AZIENDA CERTIFICATA ISO 9001

cod. 3541T630 - Rev. 04 - 12/2021

DORA 200 HT - 260 HT

USER, INSTALLATION AND MAINTENANCE MANUAL

1. GENERAL SAFETY PRECAUTIONS

CAUTION:

- This manual is an integral part of the product. Keep it with care with the appliance, and hand it on to the next user/owner in case of change of property.
- These instructions are also available from the manufacturer's customer service and its website www.lamborghinicalor.it
- Read the instructions and warnings in this manual carefully, they contain important information regarding safe installation, use and maintenance.

SAFETY WARNINGS

Do not use the appliance for any other than its specified use. The manufacturer is not liable for damage resulting from improper or incorrect use or failure to observe the instructions given in this manual.

This appliance is not intended for use by persons (including children) whose physical, sensory or mental capacities are reduced, or persons without experience or knowledge, unless they have been given instructions and monitored previously when using the appliance by a person responsible for their safety.

Children must be supervised to ensure they do not play with the appliance.

This appliance may be used by children 8 years of age or older, and those with reduced physical, sensory or mental capacity or lack of experience or knowledge, if they are properly supervised or if instructions for the safe use of the appliance have been given to them and the risks involved are clear to them.

Children are not permitted to play with the appliance.

Water heated to over 50°C can cause immediate serious burns if delivered directly to the taps. Children, disabled persons and the elderly are particularly at risk. It is recommended to install a thermostatic mixer valve on the water delivery line.

This appliance must not be cleaned or maintained by children without supervision.

Do not touch the appliance when barefoot or if any part of your body is wet.

Do not leave flammable materials in contact with or in the vicinity of the appliance.

The appliance must be emptied when it is out of service in an area subject to subzero temperatures. Drain as described in the appropriate chapter.

INSTALLATION CAUTION

The appliance must be installed and commissioned by a qualified technician in accordance with local legislation and health and safety regulations. All power circuits must be shut off before you open the terminal block.

Incorrect installation can result in damage to property and injury to persons and animals; the manufacturer is not liable for

the consequences.

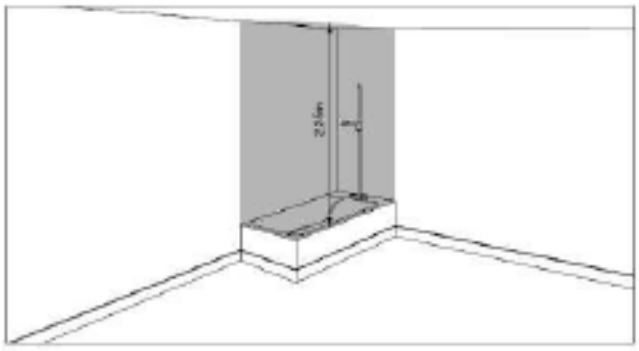
This product is heavy, handle with care and install the product in a frost-free room.

Ensure that the bulkhead can support the weight of the water filled appliance.

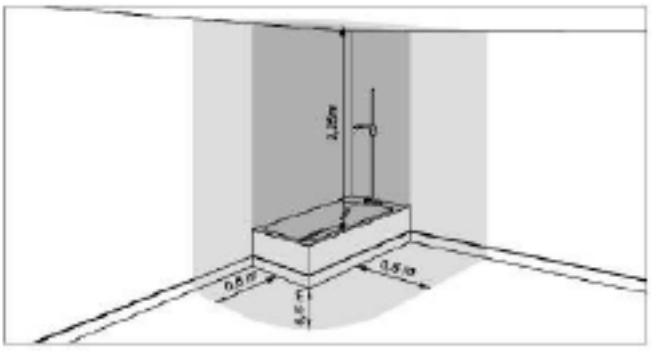
The destruction of the appliance by overpressure due to the blocking of the safety device inactivates the warranty.

INSTALLATION WARNINGS

When installing this product in a bathroom do not use the “Prohibited space” and respect, at least, the “Protected space” as shown below:



Prohibited space



Protected space

This product must be placed in an accessible location.

The water heater must be fixed to the ground using the fixing bracket provided for this purpose and adhesives are not considered to be a reliable fixing means.

This product is designed to be used at a maximum altitude of 2000 m.

Refer to description and illustrations in paragraphs “6.1 Preparation of place of installation" on page 90, “6.2 Securing to the floor" on page 91 and “6.4 Securing and connections of this appliance" on page 93.

AERAULIC CONNECTIONS WARNINGS

The simultaneous operation of an open-chamber hearth (e.g. open fireplace) and the heat pump causes a dangerous negative pressure in the room. The negative pressure can cause the return of exhaust gases into the room. Do not operate the heat pump together with an open-chamber hearth.
Only use sealed-chamber hearths (approved) with separate combustion air supply.
Keep tight and sealed the doors of boiler rooms that do not have the inflow of combustion air in common with living areas.

A suitable protection grille must be installed at the air outtake connection to prevent any foreign bodies from entering inside the equipment.
Refer to description and illustrations in the “6.3 Aeraulic connections" on page 91.

HYDRAULIC CONNECTIONS WARNINGS

It is mandatory to screw on to the appliance's water intake pipe a suitable device against overpressure (not supplied). In countries which acknowledge EN 1487, the appliance's water intake pipe must be equipped with a safety device compliant with said standard.
It must be new, with 3/4" dimensions and calibrated to a maximum pressure of 0.7 MPa (7 bar), including at least a cock, check valve, safety valve and hydraulic load cut-out.

This safety device must not be tampered with and must be made to operate frequently in order to check that it is not blocked and to remove any limescale.

The water may drip from the discharge pipe of the pressure-relief device and that this pipe must be left open to the atmosphere. The discharge pipe connected to the pressure-relief device is to be installed in a continuously downward direction and in a frost-free environment.

A pressure reducer (not supplied) is required when the inlet water pressure is greater than 0.7 MPa (7 bar), which must be attached to the water mains.

The minimum inlet water pressure for the correct operation of the appliance is 0.15 MPa (1.5 bar).

Connect a rubber pipe to the condensate drain, taking care not to force too much so as not to break the drain pipe and refer to par. "6.5.1 Condensate drain connection" on page 94.

Use only connecting pipes (not supplied), rigid and resistant to electrolysis both at the inlet of cold water and at the outlet of hot water from the device.

For models that incorporate a heat exchanger (solar coil), the circuit must not exceed 1.0 MPa (10 bar) and its temperature must not exceed 80°C.

Refer to description and illustrations in the "6.5 Hydraulic connections" on page 93

ELECTRICAL CONNECTIONS WARNINGS

The appliance shall be installed in accordance with national wiring regulations.

The electrical installation must include an all-pole disconnection with a separation of the contacts on all poles capable of guaranteeing complete disconnection in the overvoltage category III upstream of the appliance, complying with local installation rules in force .

The device must be protected by an adequate differential switch (max 30 mA). The type of differential switch should be selected by assessing the type of electrical devices used by the system as a whole.

Earth connection is mandatory. The manufacturer of the appliance shall not be held liable for any damage caused by failure to earth the system or due to anomalies in the electric power supply.

It is strictly forbidden to connect the appliance at the AC mains through extensions or by a power strip.

Before taking off the cover, make sure that the power is turned off to prevent injury or electric shock.

Refer to description and illustrations, respectively, in the "6.6 Electrical connections" on page 94 and "6.7 Wiring diagram" on page 97.

SERVICING - MAINTENANCE - TROUBLESHOOTING WARNINGS

Any repairs, maintenance, plumbing and electrical connections must be done by qualified technicians using original spare parts only. Failure to observe the above instructions can compromise the safety of the appliance and relieves the manufacturer of any liability for the consequences.

To empty the appliance: turn off the power supply and cold water, open the hot water taps and then operate the drain valve of the safety device.

The pressure relief valve must be operated regularly to remove scale deposits and to ensure that it is not blocked.

The appliance is equipped with a supply cord that if damaged, must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

The appliance incorporates a time-lag miniature fuse-link that if broken, it must be replaced with a fuse model “T5AL250V” in accordance with IEC 60127-2/II.

Refer to description and illustrations, respectively, in the “TROUBLESHOOTING” chapter 9 and “MAINTENANCE” chapter 10.

2. INTRODUCTION

This installation and maintenance manual is an integral part of the heat pump (hereinafter equipment).
The manual must be kept for future reference until dismantling.
It is intended for the specialist installer (installers - maintenance technicians) and the end user. The manual describes the installation procedures to be observed for correct and safe operation of the equipment, and the methods of use and maintenance.
In case of sale or transfer to another user, the manual must stay with the unit.
Before installing and/or using the equipment, read this instruction manual carefully and in particular chapter 4 on safety.
The manual must be kept with the unit and always be available to qualified installation and maintenance personnel.
The following symbols are used in the manual for quickly finding the most important information:

	**Caution**
	**Procedures to be followed**
	**Information / Suggestions**

2.1 Products

Dear Customer,
Thank you for purchasing this product.
Our company, always attentive to environmental issues, uses low environmental impact technologies and materials for its products, in compliance with EU WEEE standards (2012/19/EU – RoHS 2011/65/EU).

2.2 Disclaimer

The conformity of these operating instructions with the hardware and the software has been carefully checked. Nevertheless there may be differences; and no responsibility is assumed for total conformity.
In the interest of technical improvement, we reserve the right to make construction or technical data changes at any time. Any claim based on indications, figures, drawings or descriptions is therefore excluded. They are subject to possible errors.
The constructor declines any liability for damage due to command errors, improper or inappropriate use, or due to unauthorized repairs or modifications.

2.3 Language

The manual was written in Italian (IT), the original language of the manufacturer.
Any translations into additional languages must be made from the original instructions.
The Manufacturer is held responsible for the information contained in the original instructions; translations into different languages cannot be fully verified, therefore, if an inconsistency is found, it is necessary to follow the original language text or contact our Technical Documentation Office.

2.4 Copyright

2.5 Available versions and configurations

This appliance is a 1.6 kW air to water heat pump for domestic hot water heating, available in versions with 200 litres tank and 260 litres tank.

Version	Configuration description
200 HT **260 HT**	Air to water heat pump for domestic hot water (DHW) production

3. HANDLING AND TRANSPORT

The equipment comes in a cardboard box(*).
It is secured to a pallet by means of three screws.
For unloading operations use a forklift or an adequate pallet truck.
The packed equipment can be placed horizontally and back down to facilitate undoing the anchoring screws.
Unpacking must done carefully so as not to damage the equipment casing if using knives or cutters to open the cardboard packaging.
After removing the packaging, check the integrity of the unit. If in doubt, do not use the unit; contact authorized technical personnel.
Before eliminating the packaging, according to the applicable environmental protection regulations, make sure all the accessories supplied have been removed.

ATTENTION!: The packaging materials (clips, cardboard, etc.) must not be left within the reach of children as they are hazardous for them.

(*) Note: The type of packaging may undergo variations at the discretion of the manufacturer.
For the entire period the equipment remains idle, awaiting commissioning, it is advisable to put it in a place protected from atmospheric agents

3.1 Receipt

In addition to the units, the packages contain accessories and technical documentation for use and installation. Check that the following are present:

- N°1 user, installation and maintenance manual;
- N°3 fastening brackets plus screws;

For the entire period the equipment remains idle, awaiting commissioning, it is advisable to put it in a place protected from atmospheric agents.

Positions allowed for transport and handling

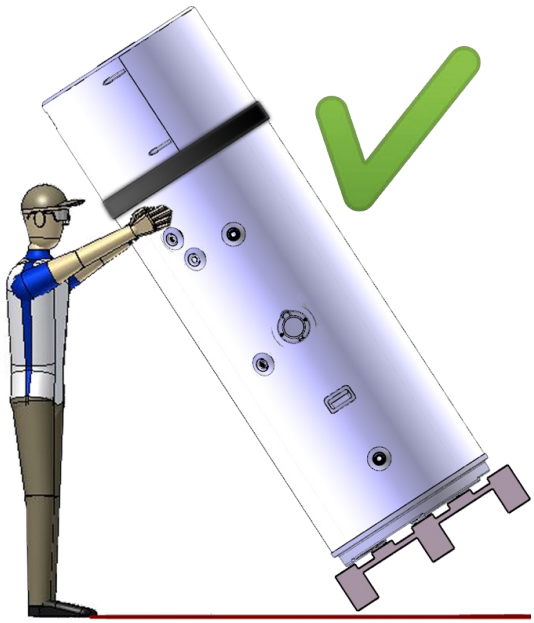
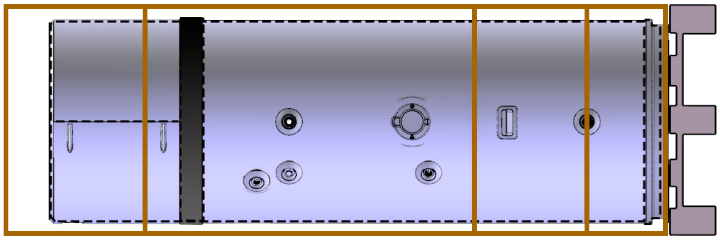


fig. 1

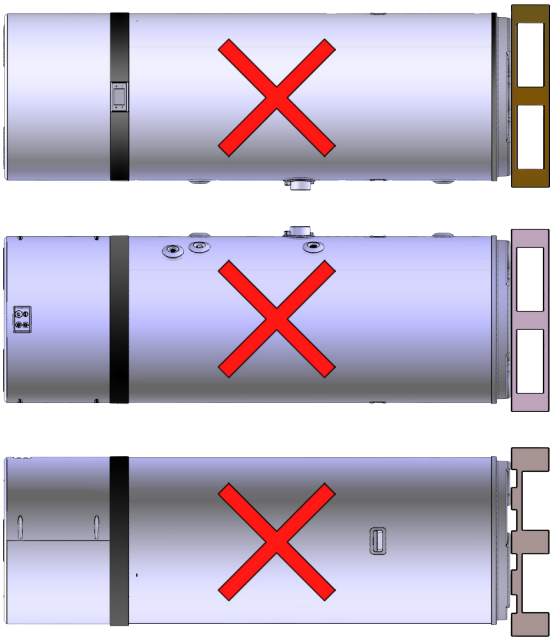
ATTENTION! During the product handling and installation phases the upper part must not be stressed in any way, as it is not structural.

ATTENTION! Horizontal transport is allowed only for the last km according to that indicated (see "Positions not allowed for transport and handling"), making sure supports are positioned in such a way at the bottom of the boiler so as not to stress the upper part, as it is not structural. During horizontal transport the display must face upwards.

