

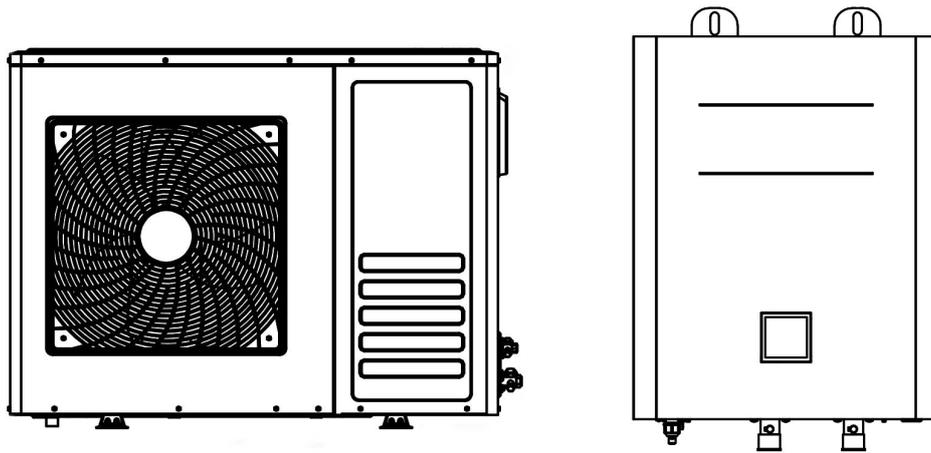
**Installation manual**

**DC INVERTER AIR TO WATER  
HEAT PUMP  
SPLIT TYPE**

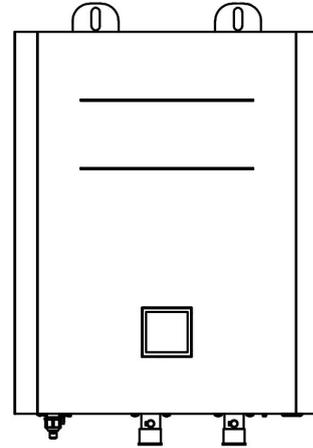
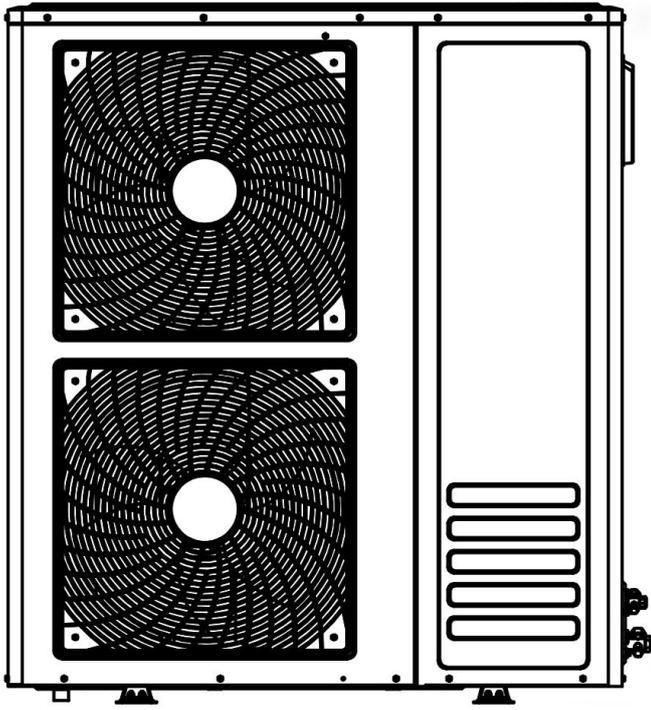
**Please read this manual carefully before using this product and keep it for your reference.**

# DC INVERTER AIR TO WATER HEAT PUMP

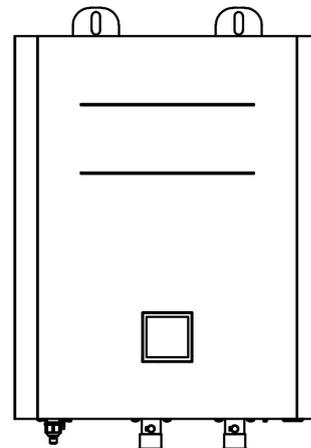
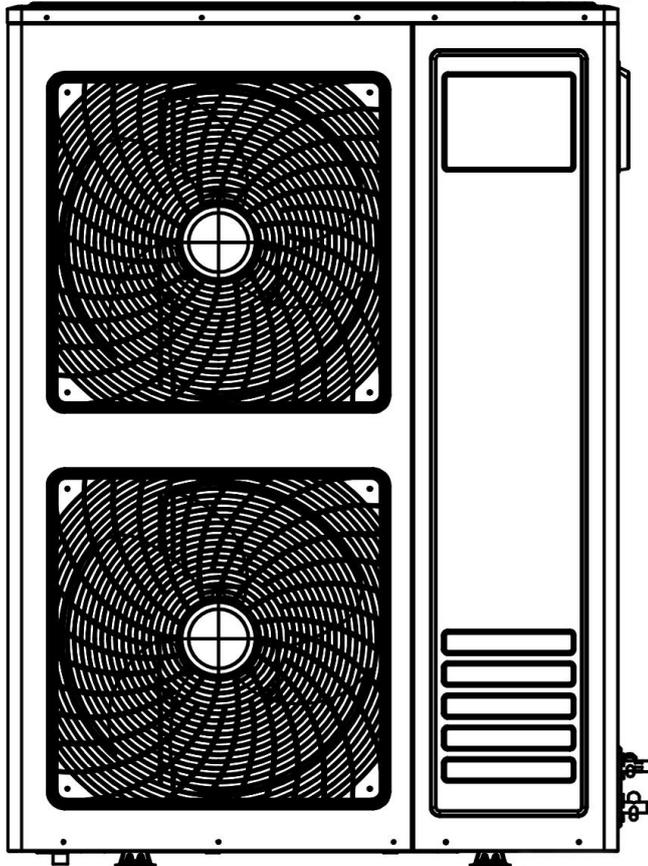
## Product parameters & installation instructions



**DCI03PS/H3DS**



DCI05PS/H5DS  
DCI06PS/H5DS



DCI08P/H8DS



#### **Note**

1. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
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 have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
3. Children should be supervised to ensure that they do not play with the appliance.
4. 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.
5. The appliance shall be installed in accordance with national wiring regulations.
6. An all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device (RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

## Notice

This equipment should be stored in a ventilated room free of continuously operating ignition sources such as open flames, operating gas appliances or operating electric heaters. Do not puncture or burn device. Note that the refrigerant may not have an odor.

## Equipment installation environment

Maintenance and installation personnel need professional training. When installing the equipment, please pay attention to no open flames within 5 meters and good ventilation. The equipment should be installed in an open outdoor place with long sunshine hours, and there should be no shelter within 0.2 meters around the equipment.

There is no obstruction within 1 meter directly in front (the direction of the wind) to ensure that the entire construction process is carried out under control. (It is best to inspect the area with proper refrigerant detection equipment prior to installation for potential airborne toxic and flammable gases)

## Check equipment before use

Safety checks should be carried out before the equipment is used to ensure that the surroundings are well ventilated but there are no open flames or other sources of ignition.



Please read the instructions carefully before installation, please do not discard. Please save the manual for future reference.



Make sure it is installed by a professional before running the unit. If in doubt, please contact your dealer for advice and information.



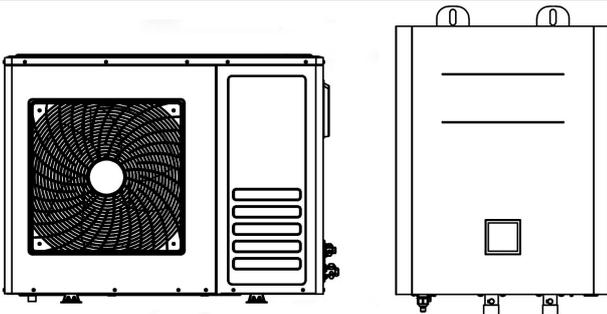
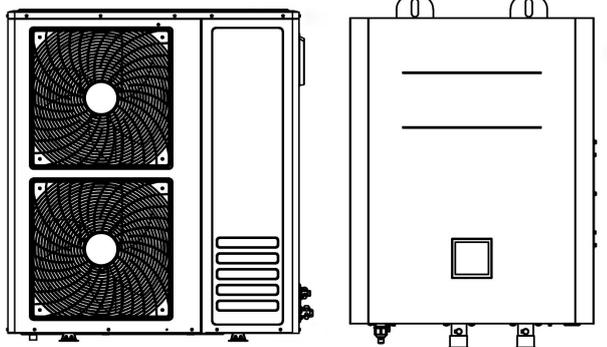
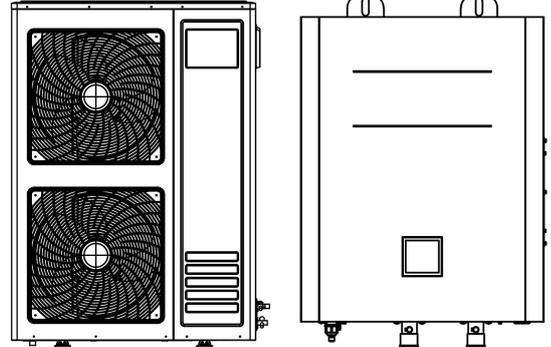
If the unit is not used for a long time, it is recommended not to turn off the power; if the power is turned off, the product protection device (such as the pump anti-lock function and antifreeze device) will not be available.

## Basic information

The air source heat pump main unit is recommended to be installed in a well ventilated area. The unit can be connected to the fan coil, underground heating equipment, low temperature radiator and other end connections.

**Items in the product packaging box**

Before installation, please make sure that all items are in the carton.

<b>Item of Split heat pump</b>		
<b>Items</b>	<b>Picture</b>	<b>Qty.</b>
Instruction manual	<p>Installation manual</p> <p>DC INVERTER AIR TO WATER HEAT PUMP MONOBLOCK TYPE</p> <p>Please read this manual carefully before using this product and keep it for your reference.</p>	1
HEAT PUMP DCI03PS/H3DS		1
HEAT PUMP DCI05PS/H5DS DCI06PS/H5DS		1
HEAT PUMP DCI08P/H8DS		1

### **Tools required to install the unit**

1. Hammer Drill
2. Spirit Level
3. Pipe Bending equipment for refrigeration pipe
4. Pipe bending equipment for water pipe
5. Brazing torch
6. Flaring tool
7. Tape measure
8. Torque spanners
9. Pipe cutters
10. Socket set with metric sockets
11. Screwdriver
12. Wire strippers
13. Vacuum pump
14. Pressure gauge
15. Electronic scale
16. Adjustable spanner
17. Protective equipment such as gloves and glasses

### **Safety instructions**

To prevent injury to users and others, or property damage, be sure to follow the instructions below. Incorrect operation may result in injury or damage.

Please install the unit in compliance with local laws, regulations and standards; check the voltage and frequency; the unit is only used for grounding sockets, and the unit must have independent switches.

The following security defenses need to be considered:

- Please read the following warnings before installation.
- Be sure to check the details that need attention, including security issues.
- After reading the installation instructions, be

sure to save them for future reference.

### **⚠ WARNING**

- **Ensure the indoor and outdoor units are securely installed.**

If the units are insufficiently secured or installed, the unit could fall causing injury. The minimum support weight of 20g/mm<sup>2</sup> of the installation is required. When installing the unit in an enclosed area or a confined space please consider the room measurements and sufficient ventilation to prevent the asphyxia caused by the leakage of refrigerant.

- **Use the specified electrical wires and attach the wires firmly to the terminal board (connection in such a way that the stress of the wires is not applied to the sections).**

Incorrect connection and fixing could cause a fire.

- **Be sure to use the correct or specified materials for the installation work.**

The use of defective parts / materials could cause an injury due to possible fire, electric shocks, the unit falling etc.

- **Perform the installation securely and please refer to the installation instructions.**

Incorrect installation could cause an injury due to possible fire, electric shocks, the unit falling, leakage of water etc.

- **Perform electrical work according to the installation manual and be sure to use a dedicated section.**

If the capacity of the power circuit is insufficient or there is an incomplete electrical circuit, it could result in a fire or an electric shock.

- **The unit must always have an earthed connection.**

If the power supply is not earthed, you may not connect the unit.

- **Do not attempt move/repair the unit yourself if you are not a LCP installer.**

Improper movement or repair on the unit could lead to water leakage, electrical shock, injury or fire. Have any repairs and/or maintenance only carried out by a recognized service engineer.

- **Do not plug or unplug the power supply during operation**

There is a risk of fire or an electric shock

- **Do not touch/operate the unit with wet hands**

There is a risk of fire or an electric shock

- **Do not place a heater or other appliances near the power cable**

There is a risk of fire or an electric shock

- **Be cautious that water could not be poured to the product directly, do not allow water to run into electric parts**

There is a risk of fire or an electric shock

**⚠ IF THE PRODUCT IS NOT USED FOR LONG PERIODS OF TIME, WE STRONGLY RECOMMEND NOT TO SWITCH 'OFF' THE POWER SUPPLY TO THE PRODUCT.**

**⚠ IF THE POWER IS NOT SUPPLIED, SOME OF THE PRODUCT-PROTECTING ACTIONS (SUCH AS WATER PUMP ANTI-LOCKING & CRANK CASE HEATER) WILL NOT BE OPERATIONAL**

### **⚠ CAUTION**

**Do not install the unit in a place where there is a chance of flammable gas leaks.**

If there is a gas leak and gas accumulates in the area

surrounding the unit, it could cause an explosion.

**Perform the drainage/piping work according to the installation instruction.**

If there is a defect in the drainage/piping work, water could leak from the unit and household goods could get wet and be damaged.

**Do not clean the unit when the power is 'on'.**

Always shut 'off' the power when cleaning or servicing the unit. If not, it could cause an injury due to the high speed running fan or an electrical shock.

**Do not continue to run the unit when there is something wrong or there is a strange smell.**

The power supply needs to be shut 'off' to stop the unit; otherwise this may cause an electrical shock or fire.

**Be cautious when unpacking and installing the product.**

Sharp edges could cause injury. Especially watch the edges and the fins on the heat exchanger of the product.

