EN

INSTALLATION AND USER MANUAL

ENERGIE®

THERMODYNAMIC SOLAR ENERGY

AQUAPURA X30 HT

R290
ECO Friendly

Revision:0
Version:01
Date: 16/11/2023

Regulations:
2014/35/UE
2014/30/UE
Regulation nº 814/2013
Regulation nº 812/2013

CE

Dear Client,

We appreciate your preference when purchasing equipment designed to heat sanitary water.

The X30 Aerothermal System will certainly meet all your expectations and provide you with many years of comfort with maximum energy savings.

Our organization dedicates a lot of time, energy and economic resources to develop innovations that promote energy savings in our products.

With your choice, you have just demonstrated your sensitivity and attention to energy consumption that affects the environment.

We are permanently committed to designing innovative and efficient products so that this rational use of energy can actively contribute to safeguarding the planet's environment and natural resources.

Keep this manual, which aims to inform, warn and advise on the use and maintenance of this equipment.

Our services are always at your disposal.

INDEX

1 INFORMATION

This manual is an aid for qualified technicians to correctly install, operate and carry out maintenance services on the heat pump.

Read this manual carefully before attempting to install, operate or carry out any intervention on the heat pump. Failure to follow these instructions may cause heat pump failure, electric shock, injury or property damage.

Installer:

Before leaving the premises, double-check the manual to make sure the heat pump was installed correctly. Start the unit and verify that the equipment is operating within normal parameters.

2 SECURITY INFORMATION

In order to protect the physical integrity of the operator, as well as the equipment, it is essential that all safety information noted in this manual is taken into account.

Hydraulic and electrical connections must comply with current regulations at the installation location.

 DANGER	Any process that the supplier believes may involve a danger of personal injury and/or property damage must be marked with a DANGER SIGN. As a means of further classifying the hazard, the symbol will be accompanied by one of the following words: • DANGER: when the operator and/or people in the vicinity of the equipment are subject to personal injury. • ATTENTION: when equipment and/or nearby materials are subject to material damage.
 INFO	All information that the supplier believes can contribute to the better performance and conservation of the equipment must be marked with the informative sign.

 NOTICE	Children must not play with the appliance. Cleaning and maintenance must not be carried out by children without supervision. This appliance can be used by children aged 8 years and over and by people with limited physical, sensory or mental capabilities or lack of experience and knowledge if they are supervised or have received instructions concerning use of the appliance in a safe way and understand the risks. involved;

2.1 Danger _

INSTALLATION:

	Description
 DANGER	The heat pump must be installed by qualified technicians. Improper installation may cause water leaks, electric shocks or fires.
	Make sure that the BC ground connection is properly connected. A bad connection can cause an electric shock.
	The refrigerant in the unit is flammable.
	• Carry out brazing or welding only on empty pipes that are clean of any lubricating oil residues; • Do not bring flames or other heat sources close to pipes containing refrigerant fluid; • Do not operate with an open flame near the unit;

IN OPERATION:

	Description
	It is prohibited to place fingers, hands or other objects on the fans. Failure to comply may cause serious injury or destruction of equipment.
 DANGER	If you detect something wrong with your BC such as a burning smell, too much noise, etc. immediately turn off the power supply. Leaving the BC operating could result in fire or destruction of the equipment.

MAINTENANCE:

	Description
 DANGER	If you need to move the BC to another location, please contact the salesperson or qualified technician. Improper installation may cause water leakage, electric shock, injury or fire.
 DANGER	Maintenance or repairs must be performed by the dealer or qualified technician. Poor intervention could cause water leaks, electric shocks, injuries or fire.
	The user is prohibited from carrying out any intervention on the BC. Failure to do so may cause water leakage, electric shock, serious injury or fire.

2.2 Notice

INSTALLATION:

	Description
 DANGER	The BC cannot be installed in places with flammable gas. The occurrence of a gas leak could cause an explosion or fire.
	Make sure that the base where you are going to install the BC is sufficiently solid, thus avoiding cracks or even falling of the BC.
	Make sure you install a separate circuit breaker for the BC. The lack of a circuit breaker can cause an overload in the circuit and, consequently, the risk of fire in the installation.

MAINTENANCE:

	Description
 DANGER	Before carrying out any intervention on the BC such as cleaning, maintenance, etc. disconnect it from the electrical ne2rk.
	It is expressly prohibited to make any type of blackout on the protection fuses. Fuses must be replaced by a qualified person.
	Do not spray the BC with flammable liquids, this may cause a fire.
	Do not use cleaning agents that contain sand, acid or chlorides, as these may damage the surface of the BC.

3 GENERAL

3.1 Manufacturer's responsibility

Our products are manufactured respecting the requirements of the various directives Europeans .

Ever worried about the quality and performance of ours products, we continually strive to improve them . Therefore, we reserve the right of modify at any moment the information described in this document .

As manufacturers, we are no longer responsible for the malfunction or even breakdown of equipment whenever:

- Instructions for use are not followed.
- No respect the instructions installation.
- Lack in maintenance (if required).

3.2 Installer's responsibility

The installer is responsible for correctly installing the equipment and starting its operation. The installer must pay attention to the following notes:

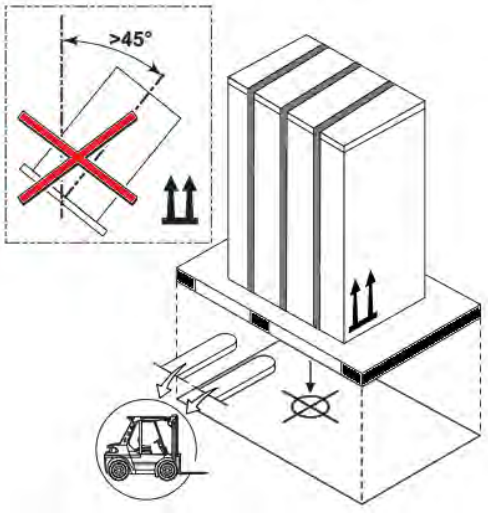
- Read and carefully follow the instructions in the manuals supplied with the device.
- Carry out the installation in accordance with the standards in force and required by the manufacturer.
- Perform the initial start-up of the equipment and check all control points.
- Explain the installation to the user and how to use the equipment.
- Warn the user of the obligation, if required, to carry out inspection and maintenance operations on the equipment.
- Provide the user with all documentation provided with the equipment (manuals and warranty certificate).

4 TRANSPORT

The Heat Pump is packed in a bottomless cardboard box and is fixed to a treated pine wood pallet with plastic straps.

When transporting, the BC must be kept vertical, otherwise damage could occur to the equipment's interior/exterior components.

The BC must be transported to the installation location on a pallet. During transport, keep the equipment as level as possible, without tilting more than 45º.



The recommended tools for transporting the unit while it is still on the pallet can be: forklift or pallet truck.

When transporting the unit, be sure to lift it only from the bottom and always with the unit placed on the pallet. Do not attempt to move the unit without assistance.

	Description
 NOTICE	The unit has been tested and inspected prior to shipment from the manufacturer for quality assurance. Carefully inspect the equipment components upon receipt to ensure that the equipment was not damaged during transportation. Confirm that all parts ordered were received as specified and that the unit type, size and voltage are correct.

5 OPERATION PRINCIPLE

The heat pump works based on a working fluid (refrigerant R290), which changes state (gas / liquid) in a continuous cycle, absorbing and releasing heat.

The ambient air is drawn in by the fan, passing it through the evaporator. The air passing through the evaporator transfers all its energy to the working fluid (the refrigerant) changing its state from liquid to gas.

With the aid of an electrically driven compressor, the refrigerant, now vaporized but still cold, is compressed and thus heated.

The refrigerant leaves the compressor in the form of a hot gas and, as it passes through the condenser, releases energy to the heating system, condenses and leaves the refrigerant in the form of a hot liquid. With this, the water in the heating system is heated to the desired temperature.

At the exit of the condenser, the gas is already in a liquid state and is transferred to the expansion valve. In the expansion valve, the pressure is reduced suddenly, consequently also lowering the temperature of the liquid quickly. The cold liquid refrigerant is transferred to the evaporator and the cycle begins again.

6 Operating conditions

The operating range of the heat pump is as follows:

Heating:

- Minimum ambient temperature -25°C
- Inlet water temperature from 15°C to 60°C

Cooling:

- Leaving water temperature 5-15°C
- Maximum ambient temperature 43°C

Comparing with oil boiler, gas boiler or electric heater, inverter heat pump is the best solution, it provides quality of life, low operating costs, safety, emission-free heat source, adequate heat, convenient control and high efficiency.

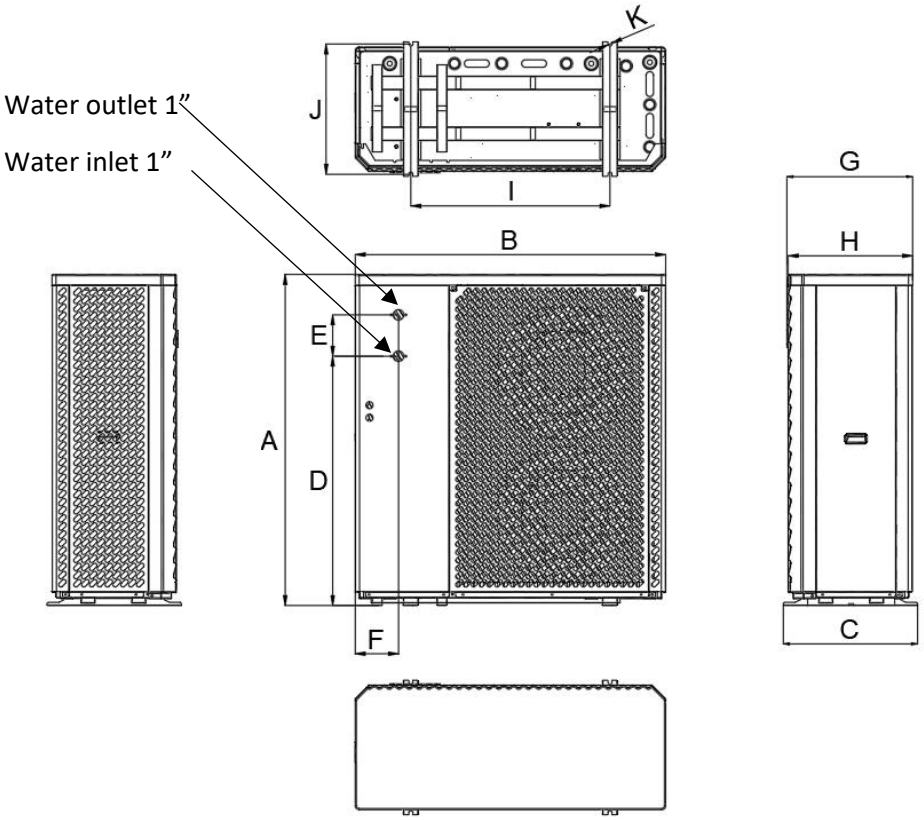
7 UNIT OVERVIEW

Air exit(horizontal)

