Installation Manual

TFHM

Thermodynamic water heaters

EN

26.AW.TFHM.WALL.IOM.R290.EN.05.03

Dear Customer,

Thank you for purchasing this device.
We invite you to read this manual carefully before using your device. Keep this document in a safe place so that you can refer to it later.
To ensure safe and efficient operation, we recommend that you carry out the necessary maintenance operations regularly. Our After-Sales Service can help you with these operations.
We hope that you will be satisfied with our services for many years to come.

AIRWELL

The data contained in this manual is not binding and may be changed by the manufacturer without the obligation to give notice.

CONTENTS

1 SAFETY INSTRUCTIONS 5
1.1 Safety instructions compared to R290 5
1.2 General Safety Instructions 5
1.3 General warnings 7
1.3.1 Risk situations 8
1.3.2 Intended use 8
1.3.3 Hydraulic system 8
1.3.4 Electrical circuit 8
1.3.5 Amendments 9
1.3.6 Failure or malfunction 9
1.3.7 User training 9
1.3.8 Data update 9
2 INTRODUCTION 10
2.1 Warnings 10
2.1.1 Installation 10
2.1.2 Hydraulic connection 10
2.1.3 Electrical connection 10
3 PRESENTATION 11
3.1 Package Contents 11
3.2 Handling 12
3.3 Dimensions 12
3.4 Accessories 14
4 INSTALLATION 15
4.1 Fastening 16
4.1.1 Load-bearing wall 16
4.1.2 Non-load-bearing wall 17
4.2 Ducted installation 18
4.2.1 Ducted Installation (Exterior/Exterior) 18
4.2.2 Ducted Installation (Interior/Exterior) 19
4.3 Unjacketed installation 20
4.4 Prohibited configurations 20
4.5 Hydraulic connection 21
4.5.1 Cold water connection 21
4.5.2 Hot water connection 22
4.5.3 Condensate Removal 22
4.6 Aeraulic connection 22
4.6.1 Maximum duct lengths 22

4.6.2 Static pressure adjustment 22
4.7 Electrical connection 23
4.8 Connecting external connections 25
4.8.1 Photovoltaic production 25
4.8.2 Contact ON/OFF 25
4.9 Filling the water heater 25
5 COMMISSIONING 26
5.1 Verification before 1st commissioning 26
5.1.1 Installation location 26
5.1.2 Hydraulic connection 26
5.1.3 Electrical connection 26
5.1.4 Inspection & Training 26
5.2 1st commissioning 27
5.3 Normal operation of the water heater 27
5.3.1 Water temperature display 27
5.3.2 Operating Range 27
5.3.3 Defrosting during water heating 28
5.3.4 Heat-up time 28
5.3.5 In case of overheating 28
5.3.6 Reboot after a long period of time 28
6 CONTROL PANEL 29
6.1 Setting the clock 32
6.2 How it works 32
6.2.1 HYBRID 32
6.2.2 ECONOMY 32
6.2.3 E-HEATER 33
6.2.4 VACATION 33
6.2.5 SMART 33
6.3 Time programming 33
6.3.1 Daily timer setting 33
6.3.2 Setting the weekly timer 34
7 TECHNICIAN MODE 35
8 ERROR CODES 36
9 OPERATING PARAMETERS 38
10 MAINTENANCE 40
11 WATER QUALITY 41
12 DISPOSAL AND RECYCLING 41

1 SAFETY INSTRUCTIONS

1.1 Safety instructions compared to R290

- Any intervention on the thermodynamic water heater should only be carried out by qualified personnel.
- Respect the safety instructions!
- Any intervention on the refrigeration circuit must be carried out by a qualified person holding a category 1 certificate of competence.
- The R290 refrigerant, contained in the heat pump circuit, does not pose any risk to the environment but is flammable.
- The R290 refrigerant is odourless.
- Do not damage the tubes of the refrigeration circuit,
- Do not handle flames or other flammable sources inside the appliance,
- In the event of a refrigerant leak, unplug the socket, ventilate the room and contact the after-sales service,
- Do not pierce or burn the appliance: the recovery of the fluid is mandatory in the event of work on the refrigeration circuit.

1.2 General Safety Instructions

The precautions in this manual are subdivided as follows.
They are important, so it is recommended to respect them scrupulously.
Be sure to read these instructions carefully before installing.
Be sure to keep this manual handy so that you can refer to it at any time if needed.
The unit that is the subject of this manual contains fluorinated gases. For specific information on the type and quantity of gas, refer to the data label applied to the unit.
Contact the dealer for any assistance needs.

Meaning of the terms DANGER, WARNING, CAUTION and NOTE.

DANGER

Indicates a situation of imminent danger that, if not avoided, results in death or serious injury.

WARNING

Indicates a potentially dangerous situation that, if not avoided, can result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation that, if not avoided, may cause minor to moderate injury. This term can also be used as a warning in case of insufficiently safe procedures.

NOTE

Indicates situations that are likely to cause only accidental damage to equipment or other material property.

WARNING

The unit may be used by children from 8 years of age and by persons with reduced physical, sensory or mental capabilities or without sufficient experience or knowledge, provided that they are supervised or have been instructed in the safe use of the device and have understood the associated hazards. Children should not play with the device. Cleaning and maintenance operations should not be carried out by children unsupervised.
Before cleaning, shut down the unit and turn off the switch or unplug the power plug.
Failure to do so may result in the risk of injury or electric shock.
This appliance is not intended for use by persons (including children) with reduced physical or mental physical or mental capabilities, or lacking experience and knowledge, unless supervised or instructed by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

WARNING

This unit must be reliably grounded before use, otherwise it could cause injury.
If you cannot ensure that your home's power supply is properly grounded, please do not install the unit. Please have a qualified person ground and install the unit. Examples of qualified persons include: licensed plumbers, staff
and authorized service personnel.
The maximum amount of refrigerant is 0.15 kg.
Have a qualified person perform the installation of this unit in accordance with local national regulations and this manual.

Improper installation may result in water leakage, electric shock, or fire.
Electrical connection work must follow the instructions of the local power company, the local electric utility and this manual.

WARNING

The unit must be grounded effectively. A fire stop should be installed near the power supply.
Before wiring/pipes, confirm the safety of the installation area (walls, floors, etc.) without hidden hazards such as water, electricity, and gas.
Before installation, check if the user's power supply meets the unit's electrical installation requirements (including reliable grounding, leakage, and electrical charge wire diameter, etc.)
If the electrical installation requirements of the product are not met, the installation of the product is prohibited until the rectification is completed.
The installation height of the power supply must be greater than 1.8m.
In case of water splashing, separate the power supply from the water.
Wiring should be done by professional technicians, in accordance with national wiring regulations and this circuit diagram.
Never use the wire and fuse with an incorrect current rating, or the unit may fail and cause a fire.
Place the device in an accessible location.
The device must be installed, used and stored in a room with an area greater than 4m2.

WARNING

Do not leave flammable materials in contact with or near the appliance.
If the unit is equipped with an auxiliary electric heater, it must be installed at least 1 meter (40 inches) away from any combustible material.
Install the device in a frost-free room. The warranty does not cover destruction of the appliance due to overpressure caused by a blockage of the safety valve.
If the appliance is to be installed in a room or place where the ambient temperature is always above 35°C, this room must be ventilated.
In order to avoid the risk of unintentional reset of the thermal circuit breaker, this appliance must not be powered by an external switching device, such as a timer, or connected to a circuit that is regularly turned on
energized and de-energized by the distribution company.
When installing multiple units centrally, please confirm the load balance of the three-phase power supply, and it is forbidden to assemble multiple units in the same phase of the three-phase power supply.
The installation of the product must be securely attached.

WARNING

The water inlet temperature of the equipment should not be less than 4°C, and the maximum water temperature of the equipment can be set at 70°C.
The minimum water pressure of the water transmission pipeline system is 0.15MPa. A pressure reducer (not supplied) is required when the pressure is above 7 bar (0.7 MPa) and it is placed on the main supply.
A discharge hose connected to the pressure relief device should be installed in a continuously downward direction and in a frost-free environment. This hose should be left open to the atmosphere, so that water can drip from the discharge pipe of the pressure relief device.
A one-way valve must be installed on the side of the water inlet, available in the accessories, see the "accessories" section of the manual.
Do not connect hot water piping directly to copper piping.
It must be equipped with a dielectric connection (not supplied with the appliance).
Connect the safety unit to a drainage pipe kept in the open air, in a frost-free environment, with a permanent downward slope, in order to eliminate the discharged water.
The drain pipe should be well insulated to prevent the water inside the pipe from freezing in cold weather.
Arrange the drain pipe to ensure a steady flow. Improper drainage work can result in the dampening of the building, furniture, etc.

WARNING

The grounding pole of the outlet should be well grounded, make sure the power outlet and plug are sufficiently dry and well connected.
How do I check that the plug and power plug are qualified?
Turn on the unit and let it run for half an hour, then turn it off and unplug it, check if the plug and plug are hot.
Do not turn off the power supply.
The system automatically stops or restarts the heating. A continuous power supply for water heating is required, except for service and maintenance.
Do not operate the unit with a wet hand. An electric shock can be caused.

Water heated to more than 50°C can cause serious and immediate burns if sent directly into the taps. Children, people with disabilities and the elderly are particularly at risk. We recommend installing a thermostatic mixer or water

temperature limiting valve on the water supply line. Smell the water before taking a bath or shower.

Before cleaning, be sure to stop the operation and turn off the circuit breaker or unplug the unit. Otherwise, electric shock and injury may be caused.
Have a qualified person move, repair and maintain the unit instead of doing it yourself.

Do not insert fingers, rods, or other objects into the air inlet or outlet. When the fan spins at high speed, it can cause injury.

Never use flammable spray such as hairspray, lacquer paint near the unit. This can cause a fire.

If the power cable is damaged, the cable must be replaced by the manufacturer, its service agent, or similarly qualified persons.

Do not leave packaging materials (staples, plastic bags, expanded polystyrene, etc.) within the reach of children, as they can cause serious injury.After prolonged use, check the unit base and fittings. If damaged, the unit may leak and cause injury.
Do not touch the internal parts of the controller.

WARNING

Do not remove the front panel. It is dangerous to touch certain parts inside, otherwise the machine will malfunction.
The pressure relief device should be operated regularly to remove limescale deposits and check that it is not blocked.

DANGER

The operation of the thermal circuit breaker indicates a potentially dangerous situation. Do not reset the thermal circuit breaker until the water heater has been repaired by a qualified person.

DANGER

If the relief valve expansion device is not activated at least once every six months, the water heater may explode. A continuous water leak at the faucet can indicate a problem with the water heater.