**Always check for gas (refrigerant) leakage after installation or repair of product.**

Low refrigerant levels may cause failure of the product.

**The installation of the indoor and outdoor unit must be level and secure.**

To avoid vibration and or water leakage

**Do not put your fingers or others into the fan, or evaporator.**

The fan runs at high speed, this could cause serious injury.

**In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.**

**This appliance has not been designed for use by persons (including children) with reduced physical, sensorial or mental faculties or by persons without any experience or knowledge of heating systems, unless they act under the safety and supervision of a responsible person or have received prior training concerning the use of the appliance. Children should be supervised to ensure that they do not play with the appliance.**

**If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly**

**qualified person in order to avoid a hazard. The means for disconnection must be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase)conductors.**

**Materials needed**

Split type heat pump outdoor unit power line: 10KW with  $\geq 4\text{mm}^2$  three-core insulated wire; 14KW and 16KW with  $\geq 6\text{mm}^2$  three-core insulated wire; 20KW  $\geq 6\text{mm}^2$  five-core insulated wire.

Indoor unit power supply line(separate power supply): with  $\geq 4\text{mm}^2$  three-core insulated wire, field wiring need isolation device.

When wiring it requires isolation device

Low voltage cable: 0.75mm shielded twisted pair

Note: All control wires must be installed 300mm away from the main wire.

Inlet and outlet pipe requirements (internal thread)

DCI03PS/H3DS indoor unit DN25

DCI05PS/H5DS indoor unit DN25

DCI06PS/H5DS indoor unit DN25

DCI08P/H8DS indoor unit DN32

**Refrigerant pipe connections**

DCI03PS/H3DS Liquid =  $\phi 15.88\text{mm}$  Gas =  $\phi 9.52\text{mm}$

DCI05PS/H5DS Liquid =  $\phi 15.88\text{mm}$  Gas =  $\phi 9.52\text{mm}$

DCI06PS/H5DS Liquid =  $\phi 15.88\text{mm}$  Gas =  $\phi 9.52\text{mm}$

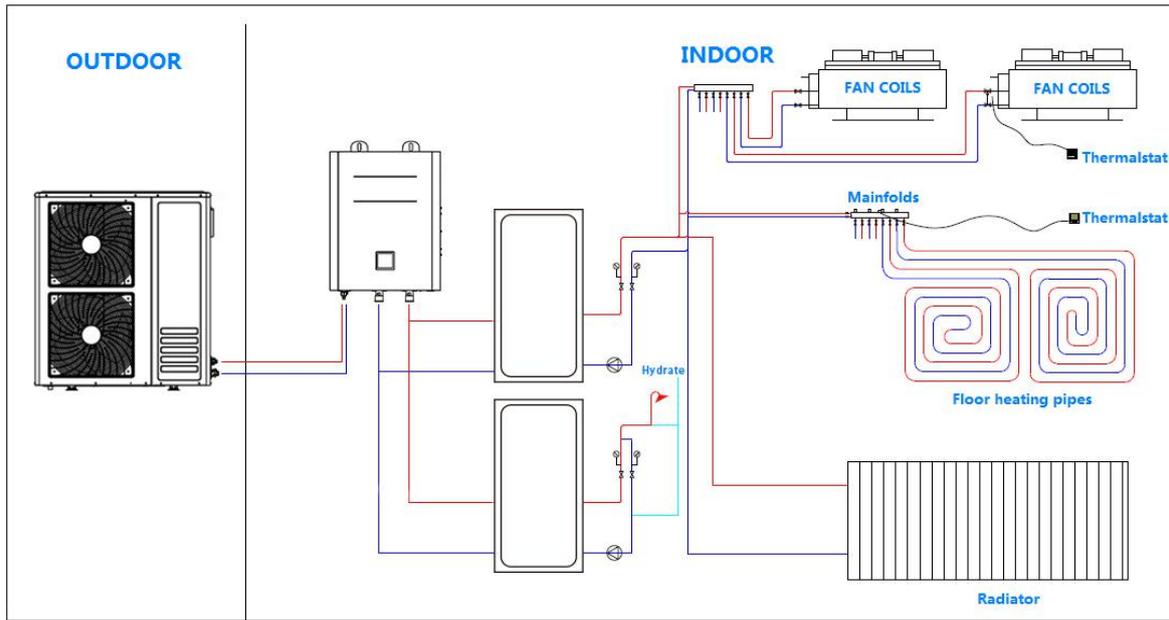
DCI08P/H8DS Liquid =  $\phi 19.05\text{mm}$  Gas =  $\phi 9.52\text{mm}$

The required insulation for the field pipe installation is Class '0'.

**Working operation range**

Working Condition		Outdoor temp.	Water temp.
		Dry bulb °C	Water inlet °C
Heating	Max.	43	55
	Min.	-25	25
Cooling	Max.	43	25
	Min.	-5	10
Hot water	Max.	43	60
	Min.	-25	25

## Equipment installation diagram

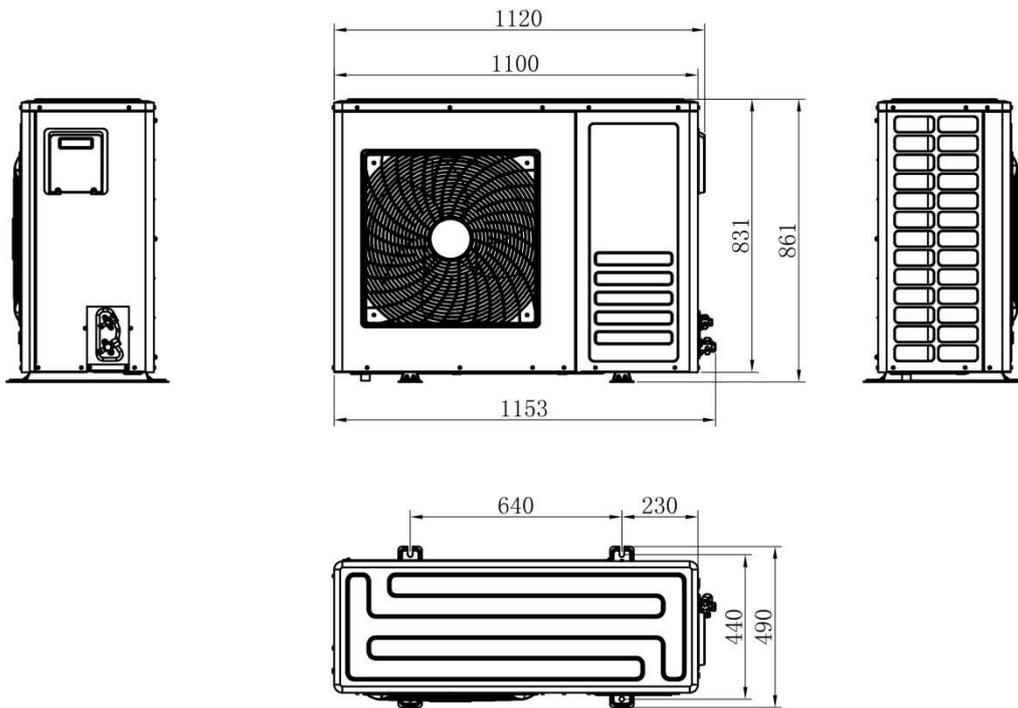


### Note

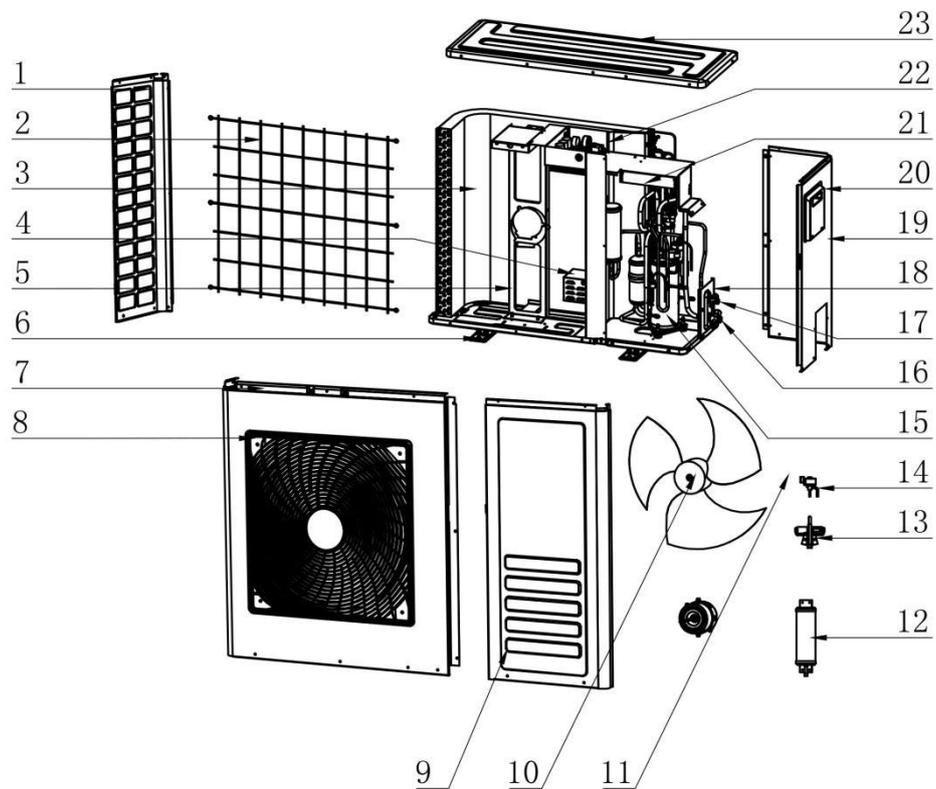
1. In the winter heating season, the unit is strictly forbidden to power off to ensure the normal operation of the unit's antifreeze function.
2. When the unit is not in use for a long time, please drain the water from the system.
3. If the unit is not used after being used for a long time, please disassemble the special exhaust port of the pump first, and use a screwdriver to check whether the pump rotor can run normally. If it cannot be rotated normally or the rotation is blocked and the rotation is not smooth, you can use a screwdriver. Rotate a few more turns until the rotor is running freely. If you have any questions, please call the after-sales service.

## Equipment Overview

DCI03PS/H3DS outdoor unit Dimension:

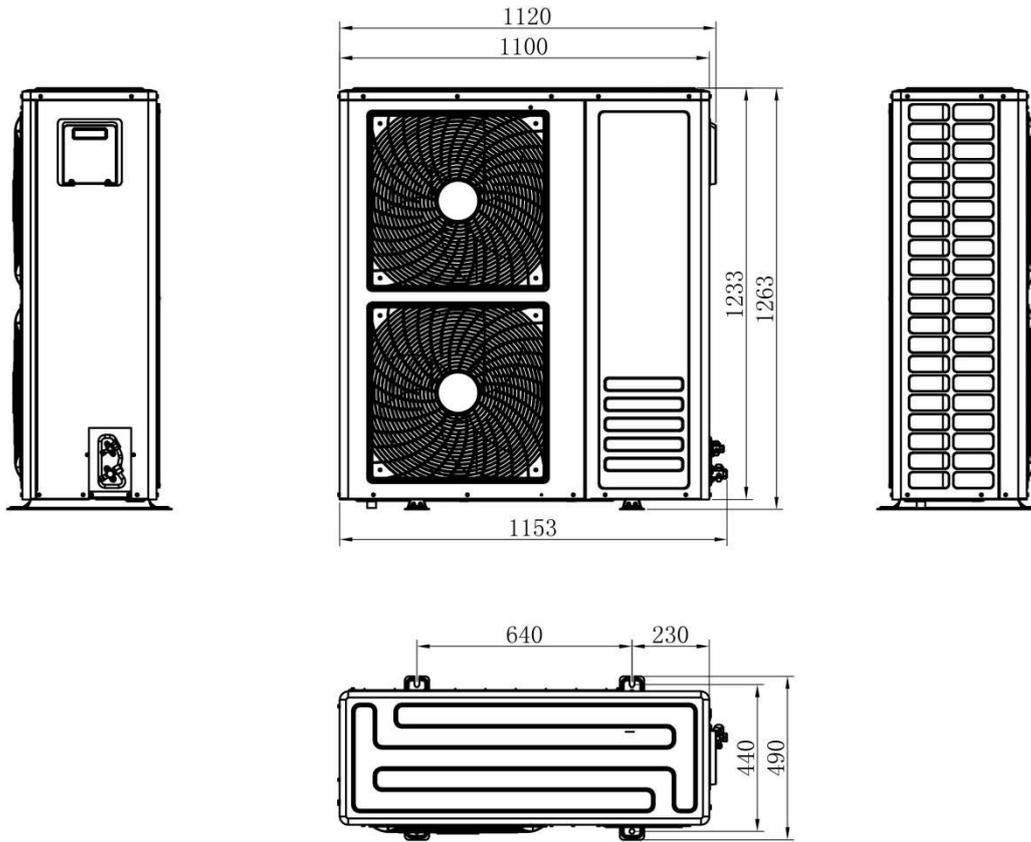


### DCI03PS/H3DS outdoor unit Internal structure

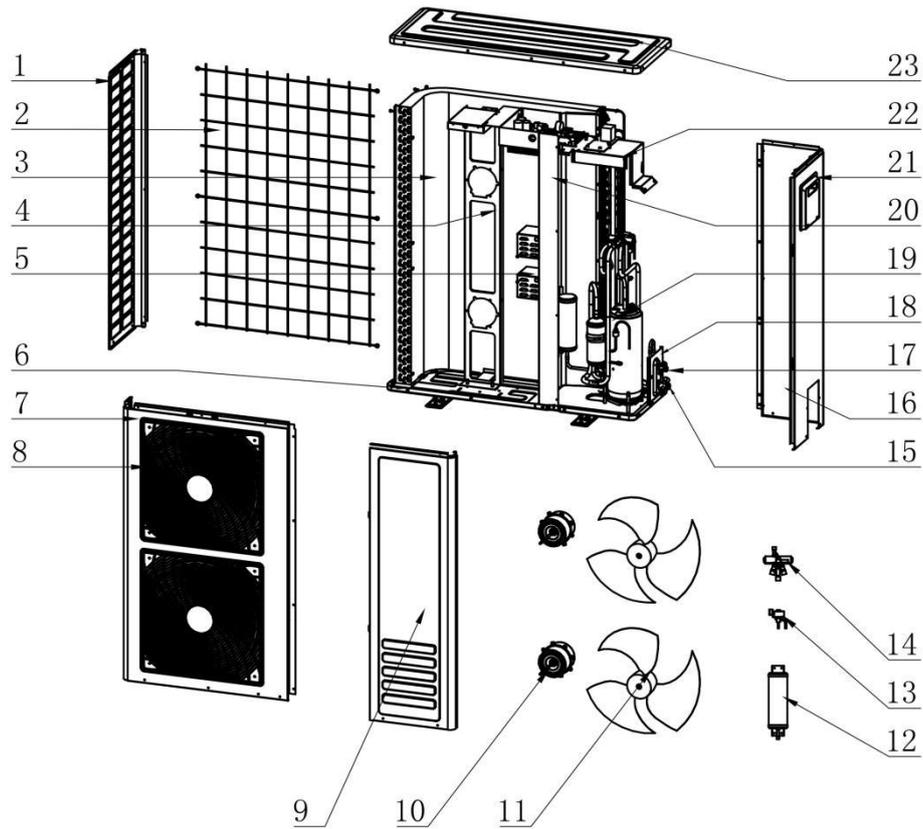


No.	Name	No.	Name	No.	Name
1	Right panel	9	Maintenance board	17	Stop valve 2
2	Rear grille	10	Fan blade	18	Valve plate
3	Fin Heat Exchanger	11	Motor	19	Right side panel
4	Reactance box	12	Balance tank	20	Large plastic handle
5	Fan bracket	13	Four-way valve	21	Electronic control part
6	Chassis Welded Components	14	Electronic expansion valve	22	Moddle plate
7	Front panel	15	Compressor	23	Top cover
8	Air outlet grille	16	Stop valve 1		

