Poolstage

INSTALLATION AND INSTRUCTION MANUAL

SWIMMING POOL HEAT PUMP

CONTENTS

Inhoud

Freeze damage NOT COVERED by manufacturer's warranty (see back of manual)

PREFACE

- In order to guarantee quality, reliability and maximum flexibility for our customers, our products are manufactured according to strict criteria and production standards.
  This manual contains all the necessary information about installation, troubleshooting, disposal and maintenance of the appliance.
  Please read this manual carefully before handling the device.
  The manufacturer cannot be held responsible for damage or injury resulting from improper installation or servicing and unnecessary maintenance.
  It is essential to follow the instructions in this manual. The appliance must be installed by competent personnel.
- The appliance may only be repaired by an authorised installer.
- Maintenance and start-up must be carried out strictly in accordance with the frequencies set out in this manual
- Use only original spare parts.
  The guarantee is only applicable if these conditions are met.
- The Poolstage heats up the pool water and keeps the water temperature constant. Our

  Poolstage has the following features:

  1 Sustainable
  The Poolstage is made with a PVC and titanium heat exchanger, which can withstand prolonged exposure to corrosive agents such as chlorine.

  2 Quiet operation
  The system includes an efficient rotary/scroll compressor and a low-noise fan motor, which ensures quiet operation of the heat pump.

  3 Advanced operation
  The system includes a microcomputer control, all operating parameters can be set. The operating status can be displayed on the LCD screen.

- WARNING

Do not use any means other than those recommended by the manufacturer to accelerate the defrosting process or to clean.

The equipment should be stored in a room that does not use continuous ignition sources (e.g. open flame, gas or electric heater).

Do not pierce or burn.

Please note: a refrigerant does not necessarily emit an odour,

The equipment shall be installed, operated and stored in a room with a floor area greater than X . NOTE The manufacturer may provide other appropriate examples or additional information regarding refrigerant odour.

- This equipment may be used by children from 8 years of age and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they are under the supervision of a third party or have been instructed in the safe use of the equipment and understand the risks involved. Children must not play with the equipment. Cleaning and user maintenance should not be carried out by unsupervised children.

- If the power cord is damaged, it must be replaced by the manufacturer, its service agent or a similarly qualified person to avoid danger.

- The equipment must be installed in accordance with national electrical regulations.

- Do not use your air conditioner in a damp room such as a bathroom or laundry room. Before

- accessing the outlets, all power circuits must be disconnected.

- The fixed wiring installation shall have an all-pole disconnecting device with a distance of at least 3 mm on all poles and a leakage current which may exceed 10 mA, the residual current device (RCD) having a rated residual operating current not exceeding 30 mA in accordance with electrical regulations.
- Do not use any means other than those recommended by the manufacturer to accelerate the defrosting process or to clean.

- The equipment must be installed, used and stored in a room with a floor area of more than X m2.

Note: a refrigerant does not necessarily emit odours. The installation of the pipework should be restricted to a minimum of X m2

The spaces containing the refrigerant lines must comply with national gas regulations. Maintenance should only be carried out as recommended by the manufacturer.

The equipment should be stored in a well-ventilated area and a room of a size corresponding to the area prescribed for use.

Any work procedure affecting the safety devices should only be carried out by competent persons.

- Transport of equipment containing flammable refrigerants Compliance with transport regulations.

Identification of equipment by pictograms Compliance with local regulations

Disposal of equipment using flammable refrigerants Compliance with transport regulations

Storage of equipment/devices

Storage of equipment should be carried out in accordance with the manufacturer's instructions.

Storage of packed (unsold) equipment

The protection of the storage package must be designed to prevent mechanical damage to the equipment in the package from causing the refrigerant charge to leak.

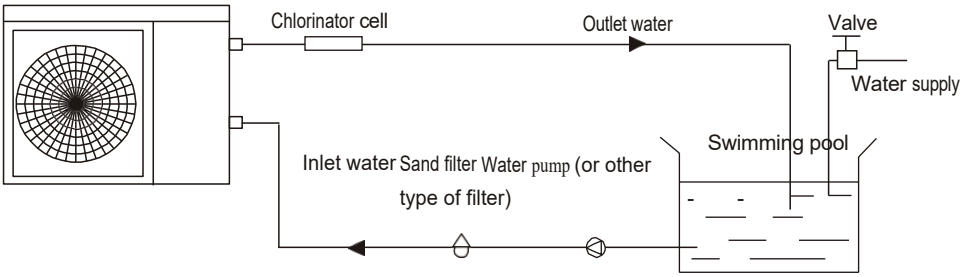
Local regulations specify the maximum number of items that may be stored together.

Warning

1. The unit may only be repaired by an authorised installation centre technician or an authorised dealer. for the European market.
2. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they are under the supervision of a third party or have been instructed in the safe use of the appliance by a person responsible for their safety. for the European market
   Children should be supervised to ensure that they do not play with the device.
3. Make sure that the appliance and the electrical connection are properly grounded, otherwise there is a risk of electric shock.
4. If the power cord is damaged, it must be replaced by the manufacturer, its service agent or a similarly qualified person to avoid danger.
5. Directive 2002/96/EC (WEEE) :
   The crossed-out wheeled bin symbol on the bottom of the appliance indicates that this product, at the end of its useful life, should not be disposed of with domestic waste
   but should be taken to a recycling centre for electrical and electronic equipment, or returned to the dealer when purchasing equivalent equipment.
6. Directive 2002/95/EC (RoHs): This product complies with Directive 2002/95/EC (RoHs) on the restriction of hazardous substances in electrical and electronic equipment.
7. The appliance MUST NOT be installed near flammable gas. In case of any gas leakage, a fire may occur.
8. Make sure the appliance is connected to a circuit breaker. The absence of a circuit breaker may result in electric shock or fire.
9. The heat pump inside the appliance is equipped with an overload protection system. This prevents the appliance from starting for at least 3 minutes after an interruption.
10. USE SUITABLE POWER LEADS FOR ℃.
11. Attention: Single-wall heat exchanger, not suitable for drinking water connection.

1. INSTALLATION AND CONNECTION

1.1 Illustration Installation



Products Installation:

The factory provides only the main appliance and the water appliance; the other products shown are necessary accessories to be provided by the installer.

Caution:

Steps to be taken during the first commissioning :

1. Open the valve and add water.
2. Make sure that the pump and the water pipe are filled with water.
3. Close the valve and start the appliance

Attention: It is imperative that the water pipe is higher than the surface of the pool.

1.INSTALLATION AND CONNECTION

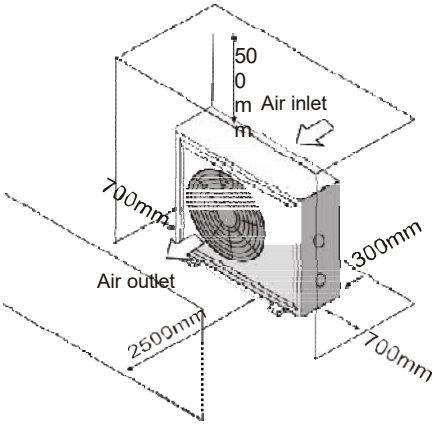
1.2 Heat pump location

The device will work perfectly in any outdoor location provided the following 3 factors are met

1. Fresh air - 2. Electricity - 3.

Virtually the device can be placed anywhere outdoors. For indoor pools consult your importers.

DO NOT place the appliance in a place with low air volume, as the air escaping from the appliance will be recirculated in the circuit.
DO NOT place the appliance near bushes, as this may block the air supply. This will prevent a continuous supply of fresh air, which will reduce efficiency and may lead to insufficient heat supply.