Display

7.1 DIMENSIONS

AQUAPURA X30



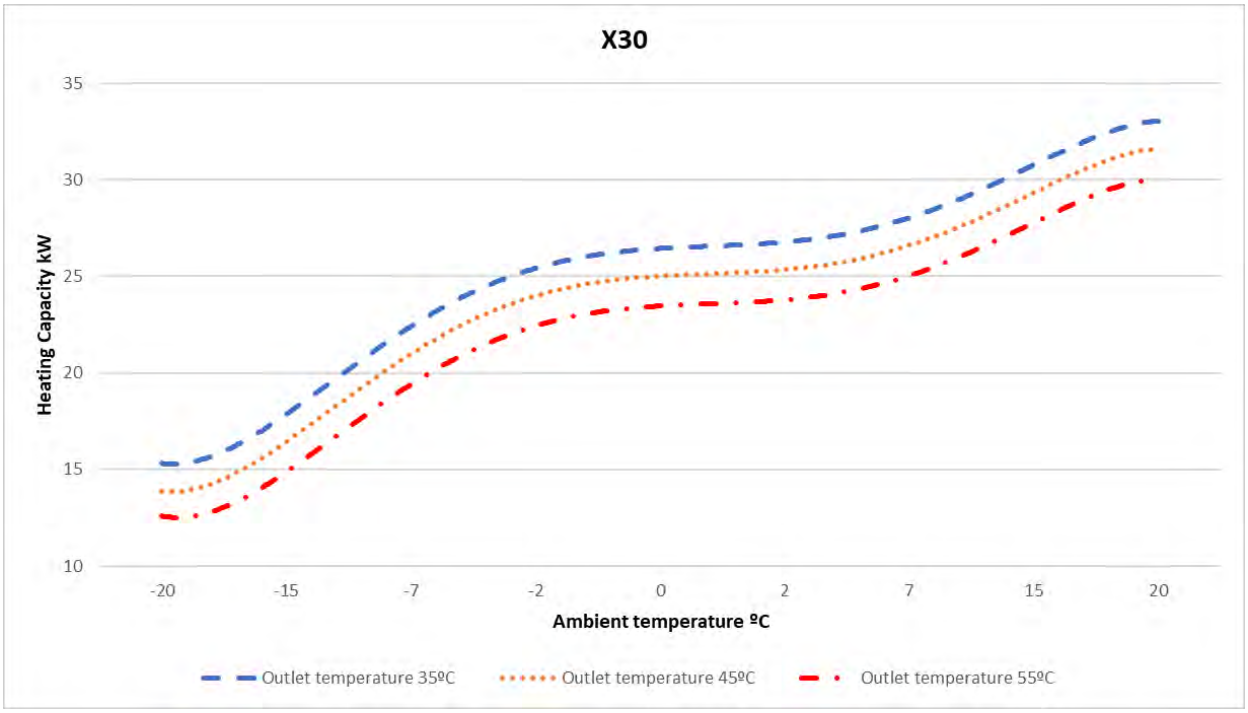
Item	Dimension(mm)	Item	Dimension(mm))	Item	Dimension(mm)
A	1330	E	166	I	800
B	1250	F	174	J	523
C	540	G	505	K	4-Ø16
D	1001	H	500		

8 TECHNICAL INFORMATION

Technical Data		**units**	**AQUAPURA X30 HT**
Electrical Supply			380~415V/3N~/50Hz
Power Provided	Heating (Nominal/ Max)	kW	28,5 / 35
	Cooling (Nominal/ Max)	kW	20,6 / 26,4
Power Consumed	Heating (Nominal/ Max)	kW	5,96 / 12,6
	Cooling (Nominal/ Max)	kW	5,71 / 12,8
COP [1]	Nominal		4.78
ERR[1]	Nominal		3.61
Energy Class at 35°C			A+++
SCOP Seasonal efficiency at 35°C			4.77
Energy Class at 55°C			A++
SCOP Seasonal efficiency at 55°C			3.59
Maximum temperature		°C	75
Maximum Consumption		kW	13.7
Maximum Operating Current		A	22
Refrigerator		g	1300
Refrigerant / CO2 Equivalent		T	0.004
Compressor			DC Inverter
Sound Pressure		dB(A)	42 to 57
Hydraulic Connections		Inches	1"
Water Flow		m3 / h	2.9
Load Loss Hydraulic Circuit		kpa	65
Room temperature		°C	-25 to 43
Dimensions (HxWXD)		mm	1330/1250/540
Weight		kg	202

1) Air temperature (DB/WB) 7°C/ 6°C; Water temperature (input/output) 30°C/ 35°C

8.1 Heat pump performance



9 INSTALLATION

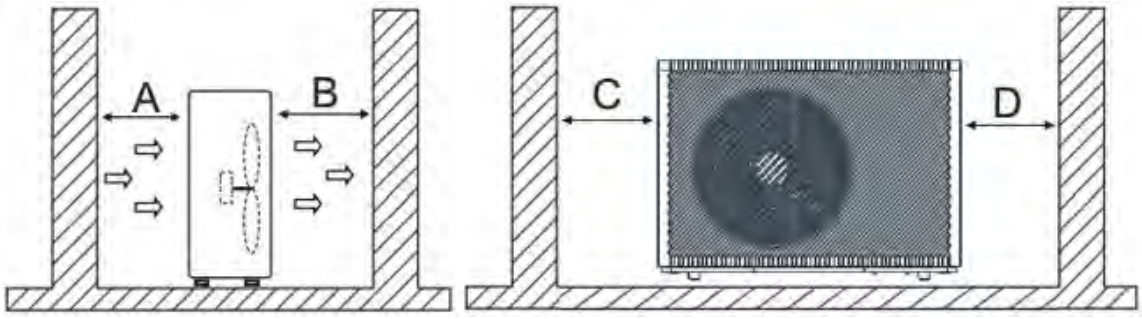
9.1 Installation location

Before starting any installation procedure, check that the base of the location where the equipment will be placed is perfectly level. This prevents the compressor lubricating oil from working outside the indicated levels.

Look for a place with a regular, safe and resistant floor, preferably concrete, taking into account the weight of the machine. At least the concrete base must be 150mm thick and if possible above ground level (100mm)

During its operation, the heat pump can create water caused by condensation from the evaporator, making it necessary to prepare the installation site with a drain point to facilitate its drainage.

Another important point is the minimum distances that the equipment must comply with in relation to walls, ceilings or any type of obstacles that could impair its performance and make access difficult, both during installation and in any maintenance operations.



	Requirements			
	A	B	W	D

	>500mm	>1500mm	>1000mm	>500mm

The walls and ceiling of the technical room can be insulated with sound absorption panels if the noise level of the heat pump is too high.

The BC's feet must be fixed to the base, preventing the equipment from moving due to the vibrations caused by its normal operation.

9.2 Condensate drainage system

In normal operation, water is produced as a result of condensation in the evaporator and defrosting cycles. Prepare a good drainage system to prevent ice from forming on the floor, thus preventing possible falls. The drain pipe must have a diameter of min. 50mm, the water discharge must be carried out into the sewer and must not be exposed in places where frost forms.

9.3 Hydraulic installation

Take the following points into consideration when executing the hydraulic circuit:

- Reduce the number of bends in the pipes as much as possible to reduce pressure losses in the installation;
- Make sure that the system's accessories, strainers, water pumps and valves are designed for the full flow of the installation. Obstructions can impact the performance of the unit and the effectiveness of the central heating system;
- The pipes must be free of dirt, if possible clean the installation;
- Load the installation to check for possible leaks and then isolate the entire installation;
- Place an expansion vessel in the installation, the pressure in the expansion vessel must be 0.5bar higher than that of the installation;
- Check that the equipment's flow switch is working correctly. Simulate a flow failure by closing a filter and check whether the controller stops the BC operation and issues an alarm message;
- The hydraulic connections between the BC and the central heating circuit must be made with a flexible pipe to avoid the transmission of vibrations;
- Before putting the BC into operation, check that the hydraulic circuit is full and properly vented. If the hydraulic circuits are isolated, each circuit must be purged, ensuring that all air pockets are eliminated from the installation;
- Place a thermometer and pressure gauge at the water inlet and outlet to facilitate inspection;
- The pressure placed in the hydraulic circuit must be between the following values: Min. 1.5 bar and Max . 2 bar.

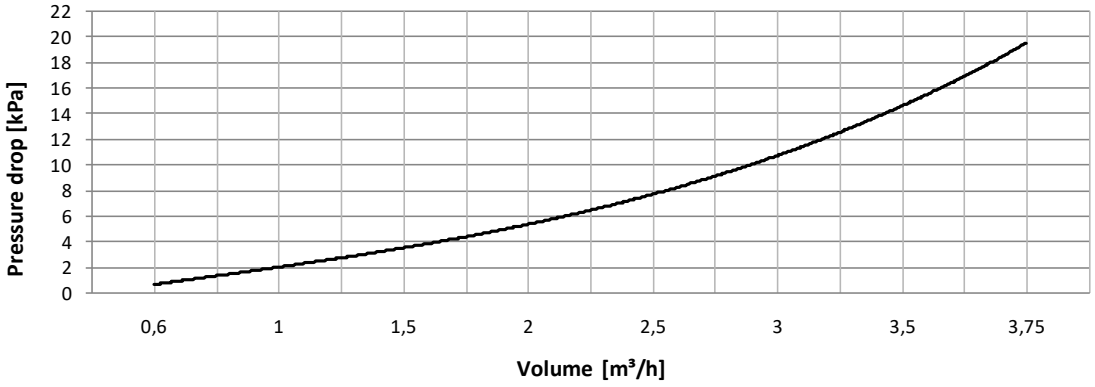
	Description
 NOTICE	The installation of the hydraulic ne2rk must be carried out by a competent professional, always respecting the hydraulic connection diagram presented by the manufacturer.