**DCI05PS/H5DS DCI06PS/H5DS outdoor unit Dimension:**

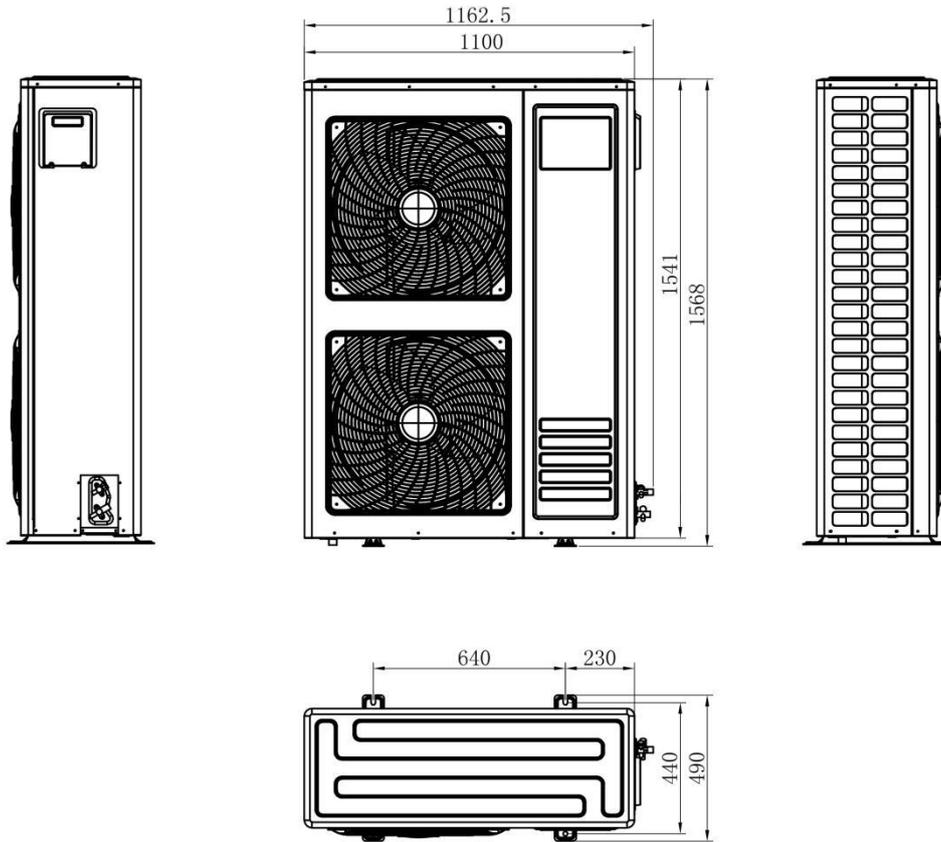


**DCI05PS/H5DS, DCI06PS/H5DS outdoor unit Internal structure**

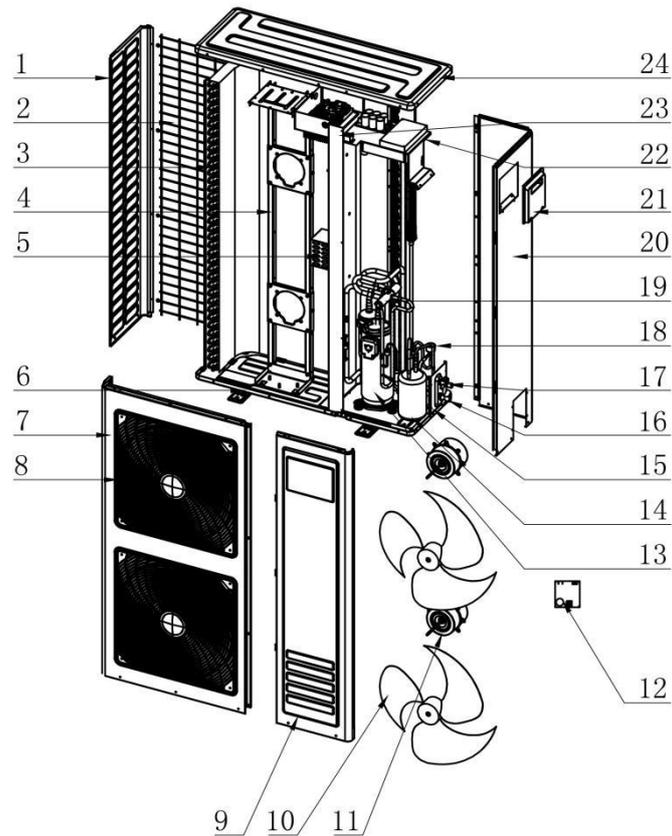


No.	Name	No.	Name	No.	Name
1	Right panel	9	Maintenance board	17	Stop valve 2
2	Rear grille	10	Motor	18	Valve plate
3	Fin Heat Exchanger	11	Fan blade	19	Compressor
4	Fan bracket	12	Balance tank	20	Middel plate
5	Reactance box	13	Electronic expansion valve	21	Large plastic handle
6	Chassis Welded Components	14	Four-way valve	22	Electronic control part
7	Front panel	15	Stop valve 1	23	Top cover
8	Air outlet grille	16	Right side panel		

**DCI08PS/H8DS outdoor unit Dimension:**

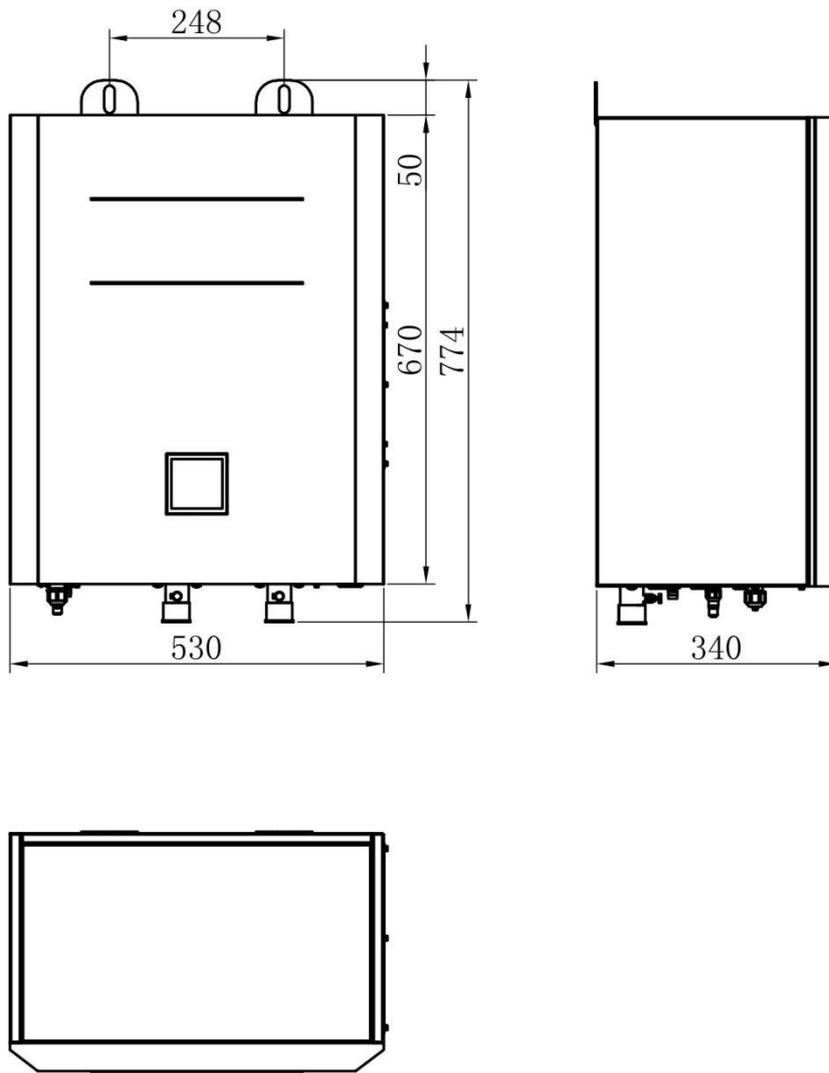


### DCI08PS/H8DS outdoor unit Internal structure

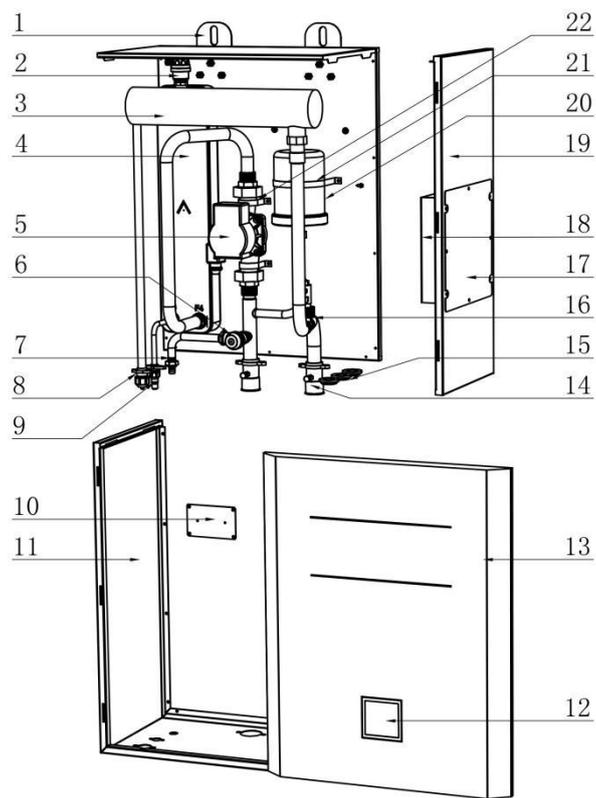


No.	Name	No.	Name	No.	Name
1	Right panel	9	Maintenance board	17	Stop valve 9.52
2	Rear grille	10	Fan blade	18	Electronic expansion valve
3	Fin Heat Exchanger	11	Motor	19	Four-way valve
4	Fan bracket	12	Dc fan assembly board	20	Right side plate
5	Reactance box	13	Inverter compressor	21	Plastic handle
6	Chassis Welded Components	14	Reservoir	22	Electronic Control Cabinet Components
7	Front panel	15	Stop valve plate	23	Middle Partition
8	Air outlet grille	16	Stop valve 19	24	Top cover

