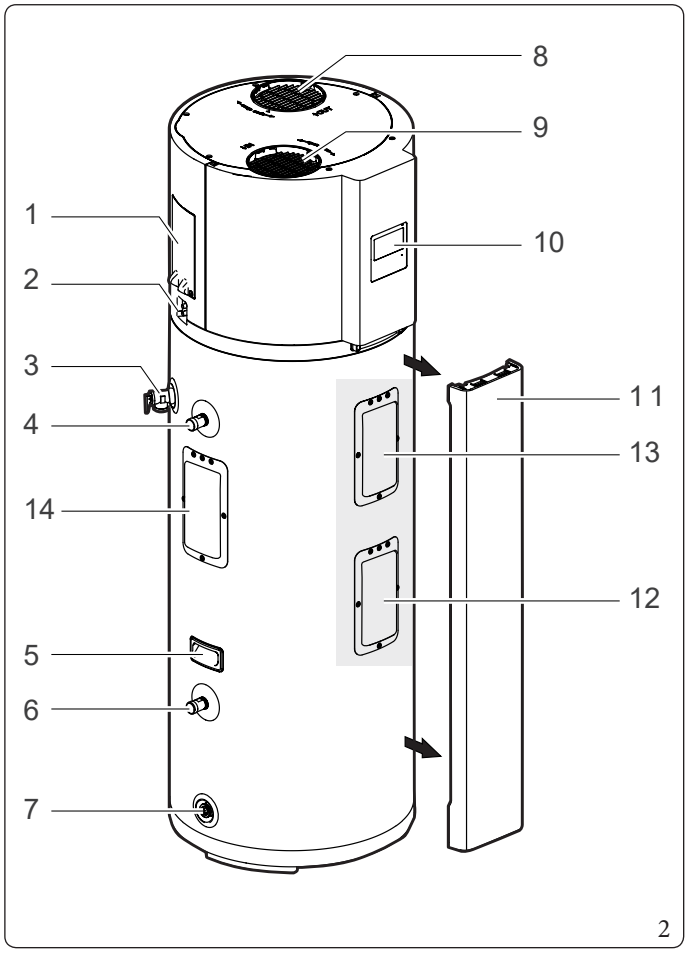
1 - Main appliance
2 - One-way valve
3 - Air duct connector
4 - Air intake filter
5 - User safety manual
6 - Condensate drain pipe
7 - Retaining band

1.3 APPLIANCE TRANSPORT/MANAGEMENT MODE

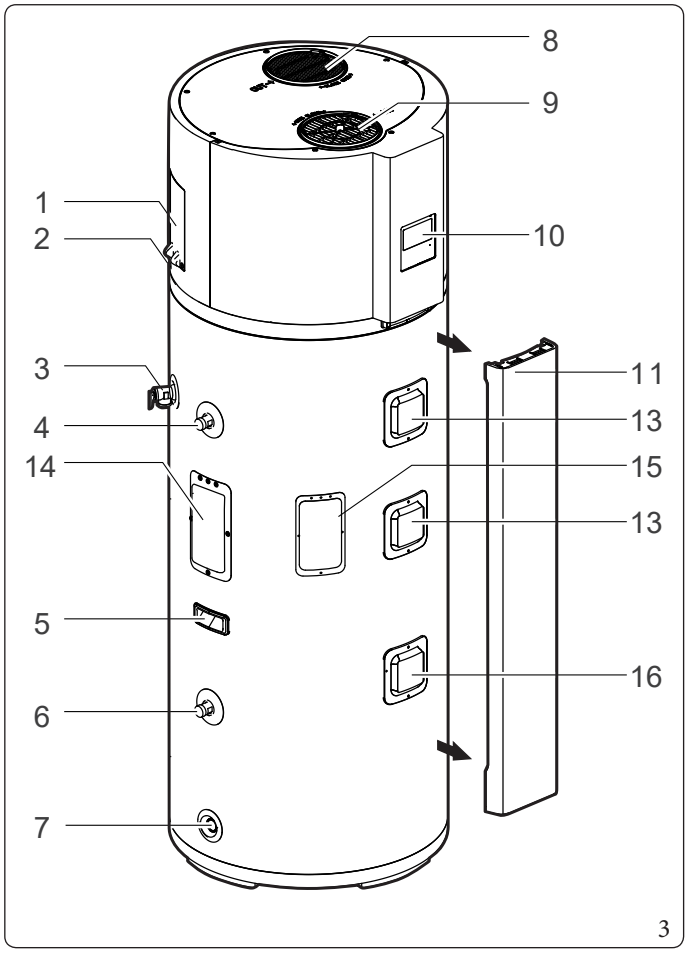
- Transport the water tank in its original factory condition without disassembling it.
- The appliance is heavy and must be handled by two or more people. Failure to do so could result in injury to the person carrying it and damage to the appliance itself. Please comply with local regulations on the prevention of occupational risks (ORP).
- To prevent contact with the fan impeller, do not insert your hands into the drain holes.
- To avoid damaging the external surface of the appliance, protect it from contact with heavy objects.
- When moving, use the handles on both sides of the appliance.

1.4 MAIN COMPONENTS

RAPAX 200 V4



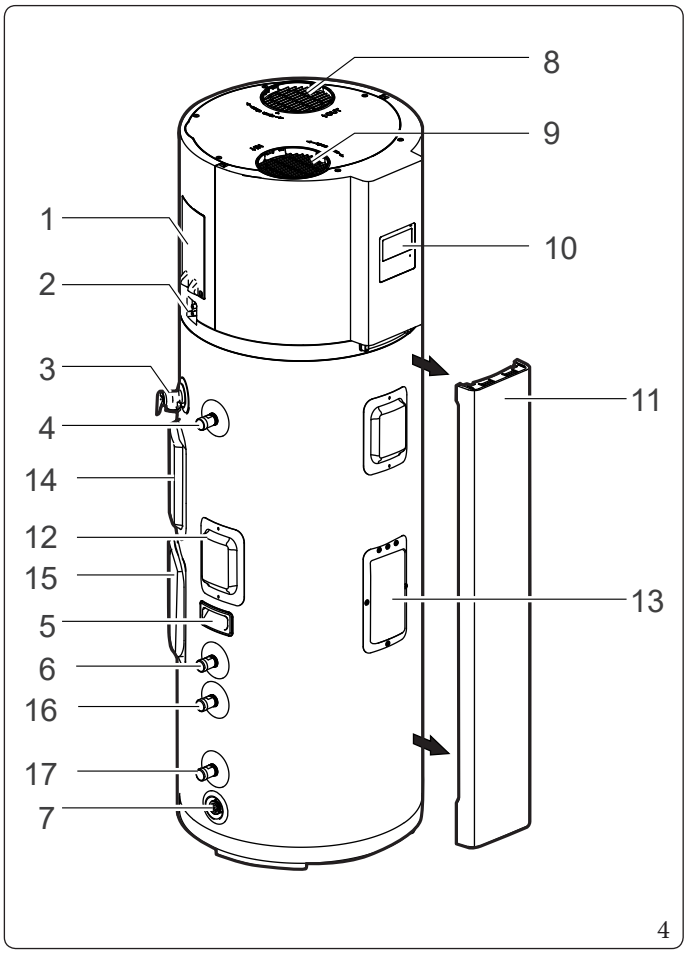
RAPAX 300 V4



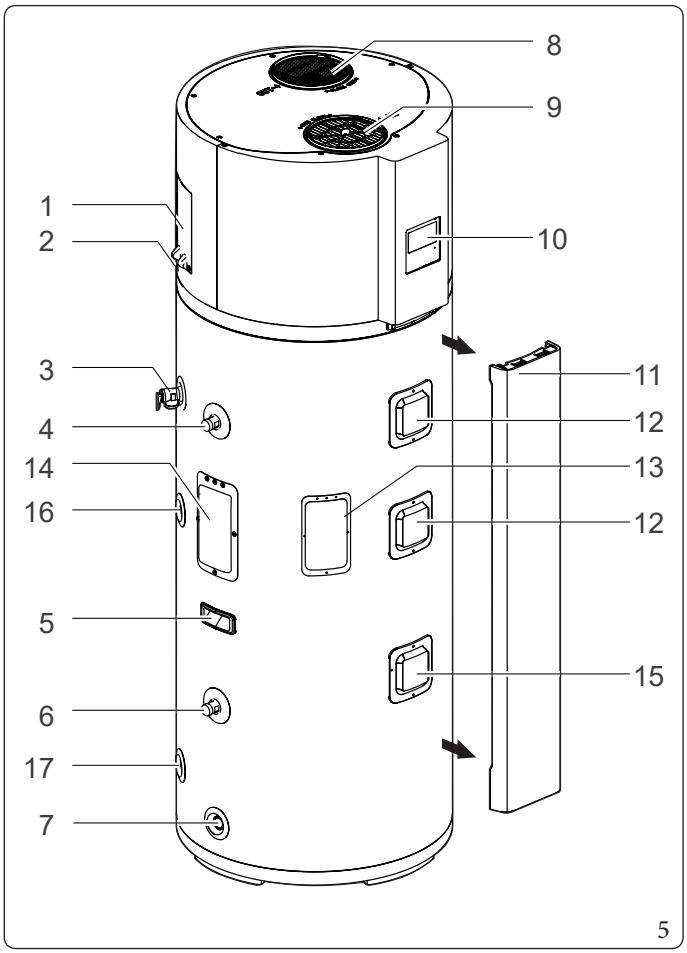
Key (Fig. 2 and 3):

1 - Junction box
2 - Condensate drain
3 - Temperature and pressure one-way safety valve
4 - Domestic hot water outlet
5 - Handle
6 - Domestic cold water inlet
7 - Storage tank drain fitting
8 - Air discharge
9 - Air intake
10 - Display
11 - Front panel
12 - Electric heater with manual reset (RAPAX 200 V4)
13 - Magnesium anode
14 - Electronic anode (not available on this model)
15 - TCO safety thermostat thermal switch
16 - Electric heater (RAPAX 300 V4)

RAPAX 200 SOL V4



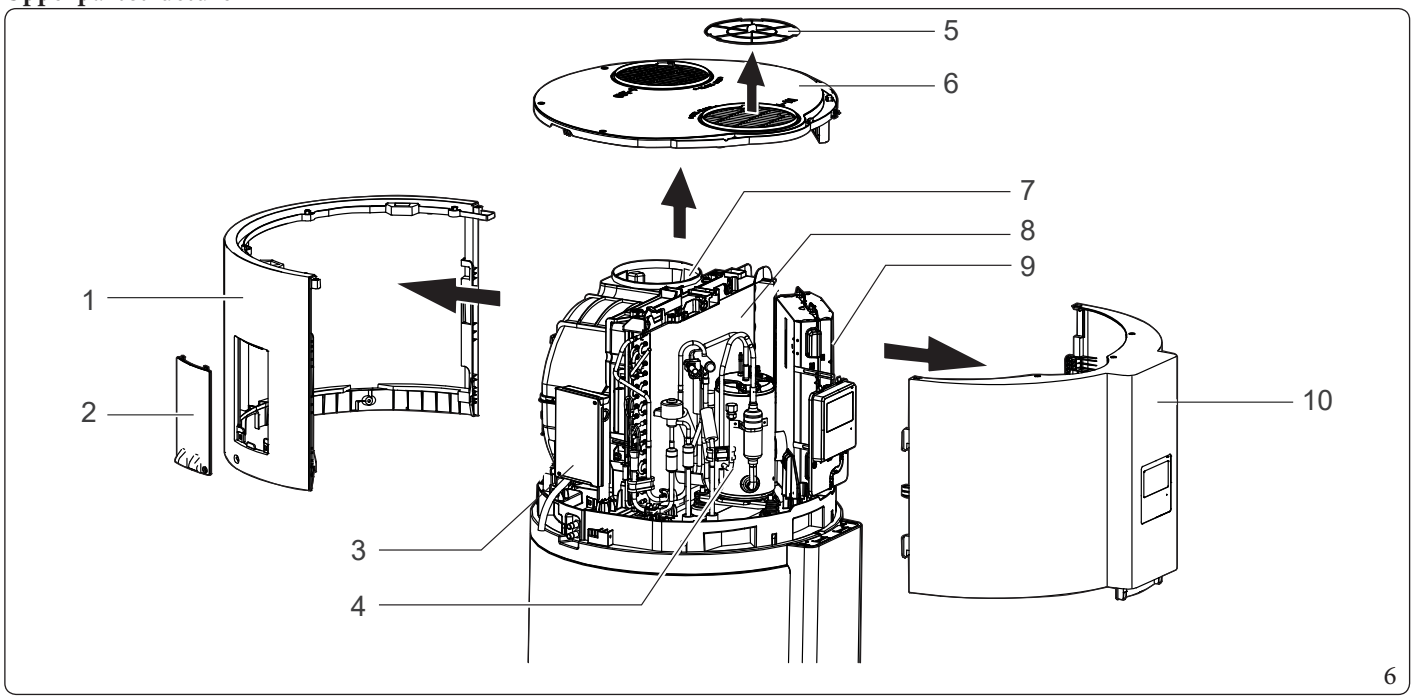
RAPAX 300 SOL V4



Key (Fig. 4 and Fig. 5):

1 - Junction box
2 - Condensate drain
3 - Temperature and pressure one-way safety valve
4 - Domestic hot water outlet
5 - Handle
6 - Domestic cold water inlet
7 - Storage tank drain fitting
8 - Air discharge
9 - Air intake
10 - Display
11 - Front panel
12 - Magnesium anode
13 - TCO safety thermostat thermal switch
14 - Electronic anode (not available on this model)
15 - Electric heater
16 - Solar inlet
17 - Solar outlet

Upper part structure



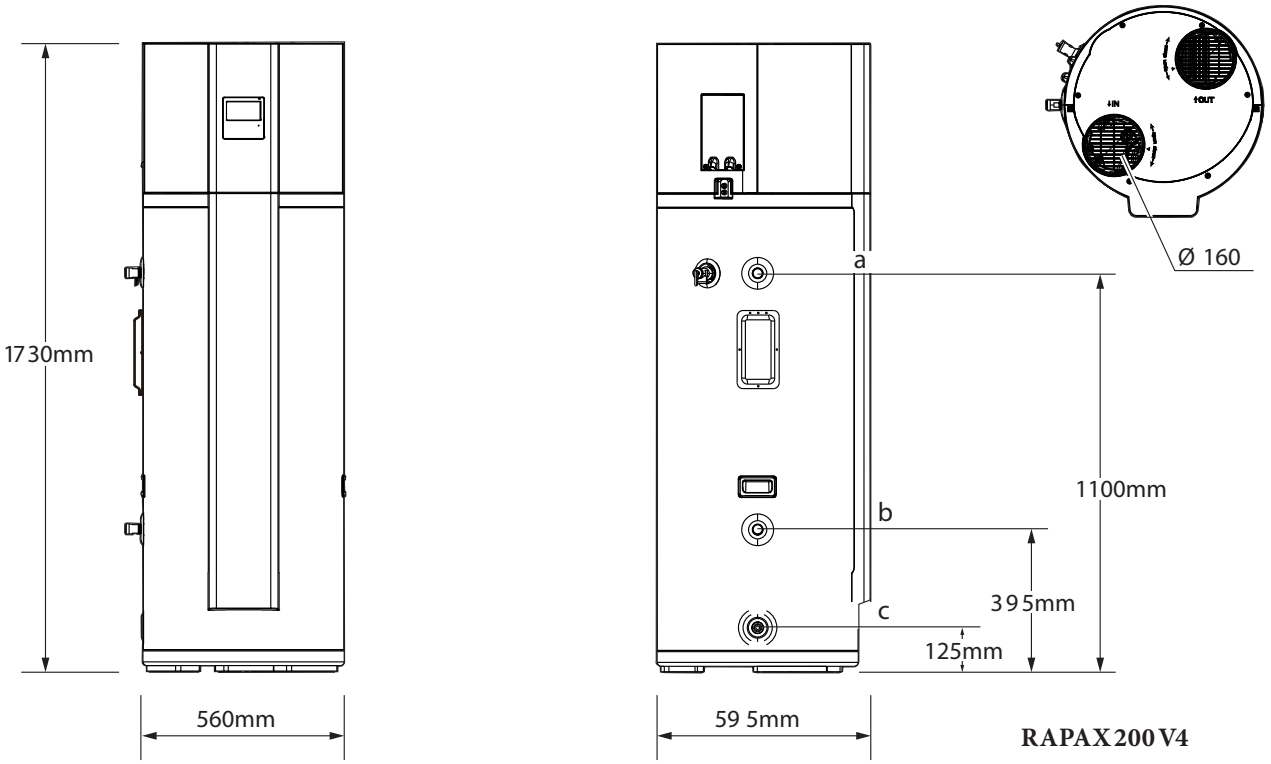
Key (Fig. 6):

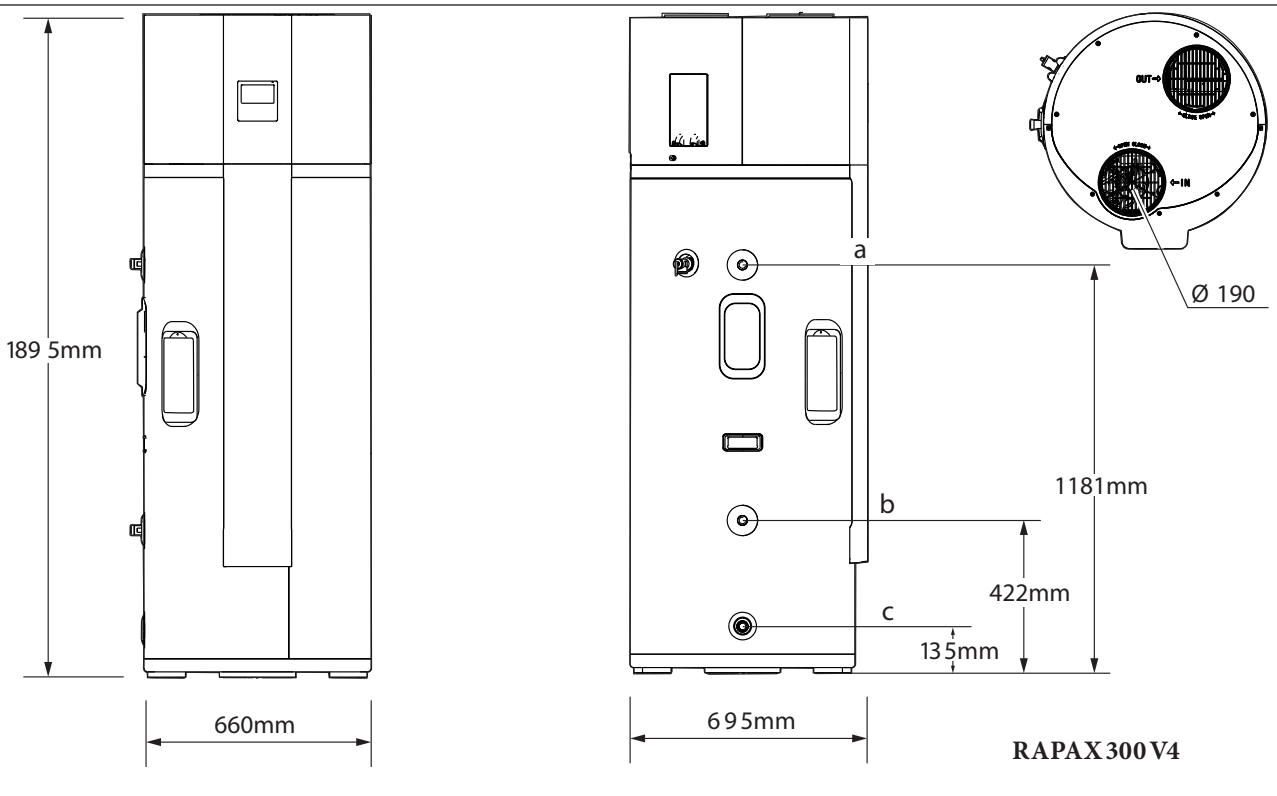
1	-	*Rear cover*
2	-	*Junction box cover*
3	-	*Junction box*
4	-	*Compressor*
5	-	*Air intake filter*
6	-	*Upper cover*
7	-	*Fan unit*
8	-	*Evaporator*
9	-	*Electronic control unit*
10	-	*Front cover*

For safety reasons, DO NOT repair electrical connections, heating elements, heat pumps, or electronic elements. Contact qualified service personnel for repairs.

The compressor is not repairable. The latter contains flammable pressurised refrigerant. In case of malfunction, please contact after-sales service.
It is strictly forbidden to attempt to repair or tamper with the compressor, as it could cause serious damage to property and personal injury.

