

ACiQ

30K-80K R32 INVERTER POOL HEAT PUMP INSTALLATION & OWNER'S MANUAL

Models Covered:
PHP-PA-30K-230
PHP-PA-80K-230



WARNING: DO NOT destroy or lose this manual. Please read the manual thoroughly. Also, store the manual in a place that allows for easy retrieval and future reference. As a result of continuous product improvement, the specification and design of this product are subject to change without advanced notice. Consult your manufacturer or your dealer for further details regarding this product. The images and illustrations within this this manual are for reference only. The actual shape and size of your product may vary.

VERSION DATE: 7-16-26



WARNING

The pool heat pump employ the flammable refrigerant R32. So, transportation, marking and storage of the units should follow the below requirements.

1. **General**

The following information is provided for units that employ FLAMMABLE REFRIGERANT.

2. **Transport of equipment containing flammable refrigerants**

Attention is drawn to the fact that additional transportation regulations may exist with respect to equipment containing flammable gas. The maximum number of pieces of equipment or the configuration of the equipment permitted to be transported together will be determined by the applicable transport regulations.

3. **Marking of equipment using signs**

Signs for similar appliances used in a work area are generally addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location.

All required signs are to be maintained and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in connection with these signs.

The effectiveness of signs should not be diminished by too many signs being placed together.

Any pictograms used should be as simple as possible and contain only essential details.

4. **Disposal of equipment using flammable refrigerants**

Please see national regulations.

5. **Storage of equipment/appliances**

The storage of the appliance should be in accordance with the applicable regulations or instructions, whichever is more stringent.

6. **Storage of packed (unsold) equipment**

Storage package protection should be constructed in such a way that mechanical damage to the equipment inside the package will not cause a leak of the REFRIGERANT CHARGE.

The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.



WARNING

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
 - The appliance shall be stored in a room without continuously operating ignition sources, for example:
 - open flames, an operating gas appliance or an operating electric heater.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.



Refrigerant
Safety Group
A2L



CONTENT

INTRODUCTION	1
SAFETY INSTRUCTIONS	1
ACCESSORIES	10
DIMENSIONS	11
INSTALLATION	13
STARTING UP FOR THE FIRST TIME	19
CONTROLLER	20
MAINTENANCE	31
TROUBLESHOOTING	32
WIFI CONTROL	36



READ THIS MANUAL CAREFULLY BEFORE STARTING UP THE UNIT. DO NOT THROW IT AWAY. KEEP IT IN YOUR FILES FOR FUTURE REFERENCE.



BEFORE OPERATING THE UNIT, MAKE SURE THE INSTALLATION HAS BEEN CARRIED OUT CORRECTLY BY A PROFESSIONAL DEALER. IF YOU FEEL UNSURE ABOUT OPERATION, CONTACT YOUR DEALER FOR ADVICE AND INFORMATION.

INTRODUCTION

This manual

This manual includes the necessary information about the products. Please read this manual carefully before you use and maintain the product.

The unit

The swimming pool heat pump is one of the most economical systems to heat the swimming pool efficiently. Using the free renewable energy from the air and the earth, it delivers up to five times more energy in heating than the traditional heating systems such as gas boiler and electric heater. So you will save 4/5 costs of the traditional heating. The swimming pool heat pump can lengthen your swimming season, and gives you comfort at high level. You will enjoy swimming not only in summer, but also in spring, autumn and even winter time.

SAFETY INSTRUCTIONS

1. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
2. Children should be supervised to ensure that they do not play with the appliance.
3. If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
4. That the appliance shall be installed in accordance with national wiring regulations.
5. The applicable operating temperature range for the pool heat pumps are -13°F to 109.4°F.
6. These units are for outdoor use only.



NOTES

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Qualification of workers

The manual shall contain specific information about the required qualification of the working personnel for maintenance, service and repair operations. Every working procedure that affects safety means shall only be carried out by competent persons.

Examples for such working procedures are:

- breaking into the refrigerating circuit,
- opening of sealed components,
- opening of ventilated enclosures.

Competence of service personnel

General

Information of procedures additional to usual information for refrigerating appliance installation, repair, maintenance and decommission procedures is required when an appliance with FLAMMABLE REFRIGERANT is affected.

The training of these procedures is carried out by national training organisations or manufacturers that are accredited to teach the relevant national competency standards that may be set in legislation.

The achieved competence should be documented by a certificate.

Information and training

The training should include the substance of the following:

1. Information about the explosion potential of FLAMMABLE REFRIGERANTS to show that flammables may be dangerous when handled without care.
 2. Information about POTENTIAL IGNITION SOURCES, especially those that are not obvious, such as lighters, light switches, vacuum cleaners, electric heaters.
 3. Information about the different safety concepts:
 - Unventilated-Safety of the appliance does not depend on ventilation of the housing. Switching off the appliance or opening of the housing has no significant effect on the safety. Nevertheless, it is possible that leaking refrigerant may accumulate inside the enclosure and flammable atmosphere will be released when the enclosure is opened.
 - Ventilated enclosure-Safety of the appliance depends on ventilation of the housing. Switching off the appliance or opening of the enclosure has a significant effect on the safety. Care should be taken to ensure sufficient ventilation before.
 - Ventilated room -Safety of the appliance depends on the ventilation of the room. Switching off the appliance or opening of the housing has no significant effect on the safety. The ventilation of the room shall not be switched off during repair procedures.
 4. Information about refrigerant detectors:
 - Principle of function, including influences on the operation.
 - Procedures, how to repair, check or replace a refrigerant detector or parts of it in a safe way.
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- Procedures, how to disable a refrigerant detector in case of repair work on the refrigerant carrying parts.
5. Information about the concept of sealed components and sealed enclosures according to IEC60079-15:2010.
 6. Information about the correct working procedures:
 - a) Commissioning
 - Ensure that the floor area is sufficient for the REFRIGERANT CHARGE or that the ventilation duct is assembled in a correct manner.
 - Connect the pipes and carry out a leak test before charging with refrigerant.
 - Check safety equipment before putting into service.
 - b) Maintenance
 - Portable equipment shall be repaired outside or in a workshop specially equipped for servicing units with FLAMMABLE REFRIGERANTS.
 - Ensure sufficient ventilation at the repair place.
 - Be aware that malfunction of the equipment may be caused by refrigerant loss and a refrigerant leak is possible.
 - Discharge capacitors in a way that won't cause any spark. The standard procedure to short circuit the capacitor terminals usually creates sparks.
 - Reassemble sealed enclosures accurately. If seals are worn, replace them. Check safety equipment before putting into service.
 - c) Repair
 - Portable equipment shall be repaired outside or in a workshop specially equipped for servicing units with FLAMMABLE REFRIGERANTS.
 - Ensure sufficient ventilation at the repair place.
 - Be aware that malfunction of the equipment may be caused by refrigerant loss and a refrigerant leak is possible.
 - Discharge capacitors in a way that won't cause any spark.
When brazing is required, the following procedures shall be carried out in the right order:
 - Remove the refrigerant. If the recovery is not required by national regulations, drain the refrigerant to the outside. Take care that the drained refrigerant will not cause any danger. In doubt, one person should guard the outlet. Take special care that drained refrigerant will not float back into the building.
 - Evacuate the refrigerant circuit.
 - Purge the refrigerant circuit with nitrogen for 5 min (not required for A2L REFRIGERANTS).
 - Evacuate again (not required for A2L REFRIGERANTS).
 - Remove parts to be replaced by cutting, not by flame.
 - Purge the braze point with nitrogen during the brazing procedure.
 - Carry out a leak test before charging with refrigerant.
 - Reassemble sealed enclosures accurately. If seals are worn, replace them.
 - Check safety equipment before putting into service.
-

d) Decommissioning

- If the safety is affected when the equipment is putted out of service, the REFRIGERANT CHARGE shall be removed before decommissioning.
- Ensure sufficient ventilation at the equipment location.
- Be aware that malfunction of the equipment may be caused by refrigerant loss and a refrigerant leak is possible.
- Discharge capacitors in a way that won't cause any spark.
- Remove the refrigerant. If the recovery is not required by national regulations, drain the refrigerant to the outside. Take care that the drained refrigerant will not cause any danger. In doubt, one person should guard the outlet. Take special care that drained refrigerant will not float back into the building.

When FLAMMABLE REFRIGERANTS except A2L REFRIGERANTS are used,

- Evacuate the refrigerant circuit.
- Purge the refrigerant circuit with nitrogen for 5 min.
- Evacuate again.
- Fill with nitrogen up to atmospheric pressure.
- Put a label on the equipment that the refrigerant is removed.

e) Disposal

- Ensure sufficient ventilation at the working place.
- Remove the refrigerant. If the recovery is not required by national regulations, drain the refrigerant to the outside. Take care that the drained refrigerant will not cause any danger. In doubt, one person should guard the outlet. Take special care that drained refrigerant will not float back into the building.
- When flammable refrigerants are used,
 - evacuate the refrigerant circuit.
 - purge the refrigerant circuit with oxygen free nitrogen.
 - evacuate again. (not required for A2L refrigerants); and
 - cut out the compressor and drain the oil.

Information on servicing

1. General

The manual shall contain specific information for service personnel according.

2. Checks to the area

Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimised.

3. Work procedure

Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

4. General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

5. Checking for presence of refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i. e. non-sparking, adequately sealed or intrinsically safe.

6. Presence of fire extinguisher

If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand.

Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

7. No ignition sources

No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

8. Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

9. Checks to the refrigerating equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

- the actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;
- the ventilation machinery and outlets are operating adequately and are not obstructed;
- if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
- marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
- refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

10. Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault

cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

11. Repairs to sealed components

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
- Sealed electrical components shall be replaced.

12. Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components must be replaced.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

13. Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

14. Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

NOTE: Examples of leak detection fluids are

-
- bubble method,
 - fluorescent method agents

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to Removal and evacuation.

15. Removal and evacuation

When breaking into the refrigerant circuit to make repairs or for any other purpose-conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

- safely remove refrigerant following local and national regulations;
- purge the circuit with inert gas (optional for A2L);
- evacuate (optional for A2L);
- continuously flush or purge with inert gas when using flame to open circuit;
- open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

16. Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

17. Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure, ensure that:
 - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - all personal protective equipment is available and being used correctly;
 - the recovery process is supervised at all times by a competent person;
 - recovery equipment and cylinders conform to the appropriate standards.
- d) Pump down refrigerant system, if possible.
- e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- f) Make sure that cylinder is situated on the scales before recovery takes place.
- g) Start the recovery machine and operate in accordance with instructions.
- h) Do not overfill cylinders (no more than 80 % volume liquid charge).
- i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- k) Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked.

18. Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

19. Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i. e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning

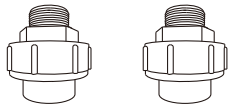
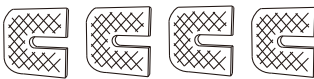
the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

ACCESSORIES

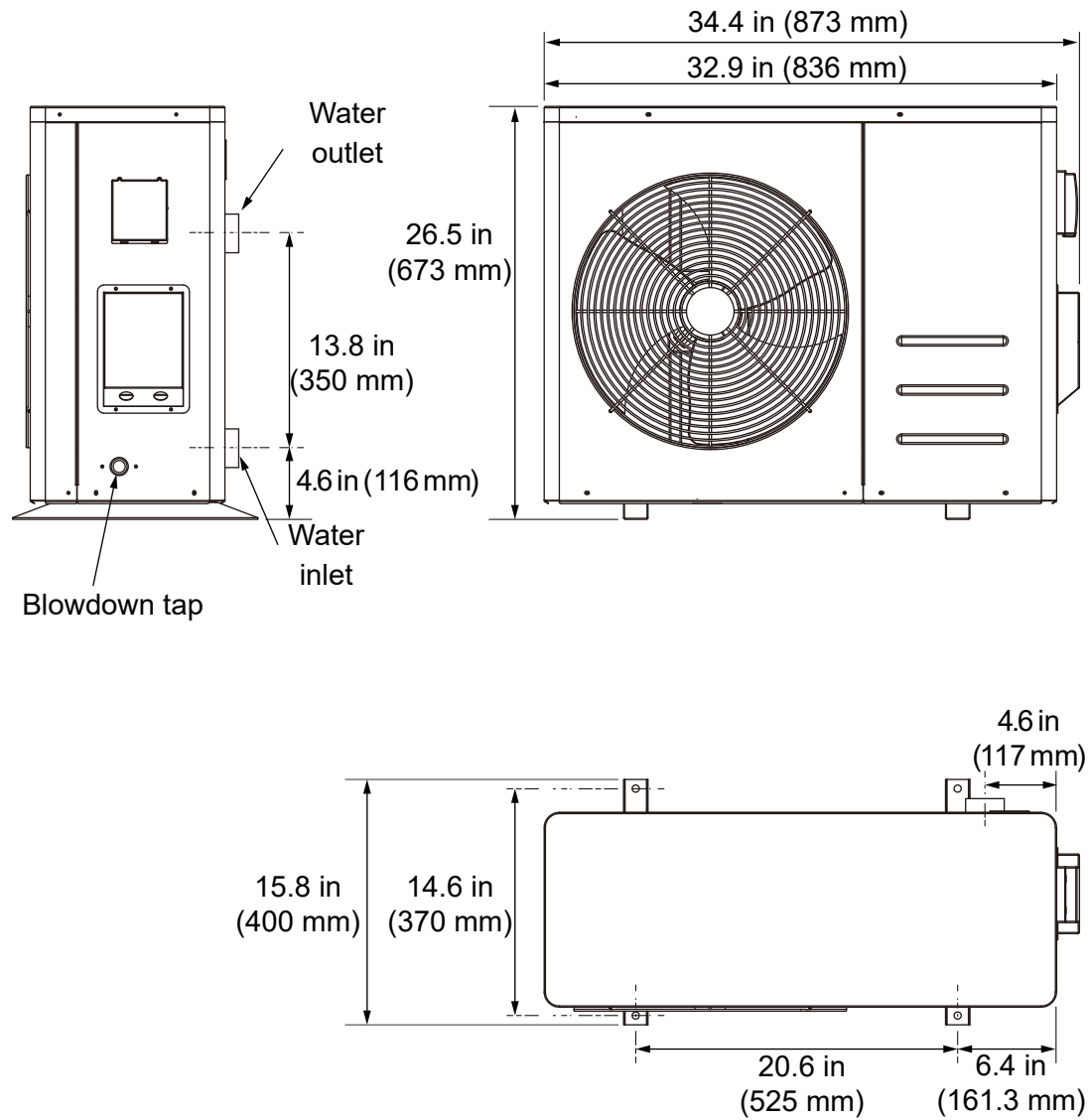
Before starting the installation, please make sure that all accessories are collected from the unit package:

Packing list		
Item	Image	Quantity
Swimming pool heat pump	-----	1
Installation and user manual	This manual.	1
Inlet and outlet water pipe connectors		2
Rubber pads		4
Drainage joint		1
Drainage pipe	-----	1
Anti-UV cover	-----	1

Recommended Pool Capacity Range*	
Model	Pool Capacity (Gallons)
30K	5283 - 10567 gal
80K	15850 - 26417 gal
*Recommended to use an isothermal cover at night	

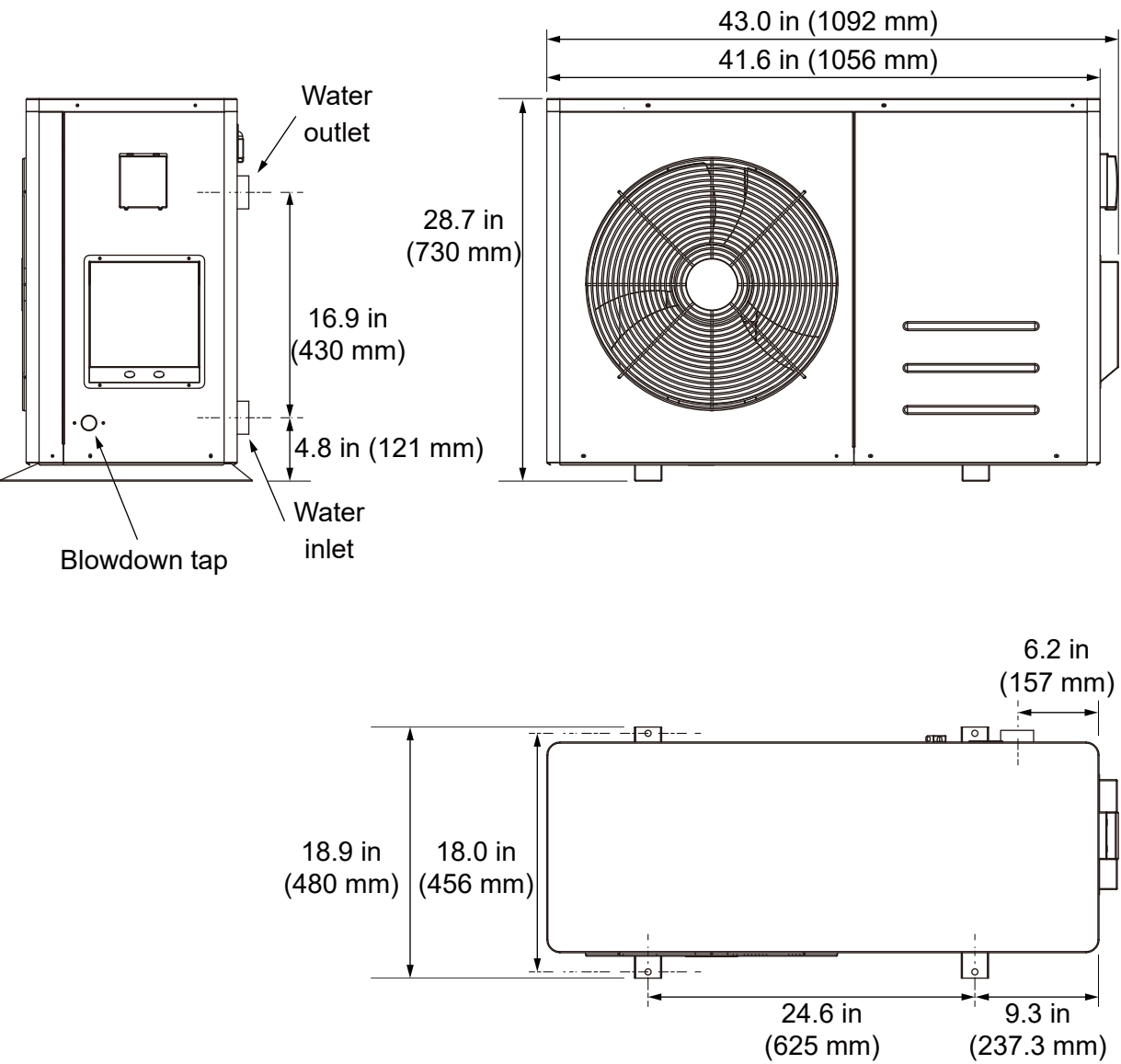
DIMENSIONS

PHP-PA-30-230
Units: inches (millimeters)



PHP-PA-80-230

Units: inches (millimeters)



INSTALLATION

Installation information

The following information given here is not an instruction, but simply mean to give the user a better understanding of the installation.

Condition of installation

The following information given here is not an instruction, but simply meant to give the user a better understanding of the installation.

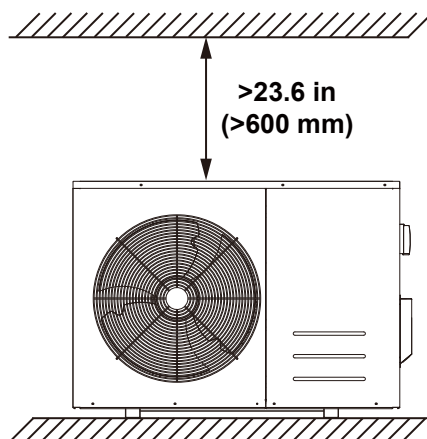
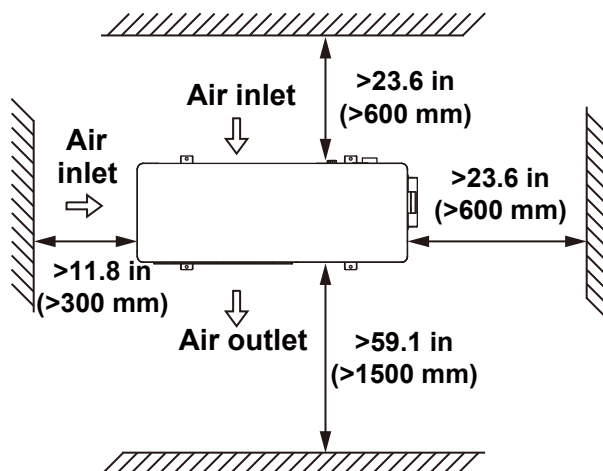
The unit must be level to allow for the gravitational evacuation of possible condensation produced during operation.

The blower must not be directed towards surrounding windows. Vibrations and noise must not be transmitted to a building closely.

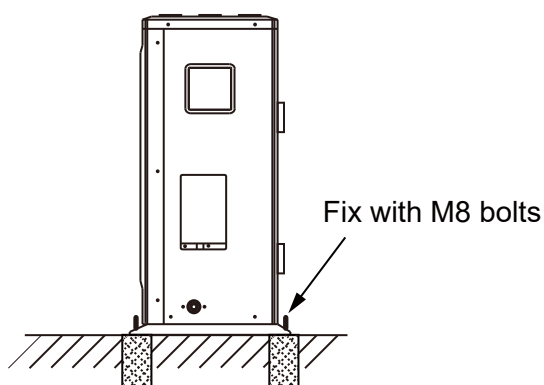
Installation place

Install the swimming pool heat pump on a flat, horizontal, and stable surface.

Make sure that the outlet air will not be breathed in.