Position allowed only for the last km



Positions not allowed for transport and handling



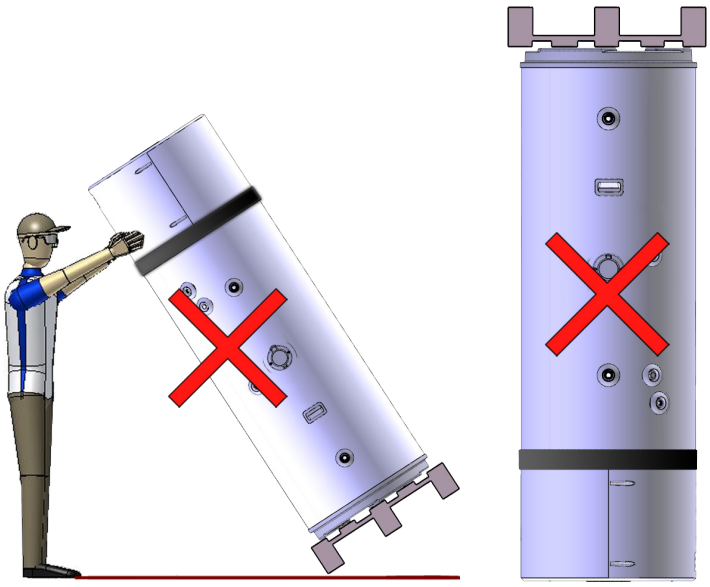


fig. 2

4. CONSTRUCTION CHARACTERISTICS

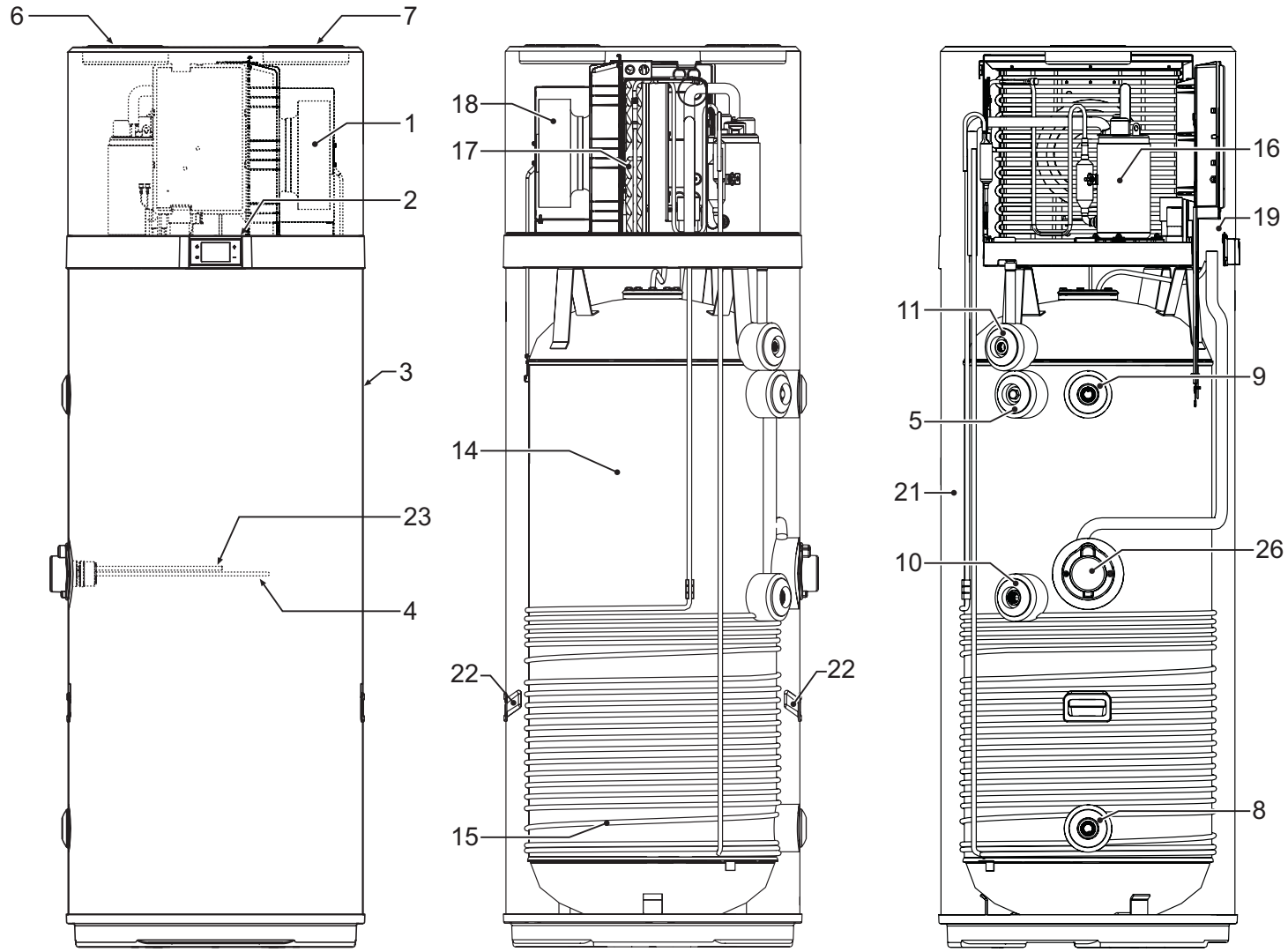
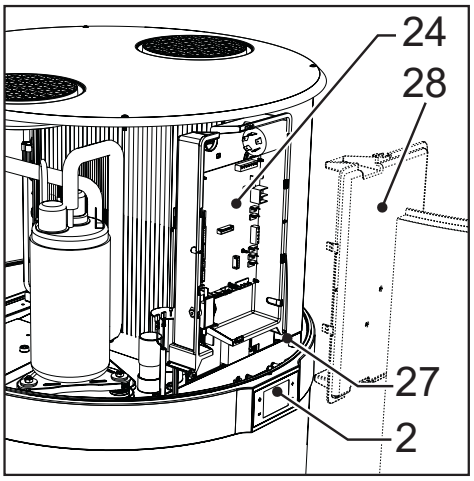


fig. 3



1 Heat pump
2 User interface
3 Steel casing
4 Heating element
5 Magnesium anode
6 Ventilation air inlet (Ø 160 mm)
7 Ventilation air outlet (Ø 160 mm)
8 Cold water inlet connection
9 Hot water outlet connection
10 Prearrangement for recirculation
11 Condensate drain
14 Steel tank with vitreous enamel coating according to DIN 4753-3
15 Condenser
16 Rotary compressor
17 Finned pack evaporator
18 Asynchronous fan
19 Boiler probes
21 Polyurethane insulation
22 Carrying handles
23 Tube for safety thermostat bulb
24 Power board
26 Compartment for accessing heating element and safety thermostat bulb
27 Wi-Fi card
28 Wiring diagram

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4.1 Dimensional data

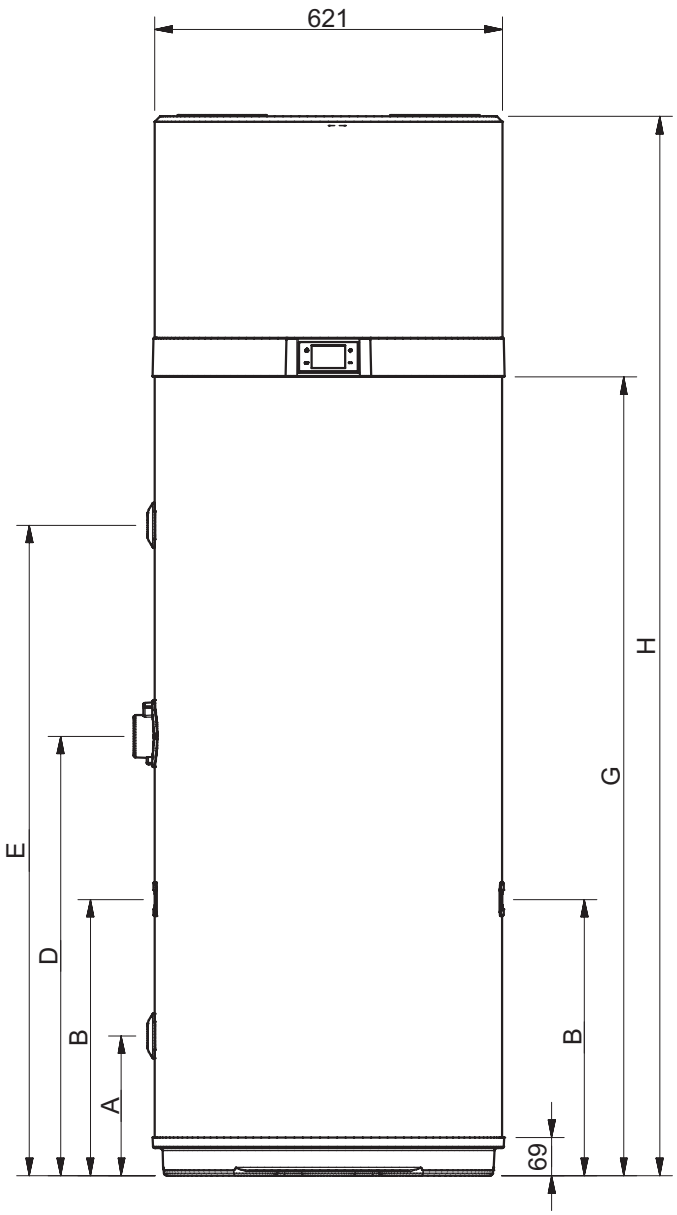


fig. 4

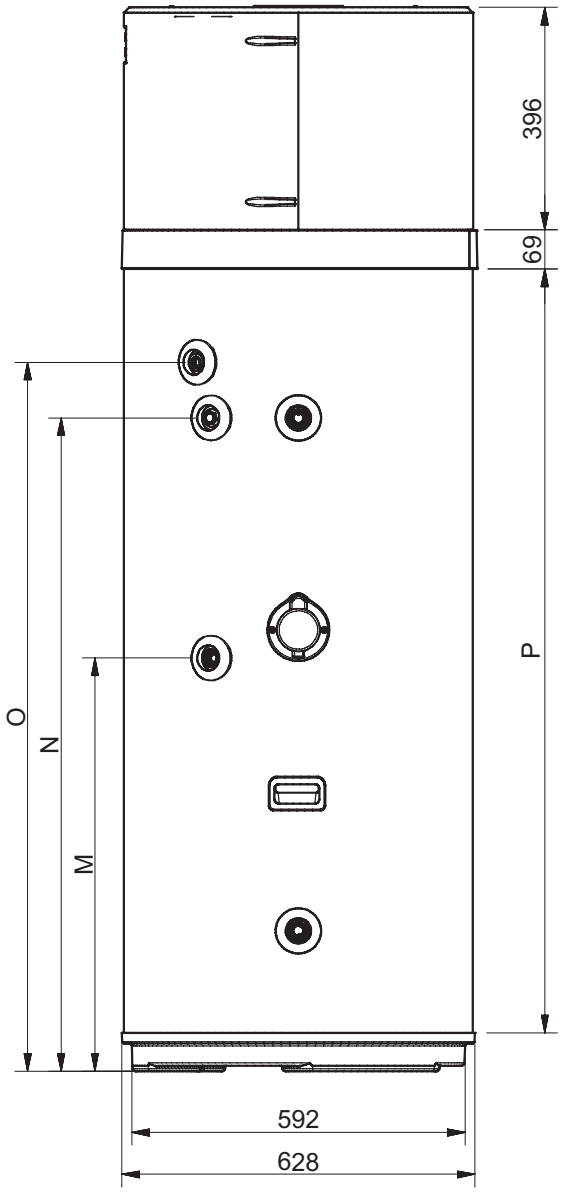


fig. 5

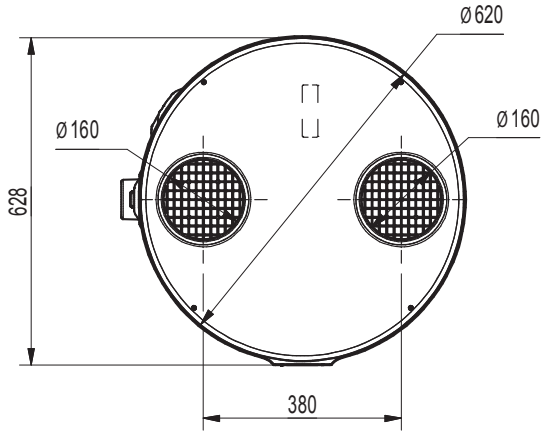


fig. 6

MODEL	Ø	200 HT	260 HT	UM
A	1"G	250	250	mm
B	-	490	493	mm
D	-	705	785	mm
E	1"G	876.5	1162	mm
G	-	1142	1427	mm
H	-	1607	1892	mm
M	3/4"G	705	735	mm
N	3/4"G	877	1162	mm
O*	1/2"G	976	1261	mm
P	-	1073	1358	mm

O - Outlet connection in plastic material

4.2 Technical characteristics

Model		200 HT	260 HT	-
Heat pump	Power supply	230-1-50-1PH		V-PH-Hz
	Thermal power (UNI)	1600	1600	W
	Total absorbed power in heating (UNI)	370	370	W
	COP (UNI)	4.32	4.32	W/W
	Rated current in heating (UNI)	1.70	1.70	A
	Max. total absorbed power in heating	500	500	W
	Max. current in heating	2.30	2.30	A
	Heating time (EN) (1)	7:16	9:44	h:min
	Heating energy (EN) (1)	2.83	3.74	kWh
	Standby consumption (EN) (1)	27.3	31	W
	Class of use (EN) (1)	L	XL	Type
	Power consumption during operating cycle WEL-TC (EN) (1)	4.18	6.17	kWh
	COPDHW (EN) (1)	2.80	3.10	W/W
	COPDHW (EN) (4)	2,50	2,60	W/W
	Water reference temperature (EN) (1)	51.4	53.7	°C
	Max. usable amount of water(EN) (2)	0.260	0.358	m^3
	Heating efficiency ref. standard (EU)	116	127	%
	Efficiency class ref. standard (EU)	A+	A+	-
	Yearly power consumption (EU)	883	1315	kWh/year
Electrical heating element	Power	1500	1500	W
	Current	6.5	6.5	A
Heat pump + Electrical heating element	Total absorbed power	1870	1870	W
	Rated current	8.20	8.20	A
	Total max. absorbed power	2000	2000	W
	Max. current	8.80	8.80	A
	Heating time (1) BOOST MODE	3:48	4:57	h:min
Storage	Storage capacity	192	250	l
	Max. pressure	0.7	0.7	MPa
	Material	Enameled steel		type
	Cathodic protection	Mg rod anode		type
	Insulation type\thickness	polyurethane/50		type/mm
Air circuit	Fan type	Centrifugal		type
	Air flow rate	350	350	m^3/h
	Duct diameter	160	160	mm
	Max. available head	100	100	Pa
Refrigeration circuit	Compressor	Rotary		type
	Refrigerant	R134a		type
	Evaporator	Aluminum - Aluminum Finned coil		type
	Condenser	Aluminum tube wound outside tank		type
Internal sound power levels (3)		52	52	dB(A)
External sound power levels (3)		50	50	dB(A)
Empty weight	Net	86	98	kg

NOTES

- **(UNI):** data according to standard **UNI EN 16147:2017**
- **(EU):** data according to regulation **2017/1369/EU**
- **(1):** Heating cycle Air inlet temp = 20°C DB/15°C WB Initial water temperature 10°C
- **(2):** Operating temperature limit 40°C - Water inlet temperature 10°C
- **(3):** data according to standard **EN 12102-1:2018 ECO MODE A 20°C DB/15°C WB**
- **(4):** Heating cycle Air inlet temp = 14°C DB/13°C WB Initial water temperature 10°C

5. IMPORTANT INFORMATION

5.1 Compliance with European regulations

This heat pump is a product intended for domestic use in compliance with the following European directives:

- Directive 2012/19/EU (WEEE)
- Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
- Directive 2014/30/EU electromagnetic compatibility (EMC)
- Directive 2014/35/EU low voltage (LVD)
- Directive 2009/125/EC eco-friendly design
- Directive 2014/53/EU radio equipment (RED)
- Regulation 2017/1369/EU energy labeling

5.2 Casing protection rating

The equipment protection rating is: **IP24**.

