

# ALL IN ONE HEAT PUMP

## Instruction Manual





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## I .PREFACE

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### **Dear customers:**

In order to use this machine safely, please read this user's manual carefully before using and installation, especially pay attention to each notice remark for usage and maintenance. Also keep it carefully for later use. Heat pump water heater is a professional machine, it may cause damage or hazard when wrong installed. Relevant installation and maintenance shall be done by technical people. Please contact our installation service for reference.



### **Important warning:**

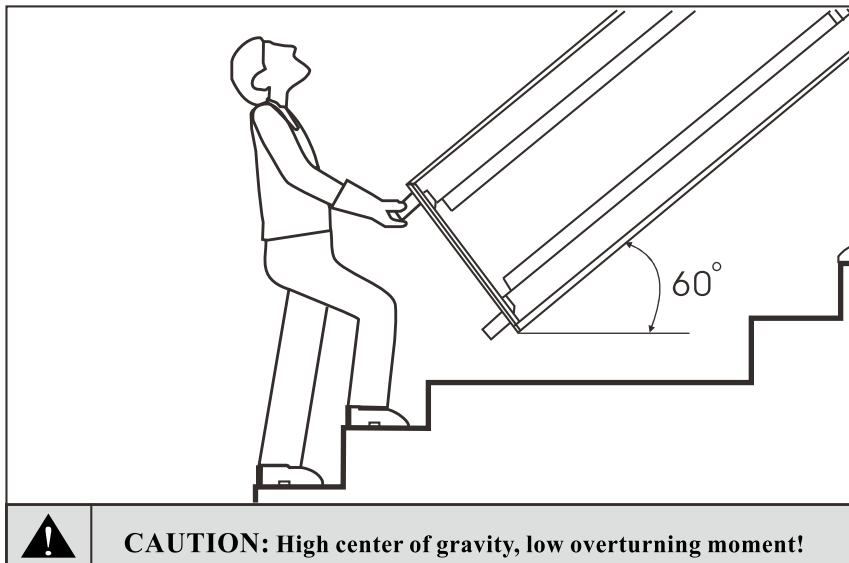
- 1).When using for the first time, check if all the wiring are correct before you connect the unit to power supply.
- 2).The specifications of fuse is: AC250V, 5A.
- 3).The appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III conditions, and these means must be incorporated in the fixed wiring in accordance with the wiring rules.
- 4). The running range of the heat pump:  
the ambient temperature range  $-7 \sim 43^{\circ}\text{C}$ ;  
outlet water range:  $12 \sim 60^{\circ}\text{C}$   
the pressure of water  $0.1\text{MPa} \sim 0.7\text{MPa}$ .
- 5).If the power cord is damaged, please replace a new one offered from factory by professional technicians.
- 6).Power plug's rated current shall be in accordance with the model you buy.
- 7).The units must be ground wired. Never connect the ground line on neutral line or water pipe.
- 8).Product shall be singly assigned to a electrical leakage protection power .
- 9).Hot water above  $50^{\circ}\text{C}$  may be burned, we suggest that you mix cold water with hot water from water tank for use.
- 10).Any equipment must not be inserted inside the heat pump unit, in case any accident or abnormal operation.
- 11).For your safety, please DO NOT change or mend the heat pump water heater yourself.
- 12).Closed water heaters shall be marked with a statement that a pressure-relief device is to be fitted in the installation, unless it is in corporatthe appliance.
- 13).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.

## I. PREFACE


### **Important warning:**

- 14). The instructions shall contain the substance of the following: 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.
- 15). The water may drip from the discharge pipe of the pressure-relief device and that this pipe must be left open to the atmosphere; the pressure-relief device is to be operated regularly to remove lime deposits and to verify that it is not blocked;
- 16). Transport using a forklift  
When transported by a fork lift, the unit must remain mounted on the pallet. The lifting rate should be kept to a minimum. Due to its top-heaviness, the unit must be secured against tipping over.  
To prevent any damage, the unit must be placed on a level surface!
- 17). Manual transport  
For the manual transport, the wooden pallet can be used for bottom part. Using ropes or carrying straps, a second or third handling configuration is possible. With this type of handling, care must be taken that the max. Permissible inclination angle of 60 degree is not exceeded.

#### **Eposited and transportation**



18)

<b>Notes on environmental protection</b>	
	<p>This product may be at the end of his life rather than the normal household waste will be sonderm at a collection point for the recycling of electrical and electronic equipment will be delivered. The symbol on the product, the instruction manual or packaging recalls.</p> <p>The materials are recycled, according to their identification. With the reuse of recycling or other forms of recovery of waste afford a important contribution to protect our environment.</p> <p>Please ask at the municipal disposal of the competent authority.</p>

## II.SPECIFICATION

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### 1).Technical Data

Model		ZR9W- 250T
Heating capacity	kw	3.0
Water tank volume	L	250
Power input	W	900
Running current	A	4.2
Power supply	V/Ph/Hz	230/1/50
Compressor number		1
Compressor type		Rotary
Rated outlet water temperature	°C	55
Max outlet water temperature	°C	60
Air volume	m <sup>3</sup> /h	450
Air pressure	Pa	60
Duct diameter	mm	Φ150
Noise	dB(A)	49
Water inlet size/outlet size	inch	G 3/4"
Net dimensions	mm	Φ600×1790
Package dimensions	mm	660×660×1950
Net weight	kg	90
Gross weight	kg	105

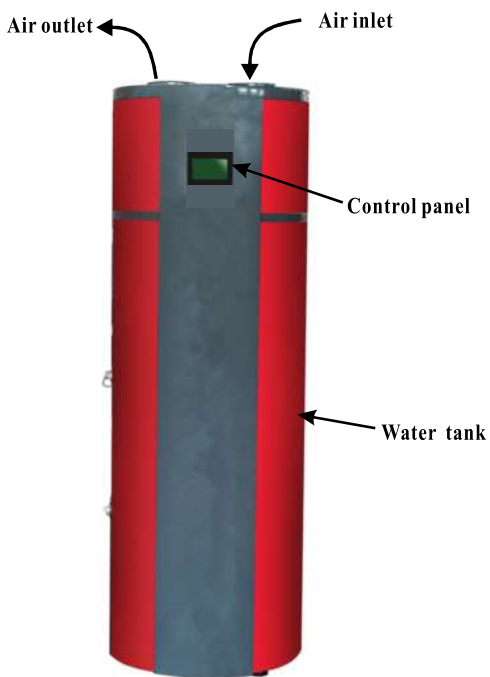
#### Notice:

- 1.The technology parameter is tested as below:20°C for dry temperature outdoor, 15°C for wet temperature outdoor; inlet water 15°C; outlet water 55°C.
- 2.Refer to the label on the unit if the data different from this table.

## II.SPECIFICATION

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### 2) Appearance and Features



\* **High efficiency:** smart design make normal working efficiency more than 300%.

\* **Easy installation and operation:** With LCD display, easy to handle and check all kind of temp and operation information.

\* **Stainless steel tank:** ensure clean water to users.

- **Waste heat is useful heat**

The standard heat exchanger of the hot-water heat pump enables direct connection to a second heat generator, e.g. a solar heating system or a boiler.

- **Dehumidification in the recirculating air mode**

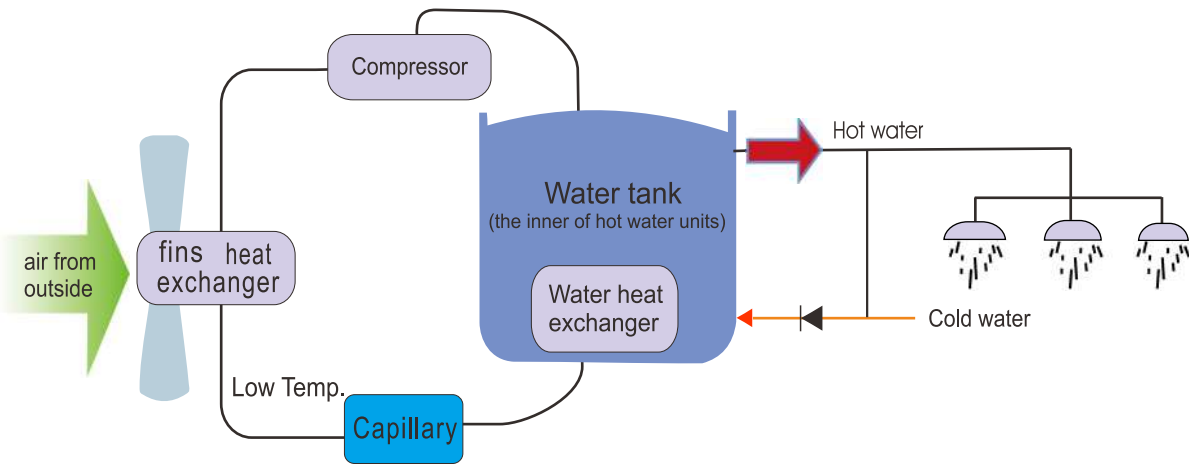
Dehumidified air in the laundry room supports laundry drying and prevents moisture-induced damage.