WARNING

If the unit has not been used for a long period of time (2 weeks or more), hydrogen may be produced in the water piping system. Hydrogen gas is extremely flammable. To reduce the risk of injury in these conditions, it is recommended to open the hot water faucet for several minutes at the kitchen sink before using any electrical appliance connected to the hot water system. In the presence of hydrogen, there will likely be an unusual noise, such as air escaping from the pipe as the water begins to flow. There should be no cigarettes or open flames near the faucet when it is opened.
Do not remove, cover, or disfigure any standing instructions, labels, or data label on the exterior of the unit or on the interior panels of the unit.

It is normal for water to leak from the overpressure safety device or the EN 1487 safety unit when the appliance heats up. This is why it is necessary to install a drain open to the air, with a pipe continuously inclined downwards, in a place where temperatures are not negative. The condensate drain must also be connected to the same pipe using a special fitting.
Be sure to drain the appliance when it is out of service in an area exposed to sub-zero temperatures.
For how to drain the water heater, please refer to the paragraphs below in the manual.
SMART mode is not recommended when water consumption is low or inconsistent.

1.3 General warnings

Read the user manual carefully and use the unit in strict accordance with the instructions provided to avoid personal injury, damage to the unit, damage to property, and legal disputes. Our company does not assume any legal responsibility for any possible damage due to improper use of the unit. The location, the hydraulic, refrigerant, electrical circuit and the air ducts must be decided by the designer of the installation or by a person competent in the field, taking into account the purely technical requirements as well as any local legislation in force, which provides for the obtaining of specific permits.

Only a qualified professional can work on the unit, as provided for by the regulations in force. Use of the unit in the event of a failure or fault:

- voids the warranty
- may compromise the safety of the unit
- can increase repair costs and times.

For any operation, respect the local safety rules.
Keep packaging materials out of the reach of children as they are a potential source of danger.
Recycle and dispose of packaging material according to local regulations

1.3.1 Risk situations

The unit is designed and manufactured in such a way as not to expose the health and safety of persons to risks.
In the project phase, it is not possible to intervene on all the causes of risk. Read the "Residual Risks" section which mentions situations that may involve risks to people or property. Installation, start-up, maintenance and repair require specific knowledge; If inexperienced staff take care of it, it can cause damage to people or property.

1.3.2 Intended use

This product is only suitable for domestic use, for the preparation of domestic hot water at 38-70°C. It must be connected to the water and electricity network of the house. It is forbidden to use the appliance for other purposes, such as industrial production, or to install it in an environment exposed to the risk of corrosion and combustion. The manufacturer is not responsible for any damage to the device due to improper installation or misuse.

1.3.3 Hydraulic system

Components
The selection and installation of circuit components must be done by the installer.

Water quality
The quality of the water can be checked by specialized personnel. The factors to be analyzed are as follows:

- Inorganic salts
- pH
- Biological contaminants (algae, etc.)
- Suspended solids
- Dissolved oxygen

Water with inadequate characteristics can cause:

- Increased pressure drops
- Decreased energy efficiency
- Increased corrosion phenomena

Risk of frost
Take steps to prevent the risk of freezing if the unit or corresponding hydraulic connections can be subjected to temperatures close to 0°C.
The unit is intended to be permanently connected to the water supply network and should not be connected with flexible hoses.
Water can drip from the safety valve drain pipe and this hose should be left open to the atmosphere.
The safety valve should be operated regularly to remove limescale deposits and to check that it is not blocked.
The drain hose connected to the safety valve must be installed in a continuous downward direction and in a frost-free location.

1.3.4 Electrical circuit

The characteristics of the lines must be established by personnel authorized in the design of electrical circuits, in compliance with the regulations in force. Always operate in compliance with the safety regulations in force.
To avoid the risk of death or injury, before using the unit, plug it into a grounded outlet.
Do not install the unit if it is not possible to verify that the grounding of the relevant home network meets the regulations in force.
Power must be supplied through an independent circuit with nominal voltage.
The power circuit must be effectively grounded.
Do not use water hoses for the grounding connection of the unit. To carry out the required operations, wear personal protective equipment: gloves, goggles, etc.
The cross-section of the power cables and the protective cable must be determined according to the characteristics of the protections adopted.
The registration number label provides the specific electrical data of the unit, including any electrical accessories.

Connections
All electrical operations must be carried out by personnel who have the prerequisites provided for by the regulations in force and who are informed of the risks associated with these operations.
Refer to the electrical diagram of the unit (the electrical diagram number is indicated on the registration label). Verify that the network characteristics are consistent with the data on the service plate.
Protect cables by using properly sized cable grommets.
Before starting work, check that the disconnect device at the start of the unit's power line is open, blocked, and equipped with the appropriate signage.
First make the earthing connection.
After connecting the wires, check again and make sure the connection is correct before turning on the unit. Before powering the unit, make sure that all the protections that were removed during the electrical connection work have been reinstalled
Signal/Data Lines – Laying

Do not exceed the maximum allowable distance, which varies depending on the type of cable and the signal.
Lay cables away from power lines, with different voltages, or that emit electromagnetic disturbances. Avoid laying cables near devices that can create electromagnetic interference.
Avoid parallel installation with other cables; Possible crossings with other cables are only allowed if they are at 90°.
The protective screen must be connected to a ground that is free of disturbances.
Guarantee the continuity of the protective screen throughout the cable extension.
Observe the indications concerning impedance, capacitance, attenuation.

1.3.5 Amendments

Any type of modification made to the unit voids the warranty and releases the manufacturer's liability.

1.3.6 Failure or malfunction

Immediately deactivate the unit in the event of a failure or malfunction.
Contact a manufacturer-approved support center.
Ask for the use of original spare parts.

1.3.7 User training

The installer must instruct the user, in particular with regard to:

- On/off;
- Modification of set points;
- Resting
- Interview;
- What to do/not to do in the event of a breakdown.

1.3.8 Data update

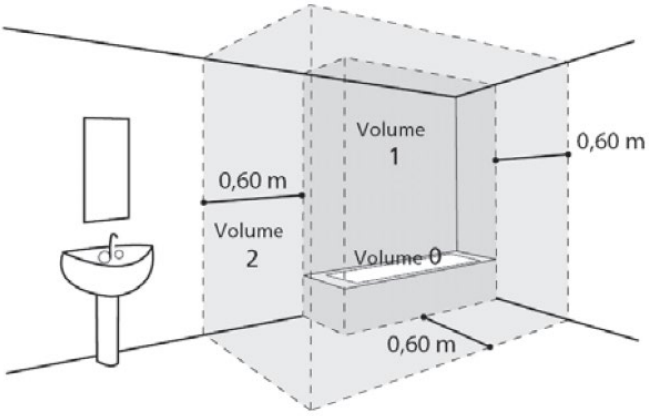
Continuous improvements to the product may result in a change to the data in this manual.
Check the manufacturer's website for updated data

2 INTRODUCTION

2.1 Warnings

2.1.1 Installation

WARNING: Heavy product to handle with care:
1/ Install the device in a frost-free room. The destruction of the device by overpressure due to the blocking of the safety device is out of warranty.
2/ Make sure that the bulkhead is able to support the weight of the water-filled device.
3/ If the appliance is to be installed in a room or location where the ambient temperature is permanently above 35°C, provide ventilation of this room.
4/ In a bathroom, do not install this product in volumes V0, V1 and V2. If the dimensions do not allow it, they can still be installed in the V2 volume.
5/ This product is intended for use at a maximum altitude of 2,000 m.
6/ Place the device in an accessible place.
7/ Refer to the installation figures in the Installation chapter.



2.1.2 Hydraulic connection

It is mandatory to install a new safety device, 3/4" in size and with a pressure of 0.7 MPa (7 bar) on the inlet of the water heater, which must comply with the local standards in force.
A pressure reducer (not supplied) is required when the supply pressure is greater than 0.5 Mpa (5 bar) which will be placed on the main supply.
Connect the safety device to a drain pipe, kept in the open air, in a frost-free environment, on a continuous downward slope for the evacuation of the expansion water from the heater or the water in the event of emptying the water heater.
It is imperative to install a retention tank under the water heater when it is positioned in a false ceiling, an attic or above inhabited premises.
A drain connected to the sewer is necessary.

2.1.3 Electrical connection

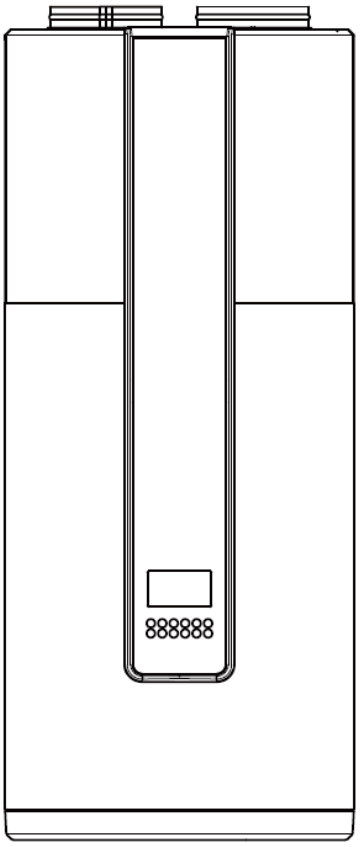
Before removing the cover, make sure the power is turned off to avoid the risk of injury or electric shock.
The electrical installation must include an omnipolar cut-off device (circuit breaker, fuse) upstream of the device in accordance with the local installation rules in force (30mA differential circuit breaker).
Refer to the wiring diagrams on the back of the cover.
Grounding is mandatory. A special marker bearing the marker  vided for this purpose.

3 PRESENTATION

3.1 Package Contents



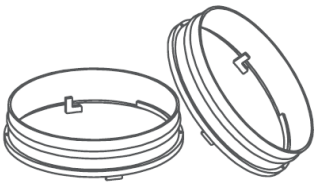
1 installation and operating instructions
1 safety manual



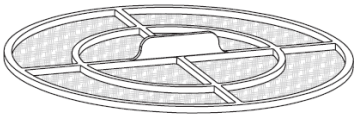
Water heaters



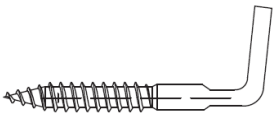
Condensate drain hose



Air duct connector



Filter



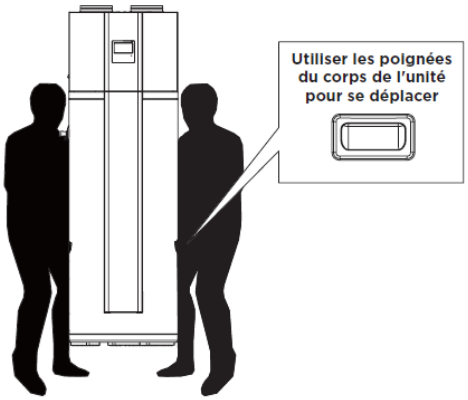
4 hooks

3.2 Handling

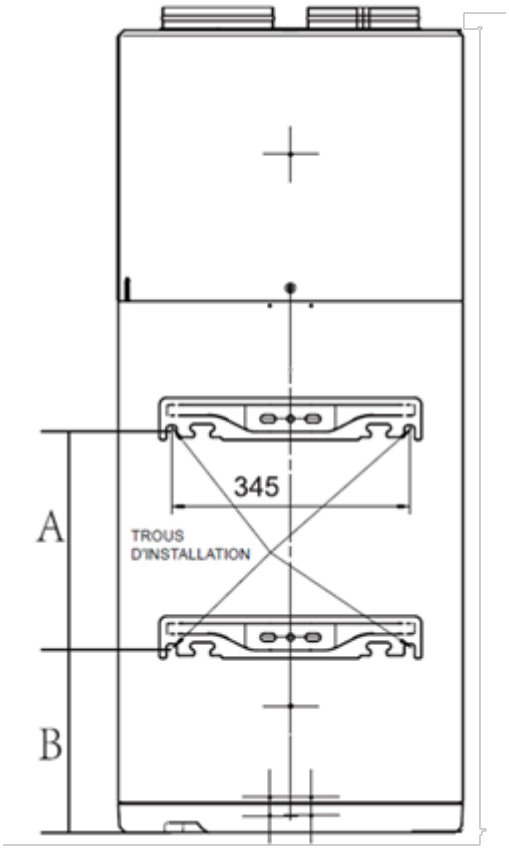
The water heater should not be transported horizontally. Horizontal transport can lead to the breakage of the plastic elements and the internal refrigeration circuit of the heat pump.