1.3 How far from the pool?

Normally the Poolstage is installed within 7.5 metres of the pool. The greater the distance, the more heat is lost in the pipework.
However, as the pipework is mainly buried the heat loss is minimal up to 15 metres (15 metres to and from the pump = 30 metres in total), unless the ground is wet or the water table is shallow. A rough estimate of heat loss per 30 metres is about 0.6 kW/h (2000 BTU) for every 5 °C difference between the pool water temperature and the ground temperature around the pipes, which translates into about 3 to 5 % extra running time.

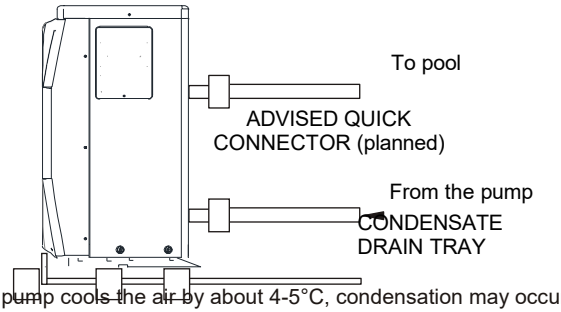
1. INSTALLATION AND CONNECTION

1.4 Plumbing heat pump

The titanium heat exchanger does not require any special plumbing except for a bypass (adjust the water flow rate as indicated on the plate). The water pressure loss is less than 10kPa for the maximum flow rate. A PVC pipe can be connected directly to the unit.

Location: Connect the unit downstream to the pool pump outlets of all pumps and filters and upstream to any chlorine, ozone or chemical pumps.
Standard models are fitted with 32mm or 50mm PVC pipe fittings
for connection to pool or spa filter pipes. Using 50 NB to 40NB you can probe 40NB

We strongly recommend a quick coupling at the pump inlet and outlet for easy access in case of maintenance and to allow easy draining during wintering.



Condensation: As the pump cools the air by about 4-5°C, condensation may occur on the evaporator fins. If the relative humidity is very high, this amounts to several litres per hour, which will escape into the tray and then drain out through the plastic drain connection. This fitting is designed for 20 mm pipes that can be tightened by hand and then connected to a suitable drain. Condensation is often mistaken for a leak in the appliance.

NB: To ensure that the water flowing out is condensation, simply turn off the unit and leave the pool pump running. If the water stops flowing from the tray, it is condensation. QUICKER STILL: TEST THE DRAINED WATER FOR CHLORINE. If there isn't, it's condensation!

1. INSTALLATION AND CONNECTION

1.5 Electrical wiring

NOTE: The heat exchanger is electrically insulated from the rest of the unit to prevent electricity from flowing into or out of the pool water. However, it is necessary to protect it from short circuits by connecting it to the earth. Think
also to create mass continuity.

The appliance is connected via a separate housing with a standard electrical conduit nipple. Remove the screws from the front panel, pass the power supply wires through the

Connect them to the three fittings already in the terminal box (four for three-phase). To complete the wiring connect the Poolstage

(Check with your electricity supplier for the required cable diameter) to the AD supply circuit protected by a suitable circuit breaker or fitted with a time-delayed fuse or remote switch.

The remote switch allows the circuit to be interrupted (circuit breaker, lead switch or without) and must be placed in a way that is accessible from the appliance. This is common practice for installers of commercial or domestic heat pumps. This prevents an appliance from being remotely powered and also to cut off the power to the appliance during maintenance.

1.6 Initial operation of the device

NOTE- In order for the unit to heat the pool, the filtration pump must be running to circulate the water through the heat exchanger.

Start-up procedure After installation, follow the steps below:

1. Start the filter pump. Check for possible water leakage and the flow to/from the pool
2. Connect the power supply, press the ON/OFF button on the control. It should start after a few seconds.
3. After letting the pump run for a few minutes, make sure that the air escaping is cooler than the air outside (between 5-10°C).
4. Switch off the filter pump while the machine is running. The appliance also switches off (message E3 in the display).
5. Let the unit and the pool pump run for 24 hours a day until the desired temperature is reached. Once reached the appliance will stop. It will restart automatically (if the filter pump is working) every time the pool temperature drops more than 0. 2 °C.

Delay: The device is equipped with a 3-minute restart delay to protect the control circuit, to avoid having to restart the whole procedure and to prevent the switch from rattling. This delay is set so that the device restarts approx. 3 minutes after each interruption of the control circuit. Even a brief interruption of the power supply will activate the restart delay and prevent the device from restarting until the 3 minutes have elapsed. Interruptions occurring during the delay time will not affect the 3 minute delay.

2. USE AND OPERATION

2.1 DISPLAY MAIN

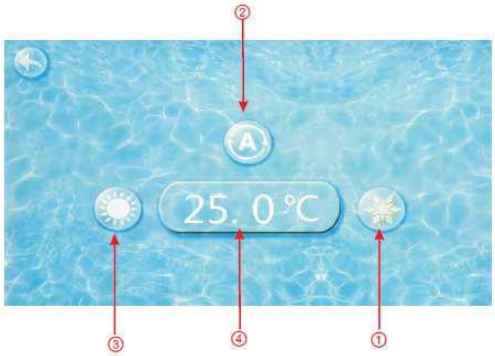
	Name	Function
	ON/OFF	Press this button to turn the unit on or off
	Parameter	For reading the status of the heat pump and/or adaptation of parameters
	Clock	For setting the time and date, as well as the timer
	Error code	To retrieve the error code history
	Silent mode	To activate the silent mode, if not via the timer function
	MODE	To change the operating mode
	Temp. curve	To find the temperature curves and of consumption
	Water inlet temp.	For reading the pool temperature, as well as changing the temperature desired of the pool
	Locking	To lock the control; unlock it with code "022

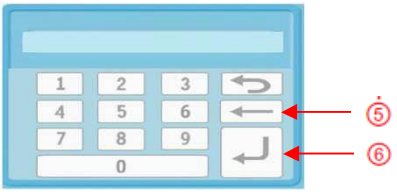
2. USE AND OPERATION

2.2 ADJUST THE MODE AND THE DESIRED TEMPERATURE OF THE POOL

Press the temperature button

Here you can select the desired mode and set the desired temperature:





	Name	Function
	Cooling mode	To activate the cooling mode
	Auto mode	To activate the auto mode
	Heating mode	To activate the heating mode
	Setting the desired pool temperature	To set the desired pool temperature
	Backspace key	Back to top
	Validate desired pool temperature	To set the desired pool temperature

2. USE AND OPERATION

2.3 SETTING CLOCK

From the main screen, press the clock button to set the clock.

Setting the time and date

Date: Day-Month-Year
Time: hours-minutes-seconds For
example: 30-03-2018 16:15:38

Timer settings

	Name	Colour button	Function
	Start button timer	Active: green Not active: grey	Starting or stopping the timer
	Time setting start-up		Setting the start time
	Timer stop button	Active: red Not active: grey	Start or stop the timer
	Stop time setting		Setting the stop time

If the timer function is active, the clock in the main display turns green.

2. USE AND OPERATION

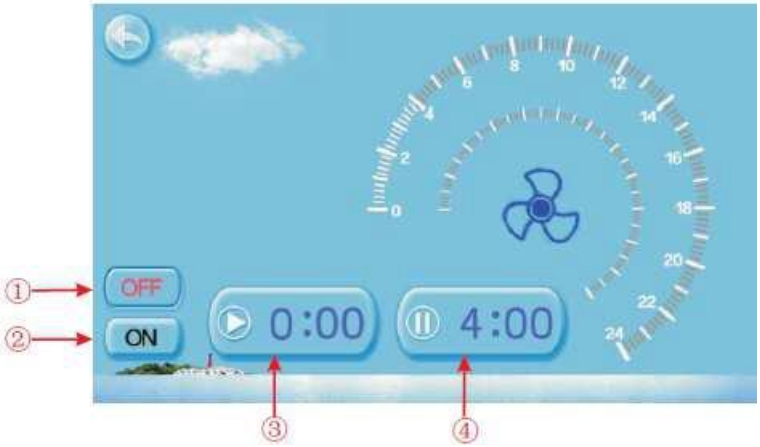
2.4 SILENT MODE AND TIMER SETTINGS SILENT MODE

From the main screen, press the mute button to adjust the mute mode.