- **Cooling in the recirculating air mode**

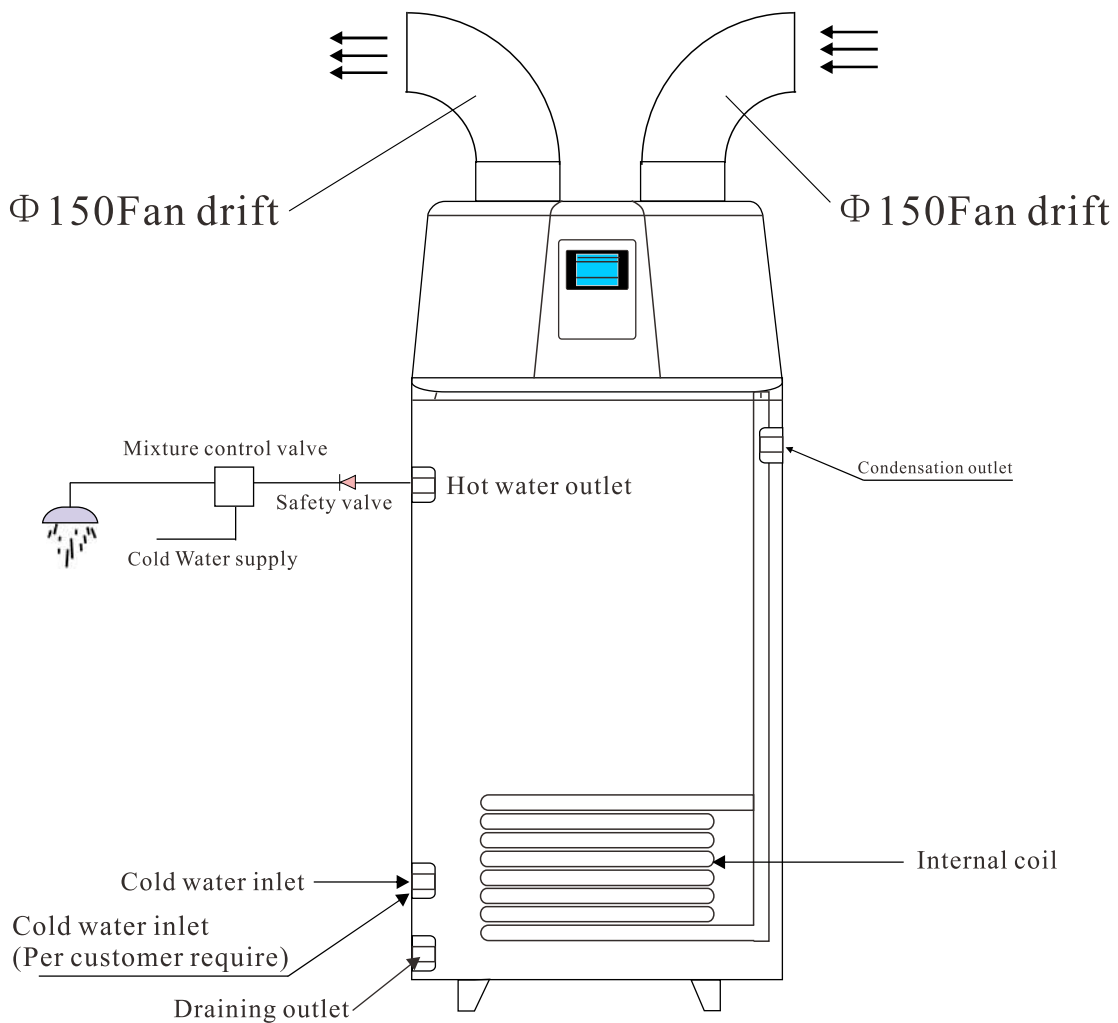
The room air is extracted from the storage room or a wine cellar, subsequently cooled and dehumidified in the heat pump and finally re-introduced into the room. Recreation rooms, boiler rooms or utility rooms are ideal installation sites. The air-ducts leading through warm sections must be insulated to prevent the formation of condensation.