**Indoor unit dimensions:**



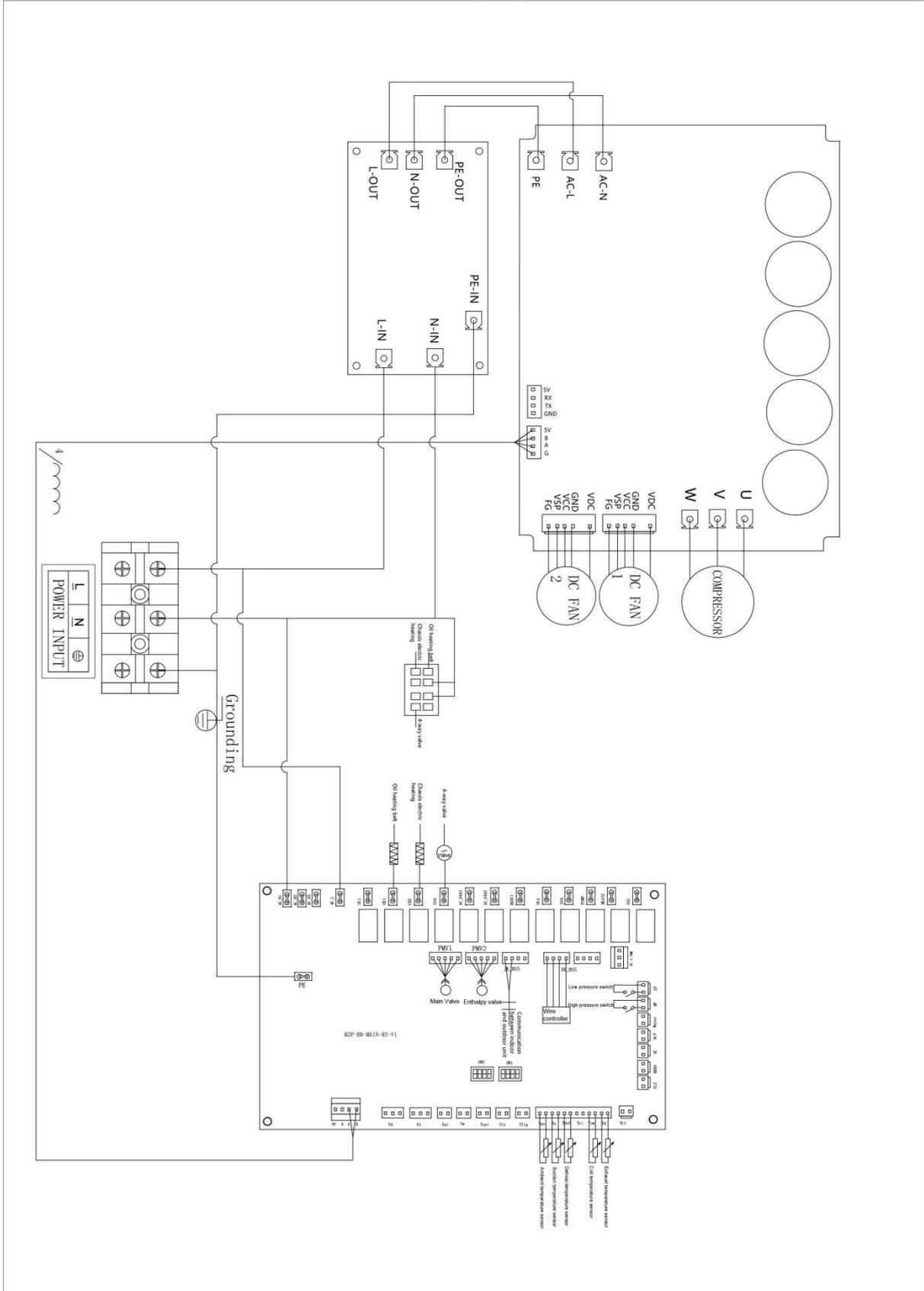
## Indoor unit Internal structure



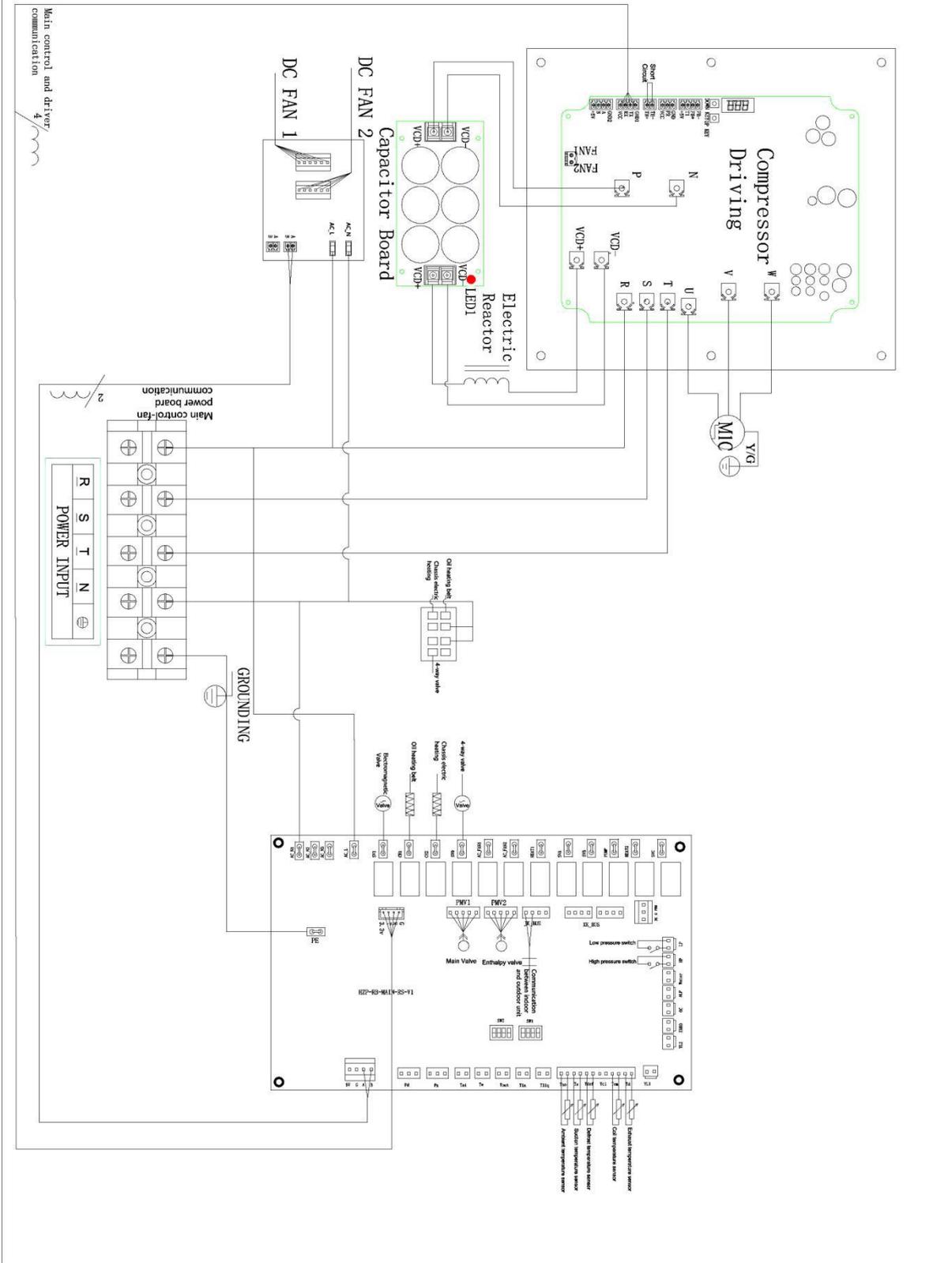
No.	Name	No.	Name	No.	Name
1	Hanging ears	9	Brass with lug single connector	17	Electrical cover
2	Auto exhaust valve	10	Control panel mounting plate	18	Electrical installation box
3	Electric heater	11	Lower left mounting plate	19	Right mounting plate
4	Brazed Plate Heat Exchanger	12	Control panel	20	Expansion tank
5	DC inverter circulation pump	13	Front panel	21	Expansion tube hoop
6	Safety valve	14	Brass union water inlet and outlet	22	water pump fixing card
7	Drain outlet	15	Double side wire ring	23	
8	Brass with lug single connector	16	Flow switch	24	



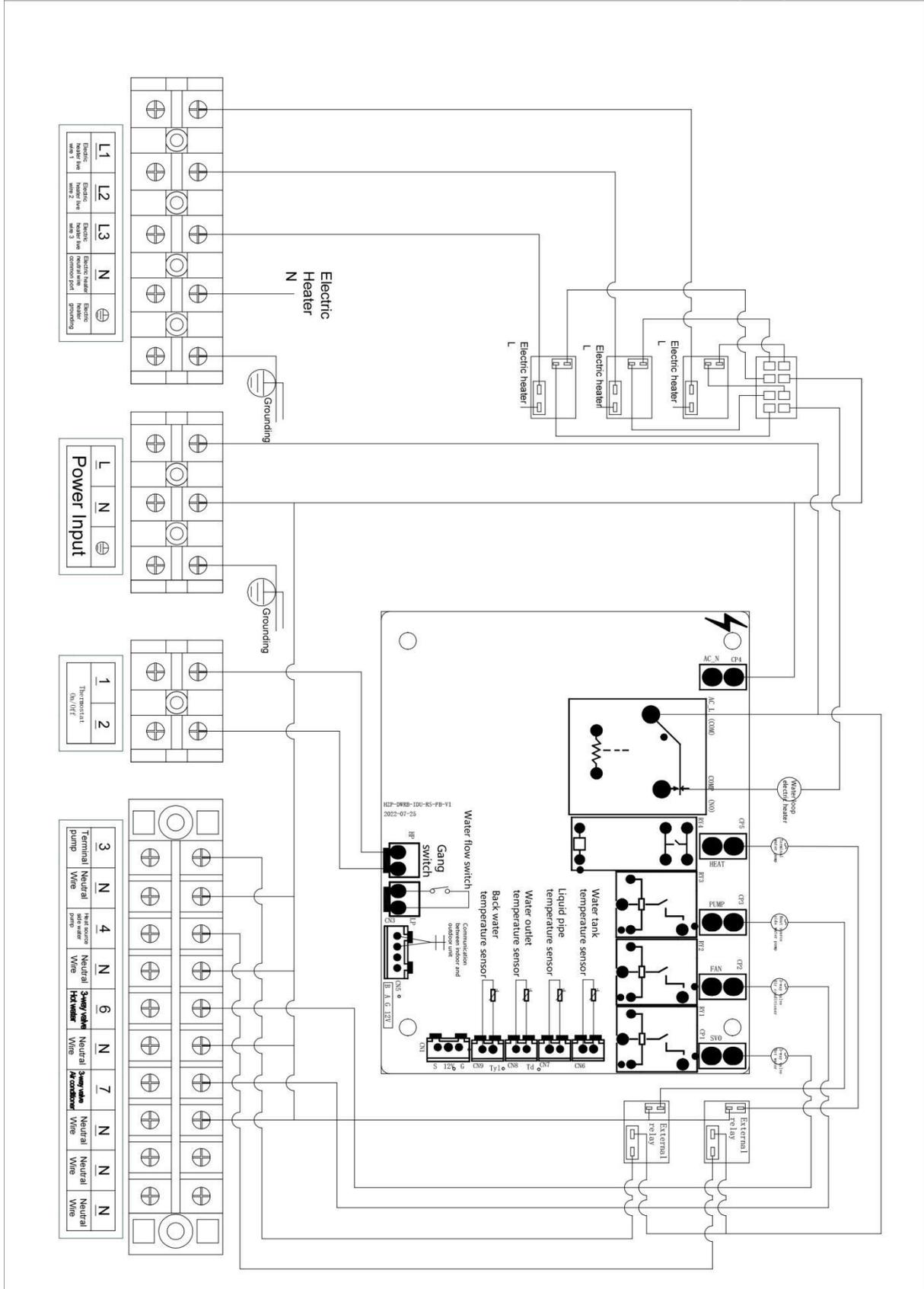
# Outdoor unit DCI05PS/H5DS, DCI06PS/H5DS wiring diagram



# Outdoor unit DCI08PS/H8DS wiring diagram



# Indoor unit DCI03PS/H3DS DCI05PS/H5DS DCI06PS/H5DS DCI08PS/H8DS wiring diagram



**Note: For specific wiring, please refer to the wiring diagram.**

**Grounding of the power supply should select the grounding point connection that meets the requirements;**

**Maximum input current of the whole machine (for reference only, subject to the machine nameplate).**

The table below gives a wiring overview of required field wiring.

<b>Model</b>	<b>Rated input power / current</b>	<b>Total max. input power / current</b>
DCI03PS/H3DS(O)	3960W /17.27A	18A
DCI05PS/H5DS(O)	7500W /34.1A	34.1A
DCI06PS/H5DS(O)	7500W /34.1A	34.1A
DCI08P/H8DS(O)	10000W /17A	19A
DCI03PS/H3DS(I) DCI05PS/H5DS(I) DCI06PS/H5DS(I) DCI08P/H8DS(I)	2800W /13A	13A
Electric heater	<b>Rated input power / current</b>	<b>Total max. input power / current</b>
DCI03PS/H3DS(I) DCI05PS/H5DS(I) DCI06PS/H5DS(I) DCI08P/H8DS(I)	3000W /14A*3	14A*3

## Field wiring



### Warning

- When wiring, please turn off the power;
- All wiring and component installation work should be performed by a licensed electrician and comply with the laws and regulations of the country in which it is located;
- Wiring work should be carried out in strict accordance with the circuit diagram and instructions of the machine;
- Use a dedicated power supply, do not use the power of other devices;
- Be sure to install the ground wire. Do not connect the ground wire of the machine to a public pipe, lightning arrester, or mainframe mount as a grounding point. Unreliable ground or grounding points can easily cause electric shock accidents;
- Install the leakage protector, otherwise it may cause electric shock.

## INSTALLATION OF INDOOR UNIT

### Selecting an installation location

The indoor unit is to be wall mounted in an indoor location that meets the following requirements:

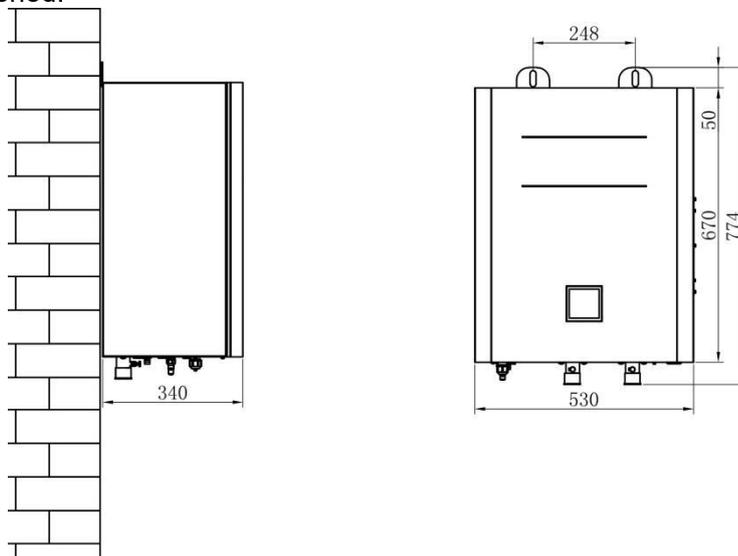
- The installation location is frost-free.
- The space around the unit is adequate for servicing.
- The space around the unit allows for sufficient air circulation.
- There is a provision for a condensate drain and pressure relief valve blow-off.
- The installation surface is a flat and vertical non-combustible wall, capable of supporting the operation weight of the unit.

- **There is danger of fire due to leakage of flammable gas.**
- All piping lengths and distances have been taken into consideration.

**NB; The pipe connections for the Water & Refrigeration is either top or bottom entry.  
Drain connection is at the bottom**

### Installing cardboard

- 1. The indoor unit must be installed on a load-bearing wall, otherwise there will be safety hazards. If it must be installed on a light-weight wall, it must be supported by installing a bracket below;
- 2. There are also skills in drilling holes on ceramic tiles. First, use a fine drill to grind a small hole to fix the drilling position, then use a thick drill to slowly grind the tiles thoroughly, and then use an impact drill to drill deep, so that the tiles will not be damaged;
- 3. Once the drill is done and the screws are fixed, the next step is to hang up the indoor unit. While hanging, it is necessary to ensure that the indoor unit is firm and cannot be loosened.