The unit should be fixed with 4 pieces of M8 bolts.



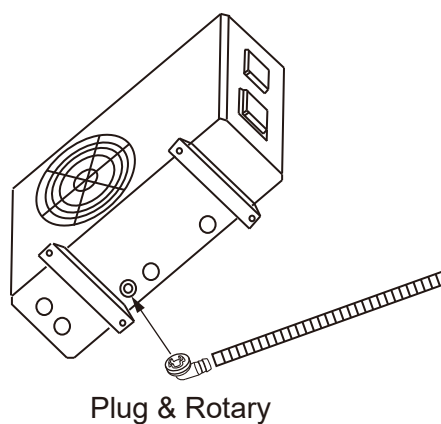
To perfect your installation

Avoid directing the flow of ventilated air towards a sensitive noise zone, such as room's window.

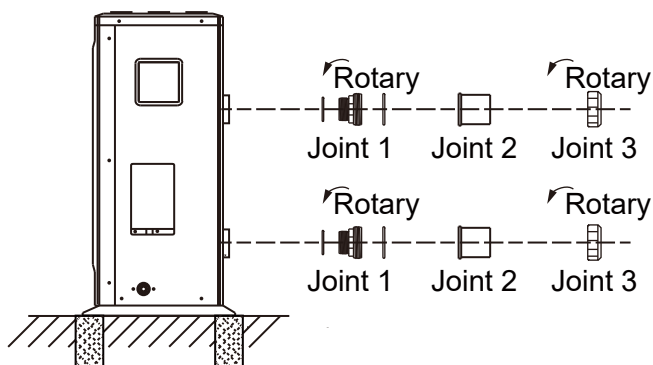
Avoid positioning pool heat pump on a surface that can transmit vibrations to dwelling.

Try to avoid placing appliance under a tree or exposed to water or mud, which would be likely to complicate maintenance.

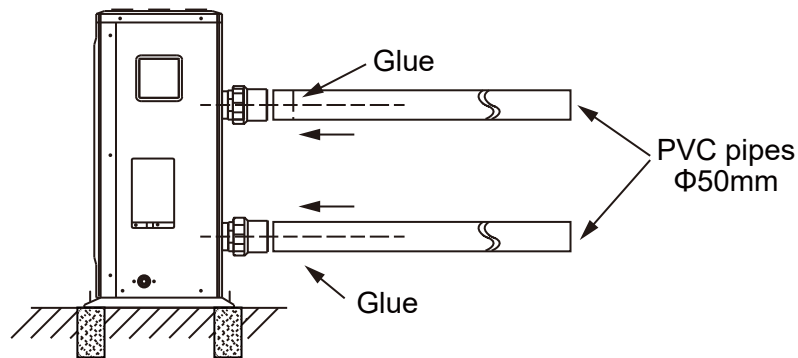
Condensed water pipe connection



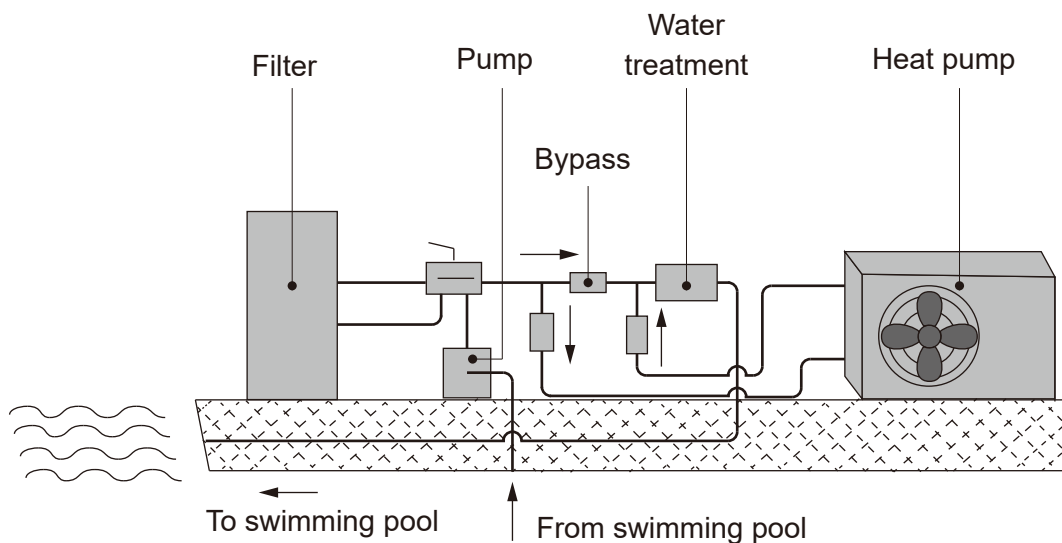
Water connection



Notes: All the joints in the figure are packaged with the pool heat pump as Inlet and outlet water pipe connectors.



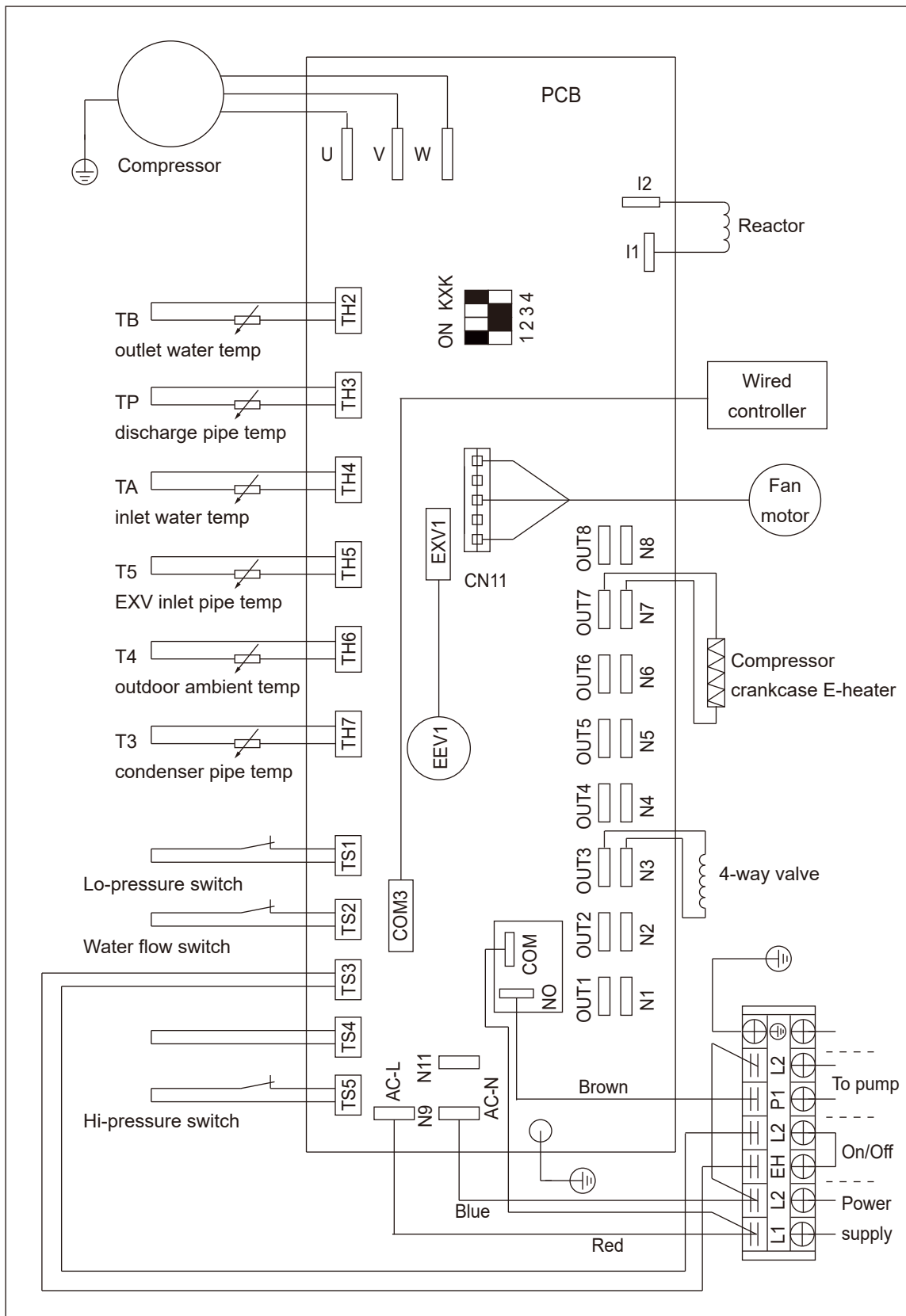
- The heat pump is connected to a filtration circuit with a by-pass.
- It is imperative that the by-pass is placed after the pump and the filter.
- The by-pass generally consists of 3 valves.
- This makes it possible to regulate the water flow which passes through the heat pump and to isolate the heat pump completely for any maintenance work, without cutting the flow of filtered water.



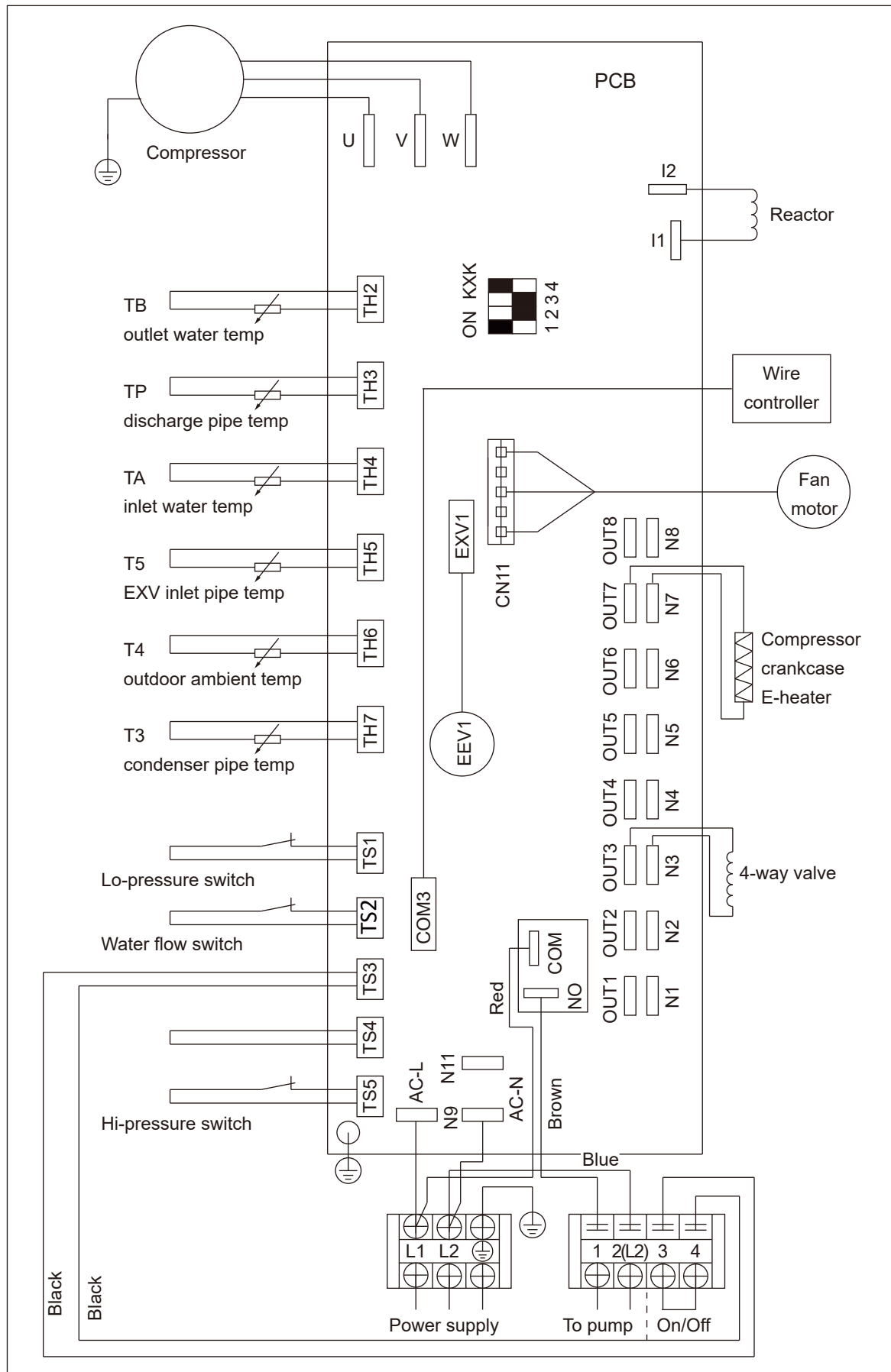
If your installation is equipped of the water treatment with product adductions (e.g. chlorine, brominates, salt...) the by-pass must be installed before the water treatment, with a non-return valve between the by-pass and water treatment.