## II. SPECIFICATION

### 3). Working principle



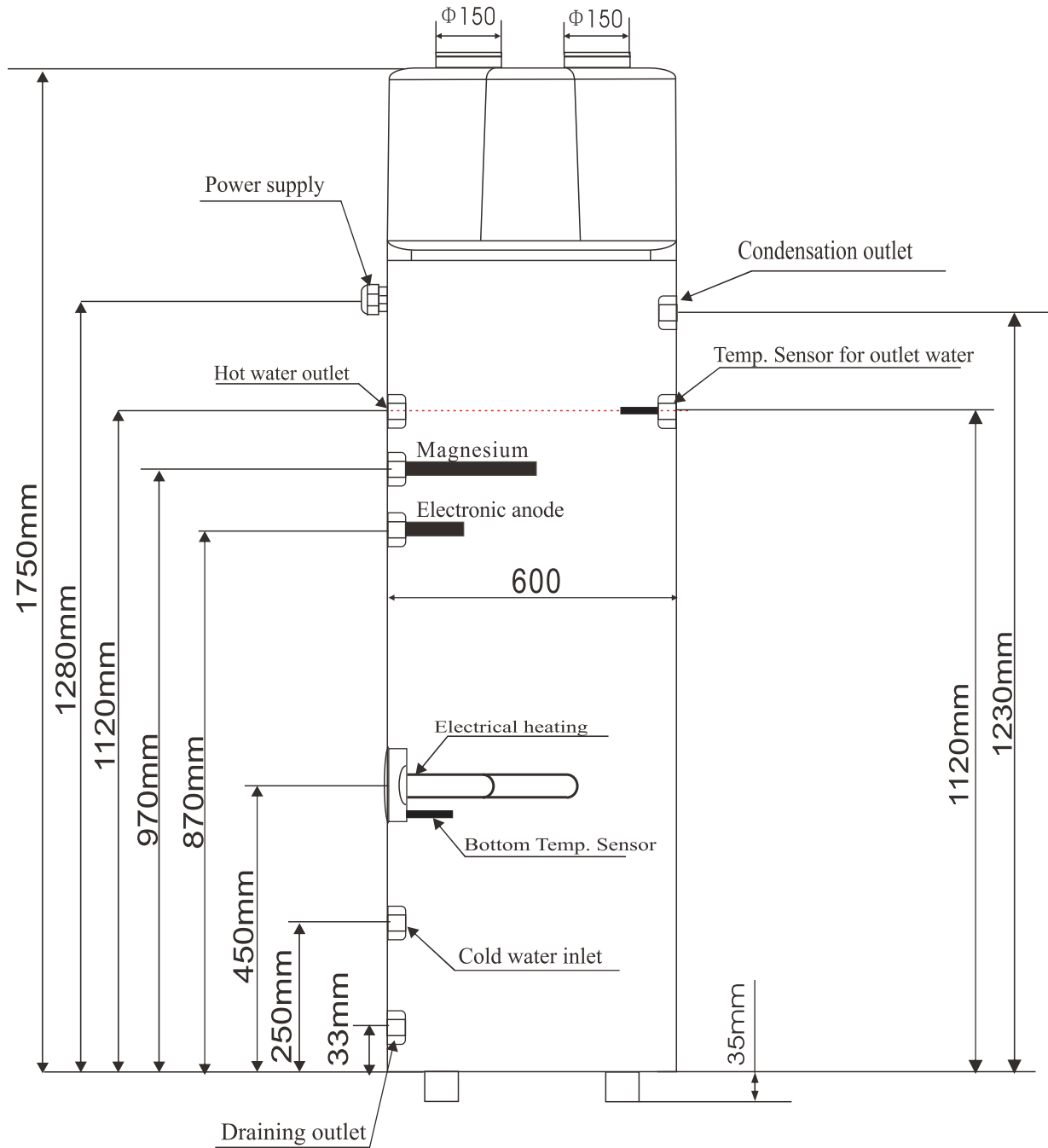
### 4). Heat pump sketch map





## II. SPECIFICATION

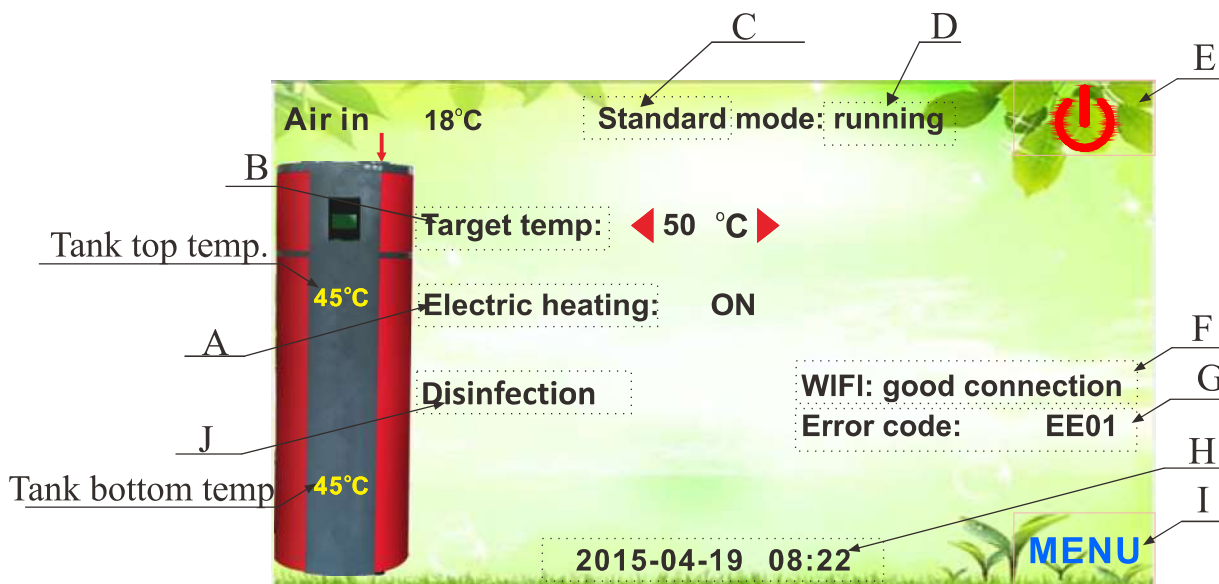
### 5). Dimension (Measure: mm)



### III. CONTROLLER INTRODUCTION

#### 1. Main interface

##### 1.1 Heat pump start up Initial interface



A: Electric heater status, only shows when electric heater is on.

B: Here shows target temperature, click ◀ or ▶ to adjust the target temperature.

C: Click this icon, linked to parameter 2.1.9 to switch between modes. This icon shows current mode, total 4 modes:

1, Standard mode; 2, Economy mode; 3, Fast mode; 4, Weather mode

D: To show if the current mode is running or not. If not running, shows as "None", if running, shows as "running"

E: This area shows the status of 2 water pump, only shows when water pump is working.

1. Circulation pump for heat pump internal circulation.

2. User pump for using side water pump.

F: Click this icon will access to 1.2 WIFI status interface: Current WIFI status: good connection or no connection.

G: Fault notice: detail information will be linked to 1.3 Fault query. No display if no fault.

H: Live Date & Time

I: Click this icon to access to detail menu.

J: Disinfection mode: Auxiliary electric heater automatically turn on once each week according to setting time (It can be also turn on if heat pump target temperature reached and turn off or standby by). "Disinfection" will be displayed in screen when starting this mode.

### III.CONTROLLER INTRODUCTION

#### 1.2 Heat pump stand-by interface

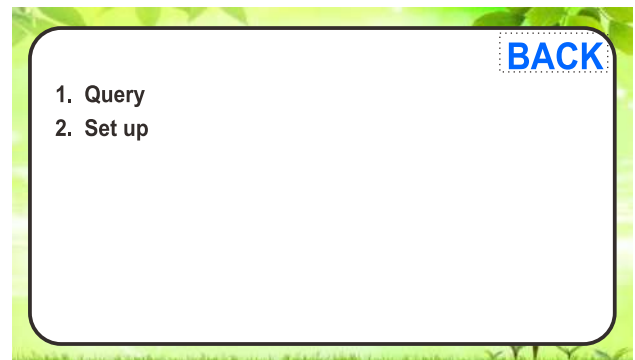


- a: Here for User water pump timer on, if no timer is set, will show “-----”
- b: Here for heat pump timer on. If no timer is set, will show “-----”
- c: Air in temperature
- d: Click this icon to start heat pump
- e: Shows timer weekday and time
- f: Current running mode
- g: Click this icon linked to 1.2 WIFI status interface, Current WIFI status : good connection or no connection
- h: Here for user water pump timer weekday & time.
- i: Click to access detail menu.

## 2. Menu

### 2.1 Main interface of menu

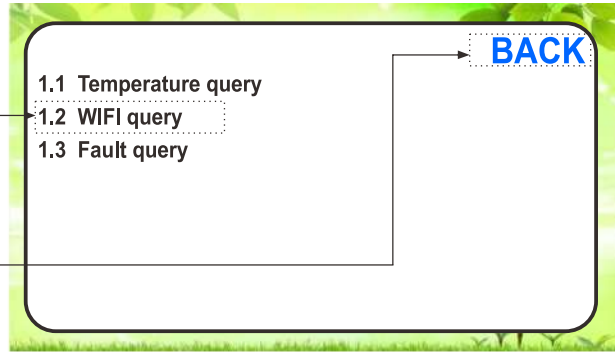
- ★ Click **1. Query** to check temperature, WIFI status, fault, maintenance information.
- ★ Click **2. Set up** to set parameters
- ★ Click **BACK**, return to main interface



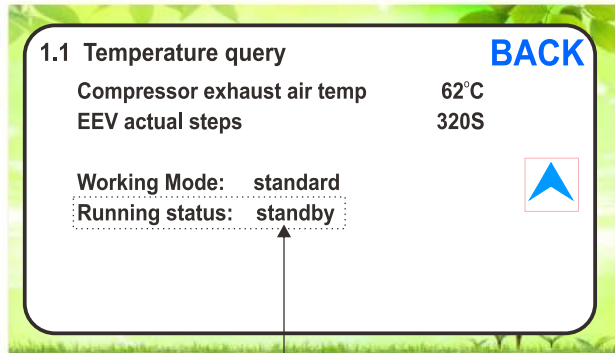
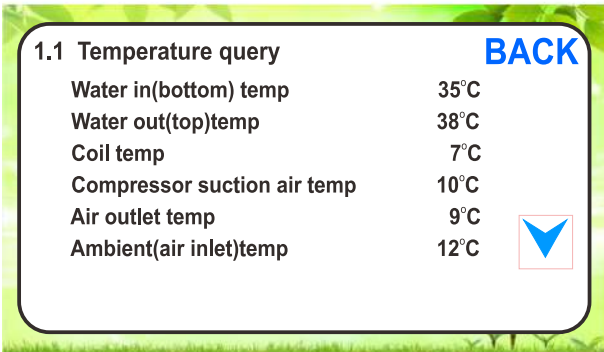
### III. CONTROLLER INTRODUCTION

2.2 Click from below list to access the prefer query information you need to check .

- WIFI status query
- Return to previous menu



2.2.1 Click **1.1 Temperature query**, to check each temperature setting



Running status:stand-by or working

2.2.2 Click to access **1.2 WIFI query**

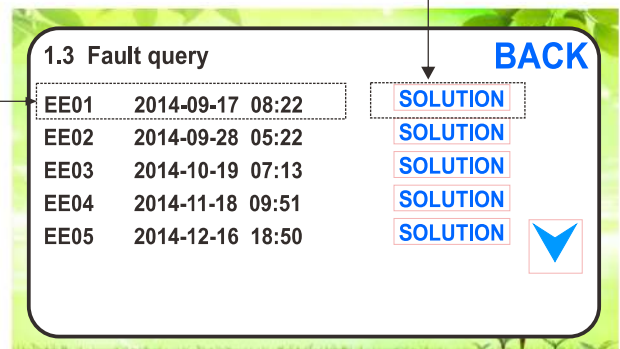
WIFI connection status



2.2.3 Click **1.3 Fault query** to check fault history, max 10 failures can be recorded.

Click to access solution for this fault

Here shows fault code , fault date and time .Click will link to each fault detail information.



### III. CONTROLLER INTRODUCTION

2.2.3.1 Here shows fault code , fault date and time .Click **EE01 2014-09-17 08:22** will link to each fault detail information

The diagram illustrates five fault detail screens for fault code EE01 (system high pressure protection) occurring on 2014-09-17 at 08:22. Each screen includes a 'BACK' button and a scroll indicator.

