

Air Source Heat Pump Water Heater

Domestic Series

Instruction Manual

- ◆ The instructions in this manual are for the use of qualified individuals specially trained and experienced in the installation and maintenance of this type of equipment.
- ◆ Persons not qualified shall not attempt to install, service, or maintain this equipment.
- ◆ Please read the manual carefully before installation.
- ◆ Please keep this manual well for future reference.

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Part I: General Information

1.1 Function description

Air source heat pump water heater is used to heat water for domestic hot water or commercial hot water, etc.

1.2 Important Information



For your own security, and to ensure proper operation of the unit, this heat pump unit must be installed and repaired by qualified technician, not consumer himself.



A leakage protection switch must be installed near the heat pump in an accessible place.



Do not use any damaged wires and switches, If found (to be damaged), replace it immediately.



Do not open the electrical box without shutting off all power sources to the heat pump.



When transporting the heat pump, ensure that it is not upside down and not tilted more than 45° in any direction.



Before performing any maintenance on the unit you must turn it off first and shut off the power to the unit.



This unit is designed for outdoor installation, do not install it in an closed area.



Do not install the unit in places where there are any inflammable or explosive materials.



Do not restrict or block the air intake or outlet of the unit.



When the unit is not used for a long time, please switch it off and disconnect the power supply. Drain the unit when ambient temperature is lower than 0°C



When power failure occurs and lasts for more than 5 hours with the ambient temperature lower than 2°C, please drain the unit to prevent the formulation of ice in it.



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.



Respect safety distance between the unit and other equipment or structures. Guarantee adequate space for access to the unit for maintenance and/or service operations.



Power supply: the cross section of the electrical cables must be adequate for the power of the unit and the power supply voltage must correspond with the value indicated on the respective units. All units must be earthed in conformity with legislation in force in the country concerned.

1.3 About heat pump

Heat Pump unit is a new technology and is regarded as the latest generation among the various water heating/cooling methods. It surpasses coal, electrical, gas and solar water heating, offering a better solution for energy saving and environmental protection.

With the advantage of high energy efficiency ratio and pollution-free, heat pump is widely used all over the world. Compared to electrical heating, consuming the same quantity of electricity, heat pump water heater makes as 3~5 times of hot water as the former does.

1.4 Working principle

The basic principle of how a heat pump works is simple. Take air source heat pump for example, it works just like air conditioner in cooling mode, however, in heating mode, the refrigerant flow is reversed and heat is extracted from the outside air to heat your home. So the purpose of a heat pump is to absorb heat in one place where it is plentiful, then to transport and release it in another location where it can be used for space or water heating.

In order to absorb and release the heat into and from the refrigerant, we exploit the ability of the refrigerant fluid to boil from a liquid to a vapor and then to condense back into a liquid. This is a continual process while the compressor is running and circulating the refrigerant

1.5 Features of heat pump water heater

1) Wide application

It can be widely used in villas, factories, schools, hospitals, hotels, restaurant, swimming pools and spas, bath centers, laundries, etc.

2) More Safety

Water and electricity are completely isolated, no electric shock problem, more secure than traditional electrical water heaters.

No fuel tubes and storage, no potential danger from oil leakage, fire, explosion, etc.

A full range of protection including compressor delay protection, high & low pressure protection, super heating protection, Anti-phase and open-phase protection, high temperature protection, etc.

3) Energy-saving

It provides the same amount of hot water at 1/4 cost of electrical water heaters, heat pump water heater can save your bill every day.

4) Super-Sized evaporator coil

Hydrophilic aluminum fin and rifled copper coil, it has higher performance in cold weather.

5) High efficiency heat exchanger

6) World famous Compressor

It adopts the world famous brand compressor---“Copeland”, “Panasonic”, “Hitachi”, “Sanyo”, unmatched reliability, quiet operation, energy-saving and environmental-friendly.

7) Monoblock design, convenient installation, nice appearance.

8) All-weather running

It supplies hot water no matter in a rainy day, snowy day or at night.