Electrical connection

Wiring diagram: PHP-PA-30-230

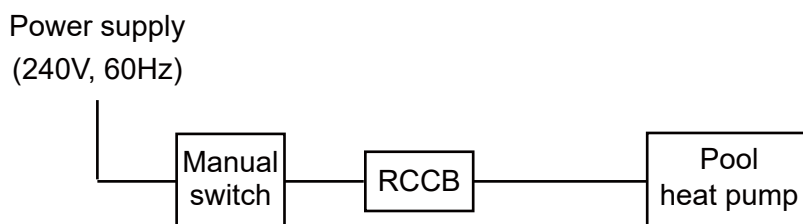


Wiring diagram: PHP-PA-80-230



Electrical supply must correspond to that indicated on the appliance.

Connection cables have to be sized according to appliance power and installation requirements.

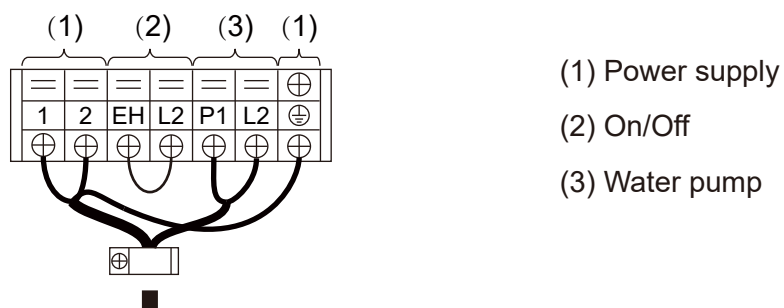


Please refer to below table:

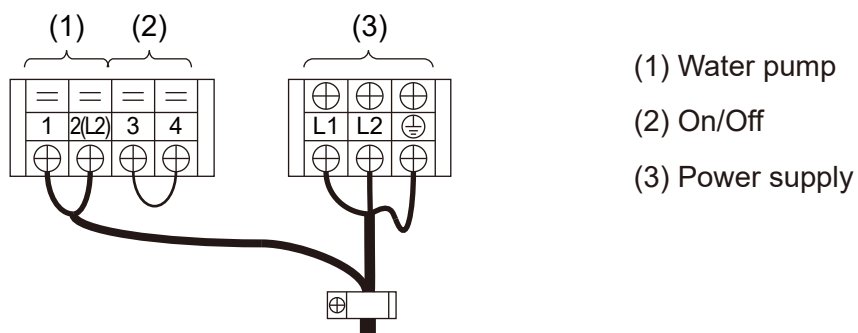
Model No.	Power supply cable size	RCCB
PHP-PA-30-230	14AWG	30mA below 0.1 seconds
PHP-PA-80-230	10AWG	

These data are only indication, you must ask an electrician to determine the exact data for your pool installation.

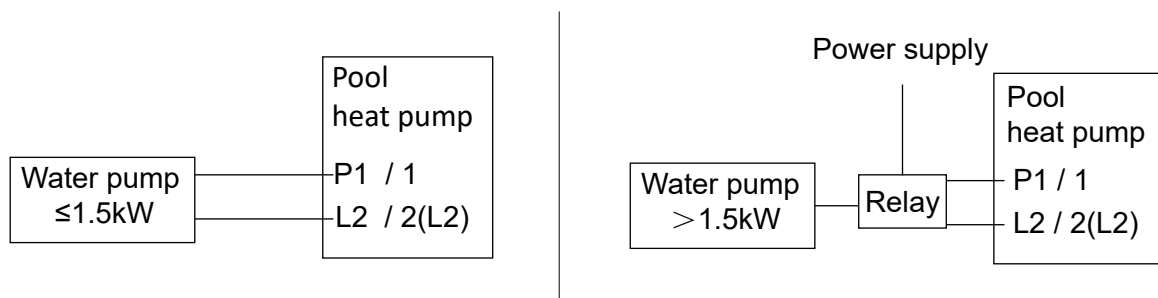
PHP-PA-30-230



PHP-PA-80-230



Water pump connection



STARTING UP FOR THE FIRST TIME

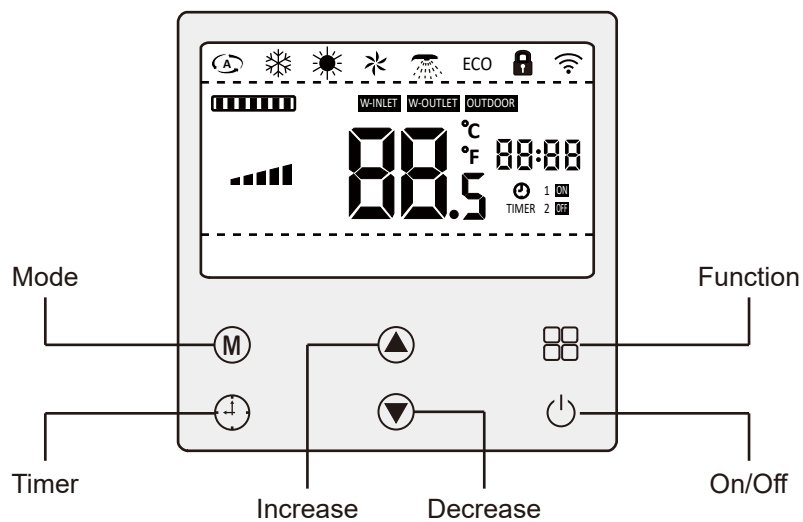
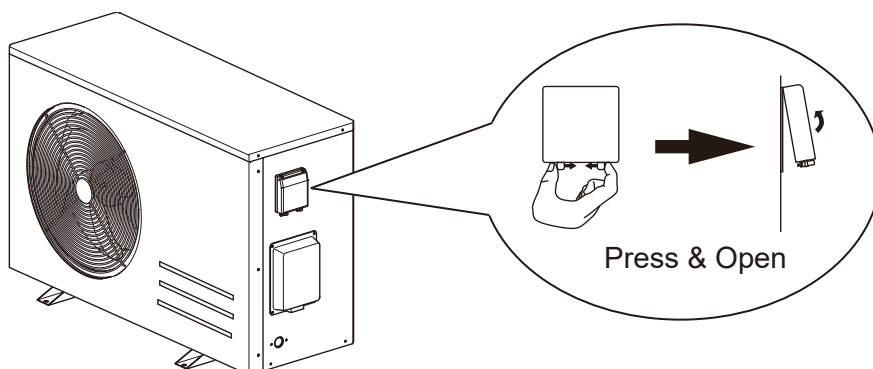
After all the connections have been made and checked, the following steps must be taken:

- Turn on the filter pump. Check for leaks and make certain that the water flows from and to the swimming pool.
- Connect the power supply to the heat pump and press the ON/OFF button. The appliance will start up after the time delay (see below) has elapsed.
- After a few minutes check whether the air being expelled from the appliance is cooler.
- Leave the appliance and filter pump in operation 24 hours per day until the desired water temperature has been reached. At this point the heat pump ceases operation. The appliance will now start up again automatically (as long as the filter pump is in operation) whenever the swimming pool temperature falls.

Depending on the initial temperature of the swimming pool water and the air temperature, several days may be needed to bring the water up to the temperature required. Covering the swimming pool properly can considerably shorten this period.

Time Delay - the appliance is fitted with built-in start-up delay of 3 minutes as protection for the electronics and to increase the life of the contacts. After this interval, the appliance will restart automatically. Even a brief interruption in the flow of current will activate this delay and thus prevent the appliance from starting up immediately. Additional interruptions in the current during this delay will have no influence on the 3-minute countdown.

CONTROLLER



(M) Mode

During the running of the heat pump unit, press this button every time, and the unit will running under the following mode:



Timer

This button is used to set the clock and timer on/off.

Increase **Decrease**

Press these two buttons to adjust the setting values including time and temperature.

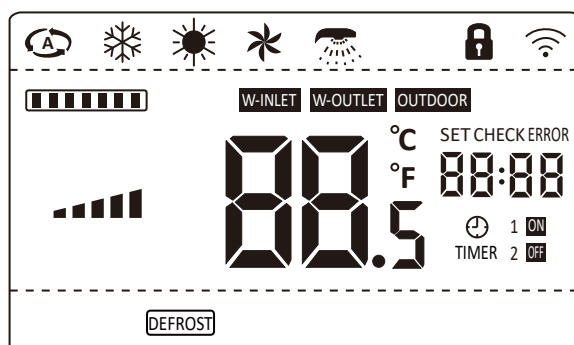
On/Off

When the heat pump is standby, press this button, and the unit will start to run. During the heat pump running, after press this button, the unit will be stop.

Function

This button is used to switch to silence mode and manual defrost.