**Screen 1: 1.3 Fault query**

- Details of "EE01 2014-09-17 08:22 "
- EE01: system high pressure protection
- Status: heating running
- Water in(bottom) temp: 42°C
- Water out(top) temp: 43°C
- Coil temp: -7°C

**Screen 2: 1.3 Fault query**

- Details of "EE01 2014-09-17 08:22 "
- EE01: system high pressure protection
- Compressor suction air temp: 0°C
- Air outlet temp: 2°C
- Ambient(air inlet)temp: 5°C
- Compressor exhaust air temp: 53°C

**Screen 3: 1.3 Fault query**

- Details of "EE01 2014-09-17 08:22 "
- EE01: system high pressure protection
- EEV actual steps: 320S
- Target temp: 55°C
- Return differential: 5°C
- Water in(bottom) temp max range: 60°C

**Screen 4: 1.3 Fault query**

- Details of "EE01 2014-09-17 08:22 "
- EE01: system high pressure protection
- Water in(bottom) temp min range: 31°C
- Disinfection temperature: 38°C
- Disinfection time: 30min
- Working Mode: standard
- Defrost circle: 45min

**Screen 5: 1.3 Fault query**

- Details of "EE01 2014-09-17 08:22 "
- EE01: system high pressure protection
- Temp. to access defrost: -5°C
- Temp. to exit defrost: 13°C
- Defrost time: 8min
- EEV working mode: Auto

**Callouts and Explanations:**

- Fault code description:** Heat pump running status when having fault: "Thermostat switch off" means heat pump stops when target temp. is reached; "Electric power supplied" means heat pump is stand-by ; "heating running" means heat pump is normally working.
- Fault record:** Points to the fault code and date/time.
- Each temperature data when having this fault:** Points to the temperature readings in the first two screens.
- EEV actual steps when having this fault:** Points to the EEV actual steps in the third screen.
- Set parameter data when having this fault:** Points to the target temp, return differential, and water temp max range in the third screen.
- Set parameter data when having this fault:** Points to the water temp min range, disinfection temperature, and disinfection time in the fourth screen.
- Set parameter data when having this fault:** Points to the defrost temperatures and time in the fifth screen.

### III. CONTROLLER INTRODUCTION

Set parameter data when having this fault

Solution

1.3 Fault query BACK  
 Details of "EE01 2014-09-17 08:22"  
 EE01: system high pressure protection

EEV manual steps	350S	▲
Electric heater start delay time	2 hours	
Efficiency Alarm time	5 hours	▶ SOLUTION

#### 2.2.3.2 Click SOLUTION to access solution for this fault, see detail solution

Corresponding Fault

First fault possibility and solution

1.3 Fault query BACK  
 Solution of "EE01"

1. Bad connection between high pressure switch lead wire and PCB board "prot2" terminal :please ensure both 2 lead wires of high pressure switch are in good condition and well fixed on terminal "PROT2" on PCB board.

Second fault possibility and solution

1.3 Fault query BACK  
 Solution of "EE01"

2. Not enough water inside tank(or weak water flow volume for split model) will cause EE01. Please ensure there is enough water inside tank, make sure no block for the entire water circuit (for split model, make sure no air on the water pipes)

Third fault possibility and solution

1.3 Fault query BACK  
 Solution of "EE01"

3. High water temp. Above 60°C or high ambient temp. above 35°C will cause EE01. Please ensure to lower the target water temp. Please replace with boiler for higher temp. hot water heating).

Forth fault possibility and solution

1.3 Fault query BACK  
 Solution of "EE01"

4. If EEV(auto working state) actual opening is too small or too big , will also cause EE01. Please contact us or to adjust the target overheat opening (make it bigger or smaller). Or you may change the EEV working state to be " manual", then amend the initial opening ( to be bigger or smaller)



### III. CONTROLLER INTRODUCTION

Fifth fault possibility and solution

#### 1.3 Fault query

[BACK](#)

Solution of "EE01"

5. The high pressure switch has internal problem may also cause EE01. Please remove the high pressure switch during stand-by state, use a multimeter to measure the resistance between 2 lead wire, if resistance = 0  $\Omega$  then it is working, otherwise please replace with a new one.



Sixth fault possibility and solution

#### 1.3 Fault query

[BACK](#)

Solution of "EE01"

If after trying all above solution, EE01 still shows, please replace with a new PCB board.



### The solution for different fault as followed

Solution for " EE02 " listed below:

#### 1.3 Fault query

[BACK](#)

Solution of "EE02"

1. Bad connection between low pressure switch lead wire and PCB board "prot3" terminal please ensure both 2 lead wires of high pressure switch are in good condition and well fixed on terminal "PROT3" on PCB board.



#### 1.3 Fault query

[BACK](#)

Solution of "EE02"

2. Low speed or malfunction on fan may also cause EE02. Please ensure the fan is running normal.  
3. Evaporator is blocked and lead to bad heat exchanging may also cause EE02. Please ensure the evaporator is clean and nothing block on the surface.



#### 1.3 Fault query

[BACK](#)

Solution of "EE02"

4. Water tank water temp lower than 10°C and ambient temp lower than 5°C, may cause EE02. Please ensure heat pump is running or turn on the electric heater to assist the heating.



#### 1.3 Fault query

[BACK](#)

Solution of "EE02"

5. Heat pump has internal refrigerant gas leakage, may cause EE02. Please check all the refrigerant gas pipes and welding joints to ensure no leakage for gas circuit. Seal the leakage dot in time, vacuum the gas circuit and infill same refrigerant gas amount marked on rating label.



#### 1.3 Fault query

[BACK](#)

Solution of "EE02"

6. Internal damage on low pressure switch may also cause EE02. Please remove the low pressure switch under heat pump stand-by state, use a multimeter to measure the resistance between 2 lead wire, if resistance = 0  $\Omega$  then it is working, otherwise please replace with a new one.



#### 1.3 Fault query

[BACK](#)

Solution of "EE02"


If after trying all above solution, EE02 still shows, please replace with a new PCB board.



### III. CONTROLLER INTRODUCTION



Solution for " EE03 " listed below:

1.3 Fault query  
Solution of "EE03"



**BACK**



1. Bad connection between water flow switch lead wire and PCB board " PROT5 " terminal please ensure both 2 lead wires of water flow switch are in good condition and well fixed on terminal "PROT5 " on PCB board.



1.3 Fault query  
Solution of "EE03"

**BACK**



2. Any block in water circuit or additional air in water circuit, may cause EE03. Please ensure no block in the entire water circuit included water pump, and remove additional air by filling the water tank full of water .



1.3 Fault query  
Solution of "EE03"

**BACK**


3. Internal damage on water flow switch may cause EE03. Please check and replace with a new one.



1.3 Fault query  
Solution of "EE03"


**BACK**

If after trying all above solution, EE03 still shows, please replace with a new PCB board.





Solution for " EE04 " listed below:

1.3 Fault query  
Solution of "EE04"



**BACK**

1. Bad connection between temperature sensor lead wire and "PROT4" terminal on PCB board (short circuit or open circuit), may cause EE04. Please ensure the entire temperature sensor lead wire in good condition and well fixed on PCB board " PROT4" terminal.





1.3 Fault query  
Solution of "EE04"

**BACK**

2. Not enough water inside tank, need to fill the tank full .



3. Thermostat is defected, please change for a new thermostat.



1.3 Fault query  
Solution of "EE04"

**BACK**


4. Electric heater lose shape and got too close to thermostat .Please check if the electric heater and the sensor tube is in normal shape or not. If fault is caused by this, you have to contact after sales service for solution.



1.3 Fault query  
Solution of "EE04"

**BACK**


5. PORT 4 connection on PCB board is not well fixed , please change for a new PCB board.






### III. CONTROLLER INTRODUCTION

#### Solution for " EE08 " listed below:


1.3 Fault query  **BACK**

Solution of "EE08"


1. Bad connection between communication wire and PCB board , may cause EE08. Please ensure the entire communication wire is in good condition, each lead wire is well fixed on PCB board, ensure the lead wire is connected correctly, or to replace with a new wire. 

1.3 Fault query **BACK**


Solution of "EE08"


2. Internal damage on PCB board or wire controller , may cause EE08. Please replace them if necessary. 

#### Solution for " PP01 " listed below:

1.3 Fault query  **BACK**


Solution of "PP01"

1. Bad connection between temperature sensor lead wire and PCB board terminal " SEN8 " , may cause PP01. Please ensure temperature sensor lead wire is in good condition and well fixed on PCB board terminal " SEN8 ". 




1.3 Fault query **BACK**


Solution of "PP01"


2. Internal damage on temperature sensor may cause PP01. Please replace with new sensor. If PP01 still shows even with new sensor, please replace a new PCB board. 

#### Solution for " PP02 " listed below:

1.3 Fault query  **BACK**


Solution of "PP02"

1. Bad connection between temperature sensor lead wire and terminal "SEN7" on PCB board (short circuit or opened circuit), may cause PP02. Please ensure the entire temperature sensor in good condition and well fixed on PCB board " SEN7" terminal. 




1.3 Fault query **BACK**

Solution of "PP02"


2. Internal damage on temperature sensor may cause PP02. Please replace with a new one. 


If changing the sensor PP02 still shows, please replace with a new PCB board.

#### Solution for " PP03 " listed below:

1.3 Fault query  **BACK**


Solution of "PP03"

1. Bad connection between temperature sensor lead wire and "SEN6" terminal on PCB board (short circuit or open circuit), may cause PP03. Please ensure the entire temperature sensor lead wire in good condition and well fixed on PCB board " SEN6" terminal. 



1.3 Fault query **BACK**


Solution of "PP03"

2. Internal damage on temperature sensor may cause PP03. Please replace with new sensor . 


If after trying all above solution, PP03 still shows, please replace with a new PCB board.