9.4 Water filter

The filter blocks any impurities present in the hydraulic circuits. Residues left in the heating pipes can damage the heat exchangers and cause the BC to not work properly. It is mandatory to install the filter in the heating circuit return line, especially if the installation does not have an inertia tank.

Note 1 : The filter must contain a mesh with holes that do not exceed one millimeter.

Note 2: The filter must be kept clean and inspected periodically in order to maintain its condition, cleanliness and ensure the proper functioning of the BC.



9.5 Water quality

Water composition and quality have a direct effect on the performance of the entire system and the lifespan of the heat pump.

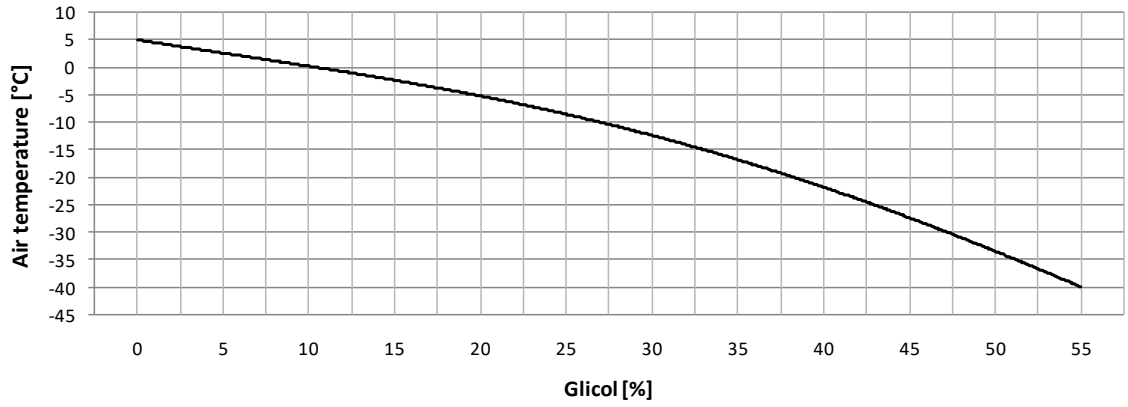
Normally the initial filling of the circuit is done with normal tap water. The water must have a pH value between 7-8 and be non-corrosive (chloride content > 150 mg/ l) or hardness (> 14 ° dH , hardness degree IV).

To eliminate any doubts, we advise you to request a water analysis.
Note: The use of chemical anti-corrosive agents is not permitted.

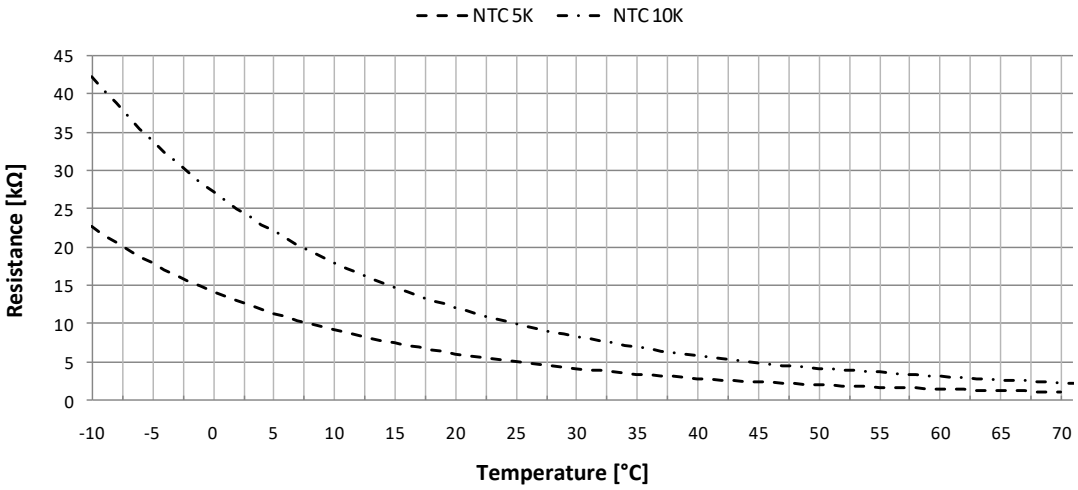
Criterion	Max value _	Consequences
PH	7-8	Danger of corrosion on parts of the heating system.
Degree of hardness	< 14dH	- Increased limescale deposits. - Reduction in the useful life of the BC.
Chloride content	< 150mg/l	Corrosion of materials.

9.6 Glycol (%)

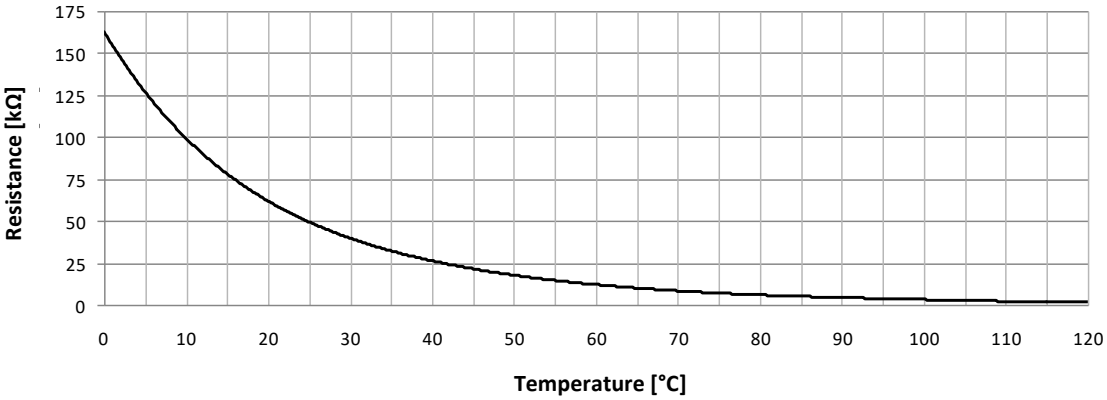
Glycol is used as an effective antifreeze in refrigeration and heating applications.
The percentage of glycol to be added to the hydraulic circuit is calculated according to the ambient air temperature, considering -5 °C. Taking this value as a reference, the installer must add 20% Ethylene Glycol to the hydraulic circuit.



9.7 Temperature probes info



NTC 50KΩ



10 ELECTRICAL INSTALLATION

10.1 General specifications

	Description
NOTICE	• The installation of the electrical ne2rk must be carried out in accordance with current local regulations and by a qualified professional. • The installer must not make any type of electrical changes to the equipment.

Before making any type of connection, check that the supply voltage corresponds to the characteristics of the device.
The equipment must be connected directly to the general electrical distribution board. Dedicated protection systems must be installed for the BC (circuit breaker and differential). Connecting the equipment together with others can cause voltage drops, impairing the functioning of the equipment.
Pay attention to conduction losses in the device's power cables; the smaller the cable's cross-sectional area, the shorter the recommended maximum length. Take note of the electrical consumption reference values of the equipment and its distance from the power source and

consult an electrical technician to advise on the diameter and type of cable to be used.
To make the electrical connection, open the side panel and connect the main power cable in the indicated locations.

	Description
NOTICE	• The equipment must be earthed in accordance with the relevant standards for this purpose. • The manufacturer is not responsible for any damage caused by a lack of earthing of the equipment or an abnormality in the electrical supply.

10.2 Electrical ne2rk specifications/protective devices

Model	Electrical supply	Max current.	* Cable section
AQUAPURA X30	380~415V/3N~/50Hz	25A	4 mm²

The wire section above was selected in accordance with current standards, considering a cable distance of 10 meters.

NOTE: Follow local regulations when selecting ground wires and circuit breakers.

Select protection systems according to the following table:

Model	Electrical supply	Max current.	CB	ELB (number of poles /A/ mA)
AQUAPURA X30	380~415V/3N~/50Hz	25A	40A	3F+N/ 40/ 30

CB – Circuit breaker; ELB – Differential

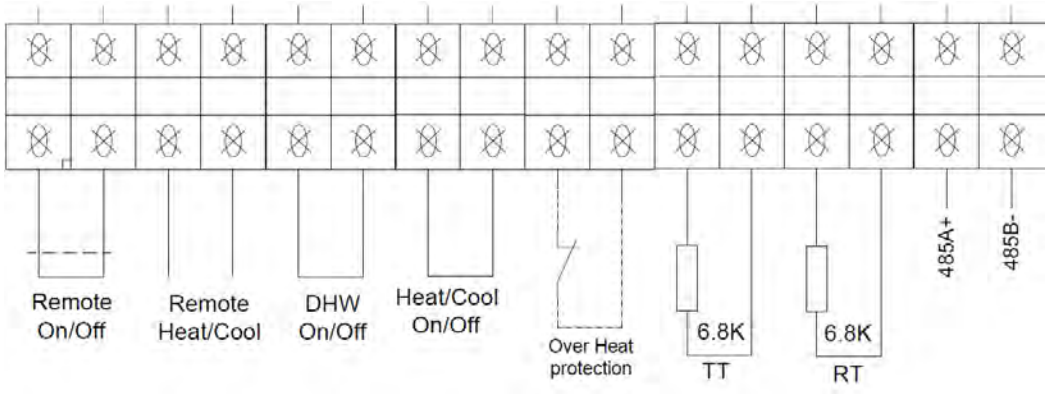
10.3 Connection outdoor unit with display

The equipment is supplied with a 12 meter cable to connect the outdoor unit with the display.
If the supplied cable is not long enough and the distance between the outdoor unit and the display is less than 50 meters, we recommend installing a direct cable.
The cable must have at least 4 conductors with a section of 0.5mm and protected with a shield to avoid interference and a maximum length of 200m.