5.3 Operating limits

PROHIBITION! This product is not designed or intended for use in hazardous environments (due to the presence of potentially explosive atmospheres - ATEX or with required IP level higher than that of the unit) or in applications requiring safety features (fault-tolerant, fail-safe) which may be systems and/or technologies to support life or any other context in which the malfunction of an application can lead to death or injury to people or animals, or serious damage to property or the environment.

NB!: If the possibility of a product fault or failure can cause damage (to people, animals and property) it is necessary to provide for a separate functional surveillance system equipped with alarm functions in order to exclude such damage. It is also necessary to arrange the replacement operation!

Appliance is not designed for installation outdoors but in a "closed" place not exposed to the elements.

5.4 Operating limits

The product in question is designed exclusively for heating hot water for sanitary uses within the limits described below. For this purpose, it must be connected to the domestic water supply and the power supply (see chapter “6. INSTALLATION AND CONNECTIONS”).

5.4.1 Temperature range

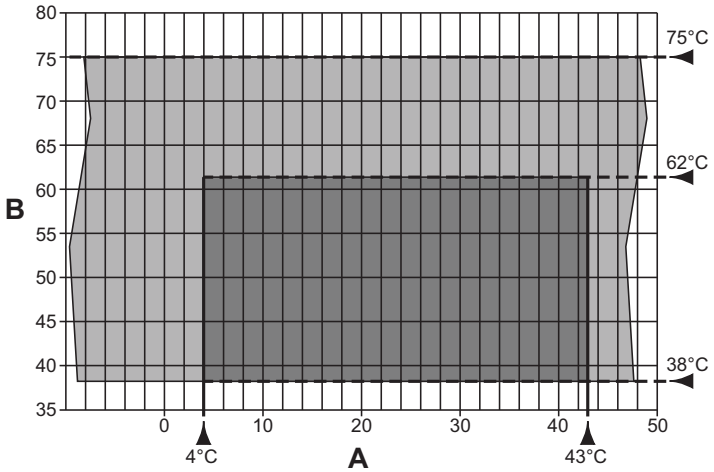


fig. 7 - Chart

A = Inlet air temperature (°C)
B = Hot water temperature (°C)
= Operating range for heat pump (HP)
= Integration with heating element only

5.4.2 Water hardness

The unit must not operate with water of hardness under 12°F; however, with particularly hard water (above 25°F), it is advisable to use a properly calibrated and monitored water softener, in this case the residual hardness must not fall below 15°F.

NB!: In the design and construction phase of the plants, the applicable local regulations and provisions must be respected.

5.5 Basic safety rules

- The product must be used by adults;
- Do not open or disassemble the product when it is electrically powered;
- Do not touch the product if barefoot or with wet or damp parts of the body;
- Do not pour or spray water on the product;
- Do not climb, sit and/or place any type of object on the product.

5.6 Information on the refrigerant used

This product contains fluorinated greenhouse gases included in the Kyoto protocol. Do not release these gases into the atmosphere.
Type of refrigerant: HFC-R134a.

NB!: Maintenance and disposal operations must only be carried out by qualified personnel.

6. INSTALLATION AND CONNECTIONS

6.1 Preparation of place of installation

The product must be installed in a suitable place, i.e. to allow normal use and adjustment operations as well as routine and extraordinary maintenance.
The necessary operating space must therefore be prepared by referring to the dimensions given in fig. 9.

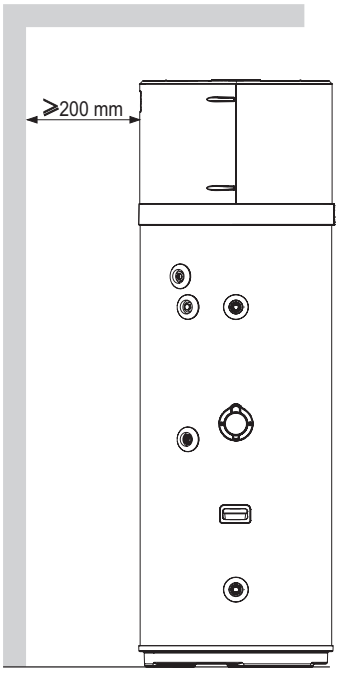


fig. 8 - Minimum spaces

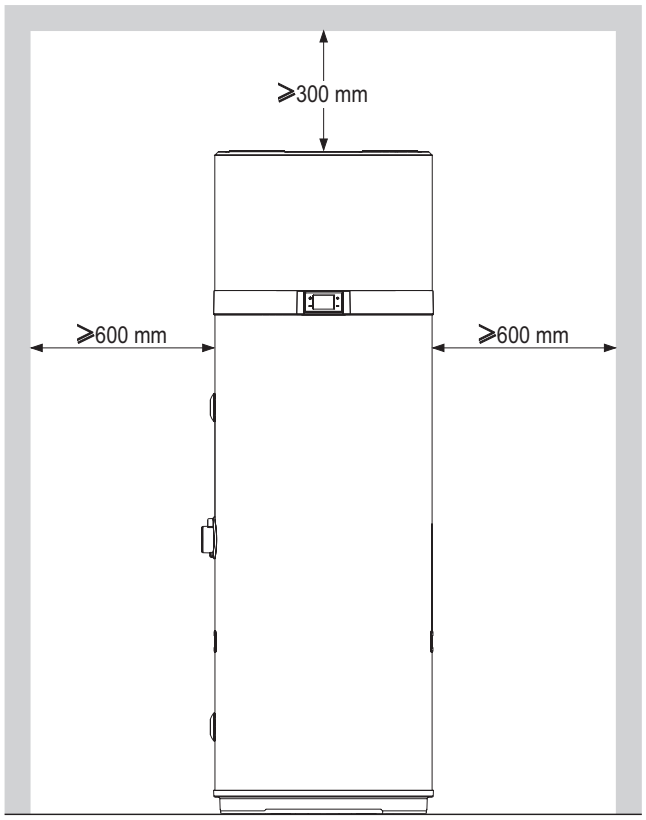


fig. 9 - Minimum spaces

The room must also be:

- Equipped with adequate water and electricity supply lines;
- Prearranged for the condensation water discharge connection;
- Prearranged with adequate water drains in case of boiler damage or safety valve intervention or the breakage of pipes/connections;
- Equipped with possible containment systems in case of serious water leakage;
- Sufficiently illuminated (where required);
- Not less than 20 m^3 in volume;
- Protected against frost and be dry.

ATTENTION! To avoid the propagation of mechanical vibrations, do not install the equipment on floors with wooden beams (e.g. in the attic).

6.2 Securing to the floor

To secure the product to the floor, fasten the supplied brackets as shown in fig. 10.

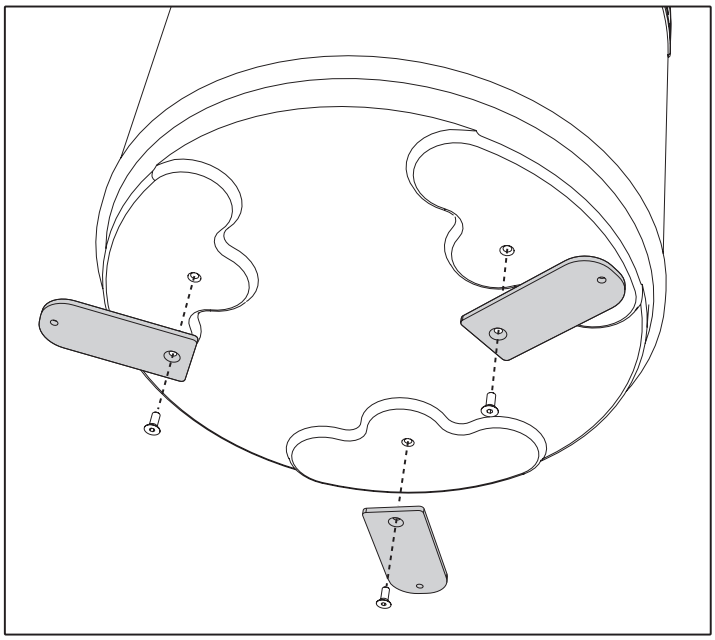


fig. 10 - Fastening brackets

Then secure the unit to the floor with the aid of suitable plugs, not supplied, as shown in fig. 11.

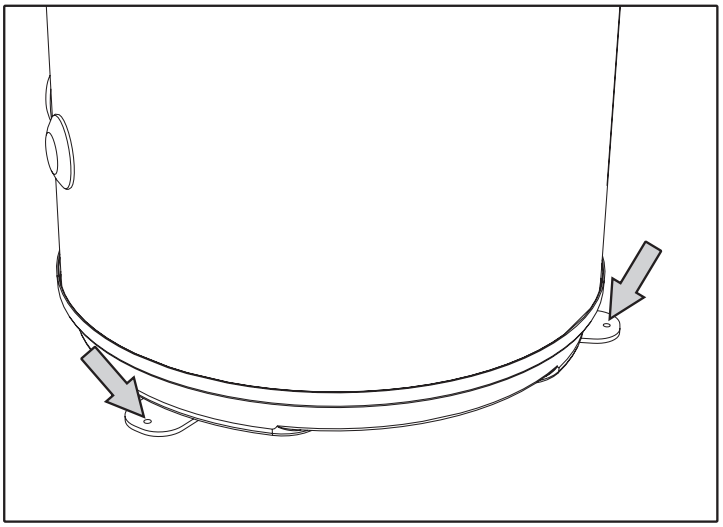


fig. 11 - Securing to the floor

6.3 Aeraulic connections

In addition to the spaces indicated in “6.1 Preparation of place of installation” on page 90, the heat pump.requires adequate air ventilation.
Create a dedicated air channel as indicated in fig. 12.

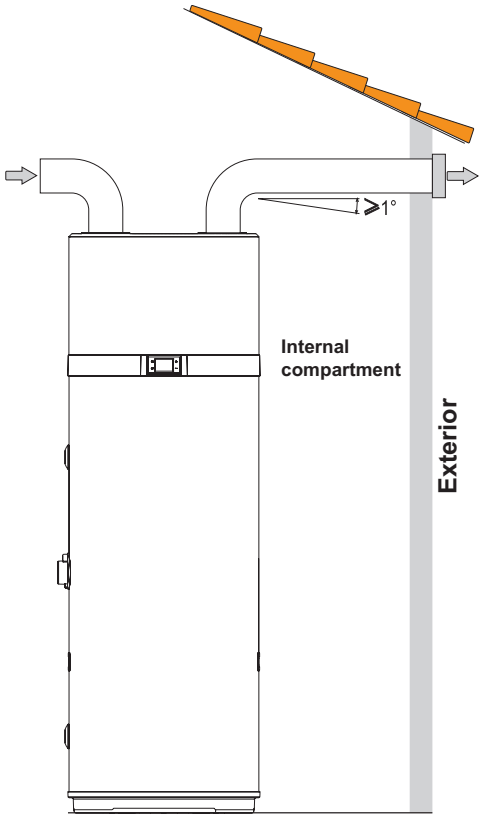
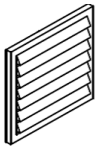


fig. 12 - Example of air outlet connection

Install each air channel, making sure:

- It does not weigh down on the equipment.
- It allows maintenance operations.
- It is adequately protected to prevent the accidental intrusion of materials inside the equipment.
- The connection to the outside must be done with suitable, non-flammable piping.
- The total equivalent length of the extraction pipes plus the delivery, including grilles, must not exceed 12 m.

The table gives the characteristic data of commercial ducting components with reference to nominal air flows and diameters 160 mm.

Data	Smooth straight pipe	Smooth 90 ° curve	Grille	UM
Type				
Effective length	1	\	\	m
Equivalent length	1	2	2	m

During operation, the heat pump tends to lower the room temperature if the air ducting is not to the outside.

A suitable protection grille must be installed at the air extraction pipe to the outside to prevent any foreign bodies from entering inside the equipment. To ensure maximum product performance, the grille must be selected from those with low pressure loss.

To avoid the formation of condensation water: insulate the air extraction pipes and the ducted air cover connections with a steam-tight thermal covering of adequate thickness.

Install silencers if deemed necessary to prevent noise due to the flow. Equip the pipes, wall outlets and connections to the heat pump with vibration-damping systems.

6.3.1 Special installation

One of the peculiarities of the heat pump heating systems is that these units considerably lower the air temperature, generally expelled to the outside of the house. As well as being colder than the ambient air, the expelled air is also completely dehumidified, therefore the air flow can be returned inside for the summer cooling of specific rooms or areas.
Installation provides for splitting of the extraction pipe, which is fitted with two dampers ("A" and "B") for directing the air flow to the outside (fig. 14) or the inside of the house (fig. 13).