### III. CONTROLLER INTRODUCTION

Solution for " PP04 " listed below:

1.3 Fault query  **BACK**


Solution of "PP04"

1. Bad connection between temperature sensor lead wire and "SEN4" terminal on PCB board (short circuit or open circuit), may cause PP04. Please ensure the entire temperature sensor lead wire in good condition and well fixed on PCB board " SEN4" terminal. 




1.3 Fault query **BACK**

Solution of "PP04"


2. Internal damage on temperature sensor may cause PP04. Please replace with new sensor . 


If after trying all above solution, PP04 still shows, please replace with a new PCB board.

Solution for " PP05 " listed below:

1.3 Fault query  **BACK**


Solution of "PP05"

1. Bad connection between temperature sensor lead wire and "SEN2" terminal on PCB board (short circuit or open circuit), may cause PP05. Please ensure the entire temperature sensor lead wire in good condition and well fixed on PCB board " SEN2" terminal. 




1.3 Fault query **BACK**

Solution of "PP05"


2. Internal damage on temperature sensor may cause PP05. Please replace with new sensor . 


If after trying all above solution, PP05 still shows, please replace with a new PCB board.

Solution for " PP08 " listed below:

1.3 Fault query  **BACK**


Solution of "PP08"

1. Bad connection between temperature sensor lead wire and "SEN3" terminal on PCB board (short circuit or open circuit), may cause PP8. Please ensure the entire temperature sensor lead wire in good condition and well fixed on PCB board " SEN3" terminal. 



1.3 Fault query **BACK**


Solution of "PP08"


2. Internal damage on temperature sensor may cause PP08. Please replace with new sensor. 


If after trying all above solution, PP08 still shows, please replace with a new PCB board.

### III. CONTROLLER INTRODUCTION

Solution for " PP09 " listed below:

1.3 Fault query  **BACK**  
Solution of "PP09"


1. Bad connection between temperature sensor lead wire and "SEN1" terminal on PCB board (short circuit or open circuit), may cause PP9. Please ensure the entire temperature sensor lead wire in good condition and well fixed on PCB board " SEN1" terminal. 



1.3 Fault query **BACK**  
Solution of "PP09"

2. Internal damage on temperature sensor may cause PP9. Please replace with new sensor .


If after trying all above solution, PP9 still shows, please replace with a new PCB board.



Solution for " PP11" listed below:



1.3 Fault query **BACK**  
Solution of "PP11"

1. Not enough water inside tank(for split heat pump, low water flow volume) may cause PP11. Please fill enough water inside tank, For split heat pump, ensure no block on water circuit, remove additional air in water circuit.





1.3 Fault query **BACK**  
Solution of "PP11"

2. Water temp Higer than 60°C or ambient temp Higher than 35°C , may cause PP11. Please lower the target water temp Or replace with boiler for higher temp hot water heating.





1.3 Fault query **BACK**  
Solution of "PP11"

3. Compressor exhaust air temp sensor malfunction may cause PP11. Please check the sensor and replace it if necessary.





1.3 Fault query **BACK**  
Solution of "PP11"

4. If EEV(auto working state) actual opening is too small or too big , will also cause PP11. Please contact us or adjust the target overheat opening (make it bigger or smaller). Or you may change the EEV working state to be " manual", then amend the initial opening ( to be bigger or smaller)




1.3 Fault query **BACK**  
Solution of "PP11"

5. Heat pump internal refrigerant gas not enough may cause PP11. Please check all the refrigerant gas pipes and welding joints to ensure no leakage for gas circuit.Seal the leakage dot in time,vacuum the gas circuit and infill same refrigerant gas amount marked on rating label.



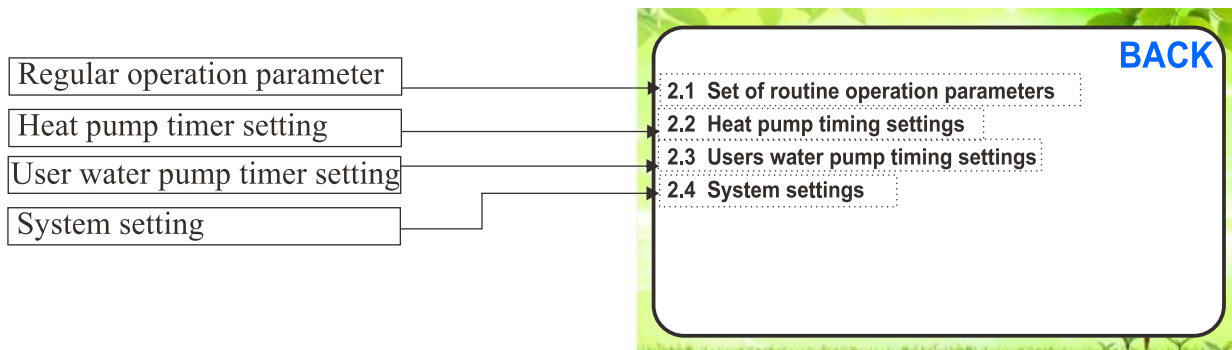
1.3 Fault query **BACK**  
Solution of "PP11"

If after trying all above solution, PP11 still shows, please replace with a new PCB board.

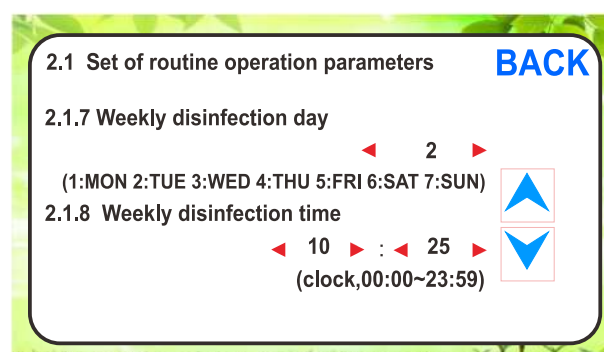
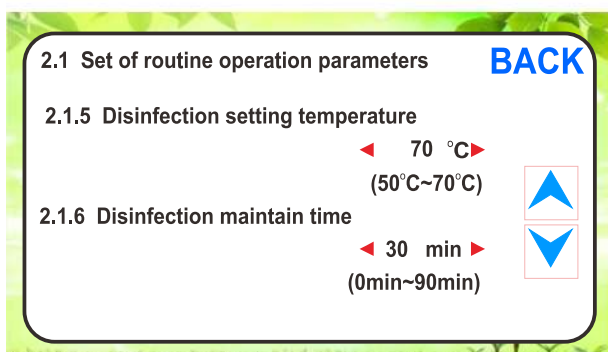
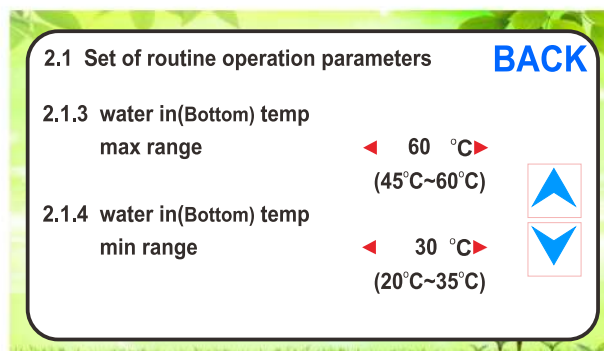
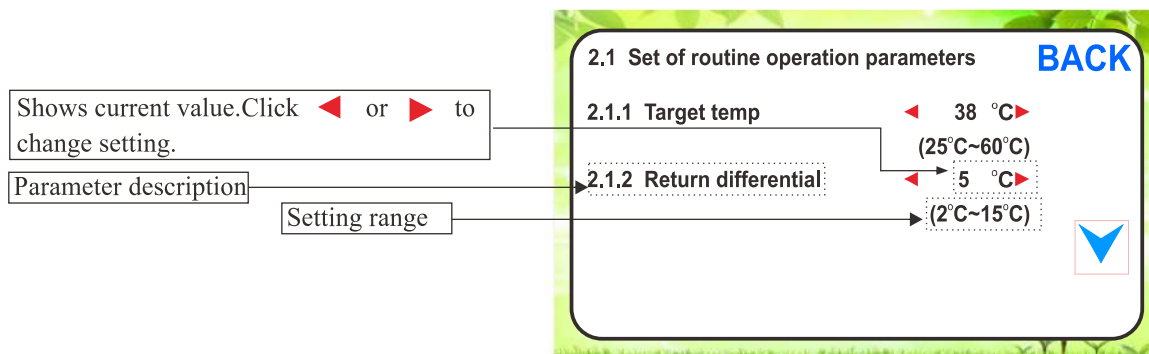


### III. CONTROLLER INTRODUCTION

#### 2.3 Click from blow list to access the parameter setting you need.





#### 2.3.1 Click 2.1 Set of routine operation parameters to set regular parameters






### III. CONTROLLER INTRODUCTION

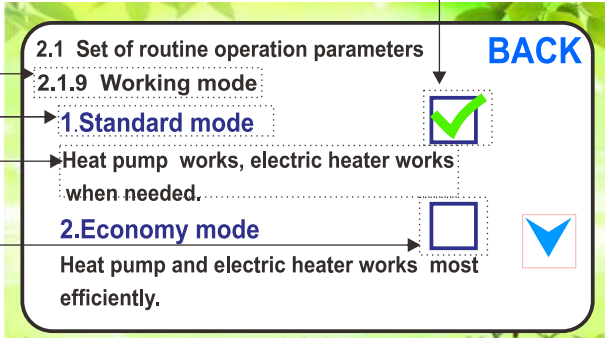
Click here till  show to choose prefer mode, no  icon means the mode is not selected.