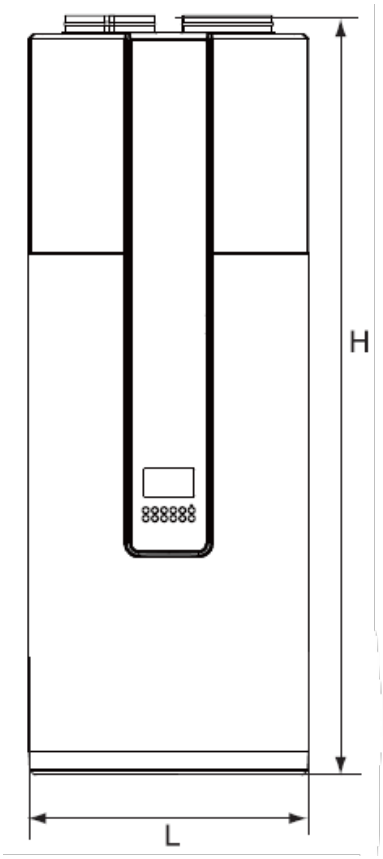


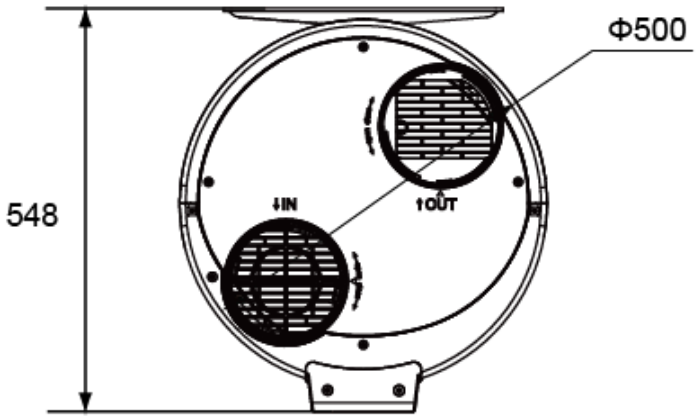
To move the water heater, use a hand truck and make sure that the inclination of the water heater does not exceed 45°.



3.3 Dimensions





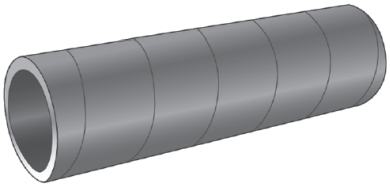
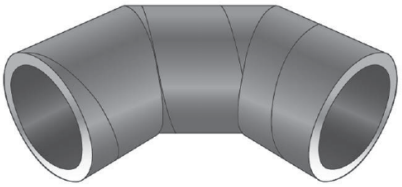
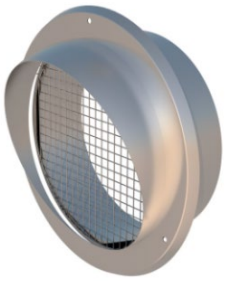


		100 L	150 L
A	Height between fasteners	415	558
B	Height between the base of the balloon and the 1st attachment	277	476
H	Height	1 365	1 708
L	Diameter of the tank	500	500
	Diameter of the ventilation ducts	160	160
	Weight	66 kg	80kg

Unit: mm

3.4 Accessories

The following accessories are not included with the unit. You can find them in our catalog or at your wholesaler.

Straight sheath Ø 160 mm (1m)	
Elbow 90° Ø 160 mm	
Wall-mounted air inlet/outlet Ø 160 mm	
Male/male connection Ø 160 mm	

4 INSTALLATION

NOTE

It is strongly recommended to install a water retention tank connected to the sewer under the water heater when it is positioned above inhabited premises.

The rating label must be accessible at all times.
Before filling, the water heater must be levelled by wedging it if necessary.

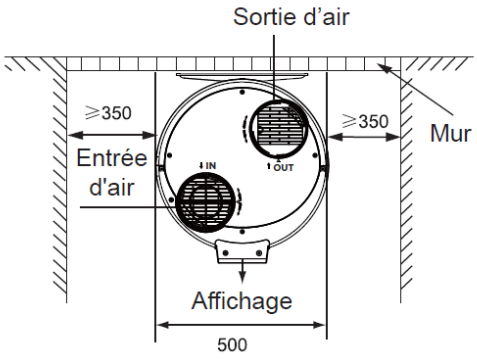
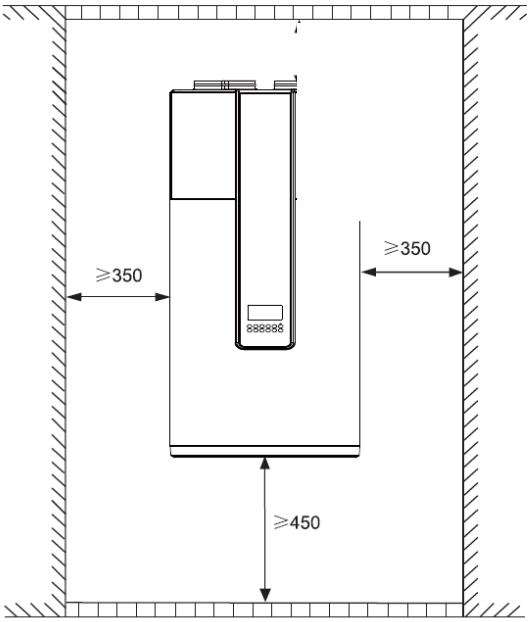


Fig. 3-1



There are 3 possible installation configurations:

1 - Unjacketed Inside/Inside
2 - Exterior/Exterior Sheathing
3 - Inside/Outside Sheathing

Regardless of the installation configuration chosen, the installation location must comply with the IP X1B protection class, in accordance with the requirements of NFC 15-100.

CAUTION

The water heater must (in accordance with Article 20 of EN 60335-1) be fixed to the floor or wall.

4.1 Fastening

4.1.1 Load-bearing wall

If the wall is load-bearing and can support the weight of the water heater filled with water (concrete, stone, brick):



Mark the wall with reference to the requirements of the size of the installation (drawing). Bolt the Ø 10 mm bolts. The wall must support a minimum load of 300 kg.

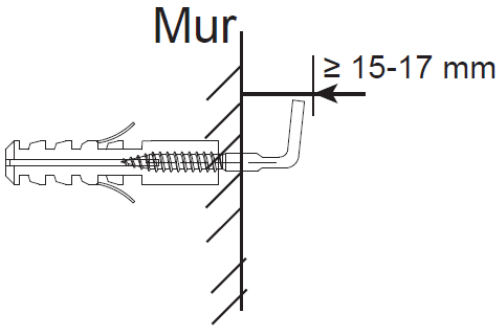
4.1.2 Non-load-bearing wall

If the wall is not load-bearing:



If the wall is not load-bearing, it is mandatory to install the water heater on a support. Place the water heater on the bracket to mark the attachment points. Make the holes and reinstall the water heater in its place. Anti-tipping fixing by the upper bracket is mandatory (fixing Ø 10 mm minimum adapted to the wall).

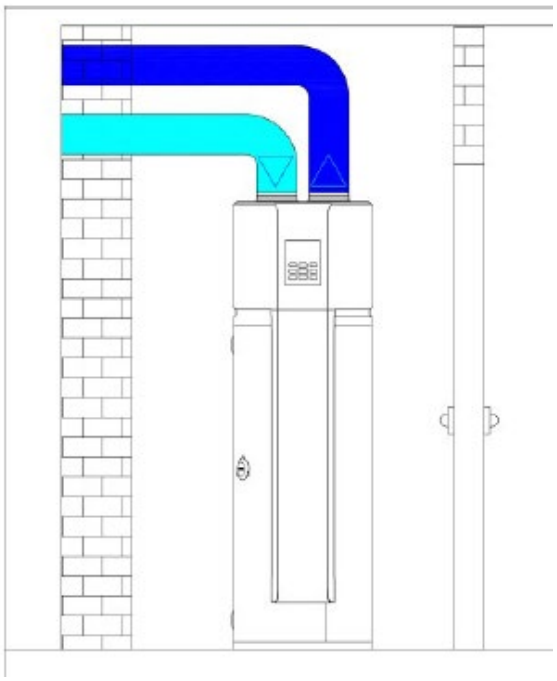
The size of the hole for wall hanging should refer to the size of the corresponding hole (two brackets for each water tank, a total of four expansion bolts should be attached).
Once the expansion bolt is tightened, the distance between the inner side of the bolt and the wall surface should be maintained between 15 and 17 mm, as shown in the figure.



4.2 Ducted installation

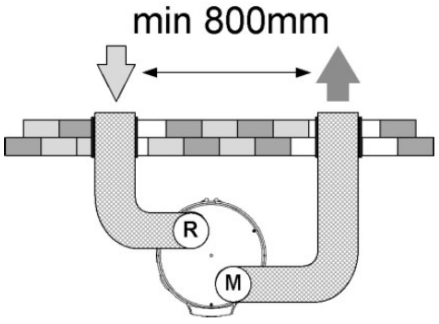
4.2.1 Ducted Installation (Exterior/Exterior)

The Outside/Outdoor connection ensures that the losses of the home are not increased (in the case of installation in heated premises). Avoid the proximity of the night rooms to the water heater and/or ducts for sound comfort.