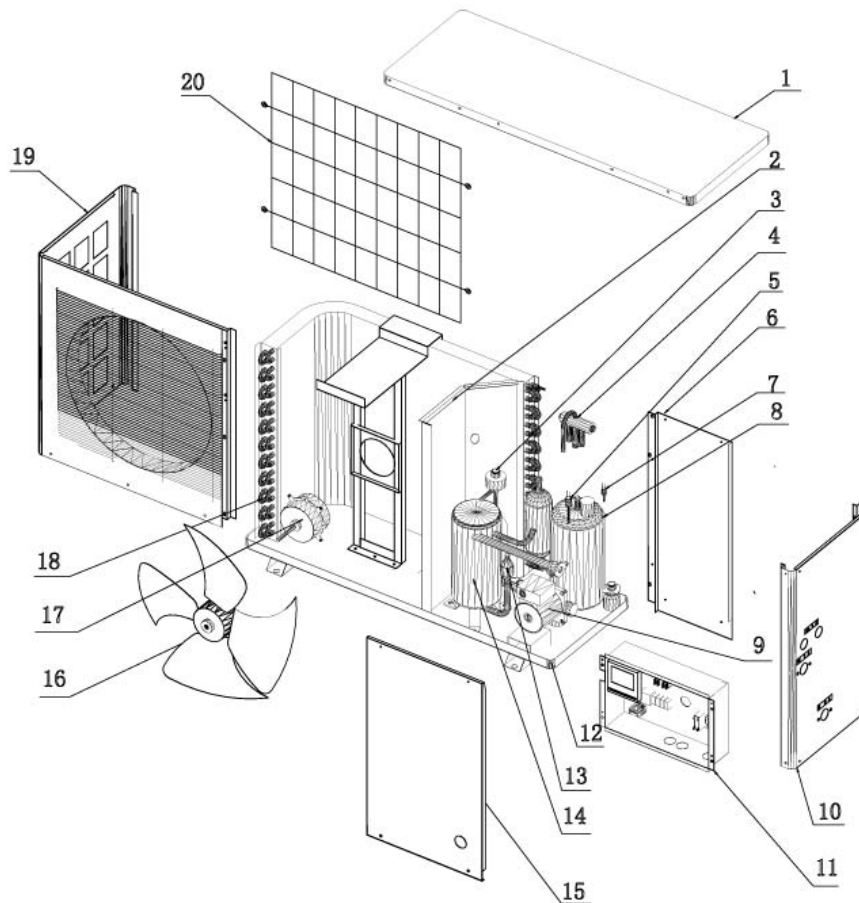
9) Running automatically

It is microcomputer controlled, with timer function, it can automatically start up and stop according to the water temperature and other running conditions you set, no need for a supervisor.

10) Environmental friendly

Environment-friendly, free of pollution, it reduces the global green house effect.

Part II Unit Exploded View



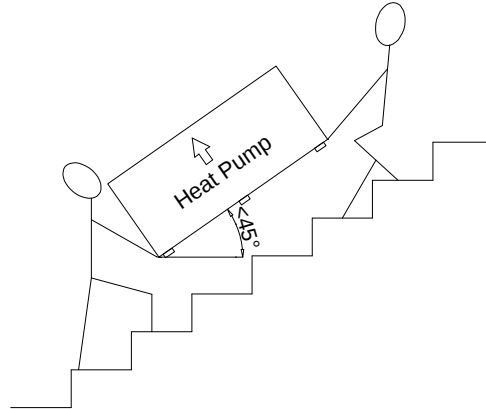
20	Protection grid	10	Right panel
19	Wind circulation grid	9	Circulation water pump
18	Evaporator	8	compressor
17	Fan motor	7	High pressure switch
16	Fan	6	Rear panel
15	Front panel	5	Low pressure switch
14	Heat exchanger	4	Four way valve
13	Filter	3	Electronic expansion valve
12	Bottom sheet	2	Partition sheet
11	Electric box	1	Top panel

Part III Installation & Application

3.1 Transportation



When transporting the heat pump, ensure that it is not tilted more than 45° in any direction.



3.2 Installation Location Requirement



This unit is designed for outdoor installation, do not install it in an enclosed area.

It is very important to select a proper position for the unit, you should consider the followings:

- The space for installation should be large enough and well ventilated
- The installation position should be close to drainage channel or vent to facilitate water discharge.
- Choose a smooth, horizontal position where it can stand the weight of the unit, and it won't increase noise and vibration as well, or you can use bracket to fix it on the wall, if necessary.
- Do not install the unit in place where there is pollution, accumulation of dirt or fallen leaves.
- There should not be inflammable or explosive materials close to the unit.

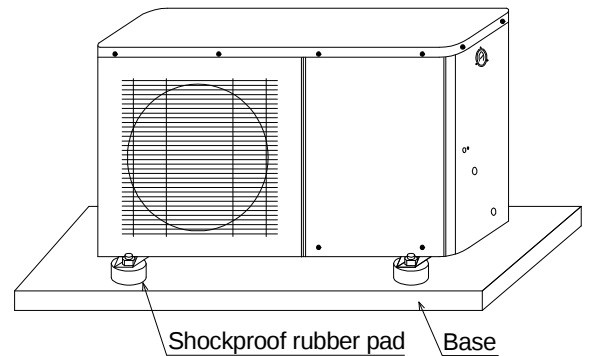


fig.1.1

3.3 Installation

3.3.1 Install the outdoor unit

- a. Mount the unit on the selected base and install the 4 black shockproof rubber pads under the 4 sheet of the unit to reduce vibration and sound transmission to the base. (Fig 1.1). For model 010B, 015B, 020B, users may use brackets to install the unit on wall (Fig 1.2)

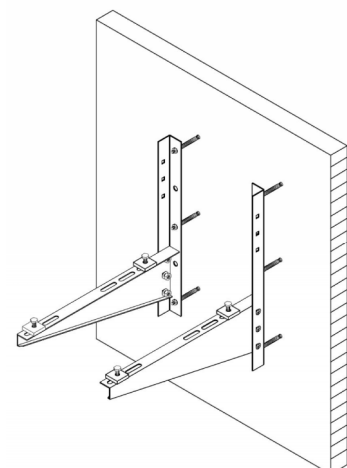


fig 1.2

- b. Connect the condensate connectors to the draining hole on the bottom sheet. (Fig 2)

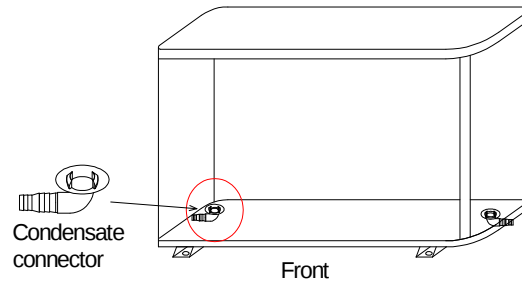


fig 2

3.3.2 Accessories

No	Item	Quantity
1	Instruction Manual	1
2	Condensate connector	3
3	Shockproof rubber pads or Brackets	1 set