Silent mode

The screen below is displayed after activating the mute mode. To deactivate the silent mode, press the silent mode button again.

Silent mode timer settings



	Name	Function
	Mode timer mute disabled	Press this button to deactivate the timer
	Mode timer muffler activated	Press this button to activate the timer
	Start time timer mode silencer	Press this button to set the timer start time
	Stop time timer mode silencer	Press this button to set the timer stop time

The setting range for start and stop times is 0:00-23:00. The setpoints can be selected to the nearest hour.

The picture above is an example: Press ON to activate the silent mode. Silent mode starts at 0:00 and stops at 4:00. Press OFF to deactivate the mute mode. If the device is in silent mode, this mode will be deactivated immediately.

2. USE AND OPERATION

2.5 HISTORY ERROR CODES

From the main screen, press the error code button to display the error code history.

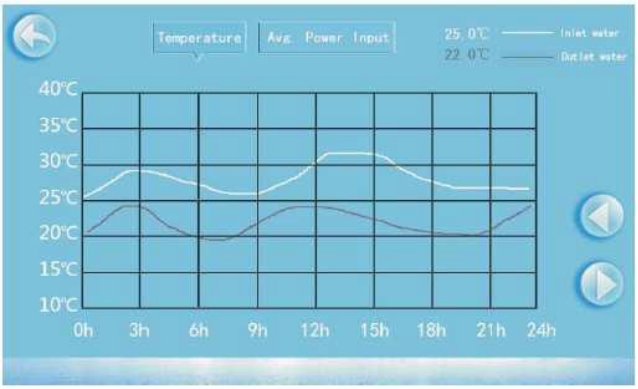
If no error has occurred, the error code symbol in the main menu will remain lit ( ). If an error has occurred, the symbol will flash red ( ). The error code history records the time, code and name of the error. If the problem is resolved without looking at the error code history, the symbol will turn red (fixed,). If the error code history is then accessed, the symbol will be dimmed again (fixed,). The error code history can be cleared ("Clean").

2. USE AND OPERATION

2.6 TEMPERATURE CURVE

From the main screen, press the temperature curve button to display the temperature curve.

Temperature curve



Power curve

The temperature curve is automatically updated every hour. The curve can be saved for 60 days.

3.MAINTENANCE AND INSPECTION

- Regularly monitor the water supply and the trigger. Avoid shortages of water and air in the system, which affect performance and reliability. Clean the filter regularly to avoid damages due to filter clogging.

- The area around the appliance must be dry, clean and well ventilated. Regularly clean the heat exchanger on the side to ensure good heat exchange and to save energy.

- The pressure operation of the refrigerant circuit must be done by a certified technician.

- Check the power supply and wiring regularly. If the appliance starts to malfunction, turn it off and contact a qualified technician.

- In winter, empty the pump completely to avoid frost damage.

The water in the pump should be drained if the appliance is not to be used for some time. The water system should be checked and refilled regularly before the appliance is used again.

- Area controls

Before starting work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. To repair the refrigerant system,
the following precautions must be observed before any operation on the system.

- Working procedure

The work should be carried out in accordance with a controlled procedure, so as to minimise the risk of a flammable gas or vapour being emitted during the work.

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- General workspace

All maintenance personnel and other staff working in the local area should be informed of the nature of the work being carried out. Confined space work should be avoided. The work area should be isolated from the surrounding area. Ensure that conditions in the area are safe
by checking for flammable materials. Checking
for the presence of refrigerant

The area should be checked with a suitable refrigerant detector before and during work to keep the technician aware of potentially flammable atmospheres. Ensure that the leak detection equipment in use is suitable for flammable refrigerants, i.e. non-sparking, properly sealed or intrinsically safe.

- Presence of fire extinguisher If any hot work is to be carried out on the refrigeration equipment or any of its associated parts, suitable fire extinguishing equipment must be available. Provide a powder or CO2 fire extinguisher in the vicinity of the load

No ignition source

Anyone carrying out work in connection with a refrigeration system that involves the exposure of any pipe that contains or has contained a flammable refrigerant must never use any ignition source that could create a fire or explosion hazard. Any possible source of ignition,
including cigarette smoking, should be kept at a sufficient distance from the installation, repair, removal and disposal site as long as there is a risk that the flammable refrigerant will be released into the surrounding space. Before work begins, the area
The area around the equipment should be assessed to ensure that there are no flammable or ignition hazards. No smoking signs should be posted. “ ”

Ventilated area

Check that the area is ventilated or properly ventilated before entering the system or carrying out any hot work. A level of ventilation should be maintained throughout the work. Ventilation should safely disperse any refrigerant that may be released and expel it preferably to the outside atmosphere.

Checks on refrigeration equipment

Any replacement electrical components must be suitable for the intended use and meet the specifications. The manufacturer's maintenance and care instructions must be followed at all times. In case of doubt, contact the manufacturer's technical support service.
The following checks must be carried out on installations using flammable refrigerants: The size of the charge is adapted to the size of the room in which the components containing refrigerant are installed;
If an indirect refrigeration circuit is used, the presence of refrigerant must be checked in the secondary circuit;
The marking of the equipment remains visible and legible. Markings and pictograms that are illegible must be corrected;
Refrigeration pipes or components shall be installed in a location where they are not likely to be exposed to any substance that could corrode components containing refrigerant, unless such components are made of inherently corrosion-resistant materials or
that they are adequately protected against such corrosion.

Checks on electrical equipment

Prior to any repair or maintenance of electrical components, safety checks and component inspection procedures should be carried out. If there is a fault that could compromise safety, then no power should be connected to the circuit until the fault has been satisfactorily resolved. If the fault
cannot be corrected immediately but that further use is necessary,
a suitable temporary solution should be used. This situation should be reported to the owner of the equipment so that all parties are notified.
The security checks should verify that :
. Capacitors are discharged: this must be done safely to avoid the risk of sparking;
. No live electrical components and wires are exposed during charging, recovery or purging of the system;
. The continuity of the earthing system is ensured.

- Repairs to sealed components

When repairing sealed components, all power supplies should be disconnected from the equipment being repaired, prior to any removal of sealed covers, etc. If it is absolutely essential to maintain a power supply to the equipment during the operation, then continuously operating leak detection equipment should be placed at the most critical point to warn of a potentially dangerous situation. Particular attention should be paid to the following to ensure that the enclosure is not modified in a way that impacts on the level of safety when working on electrical components. This should include damage to cables, an excessive number of connections, terminals that do not meet the original specification, damage to sealing devices, incorrect tightening of glands, etc.

Check that the unit is securely mounted.

- Check that seals or sealing materials are not so degraded that they no longer perform their function of preventing the ingress of flammable atmospheres. Replacement parts must comply with the manufacturer's specifications.

NOTE: The use of silicone sealant may impair the effectiveness of some types of leak detection equipment. Intrinsically safe components should not be pre-insulated

- Repair of intrinsically safe components

Do not apply a permanent capacitance or inductive load to the circuit without ensuring that it will not exceed the permissible voltage and current rating for the equipment being used.