1.5 MAIN DIMENSIONS





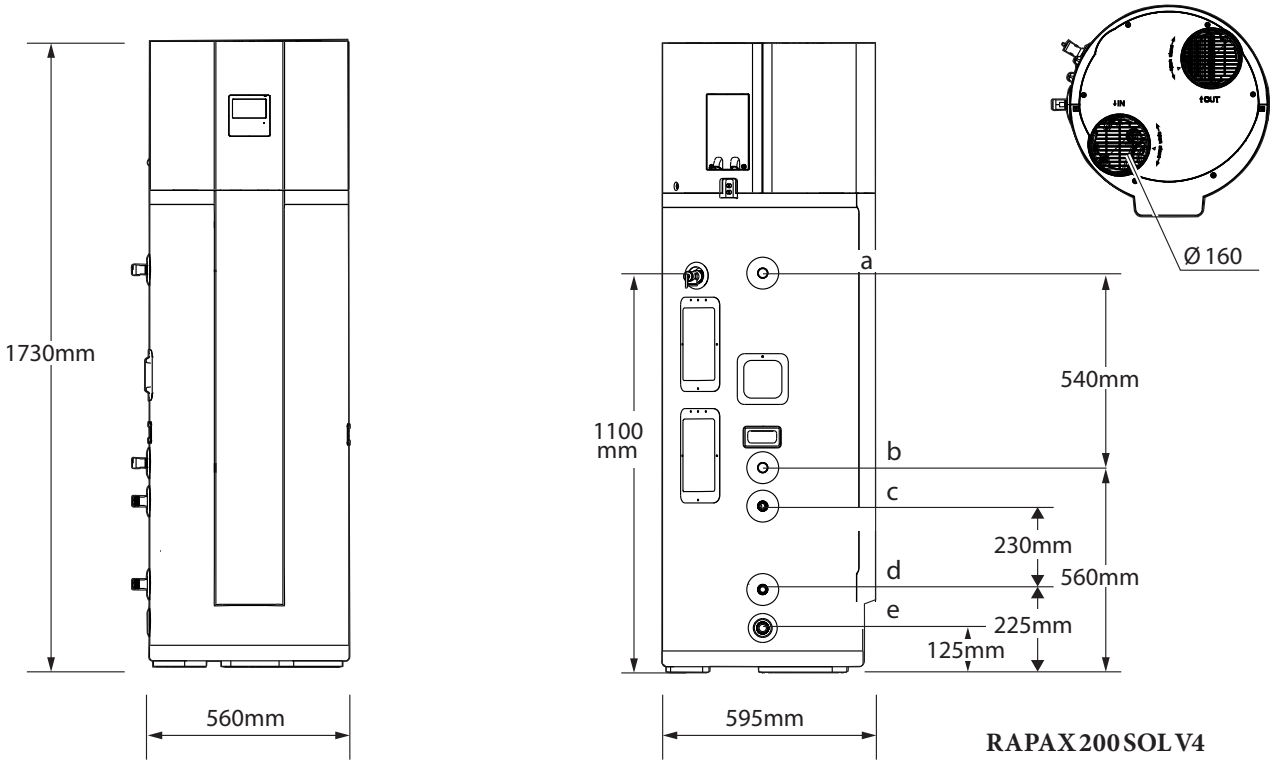
Key (Fig. 7 and 8):

a - Domestic hot water outlet

b - Domestic cold water inlet

c - Drain pipe

Connector	Dimension
Domestic hot water outlet	R3/4"
Domestic cold water inlet	R3/4"
PTR valve	RC3/4"



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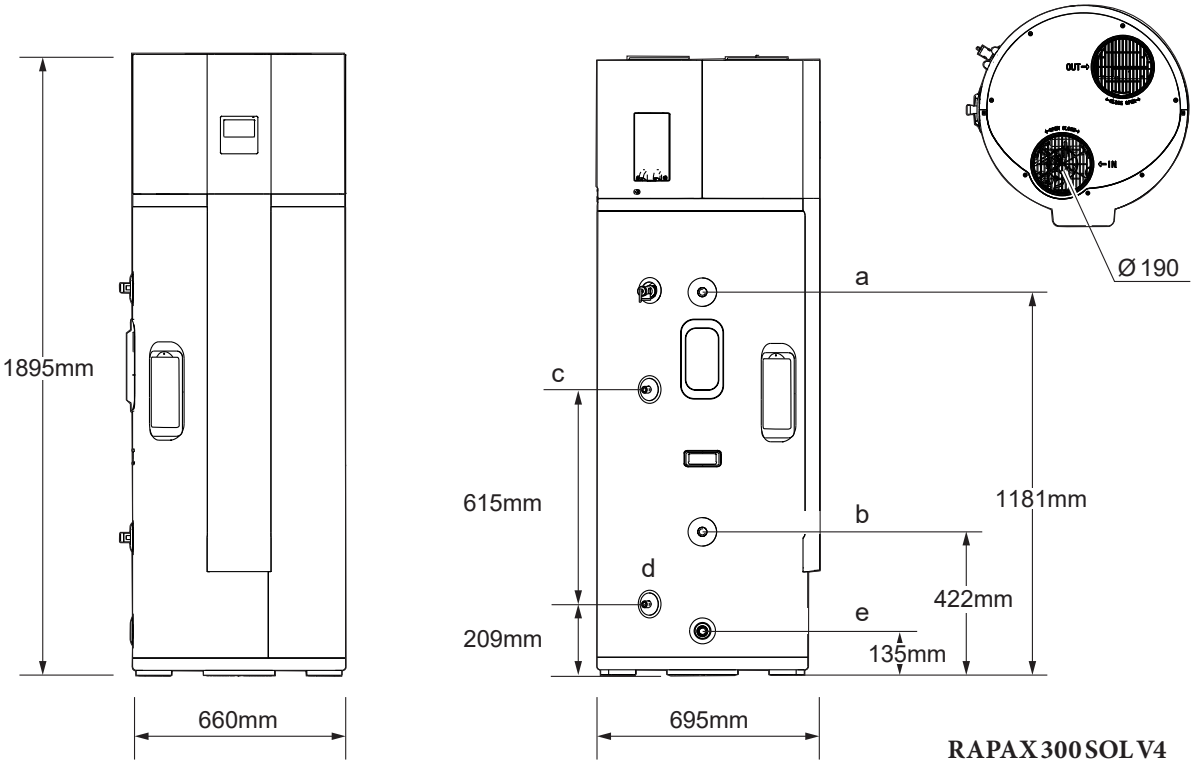

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Key (Fig. 9 and 10):

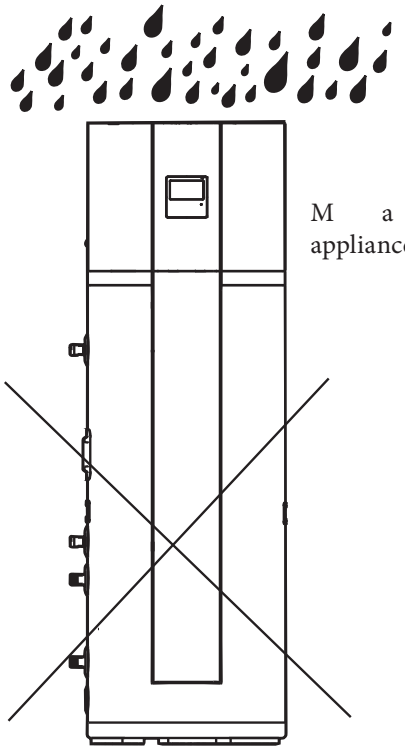
a - Domestic hot water outlet
b - Domestic cold water inlet
c - Solar inlet
d - Solar outlet
e - Drain pipe

Connector	Dimension	Connector	Dimension
Domestic hot water outlet	R3/4"	Solar outlet	R3/4"
Domestic cold water inlet	R3/4"	Solar inlet	R3/4"
PTR valve	RC3/4"	Drain pipe	NPT3/4"

1.6 POSITION OF THE APPLIANCES

- The appliance must be installed indoor in a protected space.
- It is not permitted to install the appliance in a space exposed to direct atmospheric precipitation (rain, snow, hail, etc.).

- In the event of rain/water infiltration inside the appliance, the components could be damaged or create dangerous situations for the safety of people.
- If the duct leads to the outside, a reliable, waterproof seal must be installed on the duct to prevent water from entering the appliance.
- The appliance must be securely fastened to avoid serious consequences for the user or the appliance itself.



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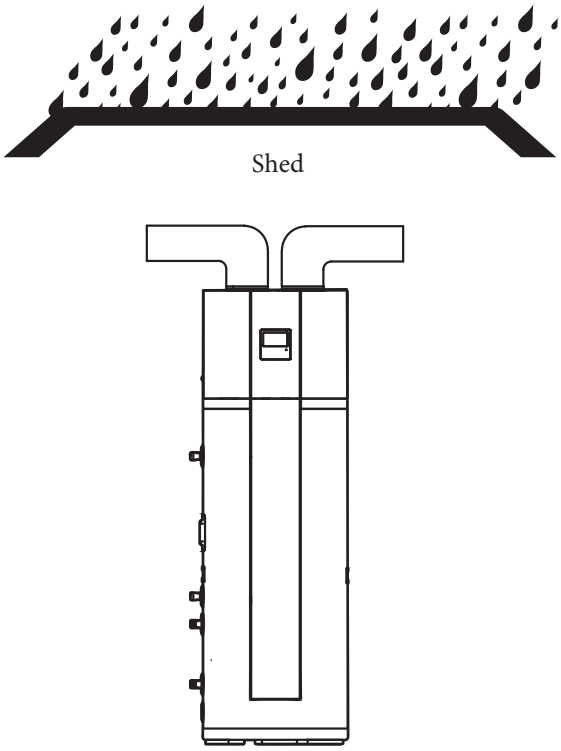

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- Sufficient space must be provided for the installation and maintenance of the appliance.
- The ground surface must be flat or sloped no more than 2°.
- The floor must be able to support the weight of the appliance and be suitable for its installation, without increasing noise or vibrations.
- To easily drain condensation water from the appliance (full of water), install the appliance on a horizontal floor. If not, make sure the drain outlet is at the lowest level.
- The air inlet and outlet must be free from obstacles and without strong winds.
- The noise generated by the operation of the appliance and the expelled air flow must not disturb the neighbours.
- There must be no obstacles around the appliance.
- There must be no flammable gas leaks nearby.
- The installation area must be suitable for installing pipes and electrical connections.
- When installing the appliance, the ambient air temperature must also be taken into account; in heat pump mode, the inlet air temperature must be above -7°C and below 43°C. If the inlet air temperature exceeds these upper and lower limits, the electric heater will activate to meet the hot water demand, deactivating the heat pump.

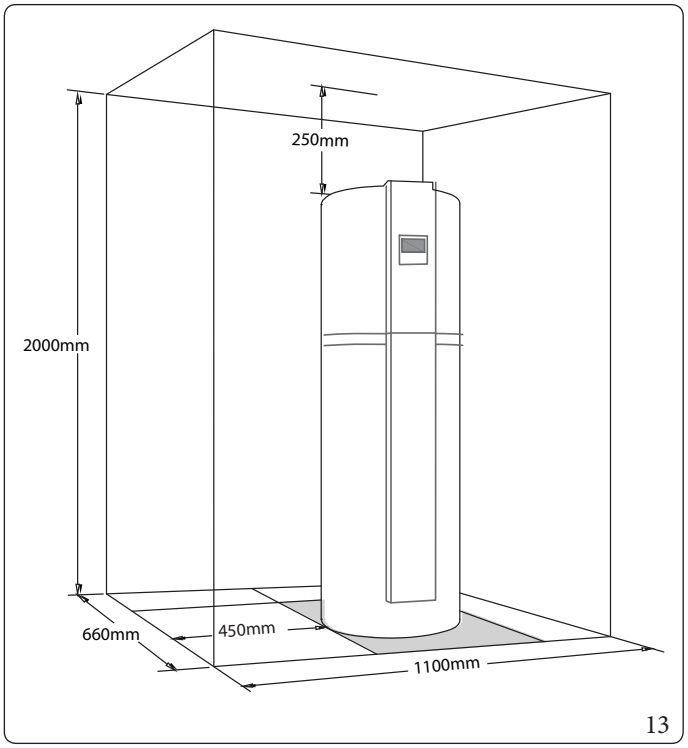
- If the appliance is installed on a balcony, the weight of the appliance (full of water) must not exceed the load limit of the balcony. Also protect the appliance from adverse weather conditions such as low temperatures and/or rain. Please note that the equipment features an IP21 protection.
- If the appliance is to be installed on a metal part of the building, ensure that the electrical insulation meets the applicable local electrical regulations.
- The appliance, installed in an indoors, may cause a decrease in the internal temperature and an increase in the noise in the room itself. Adopt appropriate preventive measures.
- The appliance must be placed in an area not subject to freezing temperatures. Appliances located in unconditioned spaces (e.g. garages, basements, etc.) may require that water lines, condensate lines, and drain lines be insulated against freezing.

Installing the appliance in one of the following locations may result in malfunction; if it is necessary to install it in one of these locations, it is mandatory to consult the supplier beforehand.

- The room contains mineral oils as lubricants for cutting machines.
- Seaside locations, characterized by air with a high concentration of salt.
- Thermal areas where corrosive gases, such as sulphurous gas, are present.
- Factories where the supply voltage is subject to continuous variations.
- Inside a caravan or camper.
- Rooms exposed to direct sunlight or other heat sources. If this cannot be avoided, install an adequate cover.
- Rooms such as the kitchen where oily vapours can permeate inside the appliance.
- Rooms where there are strong electromagnetic waves.
- Rooms where there are gases or flammable materials.
- Rooms where there are acid or alkaline gases.
- Any other environment that presents special or risky conditions.

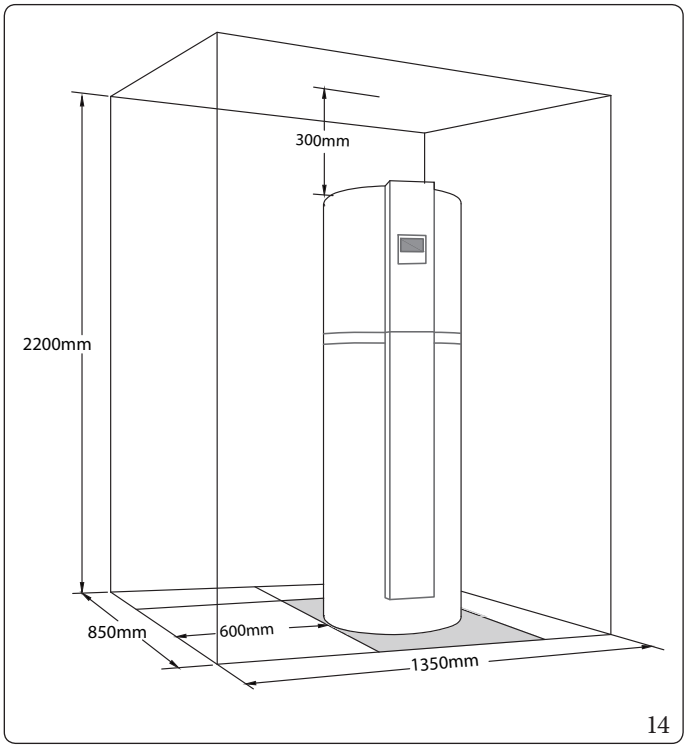
1.6.1 Minimum installation distances

RAPAX 200 V4 / RAPAX 200 SOL V4



13

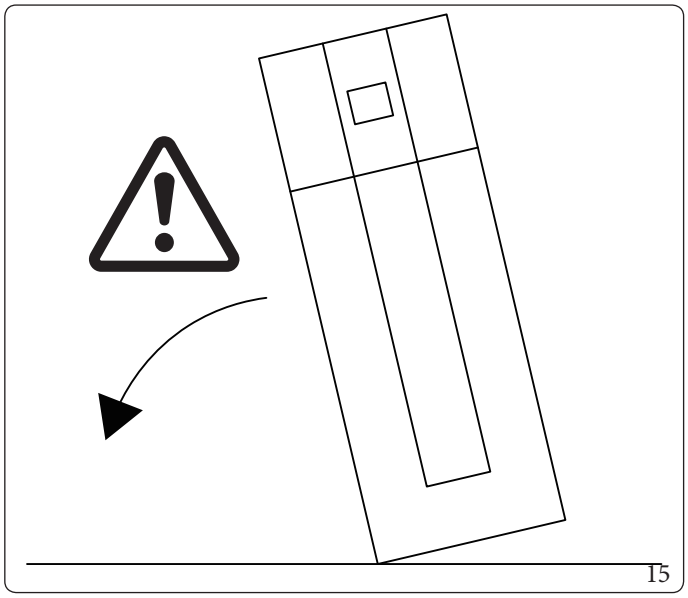
RAPAX 300 V4 / RAPAX 300 SOL V4



14

1.7 APPLIANCE ASSEMBLY

To avoid accidental falls, secure the appliance to the wall

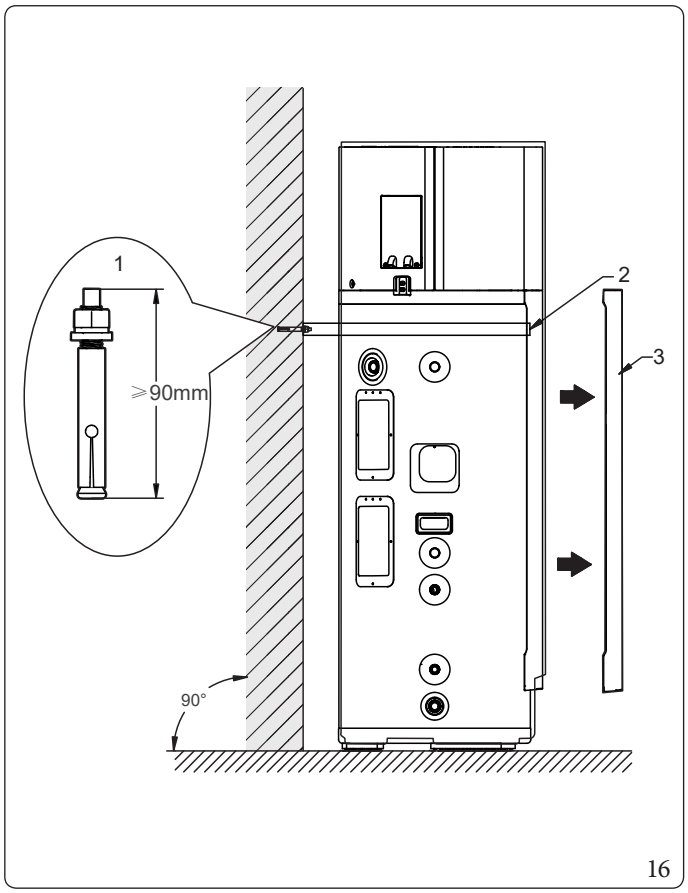


Perform the following procedures to fix the appliance:

1. Remove the front panel (3, Fig. 16).
2. Install the wall plugs (not supplied) on the wall. Use plugs suitable for the wall material.
3. Secure the end of the retaining band (2, Fig. 16) to the wall plug (1, Fig. 16).
4. Tighten the retaining band (2, Fig. 16) and fix the other end to the second plug through the appropriate hole.
5. Check that the water tank is securely attached. Otherwise, secure it with an additional retaining band (not supplied).
6. Refit the front panel (3, Fig. 16).

Key (Fig. 16):

1 - M8 expansion plugs
2 - Retaining band
3 - Front panel



Side wall (top view)

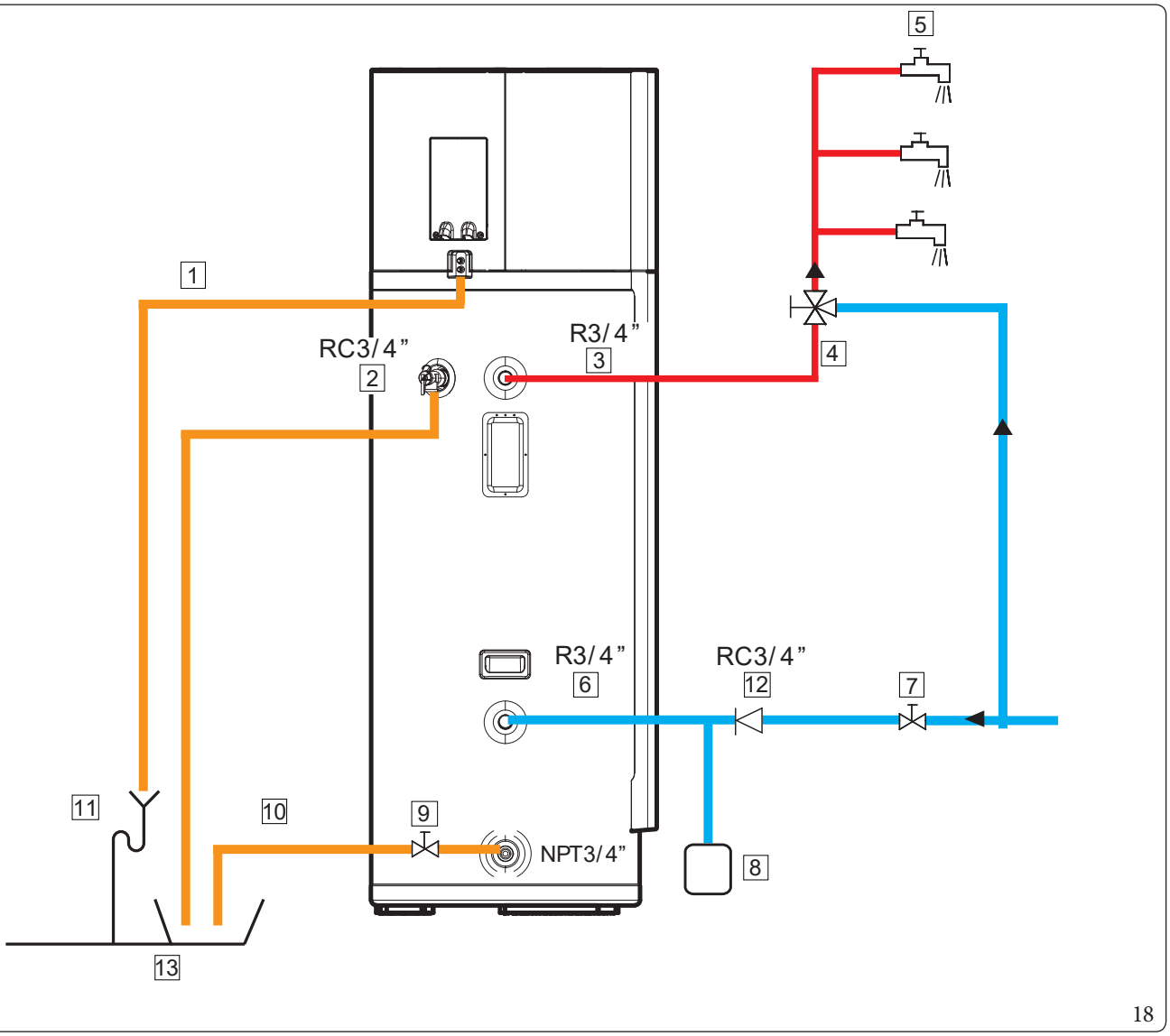
Side wall (top view)

17

- The appearance and installation orientation of the appliance shown in Fig. 17 are for reference only and can be modified according to the installation to be performed.
- The position of the retaining band can be changed during installation to adapt to the actual situation of the room or wall.
- The expansion plugs used for fixing must support the maximum weight of the appliance (with the tank completely filled with water).

1.8 HYDRAULIC CONNECTION

1.8.1 (RAPAX 200 V4 and RAPAX 300 V4) hydraulic connections



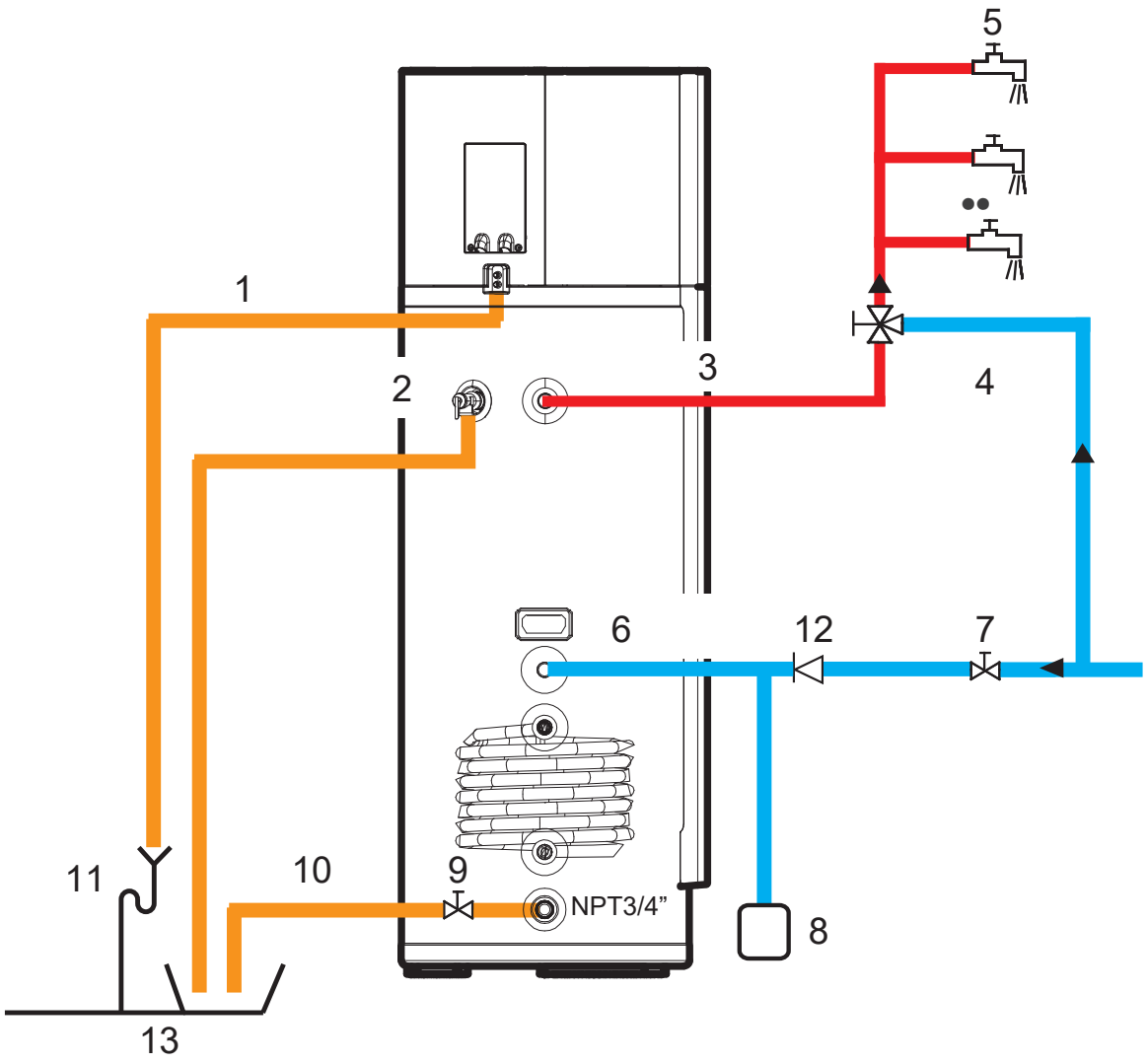
18

Key (Fig. 18):

1	-	*Condensate drain outlet*
2	-	*Temperature and pressure one-way safety valve*
3	-	*Domestic hot water outlet*
4	-	*Mixing valve (recommended)*
5	-	*User taps*
6	-	*Domestic cold water inlet*
7	-	*Domestic cold water inlet tap*
8	-	*Expansion vessel for pressure relief (recommended)*
9	-	*Storage tank draining valve*
10	-	*Storage tank drain pipe*
11	-	*Condensate drain trap*
12	-	*One-way valve*
13	-	*Drainage pan*

- Connect the hydraulic system pipes as shown in Fig. 18.
- To avoid scalding from hot water, it is recommended to use a mixing valve that allows the inlet cold water to mix with the outlet hot water.
- Before making the hydraulic connections, make sure that the pipe is clean and free of foreign bodies.
- It is recommended to use dielectric connectors to avoid potential corrosion;
- When installing the recirculation pump, connected between the hot water and cold water inlet, the dry-running protection may be activated. It is recommended to disable this function by entering the "configuration mode" and setting the parameter F15=0 on the appliance's control panel.