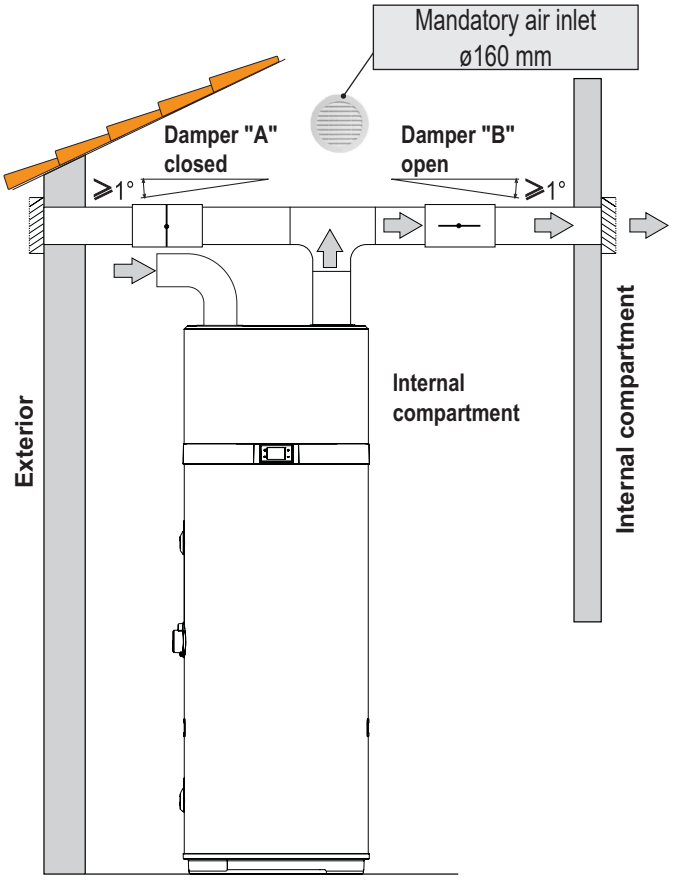


fig. 13 - Example of installation in the summer period

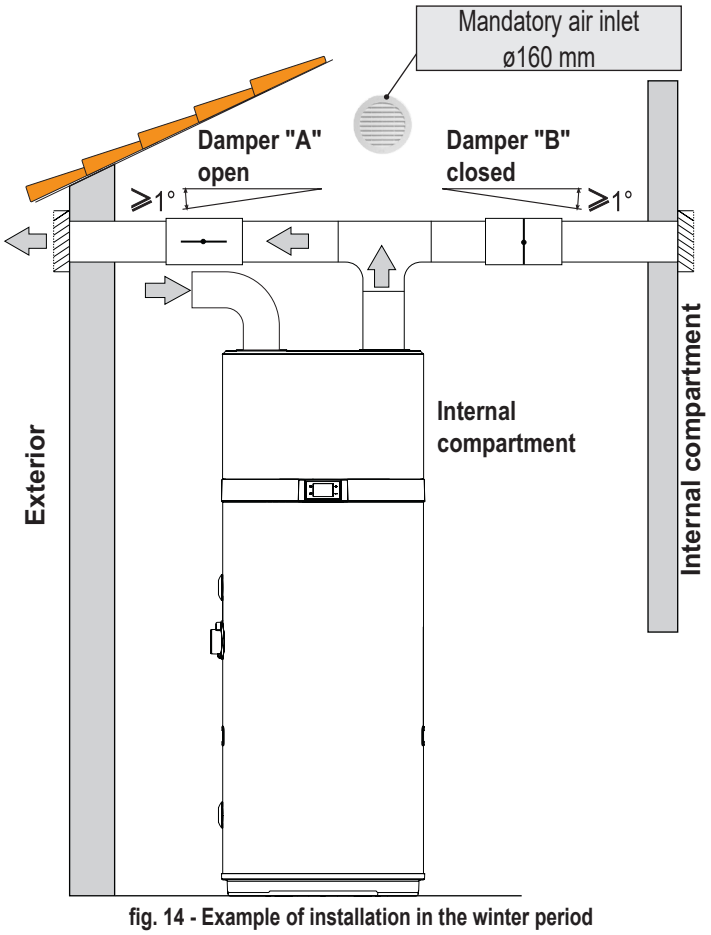


fig. 14 - Example of installation in the winter period

6.4 Securing and connections of this appliance

The product must be installed on a stable, flat floor that is not subject to vibrations.

6.5 Hydraulic connections

Connect the cold water supply line and the outlet line to the appropriate connection points (fig. 15).
The table below gives the characteristics of the connection points.

Ref.	Function	Model 200 HT / 260 HT
1	Cold water inlet	1"G
4	Recirculation	3/4"G
5	Hot water outlet	1"G
6	Condensate drain	1/2"G

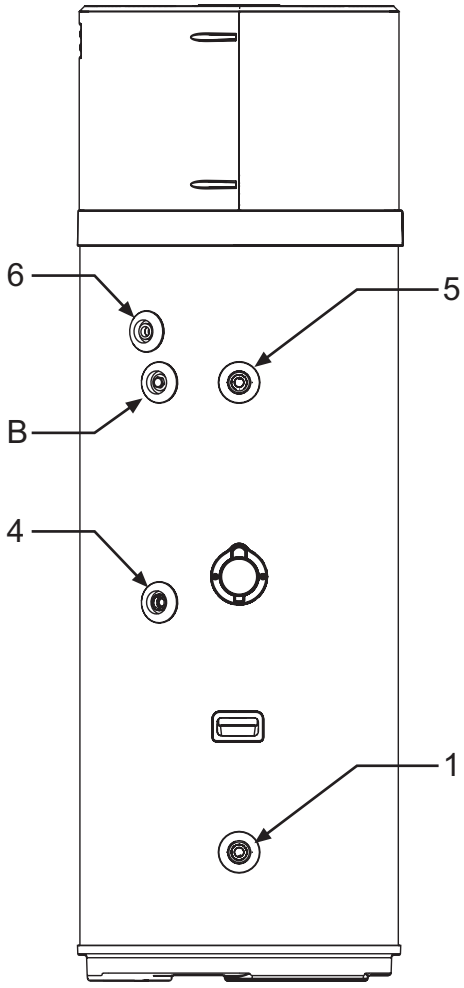


fig. 15

The following figure (fig. 16) illustrates an example of plumbing connection.

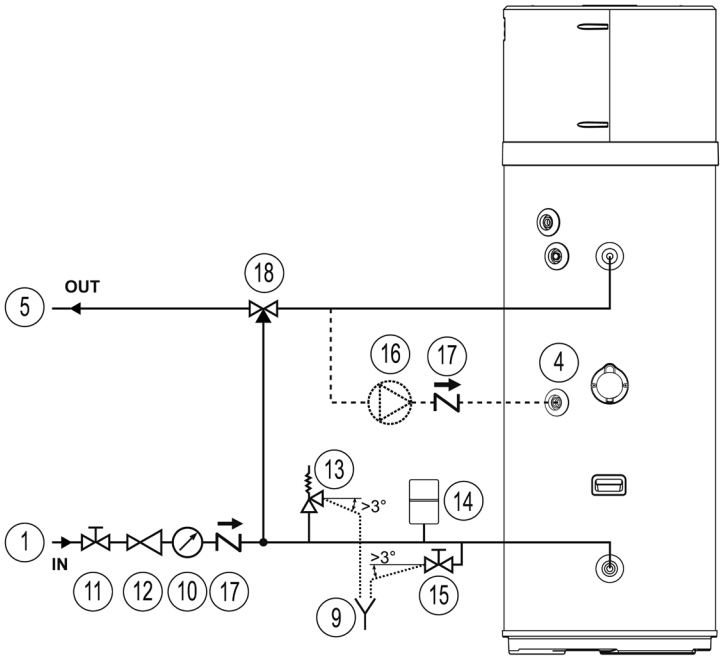


fig. 16 - Example of water system

Legend (fig. 16)

1 Water inlet pipe
4 Ricirculation water inlet
5 Hot water outlet pipe
9 Inspectionable end of discharge pipe
10 Pressure gauge
11 Shut-off valve
12 Pressure regulator
13 Safety valve
14 Expansion vessel
15 Drain tap
16 Recirculation pump
17 Spring check valve
18 Automatic thermostat mixing equipment

6.5.1 Condensate drain connection

The condensate forming during heat pump operation flows through a special drain pipe (1/2"G) that passes inside the insulating casing and comes out at the side of the equipment.
It must be connected, via a trap, to a duct so that the condensate can flow regularly (fig. 17).

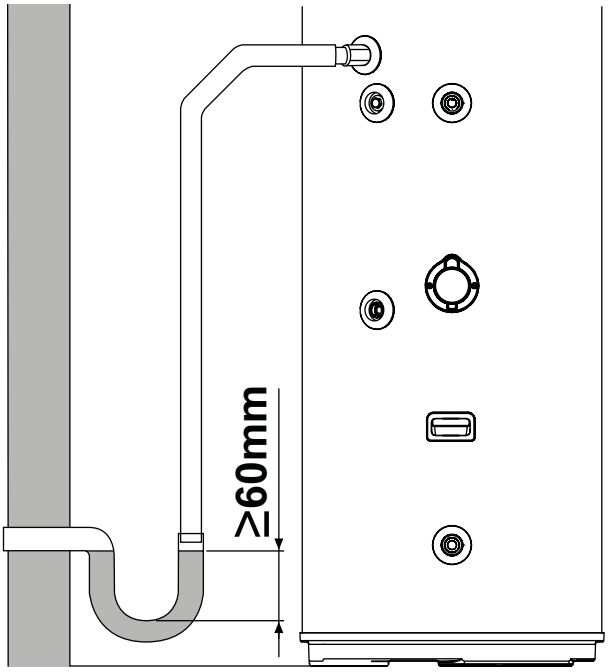


fig. 17 - Examples of condensate drain connection via a trap

6.6 Electrical connections

Before connect the appliance to AC mains, a check must be carry out on the electrical system to verify conformity to the regulations in force and that the electrical system can suitably withstand the water heater's maximum power consumption values (refer paragraph 3.2 for to technical characteristics), in terms of the size of the cables and their conformity to the regulations in force.

The appliance is supplied with a power cord with a Schuko plug (fig. 19) and for the connection with AC mains is required:

- a Schuko wall socket with ground and separate protection is required (fig. 18);
- an omnipolar 16 A circuit breaker with a contact opening of at least 3 mm;
- a 30 mA differential circuit breaker.

It is forbidden to use multiple outlet sockets, extension cables or adaptors.

It is forbidden to use piping from the water, heating and gas systems for earthing the appliance.

Prior to operating the machine, make sure that the electricity mains voltage conforms to the value indicated on the appliance's data plate.

The manufacturer of the appliance shall not be held liable for any damage caused by failure to earth the system or due to anomalies in the electric power supply..

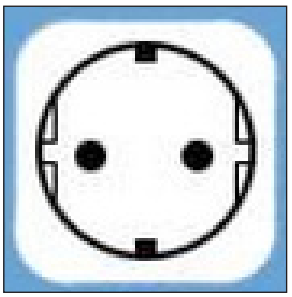


fig. 18 - Schuko socket

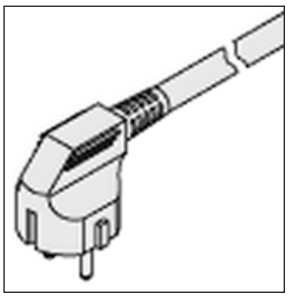


fig. 19 - Unit plug

6.6.1 Remote connections

The equipment is prearranged to be connected to other remote energy systems or energy meters (solar thermal, photovoltaic, Off-Peak)

INPUTS

- Digital 1 **(DIG1)**. NOT USABLE
  (THE TWO WIRES, WHITE AND BROWN, OF THE 6-CORE CABLE ARE NOT TO BE USED)

- Digital 2 **(DIG2)**. Digital input for photovoltaic. In case of a photovoltaic system connected to the plant, it can be used to subtract energy in the form of hot water in times of over-production. If there is a voltage-free contact, e.g. from the inverter, which closes when there is overproduction of energy, it can be connected to the two **green** and **yellow** wires of the 6-core cable supplied with the.equipment.
  Set the parameter **P23 = 1** to activate the supplement with photovoltaic.

- Digital 3 **(DIG3)**. Input for Off-Peak. This function, available only in some countries, allows the equipment to be activated only when there is a signal coming from outside with preferential tariff. If the electric contactor has a voltage-free contact which closes when the preferential tariff is available, it can be connected to the two **gray** and **pink** wires of the 6-core cable supplied with the equipment.
  Set the parameter **P24 = 1** to activate Off-peak in ECO mode or **P24 = 2** for Off-peak in AUTO mode.

6.6.1.1 Remote connection

For the connection to the digital inputs the equipment is supplied with an additional 6-core cable already connected to the PCBA (located inside the device). The remote connections to possible energy systems are the responsibility of the qualified installer (connection boxes, terminals and connection cables).
The following figures give an example of remote connection (fig. 20 and fig. 21) which must not be longer than **3 m**.

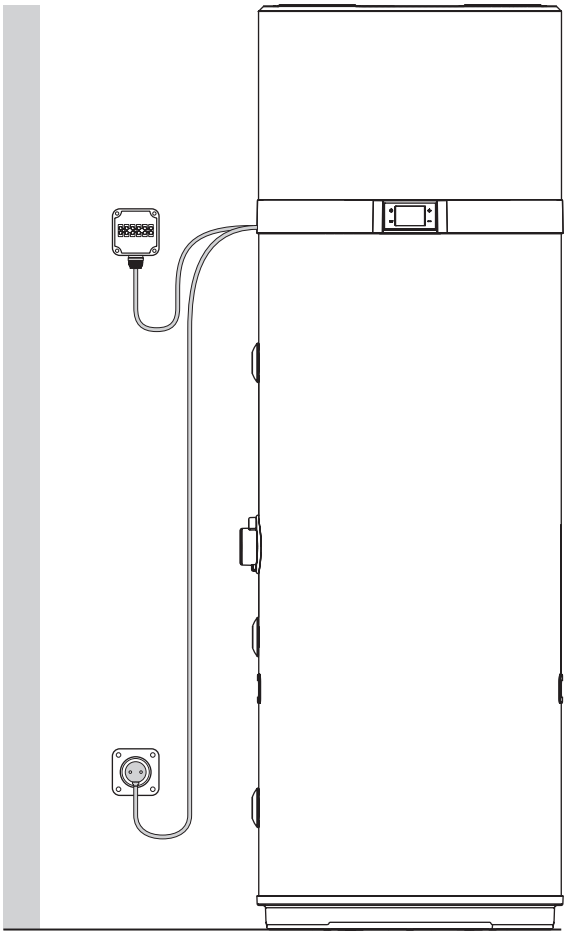


fig. 20 - Example of remote connection

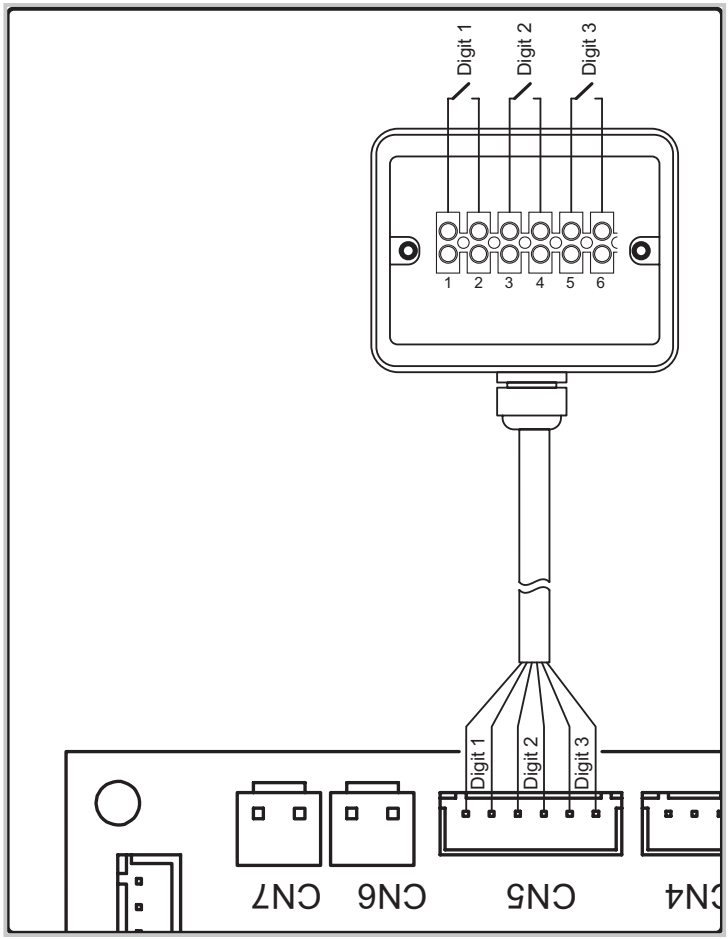


fig. 21

To access the 6-core cable for remote connection, remove the upper cover of the boiler and run to the outside the cable, already present inside the unit, through the special cable gland installed in the back cover.