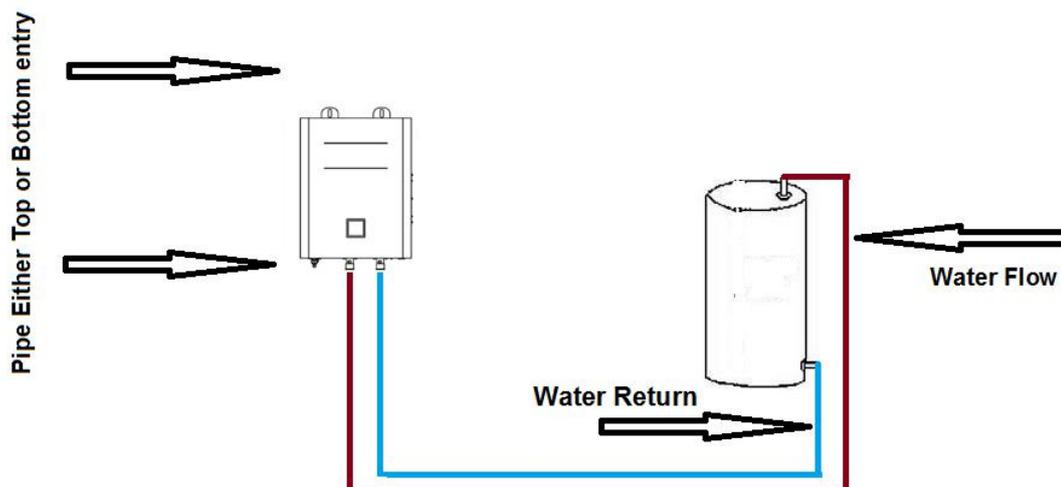
## Water pipe-work

### Checking the water circuit

Note: Be sure to install Y-type filter at the inlet

*Before continuing the installation of the unit, check the following points:*

- The maximum water pressure is 10 bar.
- Shut-off valves are not included with the unit. To facilitate service and maintenance, please install one at each water inlet/outlet. Mind position of the shut-off valves. Orientation of the integrated drain and fill valves is important for servicing.
- Drain taps must be provided at all low points of the system to permit complete drainage of the circuit during maintenance.
- Make sure to provide a proper drain for the pressure relief valve to avoid any water coming into contact with electrical parts.
- Air vents must be provided at all high points of the system. The vents should be located at points which are easily accessible for servicing. An automatic air purge is provided inside the indoor unit. Check that this air purge valve is not tightened too much so that automatic release of air in the water circuit remains possible.
- Take care that the components installed in the field piping can withstand the water pressure.



**!** NEVER USE UN-COATED PARTS IN THE WATER CIRCUIT. EXCESSIVE CORROSION OF THESE PARTS MAY OCCUR AS COPPER PIPING IS USED IN THE INTERNAL WATER CIRCUIT OF THE UNIT.

**!** WHEN USING A 3-WAY VALVE OR A 2-WAY VALVE IN THE WATER CIRCUIT, THE RECOMMENDED MAXIMUM CHANGE-OVER TIME OF THE VALVE SHOULD BE LESS THAN 20 SECONDS.

### Charging water

1. Connect the water supply to a drain and fill valve.
2. Make sure the automatic air purge valve is open (at least 2 turns).
3. Fill with water until the water manometer indicates a pressure of approximately 2.0 bar.  
Remove air in the circuit as much as possible using the air-purge valves. Air present in the water circuit might cause malfunctioning of the optional backup heater.
4. Backup heater:  
Check that the backup heater vessel is filled with water by opening the pressure relief valve.

Water must flow out of the valve.

 **NOTE**

- During filling, it might not be possible to remove all the air in the system. Remaining air will be removed through the automatic air purge valves during first operating hours of the system. Additional filling with water afterwards might be required.
- The water pressure indicated on the water manometer will vary depending on the water-temperature (higher pressure at higher water temperature).
- However, at all times water pressure should remain above 0.3 bar to avoid air entering the circuit.
- The unit might dispose some excessive water through the pressure relief valve.
- Water quality must be according to EN directive 98/83 EC.

**Water Flow Rates**

DCI03PS/H3D	1.38m <sup>3</sup> /h
DCI05PS/H5D	2.41m <sup>3</sup> /h
DCI06PS/H5D	2.75m <sup>3</sup> /h
DCI08PS/H8D	3.44m <sup>3</sup> /h

**INSTALLATION OF THE OUTDOOR UNIT**

**Installation guidelines**

**Precautions for selecting the location**

**WARNING**



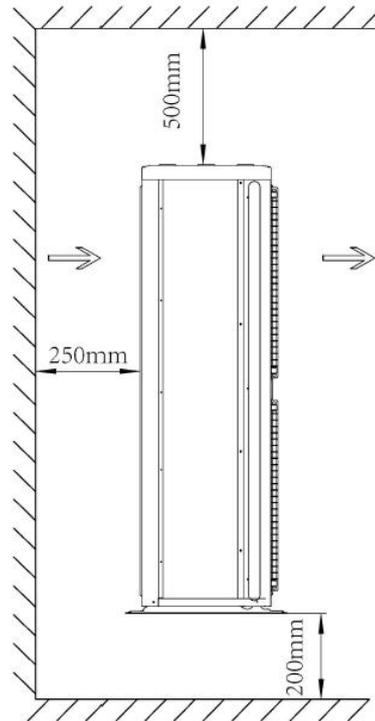
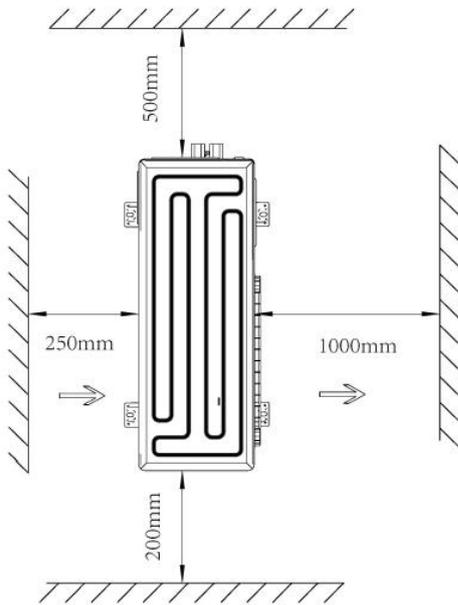
MAKE SURE TO PROVIDE FOR ADEQUATE MEASURES IN ORDER TO PREVENT THAT THE OUTDOOR UNIT WILL BE USED AS A SHELTER BY SMALL ANIMALS.



SMALL ANIMALS MAKING CONTACT WITH ELECTRICAL PARTS CAN CAUSE POSSIBLE MALFUNCTIONS, SMOKE OR FIRE. PLEASE KEEP THE AREA AROUND THE UNIT CLEAN.

1. Choose a place solid enough to bear the weight and vibration of the unit, where the operation noise will not be amplified.
2. Choose a location where the hot air discharged from the unit or the operation noise will not cause a nuisance to the neighbors of the user.
3. Avoid places near a bedroom and the like, so that the operation noise will cause no trouble.
4. There must be sufficient space for carrying the unit into and out of the site.
5. There must be sufficient space for air passage and no obstructions around the air inlet and the air outlet.
6. The site must be free from the possibility of flammable gas leakage in a nearby place.
7. Install units, power cords and inter-unit cables at least 3m away from television and radio sets. This is to prevent interference to images and sounds.
8. Depending on radio wave conditions, electromagnetic interference can still occur even if installed more that 3m away.
9. In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the outdoor unit.
10. The water will flows out of the outdoor unit when in defrost, do not place anything under the unit which must be kept dry.

## Installation space

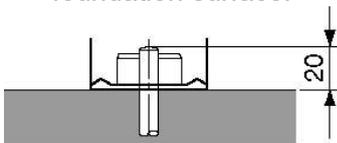


## Installation procedure

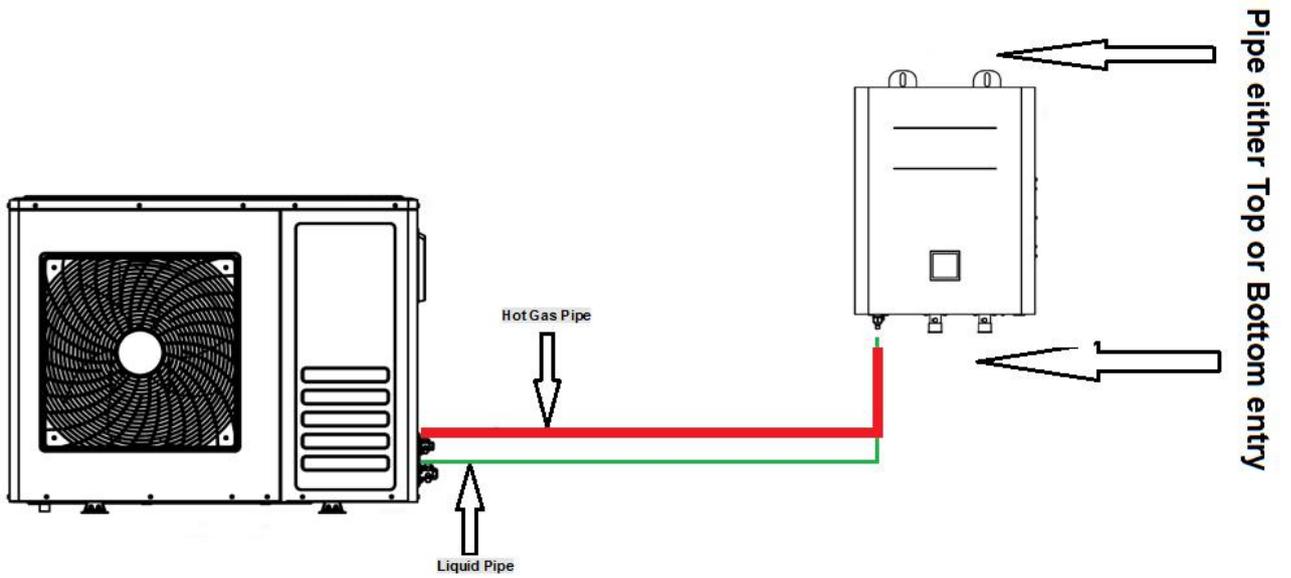
### Mounting the outdoor unit

When installing the outdoor unit, please refer to “Installation guidelines” to select an appropriate location.

1. Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installation.
2. Prepare 4 sets of M8 foundation bolts, nuts and washers each (filed supply).
3. Fix the unit securely by means of the foundation bolts in accordance with the foundation drawing. It is best to screw in the foundation bolts until their length remains 20mm above the foundation surface.



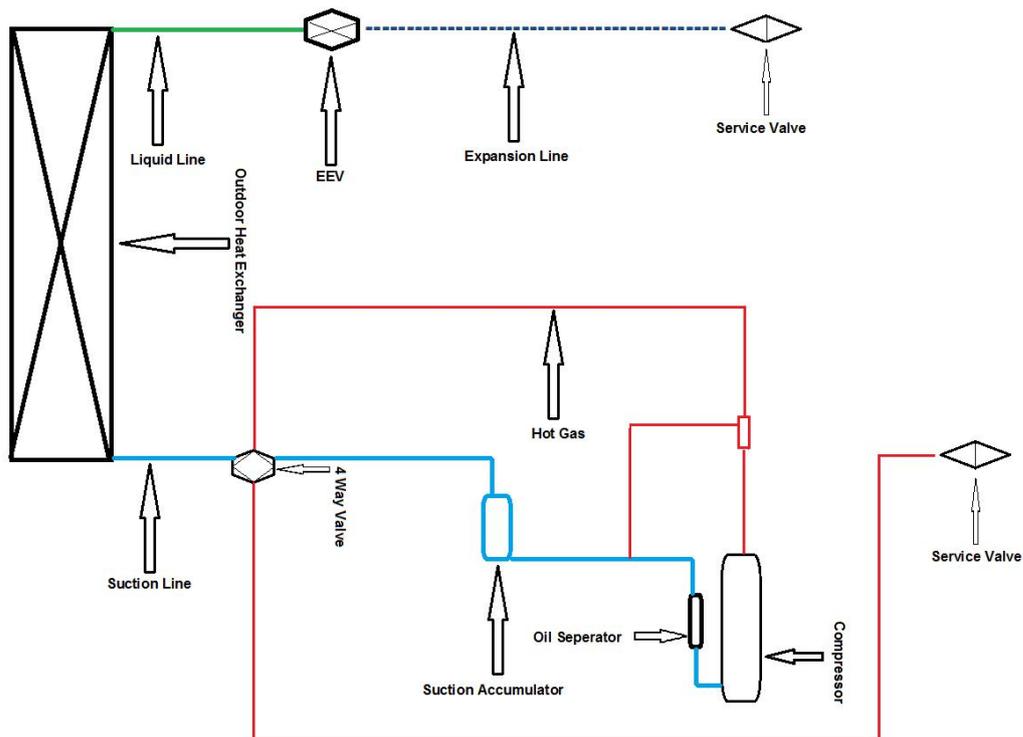
**NB; Wall brackets are not supplied with the outdoor unit unless specified an installation guide is supplied within the wall brackets packaging**

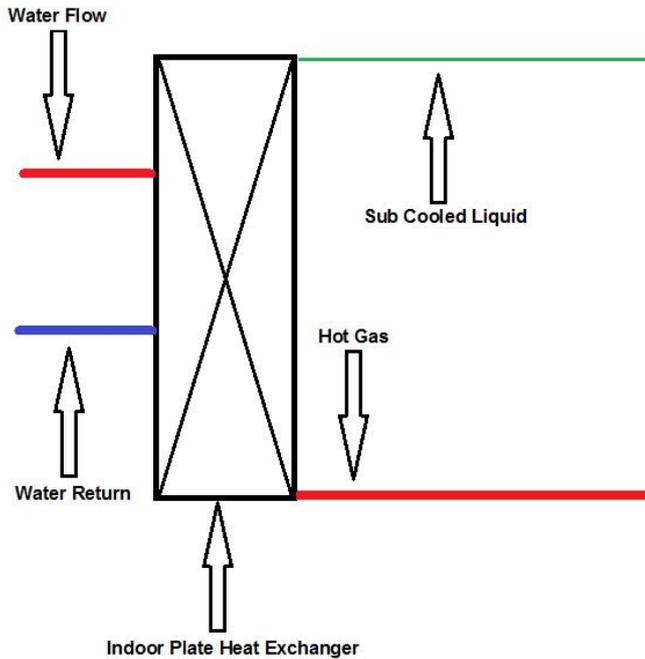


### Refrigerant pipe-work

For all guidelines, instructions and specifications regarding refrigerant pipe-work between the indoor unit and the outdoor unit please refer to the installation of outdoor unit.