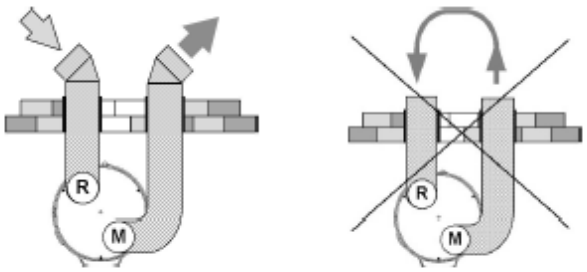


Example of premises: laundry room / pantry / cupboard in the entrance

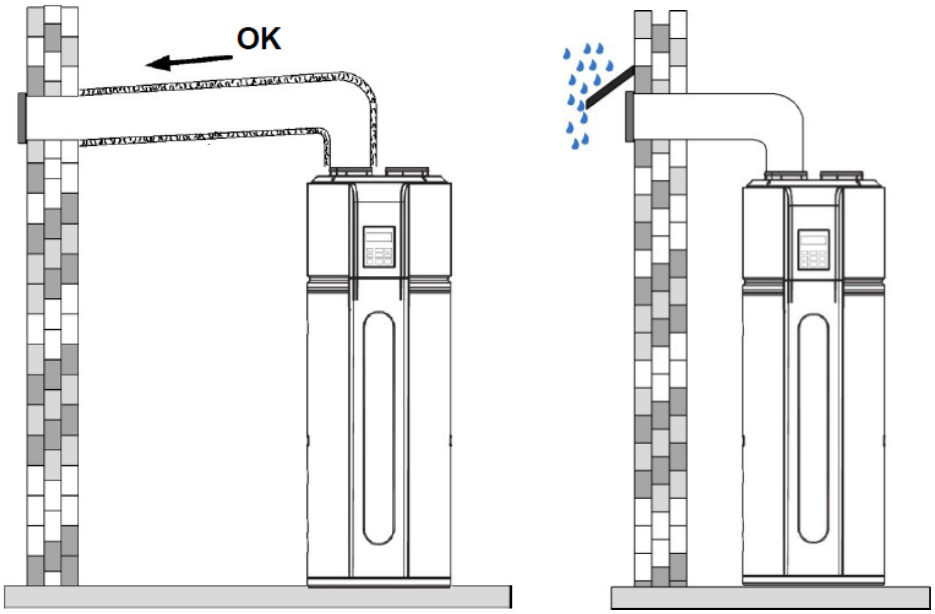
If the ducts are placed on the same exterior wall, allow a minimum of 800 mm between suction and discharge.



If this is not possible, provide adjustable vents to avoid the risk of air recirculation.



The inlets must also be protected from any possibility of water entering the ducts and the unit.

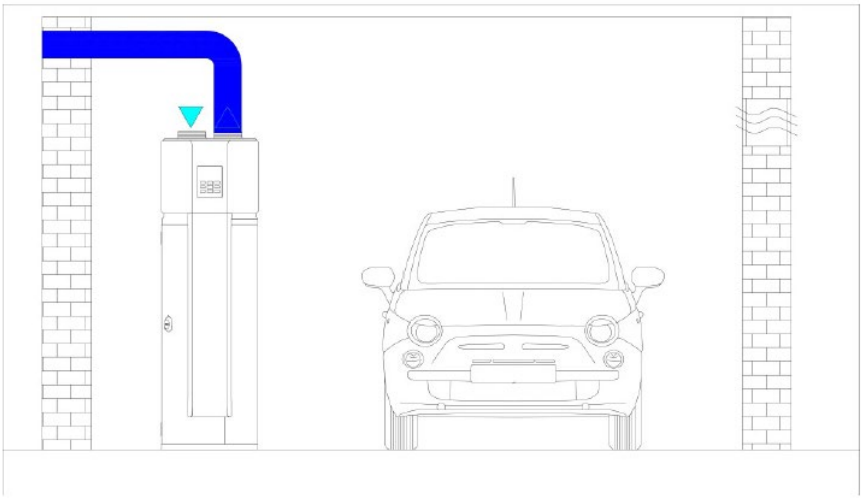


4.2.2 Ducted Installation (Interior/Exterior)

The Indoor/Outdoor connection allows you to maintain a positive suction temperature. The performance of the water heater in winter will be less degraded. The room must be unheated and insulated from the heated rooms of the house.

NOTE

The depressurization of the room by the rejection of outside air generates air ingress through the joinery (doors and windows). To avoid drawing air from the heated volume, provide an air inlet of the same diameter as the ducts opening onto the outside.
In winter, this air will be colder than the ambient air in the room, generating cooling in the garage.

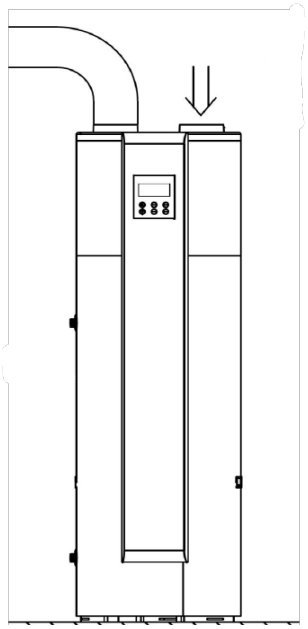


Example of premises:

- Garage: recovery of free calories from household appliances in operation.
- Laundry: free heat recovery from washing machines and dryers and dehumidification of the room.

4.3 Unjacketed installation

The Indoor/Indoor connection allows you to maintain a positive suction temperature. The performance of the water heater in winter will be less degraded. The room must be unheated and insulated from the heated rooms of the house. The premises must have a total volume (excluding bulky items) >20m3.
The air flow from the suction or discharge must be diverted to avoid recirculation at the suction.
The temperature inside this room must be above 5°C.



Example of premises:

- Garage: recovery of free calories from household appliances in operation.
- Laundry: free heat recovery from washing machines and dryers and dehumidification of the room.
- Semi-underground room: recovery of free calories released by the floor and basement walls.

4.4 Prohibited configurations

- Water heater drawing air from a heated room.
- Connection to the CMV.
- Connection to the attic.
- Ducting on the outside air at the intake and discharge of fresh air inside the room.
- Connection to a Canadian well.
- Water heater installed in a room containing a natural draft boiler and sheathed on the outside at the discharge only.
- Aeraulic connection of the appliance to a tumble dryer.
- Installation in dusty premises.
- Drawing air containing solvents or explosive materials.
- Connection to hoods that evacuate greasy or polluted air.
- Installation in a room subject to frost.
- Objects placed on top of the water heater.

4.5 Hydraulic connection

NOTE

The installation of a sanitary loop on the device is prohibited. In the event of a device failure on a loopback installation, the warranty does not apply. For more information, contact the after-sales service.

CAUTION

Do not connect directly to copper pipes. The cold and hot water connections must be equipped with a dielectric connection (not supplied with the device).
In the event of corrosion of the threads of the fittings not equipped with this protection, our warranty cannot be applied.

The cold water inlet and the hot water outlet are threaded in 15/21 (1/2") M.

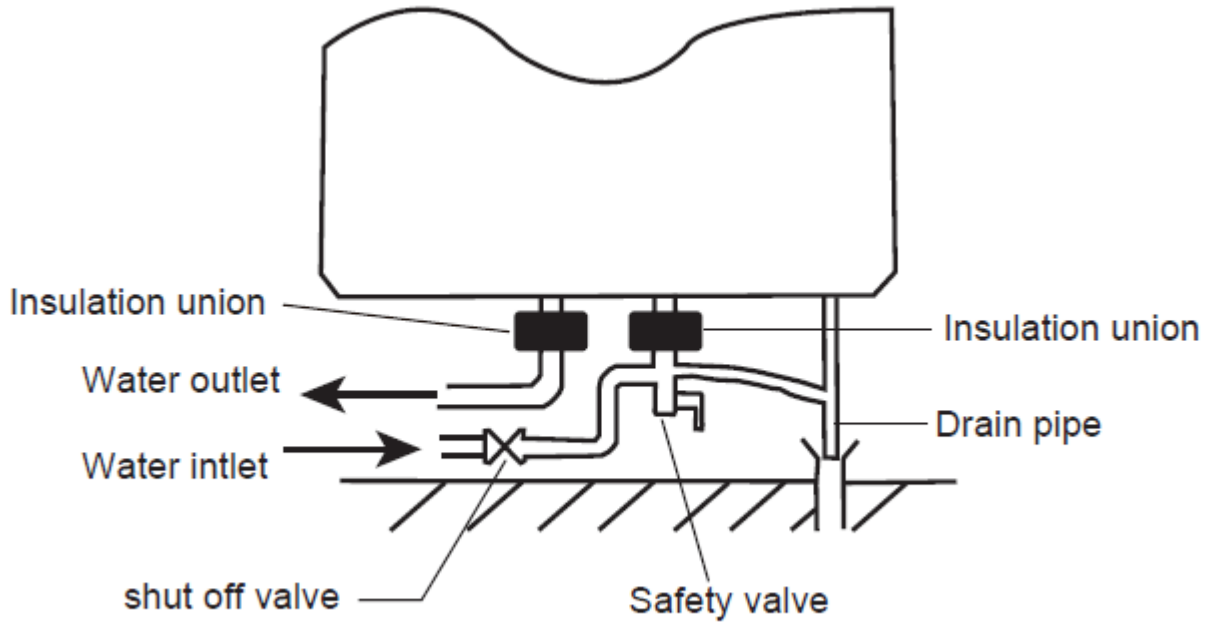
4.5.1 Cold water connection

Before proceeding with the hydraulic connection, check that the pipes in the network are clean.
The installation must be carried out using a new safety group with a set of 0.7 MPa (7 bar) (not supplied), bearing the NF mark (NF EN 1487 standard) connected directly to the cold water outlet of the water heater.

CAUTION

No component (shut-off valve, pressure reducer, hose, etc.) must be placed between the safety unit and the cold water outlet of the water heater.

Since water can drain from the discharge pipe of the pressure relief device, the discharge pipe must be kept in the open air. Regardless of the type of installation, it must have a shut-off valve on the cold water supply, upstream of the safety group.
The drain of the safety group must be connected to the free-flowing waste water via a siphon. It must be installed in a frost-free environment. The drain valve of the safety unit must be turned on regularly (every 6 months).
The installation must have a pressure reducer if the supply pressure is greater than 0.5MPa (5 bar). The pressure reducer must be installed at the start of the general distribution (upstream of the safety unit). A pressure of 0.3 to 0.4 MPa (3 to 4 bar) is recommended.



4.5.2 Hot water connection

WARNING

French regulations impose, in rooms intended for toileting, a domestic hot water temperature of 50°C maximum at the drawing points. In the other rooms, the temperature of the domestic hot water is limited to 60°C at the drawing points.
In the case of the use of pipes for synthesis (e.g. PER, multilayer, etc.), the installation of a thermostatic regulator at the outlet of the water heater is mandatory. It must be adjusted according to the performance of the material used.