Remark:

1. Usually the water tank should be installed higher than the outdoor unit. The vertical distance between heat pump unit and water tank should be less than **3m**, and the total pipe run between them should be less than **6m**.
2. Make sure to install **a wye strainer** before water inlet of the unit to avoid clogging of the system. For pressurized type water tank, It's an essential requirement to install **a relief valve** at the upper part of water tank.
3. Fix the temperature sensor of the water tank well into the connection to avoid falling down as the failure may cause overheating protection or system halted.
4. In case the wire for the temperature sensor is not long enough, It is suggested to use screening wire and bind it with electrical adhesive type in order to avoid oxidation or loose connection as it may affect the transfer of data.
5. The circulation pipes and valves must be well insulated, otherwise it'll loose heat or cause frozen problem.
6. Wire the power of the heat pump water heater (refer to wiring diagram), make sure the voltage is stable when give a trial run to the unit.

3.3.3 Electrical Connection



For your own security, and to ensure proper operation of the unit, this heat pump unit must be installed and repaired by qualified technician, not consumer himself.



A leakage protection switch must be installed near the heat pump in an accessible place.



Do not use any damaged wires and switches, If found (to be damaged), replace it immediately.

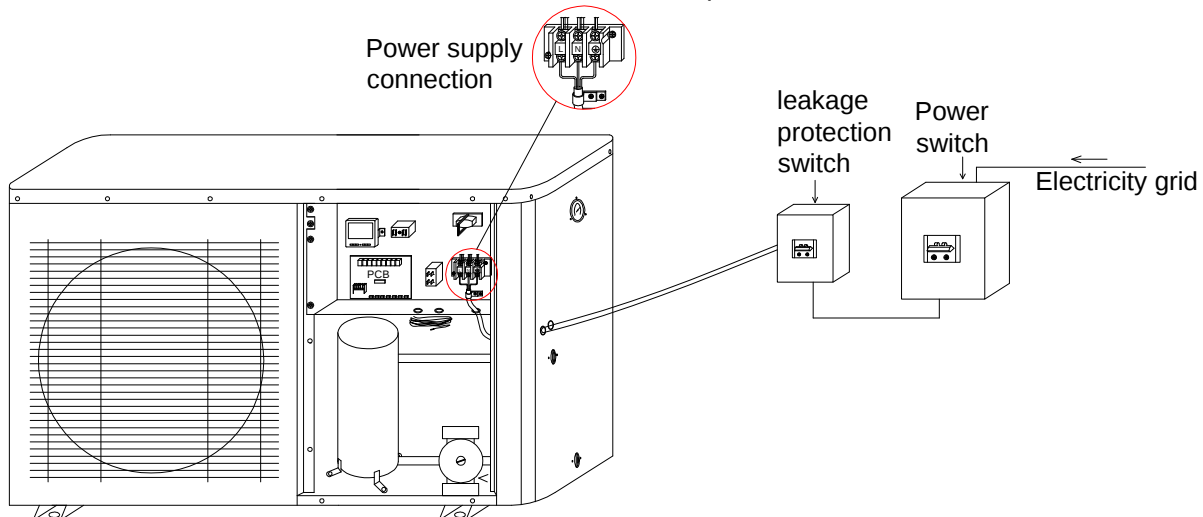


Do not open the electrical box without shutting off all power sources to the heat pump.

- All the wiring must meet the electrical safety requirement and conducted by qualified electricians.
- Ensure that there is a good earth connection for the power. Do not disconnect the earth connection of the

power in any condition.

- Ensure that the heat pump water heater is well connected to the earth.
- Offer an separate power which meets rated requirements for the heat pump water heater
- When the water heater connects to the electricity network, there must be a short-circuit protection.
- Choose the suited type of wires when use the power outdoor.
- Do not use the main power switch to control the start/stop of the unit.
- After installation, double check before connect it to the power.