	Description
NOTICE	 The cable shield must be connected directly to the equipment's ground connection.

10.4 Connection terminals – Inputs

	Description
NOTICE	The digital inputs mentioned are dry contacts (no voltage). Do not connect (220/240V~) on the terminals, otherwise it may cause irreversible damage to the controller and void the warranty.



* Note: The position of these terminals may vary depending on the model. Please check the electrical diagram of the machine

	Description
REMOTE ON/OFF terminal	Turn equipment on or off remotely. • Contact open, BC OFF; • Contact closed, BC ON;
REMOTE HEAT/COOL terminal	Select Hot or Cold operating mode; • Open contact, BC in Cooling mode ; • Contact closed, BC in Heating mode ;
Terminal DHW ON/OFF	Activate DHW function; • Open contact, BC with DHW function inactive; • Contact closed, BC with DHW function active;
Terminal HEAT/COOL ON/OFF	Activate or deactivate BC operation in Hot operating mode or in Cold operating mode: • Open contact, BC on standby; • Contact closed, BC active.
TT Terminal	Temperature probe for DHW tank (NTC10KΩ@25ºC probe)
Terminal 485A+/485B-	Connection for RS485/ Modbus communication

	Description
NOTICE	ATTENTION: The digital inputs are inactive by default, giving priority to settings made via the console. To activate the digital inputs, you must contact a specialized technician or configure them according to the procedure indicated.
NOTICE	 • **Use cable protected with steel mesh in the digital input connections, this way we protect the digital inputs against noise coming from the compressor, electrical ne2rk, etc.** • **Failure to use this type of cable may cause abnormal behavior in the operation of the equipment.** • **The mesh must be connected to the equipment earth.**

10.5 Digital input configuration

To activate the digital inputs, proceed as follows:

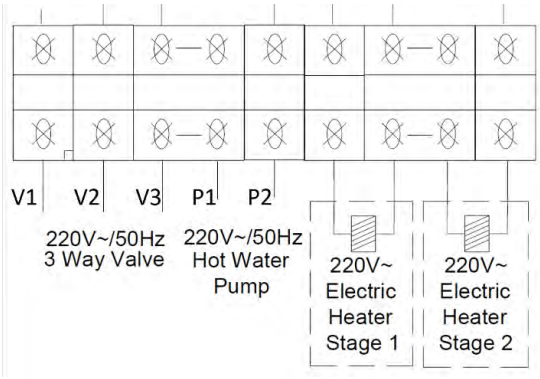
1st Access the user interface, click on the " Parameter " icon and enter the password 022.

2nd Access the " Parameter " menu;

system " menu, change the following parameter:

Parameter	Settings
H07 – Control Mode	Display
Update to:	
H07 – Control Mode	Dry contact

10.6 Connection terminals – Outputs



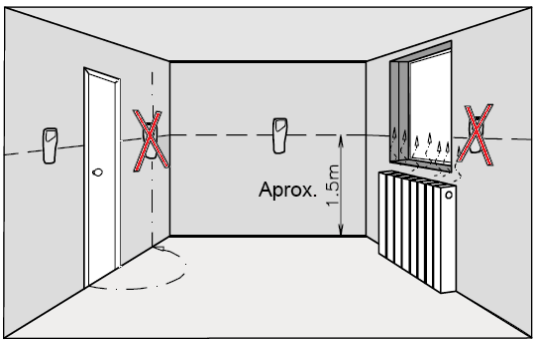
* Note: The position of these terminals may vary depending on the model. Please check the machine's electrical diagram.

	Description
Terminal V1 – Permanent phase V2 – Switching phase V3 – Neutral	Connection terminal for the 3-way valve. Polarized output with voltage (230V~) when the DHW function is active.
Terminal P1 – Neutral P2 - Phase	Connection terminal for DHW circulating pump. Polarized output with voltage (230V~) when the DHW function is active.

11 ENVIRONMENTAL THERMOSTAT INSTALLATION

The simplest way to improve and control the comfort level of your installation is through a room thermostat.

Its installation location is extremely important, following a series of requirements as we can see in the following figure.



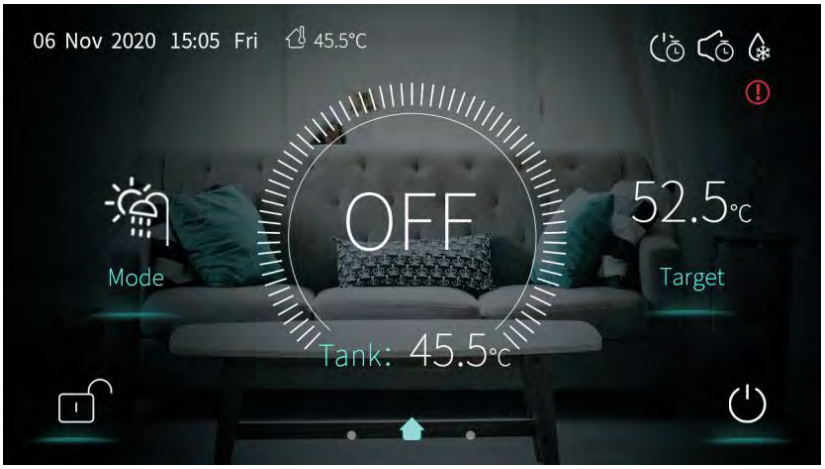
The thermostat must be installed:

- On an interior wall approximately 1.5m from the floor level;
- In a place where the temperature is as uniform as possible;
- Where there is good air recirculation around the thermostat.

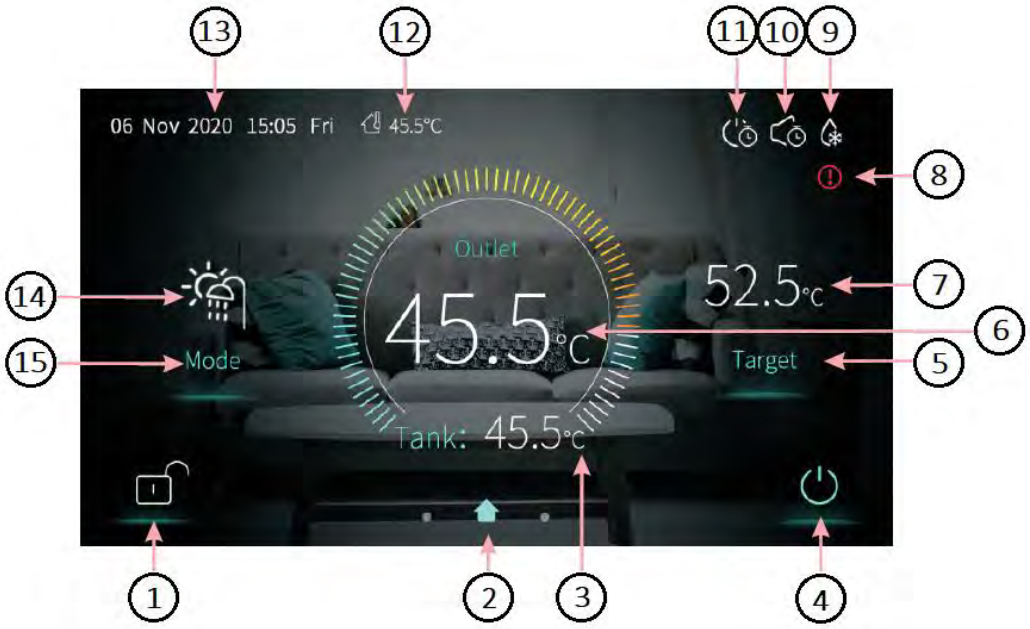
Installing the thermostat should be avoided:

- On exterior walls, near windows or behind doors;
- Near heat emitters (radiators, convectors, etc.);
- Behind or near doors

12 PANEL – MAIN INTERFACE



12.1 Description control panel

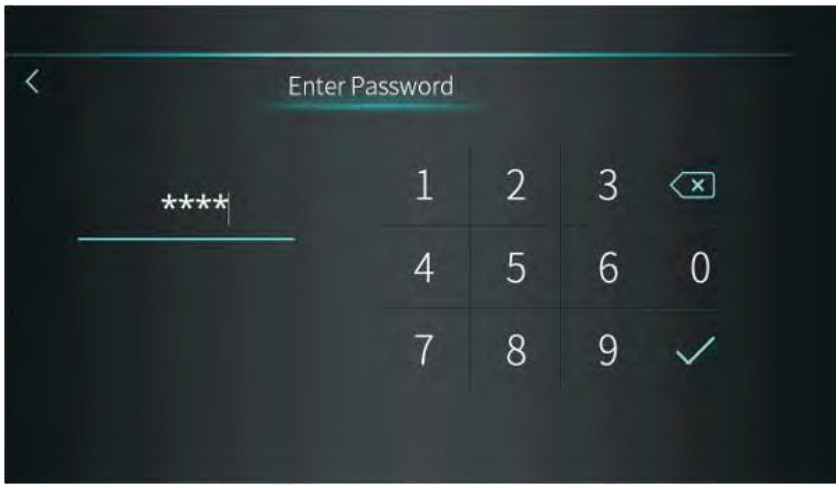


Number	Function
1	Click this key to lock/unlock the display. White display represents not enabled, while blue represents enabled.
2	Click this button to access the main menu.
3	Water temperature scale in the tank. The machine is in hot water mode when this scale is displayed; otherwise, the scale is inactive.
4	Click this button to turn ON or OFF Blue represents ON, while white represents OFF.
5	Click this key to set the operating temperature.
6	Leaving water temperature
7	Operating temperature (setpoint)
8	Fault/alarm icon. This icon will flash when there is an error
9	Icon active when the heat pump is running a defrost cycle

10	Silent mode timing icon. It is displayed when it is active.
11	Timing icon in ON/OFF mode. Appears when active
12	Outdoor temperature (AT)
13	Date and time
14	Operating mode
15	Click the button to select the heat pump operating mode. • DHW; • Heating mode; • Cooling mode; • DHW + Heating mode; • DHW + Cooling mode.