The location of the gas pipe and liquid pipe on the unit is shown under the overview of the unit.





WHEN CONNECTING THE REFRIGERANT PIPES, ALWAYS USE TWO WRENCHES/SPANNERS FOR TIGHTENING OR LOOSENING NUTS! FAILURE TO DO SO CAN RESULT IN DAMAGED PIPING CONNECTIONS AND LEAKS.

NB When brazing the pipe always purge with OFN

Installation of the interconnecting pipe work

**!** ALL FIELD PIPING MUST BE INSTALLED BY A LICENSED REFRIGERATION TECHNICIAN AND MUST COMPLY WITH RELEVANT LOCAL AND NATIONAL REGULATIONS

### Flaring the pipe end

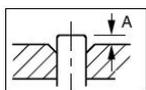
To flare each pipe end, follow the procedure below:

1. Cut the pipe end with a pipe cutter.
2. Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.



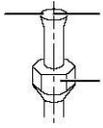
- |                                 |
|---------------------------------|
| 1. Cut exactly at right angles. |
| 2. Remove burrs.                |

3. Remove the flare nut from the stop valve and put the flare nut on the pipe.
4. Flare the pipe. Set exactly at the position shown below.



		Conventional flare tool	
	Flare tool for R32 (clutch type)	Clutch type (Rigid-type)	Wing nut type (Imperial-type)
A	0-0.5 mm	1.0-1.5 mm	1.5-2.0 mm

Check that the flaring is properly made.

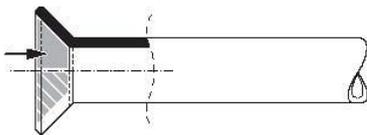


- |  |
|--|
| 1. Flare's inner surface must be flaw-free.                |
| 2. The pipe end must be evenly flared in a perfect circle. |
| 3. Make sure that the flare nut is fitted.                 |

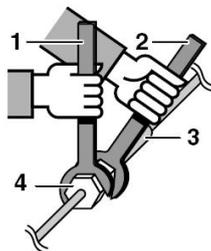
**⚠ CAUTION**

- Do not use mineral oil on flared part.
- Mineral oil getting into the system would reduce the lifetime of the units.
- Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
- Never install a drier to this R32 unit in order to guarantee its lifetime. The drying material may dissolve and damage the system.
- Incomplete flaring may cause refrigerant gas leakage.

1. When connecting the flare nut, coat the flare inner surface with ether oil or with ester oil and initially tighten 3 or 4 turns by hand before tightening firmly.



2. When loosening a flare nut, always use two wrenches together. When connecting the piping, always use a spanner and torque wrench together to tighten the flare nut to prevent nut cracking and leaks.



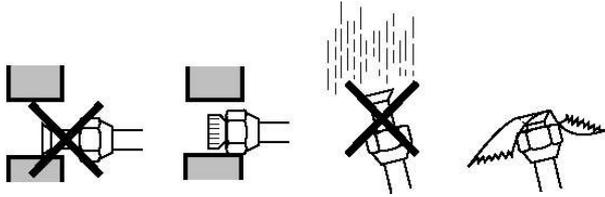
- 1 Torque wrench
- 2 Spanner
- 3 Piping union
- 4 Flare nut

mm	Inch	Kgf.m
6.35	1/4	1.8 ~ 2.5
9.52	3/8	3.4 ~ 4.2
12.7	1/2	5.5 ~ 6.6
15.88	5/8	6.6 ~ 8.2
19.05	3/4	9.9 ~ 12.1

**Refrigerant piping work**

**Pipe handling guidelines**

- Protect the open end of the pipe against dust and moisture.
- All pipe bends should be as gentle as possible. Use a pipe bender for bending.
- Bending radius should be 30 to 40 mm or larger.



### Selection of copper and heat insulation materials

When using commercial copper pipes and fittings, observe the following:

- Insulation material: polyethylene foam  
Heat transfer rate: 0.041 to 0.052 W/mK (0.035 to 0.045 kcal/mh°C)  
Refrigerant gas pipe's surface temperature reaches 110°C max.  
Choose heat insulation materials that will withstand this temperature.
- Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Pipe size		Pipe insulation	
Outer diameter	Thickness	Inner diameter	Thickness
9.52 mm (3/8")	≥0.75 mm	10-12 mm	≥10 mm
15.88 mm (5/8")	≥1.0 mm	20-24 mm	≥13 mm
19.05 mm (3/4")	≥1.0 mm	20-24 mm	≥13 mm

- Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

### Purging air and checking gas leakage

When all piping work is completed and the outdoor unit is connected to the indoor unit, it is necessary to purge the air and check for gas leakage.



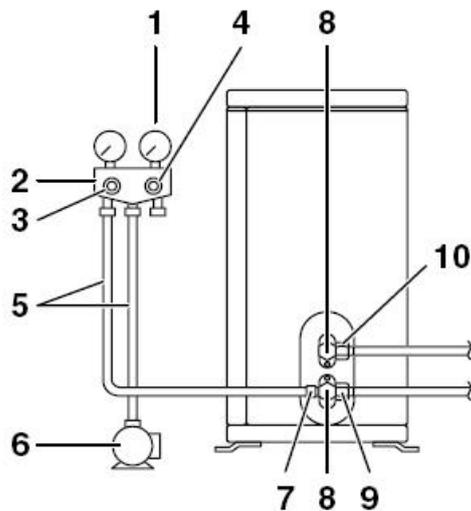
#### WARNING

- Do not mix any substance other than the specified refrigerant (R32) into the refrigeration cycle.
- When refrigerant gas leaks occur, ventilate the room as soon and as much as possible.
- R32, as well as other refrigerants, should always be recovered and never be released directly into the environment.



#### CAUTION

- Use a vacuum pump for R32 exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.
- If using additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (4 mm) to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench at the specified tightening torque. See "Connecting the refrigerant piping to the outdoor unit" for details.



- |    |                          |
|----|--------------------------|
| 1  | Pressure meter           |
| 2  | Gauge manifold           |
| 3  | Low-pressure valve (Lo)  |
| 4  | High-pressure valve (Hi) |
| 5  | Charging hoses           |
| 6  | Vacuum pump              |
| 7  | Service port             |
| 8  | Valve lids               |
| 9  | Gas stop valve           |
| 10 | Liquid stop valve        |

#### How to perform a pressure leak test (PLT)

- Once the system is installed a strength test can be performed ensuring that you use OFN (Oxygen free nitrogen) this should comply with EN 378 maximum working pressure plus 10% this is to be observed for 15-20 mins. Ensure that you use the correct leak testing equipment whilst under the strength test ie soapy bubbles. **NB the final connection cannot be connected to the outdoor unit as this may cause nitrogen contamination passing through the service valves.**
- If the leak or leaks have been found then you, can release the nitrogen and fix the leak. **NB Never fix any leak whilst the system is under pressure**
- If the leak is not found other methods should be adopted ie a trace charge whilst using an electronic leak detector, Florescent fluid under a UV light or a trace of Hydrogen / Helium
- After all leaks are found and fixed then connect to the outdoor unit service valves and then a pressure test can be conducted and should be tested to 150 psig for 8 hours and ensure there is no pressure loss **NB Nitrogen can increase and decrease dependent on temperature.**
- After the pressure test you can now conduct air purging via a vacuum pump the ideal vacuum is around the 2 torr once achieved you must conduct a pressure rise test.
- After all this is conducted, you can now recharge the system with the correct refrigerant charge using virgin refrigerant.
- commission the system and conduct a full run test

#### Charging refrigerant

This outdoor unit is factory charged.

#### Important information regarding the refrigerant used

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent gases into the atmosphere.

Refrigerant type: R32

GWP<sup>(1)</sup> value: 675

<sup>(1)</sup> GWP = global warming potential

NOTE: National implementation of EU regulation on certain fluorinated greenhouse gases may require this text in the appropriate official language on the unit. Therefore, an additional multilingual fluorinated greenhouse gases label is supplied with the unit.

Sticking instructions are illustrated on the backside of that label.

## Re-charging

In case re-charging is required, refer to the nameplate of the unit. The nameplate states the type of refrigerant and necessary amount.

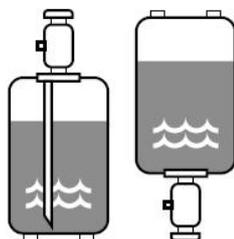
## Charging additional refrigerant

Refrigerant piping specifications	DCI03PS-H3DS	DCI05PS-H5DS	DCI06PS-H5DS	DCI08PS-H8DS
Maximum allowable piping length between outdoor unit and indoor unit	10m	15m	15m	15m
Maximum allowable height difference between outdoor unit and indoor unit	5 m	8 m	8m	8m
Additional refrigerant required for refrigerant pipe exceeding 1m in length	55 g/m	55 g/m	55 g/m	55 g/m
Gas pipe	15.88 mm (5/8")	15.88 mm (5/8")	15.88mm (5/8")	19.05mm (3/4")
Liquid pipe	9.52 mm (3/8")	9.52mm (3/8")	9.52mm (3/8")	9.52mm (3/8")

## Precautions when adding R32

- Be sure to charge the specified amount of refrigerant in liquid state to the liquid pipe. Since this refrigerant is a mixed refrigerant, adding it in gas form may cause the refrigerant composition to change, preventing normal operation.
- Before charging, check whether the refrigerant cylinder is equipped with a siphon tube or not (the cylinder should be marked with "liquid filling siphon attached" or something similar).
- 

Charge the liquid refrigerant with the cylinder in upright position.



Charge the liquid refrigerant with the cylinder in up-side-down position.

- Be sure to use tools exclusively for R32 to ensure required pressure resistance and to prevent foreign materials from mixing into the system. NB Glasses & Gloves to be worn

## Pre-operation checks

### Checks before initial start-up



**SWITCH 'OFF' THE POWER SUPPLY BEFORE MAKING ANY CONNECTIONS.**

After the installation of the unit, check the following before switching on the circuit breaker:

#### 1. Field wiring

Make sure that the field wiring between the local supply panel and indoor unit, outdoor unit and indoor unit, indoor unit and domestic hot water tank has been carried out according to the instructions, according to the wiring diagrams and according to European and national regulations.

#### 2. Fuses or protection devices

Check that the fuses or the locally installed protection devices are of the size and type

- specified. Make sure that neither a fuse nor a protection device has been bypassed.
3. Earth wiring  
Make sure that the earth wires have been connected properly and that the earth terminals are tightened.
  4. Internal wiring  
Visually check the switch box on loose connections or damaged electrical components.
  5. Fixation  
Check that the unit is properly fixed, to avoid abnormal noises and vibrations when on start up.
  6. Damaged equipment  
Check the inside of the unit on damaged components or squeezed pipes.
  7. Refrigerant leakage  
Check the inside of the unit on refrigerant leakage. If there is a refrigerant leak, call your local dealer.
  8. Power supply voltage  
Check the power supply voltage on the local supply panel. The voltage must correspond to the voltage on the identification label of the unit.
  9. Air purge valve  
Make sure the air purge valve is open (at least 2 turns).
  10. Pressure relief valve  
Check if the backup heater vessel is completely filled with water by operating the pressure relief valve. It should purge water instead of air.

 OPERATING THE SYSTEM WITH THE BACKUP HEATER VESSEL NOT COMPLETELY FILLED WITH WATER WILL DAMAGE THE BACKUP HEATER!

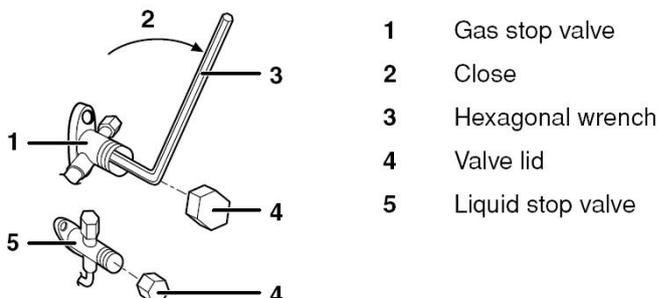
11. Shut-off valves  
Make sure that the shut-off valves are correctly installed and fully open.

 OPERATING THE SYSTEM WITH CLOSED VALVES WILL DAMAGE THE PUMP!

#### Pump down operation

In order to protect the environment, be sure to pump down when relocating or disposing of the unit. The pump down operation will extract all refrigerant from the piping into the outdoor unit.

1. Remove the valve lid from liquid stop valve and gas stop valve.
2. Carry out the forced cooling operation.
3. After 5 to 10 minutes (after only 1 or 2 minutes in case of very low ambient temperatures (<math><-10^{\circ}\text{C}</math>)), close the liquid stop valve with a hexagonal wrench.
4. After 2-3 minutes, close the gas stop valve and stop cooling operation.



After the initial installation the system needs to be commissioned this document will explain & show how to set up and commission an air to water heat pump.

Stage 1 check that the system wiring is complete and connected properly before switching on the power to the indoor and outdoor unit.

Ensuring that the isolators are switched off at this point and all cables are secure and all terminals are tight and there are no bare ends exposed.

Stage 2 pipe work before commissioning the system and turning the power on you must ensure that the system has no leaks and that the correct charge is in the system if you are not the installation engineer please ensure that the pre –commissioning sheet is completed

Stage 3 switch On the power and set up the LCD controller on the indoor unit.

# Display interface operation instructions

## 1. Controller display



Figure 1 Diagram of Wired Controller

## 2. Wired controller interface description



Figure 2 Main interface description

Table 1 Description of the main interface of the wired controller

No.	Icon name	Meaning
1	WIFI display	There is no display here when the WIFI is not connected; this icon is displayed when the WIFI is successfully connected.