Intrinsically safe components are the only types that can operate under voltage in the presence of a flammable atmosphere. The test device must be properly calibrated.

Components should only be replaced with parts specified by the manufacturer. Other parts may cause refrigerant to be released into the atmosphere as a result of leakage.

- Wiring

Check that the cabling will not be subjected to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check should also consider the effects of ageing or continuous vibration from sources such as compressors or fans.

- **Detection of flammable refrigerants**

Under no circumstances shall potential ignition sources be used to search for or detect refrigerant leaks. No halide lamps (or any other detector using an open flame) may be used.

- Leak detection methods

The following leak detection methods are considered acceptable for systems containing flammable refrigerants. Electronic leak detectors should be used to detect flammable refrigerants, but may need to be recalibrated if the sensitivity is not adequate. (Detection equipment should be calibrated in a refrigerant-free area). Check that the detector is not a potential source of ignition and that it is suitable for the refrigerant used. The leak detection equipment shall be set to a percentage of the LII of the refrigerant and shall be calibrated for the refrigerant used. The appropriate percentage of gas (maximum 25%) should be confirmed. Leak detection fluids can be used with most refrigerants but the use of detergents containing chlorine should be avoided as chlorine can react with the refrigerant and corrode the copper pipe. If a leak is suspected, all open flames should be removed / extinguished. If a refrigerant leak is discovered that requires soldering, all refrigerant must be recovered or isolated (by means of isolation valves) in a part of the system away from the leak. Oxygen-free nitrogen (OFN) should then be purged from the system both before and during the brazing process.

- Withdrawal and disposal

To enter the refrigerant circuit for repairs or any other purpose, conventional procedures must be followed. However, it is important to follow best practice
because of the risk of flammability. The procedure to follow is as follows:
. Removing the refrigerant ;
. Bleeding the system with an inert gas ;
. Evacuate ;
. Re-venting the system with an inert gas ;
. Open the circuit by cutting or soldering.

- The refrigerant charge should be recovered in suitable recovery cylinders. The system should be "flushed" with OFN to make the unit safe. This process may have to be repeated several times. Oxygen or compressed air may not be used for this operation.

Flushing should be carried out by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is reached. Then vent to atmosphere and complete the flushing. This process should be repeated until there is no refrigerant left in the system. After the last charge of OFN nitrogen, the system must be vented to atmospheric pressure in order to proceed with the work. This is absolutely vital if operations Brazing must be carried out on the pipes.
Check that the vacuum pump exhaust is not close to any source of ignition and that ventilation is available.

- Marking

The equipment must be marked to indicate that it has been taken out of service and emptied of refrigerant. The marking must be dated and signed. Check for labels on the equipment
indicating that it contains flammable refrigerant.

- Recovery

When removing refrigerant from a system, whether for servicing or decommissioning, it is good practice to dispose of all refrigerants safely.
When transferring refrigerant in cylinders, use only cylinders
Ensure that the correct number of cylinders are available to hold the total charge of the system. Ensure that the correct number of cylinders are available to hold the total charge of the system. All cylinders to be used are designed for the refrigerant
The cylinders shall be complete with a safety valve and associated isolation valves in good working order. The cylinders shall be complete with a functioning safety valve and associated isolation valves. Empty recovery cylinders shall be evacuated and, if possible, cooled before recovery.
Recovery equipment should be in good working order with a set of instructions for the equipment available and should be suitable for recovery
flammable refrigerants. In addition, calibrated scales must be available and in good working order. Hoses should be complete, with leak-free disconnection fittings and in good condition. Before using the recovery equipment, check that it is in good condition, that it has been properly maintained and that all associated electrical components
are properly sealed to prevent ignition in the event of refrigerant release. Consult the manufacturer if in doubt. The recovered refrigerant must be returned to the refrigerant supplier in the appropriate cylinder and accompanied by the waste transfer note. Do not mix refrigerants in the recovery units and especially not in the cylinders.
If compressors or compressor oils are to be removed, ensure that they are drained to an
acceptable level to ensure that no flammable refrigerant remains
in the lubricant. The evacuation process must be carried out before returning the compressor to the suppliers. Electrically heating the compressor is the only permitted way to speed up this process. Once the oil has been drained from the system, it must be handled safely.

- Decommissioning

Before carrying out this procedure, the technician should become familiar with the equipment and all its details. Recommended good practice is to safely recover all refrigerants. Prior to this operation, samples of oil and refrigerant should be extracted for analysis before the recovered refrigerant is reused. It is essential that a power supply is available before this task is carried out.
It is necessary to become familiar with the equipment and its operation. Isolate
the system electrically.
Before starting the procedure, check that :
. Mechanical handling equipment is available, if required, to handle the refrigerant cylinders;
. All personal protective equipment is available and properly used ;
. The recovery procedure is supervised at all times by a competent person ;
. The equipment and recovery cylinders are of the appropriate standard. If possible, suck
the refrigerant out of the system.
If a vacuum is not possible, use a manifold to remove refrigerant from various parts of the system.
Ensure that the cylinder is placed on the scale before reclaiming. Start the
recovery equipment and follow the manufacturer's instructions.
Do not overfill the cylinders (do not exceed 80% liquid volume). Do not exceed the maximum working pressure of the cylinder, even temporarily.
Once the cylinders have been properly filled and the process completed, check that the cylinders and equipment are quickly removed from the site and that all isolation valves on the equipment are closed.
Recovered refrigerant should not be charged to another refrigeration system unless it has been cleaned and checked.

- Loading procedures

In addition to the traditional loading procedures, the following requirements must be followed.
Avoid contamination of different refrigerants when using the charging equipment. Hoses or pipes should be kept as short as possible to minimise the amount of refrigerant they contain.
The cylinders must be kept in an upright position.
Ensure that the refrigeration system is grounded before charging the system with refrigerant. Stick a label on the system after charging (if not already done).
Take particular care not to overfill the refrigeration system.
Before recharging the system, its pressure must be tested with OFN. The system should be tested for leaks
at the time of loading but before decommissioning. A follow-up leakage test should be carried out before leaving the site.

- The safety wire shall be 5*20_5 A/250 V AC and shall meet explosion proof requirements.

3. MAINTENANCE AND INSPECTION

2.1 Table of malfunctions

Malfunction	Poster	Cause	Solution
Inlet water temperature sensor fault	P01	The detector is open or short-circuited	Check or replace the detector
Outlet water temperature sensor fault	P02	The detector is open or short-circuited	Check or replace the detector
Ambient temperature sensor fault	P04	The detector is open or short-circuited	Check or replace the detector
Pipe T° sensor fault	P05	The detector is open or short-circuited	Check or replace the detector
Evaporator temperature sensor fault	P07	The detector is open or short.	Check or replace the sensor
High pressure protection	E01	Gas pressure too high	Check the refrigeration quantity via the swith
Low pressure protection	E02	Gas pressure too low	Check the refrigeration capacity and the low pressure switch
Flow switch malfunction	E03	No or little water in the circuit	Check the water flow and operation of the water pump
Too great a difference between inlet and outlet water temperature	E06	Insufficient water flow. Not enough water pressure difference	Check the water flow and operation of the water system
Anti-freeze in cooling mode	E07	Insufficient water flow	Check the water flow and operation of the water system
First frost protection	E19	Room temperature too low	
Second frost protection	E29	Room temperature too low	
Disfunctional Communication	E08	Communication failure between controller and main board	Check connections and wiring