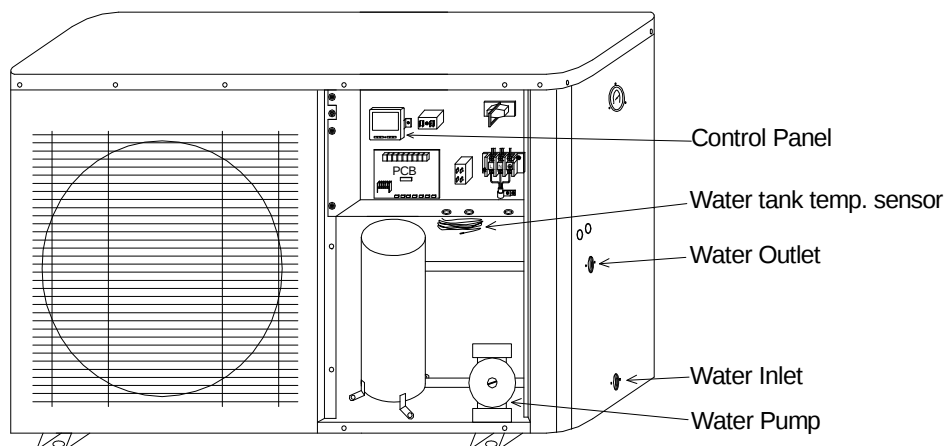


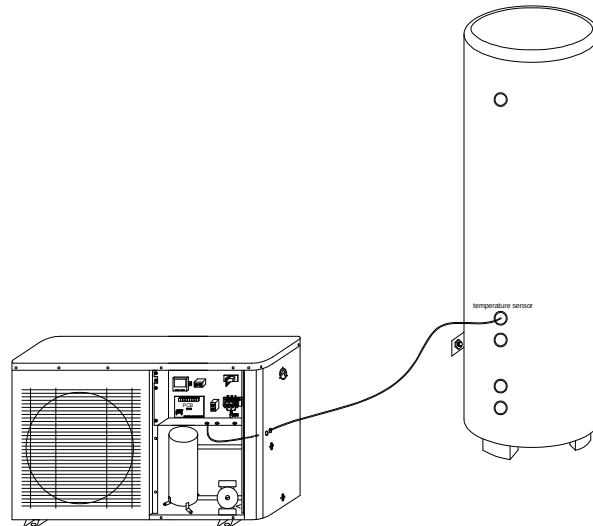
The Specification of Power

Model	010B/015B	020B	030B
Power supply	220-240V~,50Hz		
Circuit Breaker/Fuse(A)	25/20	30/25	40/35
Power wiring (mm ²)	3×2.5	3×2.5	3×4.0
Ground wiring (mm ²)	2.5	2.5	4.0

3.3.4 How to install the water tank temperature sensor

- Opening the front panel to find the water tank temperature sensor (fig 3)
- Install it to the water tank (fig 4)





Install the sensor to water tank.

fig 4

3.4 Trial Operation

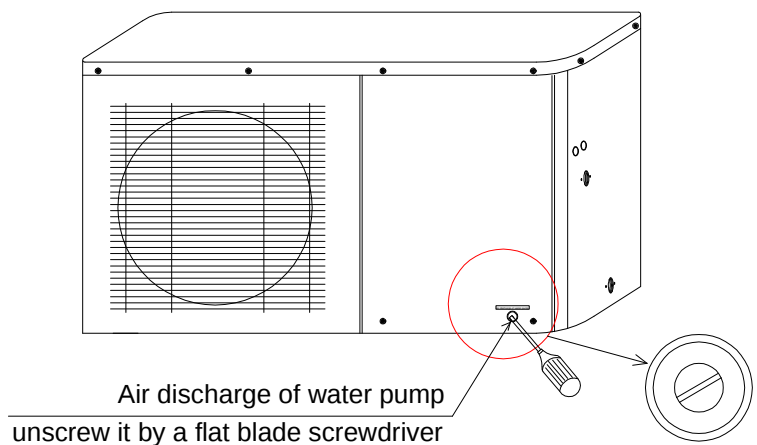
- To ensure that start-up is performed correctly, it should only be operated by qualified technician.
- The heat pump water heater is designed according to the conditions as follows: the range of ambient temperature is $-7^{\circ}\text{C} \sim 43^{\circ}\text{C}$ and the range of water pressure is $0.15 \sim 0.8\text{Mpa}$. The range of water outlet temp. is $28 \sim 75^{\circ}\text{C}$, the suggested water temp. is $46 \sim 52^{\circ}\text{C}$ (This is also the most cost efficient temp. range)
- Make sure the piping system and water tank is filled up with water before commissioning.

3.4.1 Preparation

The following items need to be checked prior to start-up:

- The heat pump must be fully connected.
- All valves that could impair the proper flow of water in the heating circuit must be open.
- The air intake and air outlet paths must be clear.
- Ensure the condensate outflow functions.
- Open the gate valve to fill the piping system and water tank, then discharge air in piping system and water tank (refer to the following instruction)

It's very important
to discharge air!



- To discharge air in water pump and piping system:

Step1: loosen the screw on the water pump through the hole,

Step2: connect heat pump to power supply, then press  1 second to turn on the unit.

Step3: Discharge air for about 15 minutes, then fasten the screw..

■ **To discharge air out of water tank**

The water tank is pressured type, after opening water refilling gate valve, it will be filled up automatically and air in it will be discharged automatically through relief valve on hot water outlet.

3.4.2 Trial run

- Make sure the piping system and water tank is filled up with water before commissioning and air is discharged out of the system.
- The water outlet temperature is set by the controller. When the water temperature of tank is higher than it is set, the unit will stop running, but if lower by 5°C (default temperature difference), it may start up automatically.
- The heat pump is started up via the heat pump control panel. After the water pump has been running for 30 seconds, the unit starts to work, and then observe whether it works normally.
- When you restart the unit, the compressor won't start to work until three minutes later, and this function is designed to protect the compressor.

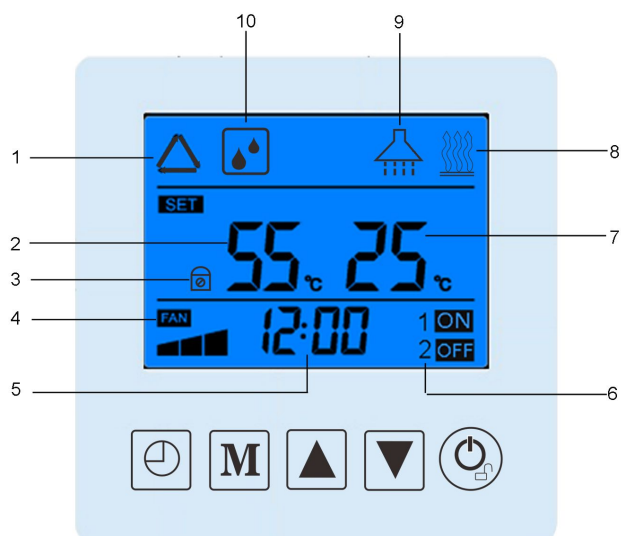
3.4.3 Caution

If something happen as follows, please stop it immediately and cut the power off. You should contact with our authorized agent or maintenance personnel, don't repair it by yourselves. Without professional technology, it may cause fire and you may get hurt.