1.8.2 (RAPAX 200 SOL V4 and RAPAX 300 SOL V4) hydraulic connections



19

Key (Fig. 19):

1 - Condensate drain outlet
2 - Temperature and pressure one-way safety valve
3 - Domestic hot water outlet
4 - Mixing valve (recommended)
5 - User taps
6 - Domestic cold water inlet
7 - Domestic cold water inlet tap
8 - Expansion vessel for pressure relief (recommended)
9 - Storage tank draining valve
10 - Storage tank drain pipe
11 - Condensate drain trap
12 - One-way valve
13 - Drainage pan

Integrated components			
1	Heat pump	5	Solar coil
2	Domestic hot water outlet	6	Solar coil inlet
3	Domestic cold water inlet	7	Solar coil outlet
4	Solar powered water tank temperature sensor		
Optional additional components			
8	Drain valve outlet	13	Solar collector temperature sensor
9	Automatic thermostatic mixer	14	Solar collectors
10	Overtemperature switch for solar water pump	15	Solar circuit expansion vessel
		16	Safety valve
11	Solar pump	17	Boiler
12	Electronic control unit	18	Water pump switch

The optional components listed in the table are not included in the standard scope of delivery of the machine. To purchase and install these components, please contact the after-sales service, which will arrange for a qualified technician to intervene.

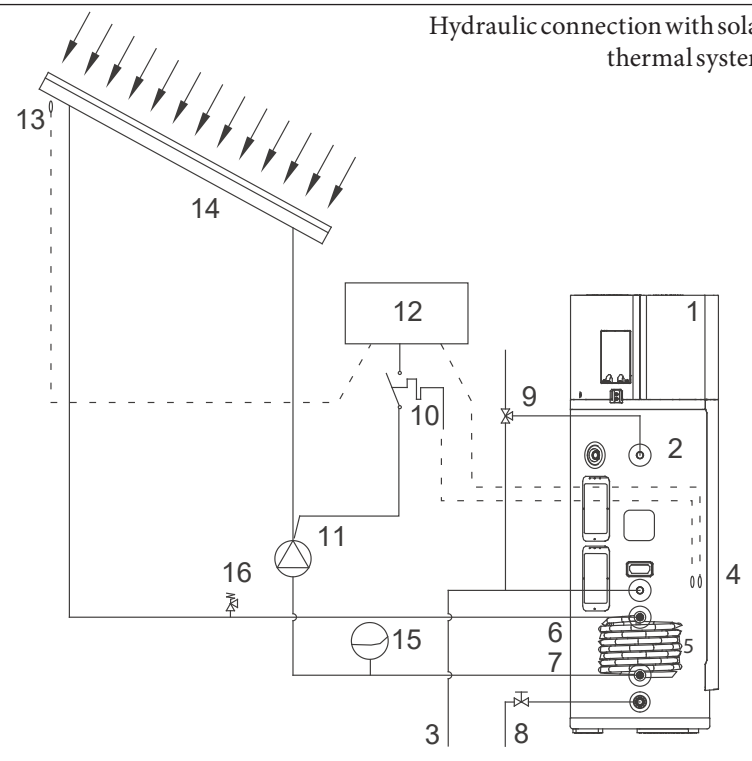
1.8.2.1 Integration with solar thermal system

- The solar collector is a panel with the function of collecting solar energy. Improper use or unauthorised modification may cause damage to the equipment and result in personal injury to the user.
- The hydraulic connection diagrams are only a functional demonstration and do not represent the actual connection of the system.

Connection method with the solar thermal system equipped with an electronic control unit dedicated to solar (see Fig. 20). You need to enter design mode and set the parameter F32=1.

3. The electronic control unit (pos. 12 Fig. 20) determines the accumulation of solar heat and manages the solar pump (pos. 11 Fig. 20).
4. To prevent the appliance from activating the protection (due to high temperature) and consequently prevent malfunction of the solar system, it is recommended to carefully adjust the temperature of the water heater and install a special thermal protection switch (pos. 10 Fig. 20). For specific parameter settings, you must refer to the maintenance technician's technical manual.

Hydraulic connection with solar thermal system



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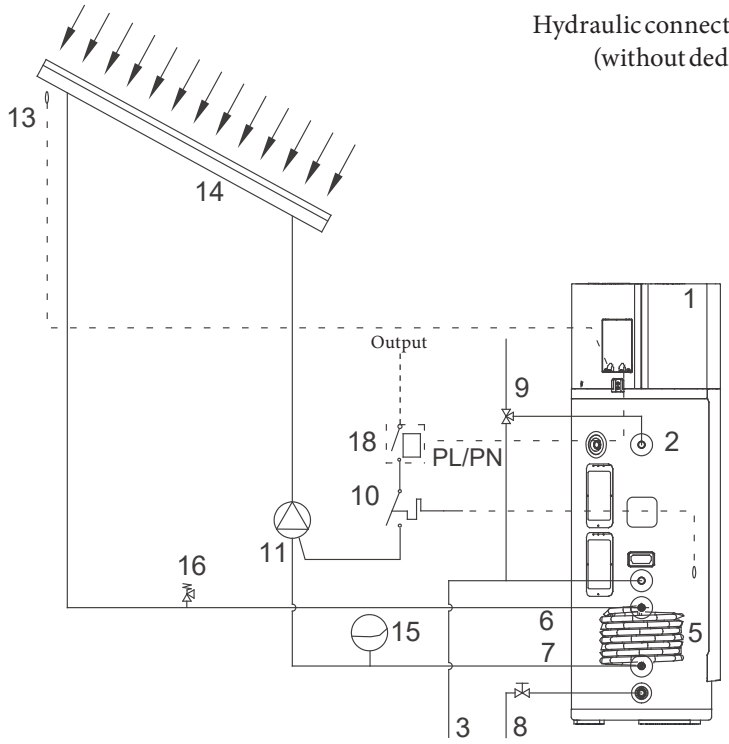
- The solar collector temperature sensor must be placed at the point where the highest temperature is recorded.
- The system must be equipped with an overtemperature control device. This system has the function of accumulating hot water, at high temperatures, when the solar collector exceeds the set temperature limit;

Hydraulic connection with solar thermal system
(without dedicated electronic control unit)



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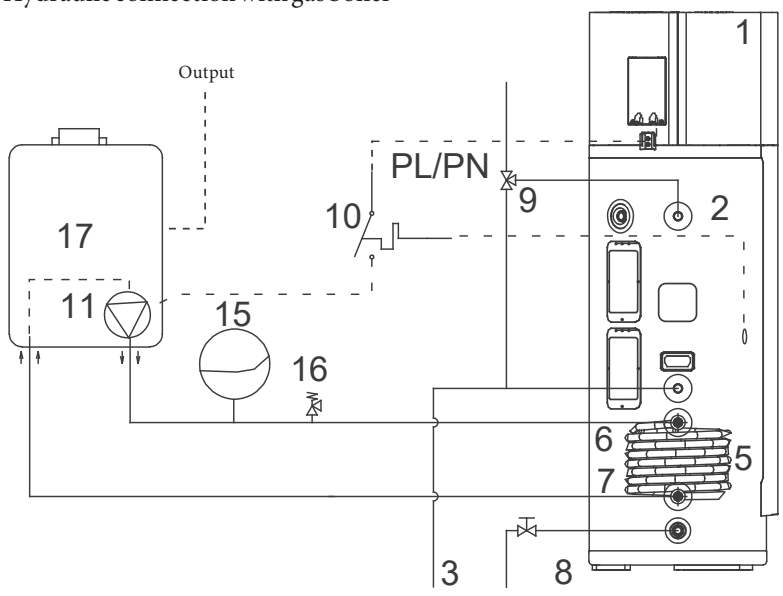
1.8.2.2 Integration with boiler

The diagram in Fig. 22 shows the connection of the system to a boiler. You need to enter "configuration mode" and set parameter F32=4.

Hydraulic connection with gas boiler



22

- It is recommended to install the solar collector and the appliance as close to each other as possible.
- To reduce heat loss, it is essential to properly insulate the pipes of the two systems.

Solar system pipes and fittings can reach very high temperatures. Before touching these parts, always check the temperature to avoid the risk of burns.

Technical requirements:

- When the system is installed in a cold environment, the piping connecting the solar circuit to the tank must be insulated; it is recommended to add ethylene glycol to ensure antifreeze protection at low temperatures.
- As the solar collector pipes are cyclically heated, the water will expand, potentially generating steam in the collector and pipes, causing an increase in volume. It is mandatory to add an expansion vessel and a safety valve to the pipes.
- When sizing pipes, it is necessary to take into account the difference in height and the total length of the pipes themselves. This is necessary to prevent insufficient power from the recirculation pump from causing a low flow rate of the heat collection fluid.
- Install a high-temperature thermostat on the water tank to prevent overheating, which could lead to burns or tank breakage.

Follow all local regulations regarding solar thermal systems and domestic hot water systems. It is also recommended that you follow the updated guidelines for the installation and use of these systems.

- Connect the hydraulic system pipes as shown in the diagram in Fig. 19.
- To avoid scalding from hot water, it is recommended to use a mixing valve that allows the inlet cold water to mix with the outlet hot water.
- Before making the hydraulic connections, make sure that the pipe is clean and free of foreign bodies.
- It is recommended to use dielectric connectors to avoid potential corrosion;
- When installing the recirculation pump, connected between the hot water and cold water inlet, the dry-running protection may be activated. It is recommended to disable this function by entering the "configuration mode" and setting the parameter F15=0 on the appliance's control panel.

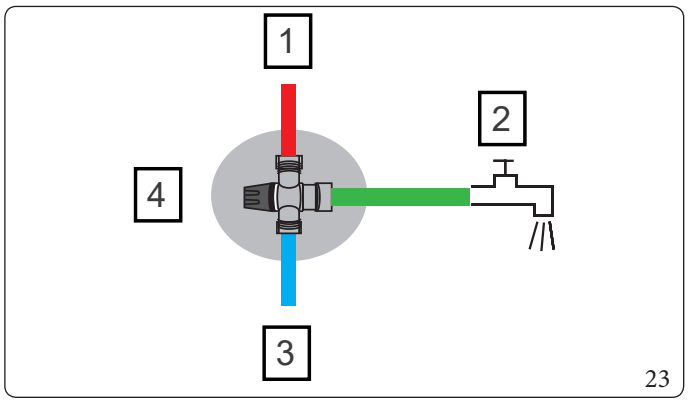
1.8.3 Cold water connection

The cold water inlet has an R3/4" thread. Use insulated pipes to connect to the home's water supply system. Install a one-way valve (RC3/4"), supplied as standard, on the inlet pipe to prevent backflow of water.

- It is recommended to provide a shut-off valve (not supplied) on the cold water inlet.
- Check that the supply pressure is 3~4 bar (0.3 to 0.4 MPa). If the inlet water pressure is less than 0.15 MPa, a pump must be installed at the water inlet. If the main water pressure is higher than 7 bar (0.7 MPa), a pressure reducer must be installed on the water inlet pipe.
- In case of significant fluctuations in system water pressure, it is recommended to install a domestic water expansion vessel (effective volume ≥7%) to balance the pressure.
- For areas with high limescale content (Th>20°f), water treatment is recommended. After treatment with a softener, the water hardness must not exceed 15°F. Using a softener does not affect the warranty if the softener is approved for the country of installation and in compliance with current regulations, performing regular checks and maintenance.
- Comply with local criteria and regulations regarding drinking water quality at the place of installation.

1.8.4 Hot water connection

The hot water outlet has an R3/4" thread. Use insulated pipes to connect to the home's water supply system.



Key (Fig. 23):

1 - Hot water
2 - User tap
3 - Cold water
4 - Thermostatic mixing valve

Water at a temperature of more than 50°C can cause serious burns. It is recommended to install a thermostatic mixing valve on the hot water supply line.

1.8.5 Boiler emptying connections

The drain connection has a 3/4 NPT thread. The appliance is supplied with a cap. Replace the cap with a suitable shut-off valve, connect the appliance to the drain pipe and make sure it remains open to the outside.

1.8.6 Condensation evacuation

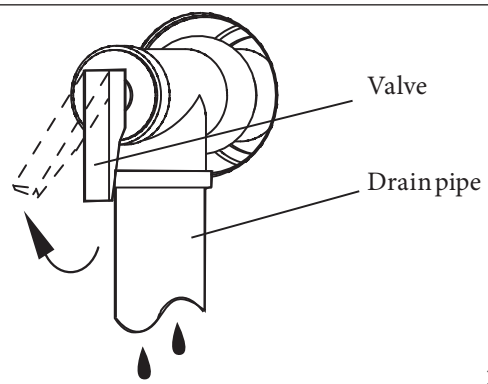
Connect the long condensate drain pipe (see Fig. 26) to the fitting provided on the condensate outlet (Fig. 18 for models RAPAX 200 V4 and RAPAX 300 V4 or the diagram in Fig. 19 for models RAPAX 200 SOL V4 and RAPAX 300 SOL V4). Depending on the humidity level in the air, the device can produce up to 0.25 L/h of condensation.
The condensate drain line must be connected directly to the home's sewer system using a siphon containing water to prevent the escape of corrosive gases and odours from the sewer system.

1.8.7 Safety valve pipe installation

The one-way valve is pre-installed on the device. The connection has an RC3/4" thread. The valve overflow must be connected to an external drain pipe which, in turn, must be connected via a siphon to the water drain. The appliance must be installed and operated in a room where temperatures do not fall below 0°C.

- If the installation is carried out in a room where the outside temperature drops below 0°C, it is necessary to insulate all hydraulic components.
- The drain pipe must be insulated to prevent the water inside it from freezing during the coldest seasons.

Do not block the one-way valve drain pipe. If the instructions given are not followed correctly, serious accidents, including personal injury and explosions, may occur.



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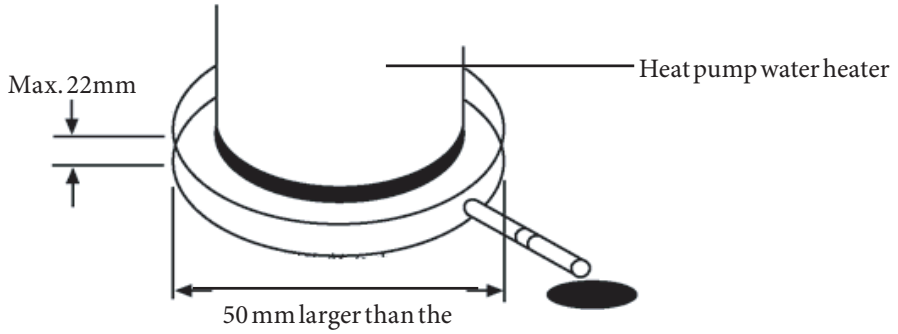
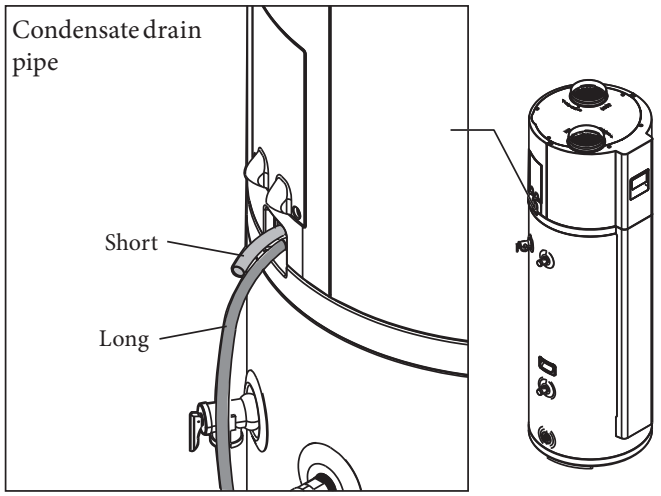
Condensation may escape from the appliance if the drain pipe is blocked or if the appliance is used in a particularly humid environment; in this case, it is recommended to use a drain pan, as shown in Fig. 25.



25

After completing the piping installation, open the cold water inlet tap and a hot water outlet tap and leave them open until water flows out of the tank. When the water flows regularly, the tank is considered full. At this point, close all taps and carefully check the pipe connections to ensure there are no leaks.



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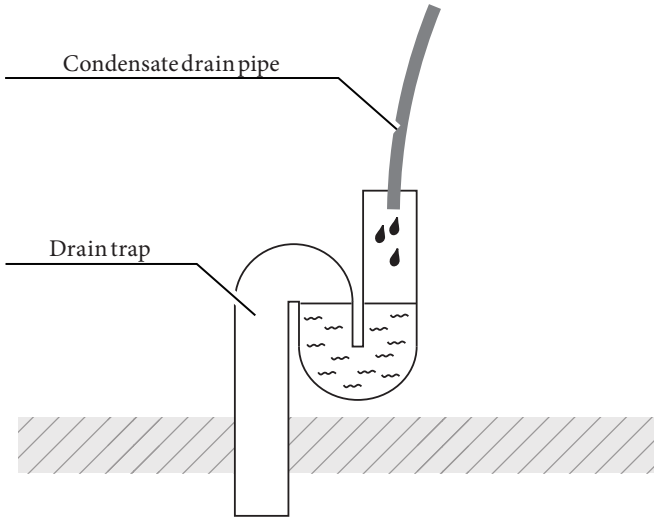

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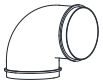
1.9 AIR DUCT CONNECTION

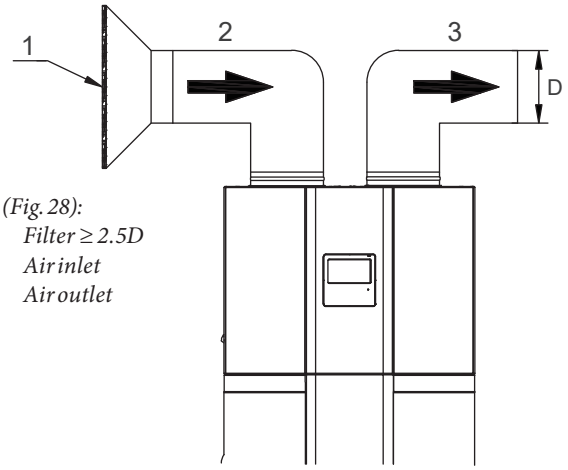
It is important that the total pressure loss inside the pipes and components for air inlet and outlet is not greater than 80 Pa. It is recommended to use rigid ducts and to check that their length complies with the indications given in the specific manual of the appliance.
The table below shows the relationship between the pressure drop of various components and their equivalent lengths.

		1m straight PVC/ HDPE pipe	PVC/ HDPE 90° elbow	Filter
Type				
RAPAX 200 V4 RAPAX 200 SOL V4 (Ø160)	Pressure drop (Pa)	2.5	9.5	19
	Equivalent length (m)	1	3.8	7.6
RAPAX 300 V4 RAPAX 300 SOL V4 (Ø190)	Pressure drop (Pa)	2	8	15.2
	Equivalent length (m)	1	4	7.6

You need to enter the Configuration mode and set parameter F40 according to the calculated pressure drop, as shown in the table below.

Total pressure drop	0-20 Pa	20-40 Pa	40-60 Pa	60-80 Pa
F40	0	1	2	3

- The decrease in pressure inside the ducts will cause a reduction in the amount of air that can circulate.
- Condensation may form on the outside surface of the ducts, especially the air exhaust ducts. Alternatively, if you install standard ducts, you will need to insulate them to ensure the appliance's proper thermal efficiency.
- When the appliance is placed in a dirty or dusty room, it is necessary to install a filter at the air vent inlet of the appliance. If the appliance is connected to a duct system, the filter must be positioned at the entrance to the duct. Under normal environmental conditions, where the air is not particularly dirty, it is sufficient to install a simple grille to prevent the entry of foreign bodies.



Key (Fig. 28):
1 - Filter ≥ 2.5D
2 - Air inlet
3 - Air outlet

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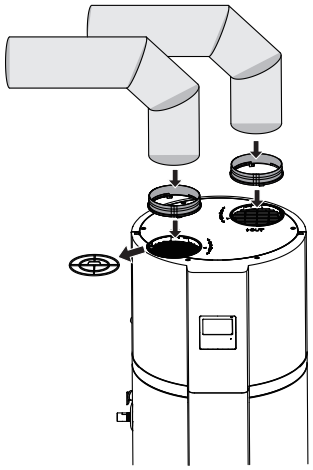


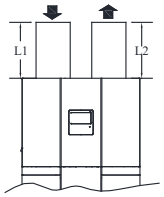
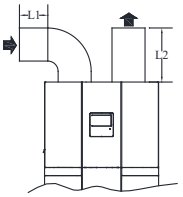
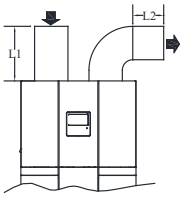
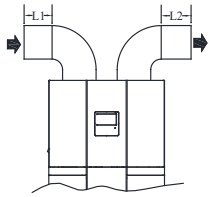
29

Filter installation (1, Fig. 28) is the responsibility of the customer; the filter mesh size must be approximately 1.2 mm.

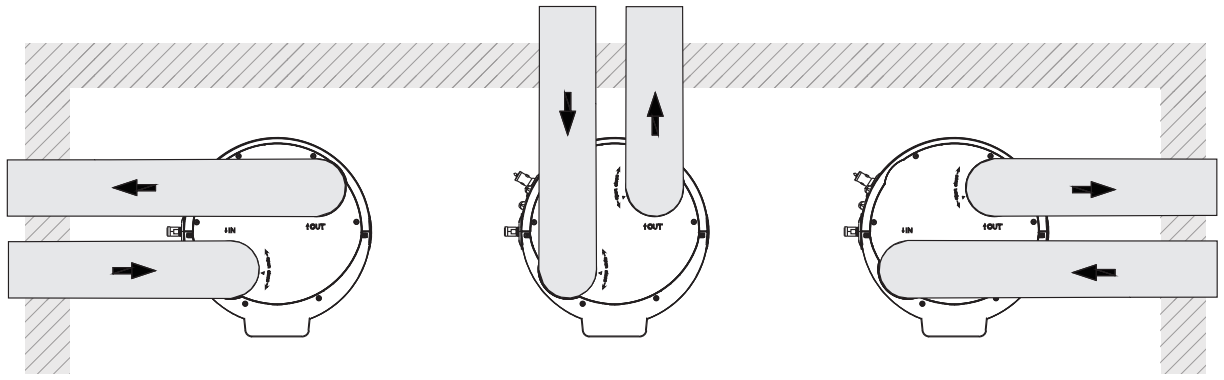
For the maximum length of the ducts, refer to the table "Air duct connection procedure" on page 30.