2	Time indication area	display time.
3	Air conditioning temperature	Display the current air conditioner temperature; touch the number to display the "set temperature and plus and minus symbols", click plus or minus to set to the target temperature (the temperature setting is only valid under the power-on condition).
4	Hot water temperature	Display the current water tank temperature; touch the number to display the "set temperature and plus and minus symbols", click plus or minus to set to the target temperature (the temperature setting is only valid under the power-on condition).
5	Mode selection	1. The sun icon is the heating mode; the sun icon is lit to set the heating mode (can be set only under the power-on condition). 2. The snowflake icon is the cooling mode; the snowflake icon is lit to set the cooling mode (can be set only under the power-on condition).
6	Functional mode	The unit defaults to "NORM" mode, click this area to switch to other modes. (Currently the unit does not support other modes) 1.NORM: Standard mode, the unit runs in normal state; 2. ECO: Energy-saving mode, the unit operates with reduced power consumption; 3.Turbo: Strong mode, the unit runs at the maximum power.
7	menu	Click this icon to enter the menu setting interface.
8	Hot water side on/off	The icon shows bright green to indicate that the hot water side is turned on, and gray indicates that the hot water side is turned off. Touch to switch the on/off state.

9	Air conditioner on/off	The icon shows bright green to indicate that the air conditioner side is turned on, and gray indicates that the air conditioner side is turned off. Touch it to switch the on/off state.◦
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### 3. Wire Controller Function Introduction

The menu interface is divided into WiFi settings, Screen settings, Time settings, Schedule, Sound settings (this function is temporarily canceled), and Factory settings 6 major setting sections, as shown in Figure 3:



Figure 3 Menu interface

#### 3.1 WIFI setting

Click the "WiFi Settings" icon on the menu interface to enter the WiFi connection settings. Click "confirm WiFi reset" to reset the WiFi, and then open the corresponding APP on the mobile phone. After the matching is successful, you can control the air conditioner in the APP. When you have already connected to the APP, click "WiFi is not reset" to choose not to reset the WiFi, and then

match it on the mobile APP. Click the "" icon to return to the menu interface, and click

the "" icon to return to the main interface



Figure 4. WIFI setting interface

### 3.2. Screen setting

Click "Screen Settings" on the menu interface to enter the screen settings interface. ① The language setting defaults to "English", click "Chinese" to switch to Chinese; ② The default backlight time is 1 minute, the selection range is 1min~30min, press and hold the small dot on the backlight time progress bar and drag to adjust the length of the backlight time.



Figure 5. Screen setting interface

### 3.3. Time setting

On the menu interface, click the time setting frame area of "Time Setting" to enter the time setting interface. As shown in Figure 6, the time setting interface is year, month, day, hour and minute from left to right, click the "+" and "-" icons in the frame area to adjust to the corresponding time.

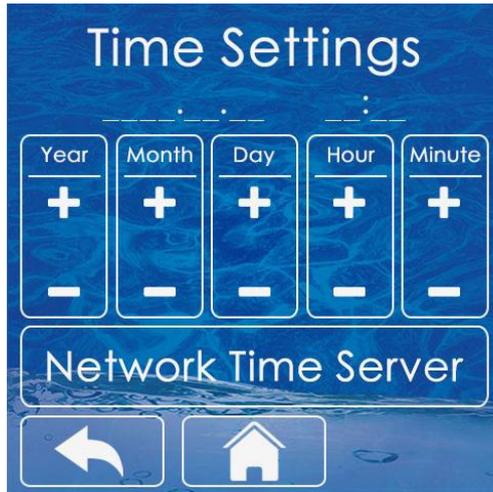


Figure 6. Time setting interface

### 3.4. Timing setting

Click "Schedule" on the menu interface to enter the schedule setting interface.

- ① The timing function has three sets of timing periods to choose from, as shown in Figure 7, click the green dot to enable the timing, and click the grey dot to close the timing.
- ② Click "Timer 1" to enter the timing adjustment interface, adjust the "Turn ON time" to 7 o'clock and the "Turn OFF time" to 8 o'clock, then the air conditioner runs at 7 o'clock and runs to 8 o'clock, click the air conditioning mode selection icon, the green cooling is cooling Mode/Red icon is the heating mode, the hot water icon is red, the hot water is enabled, and the gray is the hot water is not enabled. After the setting is completed, save and exit. "Timer 2" and "Timer 3" are the same as above. As shown in Figure 8, the air conditioner is turned on at 7 o'clock for cooling at 20 degrees and hot water at 50 degrees, and it runs to 8 o'clock and shuts down.



Figure 7 Timing interface

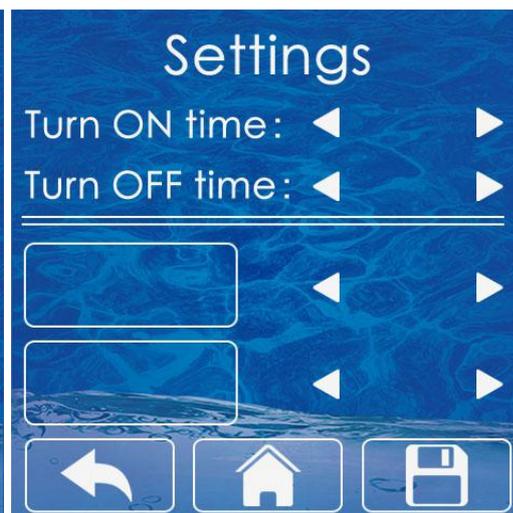


Figure 8 Timing adjustment interface

### 3.5. Factory setting

On the menu interface, click "Factory Setting" to enter the factory parameter setting interface (note: this function needs to be operated under the guidance of professionals). To enter the factory setting interface, you need to enter the password first, click the "Password Enter" field to enter the three-digit password (initial password 123), click "Login" to confirm the password, if the password is correct, enter the factory setting interface.



Figure 9 Password input interface



Figure 10 Factory setting interface

### 3.5.1 Fault Query

On the factory setting interface, click the "Fault" frame to enter the fault query interface. Click the



icon to return to the previous factory setting interface, and click the



icon to return to the main interface.



Figure 11 Fault Query

### 3.5.2 Parameter Query

On the factory setting interface, click the "Parameter" frame to enter the parameter query interface.

① When the parameters need to be changed during the unit commissioning, it is recommended to check the parameter table and click the small triangles on the left and right of the corresponding parameter value to add or subtract to adjust to the target value. Changes are automatically saved when completed.

② When you click the frame where the up key of the parameter interface is located, the page is turned up, and when you click the frame where the down key is, the page is turned down. You can go back after setting is complete.



Figure 12 Parameters Query

### 3.5.3. Operation data query

In the factory setting interface, click the "Operations" frame to enter the unit operation data query interface, and you can click the up and down keys to turn the page to query the data.

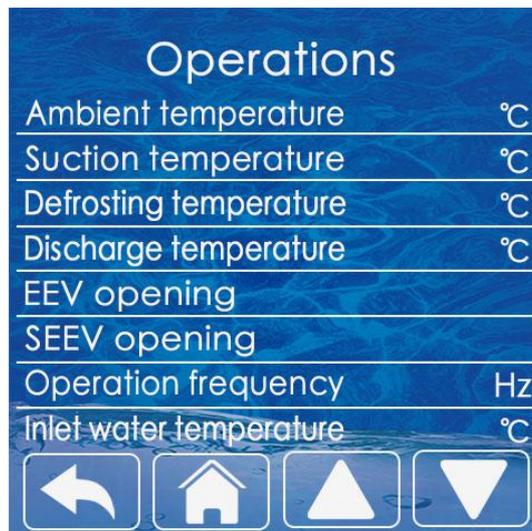
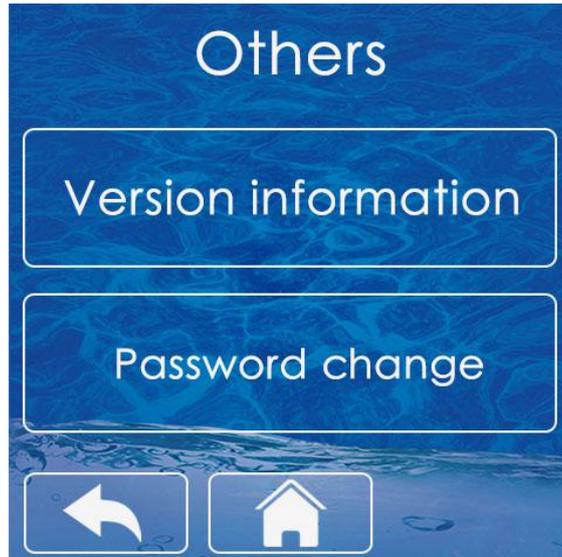


Figure 13 Operation data query interface

### 3.5.4 Other setting

In the factory setting interface, when you click the frame area where "Others" is located, it will enter the other interface.



*Figure 14 Other setting interface*

① In the "Other" interface, click the "Version Information" frame to enter the version information interface, and query the version information of the main control board program and the version information of the wire controller program.



*Figure 15 Version information*

② In the "Other" interface, click the area where the "Password Change" frame is located to enter the password change interface. Enter the same new password in the "New Password" field and "Confirm Password" field and save it.



Figure 16 Password change interface

#### 4. Wire Controller Parameter Lookup Table

The user can query and set the parameters of the unit through the wired controller. As shown in table 2:

Table 2 Wired controller parameter list

No.	Name	Defaults	Min.	Max.	Remarks
0	Heating effluent start temperature difference/°C	5	0	255	
1	Heating return water start temperature difference/°C	3	0	255	
2	Refrigeration return water start-up temperature difference/°C	3	0	255	
3	Hot water start temperature difference/°C	5	0	255	
4	Cooling / heating to temperature shutdown temperature difference/°C	1	0	255	

5	Hot water to temperature shutdown temperature difference/°C	1	0	255	
6	Whether the power-off memory is enabled	1	0	255	1: Enable 0: Disable
7	Whether the forced defrost function is enabled	0	0	255	1: Enable 0: Disable
8	Water flow switch delay/minute	1	0	255	
9	Whether the air disc linkage is enabled	0	0	255	1: Enable 0: Disable
10	Whether heating auxiliary electric heating is enabled	1	0	255	1: Enable 0: Disable
11	Water circuit auxiliary hot start ambient temperature/°C	30	0	255	Actual temperature = set temperature - 50°C
12	Whether auxiliary heating for hot water is enabled	1	0	255	1: Enable 0: Disable
13	Hot water sterilization temperature/°C	65	0	255	
14	Hot water sterilization cycle/day	10	0	255	
15	Hot water sterilization retention time/min	2	0	255	
16	Outdoor ambient temperature $T_{ao}/^{\circ}\text{C}$		0	255	Read only
17	Suction temperature $T_s/^{\circ}\text{C}$		0	255	Read only
18	Defrost coil temperature $T_{def}/^{\circ}\text{C}$		0	255	Read only

19	Exhaust temperature Td/°C		0	255	Read only
20	Main electronic expansion valve PMV1 opening/PLS		0	255	Read only
21	Enthalpy Electronic Expansion Valve PMV2/PLS		0	255	Read only
22	Inverter compressor operating frequency/Rps		0	255	Read only
23	Return water temperature/°C		0	255	Read only
24	Outlet water temperature/°C		0	255	Read only
25	compressor drive fault code		0	255	Read only
26	External unit master control fault code		0	255	Read only
27	Water conservancy module fault code		0	255	Read only
28	reserved		0	255	Read only
29	reserved		0	255	Read only
30	Air conditioning mode type selection	0	0	255	0: cooling + heating / 1: cooling only / 2: heating only
31	Pump to temperature shutdown type	0	0	255	0: When the temperature is reached, the pump will not stop / 1: Intermittent operation / 2: When the temperature is reached, stop the water pump

32	Energy efficiency test selection, no memory	0	0	255	0: Disabled 1~4: Cooling test, the cooling mode takes effect 11~22: Heating test, heating mode takes effect
33	Whether the compressor overload switch is enabled	0	0	255	1: Enable 0: Disable
34	Whether the medium voltage switch is enabled	0	0	255	1: Enable 0: Disable
35	Cooling inlet and outlet temperature difference protection value/°C	13	0	255	
36	Heating inlet and outlet temperature difference protection value/°C	13	0	255	
37	reserved	70	0	255	
38	reserved	80	0	255	
39	Frequency Hopping Point 1 Upper Limit/Rps	255	0	255	255 Indicates that the setting is invalid
40	Frequency Hopping Point 1 Lower Limit/Rps	255	0	255	255 Indicates that the setting is invalid
41	Frequency Hopping Point 2 Upper Limit/Rps	255	0	255	255 Indicates that the setting is invalid
42	Frequency Hopping Point 2 Lower	255	0	255	255 Indicates that the setting is

	Limit/Rps				invalid
43	Heating outlet water temperature correction/°C	13	0	255	Actual value = set value - 10°C
44	Cooling return water temperature correction/°C	10	0	255	Actual value = set value - 10°C
45	Cooling suction superheat Kd correction value 1/°C	7	0	255	Actual value = set value - 10°C
46	Cooling suction superheat Kd correction value 2/°C	9	0	255	Actual value = set value - 10°C
47	Cooling suction superheat Kd correction value 3/°C	10	0	255	Actual value = set value - 10°C
48	Cooling suction superheat Kd correction value 4/°C	11	0	255	Actual value = set value - 10°C
49	Heating target superheat (Tao≤-3, Ps control)	8	0	255	For negative numbers, actual value = setpoint - 256
50	Heating target superheat (Tao(-3,6), Ps control)	8	0	255	For negative numbers, actual value = setpoint - 256
51	Heating target superheat (Tao ≥ 6, Ps control)	8	0	255	For negative numbers, actual value = setpoint - 256
52	Heating target superheat (Tao≤-3, controlled by Tdef)	2	0	255	For negative numbers, actual value = setpoint - 256
53	Heating target superheat (Tao(-3,6),	2	0	255	For negative numbers, actual value