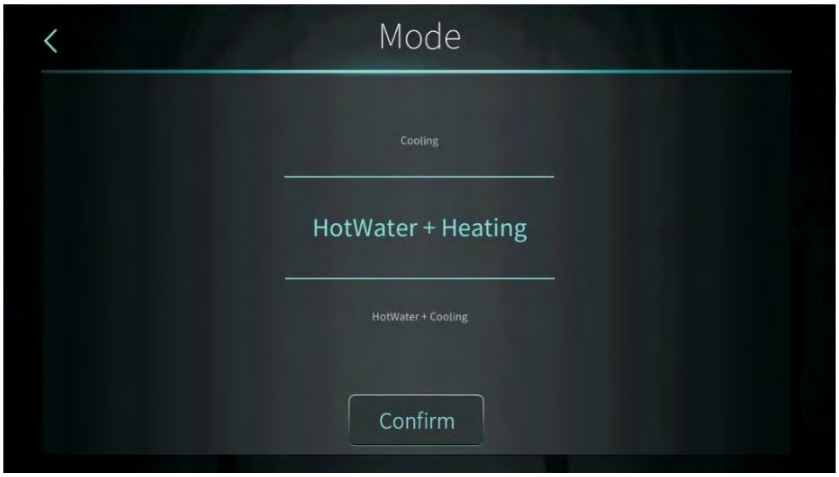
12.2 Select operating mode

Click the lock/unlock key and the following interface will automatically appear:



To unlock, you must enter the password 22 or 022.

12.3 Select operating mode

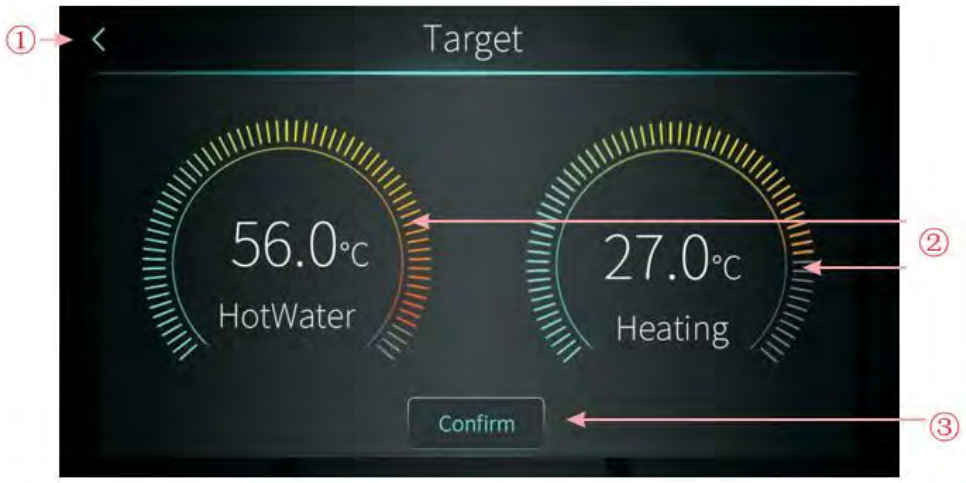


There are five modes that can be selected by swiping on the options:

	Description
“Hot water ” DHW function	Heat pump working for DHW production
“ Heating ” Heating Function	Heat pump working for room air conditioning – Heating mode
“ Cooling ” Cooling function	Heat pump working for room air conditioning – Cooling mode
“Hot water + Heating ” DHW + Heating function	Heat pump working for room air conditioning (heating mode) and DHW
5“Hot water + Cooling ” DHW + Cooling function	Heat pump working for room air conditioning (cooling mode) and DHW

	Description
NOTICE	• The DHW function has priority over the ambient air conditioning functions (hot/cold)

12.4 Select operating temperature



Select, for example, the domestic hot water + heating operating mode:

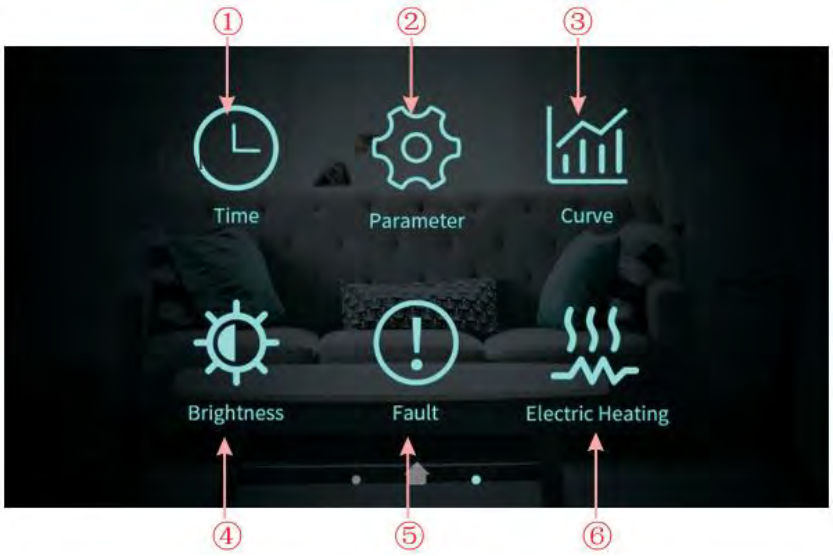
(1) Tap ① to return to the main interface;

(2) ②, slide the scale to adjust the temperature. Clockwise to increase the temperature and counterclockwise to decrease.

(3) Tap ③ to save the set temperature.

12.5 Function menu

Swipe from right to left on the main interface to enter the setting interface, and swipe from left to right on the setting interface to return to the main interface.
The function configuration interface is shown in the figure below.



	Description
1	Click this key to set the time function
2	Click the key and enter the password to enter the factory parameter settings and status parameter interface.
3	Click this key to view the temperature curve.
4	Click this button to adjust the screen brightness
5	Click to view failure history
6	When activating Support electrical resistance , the icon color will be blue, otherwise it will be white. (inactive function)

12.6 Function menu – timer

N one.	Description
1	Set general system/controller time
2	Setting the period of operation in silent mode. In this operating mode, the compressor and fan will work at low frequencies.
3	Definition of the equipment's operating period

12.6.1 Set system time

When entering the system time setting page, the system time will be initialized to the time when the button is pressed. You can adjust the time by swiping up or down on the numbers.
Note: The date and time format is displayed as: month-day-year / hour: minute: second.

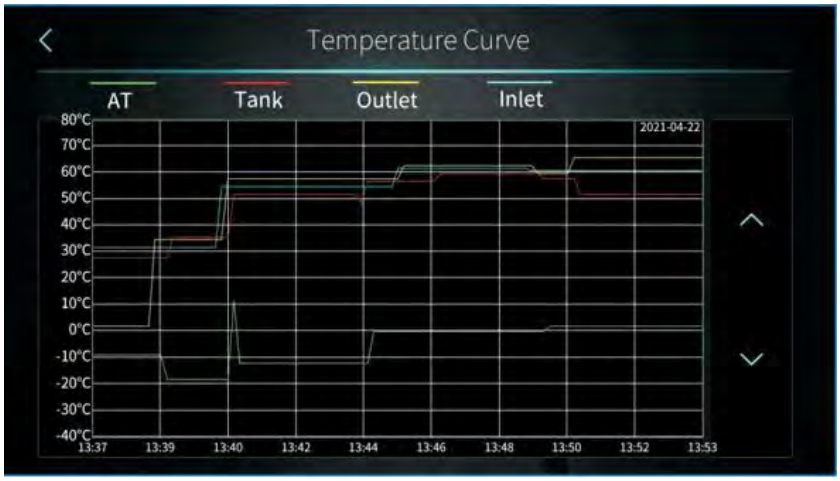
12.6.2 Set opening hours in silent mode

On one.	Description
1	Click on the key to activate the start of the period (ON – blue icon / OFF – gray icon)
	Click on the key to activate the end of the period (ON – blue icon / OFF – gray icon)
2	Setting the period of operation in silent mode (set period between 00:00 and 23:59)
3	State of the period.

12.6.3 Set opening hours in ON/OFF mode

On one.	Description
1	Click on the key to activate the period (ON – blue icon / OFF – gray icon)
2	Setting the day of the week
3	Definition of the operating period (defined period between 00:00 and 23:59)
4	Click on the cursor to consult the various periods. 6 operating periods can be configured

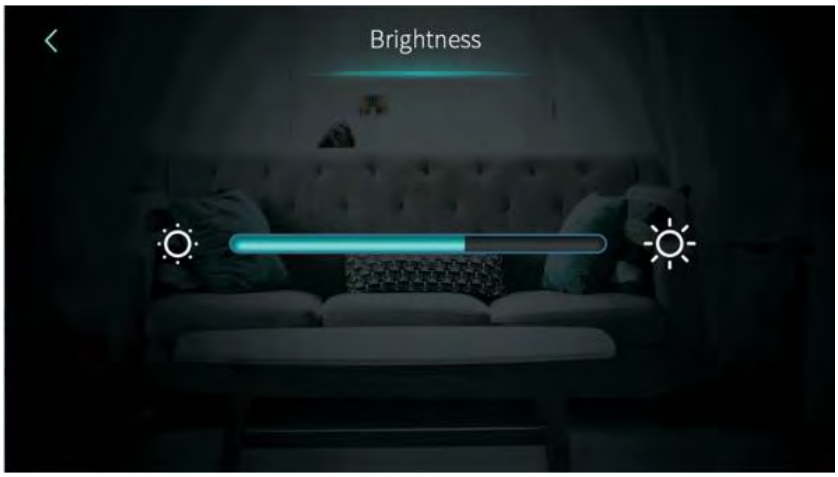
12.7 Temperature graph



This function records the inlet water temperature, outlet water temperature, DHW tank water temperature and ambient temperature.
Temperature data is acquired and saved every five minutes. Timing is done from the last data record, if power is interrupted for a period of time less than five minutes, data during that period will not be saved.
Temperature recordings only occur when the equipment is turned on.