To set working mode parameter

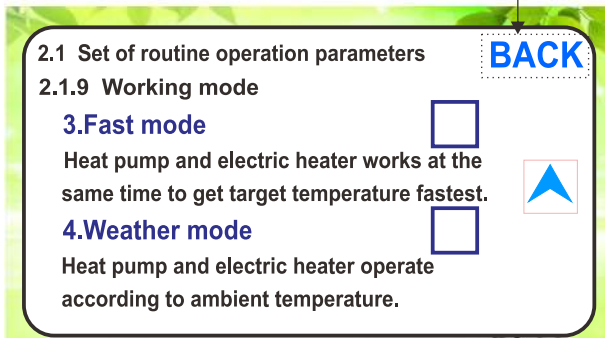
Mode brief information

Current mode

Only if "" shows, the mode is selected





Click to return to 2. SET UP parameters setting interface

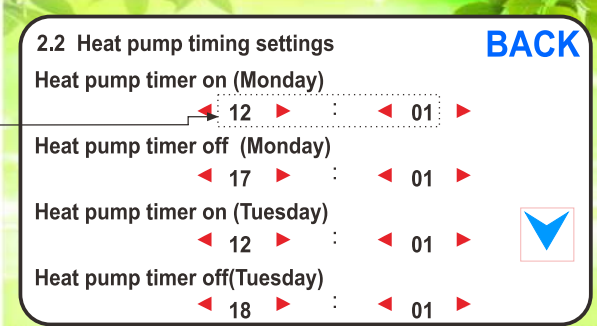


Attention: you can only select one mode ONLY each time, can not select 2 or more modes at the same time.

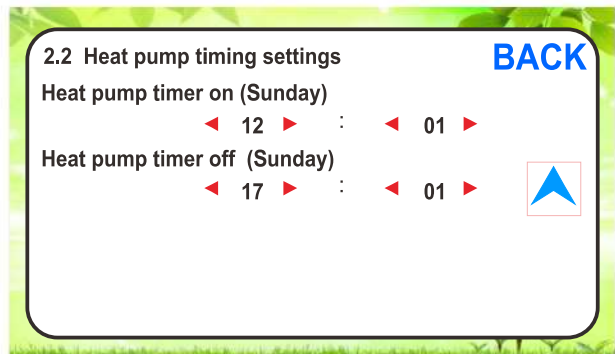
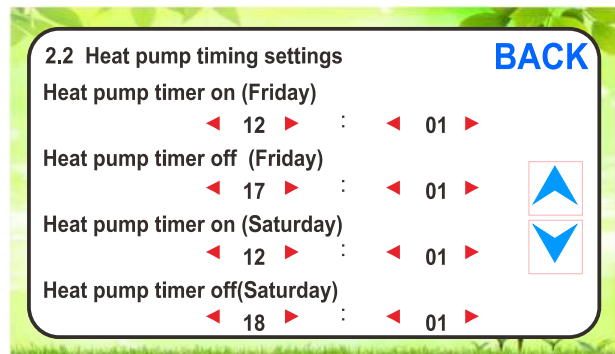
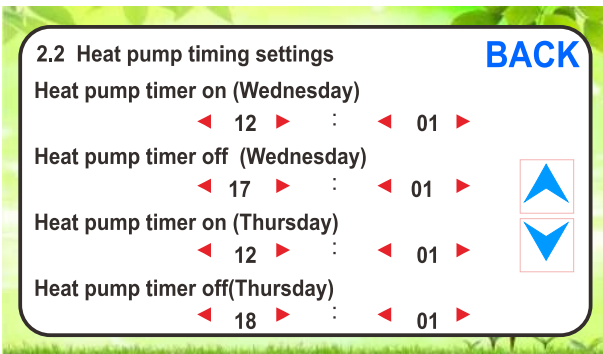
#### 2.3.2 Click **2.2 Heat pump timing settings** to set the timer on and timer off.

Here shows current time. Click  or  for changing setting.

Note: If timer on and timer off set the same time, timer will be cancelled. Timer off must be later than timer on .



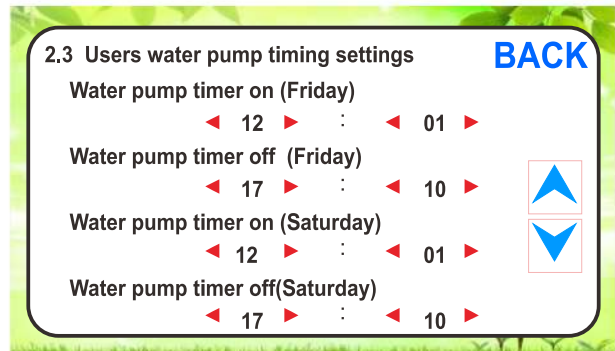
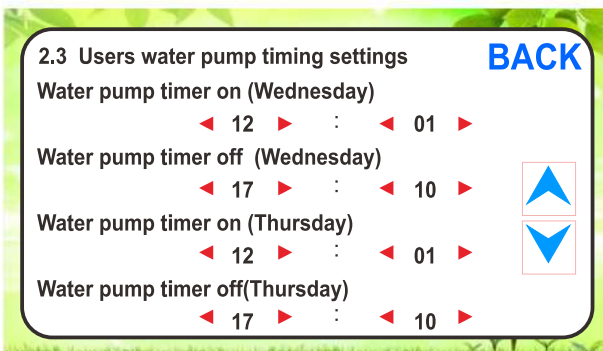
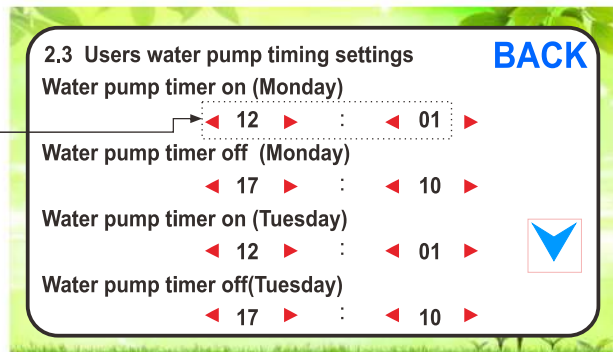
### III. CONTROLLER INTRODUCTION



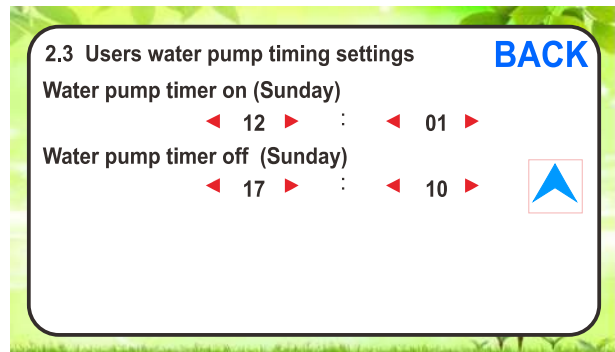
#### 2.3.3 Click **2.3 Users water pump timing settings** to access water pump timer settings.

Note: If timer on and timer off set the same time, timer will be cancelled. Timer off must be later than timer on .

Here shows current time. Click ◀ or ▶ for changing setting.