4.5.3 Condensate Removal

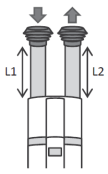
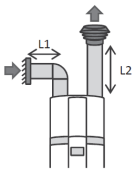
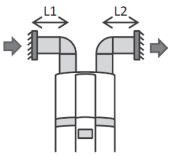
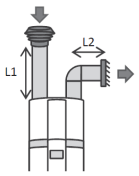
Insert the condensate drain hose onto the condensate outlet located on the back of the product.
Cut the condensate drain pipe so that it does not create a loop. Connect the end of the hose to the waste water drain.

4.6 Aeraulic connection

The energy efficiency of the thermodynamic water heater is related to the temperature of the air sucked in. The hotter the air sucked in, the better the COP (Coefficient of Performance).

- In the case of ducting, it is mandatory to opt for insulated air ducts, diameter 160mm. It is forbidden to use flexible sheaths.

4.6.1 Maximum duct lengths

			Configurations			
						
TFHM 100	L1+L2	HDPE sheath Ø 160 mm 	54 m	50 m	48 m	50 m
TFHM 150	L1+L2		42 m	38 m	34 m	38 m

WARNING

The total pressure drop of ducts and accessories for exhaust and suction of air must not exceed 60 Pa. The maximum sheath lengths must be respected.

4.6.2 Static pressure adjustment

It is necessary to enter engineering mode and set the F40 parameter according to the pressure drop calculation, as shown in the following table.

Available pressure	0-10 Pa	10-20 Pa	20-40 Pa	40-60 Pa
F40	0	1	2	3

4.7 Electrical connection

WARNING

The water heater should only be turned on after it has been filled with water.
The water heater must be permanently electrically powered.

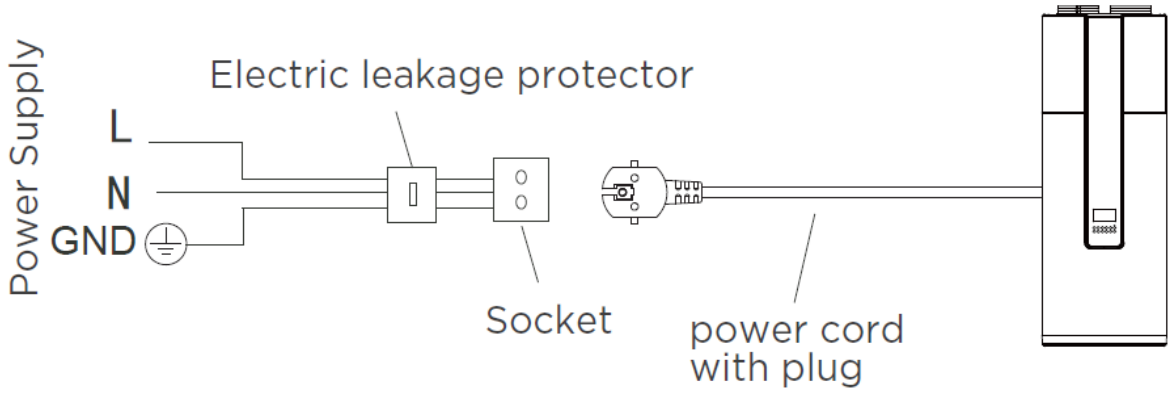
The electrical connection must be made by a qualified professional and de-energized.
The water heater must be connected to a 230V single-phase 50Hz AC network.
The electrical connection must comply with the NFC 15-100 installation standards or the recommendations and standards in force in the country where the water heater is installed.
The installation must include:

- A 16A omnipolar circuit breaker.
- Protection by a 30mA RCD.

DANGER

Never directly power the heating element.

The safety thermostat fitted to the electric back-up must not be repaired under any circumstances. Failure to comply with this clause voids the warranty.

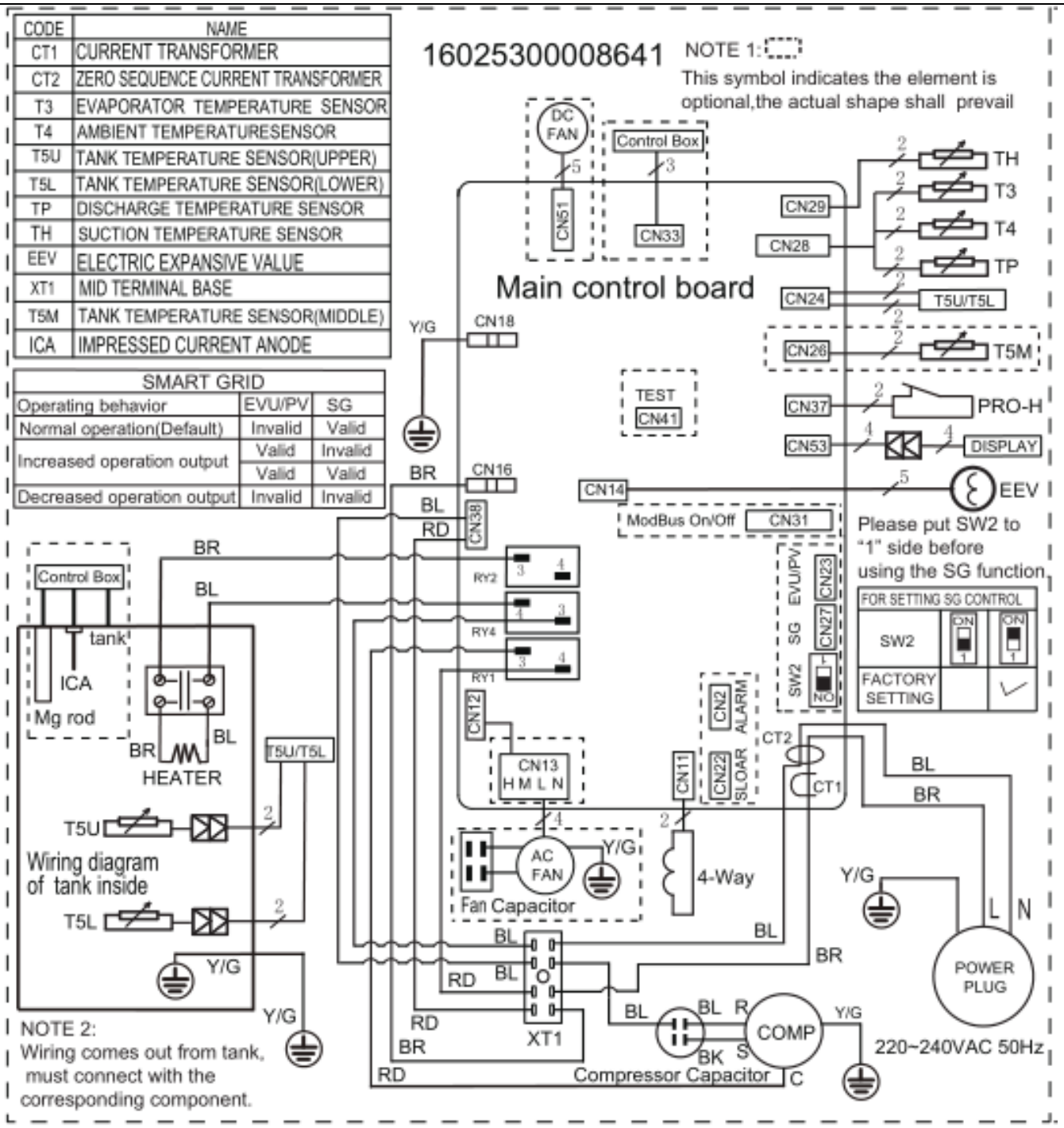


DANGER

The connection of the earthing socket is mandatory.

CODE	NAME
CT1	CURRENT TRANSFORMER
CT2	ZERO SEQUENCE CURRENT TRANSFORMER
T3	EVAPORATOR TEMPERATURE SENSOR
T4	AMBIENT TEMPERATURESENSOR
T5U	TANK TEMPERATURE SENSOR(UPPER)
T5L	TANK TEMPERATURE SENSOR(LOWER)
TP	DISCHARGE TEMPERATURE SENSOR
TH	SUCTION TEMPERATURE SENSOR
EEV	ELECTRIC EXPANSIVE VALUE
XT1	MID TERMINAL BASE
T5M	TANK TEMPERATURE SENSOR(MIDDLE)
ICA	IMPRESSED CURRENT ANODE

SMART GRID		
Operating behavior	EVU/PV	SG
Normal operation(Default)	Invalid	Valid
Increased operation output	Valid	Invalid
	Valid	Valid
Decreased operation output	Invalid	Invalid



4.8 Connecting external connections

The TFHM can take over several additional functions by connecting external elements. To do this, you need to access the connection box on the back of the device.

4.8.1 Photovoltaic production

If you are equipped with photovoltaic panels and want to use this free energy to heat your hot water tank, you must use the "SG CONTROL" function.
This function allows PV production and off-peak/peak hours to be received via a potential-free contact.

Open EVU = No PV Production	EVU closed: PV production
Open OS = Peak Hours	Open SG: Off-peak hours

The regulatory logic is as follows:

EVU open	Closed SG	Normal operation
EVU closed	Closed or open SG	Increase the setpoint to the maximum possible
EVU open	Open SG	Shutting down the unit

4.8.2 Contact ON/OFF

This port allows you to disable the water heater. The power will not be cut off, but the compressor and electric heater will stop working.
The ON/OFF connector is represented in the electrical box by X1/X2.

ON/OFF Open Port: The water heater is operating normally.
ON/OFF closed port: OFF electric compressor and heater

4.9 Filling the water heater

1. Turn on the hot water tap(s).
2. Open the cold water valve located on the safety group (make sure the unit drain valve is in the closed position).
3. After the hot water taps have flowed, turn them off. The water heater is full of water.
4. Check the tightness of the connection to the pipes and the proper functioning of the hydraulic components by opening the drain valve of the safety unit several times, in order to eliminate the presence of any residues in the discharge valve.

5 COMMISSIONING

NOTE

When the heat pump is first commissioned or after a power cut, it starts up after a delay of 3 minutes.
If the heat pump has been tilted, wait 1 hour before starting.

5.1 Verification before 1st commissioning

5.1.1 Installation location

- ☐ The wall must support a minimum load of 300 kg.
- ☐ Installed indoors, such as in a basement or garage, and in an upright position. Frost protected.
- ☐ Provide sufficient space for service and maintenance.
- ☐ Ensure sufficient ventilation for the proper functioning of the heat pump. The heat pump of the water heater must have optimal air circulation.
- ☐ The device cannot be installed in a closet or small space. Unless it is sheathed on the suction and discharge and there is enough space to carry out all the maintenance.
- ☐ The location chosen must be free of any corrosive elements present in the atmosphere, such as sulphur, fluorine and chlorine. These elements are found in aerosols, detergents, bleach, cleaning solvents, air fresheners, paint and varnish removers, refrigerants and many other commercial and household products.
  Additionally, excessive dust and lint buildup may affect the operation of the device and require regular cleaning.