4. APPENDIX

4.1 cabling specification：

1. Single-phase

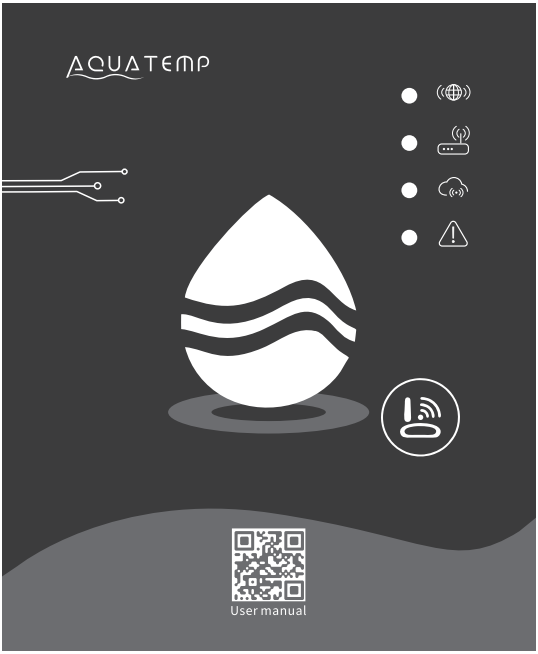
Maximum current	Line Phase	Earth Line	MCB	Current leakage protection	Signal line
No more than 13A	2 × 1.5mm²	1.5mm²	20A	30mA less than 0.1 sec	n × 0.5mm²
13~25A	2 × 4mm²	4mm²	40A	30mA less than 0.1 sec	
25~30A	2 × 6mm²	6mm²	40A	30mA less than 0.1 sec	
30~40A	2 × 10mm²	10mm2	63A	30mA less than 0.1 sec	
40~55A	2 × 16mm²	16mm²	80A	30mA less than 0.1 sec	
55~70A	2 × 25mm²	25mm²	100A	30mA less than 0.1 sec	

2. Three-phase

Maximum current	Line Phase	Neutral line	Earth Line	MCB	Current leakage protection	Signal line
No more than 13A	3 × 1.5mm²	1.5mm²	1.5mm²	20A	30mA less than 0.1 sec	n × 0.5mm²
13~25A	3 × 4mm²	4mm²	4mm²	40A	30mA less than 0.1 sec	
25~30A	3 × 6mm²	4mm²	6mm²	40A	30mA less than 0.1 sec	
30~40A	3 × 10mm²	4mm²	10mm²	63A	30mA less than 0.1 sec	
40~55A	3 × 16mm²	4mm²	16mm²	80A	30mA less than 0.1 sec	
55~70A	3 × 25mm²	4mm²	25mm²	100A	30mA less than 0.1 sec	

When the unit is installed outdoors, use a cable that is UV resistant.

WIFI Module
USER'S MANUAL



Please read this user’s manual carefully before use
Please keep this user’s maunal properly

User Privacy Instructions

We take your privacy very seriously and we promise to inform you how we use the data. Users' private data, such as mailboxes, address, before uploading to the cloud, we will get your permission, and we will work hard to protect your data security.

Description

- Receive data signal from cloud server and transmit to the main device;
- Receive data signal from main device and transmit to cloud server;
- To achieve remote upgrade the WIFI module baseplate MCU by cloud server;
- To achieve the remote upgrade of the main device by WIFI module baseplate MCU.

Technical Parameters

OPERATING VOLTAGE: DC8V~12V (Recommended value 12V)

OPERATING CURRENT: Max. recurrent peak 1A, average standby current 50mA

TEMP. RANGE: Operating Temp.: -30℃~+70℃; Storage Temp.: -40℃~+85℃

LED INDICATOR LIGHT:

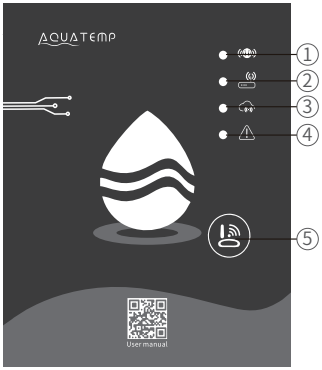
4 lights, Network configuration indicator,router connection indicator, cloud server connection indicator, 485 communication indicator;

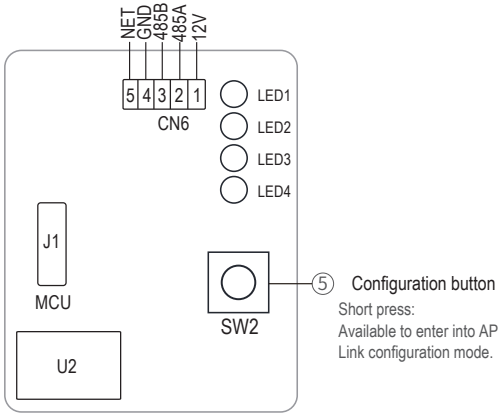
DIMENSION(L×W×H): 78mm×63mm×24mm

Installation

- There is a magnet on the back of the WIFI module, it can be installed indoors or outdoors, and avoid direct sunlight;
- Please scan the following QR code to download APP;

Functional Description





MXL-WX17

ITEM	NAME	LONG LIGHT	SLOW FLASH	EXTINGUISH
①	Network configuration indicator	Configuring Network	SmartLink configuring	Done
②	Router connection indicator	Normal	Abnormal	----
③	Cloud server connection indicator	Normal	Abnormal	----
④	485 communication indicator	Normal	Abnormal	----

Account Login

Use email address and password to register, login or reset the password.

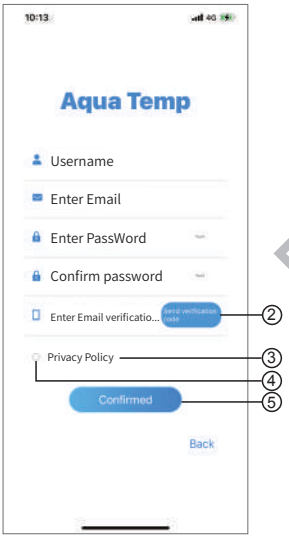


Fig.2 Account Registration interface

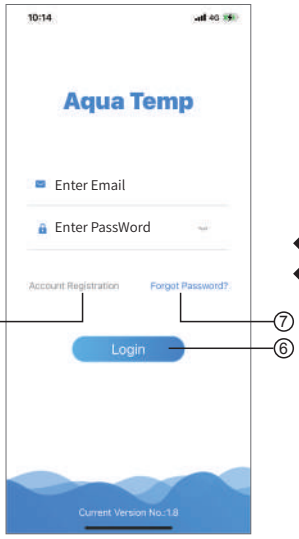


Fig.1 Login interface

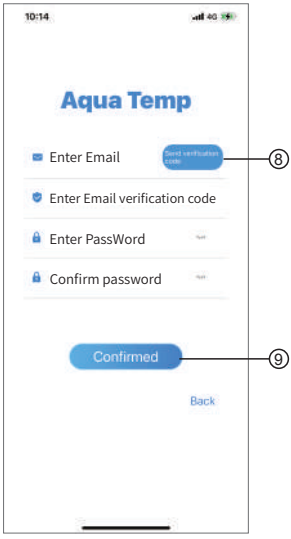


Fig.3 Forgot Password interface

1. Account Registration: To register an account, click ① (Fig.1) to jump to the Account Registration interface, fill in the relevant information and click ② to receive verification code, while completed the application information, click ③ to read the details of the Privacy Policy, then click ④ to agree, and click ⑤, registration is done.

   Please note, the valid time of one verification code is 15min, please fill in the verification code within 15min, otherwise you need to ask for a new one.

2. Log in: Follow the instructions on the page(Fig.1), enter your registered email address and password, click ⑥ and jump to device list;

3. Forgot Password: While forget your password, click ⑦ (Fig.1), jump to the Forgot Password interface (Fig.3). Follow the instructions on the page, fill in the relevant informations, click ⑧ to receive verification code from your mailbox, click ⑨ to comfirm and password reset is done.