1.9.1 Typical installation

Air duct connection procedure

Type					
RAPAX 200 V4 RAPAX 200 SOL V4	Maximum pipe length L1+L2 (without filter)	32 m	28 m	28 m	24 m
RAPAX 300 V4 RAPAX 300 SOL V4		40m	36 m	36 m	32 m

Air duct connection directions



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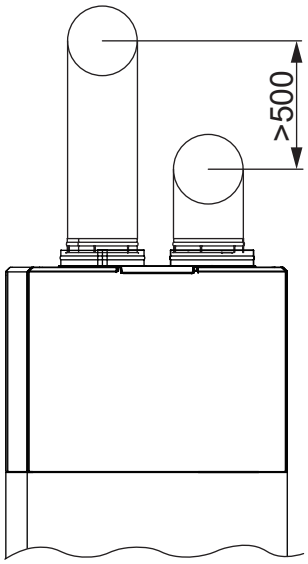
Minimum distance between air inlet/outlet ducts



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1.10 ELECTRICAL CONNECTION

- The appliance is supplied without power cable.
- The power supply must come from an independent circuit with nominal voltage as shown in the table below.
- The power supply circuit must be effectively earthed.
- The electrical connection must be carried out by professionally qualified technicians in compliance with national regulations.
- If the appliances are intended to be permanently connected to the fixed electrical installation, it is necessary to install a multi-pole isolator with a pole-to-pole distance of at least 3 mm, a residual current device (RCD) with a rated tripping current not exceeding 30 mA, and an isolating device compliant with wiring regulations.
- The power and signal cables of the connected devices (e.g. Modbus) must be routed correctly and not in contact with the connecting pipe or valve.
- After completing the cable connection, check and ensure that the installation is correct before turning on the appliance.
- Optional components are not included in the standard scope of delivery of the machine. To purchase and install these components, please contact the after-sales service, which will arrange for a qualified technician to intervene.

Power supply specifications

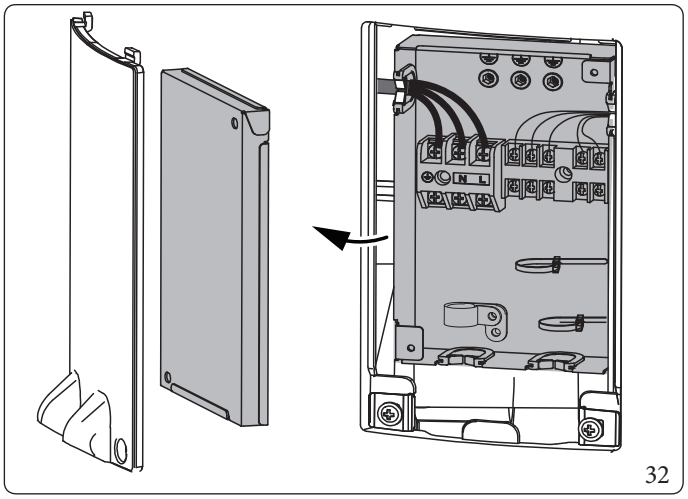
Power supply	220-240 V
Minimum power supply cable cross-section	1,5 mm²
Earthing wire	1,5 mm²
Circuit breaker switch	16 A
Residual Current Device (RCD)	Type A or F 30 mA≤0.1 sec

It is essential that the installation and use of the appliance comply with all applicable local regulations and all requirements established by the electricity supply company. The instructions and information in this manual represent the minimum requirements to be met.

Power cable connection

1. Loosen the screws to remove the first cover and the subsequent screws to remove the protective metal cover (see Fig. 32 or 34);
2. For the electrical connection, pass the power cable (pos. 1, Fig. 35) through the appropriate cable gland. Next, connect the power cable to the terminals identified as earth ⏚, neutral (N) and live (L). The power cable should then exit through the reserved left hole on the junction box cover. Once the connection is complete, both the protective metal cover and the junction box cover must be replaced and secured.

RAPAX 200
V4 and RAPAX 300 V4



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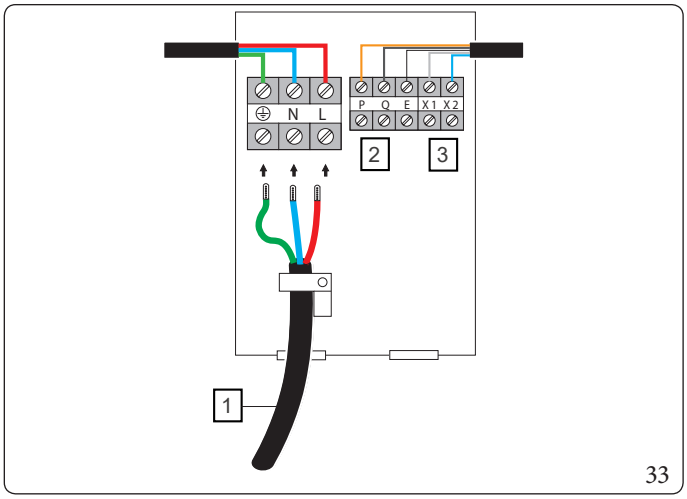

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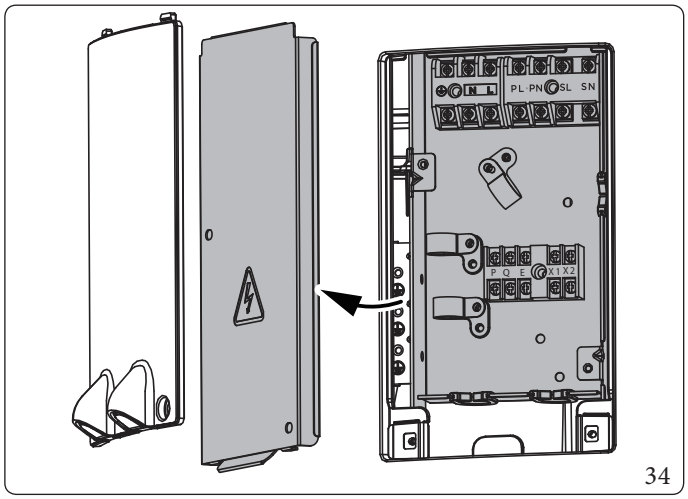
Key (Fig. 33):
1 - Power cable
2 - Modbus
3 - On/Off

RAPAX 200 SOL V4 and RAPAX 300 SOL V4



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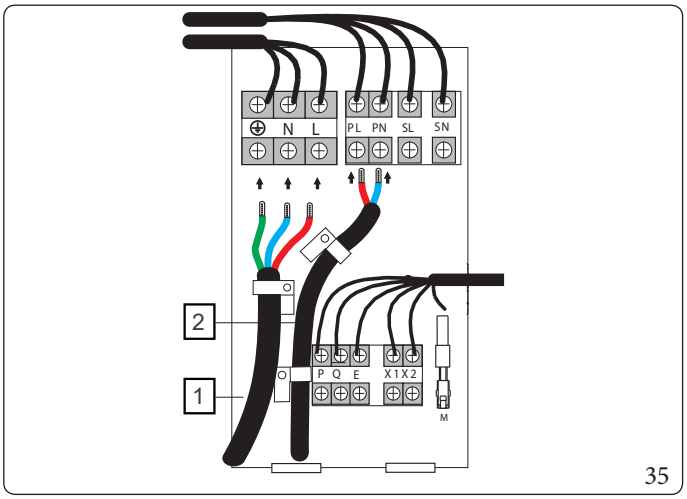


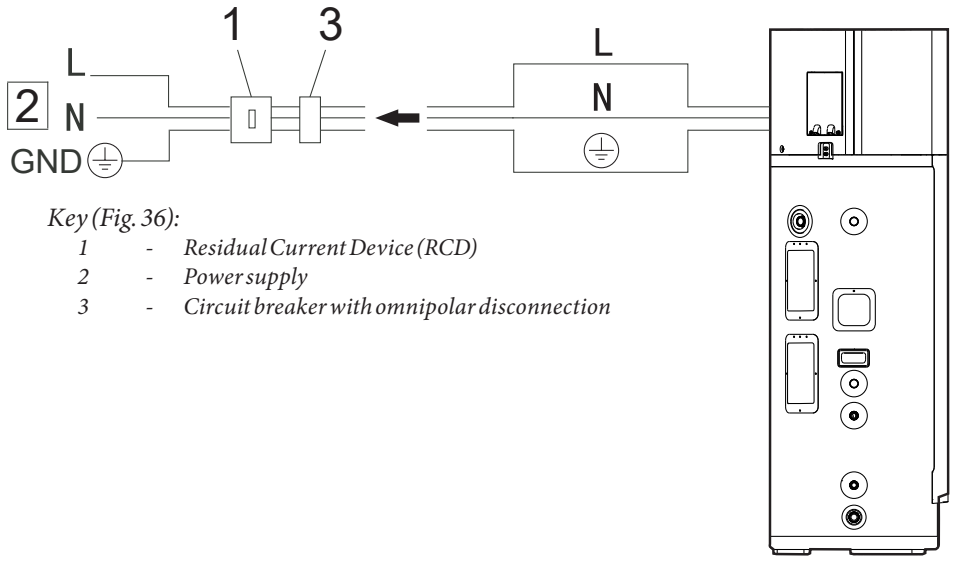
35

Key (Fig. 35):

1 - Power cable
2 - Additional cable

- For additional cables, their cross-section must not be less than 1.0 mm².
- To prepare the cable, use wire strippers to remove the rubber sheathing from both ends, exposing about 15 centimetres (5.9") of wire. Next, remove the insulation from the exposed ends. Finally, using a crimping tool, crimp the spade lugs onto the end.
- When connecting the cables, it is essential to carefully follow the wiring diagram inside the control panel cover of the appliance.
- Additionally, it is important that additional cables are connected after the power cable, so as not to interfere with the installation.

- It is essential to ensure that the earthing cable is longer than the other cables. This feature prevents it from being accidentally disconnected or pulled out, thus ensuring that the appliance remains earthed at all times for safety.
- Additional cables must comply with the IEC 60245 design standard 57 (i.e. H05RN-F) and installation must be performed by qualified personnel only.
- To prevent connections from loosening or breaking, the routing of power cables and additional signal cables must be securely fastened using cable ties.



Key (Fig. 36):

1 - Residual Current Device (RCD)
2 - Power supply
3 - Circuit breaker with omnipolar disconnection

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- When connecting the power supply, it is necessary to add an additional insulating sheath where the original rubber insulation layer of the cable is not present.
- This appliance must be installed by a qualified professional electrician and must be in full compliance with all applicable local regulations. The choice of cables and wires must comply with the requirements established by local regulations.
- For safety reasons, a maximum of 30 mm of insulation may be removed from the end of the power cable. If the exposed portion of wire is too long, there is a risk of a short circuit or insufficient insulation protection.
- Risk of electric shock: When repairing the appliance, it is essential to turn off the main power supply and any external power supply unit to avoid the risk of electric shock.
- The temperature of the solar collector pipe (if present) could become very high. To avoid damaging the power cable, it is necessary to ensure good thermal insulation and avoid contact between hot pipes and the power cable itself.

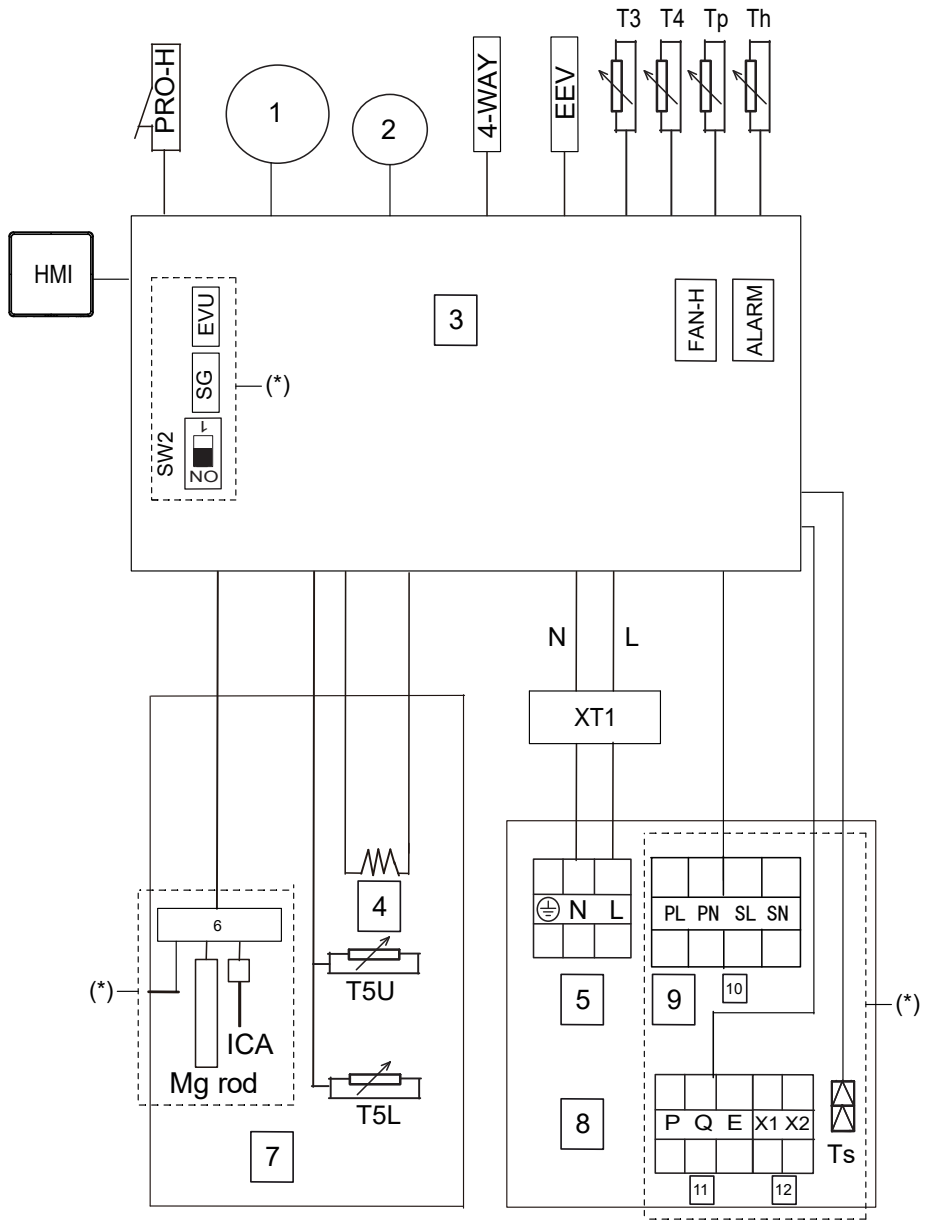
To avoid the risk of electric shock, it is mandatory to turn off the main power supply line and any external power supply unit during maintenance of the system.

1.10.1 Electrical connections with various integrated systems (RAPAX 200 SOL V4 and RAPAX 300 SOL V4)

With this appliance system, three different integrated systems are possible as shown in Fig. 20, Fig. 21 and Fig. 22.
Each system corresponds to a wiring connection diagram. It is therefore necessary to carry out a specific and different electrical connection configuration for each of the three integrated systems that you wish to implement.

It is essential to ensure that the electrical connections made are appropriate and perfectly consistent with the technical settings defined for the appliance.

1.11 WIRING DIAGRAM (RAPAX 200 V4 AND RAPAX 300 V4)



The alternating current (AC) load output of the motherboard must be controlled by an AC contactor.

Modbus terminal: P-RS485A; Q-RS485B; E-RS485 GND

37

Key (Fig. 37):

1	-	*Compressor*
2	-	*Fan*
3	-	*Main control board*
4	-	*factor*
5	-	*Power supply*
6	-	*Control panel*
7	-	*Wiring diagram inside the tank*
8	-	*Junction box*
9	-	*Recirculation pump*
10	-	*Solar pump*
11	-	*Modbus*
12	-	*On/Off*
PRO-H	-	*High pressure switch*
4-WAY	-	*4-way valve*
T3	-	*Evaporator temperature sensor*
T4	-	*Ambient temperature sensor*
T5U	-	*Tank temperature sensor (upper)*
T5L	-	*Tank temperature sensor (lower)*
Tp	-	*Drain temperature sensor*
Th	-	*Intake temperature sensor*
EEV	-	*Electronic expansion valve*
XT1	-	*Central terminal base*
Ts	-	*Solar temperature sensor*
ICA	-	*Electronic anode (not available on this model)*
PL/PN	-	*Pump for solar coil outlet L/N line AC signal*
SL/SN	-	*Solar coil input L/N line AC signal*

Smartgrid		
Operating behaviour	EVU	SG
Standard operation (default)	Open contact	Closed contact
Increase in operational efficiency	Closed contact	Open contact
	Closed contact	Closed contact
Decrease in operational efficiency	Open contact	Open contact

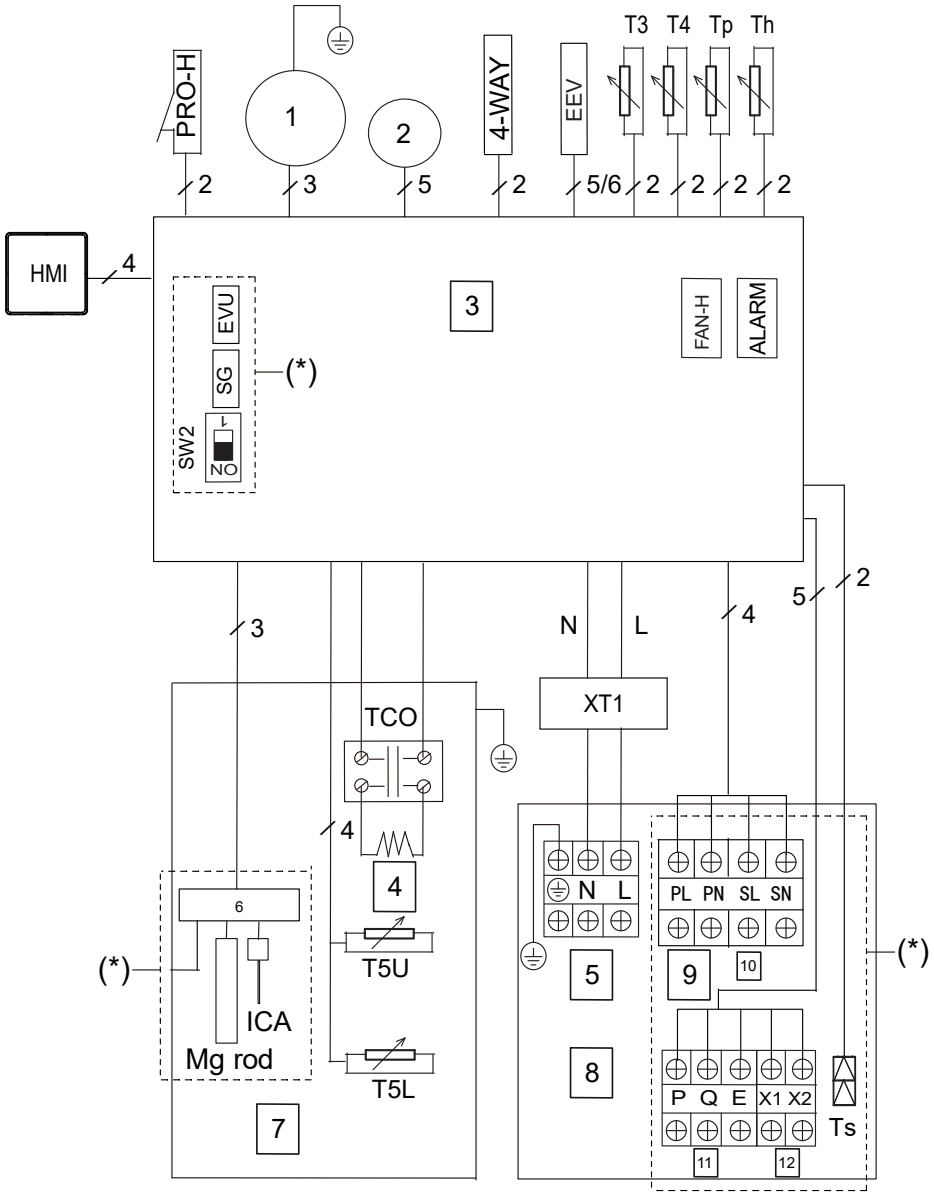
For SG and EVU connections, use 3-pole terminal blocks by connecting the cables to the external poles (1-3).

"SG" control settings		
SW2		
Factory setting		✓

(*) Optional. The optional element will not be supplied with the appliance. If you have any installation needs, please contact our qualified after-sales service technicians to purchase compliant components and have them installed by qualified technicians.

The electrical connection coming out of the tank must be connected to the corresponding component.
Set "SW2" to "1" to activate the "SG" port.
The current output (AC) from the motherboard must be controlled through an AC contactor.

1.12 WIRING DIAGRAM (RAPAX 200 SOL V4 AND RAPAX 300 SOL V4)



Modbus terminal: P-RS485A; Q-RS485B; E-RS485 GND

The alternating current (AC) load output of the motherboard must be controlled by an AC contactor.

38

Key (Fig. 38):

1	-	*Compressor*
2	-	*Fan*
3	-	*Main control board*
4	-	*factor*
5	-	*Power supply*
6	-	*Control panel*
7	-	*Wiring diagram inside the tank*
8	-	*Junction box*
9	-	*Recirculation pump*
10	-	*Solar pump*
11	-	*Modbus*
12	-	*On/Off*
PRO-H	-	*High pressure switch*
4-WAY	-	*4-way valve*
T3	-	*Evaporator temperature sensor*
T4	-	*Ambient temperature sensor*
T5U	-	*Tank temperature sensor (upper)*
T5L	-	*Tank temperature sensor (lower)*
Tp	-	*Drain temperature sensor*
Th	-	*Intake temperature sensor*
EEV	-	*Electronic expansion valve*
XT1	-	*Central terminal base*
Ts	-	*Solar temperature sensor*
ICA	-	*Electronic anode (not available on this model)*
PL/PN	-	*Pump for AC signal L/N line solar coil outlet*
SL/SN	-	*AC signal L/N line solar coil inlet*

Smartgrid		
Operating behaviour	EVU	SG
Standard operation (default)	Open contact	Closed contact
Increase in operational efficiency	Closed contact	Open contact
	Closed contact	Closed contact
Decrease in operational efficiency	Open contact	Open contact

For SG and EVU connections, use 3-pole terminal blocks by connecting the cables to the external poles (1-3).

"SG" control settings		
SW2		
Factory setting		✓

(*) Optional. The optional element will not be supplied with the appliance. If you have any installation needs, please contact our qualified after-sales service technicians to purchase compliant components and have them installed by qualified technicians.

The electrical connection coming out of the tank must be connected to the corresponding component.
Set "SW2" to "1" to activate the "SG" port.
The current output (AC) from the motherboard must be controlled through an AC contactor.

1.13 INSTALLATION CHECKLIST

1. Location and space

☐ When the appliance is filled with water, it is necessary to ensure that the floor of the room can support its weight.
☐ Install indoor in a room (basement or garage) in a vertical position. Make sure that the installation location does not reach the water freezing temperature (0°C).
☐ Ensure sufficient space for maintenance and service.
☐ Make sure that there is sufficient air for the heat pump to operate. The water heater's heat pump must have unrestricted airflow.
☐ The appliance must not be placed in closets or narrow spaces.
☐ The installation room must be free of any corrosive elements present in the atmosphere, such as sulphur, fluorine and chlorine. These elements are often found in commercial and household products, such as: aerosol sprays, detergents, bleaches, cleaning solvents, air fresheners, paints and solvents, and refrigerants. Additionally, excessive dust and lint can impair the operation of the appliance, requiring more frequent cleaning.
☐ The air temperature entering the appliance must be above -7°C and below 43°C. If the air temperature exceeds these limits, the electric heater will activate to meet the hot water demand and the heat pump will stop operating.

2. Water system pipes

☐ The safety valve (temperature and pressure relief valve) must be properly installed with a drain pipe with adequate drainage and protected from frost.
☐ All pipes must be installed correctly and without water leaks.
☐ It is recommended to install a water temperature mixing valve or mixer.
☐ Condensate drain lines must be installed with easy access.
☐ The condensate drain outlet must be in the lowest position on the appliance.

3. Electrical connections

☐ For the correct operation of the appliance, a power supply with a voltage between 220-240 VAC is required.
☐ Cable specifications and connections must comply with all applicable local regulations and the requirements in this manual.
☐ Check that the power supply has been provided with an omnipolar disconnection device that complies with the appliance's requirements and with current local regulations.
☐ Check that upstream of the electrical system there is:
- A 16A omnipolar circuit breaker or fuse with contacts compliant with current local regulations.
- A single-pole 30 mA disconnect switch.

4. Post-installation overhaul

☐ Make sure users understand how to use the "Control panel" to set different modes and access various functions.
☐ Ensure users understand the importance of periodic inspection/maintenance of the condensate collection tray and drain pipes. All this helps prevent possible blockages in the drain pipes that cause the condensate drain pan to leak.
☐ If you notice water leaking from the plastic casing of the appliance, this indicates that both condensate drain lines may be blocked.
☐ To maintain optimum performance, check, remove and clean the air filter.