5.1.2 Hydraulic connection

- ☐ The safety group must be properly installed, with a drain hose connected to a syphon and protected from freezing.
- ☐ All pipes must be properly installed and watertight.
- ☐ The installation of a temperature limiter or thermostatic mixer is recommended.
- ☐ Condensate drain lines should be easily accessible.
- ☐ The condensate drain port should be located at the lowest point of the appliance.
- ☐ The condensate drain pipes are connected to a siphon.

5.1.3 Electrical connection

- ☐ The water heater requires a 220-240V AC power supply to operate properly.
- ☐ Cable specifications and connections must comply with current local standards and the requirements of this manual.
- ☐ The water heater and power supply must be properly grounded.
- ☐ Adequate overload protection (fuse or circuit breaker) must be installed.

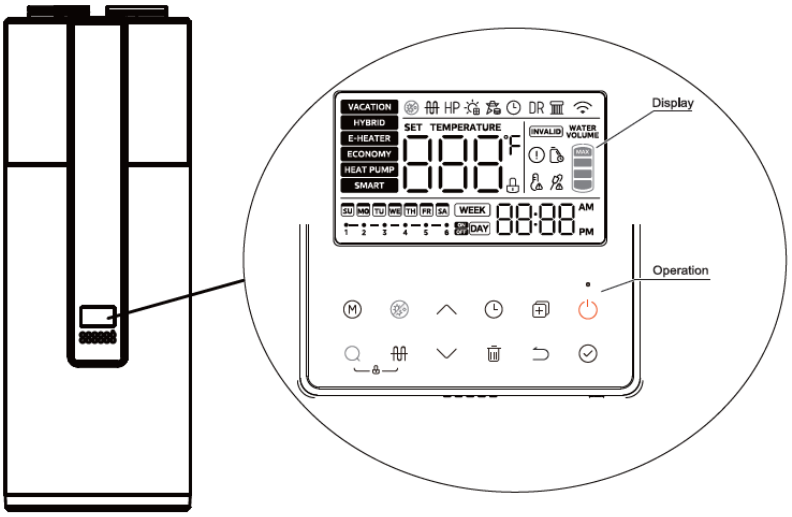
5.1.4 Inspection & Training

- ☐ Make sure users understand how to use the user interface to configure the different modes and access the different functions.
- ☐ Make sure users understand the importance of regular inspection and maintenance of the pan and condensate drain lines. This is to avoid any blockage of the drainage pipes and any overflow of the tank.
- ☐ **IMPORTANT**: The presence of water from the plastic shroud indicates that both condensate drain lines are likely blocked. Immediate intervention is required.
- ☐ For optimal operation, check, remove and clean the air filter.

5.2 1st commissioning

Check that the water heater is filled with water. To do this, turn on a hot water tap and wait for water to flow.

Turn on the water heater, once the interface is turned on, follow the instructions below.



Press the unit starts, press to select the set temperature (38-70°C) press The unit automatically selects the heat source and starts heating the water up to the set temperature.

The factory setting prioritizes the operation of the heat pump. During installation, it is necessary to make the operating mode selection settings with the customer and guide them in the use of the equipment.

5.3 Normal operation of the water heater

5.3.1 Water temperature display

The temperature displayed on the display is the maximum of the temperatures recorded by the upper and lower sensor. It is possible that once the display indicates that the set temperature has been reached on one of the sensors, the compressor will continue to operate, because the temperature of the other sensor does not reach the set temperature.

5.3.2 Operating Range

- Water set temperature range: 38°C~70°C
- Installation room temperature range: 0°C-43°C.
- Air temperature range for heat pump operation: -7°C~43°C.
- Air temperature range for electric heating operation: -20°C~45°C.

Air temperature (T4)	T4 < -7	-7 < T4 < -2	-2 < T4 < 2	7 < T4 < 35	35 < T4 < 43	43 < T4
Maximum temperature (Compressor)	--	45	55	65	60 (100L) 58 (150L)	--
Maximum temperature (Electrical heater	70					

5.3.3 Defrosting during water heating

During heat pump operation, if the evaporator frosts when the air temperature is lower, the system will automatically defrost to maintain efficient performance (approximately 3-10 minutes). When defrosting, the fan motor stops, but the compressor continues to run.

5.3.4 Heat-up time

Heating times vary depending on the ambient temperature. Lower air temperature results in a longer heating time due to lower effective performance.
When the air temperature is below 2°C, the heat pump and the electric heater take different parts of the heating capacity. In general, the lower the temperature of the intake air, the lower the share of the heat pump and the higher the share of electric heating.

		MODE	
		ECONOMY	
		100 L	150 L
Air temperature (°C)	-7	11:04	10:59
	0	09:47	09:49
	2	09:08	09:13
	7	06:35	06:37
	15	05:08	05:10
	20	04:40	04:43
	25	04:11	04:13
	30	03:44	03:45
	32	03:38	03:39
	35	03:29	03:29
	40	03:14	03:18
	43	03:02	03:11

Data in hh:mm

5.3.5 In case of overheating

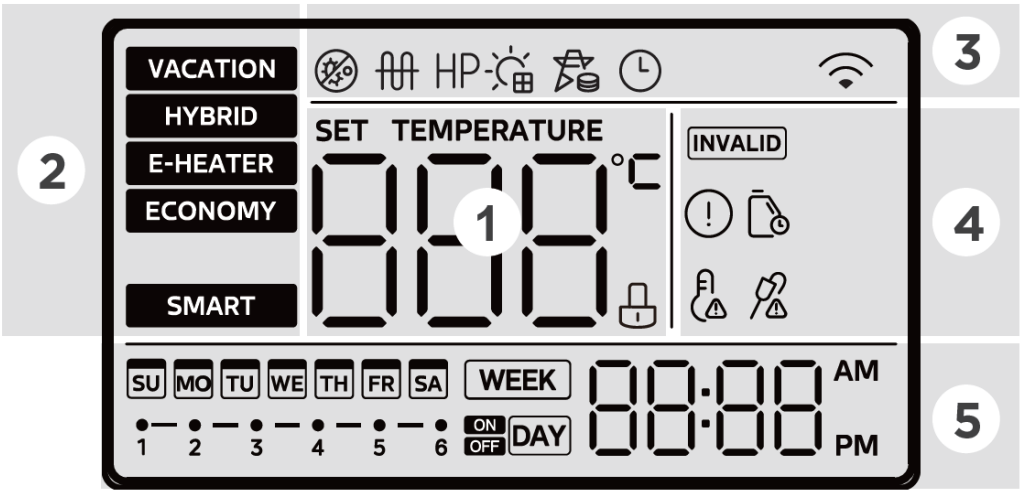
It may happen that the anti-overheating safety activates. There are 2 levels of safety, one electronic with automatic restart, the other mechanical with manual restart.

If the water reaches a temperature above 85°C, then the safety thermostat is activated. To reactivate it, it is necessary to call your installer/maintainer.

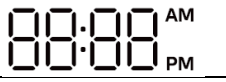
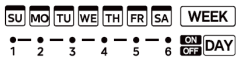
5.3.6 Reboot after a long period of time

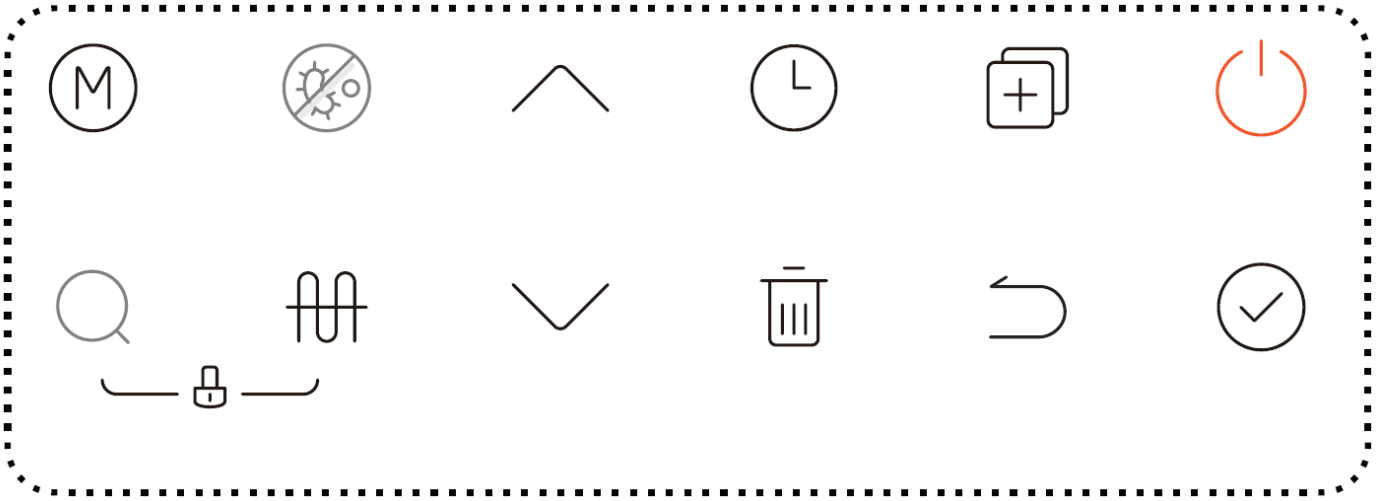
In the event of a prolonged absence (more than 2 months), it is possible that the water is dirty. In this case, run the water at the tap until it becomes clear.

6 CONTROL PANEL

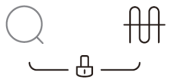


Area	Icon	Description
1		will be on if the screen is unlocked. It indicates the water temperature in normal mode; It indicates the setting temperature during the setting process; It shows the remaining vacation days in vacation mode; It shows the settings for tuning/executing the unit, the code error/protection during querying.
	SET TEMPERATURE	The icon lights up when the water temperature is being adjusted.
		**Child safety:** If the button is locked, the icon will light up, otherwise it will turn off.
2	VACATION	**HOLIDAY MODE:** For the outgoing holiday mode, the water tank is set to 15°C. Keeps the tank water temperature low, preheats hot water and antifreeze lines, while reducing tank on/off operation.
	HYBRID	**HYBRID MODE:** In heat pump mode, the unit determines whether to switch on the electric heating based on the current state (when the water cannot reach the set temperature, only with the heat pump).
	E-HEATER	**ELECTRIC HEATING MODE:** In heat pump mode, the heat pump and the electric heater work at the same time.
	ECONOMY	**ECONOMY MODE:** It is recommended to use this mode of operation when possible, as it saves energy. The heat pump heats the water to its maximum temperature before turning on the electric heater for heating, the heat pump and electric heater will not be turned on at the same time.
	SMART	**SMART MODE:** Records users' hot water usage patterns over the past 7 days and turns on heating in advance based on the user's peak water usage times. All other unconventional hot water hours are in standby mode, without heating (it is recommended that users set this mode after 7 days of regular and normal water heater operation to avoid affecting the normal use of the water heater by not recording the user's complete habits).