Add Device

After log in, displays My Device interface (Fig. 4) , follow the instruction to add WIFI or DTU.

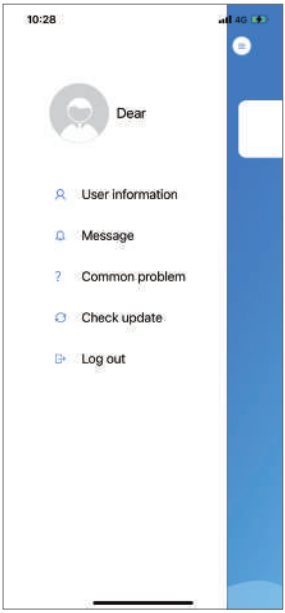


Fig.5 The left-hand menu

Fig.4 My Device interface

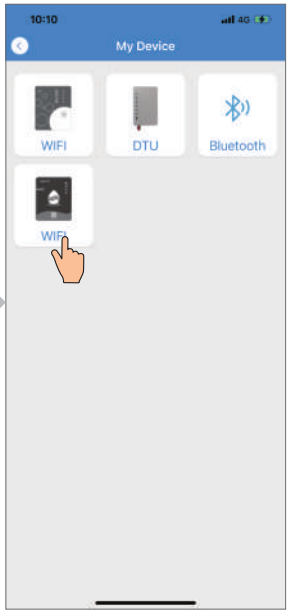


Fig.6 Add Device interface

IOS WIFI Configure Network

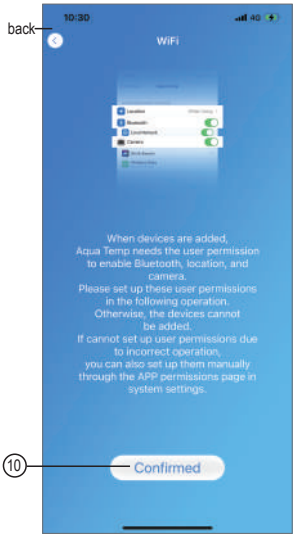


Fig.7 Permission confirmed interface

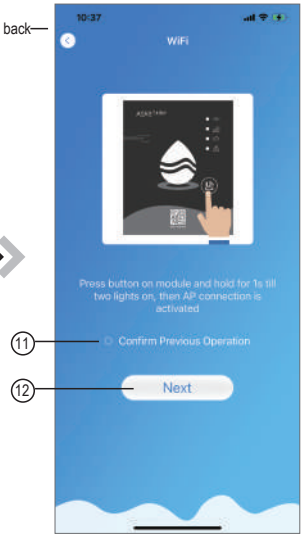


Fig.8 WIFI Module On interface

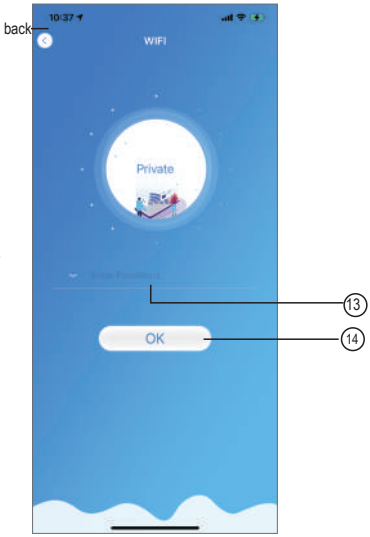


Fig.9 Enter password interface

1. Click⑩ to confirm the permisson of bluetooth,location and camera;
2. Follow the instructions on the page (Fig.8), press button on module and hold for 1s till two lights on, then AP connection is activated, click⑫ to next;
3. Click⑬ to enter the WIFI password for the current connection, click⑭ to confirm.

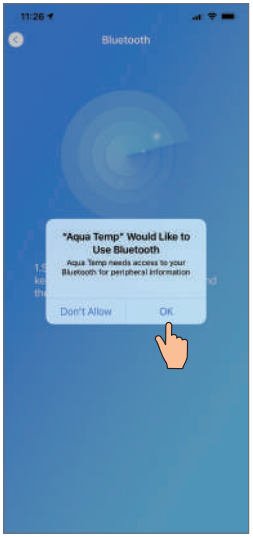


Fig.10 Searching device interface

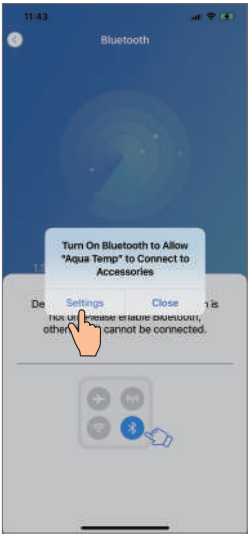


Fig.11 Enable bluetooth permission

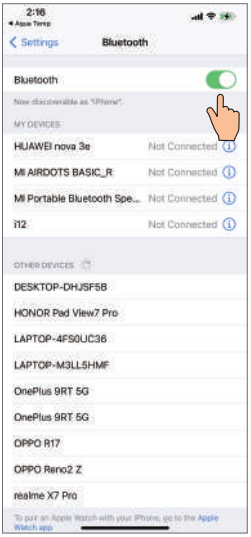


Fig.12 Bluetooth setting interface

4. Click ⑮ to bond device (Fig. 10);
5. Click "Settings" （Fig.11）to enter bluetooth setting interface(Fig. 12);
6. Turn on bluetooth and back to the APP, derectly enter the searching device interface(Fig. 13);
7. Click "OK" （Fig.15）to allow the App to use the camera for scanning the WF barcode on the heat pump unit（Fig.17.1）, or click "manual input" to enter the WF barcode(Fig. 17.2)

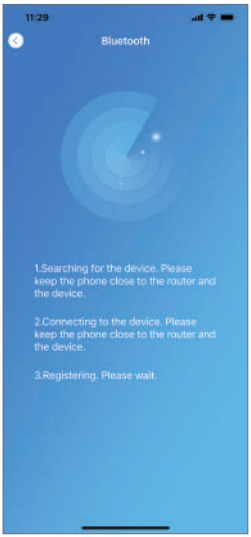


Fig.13 Searching device interface

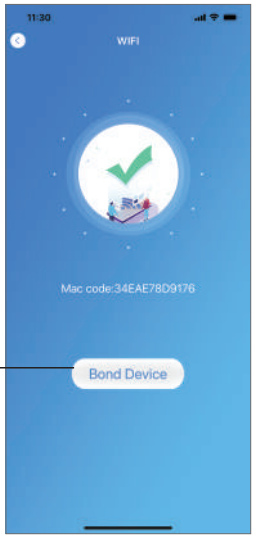


Fig.14 Bond device interface

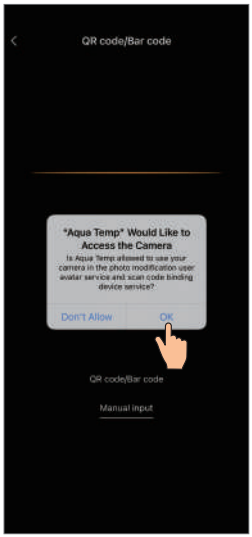


Fig.15 Enable camera permission

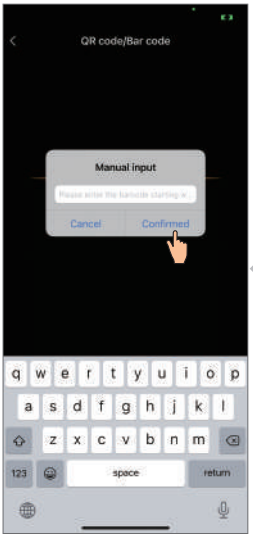


Fig.17.2 Manual input interface

Fig.16 Scanning interface

Fig.17.1 WF barcode

8.Click "Comfirmed", device bond is done (Fig.18).
9. After WIFI bonding is done, and jump back to My Device(Fig. 19);
10. Click the device derectly jump to device main interface(Fig. 20).