1.14 FINAL INSPECTIONS AND TEST OPERATION

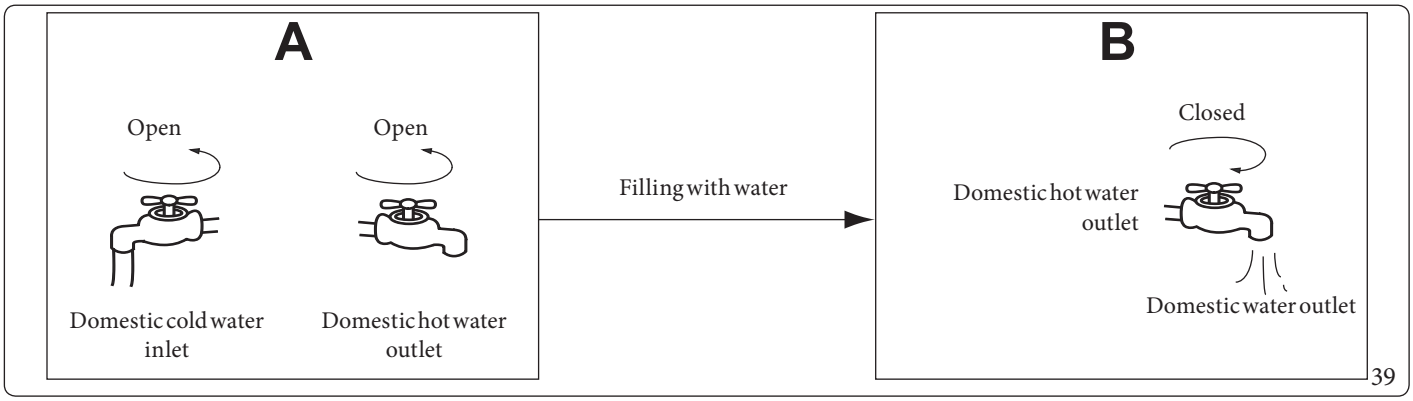
1.14.1 Filling the tank with water before operation

Before using the appliance, follow these steps:

1. **Filling with water**

If the appliance is used for the first time or reused after emptying the tank, make sure the tank is full of water before switching it on (Fig. 39).

- Close the cold water inlet tap and open the domestic hot water tap, if any (pos. A, Fig. 39).
- When water flows continuously from the hot water tap, the tank is considered full. Close the domestic hot water tap. The filling operation is now complete (pos. A, Fig. 39).

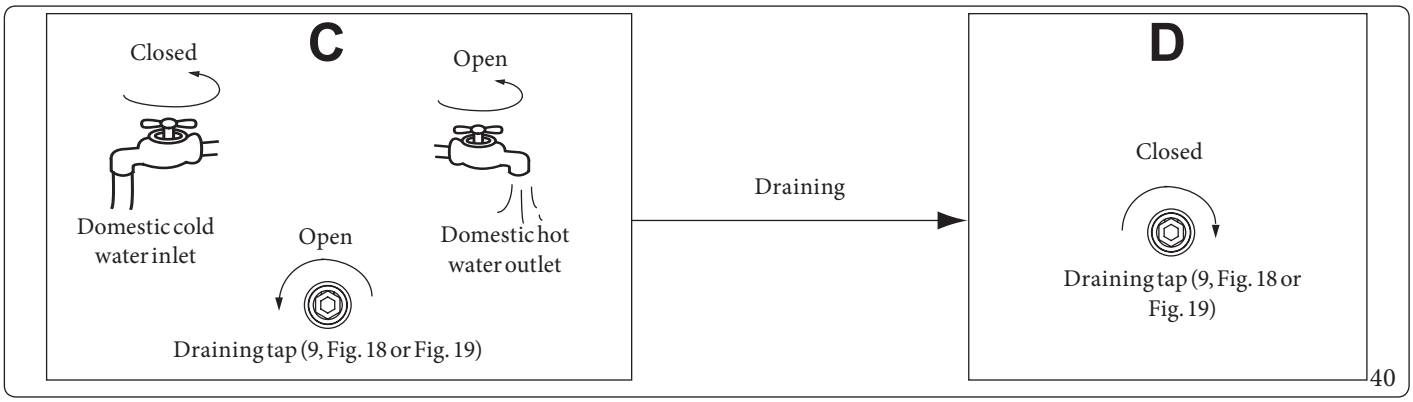


Operating without water in the tank can lead to damage to the electric heater. The manufacturer declines all responsibility for any damage caused by failure to follow the procedure.

2. **Draining**

If it is necessary to clean the appliance, move it or stop using it, carry out the following procedures (Fig. 40):

- Close the cold water inlet tap, open the domestic hot water tap and open the draining tap (C, Fig. 40).
- After emptying, close the drain tap (D, Fig. 40).



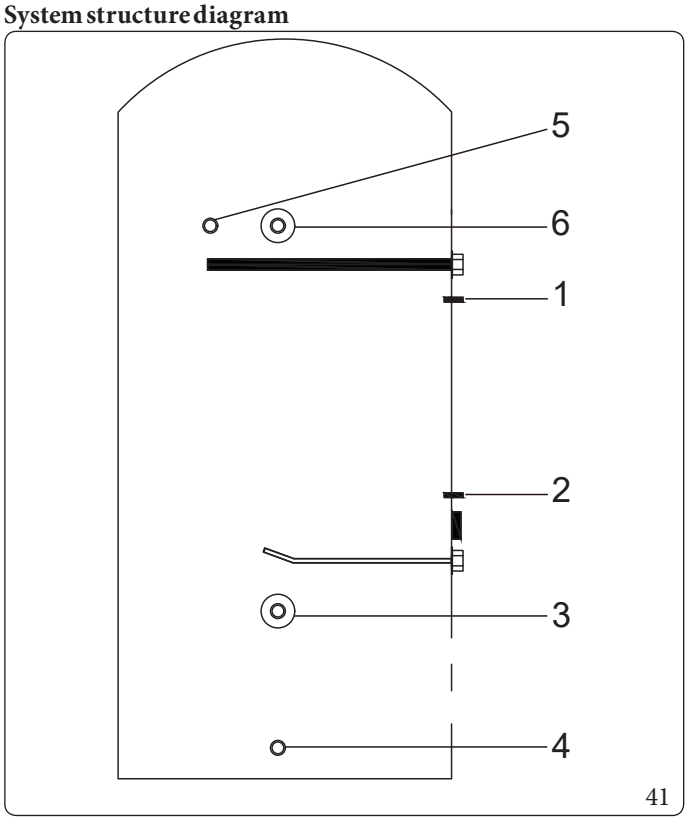
1.14.2 Operation checks

Checklist of checks to be carried out before putting the machine into service.

- Correct installation of the system.
- Correct connection of water/air pipes and electric power supply.
- Condensate drainage and correct installation of all hydraulic components.
- Correct power supply.
- No air in the water pipe and all valves open.
- Effective installation of electrical protections.
- Correct inlet water pressure (between 0.15 MPa and 0.7 MPa).
- Make sure the tank is full of water before turning the appliance on (see par. 1.14.1).

1.14.3 Information on operation

System structure diagram



Key (Fig. 41):

1 - Magnesium rod temperature sensor (T5U)
2 - Electric heater TCO temperature sensor (T5L)
3 - Domestic water inlet
4 - Drain pipe
5 - One-way valve
6 - Domestic water outlet

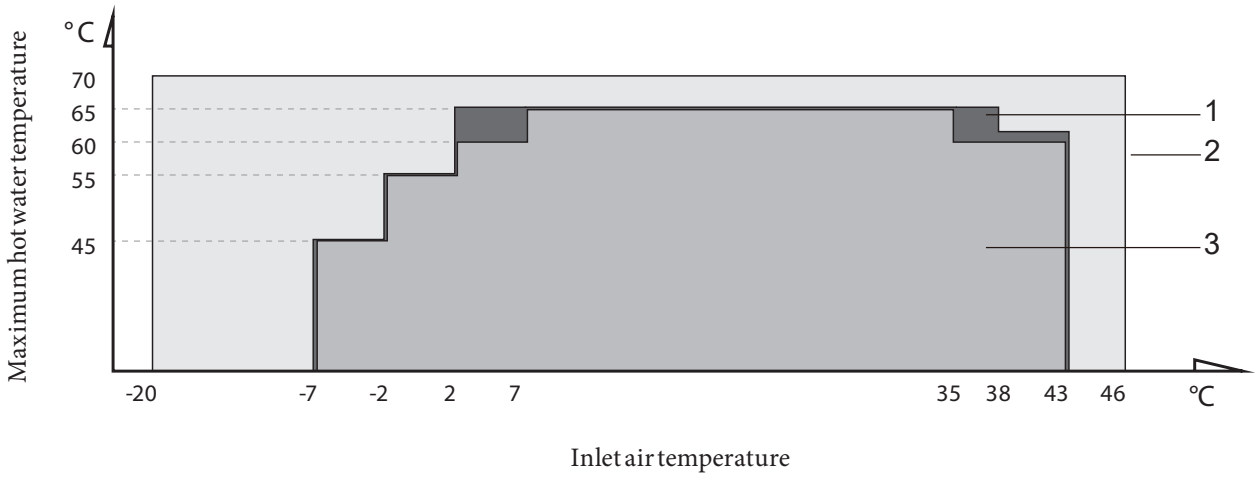
Water temperature display

The temperature shown on the display is the maximum value recorded between the upper and lower sensors.
It may happen that, even if the display shows that the set temperature has been reached (detected by one of the sensors), the appliance's compressor is still running. This happens because the water temperature near the other sensor has not yet reached the set value.

Operating temperature range

Set water temperature range		38÷70°C
Minimum installation room temperature		0°C
Maximum installation room temperature		43°C
Minimum inlet air temperature (a)	Heat pump	-7°C
	Electric heater	-20°C
Maximum inlet air temperature	Heat pump	43°C
	Electric heater	46°C

Water temperature limits



42

Key (Fig. 42):

1 - Heat pump (RAPAX 300 V4 and RAPAX 300 SOL V4)
2 - Electric heater
3 - Heat pump (RAPAX 200 V4 and RAPAX 200 SOL V4)

Changing the heating source

- The appliance has two heating sources: heat pump (compressor) and electric heater. The appliance will automatically choose the heating sources to be used to heat the water to the set temperature.
- In the "ECONOMY" and "HYBRID" modes, the default heating source is the heat pump. If the inlet air temperature is outside the operating range of the heat pump, the heat pump stops operating. The appliance automatically switches to activating the electric heater. When the inlet air temperature returns within the heat pump's operating range, the electric heater will stop and the appliance will automatically return to heat pump operation.
- If the set water temperature is higher than the maximum temperature achievable by the heat pump alone (due to its operating limits with the existing outside air temperature), the appliance will first activate the heat pump until the maximum permitted temperature (heat pump operating limits) is reached. Then, the heat pump will stop and the appliance will activate the electric heater (E-HEATER) to continuously heat the water until it reaches the desired temperature.
- Manual operation of the electric heater (E-HEATER) is possible in "ECONOMY" and "HYBRID" modes. If you manually activate the E-HEATER while the heat pump is already running, pressing the E-HEATER button will cause the heat pump and heater to operate together until the water temperature reaches the set value. Therefore, if you need to heat the water quickly, you must manually activate the electric heater (E-HEATER).

- Press the button (H, Fig. 45), the electric heater will be activated for the current heating cycle. If you want to reactivate it, press the relevant button again.
- If the electric heater is manually activated while the heat pump is running, the electric heater and the heat pump will operate together until the set water temperature is reached. This procedure is useful if you need to heat the water quickly.

Defrosting during water heating

During the heat pump's operating period, if the evaporator freezes (when the inlet air temperature is low), the system automatically defrosts to maintain effective operation.
This defrosting process will take approximately 3-10 minutes.
When defrosting occurs, the fan motor stops, but the compressor continues to run.

Heating time

Heating times vary depending on the ambient temperature. Typically, a lower temperature results in longer heating times due to the lower efficiency of the appliance.
When the outside air temperature drops below 2°C, both the heat pump and the electric heater contribute to heating, but with different capacities. These values will be determined by the temperature of the air entering the appliance, the temperature measured at the bottom of the heat pump and the temperature measured at the top of the electric heater.

RAPAX 200

V4 and RAPAX 200 SOL V4

Heating time (h, water temperature 9 ~ 55°C)

		MODE		
		ECONOMY (Energy saving)	HYBRID (Hybrid)	E-HEATER (Electric heater)
Inlet air temperature (°C)	-7	14.9	4.6	4.6
	0	12.7	5.3	4.4
	2	11.4	5.1	4.2
	7	9.7	9.7	4
	15	7.3	7.3	3.5
	20	6.4	6.4	3.3
	25	6.1	6.1	3.2
	30	5.5	5.5	3
	32	5.2	5.2	2.9
	35	5.1	5.1	2.9
	40	4.4	4.4	2.7
		Maximum efficiency	Average efficiency	Higher consumption

RAPAX 300 V4 and RAPAX 300 SOL V4

Heating time (h, water temperature 9 ~ 55°C)

		MODE		
		ECONOMY (Energy saving)	HYBRID (Hybrid)	E-HEATER (Electric heater)
Inlet air temperature (°C)	-7	18.4	6.9	6.9
	0	17.7	7.4	6.5
	2	15.7	7.2	6.3
	7	14.4	14.4	5.9
	15	9.8	9.8	5.2
	20	9	9	4.9
	25	8.4	8.4	4.8
	30	7.4	7.4	4.5
	32	7	7	4.3
	35	6.7	6.7	4.3
	40	6	6	4.1
		Maximum efficiency	Average efficiency	Higher consumption

Information about the "TCO" thermal switch

The power supply to the compressor and the electric heater will be automatically interrupted or activated by the "TCO". If the water temperature is above 85°C, the "TCO" will automatically cut off the power to the compressor and the electric heater.

Disconnect the power supply before manually resetting the TCO using the relevant button and then reactivate it.

Resetting the "TCO" requires the intervention of a qualified person. Contact your supplier or after-sales service.

Restart after a long interruption

If the appliance is restarted after a long period of inactivity, the outlet water may appear dirty. In this case, simply open the water tap and let it run to clean the system.

When the inlet air temperature is below -7°C, the heat pump's efficiency drops dramatically and the appliance will automatically switch to electric heater operation.

2 INSTRUCTIONS FOR USE AND MAINTENANCE

2.1 GENERAL RECOMMENDATIONS

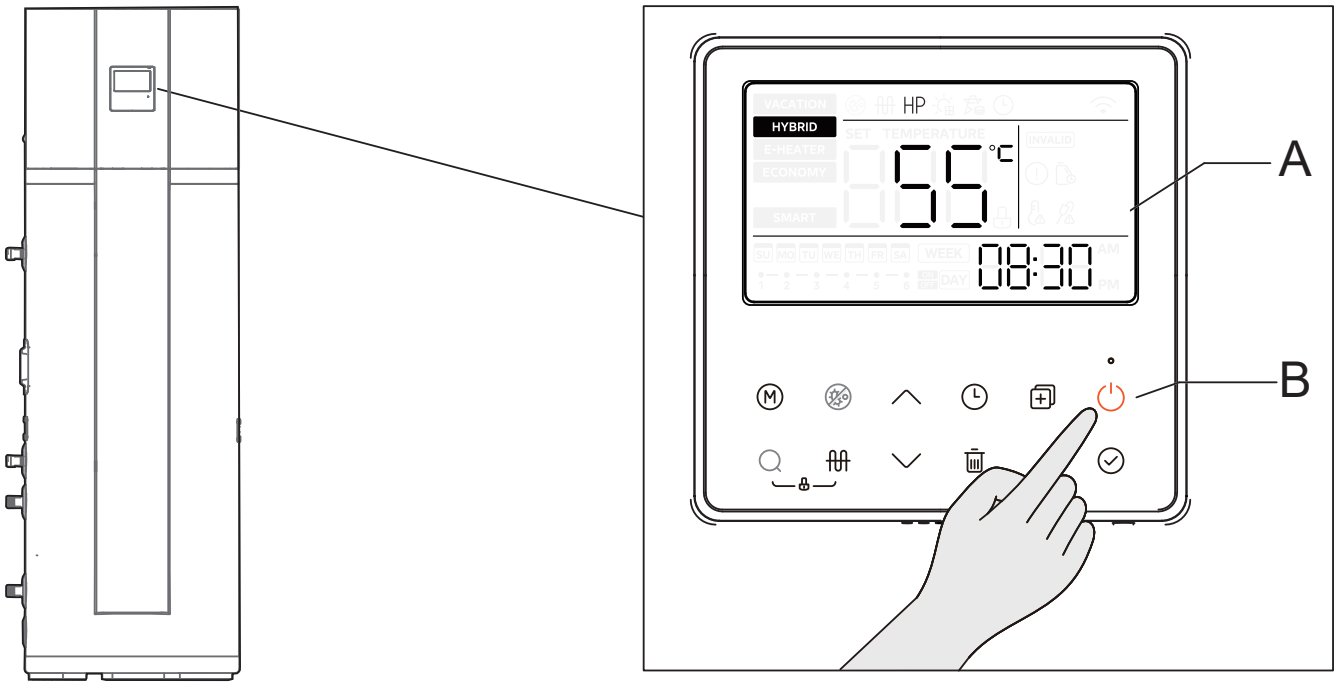
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been supervised or instructed in the use of the appliance by a person responsible for their safety.
Children must be supervised to ensure that they do not play with the appliance.

Battery performance

To ensure longer battery life, it is recommended not to disconnect the power supply if the device is not used for a long time.

At the end of its service life, the appliance must not be disposed of like normal household waste nor abandoned in the environment, but must be removed by a professionally authorised company as required by current legislation.
Contact the manufacturer for disposal instructions.

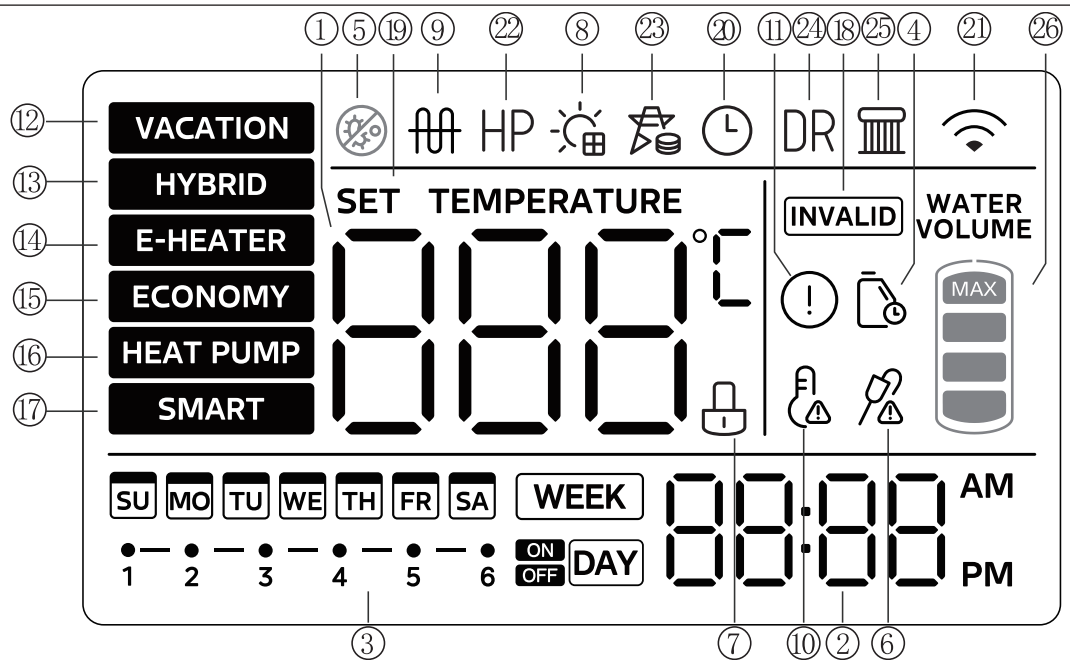
2.2 CONTROL PANEL



43

Key (Fig. 43):
A - Display
B - Control buttons

2.2.1 Description of the display



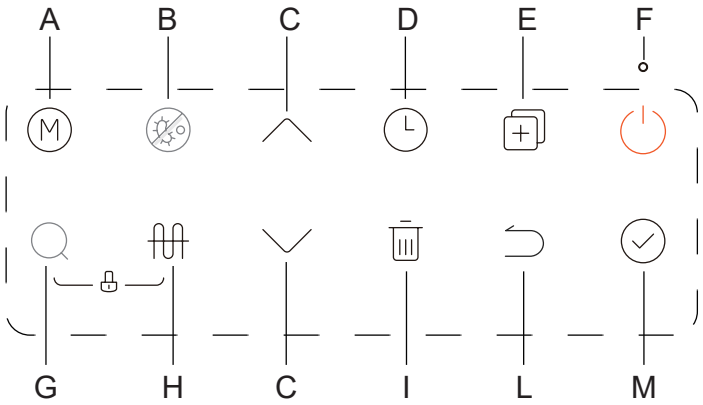
44

No	Icon	Description
1		When the screen is unlocked, the icon is illuminated and shows the following information: - current water temperature; - the remaining vacation days (holiday mode active); - the temperature you are setting; - the appliance settings or parameters, error codes and information on any protections that have intervened.
2		**Time and clock setting**: displays the current time. Each time the clock is set, the icon lights up.
3		There is an option to set a schedule on a weekly or daily basis. If no schedule is set, the corresponding part of the screen remains blank. Otherwise, the corresponding icon is displayed accordingly. During set-up, the icon selected for configuration starts flashing.
4		The icon flashes to remind the user when the next water tank maintenance is due.
5		The icon lights up when the disinfection process is active.
6		**Warning about electronic anode** (not available on this model).
7		**Block**: if the buttons are locked, the icon will be on, otherwise it will be off.
8		**EVU** (optional): When the solar panel is detected to be working, the icon lights up; the temperature is adjusted to the highest value and the appliance quickly produces hot water.
9		**Electric heater**: the icon lights up when the electric heater is on. **NOTE**: When the operating conditions requiring the activation of the electric heater are not met, the corresponding icon is displayed briefly and then goes out.

No	Icon	Description
10		**High temperature alarm**: The icon lights up when the water temperature exceeds 50°C and goes out when the temperature drops.
11		**Error**: the icon lights up when the appliance is in an error/protection condition.
12	VACATION	**Holiday mode**: for holiday mode, the water temperature will be set to 15 °C to maintain low energy consumption by preventing freezing in the tank.
13	HYBRID	**Hybrid mode**: The electric heater and the heat pump work simultaneously in two specific circumstances: - when environmental conditions are at extremely low temperatures; - when the heat pump has been running for a long time and is unable to reach the set temperature on its own.
14	E-HEATER	**E-HEATER mode (electric heater)**: in case of heating demand, the heat pump and the electric heater will operate simultaneously provided that all the operating conditions required by the heat pump are met.
15	ECONOMY	**Energy saving mode (economy)**: depending on the inlet air temperature, the appliance (in heat pump mode) heats the water up to the maximum temperature achievable (before the electric heater activates). The heat pump and electric heater will not operate simultaneously. We recommend using this mode, as it allows for greater energy savings.
16	HEAT PUMP	**Heat pump mode**: the icon lights up when the machine is operating in heat pump mode.
17	SMART	**Smart mode**: smart mode records the user's hot water consumption habits (considering the last 7 days). Based on these habits, the appliance heats the water in advance. During other periods, the appliance remains in standby and the water is not heated. It is recommended that the user set this mode only after 7 days of normal operation of the appliance. This feature ensures that the appliance records your complete habits and does not negatively impact your hot water usage.
18	INVALID	When a button that is not consistent with the adjustments being made is pressed, this icon flashes for 3 seconds.
19	SET TEMP	The icon lights up when the water temperature is set.
20		The icon lights up when the time is set in the system.
21		**Wireless**: The icon lights up when the wireless network is connected; it is off when the wireless network is not connected; it flashes at a frequency of 2 Hz during wireless network set-up.
22	HP	**Heat pump**: the icon lights up when the heat pump (compressor) is running and producing hot water.
23		**Smart Network** (optional): When the SG signal has an open contact, this icon does not light up and the machine does not turn on normally.
24	DR	Not used
25		Not used
26	WATER VOLUME	Not used

2.2.2 Description of control buttons

Pressing the button is effective only when the display is unlocked.