### III. CONTROLLER INTRODUCTION

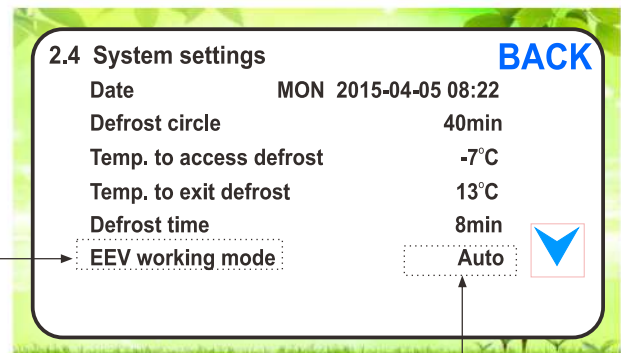


#### 2.3.4 Click: 2.4 System settings to access system setting

You need to input the right password to access the system setting, otherwise all the parameters of 2.4 can not be changed

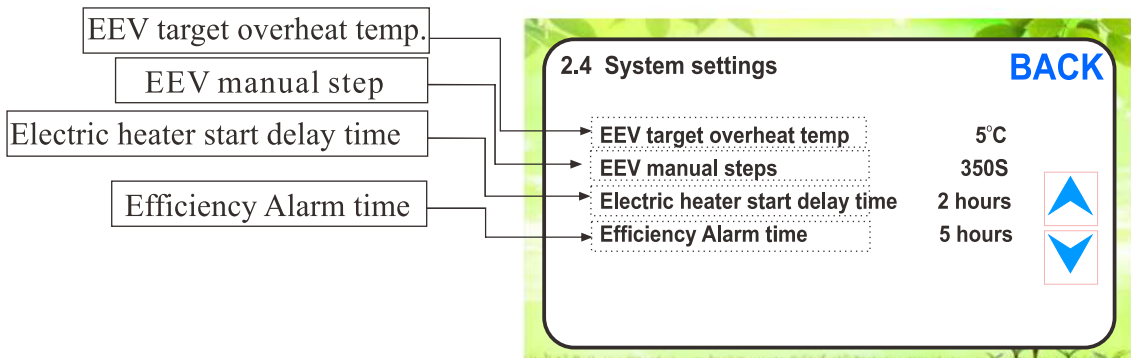
You can only access " System setting" after entering the corect password, otherwise you are not able to change setting of parameters 2.4.

Please enter the password here. Once correct password is entered, you will access to 2.4 parameter interface.



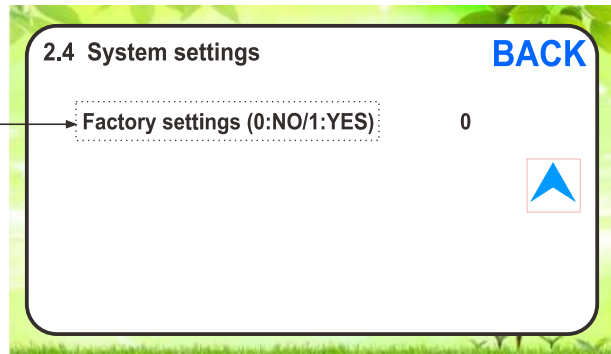
EEV working mode

Show current setting data. You may click to change this setting.



### III. CONTROLLER INTRODUCTION

Factory setting



### 3 Malfunction and solution

Protection/Malfunction	LCD display	Involved functions	Remark
Water inlet(bottom) temperature sensor failure	PP 01	<ul style="list-style-type: none"> <li>● Compressor,electric heater,4-way-valve stop at once(no delay).</li> <li>● Fan tops in 10 seconds.</li> <li>● Circulation pump stops in 20 seconds</li> </ul>	Heat pump stop heating
		Anti-freezing protect function invalid	
		User water pump invalid	
Water inlet(top) temperature sensor failure	PP 02	Only show fault information	Heat pump work normally
Coil tube temperature (defrost)sensor failure	PP 03	<ul style="list-style-type: none"> <li>● Defrost function switch to timing defrost</li> <li>● Electronic expansion valve switch to manual operation</li> </ul>	Heat pump work normally
Compressor suction air temperature sensor failure	PP 04	Electronic expansion valve switch to manual operation	Heat pump work normally
Air outlet temperature sensor failure	PP 08	Only show fault information	Heat pump work normally
Air inlet temperature sensor failure	PP 05	Anti-freezing protect, condenser heater, compressor crank heater invalid,	Heat pump work normally
Compressor exhaust air temperature sensor failure	PP 09	<ul style="list-style-type: none"> <li>● Controlling of electronic expansion valve (for exhaust air ) canceled.</li> <li>● Compressor exhaust air protect canceled</li> </ul>	Heat pump work normally
Insufficient water flow protect	EE03		Heat pump stop heating
Communication failure	EE08		Heat pump work normally
High pressure protect	EE01		Heat pump stop heating
Low pressure protect	EE02		Heat pump stop heating
Over-heat protect	EE04	Electric heater can not work normally.	Heat pump work normally
Compressor exhaust air temperature too high	PP11		Heat pump stop heating
Anti-freezing protect	PP07		



### III. CONTROLLER INTRODUCTION

#### 4 Parameters

Factory default setting on controller : all parameters can only be adjusted under stand-by status.

SN.	Parameter	Setting range	Default	Remark
1.1	Target temp.	25°C~80°C	55°C	
1.2	Return differential	2°C~15°C	5°C	
1.3	Defrost circle	30Min~90Min	40Min	
1.4	Temp. to access defrost	-30°C~0°C	-7°C	
1.5	Temp. to exit defrost	2°C~30°C	13°C	
1.6	Defrost time	1Min~12Min	8Min	
1.7	Water in temp. max range	45°C~60°C	60°C	
1.8	Water in temp. min. range	20°C~35°C	30°C	
1.9	Disinfection temperature	50°C~70°C	70°C	
1.10	Disinfection time	0Min~90Min	30Min	
1.11	EEV working mode	0(manual)/1(Auto)	1(Auto)	
1.12	EEV target overheat temp.	-15°C~15°C	5°C	
1.13	EEV manual steps	100~500 steps	350steps	
1.14	Electric heater start delay time	2~7hours	2hours	
1.15	Efficiency Alarm time	5~9hours	5hours	
2.1	Water in(bottom) temp.	0°C~99°C		Tested data
2.2	Water out(top)temp.	0°C~99°C		Tested data
2.3	Coil temp.	-35°C~80°C		Tested data
2.5	Compressor suction air temp.	-35°C~80°C		Tested data
2.6	Air outlet temp.	-35°C~80°C		Tested data
2.7	Ambient(air inlet)temp.	-35°C~80°C		Tested data
2.8	Compressor exhaust air temp.	0°C~125°C		Tested data
2.9	EEV actual steps	100~500 steps		Tested data
3.1	Heat pump timer on (Monday)	00:00~23:59	12:00	
3.2	Heat pump timer off (Monday)	00:00~23:59	12:00	
3.3	Heat pump timer on ( Tuesday)	00:00~23:59	12:00	
3.4	Heat pump timer off(Tuesday)	00:00~23:59	12:00	
3.5	Heat pump timer on (Wednesday)	00:00~23:59	12:00	
3.6	Heat pump timer off(Wednesday)	00:00~23:59	12:00	
3.7	Heat pump timer on (Thursday)	00:00~23:59	12:00	
3.8	Heat pump timer off (Thursday)	00:00~23:59	12:00	
3.9	Heat pump timer on (Friday)	00:00~23:59	12:00	
3.10	Heat pump timer off (Friday )	00:00~23:59	12:00	
3.11	Heat pump timer on (Saturday)	00:00~23:59	12:00	
3.12	Heat pump timer off(Saturday)	00:00~23:59	12:00	
3.13	Heat pump timer on (Sunday)	00:00~23:59	12:00	
3.14	Heat pump timer off(Sunday)	00:00~23:59	12:00	
3.15	Water pump timer on (Monday)	00:00~23:59	12:00	
3.16	Water pump timer off(Monday)	00:00~23:59	12:00	
3.17	Water pump timer on (Tuesday)	00:00~23:59	12:00	
3.18	Water pump timer off(Tuesday)	00:00~23:59	12:00	
3.19	Water pump timer on (Wednesday)	00:00~23:59	12:00	
3.20	Water pump timer off(Wednesday)	00:00~23:59	12:00	
3.21	Water pump timer on (Thursday)	00:00~23:59	12:00	
3.22	Water pump timer off(Thursday)	00:00~23:59	12:00	
3.23	Water pump timer on (Friday)	00:00~23:59	12:00	
3.24	Water pump timer off(Friday)	00:00~23:59	12:00	
3.25	Water pump timer on (Saturday)	00:00~23:59	12:00	
3.26	Water pump timer off(Saturday)	00:00~23:59	12:00	
3.27	Water pump timer on (Sunday)	00:00~23:59	12:00	
3.28	Water pump timer off(Sunday)	00:00~23:59	12:00	
3.29	High temp. disinfection timer on(Date)	MON~SUN	MON	
3.30	High temp. disinfection timer on(clock)	00:00~23:59m	12:00	
3.31	Factory settings	0:YES 1:NO	0:YES	

### III. CONTROLLER INTRODUCTION

## 5 How to connect your heat pump to WIFI

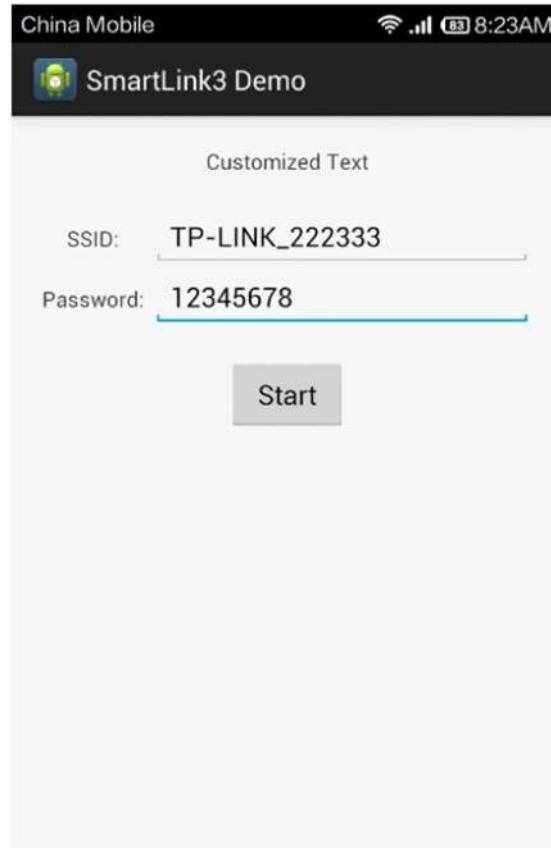
### 5.1 1# Method :( one key set-up)