- Fuse blown or protection activated frequently
- The wire and switches are heated abnormally
- Abnormal sounds coming from the unit
- Abnormal smell comes out of the unit.
- Electricity leakage

Part IV Control System

4.1 Description of Icons



1. Compressor running
2. The setting temperature
3. Buttons locked
4. Fan running
5. Clock
6. Timer 1 & 2
7. Measured water tank temperature
8. Auxiliary heating
9. Heating mode
10. Defrosting

Buttons Function:



- Long press 3 seconds to unlock the keys.
- When the keys are unlocked, long press it 1 second, turn on/off the unit.
- Return to the main interface.
- Press it to clear the error when the machine is locked by error.



- Under the main interface, press it to Review the running status.
- Long press it 3 seconds to Review the parameters.



- When the unit is ON, press them to set the water temperature.
- Work with  to review/set the parameters.



- Long press it 5 seconds to enter the clock setting.
- Shortly press it to enter the timer setting, work with   to set the timer.

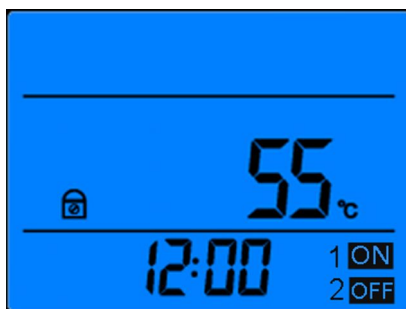
4.2 Operation Instruction

A. Lock/Unlock the keys

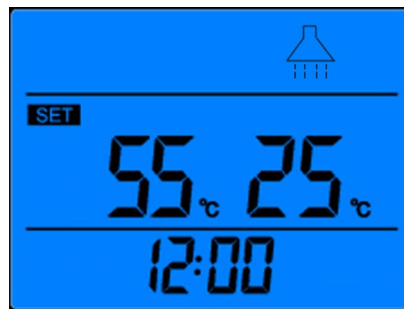
1. Unlock keys: In lock status, press  for 3 seconds to unlock the buttons.
2. Lock keys: no operation on the keys for 60 seconds, keys will be locked automatically.

B. Turn On/Off the unit

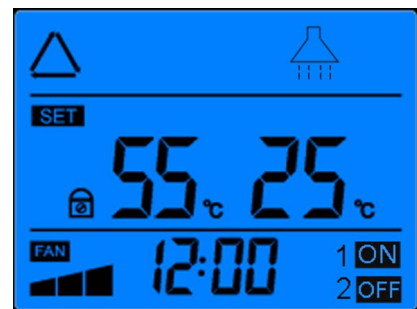
1. Turn on: Connect the power supply to the unit, the heat pump will start to run automatically or press  for 1 second to turn on the unit (refer to pictures of the status as below),  represents that the compressor is running (refer to pictures 3. Running status).
2. Turn Off: When the unit is on/running, press  for 1 second to turn off the unit (unlock the keys refer to A)



1. Off status



2. On status



3. Running status

C. Set water temperature

When the unit is on, press  or  to set the target water temperature, press  to save the setting and return to the main interface, or the setting will be saved automatically when there is no operation on it for 60 seconds.

D. Set the clock

1. Under the main interface, long press  for 5 seconds to enter clock setting.
2. Press , hour flash, press  or  to set the hour;
3. Then press , minute section flash, press  or  to set the minute;
4. After setting minute, press  to save and return to the main interface, or no operation on the

keypad for 60 seconds, the setting will be saved automatically and return to the main interface.

E. Set or Cancel the timer

Users could set 2 period of timer for the unit to on/off automatically.

1. Under the main interface, , press  to enter the setting of no. 1 timer.
2. Press , hour section flash, then press  or  to set the hour of on-time,
3. Press , minute section flash, then press  or  to set the minute of on-time,
4. Press  to enter off-time setting of no. 1 timer, use the same steps as the above to set the off-time, press  to save no. 1 timer and enter no. 2 timer, use the same steps for the setting of no. 2 timer.
5. During the setting, press  could cancel the current timer setting.
6. Cancel all the timers: During the setting, please long press  for 5 second, all timers will be canceled.
7. No operation on key pad for 30 seconds, setting will be save automatically and return to the main interface. (Timers are with power-off memory function.)
8. During the setting process, shortly press  can save the setting and return to the main interface.
9. The timers have power off memory function.

F. Working status query

Under the main interface, press  to get the working status value. (refer to the table below)

No.	Description	Range
00	PCB version	5
01	Error code	Current code or latest code
02	Water tank/ water inlet temperature	0℃~99℃
04	Water outlet temperature	-31℃~99℃
05	Ambient temperature	-31℃~99℃
06	Reserved	
09	Current setting value	0~40A
10	Compressor current	measured value
11	Compressor discharge temperature	0℃~125℃
12	Coil temperature	-31℃~99℃
13	Compressor suction temperature	-31℃~99℃
14	Opening of electronic expansion valve	measured value

G. Review/Set the parameters (for technician only)

1. When the heat pump is ON or OFF, under the main interface, long press  for 3 seconds enter

the review menu; press  or  to review the parameters.

2. During the review, press , then press  or  to adjust parameter, press  to save and return to the review interface.

3. No operation on the key pad for 30 seconds, It'll return to the main interface automatically, or just press  to return to the main interface.