	Tdef control)				= setpoint - 256
54	Heating target superheat (Tao≥6, Tdef control)	2	0	255	For negative numbers, actual value = setpoint - 256
55	Heating exhaust gas is too low control target/°C	60	0	255	
56	Heating exhaust superheat is too high control target/°C	90	0	255	
57	Heating main valve minimum opening 1/PLS Td < 65°C	80	0	255	
58	Heating main valve minimum opening 2/PLS Td > 65°C	80	0	255	
59	Heating main valve minimum opening 3/PLS Td > 75°C	85	0	255	
60	Heating main valve minimum opening 4/PLS Td < 85°C	85	0	255	
61	Heating main valve minimum opening 5/PLS Td > 95°C	90	0	255	
62	Heating auxiliary valve initial opening /PLS	75	0	255	
63	Heating auxiliary valve open exhaust temperature condition/°C	75	0	255	
64	Heating auxiliary valve closed exhaust	20	0	255	

	superheat condition/°C				
65	Heating auxiliary valve exhaust superheat target value/°C	35	0	255	
66	Heating auxiliary valve maximum opening 1 (Td > 80°C)/2pls	90	0	255	Actual value = set value*2
67	Heating auxiliary valve maximum opening 2 (Td > 90°C)/2pls	90	0	255	Actual value = set value*2
68	Heating auxiliary valve maximum opening 3(Td > 100°C)/2pls	100	0	255	Actual value = set value*2
69	Heating auxiliary valve minimum opening/PLS	50	0	255	
70	Defrost cumulative running time A- B/min	45	0	255	
71	Defrost cumulative running time C/min	90	0	255	
72	Defrost cumulative running time D/min	120	0	255	
73	Defrost frequency/Rps	65	0	255	
74	Defrost opening/2PLS	200	0	255	Actual value = set value*2
75	Defrost exit condition Tdef1/°C	10	0	255	
76	Defrost exit condition Tdef2/°C	15	0	255	
77	Exhaust temperature is too high limit frequency temperature / °C	102	0	255	

78	To temperature reduction frequency selection	1	0	1	0: No frequency reduction at arrival temperature; 1: Frequency reduction at arrival temperature.
79	Tcm usage patterns	0	0	255	0 = use Tcm; 1=Tcm is not used, the sensor position remains unchanged; 2=Tcm is not used, the sensor and Tliq are interchanged. (Power off after change)
80	Simulated temperature when Tcm is not used	10	0	255	When Tcm is not used, Tcm = Tdef + parameter - 10
81	Heating outlet/return water control options	1	0	255	0: Return water control 1: Outlet water control
82	Mainboard address	0	0	2	0: Wired controller address No. 1 machine (others increase in sequence)
83	Force compressor frequency	0	0	255	Unit 1Hz <30 not mandatory
84	Mandatory main valve opening	0	0	255	Unit 2pls 0=Not mandatory
85	Mandatory auxiliary valve opening	0	0	255	Unit 2pls 0=Not mandatory
86	Forced external DC fan speed	0	0	255	Unit 10RPM 0=Not mandatory
87	Load default parameters (restore to	0	0	255	1=reset other=no operation

	factory settings)				
88	Cooling highest frequency 1 (Tao>35)	70	0	255	If the external ambient temperature lasts for more than 2 minutes within a certain segment, the highest frequency is calculated according to the new segment
89	Cooling highest frequency 2 (Tao>30)	70	0	255	
90	Cooling highest frequency 3 (Tao>25)	70	0	255	
91	Cooling highest frequency 4 (Tao>20)	70	0	255	
92	Cooling maximum frequency 5 (Tao≤20)	70	0	255	
93	Heating maximum frequency 1 (Tao>20)	82	0	255	
94	Heating maximum frequency 2 (Tao>10)	82	0	255	
95	Heating maximum frequency 3 (Tao>0)	82	0	255	
96	Heating maximum frequency 4 (Tao>-12)	82	0	255	
97	Heating maximum frequency 5 (Tao≤-12)	82	0	255	
98	Reserved	0	0	255	

## 5. Error Code Table

Table 3. Error Code Table

Code	Name	Description	Solution
F2	Inlet water temperature Twi sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
F3	Liquid pipe temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
F4	Outlet water temperature Two sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
F1	Tw temperature sensor failure (reserved)	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
F5	Water flow switch disconnection protection	<ol style="list-style-type: none"> <li>1. Check whether the water in the valve is closed or there is no water;</li> <li>2. Check whether the flow switch is blocked or damaged;</li> <li>3. Check if the "Y" filter is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Open the valve;</li> <li>2. Replace the flow switch with a new one;</li> <li>3. Clean or replace the filter with a new one.</li> </ol>
F9	Cooling antifreeze switch disconnection protection	<ol style="list-style-type: none"> <li>1. Check the system for leaks;</li> <li>2. Check whether the Y-type filter is blocked;</li> <li>3. Check the cooling system filter for blockage or damage.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair the leak and re-inflate the body;</li> <li>2. Clean the Y-type filter;</li> <li>3. Replace the filter.</li> </ol>
FA	Insufficient water flow protection	<ol style="list-style-type: none"> <li>1. Check whether the water in the valve is closed or there is no water;</li> <li>2. Check whether the flow switch is blocked or damaged;</li> <li>3. Check if the "Y" filter is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Open the valve;</li> <li>2. Clean or replace the filter with a new one.</li> </ol>
"8888" flicker	Internal unit and wired controller communication failure	Check whether the mainboard-wire control signal cable is damaged or disconnected	Replace the cable or reconnect
A4	Td temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
A7	Ts temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
A2	Tdef temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
A1	Tao temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
A8	Tcm temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.

Ab	Pd temperature sensor failure (mutually exclusive with Tcm)	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
P6	High pressure switch disconnection protection	<ol style="list-style-type: none"> <li>1. Check whether the water flow is not enough or the pump flow is not enough;</li> <li>2. Check whether the high voltage switch is damaged;</li> <li>3. Check whether the refrigeration system is blocked;</li> <li>4. When the heat pump is off, turn the heat pump on and off and check if the electronic expansion valve sound can be heard by resetting.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refill the water or change to a new pump with a larger water flow;</li> <li>2. Replace the high-voltage switch with a new one;</li> <li>3. Replace the new filter</li> <li>4. Replace with a new electronic expansion valve.</li> </ol>
P9	Low pressure switch disconnection protection	<ol style="list-style-type: none"> <li>1. Check the gas system for leaks;</li> <li>2. Check whether the filter is blocked;</li> <li>3. Check whether the ambient temperature and water temperature exceed the limit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct the leak and refill the gas;</li> <li>2. Replace the filter with a new one.</li> <li>3. Return to normal ambient temperature and water temperature</li> </ol>
LC	Master-drive communication failure	Check whether the mainboard-wire control signal cable is damaged or disconnected	Replace the cable or reconnect
C4	Td high protection	<ol style="list-style-type: none"> <li>1. Check the refrigeration system for leaks;</li> <li>2. Check if the sensor is disconnected or if the sensor resistance value is correct.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correct the leak and refill the gas;</li> <li>2. Reconnect or replace the sensor with a new one.</li> </ol>
C7	Exhaust low superheat protection	<ol style="list-style-type: none"> <li>1. Whether the refrigerant is overcharged;</li> <li>2. Check if the sensor is disconnected or if the sensor resistance value is correct</li> <li>3. Check whether the steps of the electronic expansion valve are correct.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correction and re-injection of gas;</li> <li>2. Reconnect or replace the sensor with a new one.</li> <li>3. System settings recovery can only be controlled</li> </ol>
Y3	External machine DC fan 1 fault	<ol style="list-style-type: none"> <li>1. Check whether the connection line is disconnected;</li> <li>2. Check whether the fan is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconnect or replace the sensor with a new one.</li> <li>2. Replace the fan</li> </ol>
H5	Four-way valve failure	<ol style="list-style-type: none"> <li>1. Check whether the connection line is disconnected;</li> <li>2. Check the high and low pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconnect or replace the sensor with a new one.</li> <li>2. Replace the fan</li> </ol>
b9	Drive IPM over temperature protection	<ol style="list-style-type: none"> <li>1. The main engine fan is faulty;</li> <li>2. Air duct dose.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair or replace the fan.</li> <li>2. Clean the air duct to keep good ventilation</li> </ol>
b5	Drive input overcurrent protection	The module is abnormal;	Replace the drive module.

b5	Drive compressor phase current overcurrent protection	1. The compressor current wiring is loose; 2. The wire diameter is too thin.	1. Fasten the interface. 2. Bold wire diameter
b6	Drive DC bus voltage over and under voltage protection	Input voltage is too low, PFC module failure	Check input voltage, replace module
b7	Drive heatsink temperature sensor failure	Check if the sensor is disconnected or if the sensor resistance is correct.	Reconnect or replace with new sensor.
b4	Compressor not connected	Compressor wiring disconnection, poor contact	Check Compressor input wiring
bA	Compressor out of step or failed to start	Compressor wiring disconnection, poor contact	Check Compressor input wiring

**Note:**

In the winter heating season, the unit is strictly prohibited from powering off to ensure the normal operation of the unit's antifreeze function.

When the unit is not in use for a long time, please drain the water from the system.

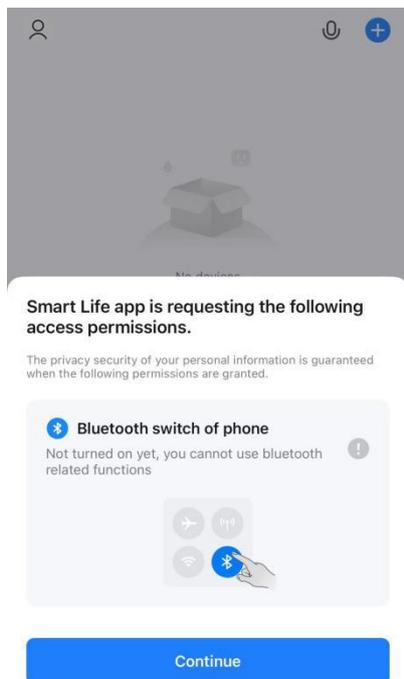
The product will be subject to change in design specifications, performance and technical parameters, etc., without prior notice, please refer to the product.

The final interpretation right belongs to KONNEN.

## Accessories: Smart Life WIFI connection

This wired controller can be connected to WIFI through the "Smart Life" software to control the unit.  
Connection steps:

1. First operate the wired controller, click "confirm WIFI reset" in the Wifi settings to reset the WiFi;
2. Download the "Smart Life" software on the mobile phone, turn on the Bluetooth on the mobile phone and connect to WIFI (the software only supports 2.4Ghz WIFI). As shown in Figure 17:



*Figure 17. Turn on Bluetooth on your mobile phone*

3. Open the "Smart life" software, generally it will prompt to add a device, click to add (as shown in Figure 18); if it cannot be added, you need to manually set it, find "Air Conditioner" in "Add Manually" and click Next, Then enter the WIFI and password that the mobile phone is connected to. If the connection is successful, you can directly go to the next step.

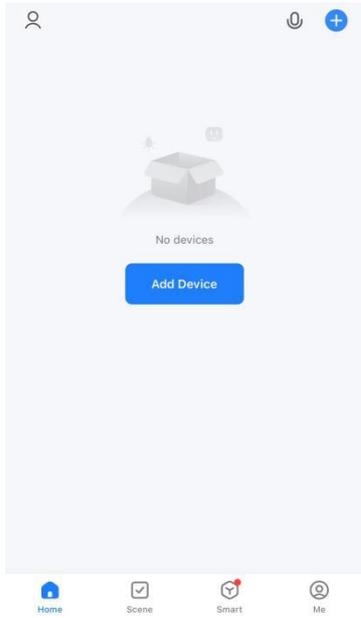


Figure 18. Add device

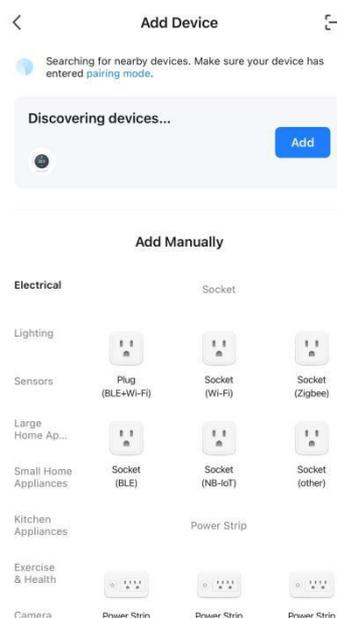


Figure 19. Autodiscover device

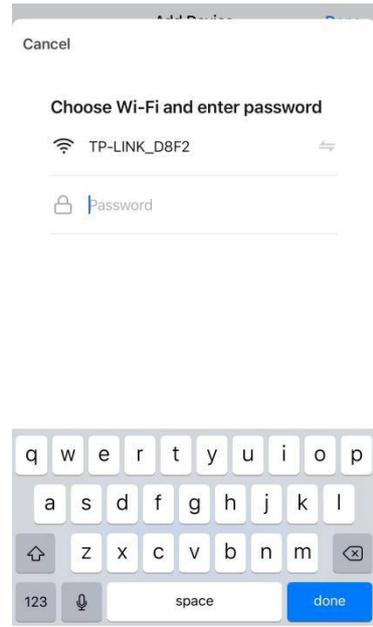


Figure 20. Autodiscover device

4. Click on the successfully added device (as shown in Figure 21) to open the air conditioner control interface (as shown in Figure 22), you can control the on/off of the air conditioner and hot water, control the air conditioner mode, control the set temperature, view the current temperature and other functions on the APP .

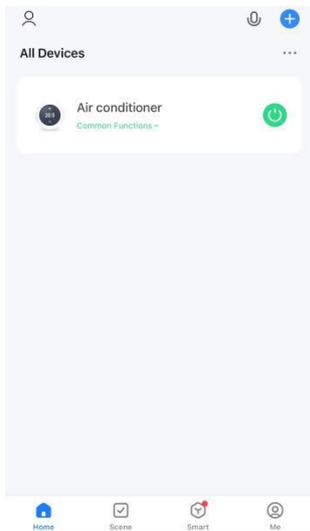


Figure 21. Successfully added device

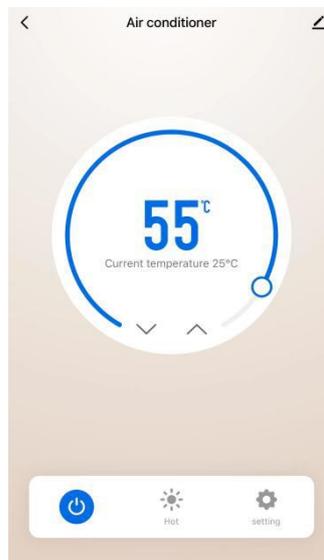


Figure 22. Air conditioner control interface