Explanations of display



Icons	Explanations	Notes
	Auto mode: Heat pump is running under auto mode.	Setting temperature range: 6°C - 40°C
	Cooling mode: Heat pump is running under cooling mode.	Setting temperature range: 6°C - 28°C
	Heating mode: Heat pump is running under heating mode.	Setting temperature range: 15°C - 40°C
	Silence function: Heat pump is running with silence function.	
	Spa mode: Heat pump is running under spa mode.	Setting temperature range: 15°C - 42°C

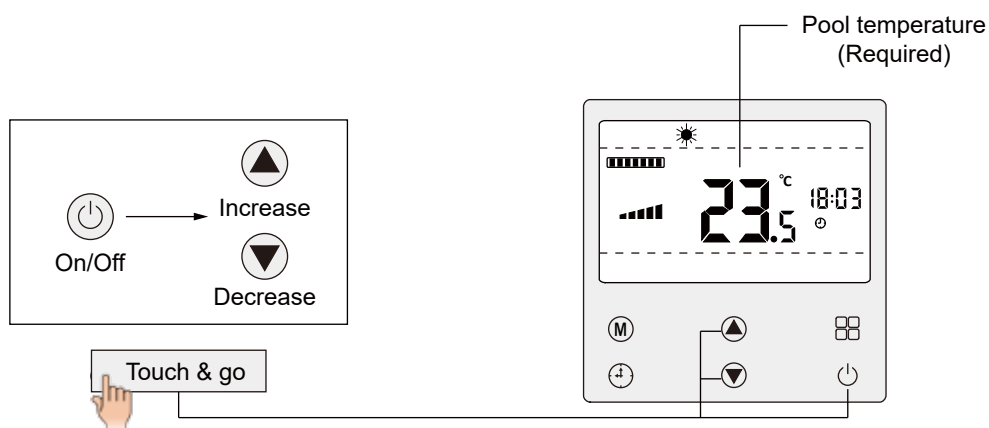
Icons	Explanations	Notes
	Lock: Hold down the ▲ and ▼ buttons for 3 seconds at the same time. All the buttons will be locked. Repeat the hold down again, and all the buttons will be unlocked.	
	Wi-Fi: When the heat pump is connected with router, the icon will be displayed. Once the heat pump is disconnected with router, it will be flashed.	Only available for the unit with Wi-Fi function.
	Compressor output rate.	
	Water flow indicator	
	 Water flow is insufficient.	
	 Water flow is sufficient.	
	 Water flow is overflow.	
	Temperature value	
°C °F	Temperature unit. Hold down the function button  for 3 seconds, these two units will be switched.	
  	When the controller is standby, the inlet/outlet water and outdoor temperature will take turns to be displayed. These three icons also will take turns according to displayed temperature.	
ERROR	During the running, there are any errors or protections occurred, and the error or protection code and this icon will be displayed.	
	Clock icon: When setting the clock or the controller is standby, this icon will display the current time. When setting the timer on/off, it display the setting time. When the icon 'ERROR' is displayed, it will be display as error or protection code.	
 1  ON 2  OFF TIMER	Timer on/off icon: When setting timer on/off, it will be displayed. Timer 2 for silence running.	
	Defrost icon: When the heat pump is running under the defrosting, it will be displayed.	

Temperature setting

Step 1: Press the On/Off button  to turn on the heat pump.

Step 2: Press the Increase button  or Decrease button  to set the temperature.

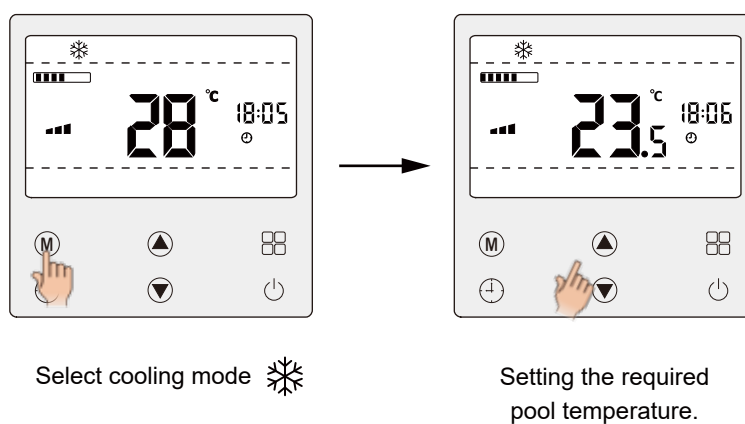
Notes: Hold down the Increase button or Decrease button for 0.5 seconds, the temperature value will be increased or decreased rapidly.



Cooling mode setting

Step 1: Press the Mode button  to select cooling mode icon .

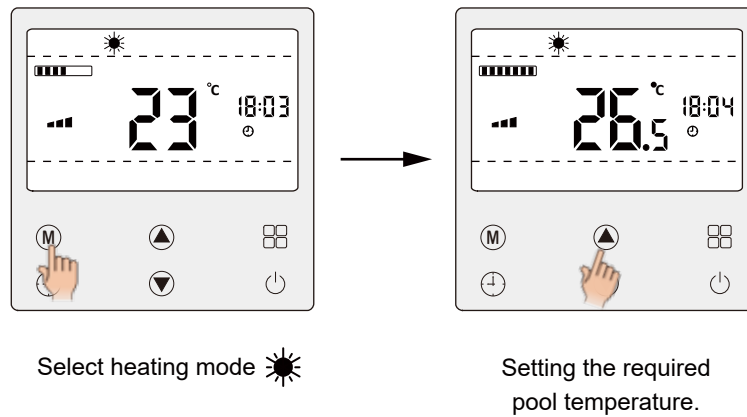
Step 2: Press the Increase button  or Decrease button  to set the temperature as needed under cooling mode.



Heating mode setting

Step 1: Press the Mode button (M) to select heating mode icon ☀.

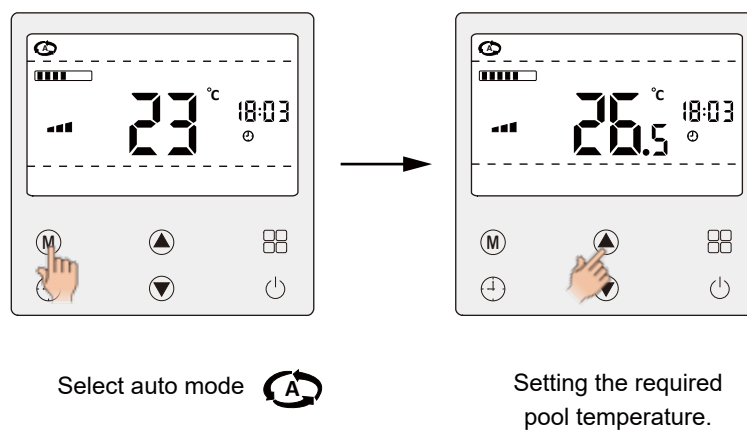
Step 2: Press the Increase (▲) or Decrease button (▼) to set the required pool temperature.



Auto mode setting

Step 1: Press the Mode button (M) to select auto mode icon ⌚.

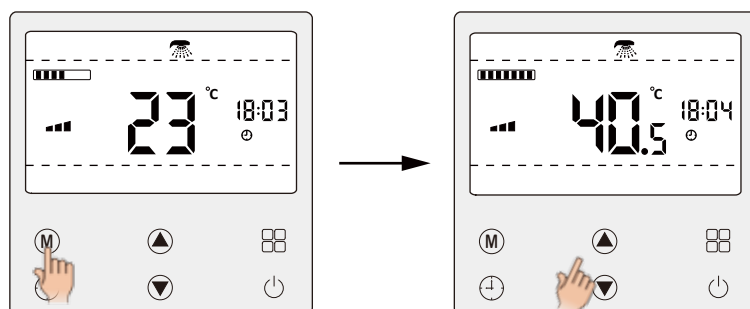
Step 2: Press the Increase (▲) or Decrease button (▼) to set the required pool temperature.



Spa mode setting

Step 1: Press the Mode button (M) to select spa mode icon .

Step 2: Press the Increase (▲) or Decrease button (▼) to set the required pool temperature.



Select Spa mode .

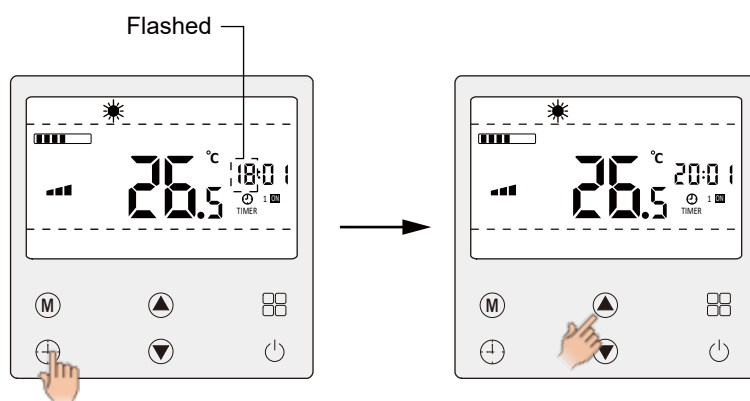
Setting the required pool temperature.

Clock setting

Step 1: Hold down the Timer button (⌚) for 3 seconds to begin to set clock. And then, the hours will be flashed.

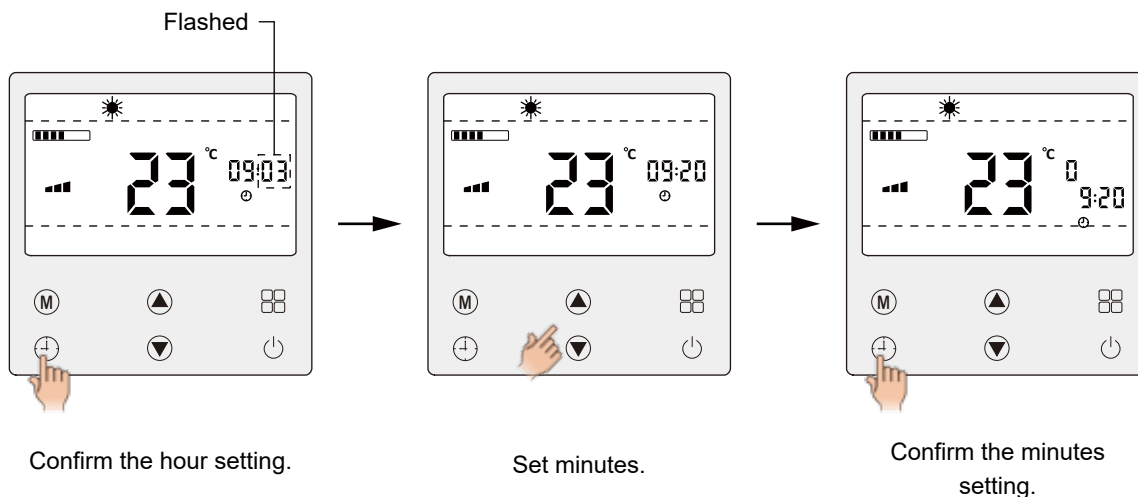
Step 2: Press the Increase or Decrease button to set the hours of the clock. Press the Timer button again, the minutes will be flashed, and begin to set the minutes of the clock.

Step 3: After set the minutes, press the Timer button to confirm the clock setting.