4. Under the main interface, long press  +  +  simultaneously for 3 seconds, all settings will renew to the default value after 10 seconds, and the heat pump will turn off.

Parameters Table

No.	Parameters	Range	Default value
L0	Water tank temp. setting	28℃~75℃	60℃
L1	Cooling temperature setting (Cooling mode)	8℃~30℃	12℃
L2	Temperature setting (Auto mode)	8℃~40℃	28℃
L3	Temperature difference setting to start/stop compressor (Refer to the note below)	2℃~18℃	5℃
L12	Ambient temp. for starting electrical heating	0℃~35℃	5℃
L15	Water pump running interval (water pump run for 2 minutes for every L15)	0~61min	61min (When L15=61 no this function)

Note:

1. Set the temperature difference between measured water temperature and purpose water temperature
2. By setting the temperature difference to control the unit to start up/stop automatically.
3. For example, the default value is 5℃, when the measured temperature is lower than desired water temperature by 5℃, the unit will start automatically. The unit will not stop until the measured temperature reaches the desired water temperature you set.

4.3 Protection

1. Communication protection 09E

When there is no signal from key pad to PCB for 20 seconds (B wire) or there is no signal from PCB to key pad for 60 seconds (A wire, the process needs 2 minutes), key pad screen shows 09E.

2. Water tank temp. sensor protection 15E
3. Ambient temp. sensor protection 12E

4. Water outlet temp. sensor protection 13E
5. Coil temp. sensor protection 10E
6. Compressor suction temp. sensor protection 64E
7. Compressor discharge temp. sensor protection 18E
8. Water flow protection 01E
9. Ambient temp. too low protection 72E
10. Anti-freezing protection
 - 1) Stage 1: When ambient temp. $\leq 4^{\circ}\text{C}$, circulation water pump run 2 minutes every 10 minutes, exit stage 1 when ambient temp. $\geq 6^{\circ}\text{C}$.
 - 2) Stage 2: When ambient temp. $\leq 4^{\circ}\text{C}$ & water outlet temp. $\leq 9^{\circ}\text{C}$, the electrical element will be activated, exit stage 2 when ambient temp. $\geq 8^{\circ}\text{C}$ or water outlet temp. $\geq 15^{\circ}\text{C}$.
 - 3) When water outlet temp. sensor fault, the protection process will run according to ambient temp. sensor (stage 1)
 - 4) When ambient temp. sensor fault, stage 1 protection will be activated and water outlet temp. Decide whether stage 2 will be activated or not, i.e. water outlet temp. $\leq 4^{\circ}\text{C}$ enter stage 2 protection, exit when water outlet temp. $\geq 15^{\circ}\text{C}$.
 - 5) When both ambient temp. sensor and water outlet temp. sensor fault, stage 1 will be activated.
- 6) The icon for hot water  flashing during stage 1 & 2.
11. High pressure protection 03E
12. Low pressure protection 04E
13. Compressor discharge temp. too high protection 20E
14. Compressor undercurrent/over current protection 40E/02E

When compressor run 3 seconds, detect current, if current $\leq 1\text{A}$ for 3 seconds, heat pump will stop, the system recover after 3 minutes. There will be an alarm when the fault take place for 5 times within 1 hour, error code is 40E, for over current, the error code is 02E.
15. Water outlet temp. too high protection 05E
16. Ambient temp. + Water outlet temp. too high protection
17. Water outlet temp. too low protection 16E (only for cooling mode)
18. Ambient temp. too high protection (no error code, automatically according to ambient temp.)
19. Compressor delay protection
 - a. Turn on the power supply to the unit, start up the unit, the compressor will work after 30 seconds to protect the compressor.
 - b. Restart the unit after you turn it off, the compressor will work after 3 minutes to protect the compressor.

Part V Maintenance



Before any maintenance on the heat pump system you must turn the unit off and shut off the power to the unit first.

A well-maintained heat pump could save your energy costs, heat pumps can deliver many years of dependable service and comfort. Below are some tips you can follow to ensure that your heat pump gives you optimum performance.

1. Turn the power off when the unit is being maintained.
2. Do not use petrol, naphtha, dissolvent and any other chemicals on the unit, otherwise, it may damage the surface. External heat pump parts can be wiped with a damp cloth and domestic cleaner.
3. Avoid leaning or putting objects on the device.
4. Keep it dry and drafty round the unit.
5. If the unit will be shut down for a long time, users should drain the water in the pipe, turn the power off and cover it with protective cover, Check it roundly before you start it again.
6. When scales accumulated in heat exchanger, it may cause high pressure protection and "03E" will flash on the screen of controller. It is advised to use the phosphoric acid whose temperature is about 50~60℃ and consistency is 15% to clean the heat exchanger of the unit. First start the circulation pump to clean it for 3 hours, and then flush it with tap water for three times. Do not use any strong detergent to clean the heat exchanger and the tank.
7. Change the installation site
If the customer wants to change the site, please contact with the dealer or the local Customer Service for he
8. **Winterizing: If you close the heat pump during the winter season or the power failure occur during winter season, it is essential to drain the water inside heat exchanger.**