12.8 Display brightness calibration

Drag the center bar to adjust the display brightness.
Tap the back key to save the configured brightness adjustment.



12.9 Activate electrical support resistance

In heating operating mode, touch the " Electric Heating " to activate/deactivate the support resistance (blue icon active resistance/ gray icon deactivate resistance)

Note: The resistance is not an integral part of the equipment. Its installation will have to be done separately.

12.10 Check equipment status

Swipe from left to right on the main interface to enter the “status” interface. To return to the main interface, swipe from right to left.

12.11 Consult list of alarms

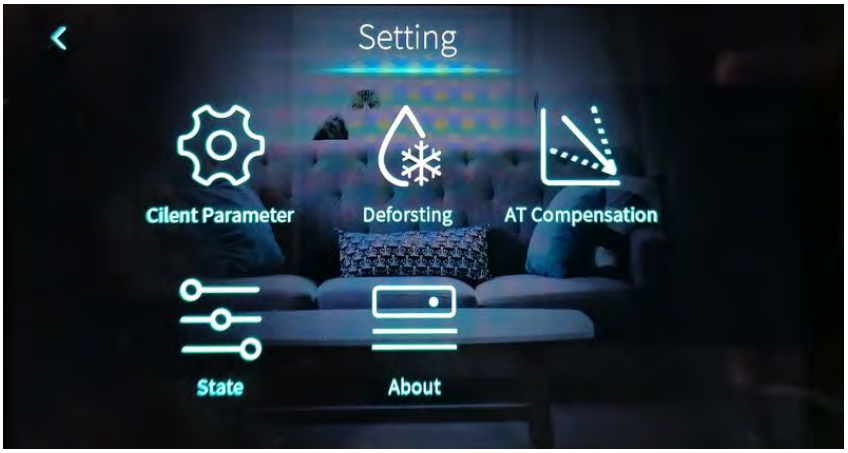
Click the alarm icon on the main interface to enter the following interface:

On one.	Description
1	Alarm code
2	Description of the alarm followed by the date and time of its occurrence;
3	Click this button to clear all alarm history;
4	Indicates the number of alarms/messages that occurred.

13 CONTROL PANEL – INSTALLER INTERFACE

To access the user interface, click on the “ Parameter ” icon and enter the password 022.

After entering the password you will have access to the following menu:



“ICON”	Description
“ Client Parameter ”	Installer Parameters
“ Defrosting ”	Force defrost cycle
“(AT) Compensation ”	Compensation temperature
“ State ”	Status of the main equipment outputs (compressor, fan, etc.)
“ About ”	SW version information

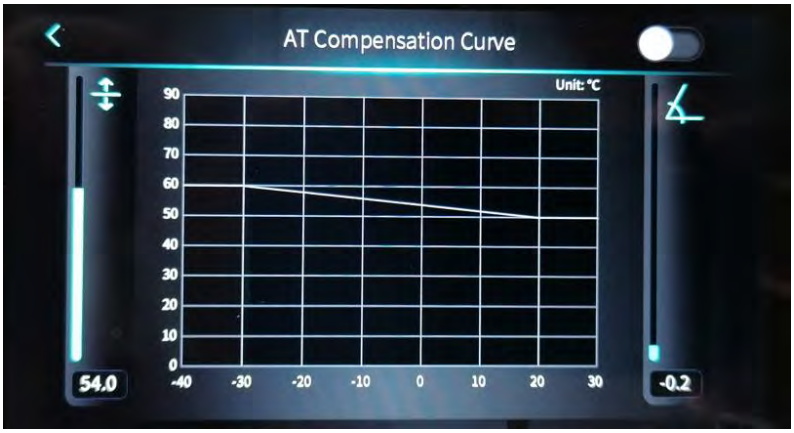
13.1 Installer Parameters

	Description	Status/configuration
“ System ” System	H05 – activate cold operating mode	Yes
	H07 – Control mode	Display
	H10 – Unit address (RS485 ModBus)	1
	H18 – Support resistance stage	Stage 3
	H20 – 3-way valve polarity	ON – Polarized output (0V to 230V) when DHW mode is active.
		OFF – Depolarized output (230V to 0V) when ASQ mode is active)
	H21 – Temperature unit	ºC
	H22 – Activate silent mode	Yes
	H25 – Control temperature	Probe for outgoing water.
	H28 – Activate heating/cold + DHW mode	Yes
	H30 – Activate Hydraulic mode	No
	H32 – Force timer mode	120 min
	H36 – Enable compensation	No
	H37 – DHW function control	TT temp probe
	H38 – Language	English
“ Protect ” Protection	A04 – Min water temperature activate anti-ice mode	4°C
	A23 – min outlet water temperature	5°C
	Temp differential to limit comp frequency .	7°C
	A28 – Temperature difference between leaving water and DHW temp	7°C
“ Defrost ” Defrosting	D03 – Interval between defrosting cycles	45min
	D17 – Temperature at the end of the defrosting cycle.	13°C
	D19 – Maximum defrost cycle time	8min
	D24 – Defrost mode	Cycle reversal (hot)
“ Temp ” Temperature	R01 – DHW Setpoint	52°C
	R02 – Central heating setpoint	55°C
	R03 – Cold setpoint	7°C
	R04 – Differential in heating mode	5°C
	R05 – Hysteresis heating mode	1°C
	R06 – Differential in cold mode	5°C
	R07 – Cold mode hysteresis	1°C
	R16 – Differential in DHW mode	5°C

	R17 – Hysteresis DHW mode	2°C
	R35 – Support resistance	No
	R70, 71, 72, 73, 74	Configuration not applicable
“Pump” circulator pump	Circulator pump operating mode	Interval
	DHW circulator pump operating mode	Interval
	P06 – Manual control of circulator pump	No
	Circulation pump activation period	0 days
Anti-legiponella	G01 – Temperature anti-legionella	60°C
	Anti-legionella cycle duration	0min
	G03 – Anti-legionella cycle start time	1h
	Anti-legionella cycle period	30 days
	G05 – Activate anti-legionella cycle	Yes

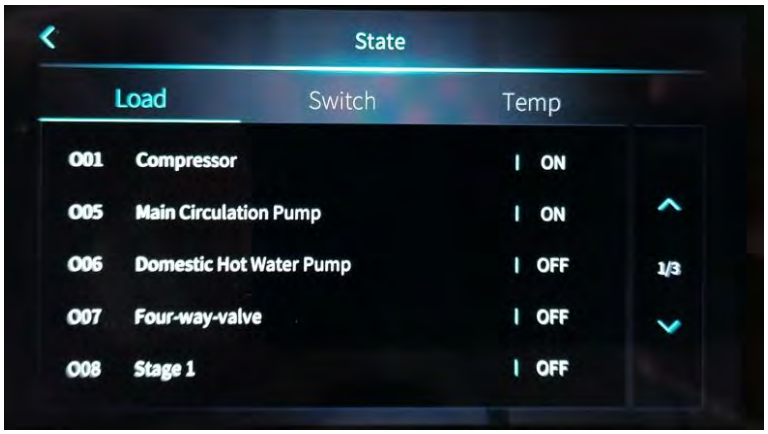
	Description
NOTICE	**Changing settings/parameters without consulting a specialized technician may cause malfunctions or cause irreversible damage to the equipment.**

13.2 Compensation curve - Outdoor temperature Vs setpoint



When activating the outdoor temperature compensation function Vs leaving water temperature for the central heating circuit, you must take into account that the setpoint will be adjusted depending on the temperature defined in the graph.
Vertical axis – Leaving water temperature
Horizontal axis – Outdoor temperature

13.3 Status of analog and digital outputs/inputs



In this interface you can check the status of the main equipment variables, such as: status of the compressor, water pump, 3-way valve, flow switch, pressure switches, temperature values, pressure values, current consumed by the compressor, etc.

13.4 Information – Software version

14 ALARMS

14.1 Alarms – Electronic control

Anomaly	Code	Problem	Problem resolution
Temp . return water	P01	Return water temperature probe failure	Check or replace probe
Temp . outlet water	P02	Leaving water temperature probe failure	Check or replace probe
Temp . DHW	P03	DHW temperature probe failure	Check or replace probe
Temp . environment - AT	P04	Room temperature probe failure.	Check or replace probe
Temp . aspiration	P17	Suction temperature probe failure	Check or replace probe
Heating return water temp	P013	Heating return temperature probe failure	Check or replace probe
Return DHW temp	P018	DHW return temperature probe failure	Check or replace probe
Heating water outlet temp	P023	Heating water outlet temperature probe failure	Check or replace probe
Temp . DHW outlet	P028	DHW outlet temperature probe failure	Check or replace probe
Temperature environment	P42	Room temperature probe failure	Check or replace probe
Temp. EVI input	P101	Expansion valve probe failure	Check or replace probe
Temp. EVI output	P102	Expansion valve probe failure	Check or replace probe
Tube temperature _ distributor	P152	Distributor tube probe failure	Check or replace probe
Temp . evaporator - CT	P153	Evaporator temperature probe failure	Check or replace probe
Temp . discharge	P181	Compressor discharge temperature probe failure	Check or replace probe
Temp . high discharge	P182	Compressor discharge temperature probe failure. Discharge temperatures (Discharge temperature ≥ 110ºC.	Check or replace probe
Anti- freeze temperature	P191	Antifreeze temperature probe failure	Check or replace probe
Water mixing tube temperature	P02a	Temperature probe failure	Check or replace probe
Inertia tank temperature	P03a	Inertia tank temperature probe failure	Check or replace probe
Suction pressure sensor	PP11	pressure transducer or lack of refrigerant	Check or replace sensor. Check the pressure in the circuit.
High sensor pressure	PP12	pressure pressure sensor failure	Check or replace the sensor. Check the pressure in the circuit
Temp . exterior (AT)	TP	Low outdoor temperature	Check or replace probe
No cooling at low ambient temperature	TC	The temperature sensor is not correctly mounted or the value is less than A30	Check or replace probe
Overheating protection	E04	Resistance safety thermostat is damaged or water is too hot.	Check that the compressor is working properly
Excessive temperature differential	E06	Water flow is insufficient and has a	Check the water flow and