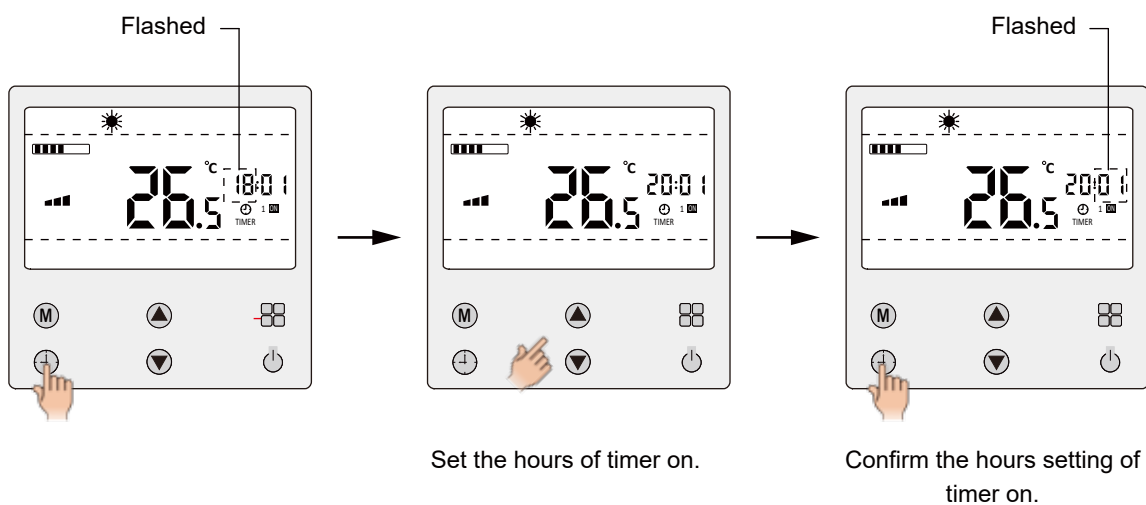
Hold down for 3s to begin to set the current time.

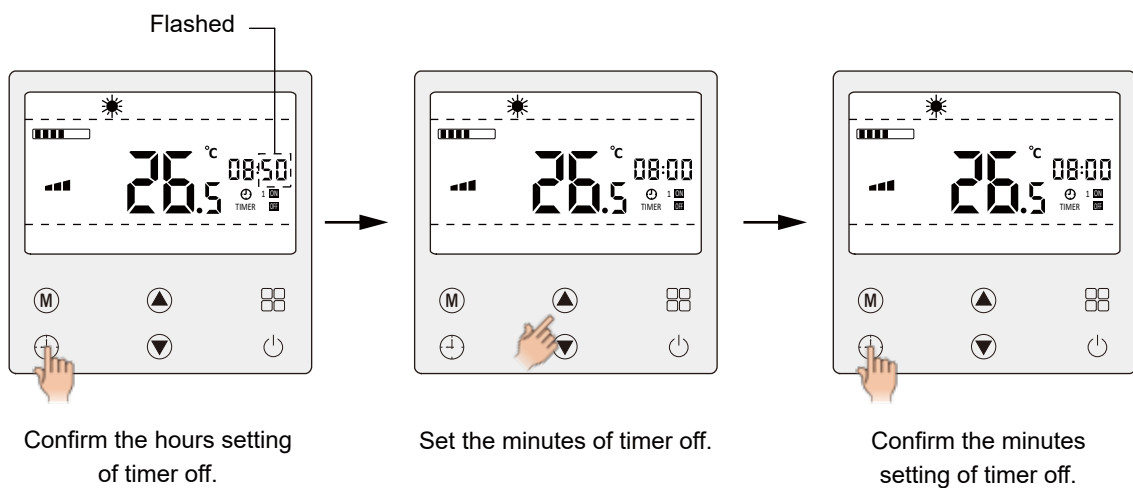
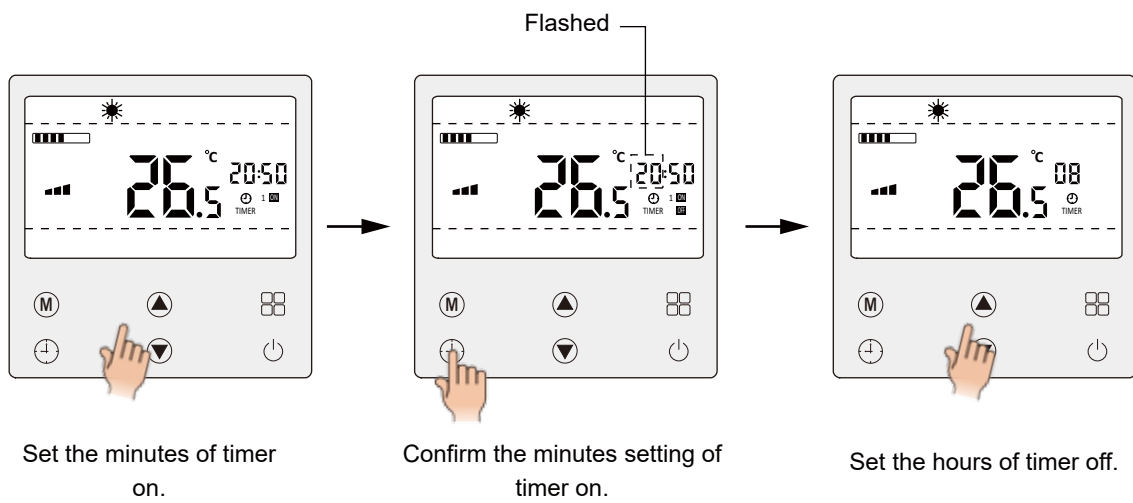
Set hours .



Timer on/off setting

- Step 1: Pressing the timer button  to set timer on. The icon 'ON' will be displayed. At the same time the hour of timer will be flashed.
- Step 2: Press the Increase or Decrease button to set the hours of the timer. Press the Timer button again, the minutes will be flashed, and begin to set the minutes of the timer.
- Step 3: After set the minutes, press the Timer button to confirm the timer on setting.
- Step 4: Once finish the timer on setting, the icon 'OFF' will be displayed, and the hour of timer will be flashed.
- Step 5: Press the increase or Decrease button to set the hours of the timer. Press the timer button again, the minutes will be flashed, and begin to set the minutes of the timer.
- Step 6: After set the minutes, press the Timer button to confirm the timer off setting.





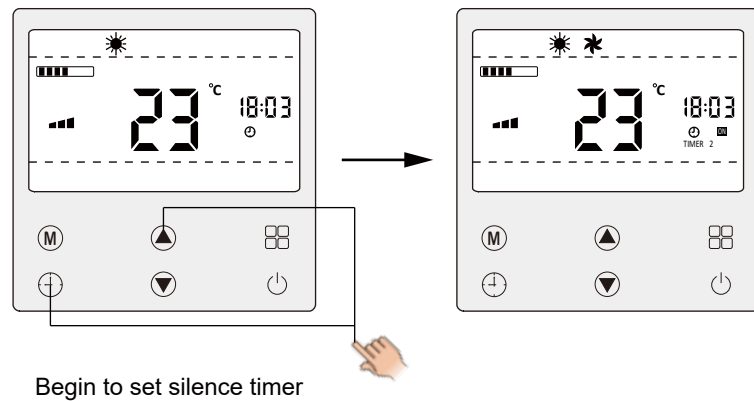
Notes: During the timer on/off setting, without pressing any button for 20 seconds or pressing the On/Off button, the timer on/off setting process will be cancelled.

Silence timer setting (Timer 2)

Silence timer on/off is set by factory. Silence timer on/off means that the heat pump will run under silence mode from 8pm to 8am. It can be modified through timer on/off setting.

Step 1: Press the Timer button  and Increase button together to begin to set the silence timer.

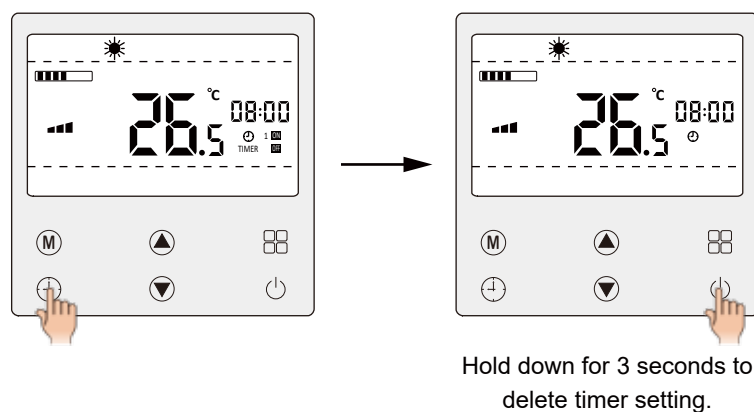
Step 2: Follow the timer on/off setting method to set the silence timer on/off.



Delete the timer on/off

Step 1: Pressing the Timer button  to enter the timer on setting interface.

Step 2: Hold down the On/Off button for 3 seconds. All settings of the timer 1 on/off will be deleted.



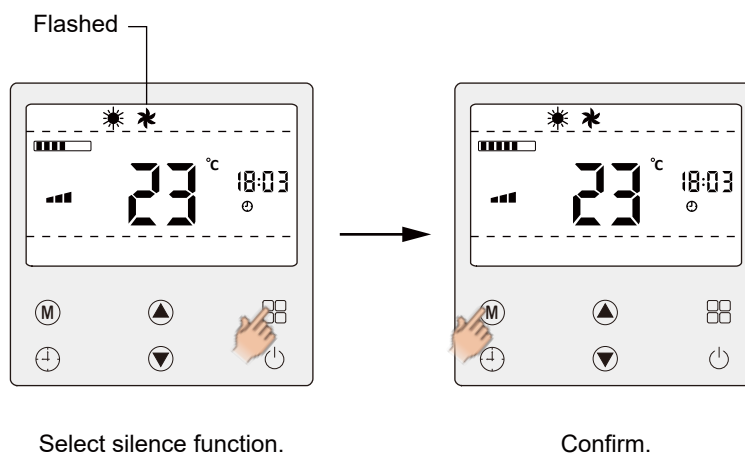
Notes:

Hold down the Timer button  and Increase button, hold down the On/Off button for 3 seconds to cancel the timer 2 on/off.

Silence function setting

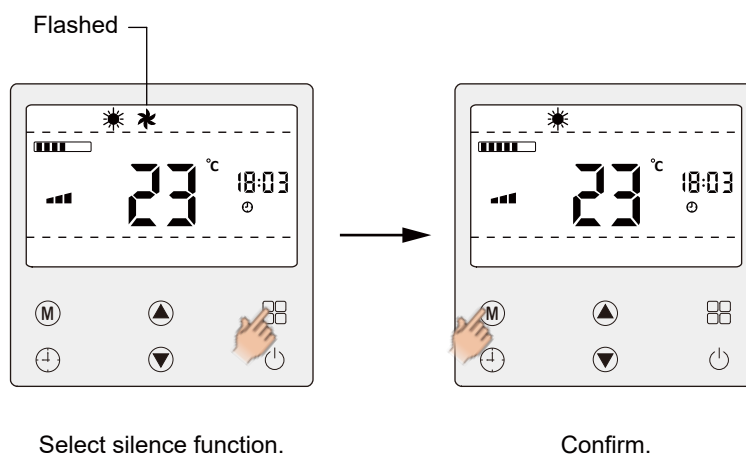
Step 1: Press the Mode button (M) to choose the required running mode: Auto, cooling and heating.