6.7 Wiring diagram

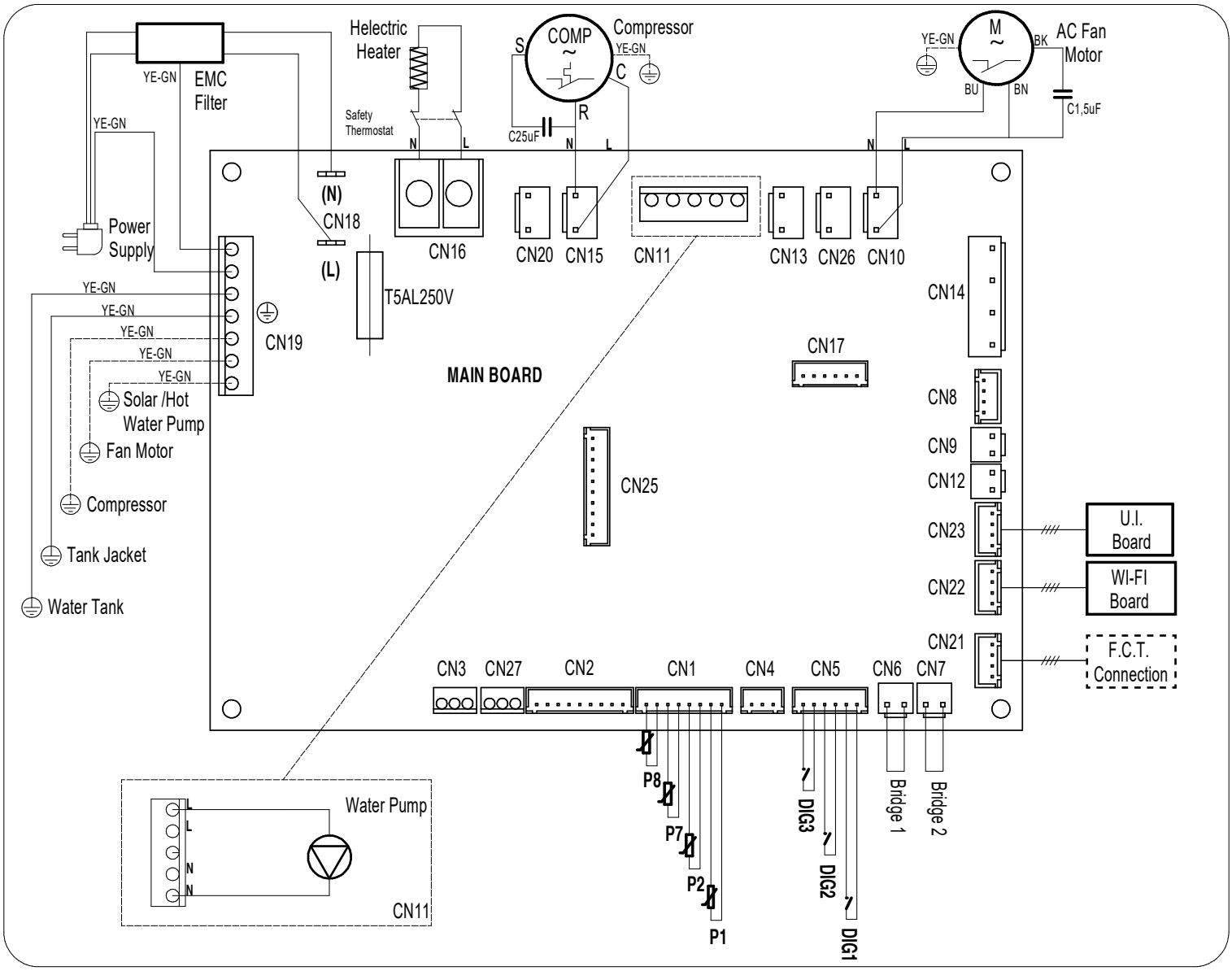


fig. 22 - Equipment wiring diagram

Description of connections available on the power board

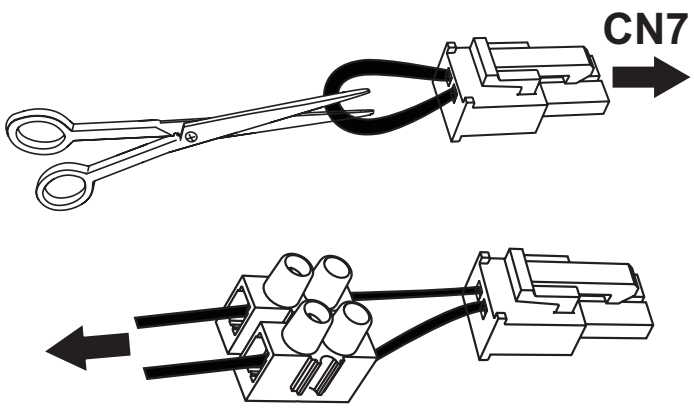
CN1	Air, defrost and water NTC probes
CN2	Not usable
CN3	Not usable
CN4	Not usable
CN5	Solar digital inputs (Not usable), PV, Off-peak
CN6	Not usable
CN7	Flow switch for DHW circulating pump
CN8	Not usable
CN9+CN12	Not usable
CN10	Fan power supply (AC)
CN11	DHW circulating pump (ON/OFF type)
CN13	Not usable
CN14	Not usable

CN15	Compressor power supply
CN16	Heating element power supply
CN17	Not usable
CN18	Main power supply 230 V - 1 PH - 50 Hz
CN19	Earth connections
CN20	230 Vac power supply for impressed current anode converter
CN21	Connection with end of line inspection/test
CN22	Wi-Fi card connection
CN23	User interface connection
CN25	Not usable

To connect a safety flow switch for the DHW recirculation circuit to the equipment, proceed as follows (reserved only for qualified technical personnel):

- Disconnect the power to the equipment.
- Remove the top cover of the equipment and then the power board cover.
- Disconnect the “jumper” (bridge 2) from connector CN7 of the power board, then cut the conductor forming the bridge in the middle and connect a suitable terminal.
- Then connect a normally-closed (N.C.) type flow switch and connect everything to CN7.
- Reassemble all the plastics and make sure the equipment is correctly installed before powering it.

If, instead, a normally-open (N.O.) type flow switch is used, it is necessary to set the parameter **P15 = 1** (see par.“8.1 Query, editing operating parameters” on page 108).



7. DESCRIPTION OF USER INTERFACE AND OPERATION OF EQUIPMENT

fig. 23

Description	Symbol
"On/Off" button for switching on, putting the product in standby mode, unlocking buttons, saving changes	
"Set" button to edit the parameter value, confirm;	
“Increase” button to increase the set-point value, parameter or password	
“Decrease” button to decrease the set-point value, parameter or password	
Heat pump operation (ECO mode)	HP
Heating element operation (ELECTRIC mode)	
AUTOMATIC mode	HP +
BOOST mode (symbols flash)	HP +
Button lock active	
Defrost	
Frost protection	
Anti-legionella cycle	
Holiday mode;	
Operation with time bands	
Clock setting (symbol flashes)	
Connected with Wi-Fi	
Photovoltaic mode (with symbol flashing the supplement is not active)	
(not available for these models)	
Fault or protection active	
Off-Peak mode (with symbol flashing the equipment remains on standby)	

The user interface of this water heater model consists of four capacitive buttons, and a LED display.

As soon as the water heater is powered the four buttons are backlit and all the icons and display segments light up simultaneously for 3 s.
During normal operation of the product the three digits on the display show the water temperature in °C, measured with the upper water probe if parameter P11 is set to 1 or with the lower water probe if P11 = 0.
During modification of the selected operating mode set-point, the set-point temperature is shown on the display.
The icons indicate the selected operating mode, the presence or not of alarms, Wi-Fi connection status, and other information on product status.

7.1 Turning the water heater on and off and unlocking the buttons

When the water heater is correctly powered it can be "ON" and, therefore, in one of the available operating modes (ECO, Automatic, etc.) or in standby mode.
During standby mode the four capacitive buttons are backlit for easy visibility, the Wi-Fi icon is lit up according to the connection status with an external Wi-Fi router (not supplied) and, in the absence of alarms or frost protection active, all other icons as well as the segments of the three digits are off.

Turning on
With the water heater in standby mode and "button lock" function active (padlock icon at the bottom left lit up), it is necessary to first "unlock" the buttons by pressing the ON/OFF button for at least 3 seconds (the padlock icon goes off), then press the ON/OFF button again for 3 seconds to turn on the water heater.

Turning off
With the water heater on and "button lock" function active, it is necessary to first "unlock" the buttons by pressing the ON/OFF button for at least 3 seconds, then press the ON/OFF button again for 3 seconds to turn off the water heater (putting in standby mode).
In any status, 60 seconds after the last press of any of the four user interface buttons, the button lock function is automatically activated to prevent possible interactions with the water heater, e.g. by children, etc. At the same time the backlighting level of the buttons and display decreases to reduce the unit's energy consumption.
By pressing any of the four buttons, the backlighting of the buttons and display will immediately return to its normal level for better visibility.

7.2 Setting the clock

With the buttons unlocked, press the button ✓ for 3 seconds to access the clock settings (the symbol 🕒 flashes).
Set the time with the "+" and "-" buttons, press " ✓ " to confirm and then set the minutes.
Press the button ✓ to confirm and exit.

7.3 Setting time bands

The equipment clock must be set before activating the time bands.
Select the desired operating mode then set the time bands.
The time bands can be activated only in the ECO - AUTOMATIC - BOOST - ELECTRIC and VENTILATION modes.
With the buttons released, press th button ✓ and "-" button together for 3 seconds to set the time bands (the symbol 🕒 is displayed).
Set the switch-on time using the "+" and "-" buttons, press " ✓ " to confirm and then set the On minutes.
Press ✓ to confirm and go to switch-off time setting.
Press ✓ to confirm, then, using the "+" and "-" buttons, select the desired operating mode for the time band (ECO, AUTOMATIC, BOOST, ELECTRIC, VENTILATION).
Press ✓ to confirm and exit.
Note: At the end of the time band the equipment goes to standby mode and remains there until repetition of the time band the next day

To deactivate the time bands:
- set the on and off times to midnight (00:00);
- press ✓ to confirm;
- press button ✓ and "-" button together for 3 seconds (the symbol 🕒 goes off).

7.4 Setting the hot water set-point

It is possible to adjust the hot water set-point in the ECO, AUTOMATIC, BOOST and ELECTRIC modes
Select the desired mode with the button ✓ , then adjust the set-point with the "+" and "-" buttons.
Press the button ✓ to confirm and ⏻ to exit.

Mode	Hot water set-point	
	Range	Default
ECO	38÷62°C	55°C
AUTOMATIC	38÷62°C	55°C
BOOST	38÷75°C*	55°C
ELECTRIC	38÷75°C	55°C

* In BOOST mode the maximum set-point value for the heat pump is 62°C. Therefore, by setting a higher value this is to be considered only for the heating element.

7.5 Operating mode

The following modes are available for this water heater:
- ECO;
- BOOST;
- ELECTRIC;
- VENTILATION;
- HOLIDAY;
- AUTOMATIC.

The equipment is set in ECO mode; pressing this button ✓ it is possible to select the desired mode.

7.5.1 ECO

The display shows the symbol **HP**

With this mode only the heat pump is used within the product operating limits to ensure maximum possible energy saving.
The heat pump is switched on 5 minutes after selecting this mode or from the last switch-off.
In case of switching off, within the first 5 minutes, the heat pump will remain on anyway to ensure at least 5 minutes of continuous operation.

7.5.2 AUTOMATIC

The display shows the symbol **HP** + .

With this mode the heat pump is used and, if necessary, also the heating element, within the product operating limits, to ensure best possible comfort.
The heat pump is switched on 5 minutes after selecting this mode or from the last switch-off.
In case of switching off, within the first 5 minutes, the heat pump will remain on anyway to ensure at least 5 minutes of continuous operation.

7.5.3 BOOST

The display shows the symbols **HP** + flashing.

This mode uses the heat pump and the heating element, within the product operating limits, to ensure faster heating.
The heat pump is switched on 5 minutes after selecting this mode or from the last switch-off.
In case of switching off, within the first 5 minutes, the heat pump will remain on anyway to ensure at least 5 minutes of continuous operation.
The heating element is switched on immediately.

7.5.4 ELECTRIC

The display shows the symbol .

With this mode only the heating element is used within the product operating limits and is useful in situations of low inlet air temperatures.

7.5.5 VENTILATION

The display shows the message FAn.

With this mode only the electronic fan inside the equipment is used and is useful for recirculating the air in the installation room if desired.
In automatic mode the fan will be adjusted to the minimum speed.

7.5.6 HOLIDAY

The display shows the symbol .

This mode is useful when away for a limited time and then automatically finding the equipment working in automatic mode.
Using the + and - buttons it is possible set the days of absence during which the equipment is to remain in standby mode.
Press ✓ and then on off to confirm.

7.5.7 Solar Mode HP+ or HP+ + or +

(*Only for models* **LT-S**)

When the solar mode is activated from the installer menu, only ECO - AUTOMATIC - HOLIDAY will be available.

When the symbol on the display flashes, the solar mode is not operating and the unit works in the set mode: ECO, AUTOMATIC or HOLIDAY.
When the symbol on the display is lit up, the energy produced by the solar system is used to heat the water inside the tank via the solar coil.

7.5.8 Photovoltaic Mode HP+ or HP+ + or +

When the photovoltaic mode is activated from the installer menu, only ECO - AUTOMATIC - HOLIDAY will be available.
When the symbol on the display flashes, the photovoltaic mode is not operating and the unit works in the set mode: ECO, AUTOMATIC or HOLIDAY.
When the symbol on the display is lit up, the energy produced by the photovoltaic system is used to heat the water inside the tank.

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With ECO mode selected, the heat pump will operate until the set-point is reached and the heating element is switched on until the photovoltaic set-point set from the installer menu is reached.
Otherwise, with AUTOMATIC mode selected, the heating element can also be switched on before reaching the set-point of this mode if the conditions require it.

7.5.9 Off-Peak Mode HP + ⏱ or HP + ♨ + ⏱

When the photovoltaic mode is activated from the installer menu, only ECO - AUTOMATIC will be available.
When the symbol ⏱ on the display flashes, the Off-Peak mode is not operating and the unit remains on standby and the heat pump and heating element are off.
Otherwise, when the symbol ⏱ on the display is lit up, the unit works in the ECO or AUTOMATIC mode.

7.6 Additional functions

7.6.1 Anti-Legionella

The display shows the symbol ◐.

Every two weeks, at the set time, a water heating cycle is carried out by means of the heating element inside the tank, up to the anti-legionella temperature, maintaining it for the set time.
If, on reaching the anti-legionella temperature, the cycle is not performed correctly within 10 hours, it is stopped and will be run again after 2 weeks.
If the request for the anti-legionella function occurs with HOLIDAY mode selected, the anti-legionella cycle will be carried out immediately when the unit is reactivated after the set days of absence.