3		**Disinfection:** The icon lights up when the water heater is being disinfected.
		**Electric heating:** The icon lights up when the electric heater is running. NOTE: When the operating conditions are not met to activate this function, the corresponding icon will light up briefly and then turn off.
		**Heat pump:** When the compressor is running and producing hot water, the icon will light up.
		**Clock:** The icon lights up when the clock is being set.
		**EVU:** The icon lights up when PV production is available.
		**SG:** The icon lights up during peak hours.
		**Wi-Fi Connectivity:** Lights up when WiFi is connected. turns off when WiFi is not connected; will flash at a frequency of 2Hz when adjusting the WiFi.
4		When an action on the interface is invalid, this icon flashes for 3 seconds.
		**Error:** The icon will illuminate when the unit is under protection/error.
		This flashes to remind the user to maintain the water heater. Call on your installer/maintainer.
		**High Temperature Alarm:** If the water temperature is above 50°C, it will turn on.
		**Electronic anode alarm:** This light will illuminate if the electronic anode fails.
5		**Time and clock setting:** It indicates the clock.
		**Weekly programming:** It is possible to set a weekly or daily schedule. If no program is defined, the corresponding part of the screen remains blank. Otherwise, "WEEK" or "DAY" is displayed. During the setting, the corresponding icon flashes.



Icon	Description
	POWER ON/OFF Press this button to start/stop the unit.
	TOP/BOTTOM If the screen is unlocked, tap ∧∨ to set the corresponding value. While setting the temperature, time, or vacation days, press the key for more than one second to change the value continuously. Press ⊘ to confirm the setting. When querying, the buttons allow you to switch between control elements.
	MODE Press this button to switch modes HYBRID → ELECTRIC HEATING → ECONOMY → SMART → HOLIDAYS → HYBRID
	DISINFECTION Click the button to activate the forced sterilization function.
	ELECTRIC HEATING If the display is unlocked, press this button to manually activate the water heater's electrical heater.
	TIMER Press the TIMER button to select the daily/weekly timer, and press ⊘ to enter the setting interface.
	SEARCH/QUERY MODE In the main screen, press and hold the search button for 1 second to enter technician mode. See "Technician" mode
	COPY / INSTALLER MODE In the main screen, press and hold this button for 3 seconds to enter the engineering mode. In the TIMER screen, allows you to copy a schedule. See chapter "Programming"
	DELETE This key is used to undo all settings and exit the setting. When the wireless connection is in operation, press the Delete button for more than 8s to exit the wireless connection.
	BACK Press the button to return to the previous setting or the main screen.
	CONFIRM If the screen and buttons are unlocked, press this key to download the setting settings after adjusting a setting.

	**CHILD SAFETY** In the main screen, long press the key combination for 2 seconds to enter the Child Lock state; When Child Lock is enabled, press the key combination again for 2 seconds to disable Child Lock; In the locked state, an icon appears next to the water temperature display.
 Appuyer pendant 3 secondes	**Connecting the Wireless Function** On the main interface, press and hold for 3 seconds to activate the AP wireless network mode. An icon will appear in the top right corner of the controller. Then open the app, choose the appropriate model, and once the connection is established, the Wi-Fi icon will stay on. Wireless pairing can take up to 8 minutes. If pairing fails after 8 minutes, the wireless icon will turn off. Press and hold the main interface for 8 seconds to reset the wireless function.

6.1 Setting the clock

When you first put it into operation, you must set the clock to allow the water heater to regulate properly.

In the main screen, press ⏲ for 3 seconds to enter the day of the week setting, tap ∧∨ to select the date, tap ✓ to enter the time setting, use ∧∨ to change the time. Tap ✓ to complete the setting and return to the main screen.

6.2 How it works

There are 5 different operating modes for the water heater, to change mode, you have to press the button Ⓜ. HYBRID → E-HEATER → ECONOMY → SMART → VACATION

6.2.1 HYBRID

The HYBRID mode is the right compromise between energy saving and heat-up time. It allows the compressor to be used as often as possible and activates the electrical heater when the outside temperature is too low or the heating time is too long.

6.2.2 ECONOMY

The ECONOMY mode uses the compressor primarily to heat the water. The electrical heater is only used outside the operating range of the compressor.

NOTE

Be careful, when air temperatures are low (below 2°C), the heating time can be very long (more than 10 hours). If you set time schedules, the water heater may have trouble coming up to temperature in ECONOMY mode.

6.2.3 E-HEATER

The E-HEATER mode uses only the electrical heater of the water heater.

NOTE

This mode of operation is the least economical. Electricity consumption will be higher than expected. Using this mode, the amount of water heated is about 150L which drastically reduces the amount of water available. This mode is only to be used in the event of a problem or a one-time need.

6.2.4 VACATION

The VACATION mode allows you to reduce the consumption of the water heater while you are away. You can select the number of days you are away and the water heater will automatically reactivate to be at temperature when you return.

Press Ⓜ to select and the device will automatically heat the water to a maximum of 15°C. Tap ∧∨ to change the vacation dates, then tap ✓ to confirm the setting.

6.2.5 SMART

SMART mode records your hot water usage patterns over the past 7 days. It will then deduce when hot water should be available and stop heating the rest of the time.

NOTE

It is recommended to enable this mode after 7 days of normal device use to avoid any problems with habit registration and optimize the user experience. If you do not have regular cycles of hot water use then it is not recommended to use this mode.

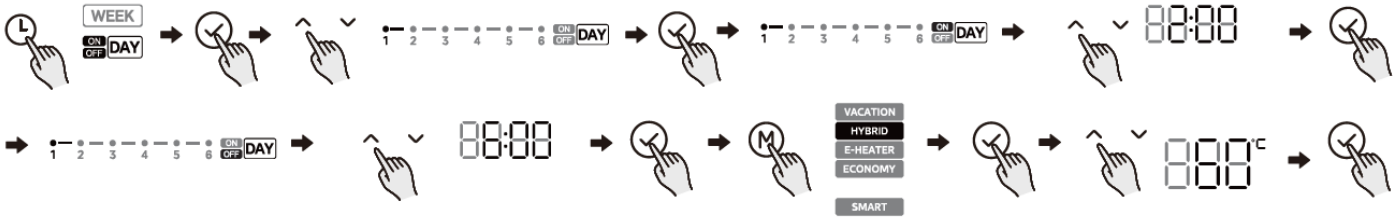
6.3 Time programming

Press to 🕒 select the daily/weekly timer, and tap ✓ to enter the setting interface.

6.3.1 Daily timer setting

When setting the daily timer, there are a total of 6 periods, each period has an on/off time, a mode and a water temperature that can be set (the default settings: energy saving mode, 60°C).

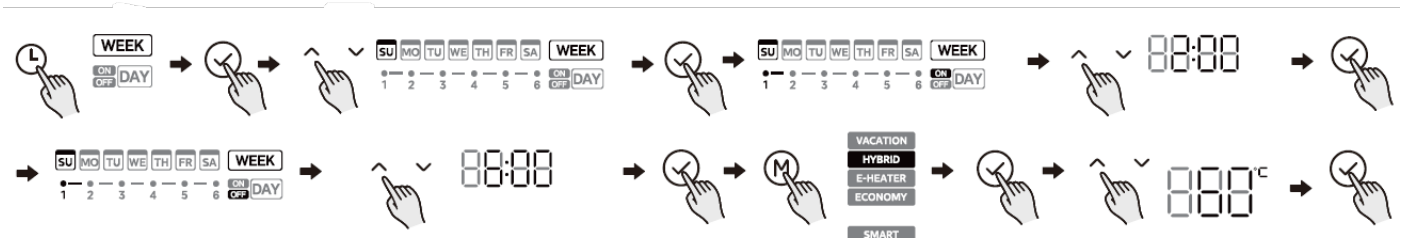
- Set the target value for the current period, and tap ✓ to move to the next setting, or tap ⮌ to return to the previous setting. After making all the settings for all periods, press again ✓ to return to the main screen.



- When setting the on/off time, you can reset the time to the default (displaying -.--) by pressing 🗑.
- In the event of a conflict between two periods, the settings for the last period will be valid and those for the first period will be overridden and reverted to the default values.
- If you set a value again after you have made all adjustments, the adjustments made after the adjustment period will be undone and the default values will be reset.
- You can enter the timer setting in both the on and off state.

6.3.2 Setting the weekly timer

The weekly timer has a total of 7 days, press to enter the selected day setting. It can then be set in the same way as a daily timer.



Copy the settings from one day to the next:

While selecting the day, tap to copy the settings for a base day, then select other days by pressing again (the status flashes rapidly). Use to confirm the operation and the settings will be copied to the selected days.

7 TECHNICIAN MODE

Press ⌕ for 1 second to enter technician mode.
The operating parameters of the system will be displayed one by one in the following order each time you press ∧ ∨, as shown in the table below.

No.	Digit hour 1	Digit minute 2	Digit minute 1	Unit	Description
1	T	S	U	°C	High water temperature
2	T	S	L	°C	Low water temperature
3	T	S	1	°C	/
4		T	S	°C	Compressor shutdown temperature
5		T	3	°C	Evaporator Temperature
6		T	4	°C	Air Temperature
7		T	P	°C	Compressor discharge temperature
8		T	H	°C	Compressor suction temperature
9		o	n	/	/
10	T	F	r	/	/
11		T	T	°C	Temperature, disinfection mode
12		C	o	A	Current (compressor + electrical heater)
13		F	o	/	Fan speed (actual speed/10)
14		E	o	/	0-255
15	E	E	r	/	No opening of the electronic regulator
16	E	E	C	/	
17	P	U	P	/	
18		P	S	/	
19		F	T	/	Fan Type (0 = AC / 1 = DC)
20		H	T	/	1
21		H	P	/	0
22	F	S	1	/	/
23	S	1	o	/	Balloon Volume
24	P	4	P	/	4-way valve status
25		U	U	/	0
26		U	1	/	Firmware version
27		U	2	/	Controller version
28		U	3	/	000
29		U	4	/	0
30		U	T	/	3
31	1	E	r	/	Last error code
32	2	E	r	/	Previous error code
33	3	E	r	/	2nd Previous Error Code
34	H	H	H	day	Timer interview
35	T	L	F	°C	Target set temperature
36	E	n	d	/	End

8 ERROR CODES

If an error appears, a sound will be heard. The icon  appears on the screen.

The error code appears in place of the temperature in an alternating manner.

Some alarms may disappear automatically.