between inlet and outlet		low pressure differential	possible obstructions
Communication failure	E08	Communication failure between display and control board	Check connections between display and control board
High pressure switch	E11	pressure switch or excess pressure in the circuit.	Check the status of the pressure switch and the pressure in the circuit
Low pressure switch	E12	pressure switch or low pressure in the circuit.	Check the status of the pressure switch and the pressure in the circuit
Antifreeze protection circuit 1	E19	Anti-freeze protection (2ºC < return water temp < 4ºC and ambient temp ≤ 0ºC).	Check the ambient temperature value
Frost protection circuit 2 (not applicable)	E29	Anti-freeze protection (2ºC < return water temp < 4ºC and ambient temp ≤ 0ºC).	. Check the ambient temperature value
Insufficient water flow for defrosting	E030	The water flow value is lower than the minimum unit value	Check or change the hydraulic system to provide the required flow
Flow switch	E032	Lack of water in the hydraulic circuit, excess air or clogged filter	Check the hydraulic circuit.
Compressor over current protection	E051	Excessive current consumption by the compressor	Check that the compressor is working correctly; Check compressor current
Excessive temperature at the water outlet	E065	Insufficient amount of water in the system	Check or change the hydraulic system
Low temperature at the water outlet	E071	Insufficient amount of water in the system	Check or change the hydraulic system
Communication failure between fan motor 1 and power board	E081	Communication failure between control board and inverter drive.	Check connections between control board and inverter drive
Communication failure between fan motor 2 and power board	E082	Communication failure between control board and inverter drive	Check connections between control board and inverter drive
Display and power board communication failure	E084	The display software is not compatible with the power board	Check the software version of the controller and power board
Communication failure with the hydraulic module	E08c	Communication failure with the hydraulic module	Check the connection
Hydraulic circuit anti-freeze protection	E171	Leaving water temp ≤ 4ºC	Check water flow; temp probe connections . of the leaving water;
Fan 1 failure	F031	1. Blocked fan motor rotor; 2. Connection between the fan motor and control board damaged or with poor contact.	Check the fan motor; Check the electrical connections;
Fan failure 2	F032	1. Blocked fan motor rotor; 2. Connection between the fan motor and control board damaged or with poor contact.	Check the fan motor; Check the electrical connections;

14.2 Alarms – Frequency control module

Anomaly	Code	Problem	Problem resolution
Overcurrent protection in the IMP	F00	IMP current too high	Check compressor current and operating frequency.
Compressor start failure	F01	Failure of a phase; Damaged compressor drive.	Check the input voltage; Check the compressor drive;
PFC failure	F03	PFC failure (power factor correction module)	Check the PFC module
High voltage protection on the DC bus	F05	DC bus voltage too high	Check the R/S/T voltage (voltage < 500V). If the values are normal, replace the compressor or driver.
Low voltage protection on the DC bus	F06	DC bus voltage too low	Check the R/S/T input voltage (voltage >210V). If the values are normal, replace the compressor or driver.
AC input low voltage protection	F07	The input voltage is too low.	Check the R/S/T voltage (voltage > 300V). If the voltage is less than 300V, replace the compressor or driver.
AC input high voltage protection	F08	The input current is too high,	Check the current in the compressor
Input voltage failure	F09	Input voltage failure	Check input voltage
Communication failure between DSP and PFC.	F10	Communication failure between DSP and PFC.	Check the connections between the 2 modules.
DSP communication failure	F11	Communication failure between DSP and inverter drive.	Check the connections between the 2 modules.
Inverter drive communication failure	F12	Communication failure between the inverter drive and the control board (PC8002).	Check communication between the inverter drive and the control board (PC8002).
IPM overheat protection	F13	IPM module temperature too high	Check if the fans are working; Check that the evaporator is clean; Check that the installation complies with the requirements defined in the manual;
Protection lack of magnetism in the compressor.	F14	Compressor magnetic force is not enough	
Lack of phase	F15	Missing phase at the input	Check input voltage
IPM failure	F16	Excess current in the compressor or current leakage to earth.	Check for a short circuit at the inverter output, excess current in the compressor or current leakage to ground.
Temperature probe failure	F17	Failure of the inverter drive heatsink temperature probe; Overheated inverter drive	Check the temperature in the inverter drive.
IPM current sample reading failure	F18	IPM current sample reading failure	Check and adjust current measurement
IGBT module overheating	F20	IGBT module overheated	Check the temperature on the IGBT module.
Excess current	F21	Current consumed by the compressor too high.	Check the current in the compressor.
Excess AC current at input	F22	Current consumed too high	Check input current

EEPROM Alarm	F23	Damaged control board	Replace the control board.
Damaged EEPROM	F24	Damaged control board	Replace the control board.
LP 15V	F25	V15V above or below the reference voltage.	Check that the voltage is within the values 13.5 < V < 16.6V
IGBT module overheating	F26	IGBT module overheated	Check the temperature on the IGBT module.
EEPROM failure	F29	Memory chip reading failure	Check the frequency conversion board
Compressor current - alarm on frequency reduction	F33	Compressor frequency is reducing	Check current measurement
The fan board has lost power	F101	The fan has lost power	Check that the cables are correctly connected
The fan board cannot start	F102	Fan current is insufficient	Check if the fan is blocked or stuck
Excessive current in the fan board	F105		
The fan power board has overheated	F106	The board has poor heat dissipation	Check the board
Fan rotation speed is excessive	F109	Fan rotation speed is excessive	
Fan current failure	F112	Fan current is not stable	Check the fan board
Fan power board has excessive current	F113	Fan power board has excessive current	
Compressor board and power board communication failure	F151	Compressor board and power board communication failure	Check communication between boards

15 PROBLEM SOLVING

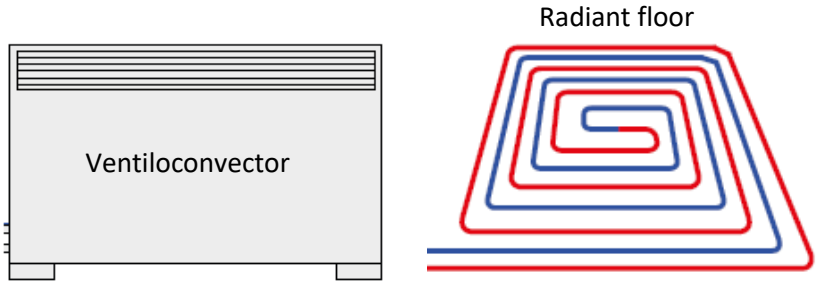
Problem	Possible cause	Solution
BC does not work, display has no information	1) Electrical supply failure. 2) Circuit breaker off. 3) Power cord not properly connected. 4) Phases switched. 5) Blown controller fuse	1) Check the electrical power supply. 2) Check if there is any anomaly and turn the circuit breaker back on. 3) Correctly connect the power cord. 4) Change one of the phases. 5) Check the fuse
Circulator pump makes a lot of noise or there is no water	1) Lack of water. in the hydraulic circuit, 2) Air in the installation 3) Closed valves 4) Dirty or blocked water filter	1) Check that there is no water leak. Fill the circuit 2) Purge the hydraulic circuit. 3) Open the valves 4) Clean the filter
High compression temperature	1) Too much refrigerant gas; 2) Low heat exchange in the evaporator	1. Rectify the refrigerant gas charge; 2. Check and clean the evaporator. Faulty fan.
Low pressure alarm	1) Lack of refrigerant gas 2) Very low outside temperature. 3) Obstruction of the refrigerant circuit.	1. Refrigerant gas leak. 2. Check that the evaporator is not clogged with ice. 3. Check the filters
Compressor does not start	1) Compressor electrical supply failure 2) contactor . 3) Compressor thermal active. 4) Return temperature probe faulty. 5) Lack of flow	1) Check the electrical power cable for compressor. 2) Replace the contactor . 3) High compression temperature. 4) Replace temperature probe. 5) Circulator pump turned off. Clean the water filter.
Compressor makes a lot of noise	1) Return of liquid to the compressor. 2) Compressor broken.	1) Clogged evaporator. Fan off. 2) Replace compressor.
Fan doesn't work	1) Faulty fan relay. 2) Faulty fan.	1) Replace the relay. 2) Replace the fan
Compressor works, but does not heat or cool.	1) Lack of refrigerant gas. 2) Clogged heat exchanger. 3) Damaged compressor.	1) Check that there are no leaks. Charge refrigerant gas. 2) Replace the condenser. 3) Replace the compressor.
Low leaving water temperature	1) Lack of flow 2) Low operating setpoint .	1) Clean the filter and bleed the air from the hydraulic system. 2) Adjust the operating setpoint .

Flow switch alarm	1) Obstruction of the hydraulic circuit. 2) flow switch .	1) Clean the filter and bleed the air from the hydraulic system. 2) Replace the flow switch .