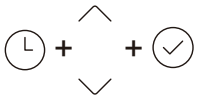
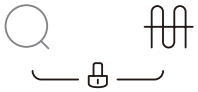


45

No	Icon	Description
A		**Changing mode** Press this button to select the various operating modes: Default hybrid mode (HYBRID) -> Electric heater mode (E-HEATER) -> Energy saving mode (ECONOMY) -> Holiday mode (VACATION). For holiday mode, adjust the days from 1 to 360.
B		**Disinfection function** This button allows you to force the activation of the disinfection function. By pressing the button, the icon will light up and the appliance will activate the function; the water will be heated to a temperature of 65°C until the disinfection is complete. At the end of the cycle, press the button again to end the disinfection procedure.
C		**Increase and Decrease of values** If the display is unlocked, press the buttons to adjust the displayed values. When setting the temperature/timer/vacation days, press and hold the buttons for more than 1 second to continuously change the value. Press the button (M) to confirm the selected setting. Also use the buttons to scroll through the various items you want to check/view.
D		**Daily setting** - Press the TIMER button (D) to display the daily timer icon ON OFF DAY and access the function by pressing the button (M). The daily timer has a total of 6 configurable time slots; each slot can be set to start/stop the selected mode and adjust the water temperature. Once you have configured the first slot, press the confirmation button (M) to move on to the next slot. Once you have set the sixth slot, press the confirmation button (M) to return to the main screen. - When setting the on and off time, press the (I) button to reset to the default value. - If there is a conflict between the time slots you set, the second configured slot will be considered valid; the invalid slot will be reverted to the default setting. - Daily timer setting can be accessed both when the machine is started and when it is shut down.
		Weekly setting - Press the TIMER button (D) to display the weekly timer icon WEEK and access the function by pressing the button (M). The weekly timer has a total of 7 configurable days, with 6 time slots that can be set daily. Each slot can start/stop the set mode and change the water temperature. Once you have configured the first slot, press the confirmation button (M) to move on to the next interval settings. Once you have set the sixth time slot, press the confirmation button (M) to return to the main screen. - When setting the on and off time, press the (I) button to reset to the default value. - If you adjust the time again after completing the setting, all settings after the changed time slot will be cleared. For example, if you adjust the settings for time slot 2, the settings for time slots 3, 4, 5, and 6 will all be cleared. The mode and water temperature will return to the default values (energy saving mode, 60°C). - When setting the weekly timer, use the button (E) to copy the settings of an already configured day; subsequently select other days by pressing the button (E) again (the status LED will flash quickly). Press the button (M) to confirm the operation and copy the settings to the selected days. - Weekly timer setting can be accessed both when the machine is started and when it is shut down.

No	Icon	Description
E		**Configuration mode** On the main screen, press and hold the button (E) for 3 seconds to enter the "configuration mode"; use the buttons (C) to select the inspection parameter and view the value assigned to the parameter itself. Use the buttons (C) to change the parameters and confirm any changes using the button (M) to make them effective. To exit the "configuration mode" wait 30 seconds after the last operation or press the buttons (F or L). The "configuration mode" can be activated both during the start-up and shut-down phases of the machine. **To avoid compromising the normal operation of the appliance or damaging it, the customer is strictly prohibited from changing the parameter settings without the manufacturer's authorisation.** The default maximum temperature is 65°C; if you need to use a higher temperature, enter the configuration mode by selecting "parameter 18" and increase the temperature limit to 70°C.
F		**On/Off button** Press the button to turn the device on or off.
G		**Control and search function** - On the main screen, press and hold the button (G) for 1 second to enter search mode. Use the buttons (C) to change the quick control parameter; the value assigned to the selected parameter will be displayed. - To exit search mode, wait 30 seconds after the last operation or press the buttons (F or I). - Search mode can be accessed both when the machine is started and when it is shut down.
H		Press this button to manually activate the electric heater operation.
I		**Delete** This button is used to cancel all current settings and exit the set-up mode. When the wireless connection is working, press and hold the button (I) for more than 8 seconds to disconnect the connection.
L		**Back** Press the button to return to the previous setting or main screen.
M		**Confirm** After setting any parameter, you need to press the appropriate button to load and save those parameters into the appliance.

Button combination

No	Icon	Description
Setting the date and clock		- From the main screen, hold down button (D) for 3 seconds to access the date setting; press buttons (C) to select the desired date and confirm the change using button (M). Then press the buttons (C) to change the time. Confirm the change by pressing the button (M). - To exit the menu, wait 30 seconds after the last operation or press the buttons (F or L). - These changes can be made both at start-up and shutdown.
Connecting to the wireless network	 Press for 3 seconds	**Connecting to the wireless network** - On the main screen, press and hold the button (M) for 3 seconds to enter wireless network mode; the icon will light up in the upper right corner of the display. Access the application (see Par. 2.5), select the heat pump water heater category, select the correct appliance model and connect to the network according to the application's requests. Once the connection is established, the wireless icon will remain lit. - Wireless pairing can take up to 8 minutes; if pairing fails after 8 minutes, the wireless icon will turn off. - Press the button (I) for 8 seconds to reset the wireless function; this operation can be performed both when switching on and off.
Child safety lock	 Press for 2 seconds	**Child safety lock** - On the main screen, press and hold the button combination (G+H) for 2 second to activate the child lock status. - To unlock the display, hold down the 2 buttons for at least 2 seconds. - In the lockout status, the icon lights up next to the water temperature display.

2.3 OPERATING MODE

Start-up

After turning on the appliance, the display will light up.

In the first 10 seconds after switching on, the appliance will perform a self-test during which it is recommended not to perform any operations.

- To turn on the appliance, press the button (F, Fig. 45). Subsequently, using the buttons (C, Fig. 45) select the desired temperature (between 38-70 °C). Finally, press the button (M, Fig. 45) and the appliance will automatically select the appropriate heat source and start heating the water until the set temperature is reached.
- To change the operating mode, press the button (A, Fig. 45).
- To access the weekday setting, press and hold the button (D, Fig. 45) for 3 seconds. Then use the buttons (C, Fig. 45) to change the date; press (M, Fig. 45) to access the setting and use again the buttons (C, Fig. 45) to adjust the time. Complete the operation and return to the initial screen by pressing the button (M, Fig. 45).
- The factory default setting prioritises heat pump operation. During installation, it is necessary to define the settings for selecting the appropriate operating mode in agreement with the customer and provide them with instructions for the correct use of the appliance.

In case of malfunctions

The error code "EHHP" and the icon (11, 44) will appear on the display and the heat pump will stop working. The appliance will automatically activate the "E-HEATER" function (electric heater) as a reserve heat source, but the "EHHP" code and the icon (11, 44) will be displayed until the appliance is switched off and the cause of the error is resolved. Please refer to paragraph 2.7 for more information.

Automatic restart

In the event of a power failure or interruption, the appliance is able to store all the parameters and settings that have been configured by the user. When power is restored (when the power comes back on), the appliance automatically resumes operation using the settings that were active before the interruption.

Automatic button lock

The device is equipped with an automatic button lock function. If no buttons are pressed for 60 seconds, the buttons lock to prevent accidental modifications. To unlock the display, you need to press the buttons G+H simultaneously (Fig. 45).

Automatic screen backlight switch-off

If no button operations are performed for a period of 60 seconds, the screen automatically locks and turns off. Only in the event of a malfunction will the alarm icon and the related error code remain visible on the screen to warn the user.
To unlock and turn the screen back on, press any button.
To enable or disable this automatic lock feature, you need to enter the "configuration mode" and select "parameter 35".

It is recommended that you connect to the wireless network before using the daily timer, weekly timer, weekly disinfection, holiday mode and smart mode functions. If there is no network connection, ensure that the correct time is set on the control panel before using these functions. If there is no network connection, reset the correct time on the panel after the unit has been switched off for a long period.

Automatic protection

When the automatic protection function is activated, the system shuts down and starts a self-diagnostic function; once the problem is resolved, the appliance begins a lengthy system reboot.
When automatic protection is activated, the icon (11, Fig. 44) flashes and the corresponding error code is displayed on the water temperature indicator. The error code and symbol will remain visible until the automatic protection function is completed.
Automatic protection can be activated in the following cases:

- the air inlet or outlet is blocked.
- the evaporator is covered with too much dust;
- incorrect power supply (above the range of 220-240 V).

Electric heater On/Off

To avoid reducing the effectiveness of the hot water heating process, users are advised not to turn off the electric heater.

1. Press and hold the button (E, Fig. 45) for 3 seconds to enter configuration mode and select channel F6. Scroll through the parameters using the buttons (C, Fig. 45) and set the "F6" parameter to "0"; the electric heater will be deactivated and will not turn on during the heating phase.
2. Scroll through the parameters using the buttons (C, Fig. 45) and confirm the change by pressing the button (M, Fig. 45).
3. By setting the "F6" parameter to "1"; the electric heater will be activated and will turn on during the heating phase. Scroll through the parameters using the buttons (C, Fig. 45) and confirm the change by pressing the button (M, Fig. 45).

Activation of the weekly disinfection function.

Activating the weekly disinfection function will turn on the electric heater. The factory default setting for this function is off (disabled).

1. Press and hold the button (E, Fig. 45) for 3 seconds to enter configuration mode and select channel F7.
2. Scroll through the parameters using the buttons (C, Fig. 45) and set the "F7" parameter to "0" to disable the weekly disinfection function. Scroll through the parameters using the buttons (C, Fig. 45) and confirm the change by pressing the button (M, Fig. 45).
3. By setting the "F7" parameter to "0", the weekly disinfection function will be active. Scroll through the parameters using the buttons (C, Fig. 45) and confirm the change by pressing the button (M, Fig. 45).

Search mode

Press and hold the button (G, Fig. 45) for at least 1 second to enter search mode; scroll through the values using the buttons (C, Fig. 45) and to view the parameters shown in the following table.

NO.	Parameter	Unit	Description
1	TSU	Temp.	T5U
2	TSL	Temp.	T5L
3	TS1	Temp.	T5M
4	TS	Temp.	Heat pump stop temperature
5	T3	Temp.	T3
6	T4	Temp.	T4
7	TP	Temp.	TP
8	TH	Temp.	Th
9	on		--
10	TFr		--
11	TT	Temp.	Disinfection temperature
12	Co	Current	Compressor and electric heating current
13	Fo	Fan	AC Fan 0: OFF 1: Low 2: MID Dc Fan Real speed/10
14	Eo	Machine parameters	0~255
15	EEr		Electric heater control type
16	EEC		Compressor and electric heating current
17	PUP		Recirculation pump opening 0: OFF 1: OPEN
18	P5		--

NO.	Parameter	Unit	Description
1	TSU	Temp.	T5U
2	TSL	Temp.	T5L
3	TS1	Temp.	T5M
4	TS	Temp.	Heat pump stop temperature
5	T3	Temp.	T3
6	T4	Temp.	T4
7	TP	Temp.	TP
8	TH	Temp.	Th
9	on		--
10	TFr		--
11	TT	Temp.	Disinfection temperature
12	Co	Current	Compressor and electric heating current
13	Fo	Fan	AC Fan 0: OFF 1: Low 2: MID Dc Fan Real speed/10
14	Eo	Machine parameters	0~255
15	EEr		Electric heater control type
16	EEC		Compressor and electric heating current
17	PUP		Recirculation pump opening 0: OFF 1: OPEN
18	P5		--

2.4 APPLIANCE CONFIGURATION WITH THE SMARTPHONE APP

2.5.1 Download and install the App

The following QR codes are provided to download our APP called "CLIMAsmart".

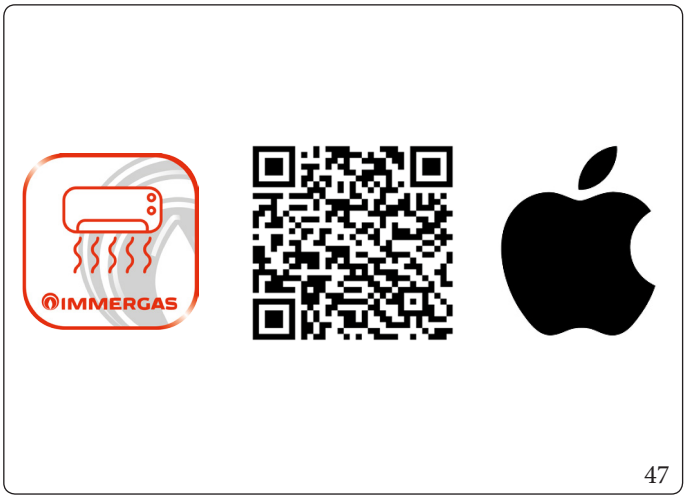
Android users.

Scan the dedicated QR code or go to Google Play, search for the "CLIMAsmart" app and download it.

46

iOS users.

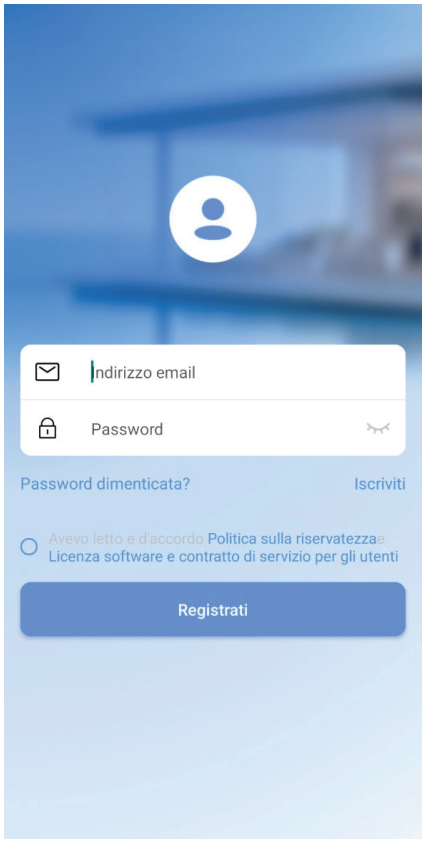
Scan the dedicated QR code or go to the App Store, search for the "CLIMAsmart" app and download it.



47

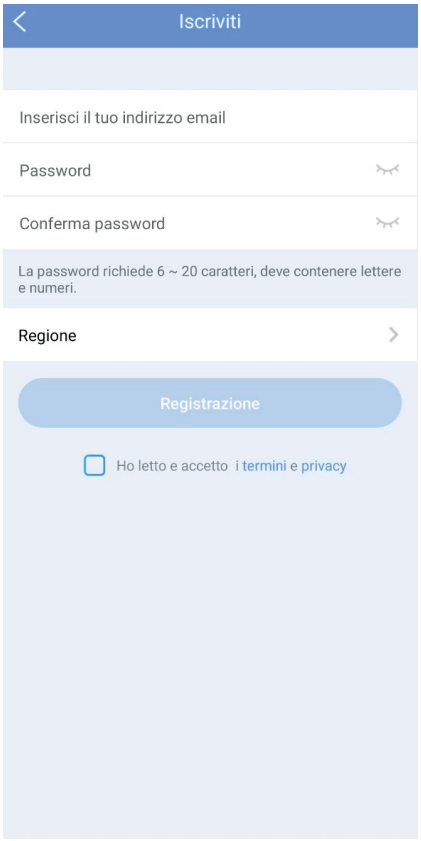
2.5.2 User registration

Make sure your mobile device is connected to your wireless router and the router is already connected to the Internet before performing user registration.



48

1. Click on **"Subscribe"**



49

2. Enter your email address and password, followed by your region, then click on **"Register"**. To proceed, you must accept the terms of use and authorise the processing of personal data.

2.5.3 Preparing for network configuration

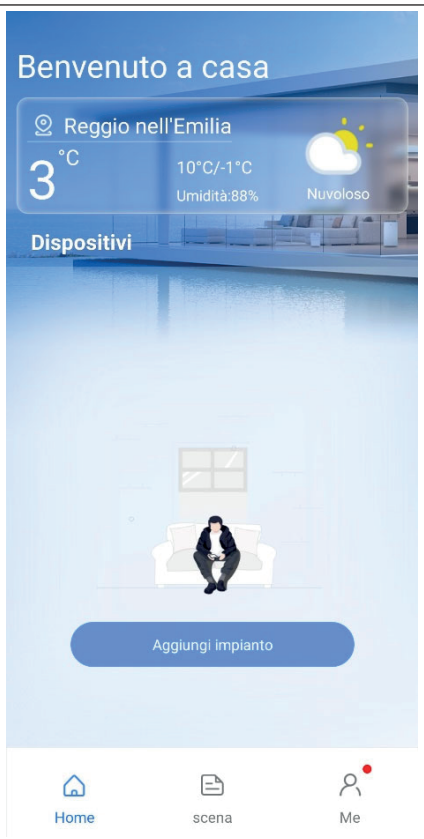
- You need to disconnect from any other nearby networks and make sure your Android or iOS device connects to the Wireless network you want to set up.
- Make sure that the wireless function of your Android or iOS device is working properly and can automatically reconnect to the original wireless network.

Use an Android or iOS device for network configuration.

1. Make sure your mobile device has already been connected to the Wireless network you want to use.
2. Make sure the appliance is properly powered.

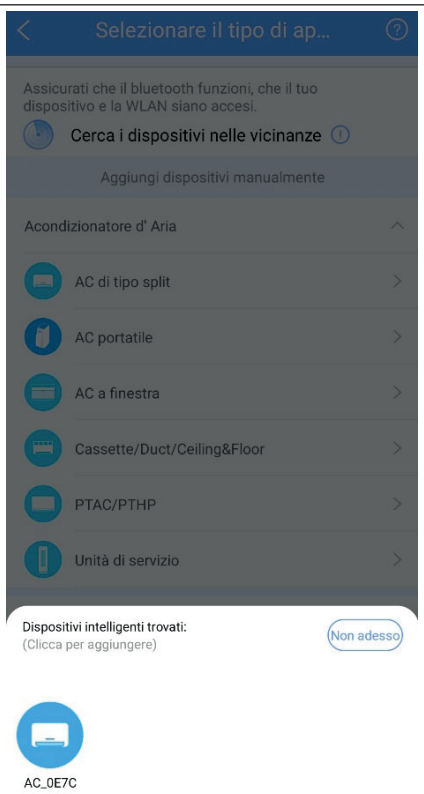
2.5.4 Network configuration (automatic method)

Press and hold the "Stand-by" button on the product control panel (F, Fig.) for 3 seconds. 45).
The flashing wireless connection symbol will light up in the top right corner of the display.

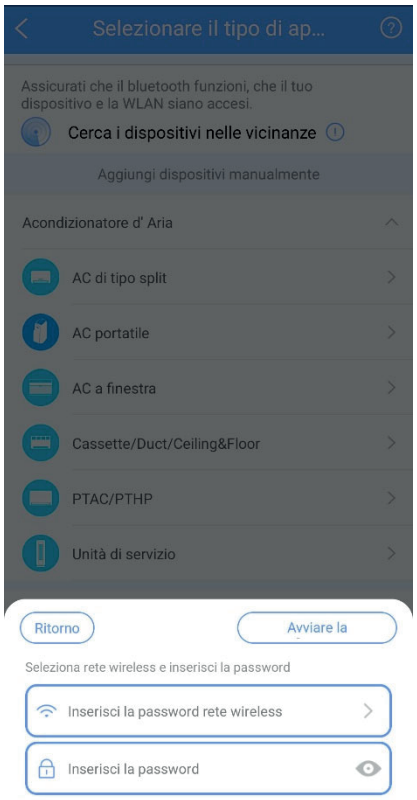


50

1. Press "Add system".



51

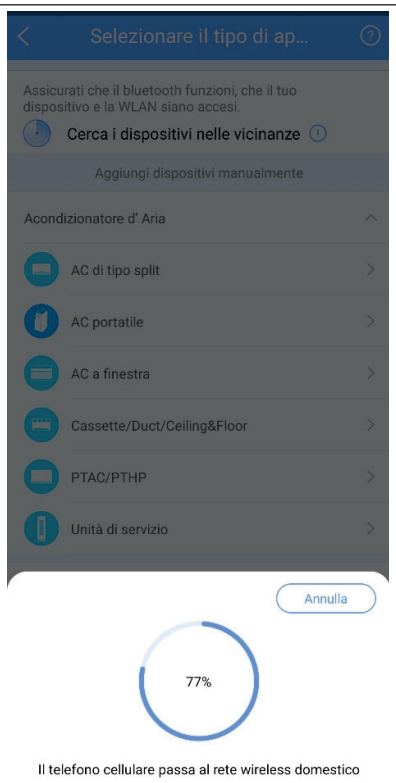


52

2. Wait for the device to be searched, then select it to add it.

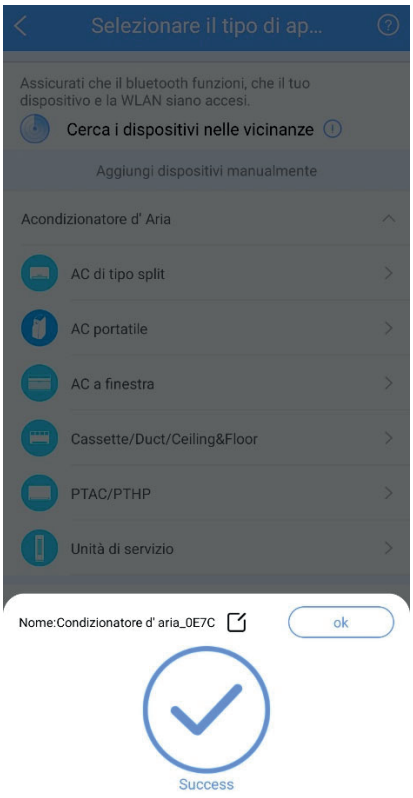
3. Select the name of the wireless network to which you want to connect the appliance and enter the password.

The appliance supports 2.4 GHz Wi-Fi wireless networks only.



53

4. Wait for the network connection.



54

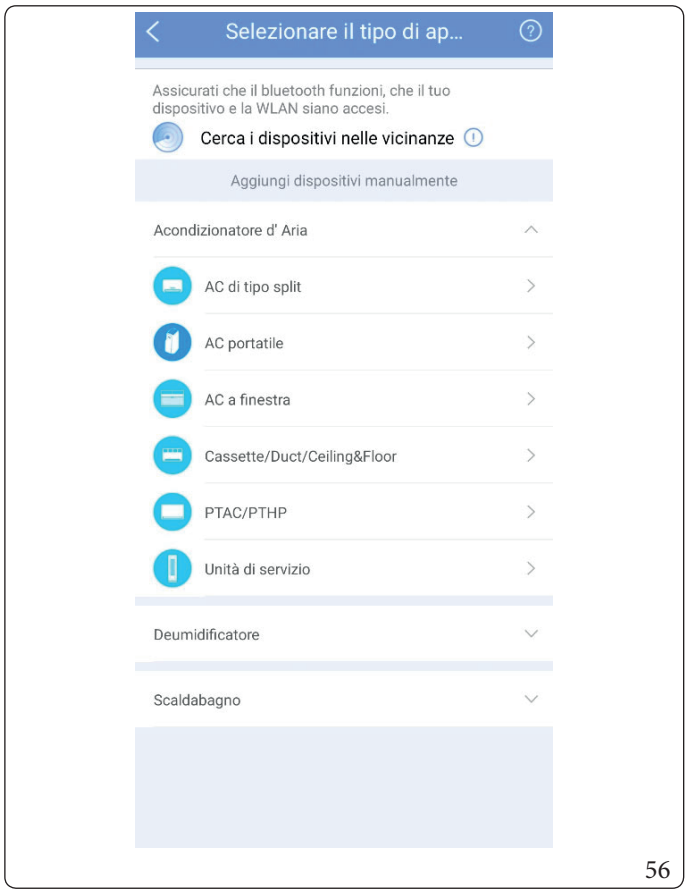
5. Configuration successful. You can now change the default name.