Anti-legionella parameters	Range	Default
Anti-legionella temperature set-point (P3)	50÷75°C	75°C
Anti-legionella cycle duration (P4)	0÷90 min	30 min
Anti-legionella cycle activation time (P29)	0÷23 h	23 h

7.6.2 Defrost function

The display shows the symbol ❄.

This equipment has an automatic evaporator defrost function which is activated, when the operating conditions require it, during heat pump operation.
Defrosting occurs through the injection of hot gas into the evaporator, allowing it to be rapidly defrosted.
During defrosting, the heating element, which the equipment is provided with, is switched off unless otherwise set via the installer menu (parameter P6).
The max. duration of defrosting is 8 minutes, unless otherwise specified.

7.6.2.1 Frost protection

The display shows the symbol ❄.

This protection prevents the water temperature inside the tank from reaching values close to zero.
With the equipment in standby mode, when the water temperature inside the tank is below or equal to 5°C (parameter configurable via installer menu), the frost protection function activates, which switches on the heating element until 12°C is reached (parameter configurable via installer menu).

7.7 Control of equipment via APP

This water heater has a Wi-Fi module integrated in the product, enabling connection to an external Wi-Fi router (not supplied) and therefore being controlled via smartphone APP.
Depending on the availability of a smartphone with Android® or iOS® operating system, via the dedicated app.

Google Play App Store

Download and install the **"DORA Smart"** app

DORA Smart

Start the **"DORA Smart"** app from your smartphone by pressing the icon as indicated above.

User registration

To use the **"DORA Smart"** application for the first time, user registration is required: create a new account → enter the mobile number/email address → enter the verification code and set the password → confirm.

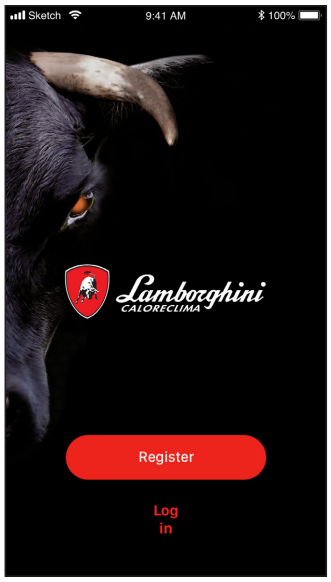

fig. 24

Press the register button to register, then enter your mobile number or email address to obtain the verification code needed for registration.
Press the “+” button at the top right to select your water heater model (DORA pedestal).

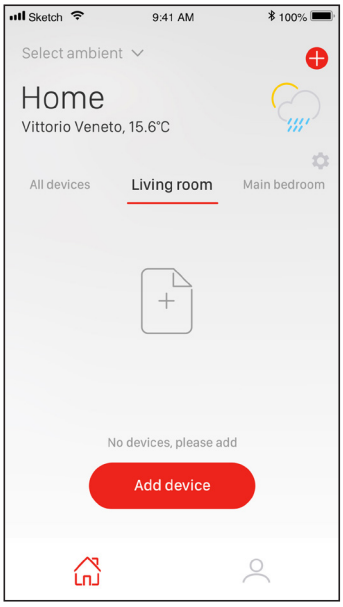

fig. 25

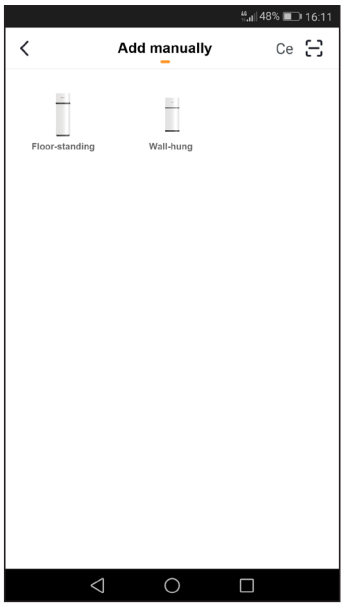

fig. 26

Make sure the equipment is powered.
With the buttons released, press the button ✓ + ⏻ together for 5 seconds. When the Wi-Fi symbol on the display flashes fast, press the confirm button on the App.

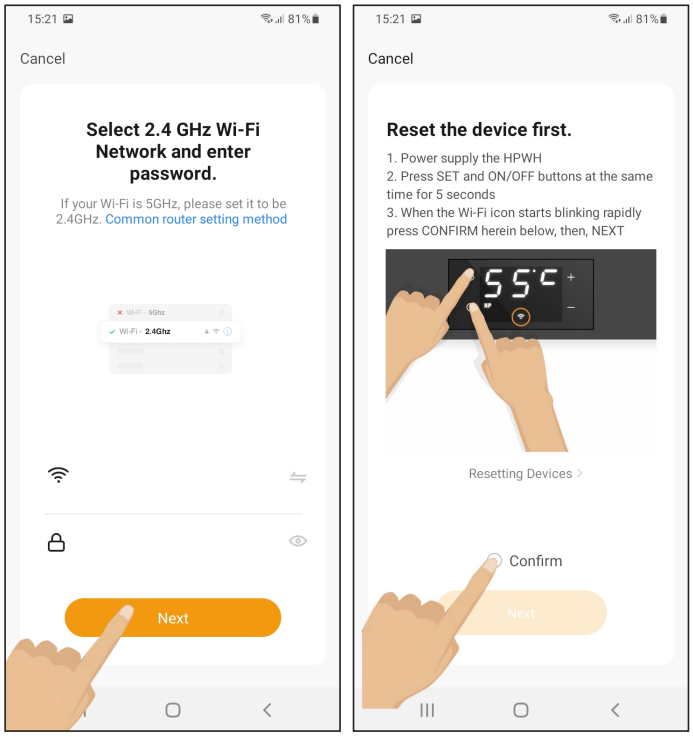

fig. 27

Select the Wi-Fi network and enter the password of the network for connecting the equipment, then press confirm on the App.

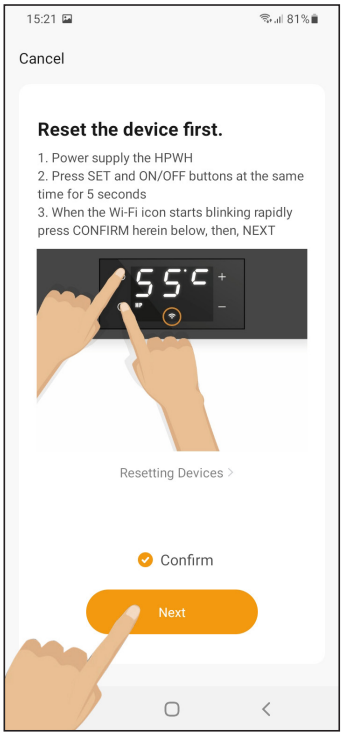

fig. 28

Wait for the equipment to be connected to the router.

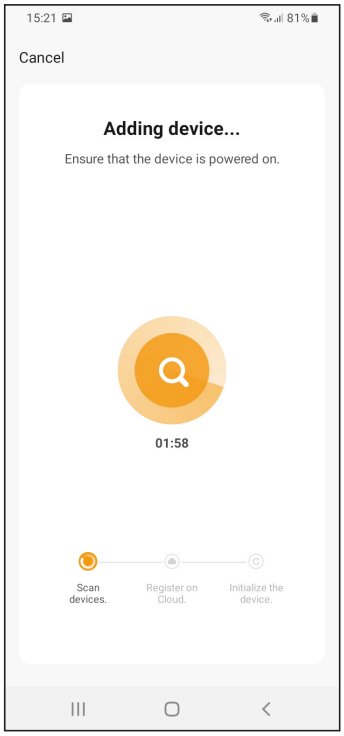

fig. 29

If the procedure for connection with the Wi-Fi router was successful, you will see your device added as shown below.

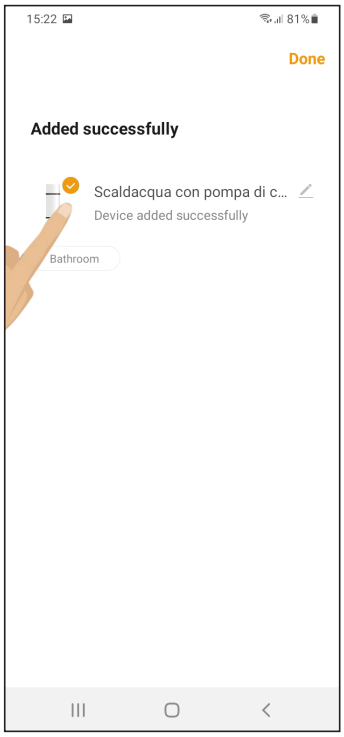

fig. 30

Press on the icon of the equipment to access the control panel

fig. 31

Press on the symbol Auto to select, for example, the automatic operating mode.

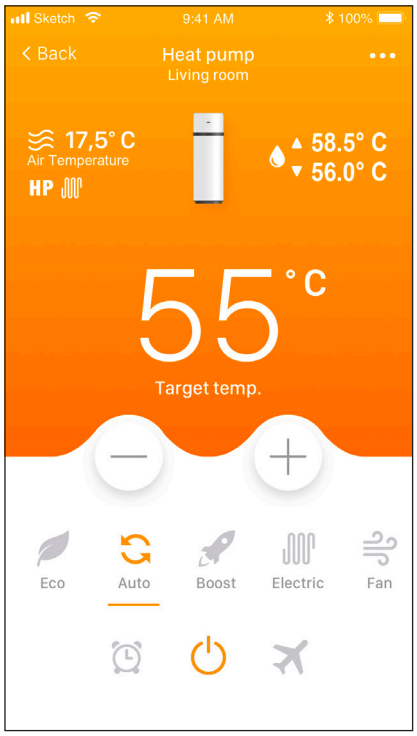

fig. 32

The time bands can be activated, in any operating mode except HOLIDAY, by pressing the symbol

Then press on the symbol of the following image.

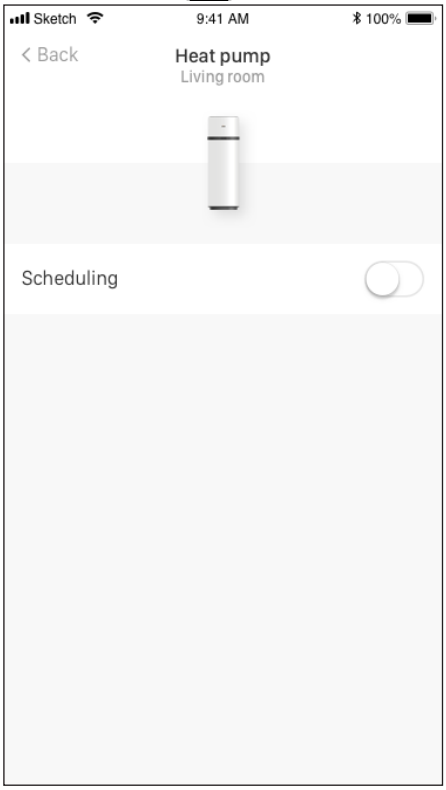

fig. 33

Set the operating mode desired during time band operation, the equipment switch-on and switch-off time and press the confirm button.
Now, press the back button at the top left.

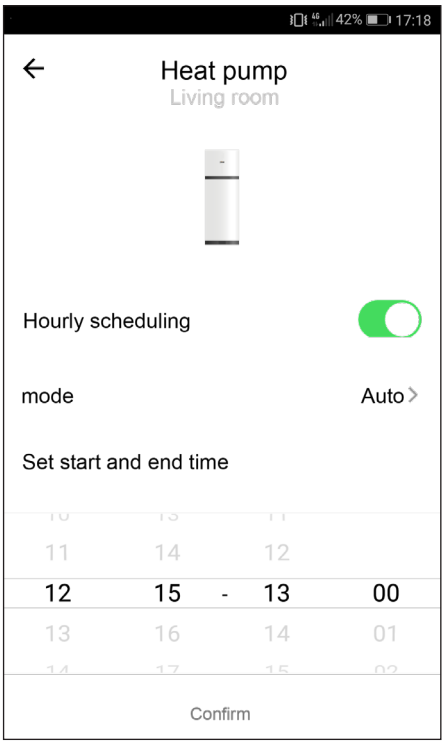

fig. 34

When time band operation is activated, outside the time band the equipment is in standby mode and this is the screen displayed.

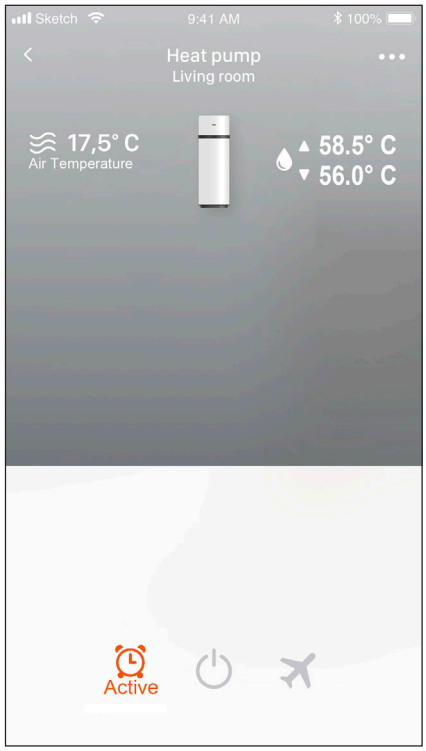

fig. 35

Holiday mode can be activated in any operating mode by pressing on the symbol . Then press on the symbol of the following image.

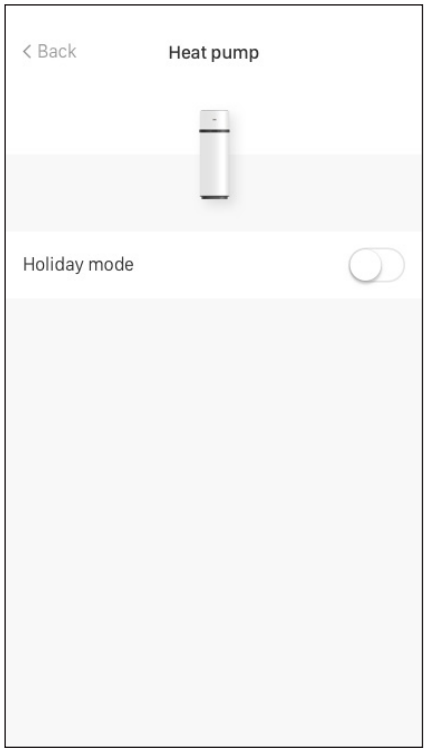

fig. 36

Set the number of days of absence and press confirm

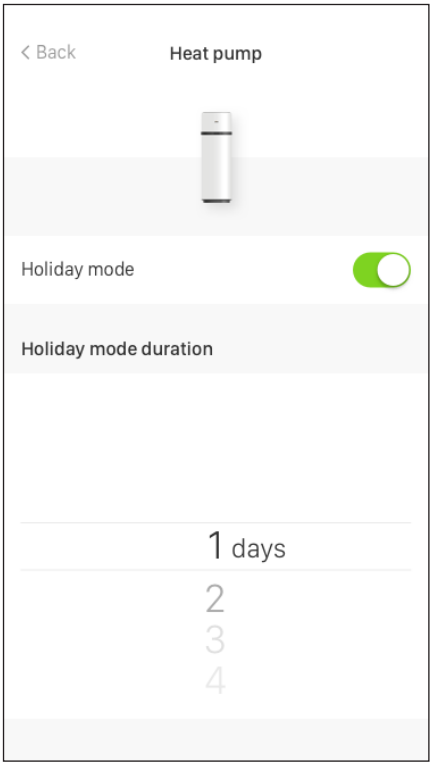

fig. 37

To disable the holiday mode before its end, press the holiday mode “disable” button.