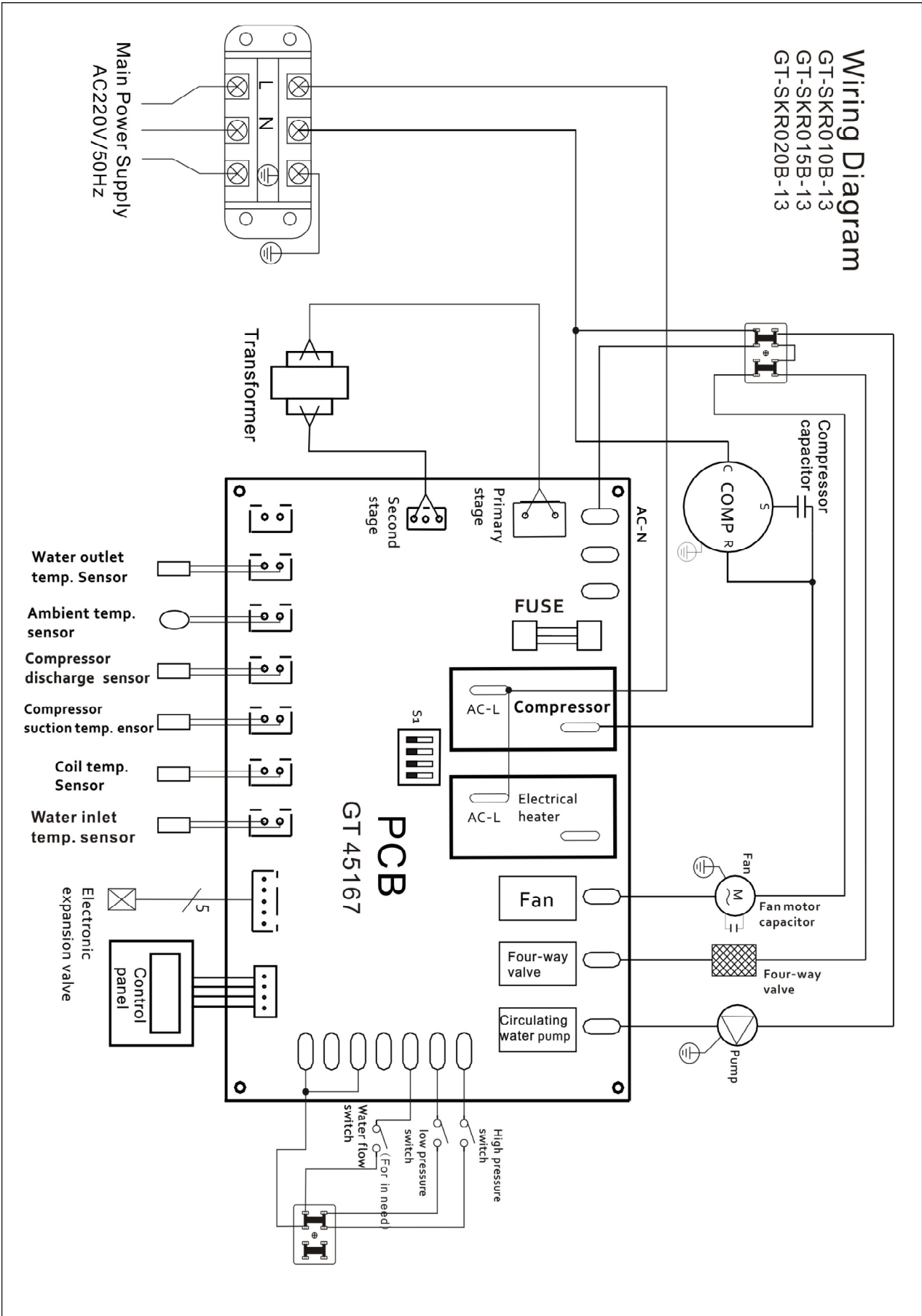
Part VI Trouble Shooting

Fault Code	Fault	Possible Causes & Treatment
01E	Flow switch fault	◇Inadequate water-flow ◇There is air in the circulating water inlet tube ◇Circulation pump destroyed
02E	Current protection	1) Check the wire connection between terminal block of main power & compressor, to see if it is loose. 2) The current transformer is broken, replace a new one. 3) Compressor or refrigerant system fault cause the over-current. 4) The discharge pressure of compressor is too high, please refer to the high pressure protection. If the error code still be there after the above steps, please replace the PCB.
03E	High pressure protection (protect when high pressure switch interrupts)	1) No water flow or inadequate water flow, please check the followings: * Clean the Y strainer * Discharge air out of the suction pipe of water pump * The water pipes are clogged somewhere. * Inadequate water in water tank, please fill up the water tank. * The circulation water pump is broken. 2) The probe of water tank temp. sensor falls down and the hot water temp goes very high, then this causes the high pressure. 3) The tube-in-shell heat exchanger accumulated scale, please clean it. 4) The refrigerant system has some problem. * Excessive refrigerant, please discharge some. * The system need to be fully evacuated. * The electronic expansion valve is broken or clogged (sometimes operate incorrectly) Note: The faulty ambient temp. sensor may cause the incorrect operation of the electronic expansion valve. So please check the measured ambient temp. through the controller, if it's obviously lower than actual ambient temp. please replace the sensor. 5) High pressure switch is broken. Please use multimeter to check the terminals of high pressure switch on the PCB, if they're circuit, but