55

6. Device set-up was successful, you can now see the device on the home screen.

2.5.5 Network configuration (manual method)

If the automatic configuration, seen in the previous paragraph, fails, follow the manual configuration below.



56

1. Manually select the product type.

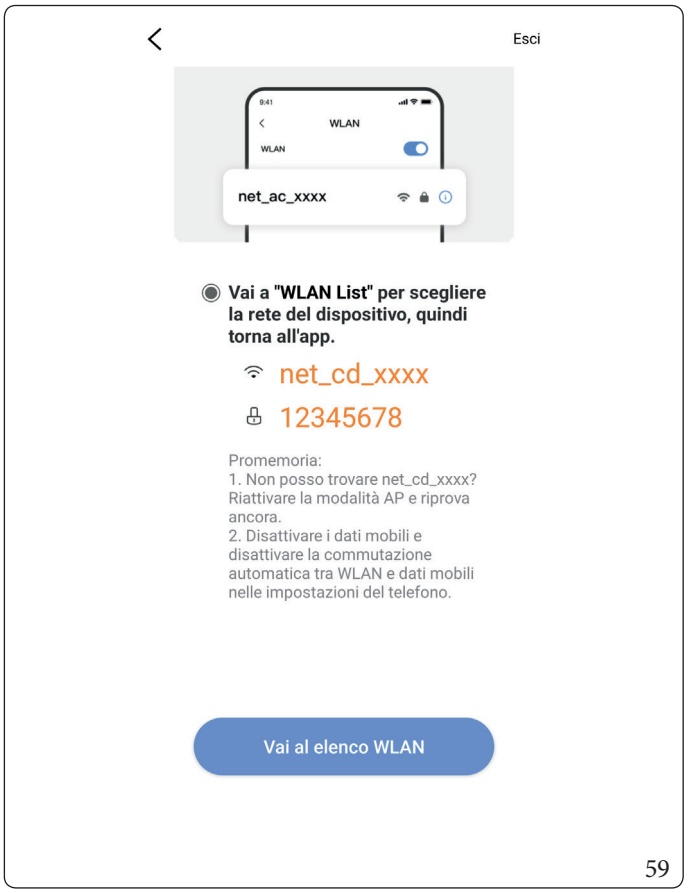
57

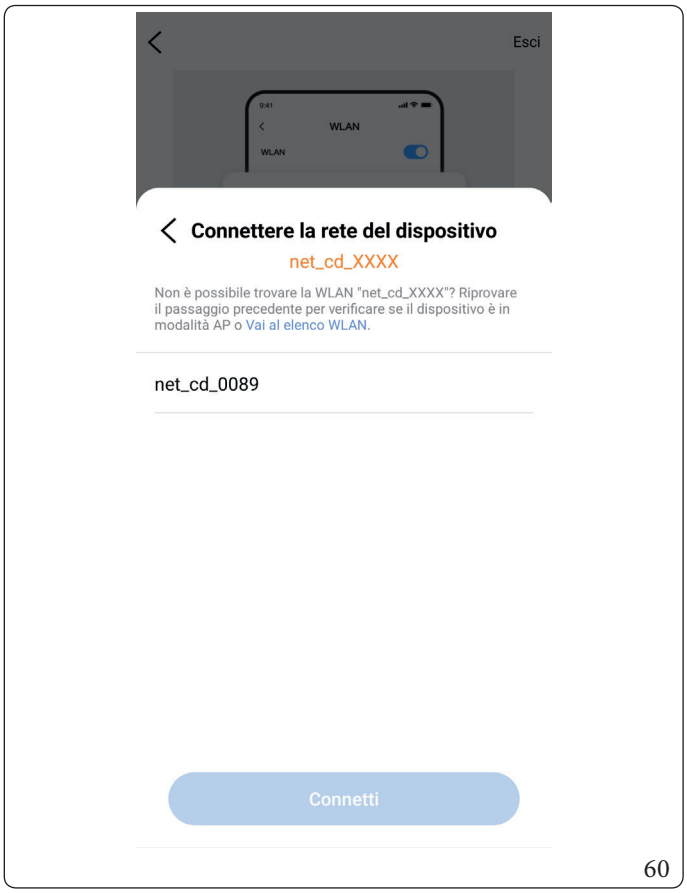
2. Select the name of the wireless network to which you want to connect the appliance and enter the password.

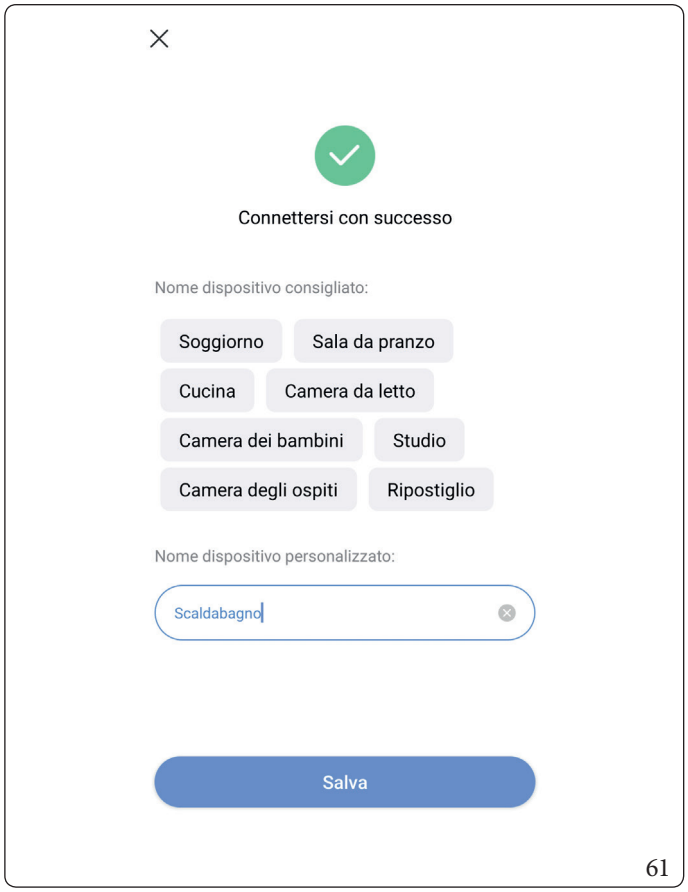
The appliance supports 2.4 GHz Wi-Fi wireless networks only.

3. Press and hold the "Stand-by" button on the display (F, Fig.) for 3 seconds. 45). The flashing wireless connection symbol will light up in the top right corner of the display.

4. The appliance displays a temporary wireless network, called 'net_cd_xxxx', which you can connect to using your mobile phone by entering the password '12345678'.



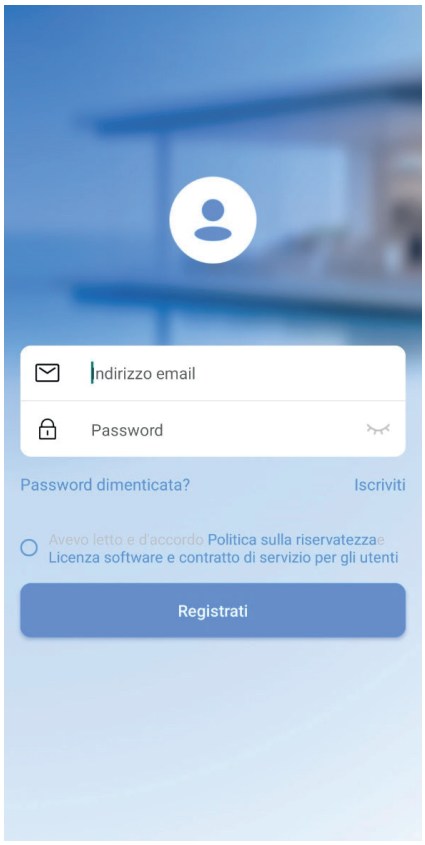




5. Device set-up was successful, now you can change the appliance name.

2.5.6 How to use the App

Make sure the appliance is connected to the Wireless network (see par. 2.5).



62

1. Please log in.
2. If you've forgotten your password, click "Forgot your password?" and follow the steps in the App.

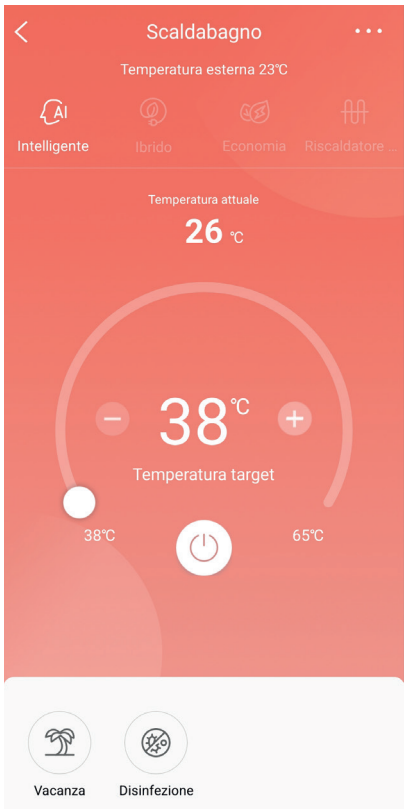
63

3. Select the appliance to be controlled.
4. The available functions are displayed on the appliance screen.

2.5.6.1 Operating mode

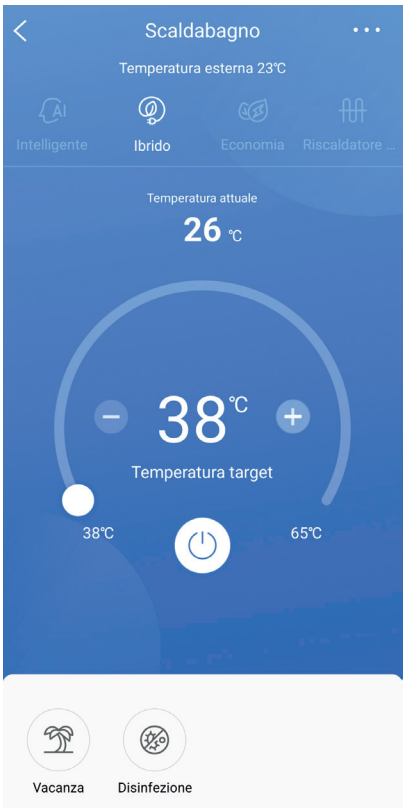
The available modes are (refer to Par. 2.2.1):

Smart mode



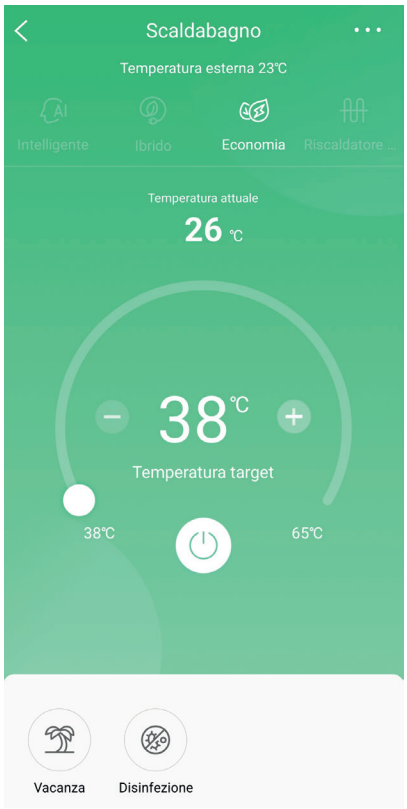
64

Hybrid mode



65

Energy saving mode



66

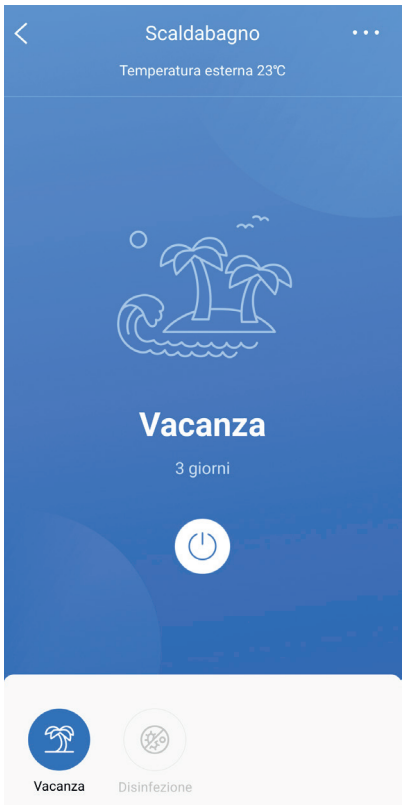
Electric heater mode (E-HEATER)

67

2.5.7 Special functions

The following information is present in the submenu (reference Par. 2.2.1):

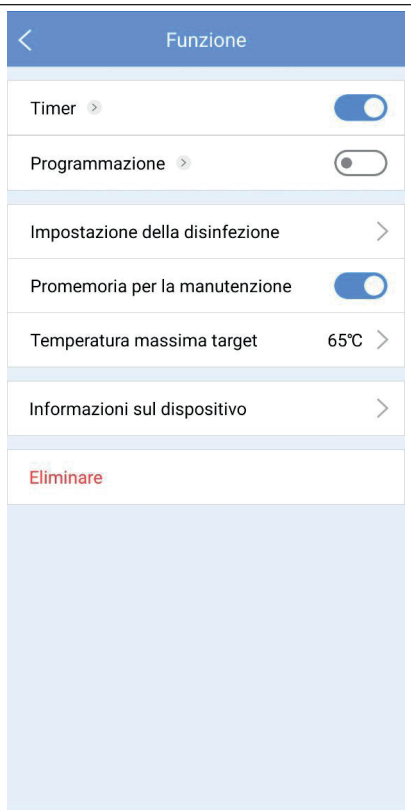
Holiday mode



68

69

Function

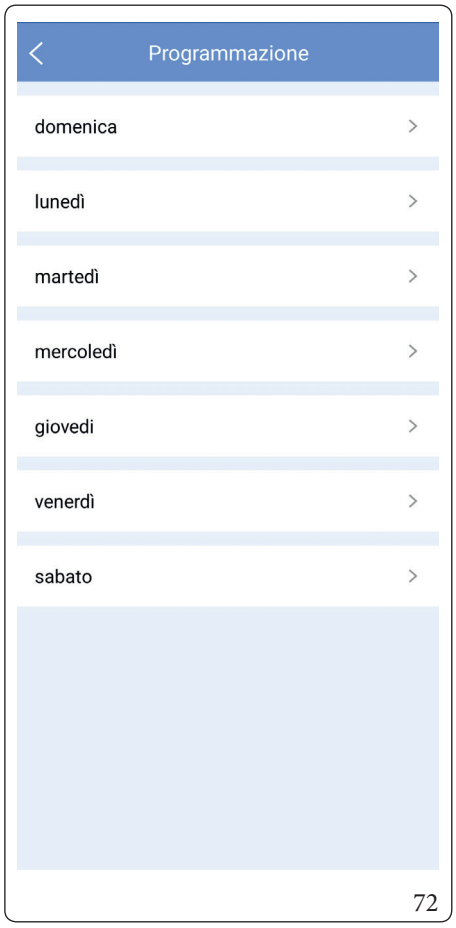


70

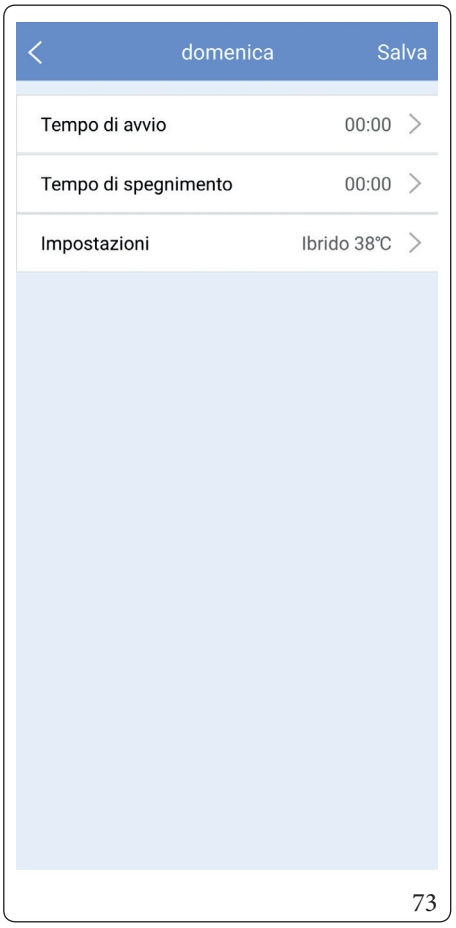
Timer

71

Schedule



72



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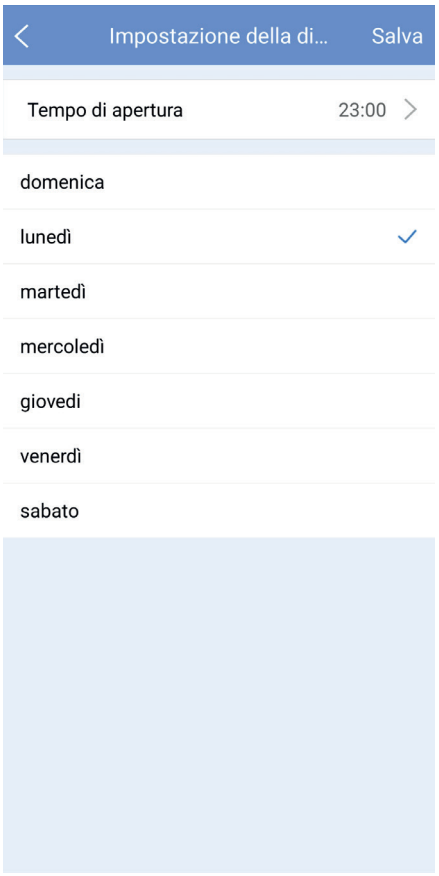
74

75

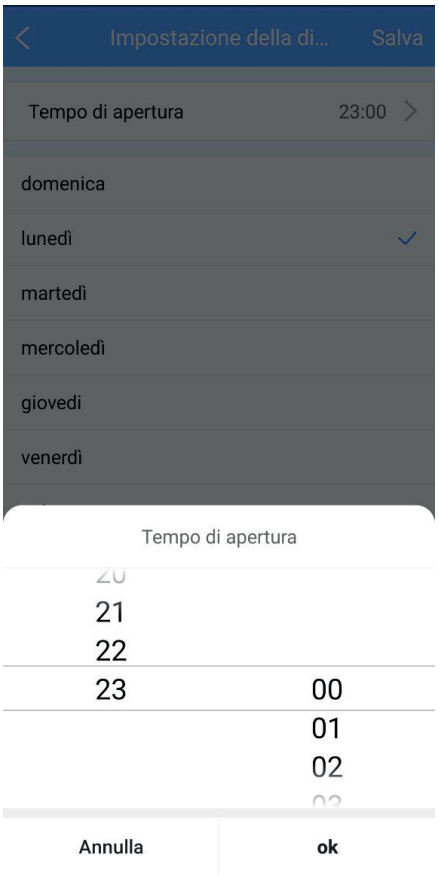
76


Impostazione della di...
Si consiglia di sterilizzare il dispositivo almeno una volta alla settimana.
Disinfezione programmata
Disinfezione automatica ogni lunedì a 23:00
Disinfezione immediata
Attiva immediatamente la funzione di disinfezione
Temperatura di disinfezione
70℃
Più alta è la temperatura di disinfezione, più rapida sarà la disinfezione.

77


Impostazione della di...
Salva
Tempo di apertura
23:00
domenica
lunedì
martedì
mercoledì
giovedi
venerdì
sabato

78


Impostazione della di...
Salva
Tempo di apertura
23:00
domenica
lunedì
martedì
mercoledì
giovedi
venerdì
Tempo di apertura
21
22
23
00
01
02
Annulla
ok

79


Impostazione della di...
Si consiglia di sterilizzare il dispositivo almeno una volta alla settimana.
Disinfezione programmata
Disinfezione automatica ogni lunedì a 23:00
Disinfezione immediata
Attiva immediatamente la funzione di disinfezione
Temperatura di disinfezione
70℃
Più alta è la temperatura di disinfezione, più rapida sarà la disinfezione.
Temperatura di disinfezione
68℃
69℃
70℃
Annulla
Conferma

80

Maximum target temperature

81

Device information

82

2.5.8 Compliance

We hereby declare that this device complies with the relevant provisions of the RED Directive 2014/53/EU.
For appliances intended for the European Union, the complete copy of the Declaration of Conformity is as follows:

- The manufacturer, Immergas, declares that the radio equipment RAPAX 200 V4, RAPAX 300 V4, RAPAX 200 SOL V4, RAPAX 300 SOL V4 complies with Directive 2014/53/EU.
- The full text of the EU declaration of conformity is available at the following Internet address: www.immergas.com

Wireless module models:

- EU-SK110, US-SK110:
- FCC ID: 2ADQOMDNA23
- IC: 12575A-MDNA23
- BLE: 2402-2480MHz
- TX Power: <10dBm
- Wireless: 2400-2483.5MHz
- TX Power: <20dBm

This device complies with Part 15 of the FCC standards and contains license-exempt transmitters/receivers that comply with Canada's Radio Standards Specifications (RSS) for Innovation, Science and Economic Development (ISED).
Operation is subject to the following two conditions:

1. This device must not cause harmful interference;
2. This device must accept any interference, including interference that may cause undesired operation of the device.

The appliance must only be used in strict accordance with the instructions provided. Any changes or modifications to this equipment, not expressly approved by the party responsible for compliance, could void the user's authority to operate it.
This equipment complies with FCC radiation exposure limits set forth for uncontrolled environments. To ensure that radio frequency (RF) exposure limits are not exceeded, the user must maintain a minimum separation distance of 20 cm (8 inches) from the antenna during normal operation of the appliance.

2.6 FAULT AND ANOMALY SIGNALS

Anomaly	Causes	Solutions
Delayed Compressor Start	The appliance waits 3 minutes before restarting the compressor.	This function is not a malfunction but an automatic procedure by the appliance.
Decrease in the temperature displayed during operation of the appliance	The anomaly occurs when the water temperature in the upper part of the tank is much higher than that in the lower part. The hot water at the top mixes with the cold water that continuously flows from the inlet pipe. This combination causes a decrease in temperature at the top of the tank.	If the anomaly persists, contact the authorised service centre.
Sudden decrease in the temperature shown on the display	The fault is caused by the pressurised tank; if there is a high demand for hot water, it is quickly drawn from the upper part of the tank, while cold water quickly enters the lower part. If cold water reaches the upper temperature sensor, the temperature shown on the display will drop rapidly.	If the anomaly persists, contact the authorised service centre.
Sudden decrease in temperature on the display but hot water still available	The fault is caused by the water sensor located in the upper area of the tank; if the temperature on the display begins to decrease, there will still be 1/4 of the hot water available in the tank.	If the anomaly persists, contact the authorised service centre.
"EHLA" fault displayed	When the appliance does not have the electrical heating function, the heat pump can only operate within an inlet air temperature range of -7 to 43°C. If the inlet air temperature falls outside this range, the system will alert the user by displaying a notification on the display.	If the anomaly persists, contact the authorised service centre.
Buttons not operating	If the panel is not used for 60 seconds, the appliance locks the display by showing the "🔒" symbol.	Press the buttons G+H simultaneously (Fig. 45) to unlock the display.
Water leaking from the safety valve drain pipe	The anomaly is due to the fact that the tank is pressurised; when the water inside the tank is heated, it expands, causing an increase in internal pressure. If the pressure exceeds 0.85 MPa, the safety valve activates to release the excess pressure. As a result, a certain amount of hot water is discharged.	If water drips continuously from the safety valve drain pipe, contact a qualified technician for repair.
The tap water is cold and the display screen is off.	1. Incorrect connection between power plug and socket; 2. Water temperature setting too low; 3. Broken temperature sensor; faulty system board.	1. Insert the plug; 2. Set a higher temperature; 3. Contact the authorised service centre.
No hot water comes out of the tap.	1. Public water system interruption; 2. The cold water inlet pressure is too low (< 0.15 MPa); 3. Domestic cold water inlet tap closed.	1. Waiting for the public water system to be restored; 2. Waiting for increase in inlet water pressure; 3. Open the domestic water inlet valve.
Water leaks	The hydraulic pipe joints are not sealed properly. Breakage of a pipe or fitting.	Check and tighten all joints. Check the pipes.