Step 2: Press the Function button  to begin to function setting. Press the Function button again till the silence icon  is flashed. After pressing the Mode button to confirm, the silence icon will be lighted on.



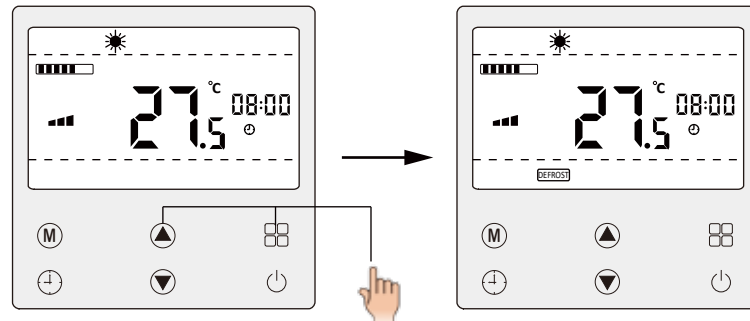
Silence function exit

Press the Function button  to begin to function setting. Press the Function button again till the silence icon  is flashed. Press the Mode button to confirm. Then, the silence icon will be extinguished. It means the silence function is exited.



Manual defrosting

Manual defrost is only can be operated under heating mode or Spa mode. After finishing the defrosting, it will be exited automatically, and the icon will be extinguished too.



Hold down these two buttons for 3 seconds.

Begin to manual defrosting.

MAINTENANCE

To protect the paintwork, avoid leaning or putting objects on the device. External heat pump parts can be wiped with a damp cloth and domestic cleaner. (Attention: Never use cleaning agents containing sand, soda, acid or chloride as these can damage the surfaces.)

To prevent faults due to sediments in the titanium heat exchanger of the heat pump, ensure that the heat exchanger cannot be contaminated (water treatment and filter system necessary). In the event that operating malfunctions due to contamination still occur, the system should be cleaned as described below.

(Warning: the fins on the finned tube heat exchanger are sharp-edged --- danger of being cut!)

Cleaning the pipe system in the heat exchanger

Contamination in the pipes and heat exchanger can reduce the performance of the heat pump's titanium heat exchanger. If this is the case, the pipe system and heat exchanger must be cleaned by a technician.

Use only pressurized drinking water for cleaning.

Cleaning the air system

The finned heat exchanger, ventilator and condensate outflow should be cleaned of contaminants (leaves, twigs, etc.) before each new heating period. These types of contaminants can be manually removed using compressed air or by flushing with clean water.

It may be necessary to remove the device cover and air inlet grid first.

Attention: Before opening the device, ensure that all circuits are isolated from the power supply.

To prevent the evaporator and the condensate tray from being damaged, do not use hard or sharp objects for cleaning.

Under extreme weather conditions (e.g. snow drifts), ice may form on the air intake and exhaust air outlet grids. If this happens, the ice must be removed in the vicinity of the air intake and exhaust air outlet grids to ensure that the minimum air flow rate is maintained.

Winter Shutdown/Lay-up

If there is a chance of frost after the bathing-season has ended when the swimming pool heating is switched off and the external temperature is expected to drop below the operating limit, the water circuit of the heat pump should be completely drained. Otherwise, suitable constructional measures should be taken by the customer to protect the heat pump against damage from frost.

Attention: The warranty does not cover damage caused by inadequate lay-up measures during the winter.

TROUBLESHOOTING

This section provides useful information for diagnosing and correcting certain troubles which may occur. Before starting the troubleshooting procedure, carry out a thorough visual inspection of the unit and look for obvious defects such as loose connections or defective wiring.

Before contacting your local dealer, read this chapter carefully, it will save you time and money.

	Condition	Cause
Normal operation.	White aerosol or globule is given out. Make sound of 'hiss'.	Air supply motor stops automatically to defrost.
		At the beginner and the end of the defrost process, sound is given out from 4-way valve.
		During the process or just after having stopped, sound like water flow occur, which will be amplified at the first 2-3 minutes, this is caused by process of refrigerant current or water.
		Slight 'hiss' is caused by heat exchanger as temperature changes. The sound is given out because of heat expands and cold contracts of heat exchanger.
Please check that again.	Stop operation or start up automatically.	Check the timer whether it is correctly set.
		Detect anti-freezing mode is operating.
	No operated.	Whether the power is cut.
		Whether the manual power supply switch is off.
		Whether the fuse is broken.
		Whether the protection device works.
		Whether it is the timer set.
	Inefficient heating.	Whether the inlet and outlet of water pipe are blocked.

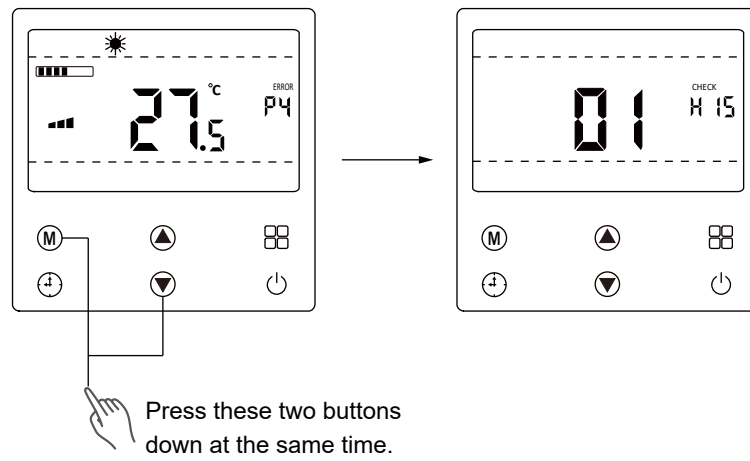
Error/Protection codes lists

Codes	Details	Means
EF	EF	Water flow failure
E1 / E32	E1 / E32	Communications failure between controller and PCB
Ed	Ed	Communications failure between PCB and driver modular
E11	E11	Temperature sensor failure of entering water
EE	EE	EEPROM failure
E4	E4	Temperature sensor failure of refrigerant pipe
E12	E12	Temperature sensor failure of leaving water
E13	E13	Temperature sensor failure of condenser
E14	E14	Temperature sensor failure of outdoor ambient
E15	E15	Temperature sensor failure of discharge pipe
E17	E17	Water flow switch failure
E9	E9	EEPROM failure (Driven module)
E7	E20	Out-of-step protection of fan motor
	E21	Current sampling circuit Failure of fan motor
	E22	Fan-motor module protection
	E23	Out-of-speed protection of fan motor
	E24	Zero-velocity protection of fan motor
	E25	Over-phase-current protection of fan motor
	E26	Over-load protection of fan motor
	E27	Start-up phase overcurrent protection of fan motor
	E28	Phase-lack protection of fan motor's power supply
	E29	Fan startup failure
PF	H32	Over-current protection of PFC
	H33	Over-current protection of PFC component
	H34	Current-detecting failure of PFC
	H36	Over-current protection of PFC of PFC
P31	P31	Low pressure protection of refrigerant system
P30	P30	High pressure protection of refrigerant system

Code	Detail	Means
--	P20	Excessive temperature difference protection between entering and leaving water
--	P21	Over-low temperature protection under cooling mode
--	P22	Over-low temperature protection of liquid refrigerant pipe
--	P23	Over-high temperature protection of condenser
--	P24	Over-high ambient temperature protection under heating mode / Over-low ambient temperature protection under cooling mode
--	P25	High temperature protection of discharge
--	P26	Over-high temperature protection of IPM
--	P27	Abnormal temperature difference protection between entering and leaving water
--	P8	Turn off by remote On/Off function
P11	P11	Over-low protection of DC bus voltage
P12	P12	Over-high protection of DC bus voltage
--	PC	Current protection for whole unit
P4	H11	Over-current protection of compressor
	H12	IPM protection
	H13	Out-of-speed protection of compressor's motor
	H14	Zero-velocity protection of compressor's motor
	H15	Over-phase-current protection of compressor
	H16	Over-load protection of compressor
	H17	Current-detecting circuit failure of compressor
	H18	Phase-lack protection of compressor
	H19	Out-of-step protection of compressor's motor

Note:

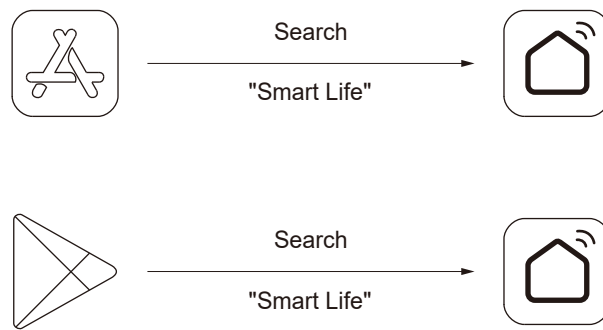
1. The tips may help you fix common issues with the unit. If you still can't get the problem sorted out, reach out to your installer or local dealer for help.
2. Any error or protection codes will show up on the controller's screen when something goes wrong with the unit.
3. The details can be checked manually. Press the Mode button and the Decrease button simultaneously to check the troubleshooting code details.



WIFI CONTROL

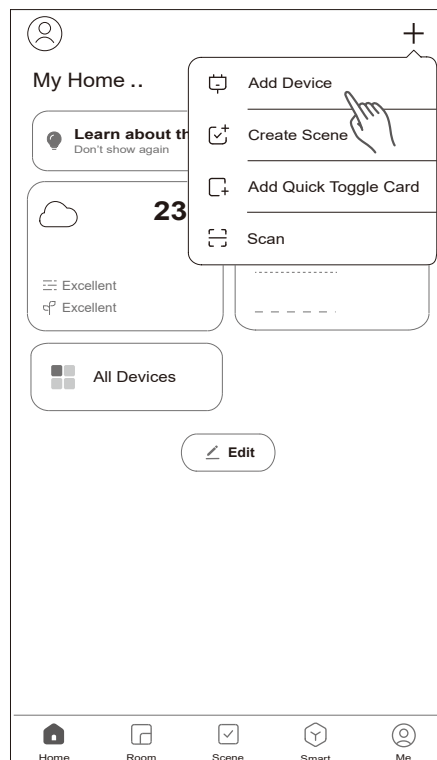
Install the APP

For iPhones, search for "Smart Life" in the APP Store. For Android phones, look it up in the Google Play Store. Download and install the APP.