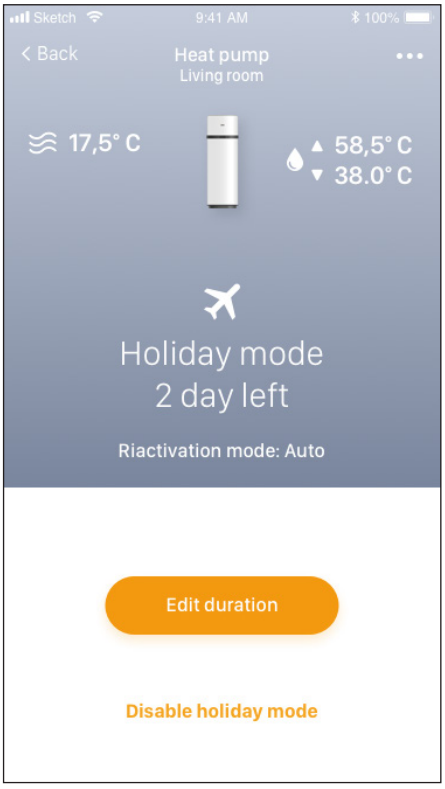

fig. 38

Then press confirm on the next screen.

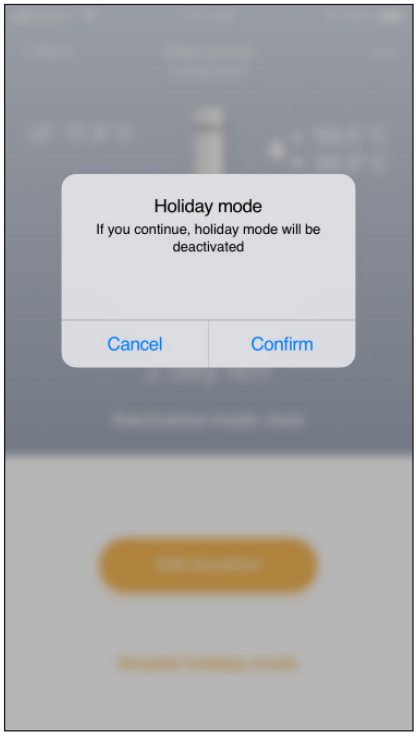

fig. 39

From the App it is possible to turn off the equipment by pressing on the on/off symbol (the symbol is orange when the equipment is on).

7.8 Faults/protection

This equipment has a self-diagnosis system that covers some possible faults or protections from anomalous operating conditions through: detection, signaling and adoption of an emergency procedure until resolution of the fault.

Fault/Protection	Error code	Display indication
Tank lower probe fault	P01	+ P01
Tank upper probe fault	P02	+ P02
Defrost probe fault	P03	+ P03
Inlet air probe fault	P04	+ P04
Evaporator inlet probe fault (not available for these models)	P05	+ P05
Evaporator outlet probe fault (not available for these models)	P06	+ P06
Compressor discharge probe fault (not available for these models)	P07	+ P07
Solar collector probe fault (not available for these models)	P08	+ P08
High pressure protection (not available for these models)	E01	+ E01
Recirculation circuit alarm	E02	+E02
Temperature not suitable for heat pump operation alarm (With alarm active the water is heated only with heating element)	PA	+PA
No communication (with alarm active the equipment does not work)	E08	+ E08
Electronic fan fault (not available for these models)	E03	+ E03

In case of any of the above faults, it is necessary to contact the manufacturer's technical assistance service, indicating the error code shown on the display or on the APP for smartphone.

8. COMMISSIONING

ATTENTION!: Check that the equipment has been connected to the ground wire.

ATTENTION!: Check that the line voltage is that indicated on the equipment rating plate.

CAUTION: The appliance can only be turned on after it has been filled with water.

Proceed with the following operations for commissioning:

- Once the appliance is installed and all connections are performed (aeraulic, hydraulic, electrical, etc), it must be filled with water from the domestic water supply network. In order to fill the appliance, it is necessary to open the central tap of the domestic network supply and the nearest hot water tap, while making sure that all the air in the tank is gradually expelled.
- Do not exceed the max. permissible pressure indicated in the "general technical data" section.
- Check the water circuit safety devices.
- Plug the unit into the power outlet.
- When the plug is inserted, the boiler is in standby mode, the display remains off, the power button lights up.
- Press the ON/OFF button, the unit is activated in "ECO" mode (factory setting).

In case of a sudden power outage, when restored the equipment will restart from the operating mode prior to the interruption.

8.1 Query, editing operating parameters

This equipment has two distinct menus, respectively, for consulting and editing the operating parameters (see “8.1.1 List of equipment parameters”).
With the equipment operating, the parameters can be freely consulted at any time by unlocking the buttons (see “7.1 Turning the water heater on and off and unlocking the buttons”) and pressing the " ✓ " and "+" buttons together for 3 seconds. The label of the first parameter is shown on the display with the letter "A". Pressing the "+" button displays its value and, pressing this button again, the label of the second parameter "B" is displayed, and so on.
The entire parameter list can then be scrolled forward/back with the "+" and "-" buttons.
Press the "ON/OFF" button to exit.
Editing one or more operating parameters can only be done with the equipment in standby mode and requires the password to be entered.

NB!: “Use of the password is reserved for qualified personnel; any consequences due to incorrect parameter settings will be the sole responsibility of the customer. Therefore, any interventions requested by the customer from an authorized technical assistance center FERROLI during the standard warranty period, for product problems due to incorrect settings of password-protected parameters, will not be covered by the standard warranty.”.

With buttons unlocked, **only in standby mode**, press the " ✓ " and "+" buttons together for 3 seconds to access the equipment parameter editing menu (password protected: 35). The display shows the two digits "00". Press the " ✓ " button. The digit "0" on the left flashes and with "+" and "-" select the first number to enter (3) and press " ✓ " to confirm. Proceed in the same way for the second digit (5).
If the password is correct, the parameter P1 is displayed. Pressing the "+" button displays the default value of this parameter which can be modified by pressing ✓ , and using the "+" and "-" buttons it is possible to change the value within the permissible range for this parameter. Then press ✓ to confirm and the "+" button to continue with the other parameters.
After editing the desired parameters, press the on/off button to save and exit.
The equipment now returns to standby mode.

8.1.1 List of equipment parameters

Parameter	Description	Range	Default	Notes
A	Tank lower probe temperature	-30÷99°C	Measured value	Not modifiable
B	Tank upper probe temperature	-30÷99°C	Measured value	Not modifiable
C	Defrost probe temperature	-30÷99°C	Measured value	Not modifiable
D	Inlet air probe temperature	-30÷99°C	Measured value	Not modifiable
E	Evaporator input probe temperature	-30÷99°C	Measured value / "0°C" if P33 = 0	Not modifiable (1)
F	Evaporator outlet probe temperature	-30÷99°C	Measured value / "0°C" if P33 = 0	Not modifiable (1)
G	Compressor delivery temperature	0÷125°C	Measured value / "0°C" if P33 = 0	Not modifiable (1)
H	Solar collector probe temperature (PT1000)	0÷150°C	Measured value / "0°C" if P16 = 2	Not modifiable (1)
I	EEV opening steps	30÷500	Measured value or value of P40 if P39 = 1	Not modifiable (1)
J	Power board firmware version	0÷99	Current value	Not modifiable
L	User interface firmware version	0÷99	Current value	Not modifiable
P1	Hysteresis on lower tank probe for heat pump operation	2÷15°C	7°C	Modifiable
P2	Heating element switch-on delay	0÷90 min	6 min	Function excluded
P3	Anti-legionella temperature set-point	50°C÷75°C	75°C	Modifiable
P4	Anti-legionella duration	0÷90 min	30 min	Modifiable
P5	Defrost mode	0 = compressor stop 1 = hot-gas	0	Modifiable
P6	Heating element use during defrosting	0 = off 1 = on	0	Modifiable
P7	Interval between defrost cycles	30÷90 min	45 min	Modifiable
P8	Temperature for defrost start	-30÷0°C	-2°C	Modifiable
P9	Temperature for defrost end	2÷30°C	3°C	Modifiable
P10	Defrost cycle max. duration	3min÷12min	8 min	Modifiable
P11	Tank probe temperature shown on display	0 = lower 1 = upper	1	Modifiable
P12	Type of external pump operation	0 = function excluded 1 = recirculation function 2 = solar function	1	Modifiable
P13	Type of hot water recirculating pump operation	0 = operation with HP 1 = continuous operation	0	Modifiable
P14	Type of evaporator fan (EC; AC; AC with double speed; EC with dynamic speed control)	0 = EC 1 = AC 2 = AC with double speed 3 = EC with dynamic speed control	1	Modifiable
P15	Type of safety flow switch for hot / solar water, low pressure switch activation	0 = NC 1 = NO	0	Modifiable
P16	Solar thermal supplement	0 = NC 1 = NO 2 = low pressure selection switch	0	Modifiable (1)
P17	Heat pump start delay after release DIG.1 in solar mode = 1 (with DIG1)	10÷60min	20 min	Modifiable (1)
P18	Tank lower probe temperature for heat pump stop in solar mode = 1 (with DIG.1)	20÷60°C	40°C	Modifiable (1)
P19	Hysteresis for pump switch-on in solar mode = 2 (solar thermal system control)	5÷20°C	10°C	Modifiable (1)
P20	Solar shutter / discharge valve intervention temperature in solar mode = 2 (solar thermal system control)	100÷150°C	140°C	Modifiable (1)
P21	Tank lower probe temperature for heat pump stop in photovoltaic mode	30÷70°C	62°C	Modifiable

Parameter	Description	Range	Default	Notes
P22	Tank upper probe temperature for heating element stop in photovoltaic mode	30÷80°C	75°C	Modifiable
P23	Photovoltaic supplement	0 = function excluded 1 = enabled	0	Modifiable
P24	Operating mode during Off-peak	0 = function excluded 1 = ECO 2 = Automatic	0	Modifiable
P25	Offset for tank upper probe	-25÷25°C	0°C	Modifiable
P26	Offset for tank lower probe	-25÷25°C	0°C	Modifiable
P27	Inlet air probe offset	-25÷25°C	0°C	Modifiable
P28	Offset for defrost probe	-25÷25°C	0°C	Modifiable
P29	Anti-legionella cycle activation time	0÷23 hours	23 hours	Modifiable
P30	Hysteresis on upper tank probe for heating element operation	2÷20°C	7°C	Modifiable
P31	Working time of heat pump in Automatic mode for calculating heating speed	10÷80 min	30 min	Modifiable
P32	Threshold on tank lower probe for heating element switch-on in Automatic mode	0÷20°C	4°C	Modifiable
P33	EEV use	0 = not used 1 = used	0	Modifiable (1)
P34	Overheating calculation interval for EEV with automatic control	20÷90s	30 s	Modifiable (1)
P35	Overheating set-point for EEV with automatic control	-8 ÷15°C	4°C	Modifiable (1)
P36	Desuperheating set-point for EEV with automatic control	60÷110°C	88°C	Modifiable (1)
P37	EEV opening step during defrosting (x10)	5÷50	15	Modifiable (1)
P38	EEV minimum opening step with automatic control (x10)	3~45	9	Modifiable (1)
P39	EEV control mode	0 = automatic 1 = manual	0	Modifiable (1)
P40	EEV initial opening step with automatic control / EEV opening set-point with manual control (x10)	5÷50	25	Modifiable (1)
P41	AKP1 threshold for KP1 gain	-10÷10°C	-1°C	Modifiable (1)
P42	AKP2 threshold for KP2 gain	-10÷10°C	0°C	Modifiable (1)
P43	AKP3 threshold for KP3 gain	-10÷10°C	0°C	Modifiable (1)
P44	EEV KP1 gain	-10÷10	2	Modifiable (1)
P45	EEV KP2 gain	-10÷10	2	Modifiable (1)
P46	EEV KP3 gain	-10÷10	1	Modifiable (1)
P47	Max. inlet air temperature for heat pump operation	30÷50°C	43°C	Modifiable
P48	Min. inlet air temperature for heat pump operation	-10÷10°C	4°C	Modifiable
P49	Inlet air temperature threshold for setting the electronic fan speed or two-speed AC	10÷40°C	25°C	Modifiable (1)
P50	Tank lower probe temperature for frost protection	0÷15°C	12°C	Modifiable
P51	EC evaporator fan upper speed set-point	60÷100%	65%	Modifiable (1)
P52	EC evaporator fan lower speed set-point	10÷60%	40%	Modifiable (1)
P53	EC evaporator fan defrost speed setpoint	0÷100%	50%	Modifiable (1)
P54	Low pressure switch bypass time	1÷240 min	1	Modifiable (1)
P55	Band 1 evaporator temperature proportional regulation	1÷20°C	4°C	Modifiable (1)
P56	Differential temperature with activation of maximum speed	P57÷20°C	2°C	Modifiable (1)
P57	Differential temperature with deactivation of maximum speed	1°C÷P56	1°C	Modifiable (1)

Parameter	Description	Range	Default	Notes
P58	Use of the evaporator fan with the compressor off	0 = OFF 1 = ON with manual speed control 2 = ON with automatic speed control	0	Modifiable (1)
P59	Evaporator fan speed (EC) with compressor off	0÷100%	40%	Modifiable (1)
P60	Temperature difference 1 of evaporation of the air for the calculation of the setpoint	1÷25°C	4°C	Modifiable (1)
P61	Temperature difference 2 of evaporation of the air for the calculation of the setpoint	1÷25°C	2°C	Modifiable (1)
P62	Temperature difference 3 of evaporation of the air for the calculation of the setpoint	1÷25°C	6°C	Modifiable (1)
P63	Temperature difference 4 of evaporation of the air for the calculation of the setpoint	1÷25°C	3°C	Modifiable (1)
P64	Temperature difference 5 of evaporation of the air for the calculation of the setpoint	1÷25°C	10°C	Modifiable (1)
P65	Temperature difference 6 of evaporation of the air for the calculation of the setpoint	1÷25°C	18°C	Modifiable (1)
P66	Band 2 evaporator temperature proportional regulation	1÷20°C	2°C	Modifiable (1)
P67	Band 3 evaporator temperature proportional regulation	1÷20°C	9°C	Modifiable (1)
P68	Band 4 evaporator temperature proportional regulation	1÷20°C	5°C	Modifiable (1)
P69	Band 5 evaporator temperature proportional regulation	1÷20°C	10°C	Modifiable (1)
P70	Band 6 evaporator temperature proportional regulation	1÷20°C	5°C	Modifiable (1)
P71	EC evaporator fan speed reduction for silent mode	0÷40%	15%	Modifiable (1)
P72	EC fan speed regulator gain	1÷100	5	Modifiable (1)

(1) = NOT USABLE FOR THIS EQUIPMENT

9. TROUBLESHOOTING

CAUTION: Do not attempt to repair your appliance Yourself.
The followings checks are reserved for qualified personnel only.