		the error code still be there, please replace the PCB
04E	Low pressure switch fault (protect when interrupts)	1) The refrigerant system has some problem. * Inadequate refrigerant, please put in some. * The fin-coil evaporator is blocked or covered. * The fan motor doesn't work. * The electronic expansion valve is broken or clogged (sometimes operate incorrectly) Note: The faulty ambient temp. sensor may cause the incorrect operation of the electronic expansion valve. So please check the measured ambient temp. through the controller, if it's obviously lower than actual ambient temp. please replace the sensor. 2) Low pressure switch is broken. If the protection occurs when the pressure is higher than 0.05MPa, that means the switch is broken, please replace it. 3) Please use a multimeter to check the terminals of low pressure switch on the PCB, if they're circuit, but the error code still be there, please replace the PCB.
05E	outlet water temp. is too high	1) No water flow or inadequate water flow, please check the followings: * Clean the Y strainer. * Discharge air out of the suction pipe of water pump. * The water pipes are clogged somewhere. * Inadequate water in water tank, please fill up the water tank. * The circulation water pump is broken. 2) The water tank temp. sensor is broken or the probe of sensor falls down, the unit can't stop working automatically, please replace the sensor. 3) If the error code still be there after the above steps, please replace the PCB.
09E	Communication error (the control panel can't receive information from the PCB)	1) The connection cable between controller & PCB is open circuit, short circuit or phase sequence is wrong. Replace it, if necessary. 2) If the error code still be there, please replace the controller first. 3) If the error code still be there, please replace the PCB.
11E	Coil sensor fault	1) The sensor falls down from PCB or it's connector is loose, please install it firmly. 2) The sensor is has some problem, please check if it's open circuit or short circuit, please measure the resistance of it (it's 5kΩ at 25℃) to see if the sensor is broken, please replace it if necessary. 3) When there is strong electromagnetic interference from the surroundings, the unit maybe will have some problem. 4) If the error code still be there after the above steps, please replace the PCB.
12E	Environment sensor fault	
13E	Water outlet sensor fault	
15E	Water-tank sensor fault	
18E	Compressor discharge sensor fault	
64E	Compressor suction sensor fault	
20E	Compressor discharge overheat protection	1) Water temp. too high 2) Clean the heat exchanger /evaporator 3)Expansion valve clogged 4) too much refrigerant or lack of refrigerant 5) lack of compressor oil 6) Ambient temp. too low
40E	Compressor no current or undercurrent protection	1) Compressor self-protection due to too high discharge temp. 2) Check the wire/plug for the compressor 3)Single phase compressor capacitor is broken 4) Check the power supply to make sure the voltage is 4) lack of refrigerant 5)current transformer problem, check the wire, the plug or the current transformer is broken 6) PCB problem, change the PCB.
72E	Ambient temp. too low protection	1)Check the actual ambient temp. 2) make sue the ambient temp. sensor is not attached to the evaporator
16E	spare	
53E	spare	
	Overheat protection	When ambient temp. > 35℃ & ambient temp. + water tank temp.>95℃, the unit will stop working automatically to protect the unit, it'll resume work automatically when ≤90℃
	Anti-freezing protection	Refer to the protect section.

Fault Condition	Possible Causes	Treatment
The unit doesn't work	◇ Power failure ◇ Bad connection to the power ◇ Fuse blow	◇ Turn off the switch, check the Power source ◇ Find the causes and renovate them ◇ Replace the fuse
The pump is working but too noisy and the water is not cycled	◇ Lack water In the system ◇ There is air in the water circulation ◇ Any valve in the system is not open ◇ Filter stoppage	◇ Check the water make-up device and fill in with water ◇ Discharge the air in the water system ◇ Open all the valves ◇ Clean the filter
Low heating capacity	◇ Inadequate refrigerant ◇ bad insulation of the water system ◇ Drying filter stoppage ◇ Air side heat exchanger is un-efficient ◇ Inadequate water-flow	◇ Leak hunting and fill in standard quantity of refrigerant ◇ Improve the heat insulation ◇ Replace the drying filter ◇ Clean the heat exchanger ◇ Clean the water filter
The compressor doesn't work	◇ Power failure ◇ Compressor contactor destroyed ◇ Poor connection ◇ Overheating protection ◇ water outlet temperature is too high ◇ Inadequate water-flow	◇ Check it and solve the problems ◇ Replace contactor ◇ Check and renovate it ◇ Check and solve the problems ◇ Reset a proper temperature ◇ Clean the water filter and discharge the air in the water system
The compressor works but too noisy	◇ Liquid refrigerant goes into the compressor ◇ interior components destroyed ◇ Inadequate refrigeration oil	◇ Check the expansion valve ◇ Replace the compressor ◇ Add in adequate refrigeration oil
The fan doesn't work	◇ Capacitor damaged ◇ The fans are not fixed well ◇ The fan motor burned out ◇ Contactor destroyed	◇ Replace it ◇ Fix it well again ◇ Replace the fan motor ◇ Replace the Contactor
Compressor works but not heating	◇ Refrigerant leakage ◇ Compressor fault	◇ Leak hunting and fill in standard quantity of refrigerant ◇ Replace the compressor
Low water-flow protection	◇ Hydraulic switch destroyed ◇ Inadequate water-flow	◇ Replace the switch ◇ Clean the filter and discharge the air
Excessive discharge pressure	◇ Too much refrigerant ◇ Non-condensable gas in the Refrigeration cycle ◇ Inadequate water-flow	◇ Draw off the superfluous refrigerant ◇ Drive the gas out ◇ Check the circulation and increase the flow
Low suction pressure	◇ Drying filter stoppage ◇ Lack of refrigerant ◇ Excessive pressure drop in the heat exchanger	◇ Replace the filter ◇ Leak hunting and fill in standard quantity of refrigerant ◇ Check the opening of electronic expansion valve

Part VII Wiring Diagram



Disposal

Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging you health and well-being.