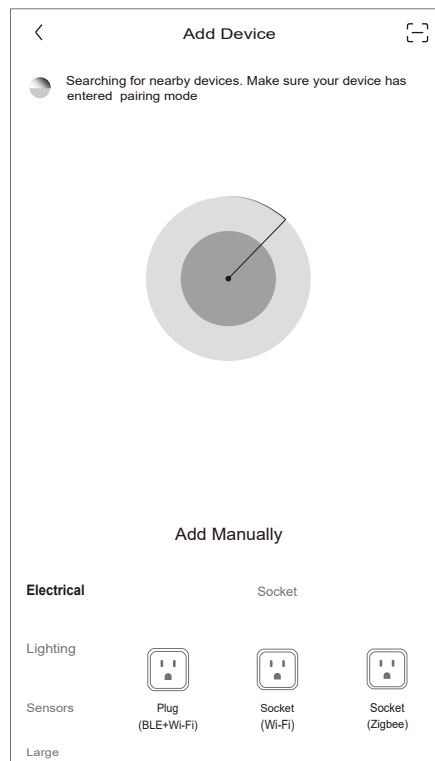


APP configuration

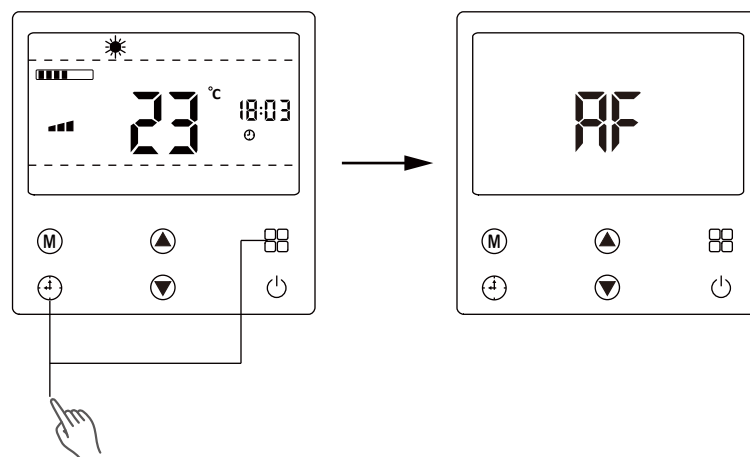
Turn on your phone's Bluetooth. Open the APP and sign up. Remember the password. After logging in, go to the homepage. On this interface, click the '+' button and select 'Add Device'.



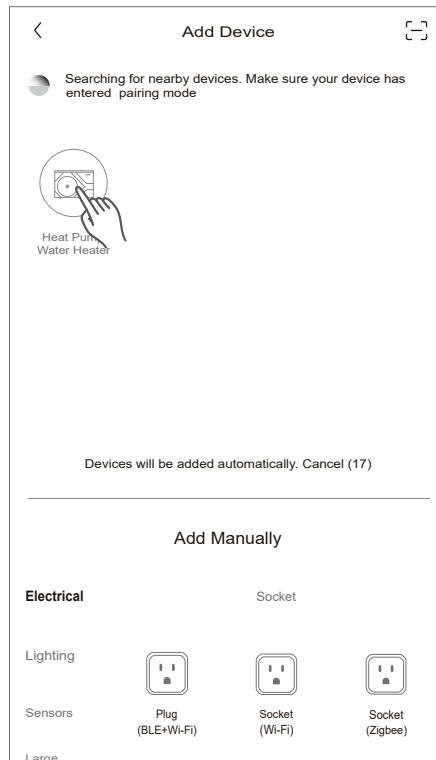
The APP automatically starts searching for the pool heat pump.



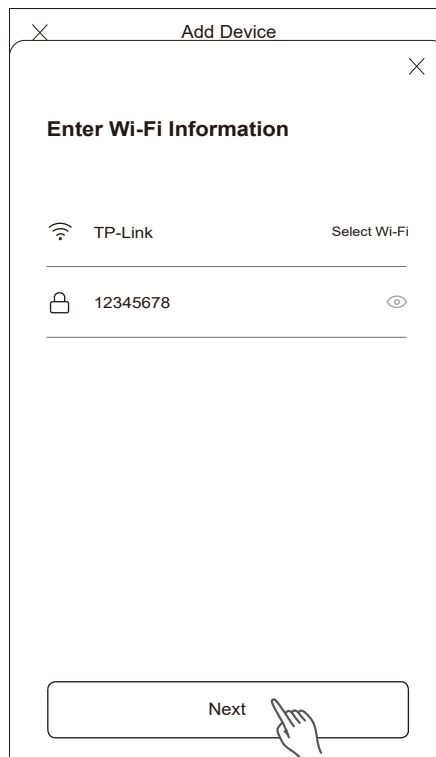
Turn on the heat pump with the On/Off button on the controller. Then hold down the Function button and Timer button together for 3 seconds



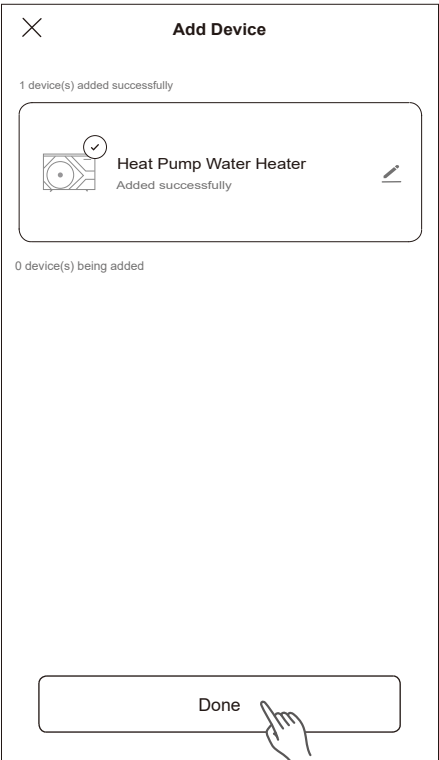
When the heat pump icon appears on the interface, click it to proceed to the next screen.



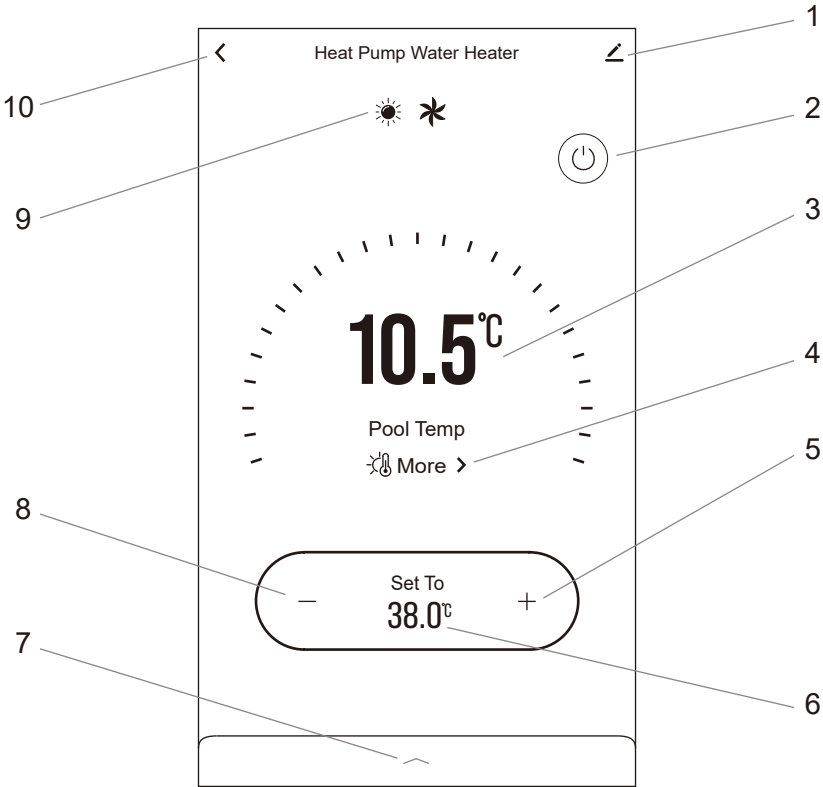
Select the 2.4GHz Wi-Fi, enter the password, then tap 'Next'.



The pool heat pump will start connecting to the APP. Once connected, tap the 'Done' button to begin controlling the pool heat pump via the APP.



Interface description



Item	Descriptions	
1		Edit button Click this button to give the pool heat pump a new name.
2		On/Off button This button is for turning the pool heat pump on or off.
3		Pool temperature value This number shows the current water temperature of the swimming pool.
4	 More >	More information button Click this button to show the inlet and outlet water temperatures and switch between °C and °F.
5		Increase button This button is for setting the pool's target temperature.
6		Setting temperature value This number is the preset temperature you set for the swimming pool.
7		Function button Click this button to choose the running mode and set the timer on or off, etc.
8		Decrease button This button is for setting the pool's target temperature.
9		Running status icon This part of the screen shows the current running status of the pool heat pump.
10		Back button Click this button to go back to the welcome screen directly.

Mode setting

Press the Function button to open the function menu, then pick the running mode from the options.



The Mode menu has four options: Auto, Cooling, Heating and SPA. Just click to choose the right one for the swimming pool.

Mode
 Auto
 Cooling
 Heating
 SPA
Cancel

Silence setting

Click the Function button first, then click the Silence button to get to the Silence setting screen.



The silence setting menu has two different quiet functions

Silence
Instant Silence
Silence Timer
Silence Setting Cancel
Cancel

Instant Silence	When select this option, the pool heat pump will keep running in silence mode.
Silence Timer	When this option is selected, the timer for turning the silence mode on or off can be set. The pool heat pump will run with or without the silence mode based on the settings.
Silence Setting Cancel	If you want to cancel all the silence settings, just click this button.

Timer setting

Click the Function button first. And then click the Timer button to enter the weekly timer on/off setting interface.



Defrost setting

Click the Function button first. And then click the Defrost button to get to the defrost setting screen.



DISPOSAL

Environmental information

This device contains fluorinated greenhouse gases listed in the Kyoto Protocol. It must only be serviced or taken apart by professionally trained technicians.

This device uses R32 refrigerant, and the amount is as stated in the product specs. Never release R32 into the air - R32 is a fluorinated greenhouse gas with a Global Warming Potential (GWP) of 675.

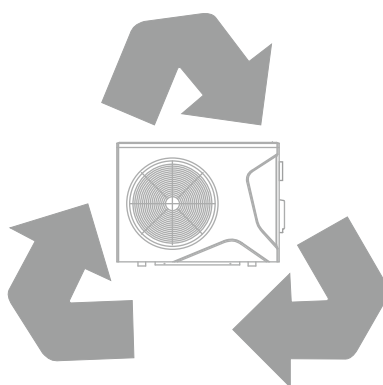
Disposal requirements

Dismantling the unit, along with handling the refrigerant, oil and other parts, must be done according to the relevant local and national rules.



This symbol is printed on your product. It means you should never throw this electrical and electronic product into unsorted household garbage.

Do NOT attempt to take apart the system by yourself. Dismantling the system, handling the refrigerant, oil and other parts must be done by a qualified installer in accordance with local and national rules.



ACiQ

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details. Any updates to the manual will be uploaded to the service website, please check for the latest version.