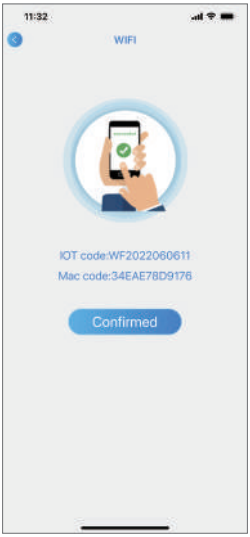


Fig.18 Bond device done interface

Fig.19 Device management interface

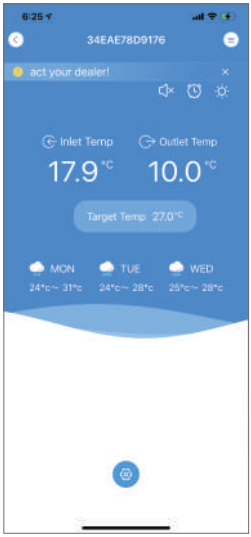


Fig.20 Device Main interface

Android WIFI Configure Network

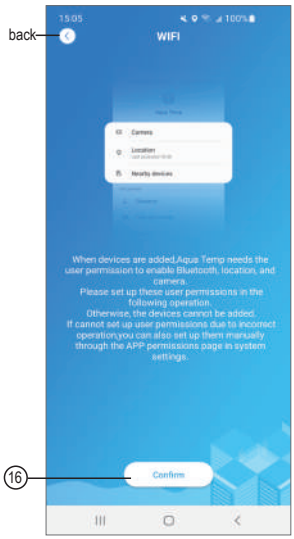


Fig.21 Permission confirmed interface

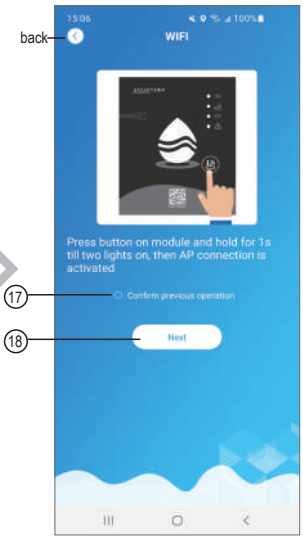


Fig.22 WIFI Module On interface

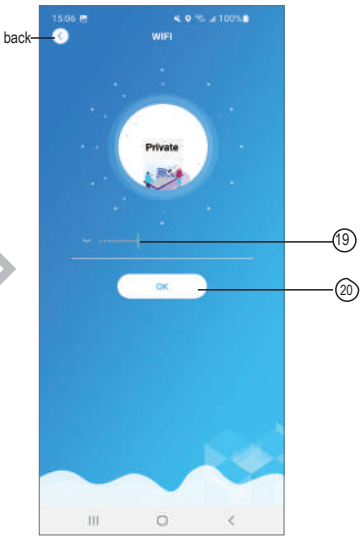


Fig.23 Enter password interface

1. Click⑯ to confirm the permisson of bluetooth,location and camera;
2. Follow the instructions on the page (Fig.22), press button on module and hold for 1s till two lights on, then AP connection is activated, click⑱ to next;
3. Click⑲ to enter the WIFI password for the current connection, click⑳ to confirm.

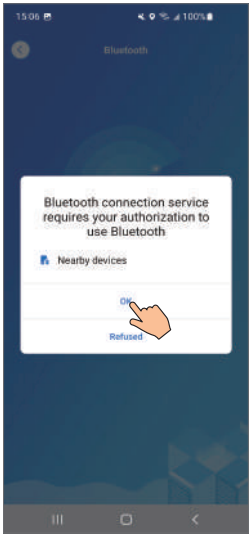


Fig.24 Enable bluetooth permission

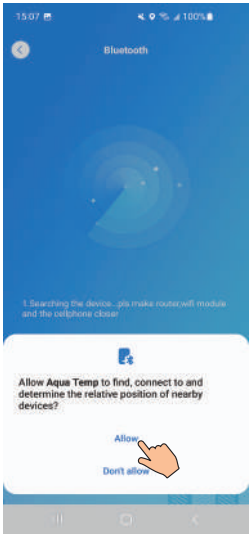


Fig.25 Enable location permission

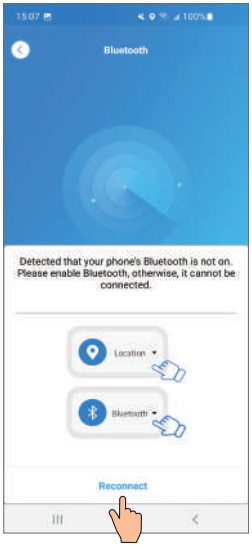


Fig.26 Reconnect interface

4. Click "OK" to enable bluetooth permission (Fig. 24);
5. Click "Allow" to enable bluetooth permission (Fig. 25);
6. Click "Reconnect" (Fig.26) derectly jump to searching device interface(Fig. 27);
7. Click ㉑ to bond device (Fig. 28);
8. Click "While using the app" allow the App to use the camera for scanning the WF barcode on the heat pump unit (Fig.31.1), or click "manual input" to enter the WF barcode(Fig. 32.2)

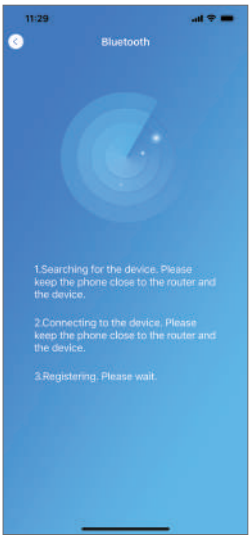


Fig.27 Searching device interface

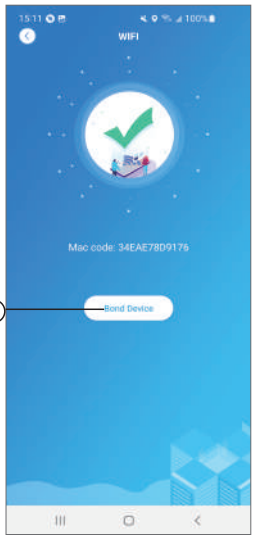


Fig.28 Bond device interface

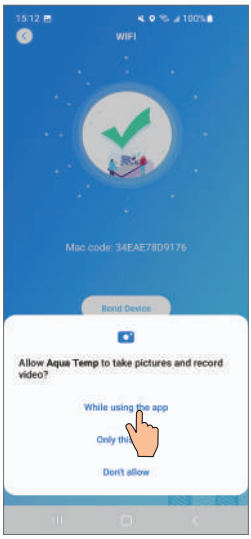


Fig.29 Enable camera permission

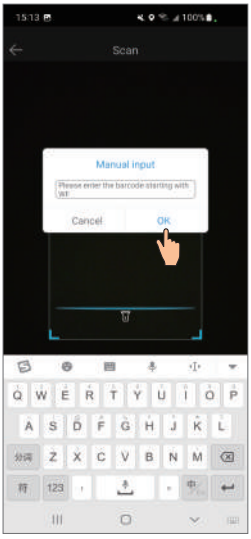


Fig.31.2 Manual input interface

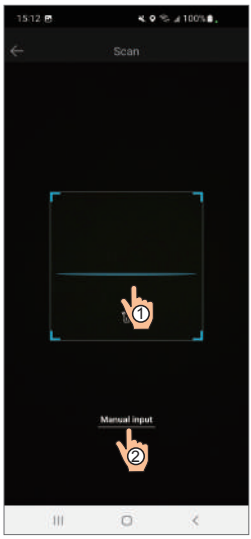


Fig.30 Scanning interface

Fig.31.1 WF barcode

9.Click "OK", device bond is done (Fig.33).
10. After WIFI bonding is done, and jump back to My Device(Fig. 19);
11. Click the device derectly jump to device main interface(Fig. 20).