⚠
- If common errors occur, the appliance will automatically switch to electric heater mode to ensure emergency domestic hot water supply. Contact qualified personnel for repairs.
- If serious errors occur and the appliance does not start, contact qualified technicians for repair.

2.7 ERROR CODES

Error code	Description	Remedy
EH0b	Communication error between tank and LCD panel.	Check that the connection between the LCD panel and the board is correct Check that the board is not faulty.
EH00	Anomaly in the machine operating parameters.	Contact a professionally qualified technician for maintenance of the appliance.
EH03	DC fan fault.	Check that the connection between the fan and the board is correct Check that the fan is not broken. Contact a professionally qualified technician for maintenance of the appliance.
PH15	Electrical leakage error. When the circuit detects that the current difference between the phase (L) and neutral (N) conductors is greater than 14 mA, the system interprets this condition as an "electrical leakage error".	Check that the power supply cables are connected correctly. Contact a professionally qualified technician for maintenance of the appliance.
EC54	Error of compressor drain temperature sensor TP.	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
EH5H	Error of compressor intake temperature sensor TH.	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
EC53	Error of ambient temperature sensor T4.	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
EC52	Error of evaporator temperature sensor T3.	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
EH5L	T5L sensor error (lower water temperature)	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
EH5U	T5U sensor error (higher water temperature)	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.

Error code	Description	Remedy
EH5N	T5M sensor error (solar collector temperature sensor)	Check that the connection between the sensor and the board is correct. Check that the sensor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
EHLA	When the room temperature value T4 is out of the compressor operating range, the appliance stops and the "EHLA" fault is displayed. The fault persists until the T4 value returns to the operating range. This operation is only valid on appliances without electric heater. The "EHLA" fault never occurs on appliances with electric heater.	No intervention required
EH5d	Electric heater open circuit error	Check that the electric heater cables are connected correctly. Check that the heating element is not broken.
EHHP	Heat pump fault. The alarm is activated when error codes PH20, PH21, PC30, PC06 are displayed; when any protection is activated 3 times in a row or if any of the protections remains active for 1 hour.	The compressor is working abnormally. Contact a professionally qualified technician for maintenance of the appliance.
EHEA	Default electronic anode (not available on this model)	If the problem persists, contact a professionally qualified technician for maintenance of the appliance.
PHdH	Overheating protection has been activated.	Make sure there is water in the tank before starting the heating cycle.
PH20	Protection tripped due to abnormal compressor shut-down. After a certain period of operation of the compressor, the discharge temperature is not high enough compared to the evaporator temperature.	Check that the connection between the compressor and the board is correct. Check that the compressor is not faulty. Contact a professionally qualified technician for maintenance of the appliance.
PH21	The compressor current draw is too high.	Check that the compressor is not broken Possible system blockage, water temperature sensor malfunction, etc. Contact a professionally qualified technician for maintenance of the appliance.
PH24	Frost protection activated (T5L < 4 °C and T4 < 7 °C)	The cold water temperature is too low. This anomaly may affect the water tank. The electric heater will still work.
PC30	High pressure protection tripped: ≥ 3,0 MPa active; ≤ 2.4 Mpa inactive	Possible system blockage, water temperature sensor malfunction, etc. Contact a professionally qualified technician for maintenance of the appliance.
PC06	High pressure protection tripped Tp > 110 °C active protection Tp < 90 °C inactive protection	Possible system blockage, water temperature sensor malfunction, etc. Contact a professionally qualified technician for maintenance of the appliance.
PH9b	Overtemperature protection tripped. The displayed water temperature exceeds the set temperature (+5 °C).	The water temperature sensor is defective or the current water temperature is too high. Contact a professionally qualified technician for maintenance of the appliance. **Burn hazard**
PH91	Protection tripped; value detected by sensor T3 too low.	If the problem persists, contact a professionally qualified technician for maintenance of the appliance.

3 INSTRUCTIONS FOR MAINTENANCE AND INITIAL CHECK

3.1 GENERAL RECOMMENDATIONS

Operators who install and service the appliance must wear the suitable personal protective equipment (PPE) required by applicable law.
The list of possible PPE is not all-comprehensive as it is indicated and chosen by the Employer of the authorised company (installer or maintenance).

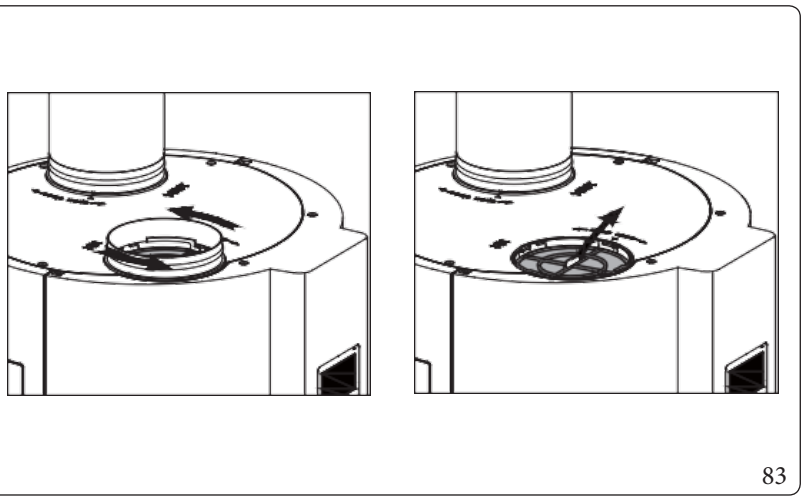
Before carrying out any maintenance work, make sure that:
– Always turn off your heat pump water heating system and disconnect the electrical power before cleaning or maintenance.

Components must be replaced exclusively by a professionally qualified technician.
Users are not allowed to proceed with disassembly.

- **Before cleaning, stop the appliance by turning off the switch or unplugging it. Otherwise, you may receive an electric shock and suffer injury.**
- **Contact qualified personnel when moving, repairing or maintaining the appliance. Never do it alone.**

3.2 APPLIANCE CHECK AND MAINTENANCE

- Regularly check the connection between the power plug and the power outlet, including checking for proper earthing.
- If the appliance is located in a cold environment (with temperatures below 0°C) and a prolonged shut-down is expected, it is mandatory to completely drain all the water from inside it. This operation is necessary to avoid freezing of the internal tank and the potential damage that would result, including failure of the electric heater.
- It is recommended to clean the internal tank and the electric heater every six months to maintain optimal system efficiency. For this operation, please contact your supplier or after-sales service.
- Check the sacrificial anode every six months and replace it if it is worn. For more information or replacement, please contact your supplier or after-sales service.
- To optimise energy efficiency, prevent limescale build-ups, and reduce heat loss, we recommend setting the hot water temperature to the lowest possible value consistent with user comfort.
- It is recommended to clean the air filter every month to prevent a reduction in heating performance efficiency. For filters mounted directly on the air inlet, unscrew the air inlet ring, remove the filter, clean it thoroughly and finally reassemble it correctly in the appliance.
- Before shutting down the system for an extended period of time, you should:
  - cut off the power supply;
  - drain all the water contained in the tank and inside the pipes, closing all the valves;
  - Check internal components regularly during inactivity.



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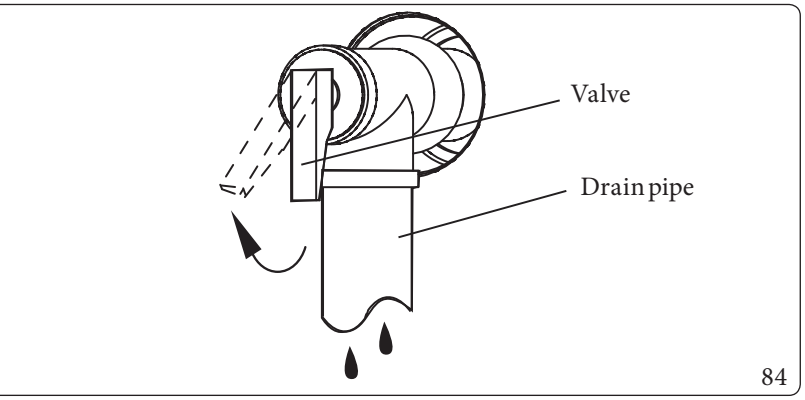
If the appliance is used in a dirty or dusty environment, it is necessary to install the filter in the appropriate intake air fitting. If you notice inefficient heating performance, we recommend cleaning the air filter.
Regarding the filter installed directly in the air inlet (i.e., without connection to a duct):

- unscrew the air duct connector anti-clockwise;
- remove the filter and clean it completely;
- reassemble it on the appliance.



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- To avoid blockages, operate and check the one-way valve (Fig. 84) every 6 months.

The following maintenance steps must only be performed by qualified personnel. For further information, please contact the supplier or after-sales service.

- It is recommended to clean the electric heater every six months to ensure that the appliance maintains efficient performance.
- Check the magnesium anode every six months and replace it if it is worn.

3.3 LIST OF ORDINARY MAINTENANCE OPERATIONS

Unit	Control frequency	Action
Air filter (inlet)	every month	Clean the filter
Magnesium anode	every six months	Replace if worn
Internal tank	every six months	Cleaning the tank
Electric heater	every six months	Electric heater cleaning
PTR valve	every month	Check for any obstructions

For more information, please contact the supplier or after-sales service.

4 TECHNICAL DATA

4.1 TECHNICAL DATA TABLE

Appliance data

		Rapax 200 V4	Rapax 300 V4	Rapax 200 Sol V4	Rapax 300 Sol V4
Weight and dimensions					
Full unit weight	kg	276,0	398,0	275,0	402,0
Empty unit weight	kg	91,0	123,0	94,0	132,0
Dimensions (LxHxD)	mm	560 x 1730 x 595	660 x 1895 x 695	560 x 1730 x 595	660 x 1895 x 695
Coolant					
Type of refrigerant		R290			
Coolant load	g	150			
Fan					
Type		Centrifugal			
Nominal air flow	m^3/h	350	450	350	450
Permissible pressure drops on the air duct circuit	Pa	80			
Absorbed electric power	W	30			
Evaporator					
Type of fins		hydrophilic aluminium			
Pipe type		copper with internal groove			
Condenser					
Type		Microchannel			
Appliance with packaging					
Weight with packaging	kg	115,0	148,0	115,0	160,0
Dimensions of unit with packaging (LxHxD)	mm	655 x 1945 x 675	775 x 2110 x 745	655 x 1945 x 675	745 x 2110 x 775
Storage room temperature	°C	-			
Power supply electrical features					
Electrical connection		220 - 240V ~ 50Hz			
Maximum absorbed power	W	2240	2350	2240	2350
Rated absorbed current	A	10,5	11,0	10,5	11,0
Absorbed power without integration resistance	W	600	710	600	710
Absorbed current without integration resistance	A	-			
Integration heating element absorbed current (DHW EH)	W	1640			
Integration heating element absorbed current (DHW EH)	A	-			

		Rapax 200 V4	Rapax 300 V4	Rapax 200 Sol V4	Rapax 300 Sol V4
Power cable features					
Type of cable		H05RN-F			
MFA (maximum fuse current) without DHW EH	A	5			
Fuse type without DHW EH		T			
MFA (maximum fuse current) with DHW EH	A	16			
Fuse type with DHW EH		T			
Minimum power supply cable cross-section	mm^2	1,5			
Minimum earthing cable cross-section	mm^2	1,5			
Other electrical data					
Protection class		IP21			
DHW Tank Data					
Material		Polyurethane			
Insulation thickness	mm	42	46	42	46
Domestic water content	l	185	275	181	270
Maximum working pressure	bar	8,5			
Maximum domestic water temperature	°C	70			
Minimum cold water inlet pressure	bar	2			
Maximum cold water inlet pressure	bar	7			
Recommended cold water inlet pressure	bar	3 ~ 4			
Safety valve - Calibration	bar	8,5			
Safety valve - Size	inches	3/4"			
Heat exchange surface	m^2	-		0,6	1,1
Maximum working pressure	bar	-		10	
Material		-		SUS316L	
Nominal volume	l	-			
Usable volume	l	-			
Precharge	kPa (bar)	-			
Corrosion protection		Magnesium anode, Vitreous enamel-coated steel			
Sound power					
Sound power indoors (without duct)	dB(A)	56	54	51	
Sound power outdoors (with duct)	dB(A)	-	54		

Product data.

		Rapax 200 V4	Rapax 300 V4	Rapax 200 Sol V4	Rapax 300 Sol V4
DHW					
Adjustable DHW temperature	°C	+38 ÷ +70			
Room temperature	°C	0 ÷ +43			
Inlet air temperature during heat pump operation	°C	-7 ÷ +43			
Inlet air temperature for integration heating element operation	°C	-20 ÷ +46			

4.2 PRODUCT FICHE RAPAX 200 V4 (IN COMPLIANCE WITH REGULATION 811/2013)

A	Supplier's name or trademark		-	Immergas
B	Supplier's model identifier		-	Rapax 200 V4
C	For water heating	Stated load profile	-	L
D	Energy efficiency class of water heating		-	A+
E	Energy efficiency of water heating (average climate condition)		%	131
F	Annual energy consumption for water heating (average climate condition)		kWh	781
G	Additional load profile		-	-
	Water heating energy efficiency		kWh	-
	Annual energy consumption for water heating		%	-
H	Thermostat temperature setting		°C	53
I	Lwa sound power level indoors		dB	56
I	Lwa sound power level outdoors		dB	-
J	Operation only during dead hours		-	No
K	Specific precautions		-	-
L	Smart value		-	1
L1	Weekly energy consumption with smart control (average climate condition) $Q_{elec,week,smart}$		kWh	14,189
L2	Weekly energy consumption without smart control (average climate condition) $Q_{elec,week}$		kWh	16,309
M	Energy efficiency of water heating (colder climate condition)		%	98
	Energy efficiency of water heating (hotter climate condition)		%	144
N	Annual energy consumption for water heating (colder climate condition)		kWh	1048
	Annual energy consumption for water heating (warmer climate condition)		kWh	710

4.3 DHW PERFORMANCE (EN16147) (RAPAX 200 V4)

Climate conditions		Averages	Hot	Cool
Energy class		A+	-	-
Stated load profile		L	-	-
Daily electrical power consumption (Q_{elec})	kWh	3,705	3,378	4,931
Annual electrical power consumption (AEC)	kWh	781	710	1048
Energy Eff. Water heating (η_{wh})	%	131	144	98
Daily fuel consumption (Q_{fuel})	kWh	-	-	-
Annual Fuel Consumption (AFC)	GJ	-	-	-
V40 (water mixed at 40°C) (V40)	l	245	-	-
Seasonal coefficient of performance ($_{DHW}$ SCOP)		3,15	-	-
Heating time (t_h)	h:min	7:32	-	-
Thermostat temperature	°C	53,0	-	-
Stand-by power (P_{es})	W	27	-	-

Charging time (9 ~ 55 °C)			
Temp. Inlet air	Mode		
	ECONOMY (maximum efficiency)	HYBRID (medium efficiency)	E-HEATER (maximum consumption)
-7	14,9	4,6	4,6
0	12,7	5,3	4,4
2	11,4	5,1	4,2
7	9,7	9,7	4,0
15	7,3	7,3	3,5
20	6,4	6,4	3,3
25	6,1	6,1	3,2
30	5,5	5,5	3,0
32	5,2	5,2	2,9
35	5,1	5,1	2,9
40	4,4	4,4	2,7

Nominal performance		
(*) Heat output:	W	1430

(*) Air temperature 15/12°C (DB/WB), inlet water temperature 15°C, outlet water temperature 45°C

4.4 TABLE 2 REGULATION 813/2013 (RAPAX 300 V4)

A	Supplier's name or trademark		-	Immergas
B	Supplier's model identifier		-	Rapax 300 V4
C	For water heating	Stated load profile	-	XL
D	Energy efficiency class of water heating		-	A+
E	Energy efficiency of water heating (average climate condition)		%	132
F	Annual energy consumption for water heating (average climate condition)		kWh	1267
G	Additional load profile		-	-
	Water heating energy efficiency		kWh	-
	Annual energy consumption for water heating		%	-
H	Thermostat temperature setting		°C	52
I	Lwa sound power level indoors		dB	54
I	Lwa sound power level outdoors		dB	54
J	Operation only during dead hours		-	No
K	Specific precautions		-	-
L	Smart value		-	0
L1	Weekly energy consumption with smart control (average climate condition) $Q_{elec,week,smart}$		kWh	-
L2	Weekly energy consumption without smart control (average climate condition) $Q_{elec,week}$		kWh	-
M	Energy efficiency of water heating (colder climate condition)		%	107
	Energy efficiency of water heating (hotter climate condition)		%	141
N	Annual energy consumption for water heating (colder climate condition)		kWh	1561
	Annual energy consumption for water heating (warmer climate condition)		kWh	1190

4.5 DHW PERFORMANCE (EN16147) (RAPAX 300 V4)

Climate conditions		Averages	Hot	Cool
Energy class		A+	-	-
Stated load profile		XL	-	-
Daily electrical power consumption (Q_{elec})	kWh	5,875	5,512	7,252
Annual electrical power consumption (AEC)	kWh	1267	1190	1561
Energy Eff. Water heating (η_{wh})	%	132	141	107
Daily fuel consumption (Q_{fuel})	kWh	-	-	-
Annual Fuel Consumption (AFC)	GJ	-	-	-
V40 (water mixed at 40°C) (V40)	l	350	-	-
Seasonal coefficient of performance ($_{DHW}$ SCOP)		3,25	-	-
Heating time (t_h)	h:min	8:58	-	-
Thermostat temperature	°C	52,0	-	-
Stand-by power (P_{es})	W	19	-	-

Charging time (9 ~ 55 °C)			
Temp. Inlet air	Mode		
	ECONOMY (maximum efficiency)	HYBRID (medium efficiency)	E-HEATER (maximum consumption)
-7	18,4	6,9	6,9
0	17,7	7,4	6,5
2	15,7	7,2	6,3
7	14,4	14,4	5,9
15	9,8	9,8	5,2
20	9,0	9,0	4,9
25	8,4	8,4	4,8
30	7,4	7,4	4,5
32	7,0	7,0	4,3
35	6,7	6,7	4,3
40	6,0	6,0	4,1

Nominal performance		
(*) Heat output:	W	1500

(*) Air temperature 15/12°C (DB/WB), inlet water temperature 15°C, outlet water temperature 45°C

4.6 TABLE 2 REGULATION 813/2013 (RAPAX 200 SOL V4)

A	Supplier's name or trademark		-	Immergas
B	Supplier's model identifier		-	Rapax 200 Sol V4
C	For water heating	Stated load profile	-	L
D	Energy efficiency class of water heating		-	A+
E	Energy efficiency of water heating (average climate condition)		%	130
F	Annual energy consumption for water heating (average climate condition)		kWh	785
G	Additional load profile		-	-
	Water heating energy efficiency		kWh	-
	Annual energy consumption for water heating		%	-
H	Thermostat temperature setting		°C	53
I	Lwa sound power level indoors		dB	51
I	Lwa sound power level outdoors		dB	54
J	Operation only during dead hours		-	No
K	Specific precautions		-	-
L	Smart value		-	0
L1	Weekly energy consumption with smart control (average climate condition) $Q_{elec,week,smart}$		kWh	-
L2	Weekly energy consumption without smart control (average climate condition) $Q_{elec,week}$		kWh	-
M	Energy efficiency of water heating (colder climate condition)		%	86
	Energy efficiency of water heating (hotter climate condition)		%	144
N	Annual energy consumption for water heating (colder climate condition)		kWh	1192
	Annual energy consumption for water heating (warmer climate condition)		kWh	708

4.7 DHW PERFORMANCE (EN16147) (RAPAX 200 SOL V4)

Climate conditions		Averages	Hot	Cool
Energy class		A+	-	-
Stated load profile		L	-	-
Daily electrical power consumption (Q_{elec})	kWh	3,718	3,314	5,620
Annual electrical power consumption (AEC)	kWh	785	708	1192
Energy Eff. Water heating (η_{wh})	%	130	144	86
Daily fuel consumption (Q_{fuel})	kWh	-	-	-
Annual Fuel Consumption (AFC)	GJ	-	-	-
V40 (water mixed at 40°C) (V40)	l	245	-	-
Seasonal coefficient of performance ($_{DHW}$ SCOP)		3,14	-	-
Heating time (t_h)	h:min	7:47	-	-
Thermostat temperature	°C	53,0	-	-
Stand-by power (P_{es})	W	26	-	-

Charging time (9 ~ 55 °C)			
Temp. Inlet air	Mode		
	ECONOMY (maximum efficiency)	HYBRID (medium efficiency)	E-HEATER (maximum consumption)
-7	14,9	4,6	4,6
0	12,7	5,3	4,4
2	11,4	5,1	4,2
7	9,7	9,7	4,0
15	7,3	7,3	3,5
20	6,4	6,4	3,3
25	6,1	6,1	3,2
30	5,5	5,5	3,0
32	5,2	5,2	2,9
35	5,1	5,1	2,9
40	4,4	4,4	2,7

Nominal performance		
(*) Heat output:	W	1430

(*) Air temperature 15/12°C (DB/WB), inlet water temperature 15°C, outlet water temperature 45°C

4.8 TABLE 2 REGULATION 813/2013 (RAPAX 300 SOL V4)

A	Supplier's name or trademark		-	Immergas
B	Supplier's model identifier		-	Rapax 300 Sol V4
C	For water heating	Stated load profile	-	XL
D	Energy efficiency class of water heating		-	A+
E	Energy efficiency of water heating (average climate condition)		%	128
F	Annual energy consumption for water heating (average climate condition)		kWh	1312
G	Additional load profile		-	-
	Water heating energy efficiency		kWh	-
	Annual energy consumption for water heating		%	-
H	Thermostat temperature setting		°C	53
I	Lwa sound power level indoors		dB	51
I	Lwa sound power level outdoors		dB	54
J	Operation only during dead hours		-	No
K	Specific precautions		-	-
L	Smart value		-	0
L1	Weekly energy consumption with smart control (average climate condition) $Q_{elec,week,smart}$		kWh	-
L2	Weekly energy consumption without smart control (average climate condition) $Q_{elec,week}$		kWh	-
M	Energy efficiency of water heating (colder climate condition)		%	104
	Energy efficiency of water heating (hotter climate condition)		%	144
N	Annual energy consumption for water heating (colder climate condition)		kWh	1614
	Annual energy consumption for water heating (warmer climate condition)		kWh	1167

4.9 DHW PERFORMANCE (EN16147) (RAPAX 300 SOL V4)

Climate conditions		Averages	Hot	Cool
Energy class		A+	-	-
Stated load profile		XL	-	-
Daily electrical power consumption (Q_{elec})	kWh	6,095	5,435	7,499
Annual electrical power consumption (AEC)	kWh	1312	1167	1614
Energy Eff. Water heating (η_{wh})	%	128	144	104
Daily fuel consumption (Q_{fuel})	kWh	-	-	-
Annual Fuel Consumption (AFC)	GJ	-	-	-
V40 (water mixed at 40°C) (V40)	l	345	-	-
Seasonal coefficient of performance ($_{DHW}$ SCOP)		3,13	-	-
Heating time (t_h)	h:min	9:02	-	-
Thermostat temperature	°C	53,0	-	-
Stand-by power (P_{es})	W	22	-	-

Charging time (9 ~ 55 °C)			
Temp. Inlet air	Mode		
	ECONOMY (maximum efficiency)	HYBRID (medium efficiency)	E-HEATER (maximum consumption)
-7	18,4	6,9	6,9
0	17,7	7,4	6,5
2	15,7	7,2	6,3
7	14,4	14,4	5,9
15	9,8	9,8	5,2
20	9,0	9,0	4,9
25	8,4	8,4	4,8
30	7,4	7,4	4,5
32	7,0	7,0	4,3
35	6,7	6,7	4,3
40	6,0	6,0	4,1

Nominal performance		
(*) Heat output:	W	1500

(*) Air temperature 15/12°C (DB/WB), inlet water temperature 15°C, outlet water temperature 45°C

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