Fault	Recommended action
The equipment does not switch on	• Check that the product is actually powered by the mains. • Disconnect the equipment then reconnect it after a few minutes. • Check the power cable inside the product. • Check that the fuse on the power board is intact. If not, replace it with an IEC-60127-2/II certified time-delay 5 A fuse (T5AL250V).
Water cannot be heated via the heat pump in ECO or AUTOMATIC mode	• Switch the equipment off, then switch it on again after a few hours. • Disconnect the equipment from the mains, drain part of the water contained in the tank (approx. 50%) then refill it and switch the equipment on again in ECO mode.
The heat pump remains on without ever stopping	• Without drawing hot water from the product, check that in a few hours heating via heat pump occurs positively.
Water cannot be heated via the integrated heating element in AUTOMATIC mode	• Switch off the equipment and check the safety thermostat of the heating element inside the equipment and reset it if necessary. Then switch on the equipment in AUTOMATIC mode. • Disconnect the equipment from the mains, drain part of the water contained in the tank (approx. 50%) then refill it and switch the equipment back on again in AUTOMATIC mode. • Access the installer menu and increase the value of parameter P32, e.g. to 7°C. • Check that the heating element safety thermostat has not intervened (see “9.2 Heating element safety thermostat reset” on page 113)
The product cannot be controlled via APP	• Check that there is Wi-Fi network coverage, e.g. via smartphone where the product is installed, then carry out the configuration procedure again with the router. Make sure the Wi-Fi symbol on the display is lit up steady.

9.1 Power board fuse replacement

Proceed as indicated below (reserved for qualified technical personnel only):

- Disconnect the power to the equipment.
- Remove the top cover of the equipment and then the power board cover.
- Remove the fuse cap, then the fuse, using a suitable screwdriver.
- Install a new IEC-60127-2/II certified time-delay **5 A 250V** fuse (**T5AL250V**), then refit the protective cap.
- Reassemble all the plastics and make sure the equipment is correctly installed before powering it.

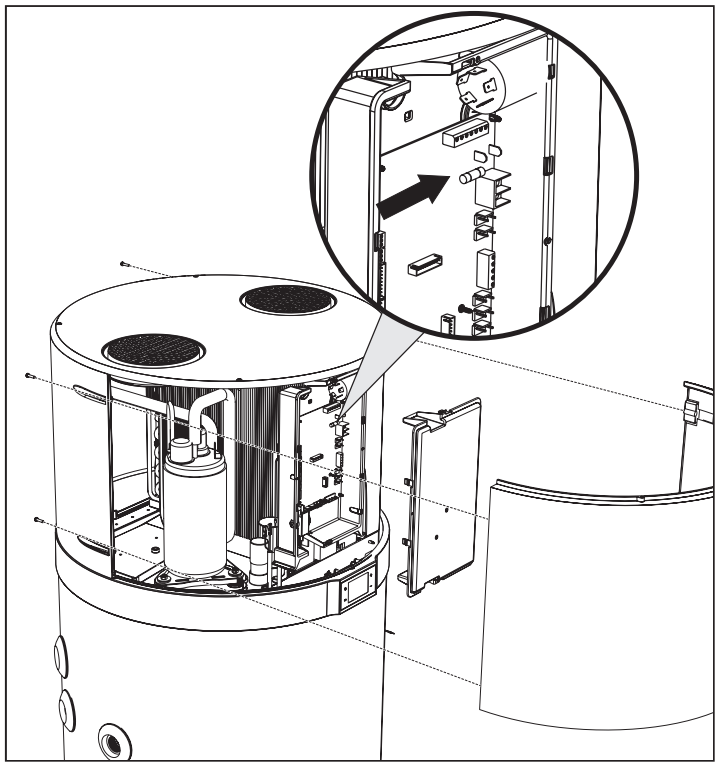

fig. 40

9.2 Heating element safety thermostat reset

This equipment has a manual-reset safety thermostat connected in series with the heating element immersed in water, which interrupts the power supply in case of overtemperature inside the tank.

If necessary, proceed as follows to reset the thermostat (reserved for qualified technical personnel):

- Unplug the product.
- Remove any air ducts.
- Remove the top cover by first undoing the locking screws (fig. 41).
- Remove the front panel and manually reset the tripped safety thermostat (fig. 42). In case of intervention, the central pin of the thermostat comes out by about 2 mm.
- Refit the previously removed top cover.

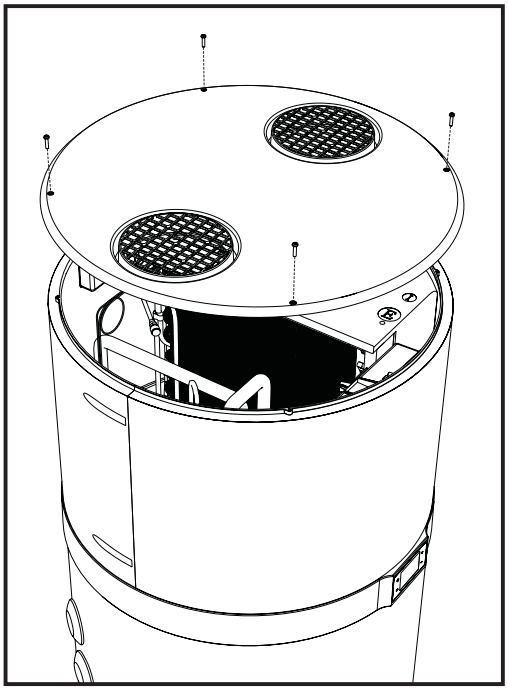

fig. 41 - Top cover removal

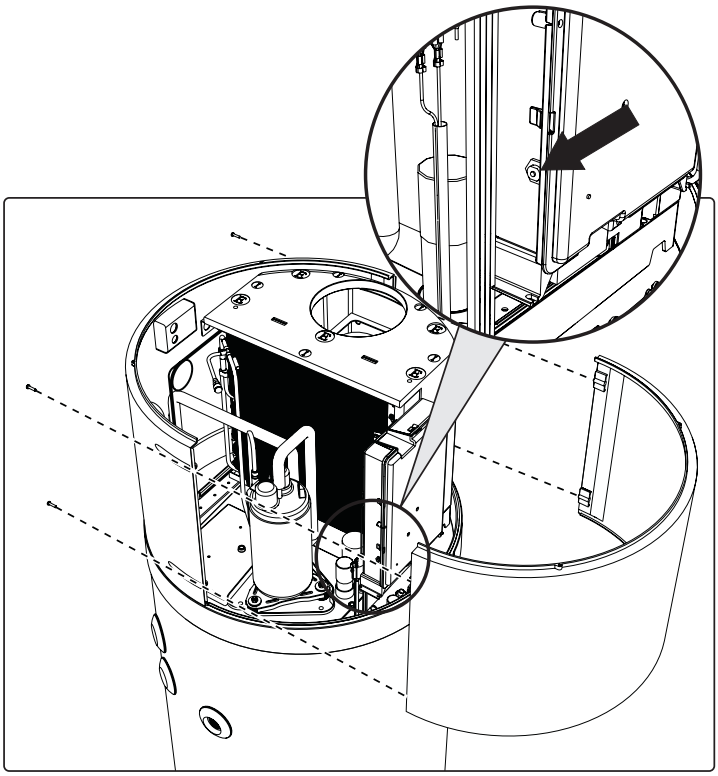

fig. 42 - Front panel removal

ATTENTION!: Intervention of the safety thermostat can be caused by a fault linked to the control board or by no water inside the tank.

ATTENTION!: Carrying out repair work on parts with safety function compromises safe operation of the equipment. Replace faulty parts with original spare parts only.

NB!: Intervention of the thermostat excludes operation of the heating element but not the heat pump system within the permitted operating limits.

ATTENTION! If the operator is unable to eliminate the fault, switch off the equipment and contact the Technical Assistance Service, communicating the model of the product purchased.

10. MAINTENANCE

ATTENTION!: Any repairs to the equipment must be carried out by qualified personnel. Improper repairs can put the user in serious danger. If your equipment needs any repair, contact the service center.

ATTENTION!: Before undertaking any maintenance operation make sure the equipment is not and cannot accidentally be electrically powered. Therefore, disconnect the power at every maintenance or cleaning operation.

10.1 Sacrificial anode check/replacement

The magnesium (Mg) anode, also called "sacrificial" anode, prevents any eddy currents generated inside the boiler from triggering surface corrosion processes.
In fact, magnesium is a weakly charged metal compared to the material of which the inside of the boiler is coated, therefore it attracts first the negative charges that form with the heating of water, consuming itself. The anode therefore "sacrifices" itself by corroding itself instead of the tank. The boiler has two anodes, one fitted in the lower part of the tank and one fitted in the upper part of the tank (area more subject to corrosion).
The integrity of the Mg anodes must be checked at least every two years (preferably once a year). The operation must be performed by qualified personnel.
Before doing the check:

- Close the cold water inlet.
- Proceed with emptying the boiler (see par. “10.2 Boiler emptying”).
- Unscrew the upper anode and check its corrosion; if the corrosion affects more than 2/3 of the anode surface proceed with replacement.

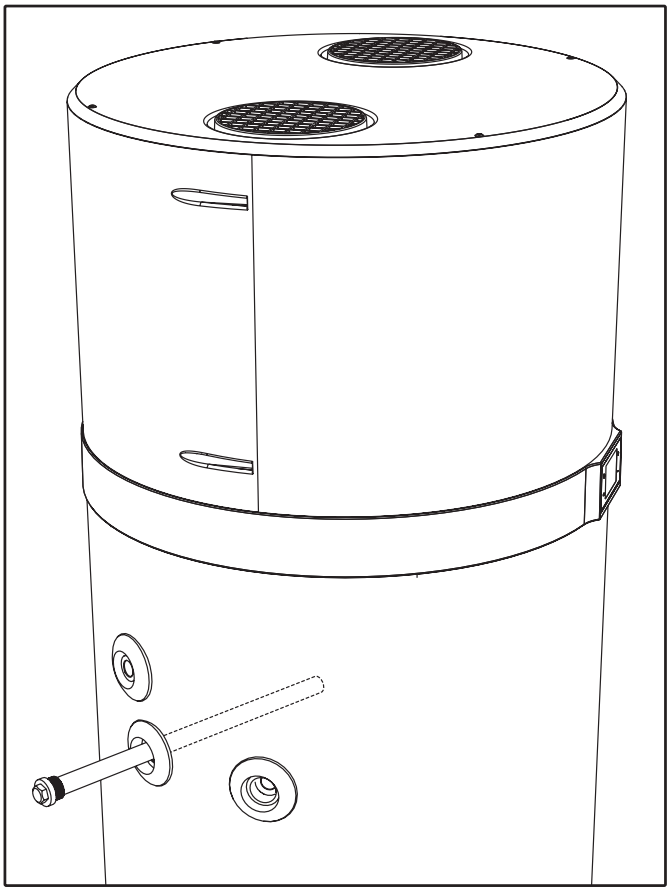

fig. 43

The anodes have a special sealing gasket, to prevent water leaks; it is advisable to use anaerobic thread sealant compatible for use in heating-plumbing systems. The gaskets must be replaced with new ones in case of checking and also anode replacement.

10.2 Boiler emptying

If not in use, especially in case of low temperatures, it is advisable to drain the water inside the boiler. For the equipment in question, just open the drain cock as per the example hydraulic connections chap. “6.5 Hydraulic connections” on page 93 (see fig. 16).

NB!: In case of low temperatures, remember to empty the system to avoid freezing.

11. DISPOSAL

At the end of use, the heat pumps must be disposed of in compliance with current regulations.

ATTENTION!: This equipment contains fluorinated greenhouse gases included in the Kyoto protocol. Maintenance and disposal operations must be carried out only by qualified personnel.

INFORMATION FOR USERS

Pursuant to Directives 2011/65/EU and 2012/19/EU on the restriction of the use of hazardous substances in electrical and electronic equipment, as well as the disposal of waste.

The crossed-out bin symbol on the equipment or on its packaging indicates that, at the end of its useful life, the product must be collected separately from other waste.

Therefore, at the end of its life, the user must give the equipment to the appropriate recycling centers for electrical and electronic equipment, or return it to the dealer when purchasing new, equivalent type equipment, on a one-to-one basis.

Adequate separate waste collection for subsequent sending of the decommissioned equipment to environmentally compatible recycling, treatment and/or disposal helps prevent negative effects on the environment and health and favors the reuse and/or recycling of the materials that make up the equipment.

Unauthorized disposal of the product by the user involves the application of the administrative sanctions provided for by current legislation.

The main materials that make up the equipment in question are:

- steel
- copper
- magnesium
- aluminum
- plastic
- polyurethane

12. PRODUCT SHEET

Descriptions	u.m.	200 HT	260 HT
Declared load profile		L	XL
Energy efficiency class for heating water in average weather conditions		A+	A+
Energy efficiency of water heating in % in average weather conditions	%	116	127
Annual energy consumption in kWh in terms of final energy in average weather conditions	kWh	883	1315
Water heater thermostat temperature settings	°C	55	55
Inside sound power level Lwa in dB	dB	52	52
The water heater can only work during off-peak hours		NO	NO
Any specific precautions to be taken at the time of assembly, installation or maintenance of the water heater		See manual	
Energy efficiency of water heating in % in coldest weather conditions	%	116	127
Energy efficiency of water heating in % in hottest weather conditions	%	116	127
Yearly energy consumption in kWh in terms of final energy in coldest weather conditions	kWh	883	1315
Yearly energy consumption in kWh in terms of final energy in hottest weather conditions	kWh	883	1315
Outside sound power level Lwa in dB	dB	50	50

13. NOTES ABOUT RADIO DEVICES AND APP

This appliance incorporates a radio module (Wi-Fi) and it is compliance with Radio Equipment Directive (RED) 2014/53/EU. See the following radio data:

- Transmission protocol: IEEE 802.11 b/g/n
- Operating frequency range: 2412÷2472 MHz (13 channels)
- Maximum transmitter power: 100 mW (20 dBm)
- Maximum power spectral density (PSD): 10 dBm/MHz
- Maximum antenna gain: 3,23 dBi

Wireless networks may be affected by the surrounding wireless communication environment.

The product may fail to connect to the Internet or it can lose the connection due to distance from the Wi-Fi router or electrical interference from the surrounding environment. Wait a few minutes and try again.

If your Internet service provider has registered the MAC address of your PC or modem for identification, this appliance may fail to connect to the Internet. If this happens, contact your Internet service provider for technical assistance.

The firewall settings of your network system may prevent your appliance from accessing the Internet. Contact your Internet service provider for technical assistance. If this symptom continues, contact a local service center or retailer authorized by the manufacturer.

To configure the wireless access point (AP) settings, see the user manual of the AP.

Visit the Google Play Store or Apple App Store and search the app related to this appliance to know the minimum installation requirements and to download it on your smart device.

This app is not available for some tablet/smartphone and for improved performance, it is subject to change/upgrade without notice, or discontinued support according to the manufacturer's policy.