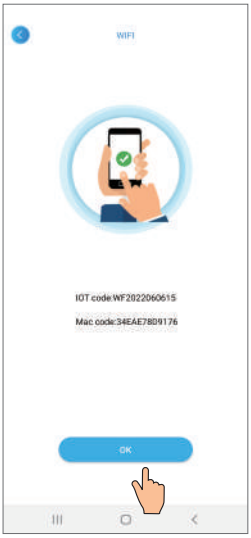


Fig.32 Bond device done interface

Fig.33 Device management interface

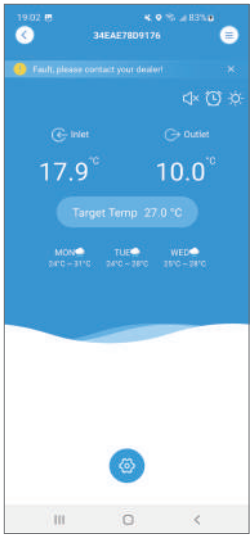


Fig.34 Device Main interface

Device Management

Device management operations are as below :

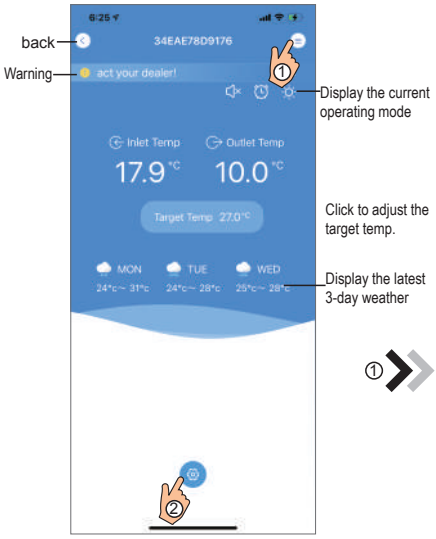


Fig.35 Device Main interface

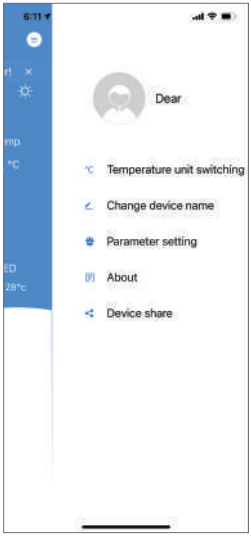


Fig.36 The right-hand menu interface

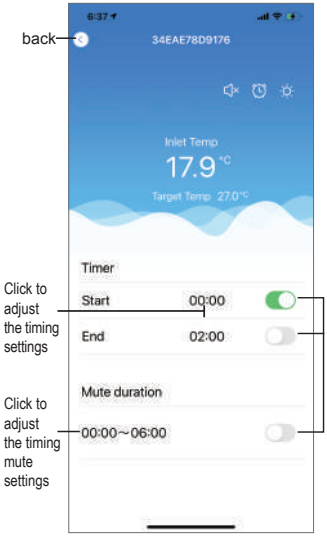


Fig.37 Timing Settings interface

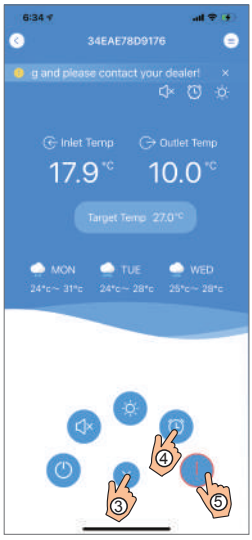


Fig.38 Device Main interface

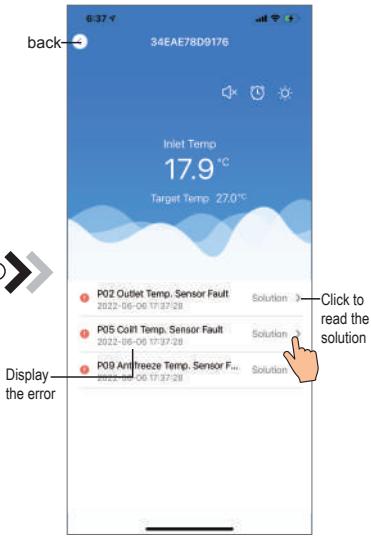


Fig. 39 Troubleshooting interface

ICON	NAME	FUNCTIONS
	ON/ OFF	Click it to turn on/ off the unit
	Silent Mode Off	Display silent mode off, click it to activate the silent mode
	Silent Mode On	Display silent mode on, click it to turn off the silent mode
	Mode shift	Mode changing: Cooling--Heating--Auto
	Cooling	Display Cooling mode, click it to change operating mode
	Heating	Display Heating mode, click it to change operating mode
	Auto	Display Auto mode, click it to change operating mode
	Timming settings	Click it to jump to the timer on/ off and mute timer setting interface
	Troubleshooting	Click it to jump to the troubleshooting interface
	Menu	Click to unfold or collapse the menu

6. Operation of the anti freeze function

When the Poolstage is in "standby" mode, it will always measure the water inlet temperature and the ambient temperature.
When the water inlet temperature is between 2°C and 4°C and the ambient temperature is below 0°C, the Poolstage will start the first stage of the anti-freeze function.
When the water inlet temperature is below 2°C and the ambient temperature is below 0°C, the Poolstage will start the second stage of the anti-freeze function.
The first level of anti-frost function means that the Poolstage will switch on the pool circulation pump by external contact. When the water inlet temperature is between 8°C and 15°C or the ambient temperature rises by more than 1°C, the circulation pump will stop.
The second level of the anti-freeze function means that the Poolstage will first switch on the (pool) circulation pump and then the Poolstage itself will switch on and start heating. When the water inlet temperature rises above 15°C or the ambient temperature is above 1°C, the Poolstage will stop, then stop the pool circulation pump.
Caution:
Always ensure that there is enough water in the pool to ensure circulation. Without water circulation the anti-freeze function cannot work, causing irreparable damage to the heat exchanger.

7. Winter precautions for Poolstage

There are two ways to protect the Poolstage from possible cold damage:
1. The Poolstage is frost-free: drain the water from the heat exchanger
2. The Poolstage is protected against frost: retaining water in the heat exchanger
1. The Poolstage is frost-free (recommended)
Precautions
- Switch off the power to the Poolstage
- Loosen the PVC fittings of the Poolstage completely, the water is automatically drained from the heat exchanger
- Place the supplied cover around the outdoor unit, so that the unit is fully protected from the winter elements
This is recommended so that the Poolstage is certainly not damaged by frost during a power failure, but also for economic reasons.
2. The Poolstage is protected against frost
The Poolstage works down to an outdoor temperature of -15°C, which means that there are important precautions to be taken!
Strict conditions
- The control of the Poolstage pump to the pool filter pump should work (to be tested!), see operation of the anti-freeze function p. 47.
- The Poolstage and the pool filter pump must always be able to switch on, so that the supply voltage cannot be interrupted.
Beware of power failures when the outside temperature is below 0°C!
Freeze damage is NOT covered by the manufacturer's warranty.