16 ATTACHMENT

16.1 INSTALLATION PLANTS

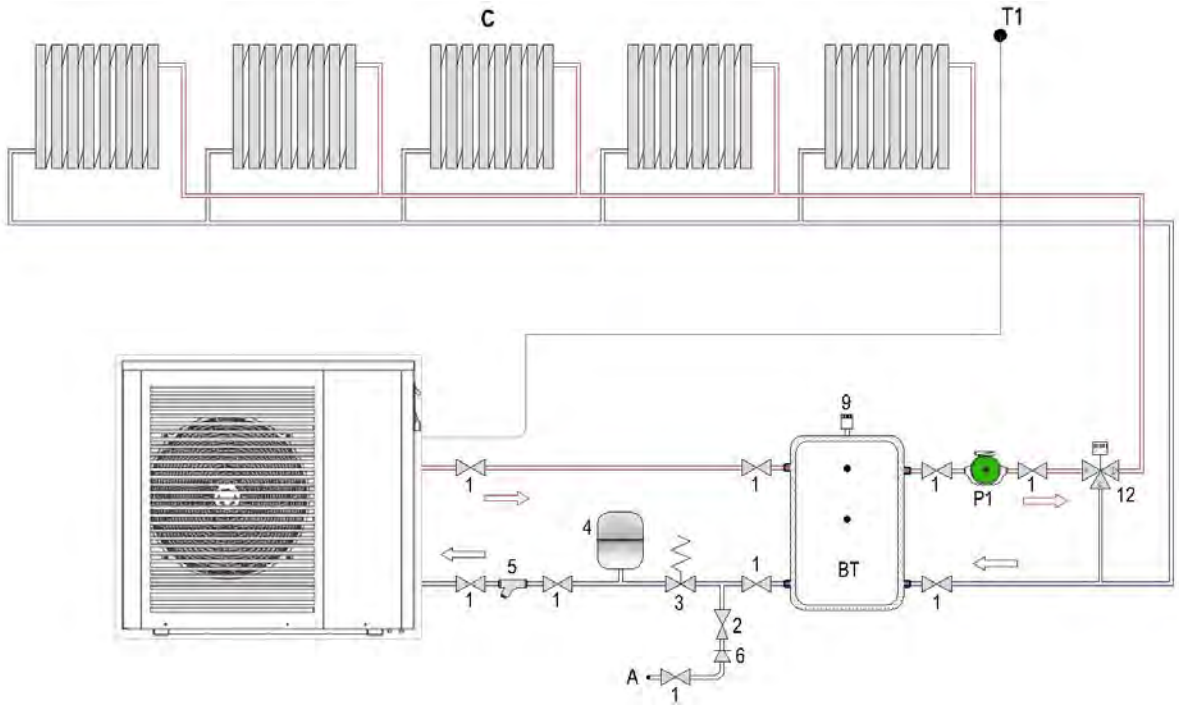
	Description
NOTICE	• Hydraulic diagrams represent only the central components of the application. There are many components that can be installed, such as water pressure sensors, temperature sensors, drainage, differential valve, etc. • The sanitary hot water circuit, when implemented, has priority over the air conditioning circuit.

	Description
INFORMATION	The heat dissipation source represented in the diagrams is merely representative. The equipment can be installed with radiators, underfloor heating, fan coil units, etc. 

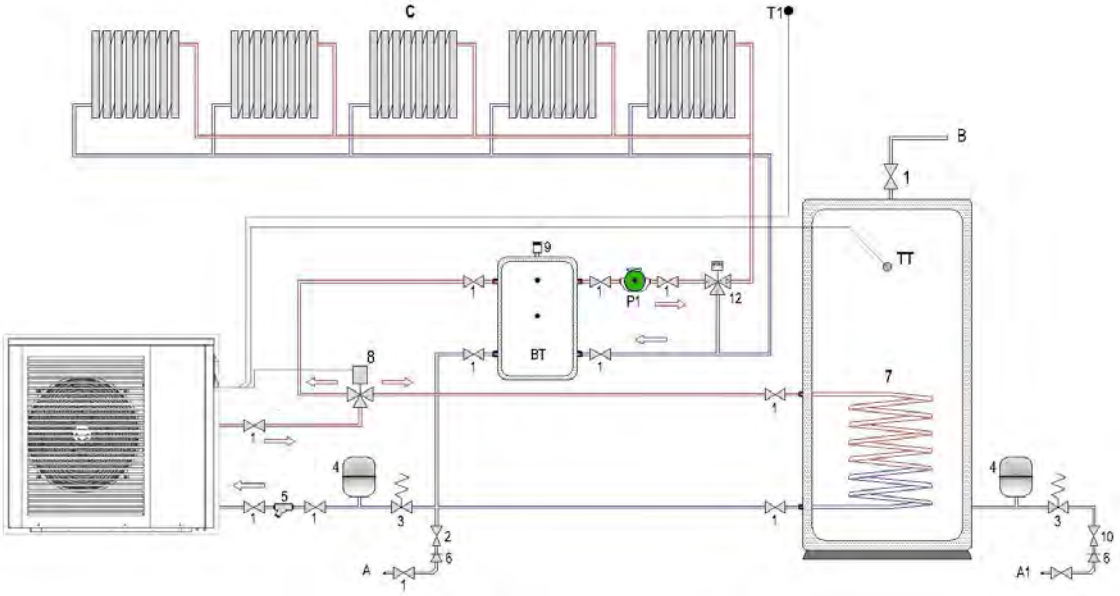
16.2 Glossary --- Hydraulic Diagrams

1	Shut-off valve	**A**	Water inlet (AC)
2	Automatic filling group	**TO 1**	Water inlet (DHW)
3	Safety valve	**B**	Air conditioning circuit (radiators, underfloor heating or fan coil units)
4	Expansion vessel	**W**	Water outlet (DHW)
5	Filter	**BT**	Inertia deposit
6	Non-return valve	**P1**	circulator pump
7	DHW tank	**T1**	Room thermostat
8	Three-way valve	**TT**	DHW temperature probe
9	Trap	**11**	Differential bypass valve
10	Pressure reducing valve	**12**	Thermostatic valve

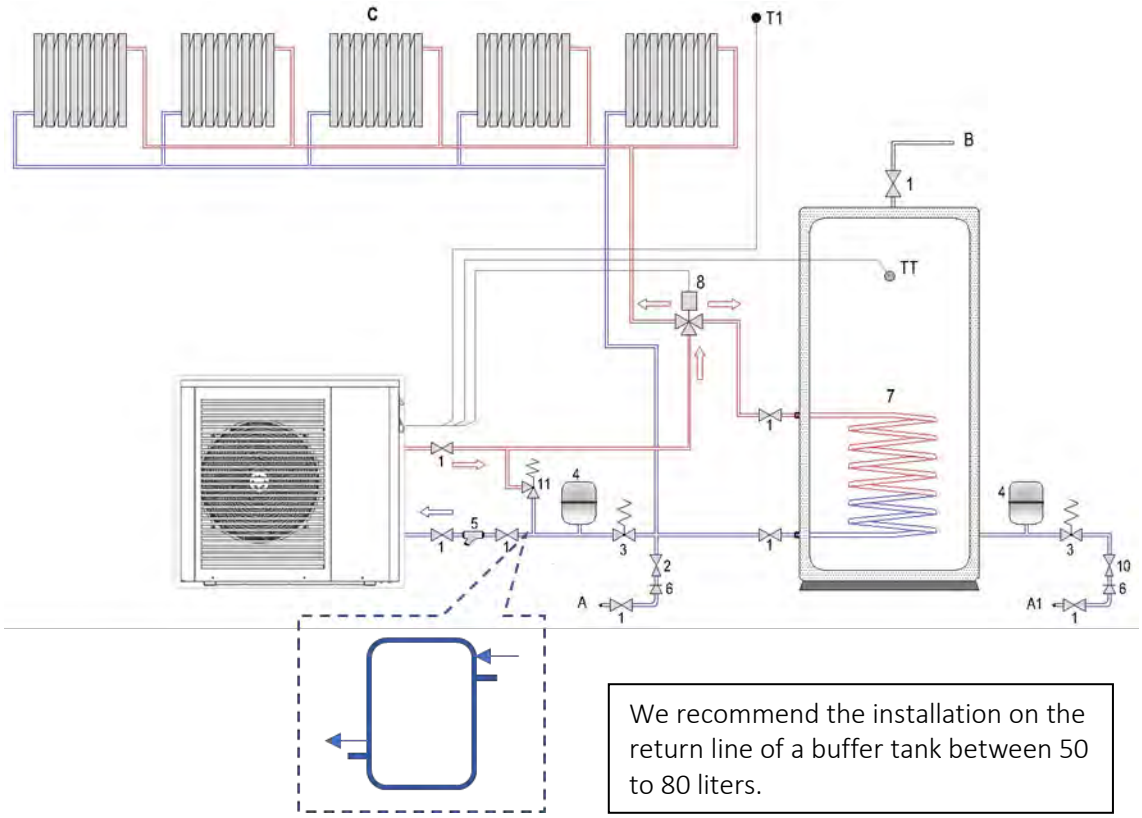
16.2.1 Air conditioning (heating/cooling) and DHW



16.2.2 Inertial air conditioning



16.2.3 Air conditioning +AQS



We recommend the installation on the return line of a buffer tank between 50 to 80 liters.

17 WARRANTY CONDITIONS

This warranty covers confirmed defects in materials, excluding the payment of any compensation for personal or material losses that may be caused directly or indirectly.
The deadlines indicated below start from the date of purchase of the device, at the latest 6 months after the date it leaves the warehouse.

Component	**Warranty period**
Water heater (domestic or industrial use)	3 (three) years with an extension of + 2 (2) years*
Heat pump, electrical components and removable parts	3 (three) years.

* The warranty extension of another 2 years is subject to the shipment of:

- Control and Warranty Sheet within a maximum of 15 days after installation.
- Documentary proof of magnesium anode replacement.
- Photos of the installation showing the safety group, expansion vessel, hydraulic and electrical connections.

In the case of warranty, the replaced parts are the property of the manufacturer.
Repairs under warranty do not give rise to an extension of the period.

WARRANTY EXCLUSIONS

The warranty ends as long as the devices are not connected, used or assembled in accordance with the manufacturer's instructions, or have been operated by third-party technicians, have been modified and/or even if their serial number has been torn off or erased. The equipment must be installed by qualified technicians in accordance with current standards and/or rules of art, or prescribed by our technical services. The following are also excluded from the warranty:

- Water heaters that are working in water with the following indexes:
    - Active chlorine > 0.2 ppm
    - Chlorides > 50 mg/l (Inox)
    - Hardness > 200 mg/l
    - Conductivity > 600 µS /cm (20 ºC)
    - 5.5 > PH and PH > 9 (Sorensen scale at 20ºC)
    - And all Waters with a value higher than the VMA, by Decree-Law 236/98 (Portugal).
- Parts subject to natural wear and tear – handles, switches, resistors, programmers, thermostats and others.
- Breakdowns due to; shock or transport, electrical discharges, floods, humidity, or caused by improper use of the device;

- The warranty expires when the device is transferred to another owner, even within the warranty period.
- The warranty expires if this certificate is incorrectly filled out, corrupted or returned after 15 days from the date of purchase.

ATTENTION:

The technician's travel, even within the warranty period, is paid by the customer (km and travel time).

If there is no fault justifying the technician's travel, the customer will pay for the lost travel time.