Code Error	Details	Corrective actions
EH0b	Communication error between the tank and the controller.	Maybe the connection between the LCD and the PCB has loosened or the PCB has been broken.
EH00	EEPROM chip error.	Contact a qualified person to repair the unit.
EH03	DC fan fault.	Maybe the connection between the fan and the PCB has loosened or the fan has been broken. Contact a qualified person to repair the unit
PH15	Electrical leakage protection. If the current induction circuit of the printed circuit board checks the current difference between L,N >14mA, the system considers it an "electrical leakage error".	Maybe some wires have been broken or the wires are connected poorly. Contact a qualified person to repair the unit.
EC54	Compressor discharge temperature (TP) sensor error.	Maybe the connection between the sensor and the PCB has loosened or the sensor has been broken. Contact a qualified person to repair the unit.
EH5H	Compressor Suction Temperature (TH) Sensor Error.	
EC53	Air temperature sensor error (T4).	
EC52	Evaporator temperature sensor error (T3).	
EC5L	T5L sensor error (low water temperature sensor).	
EC5U	T5U sensor error (high water temperature sensor).	
EH5N	T5M sensor error (solar temperature sensor).	
EH5d	Electric heater open circuit error.	Maybe the electrical heater has been broken or the connection of the wires is bad after the repair.
EHLA	When the T4 ambient temperature is out of the compressor's operating range, the compressor will shut down and the "EHLA" message will be displayed until T4 returns to normal. Works only on devices without electrical heater. Devices equipped with electrical heater will never display "EHLA".	This is normal, and it does not need to be fixed.
EHHP	Fault in the heat pump system. When PH20, PH21, PC30, PC06 or other protection appears 3 times or the protection lasts for 1 hour.	The compressor is operating abnormally. Contact a qualified person to repair the unit.
PHdH	Dry-running protection	Make sure there is water in the water tank before heating.
PH20	Protection against abnormal compressor shutdown	Maybe because of a broken compressor or a bad connection between the PCB and the compressor. Contact a qualified person to repair the unit.

PH21	Compressor overload protection	Maybe because of a broken compressor, a blocked system, the presence of air, water or more refrigerant in the system (after repair), a malfunction of the water temperature sensor, etc. Contact a qualified person to repair the unit.
PH24	Frost protection in low temperatures T5L< 4°C and T4 < 7°C	The cold water temperature is too low, which affects the water tank. Electric heating works
PC30	High Pressure System Protection ≥3.0MPa enabled ≤2.4Mpa inactive	Maybe because of a broken compressor, a blocked system, the presence of air, water or more refrigerant in the system (after repair), a malfunction of the water temperature sensor, etc. Contact a qualified person to repair the unit.
PC06	High discharge temperature protection Tp>110°C, Active Protection. Tp<90°C, Inactive Protection	This can be due to a blockage of the system, the presence of air or water or a decrease in the refrigerant (leakage) in the system (after repair), a malfunction of the water temperature sensor, etc. Contact a qualified person to repair the unit.
PH9b	Overheat protection The current water temperature exceeds the target temperature by more than 5 °C	The water temperature sensor is faulty or the current water temperature is too high. In case of burns, contact a qualified person to check.
PH91	Freeze protection in case of cooling T3<-30°C lasting for 10s, Active protection. T3≥-30°C, Inactive Protection	If the defect persists, contact a qualified person to repair the unit.

To see the resolution of the various error codes, refer to the service manual.

9 OPERATING PARAMETERS

CAUTION

Changing the operating parameters of the water heater is reserved for qualified personnel. Changing these settings may affect the performance and proper operation of the water heater.

CAUTION

Any modifications, resulting in a malfunction that could damage the water heater and have not been carried out by a professional and/or expressly requested by our technical department, will result in the cancellation of the warranty.

Press ⊞ for 3 seconds to enter installer mode. You can then scroll through the settings with ∧∨.

Code	Detail	Adjustment Range	Factory Setting	Unit	Note
F 01	Changing the degree unit	0-1	0	-	0 = °C 1 = °F
F 02	Maintenance alarm	0-1	1	-	0 = OFF 1= ON
F 03	Time to alarm maintenance	30-365	365	day	Sets the time before the maintenance reminder
F 04	Validate maintenance	0-1	0	-	0= NO 1 = YES
F 05	Clear error code	0-1	0	--	0= NO 1 = YES
F 06	Allow the use of electrical heater	0-1	1	--	0= NO 1 = YES
F 07	Activate the weekly disinfection function	0-1	0	--	0= NO 1 = YES
F 08	Room temperature for activation of electrical heater	100L:-5/5 150L: -15/5	5	°C	Defines the air temperature at which the electrical heater can be activated.
F 09	Departure time of the disinfection function	0-23	23	Time	Sets the time when the disinfection function will activate
F 10	Reserved	0-2	0	--	Reserved
F 11	Vacation Mode Setpoint Temperature	10-20	15	°C	Sets the water storage temperature during vacation mode
F 12	Reserved	0-3	0	--	Reserved
F 13	Reserved	--	--	--	Reserved
F 14	Time before forced activation of the electrical heater	10-300	60	min	Defines the time, if the set point is not reached, before forcibly activating the electrical heater (F27=1 to be valid)
F 15	Protection against burns	0-1	1	--	0= NO 1 = YES
F 16	Enabling Current Sensing	0-1	1	--	0= NO 1 = YES
F 17	Temperature set for disinfection mode	60-70	65	°C	Sets the water temperature during sanitize mode
F 18	Maximum water temperature	60-70	65	°C	Sets the maximum temperature that can be set as a setpoint.
F 19 F 20 F 22 F 24 F 25	Reserved	--	--	--	Reserved
F 21	Modbus Address	1-20	1	--	Sets the Modbus address of the water heater
F 23	Reset settings to 0	0-1	0	--	0= NO 1 = YES
F 26	Disinfection function start minute	0-59	0	min	Sets the minute when the sanitize function will activate
F 27	Allowing the activation of the electrical heater in ECO mode	0-1	0		Allows or does not allow the activation of the electrical heater during the use of ECO mode. (Enables the F14 setting)
F 28 F 29	Reserved	--	--	--	Reserved
F 30	Backlight	0-1	1	--	0= active all the time 1= only during use

Code	Detail	Adjustment Range	Factory Setting	Unit	Note
F 31 **F 32** **F 33** **F 37** **F 38** **F 39**	Reserved	--	--	--	Reserved
F 34	Keyboard sound	0-1	0	--	0= no sound 1= sound on
F 35	Auto-lock	0-1	0	--	0= no auto-lock 1= auto-lock after 1 min
F 36	Temperature Delta	2-20	6	°C	Defines the temperature delta between T5U and T5L. If the actual temperature difference is greater than this delta, the heat pump activates.
F 40	Static pressure adjustment	0-3	0	Pa	0= 0-10 1= 10-20 2= 20-40 3= 40-60
F 41 **F 42** **F 43**	Reserved	--	--	--	Reserved

10 MAINTENANCE

CAUTION

Before cleaning or maintenance, always turn off your pump water heater and turn off the power.

Regularly check the connection between the plug and the power socket and the grounding wiring;

- It is recommended to set a lower temperature if the outlet water volume is sufficient, in order to reduce heat generation, prevent scaling and save energy.

- If the system is to be shut down for a long time, do the following to prevent freezing of the inner tank and damage to the electric heater:
  - Turn off the power supply;
  - Release all water from the tank and pipe and close all valves;
  - Check the internal components regularly.

- Clean the air filter monthly in case of low heating performance. For the filter placed directly at the air inlet:
  - Unscrew the air duct connector counterclockwise.
  - Remove the filter and clean it thoroughly;
  - Reassemble it on the unit.

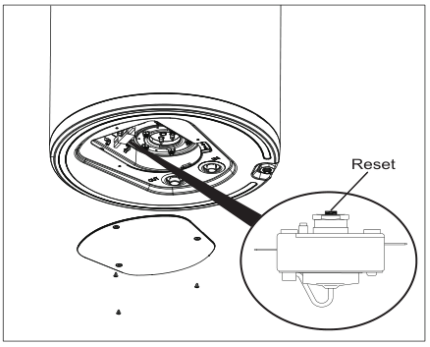
- Run and check the security group every 6 months to prevent it from crashing.

CAUTION

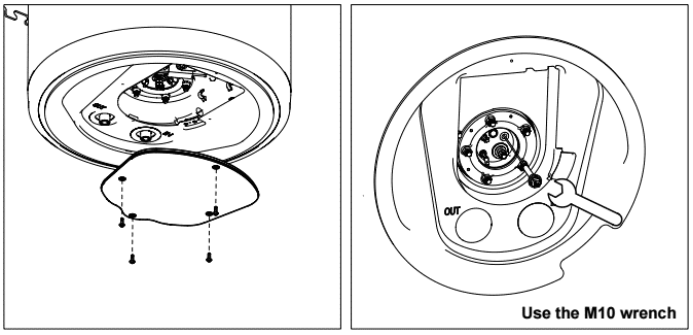
The following maintenance operations must be performed by qualified persons. Please contact your installer or our service department.

- *It is recommended to clean the electric heater every 6 months to maintain an efficient performance.*
- *Check the electrical anode every year or as soon as an error appears.*

- Before resetting the back-up temperature limiter, ensure that the operation has not been interrupted by activating an energy-saving contact or a time schedule. Check whether the safety temperature limiter of the additional electric heating has been set due to overheating (> 85 °C) or if it was triggered by a fault.



- When the impressed current anode need maintenance, please unmount it by a M10 wrench. **Don't forget to empty the tank before inspecting.**



11 WATER QUALITY

The water quality must meet the standards of the European Directive 98/83 EC and the criteria defined in the UNE 112.076 standard. Water quality must be tested before use; to evaluate criteria such as concentration, pH value, conductivity, chloride ion concentration (Cl-), sulfide ion concentration (S2-), etc. Some of the parameters of the chemical ingredients are listed in the following table:

Resistivity	2200 Ω.cm < R < 4500 Ω.cm	
Full Alkali Strength (TAC)	> 1.6 meq/l	> 8°F
CO2 Free	< 15 mg/l	
Calcium (CA++)	> 1.6 meq/l	> 8°F
Sulfate ($SO4^{--}$)	< 2 meq/l	< 10°F
Chlorides (Cl^{-})	< 2 meq/l	< 10°F
Sulphates and Chlorides ($SO4^{--}$+Cl^{-})	< 3 meq/l	< 15°F

- PH value: between 6.5 and 8.5
- Water Hardness: <50ppm.

WARNING

Failure to comply with the installation conditions, the DTU 60-1 and/or the water quality above, will result in the cancellation of the warranty on the tank of the tank (the values are given for water at 20°C).

12 DISPOSAL AND RECYCLING

Compliance with the WEEE Directive and Disposing of the Waster Product:
This product complies with EU WEEE Directive (2012/19/EU). This product bears a classification symbol for waster electrical and electronic equipment (WEEE).



This symbol indicates that this product shall not be disposed with other household wastes at the end of its service life. Used device must be returned to official collection point for recycling of electrical electronic devices. To find these collection systems please contact to your local authorities or retailer where the product was purchased. Each household performs important role in recovering and recycling of old appliance. Appropriate disposal of used appliance helps prevent potential negative consequences for the environment and human health.



AIRWELL GROUP
10 RUE DU FORT DE SAINT CYR
78180 MONTIGNY LE BRETONNEUX
FRANCE
www.airwell.com

26.AW.TFHA.WALL.IOM.R290.EN.05.03