5.1.1 To install the“SmartLink3 Demo”APP on your Android phone.

5.1.2 APP Interface showed as followed:

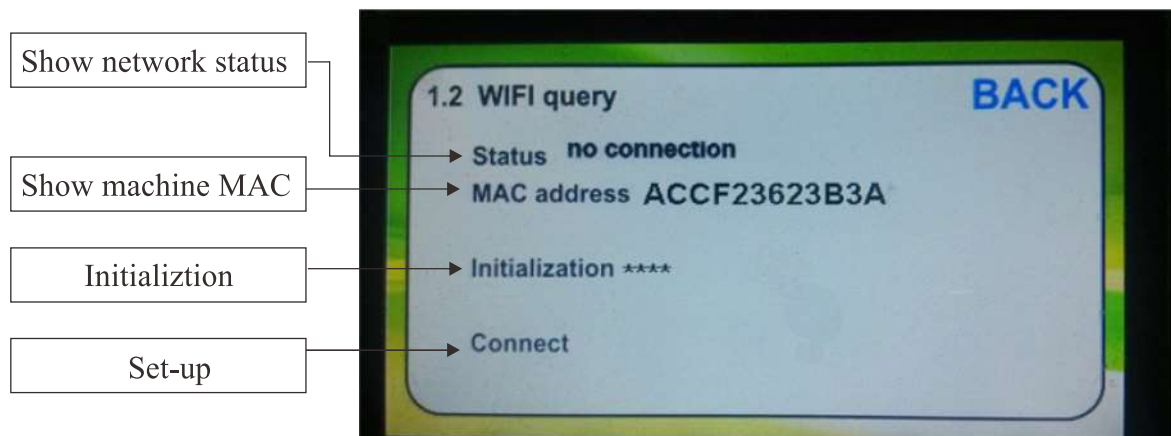
“SSID”: Input the available WIFI name,

“Password”: Input the WIFI password.



5.1.3 Turn on the heat pump machine, and ensure your mobile phone is well connected to WIFI, as during the set-up process, SSID address will be considered as default router SSID address connected by mobile.( Notice: during the set-up process, please pay attention to network that your mobile has connected, and ensure that heat pump machine is also in the same network ,otherwise set-up may fail.)

5.1.4 Click on LED display screen from controller 1.2 WIFI , click “Connect” showed in below picture:



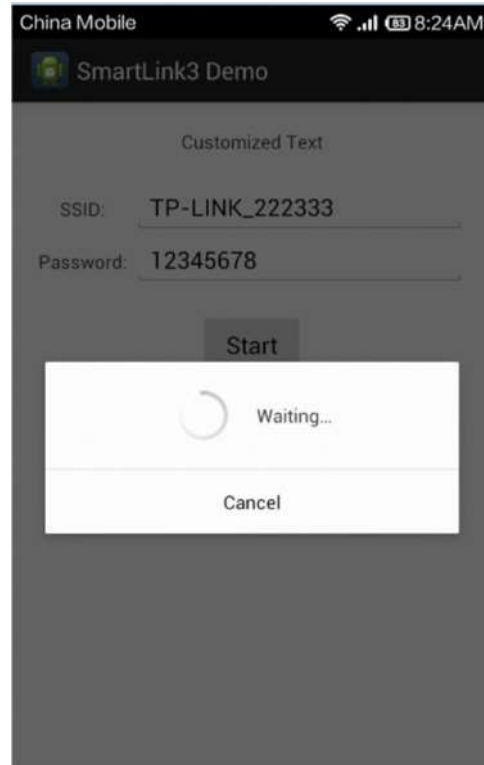
### III. CONTROLLER INTRODUCTION

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## 5 How to connect your heat pump to WIFI

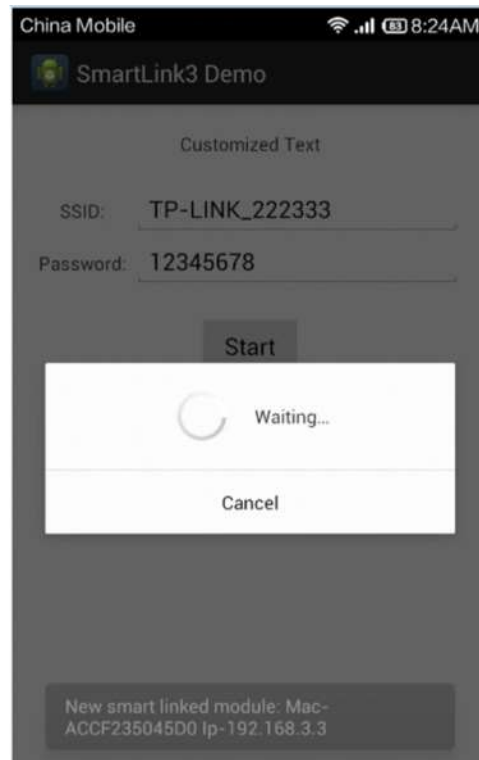
### 5.1 1<sup>#</sup> Method :( one key set-up)

5.1.5 After step 4, please fastly click “ Start” button on “SmartLink3 Demo” APP , after that, APP shows as followed. Please ensure your mobile phone is close enough to the wire controller in order to finish the set-up.



5.1.6 The complete set-up process takes about 1 minute, during the process, please do pay special attention to the screen, the indication of set-up completion will only pop up for a new seconds!

5.1.7 When the APP search your heat pump model, information will be showed as following picture, the set-up is not completed till you see on screen with “SmartLink completed”



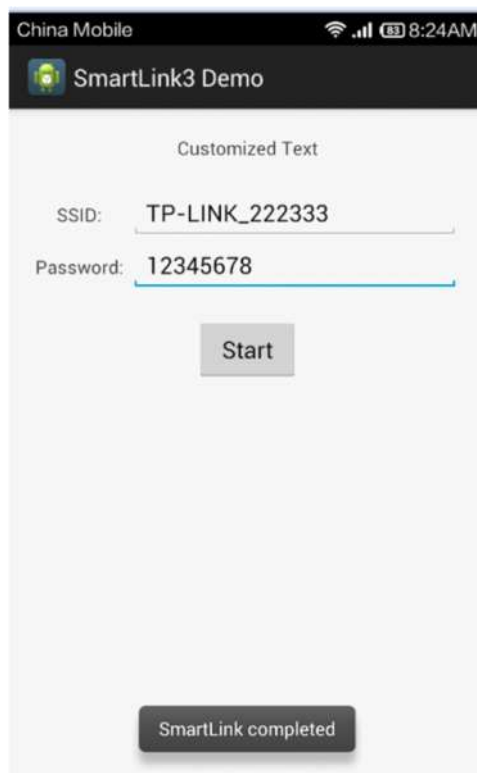
### III. CONTROLLER INTRODUCTION

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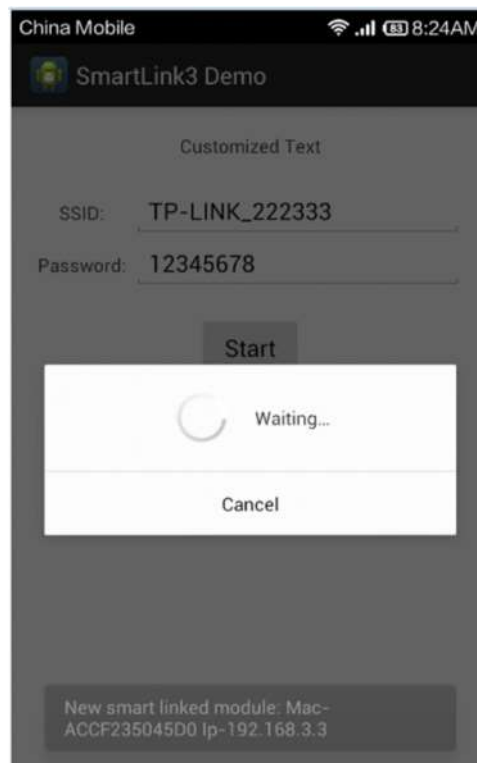
## 5 How to connect your heat pump to WIFI

### 5.1 1<sup>#</sup> Method :( one key set-up)

5.1.8 When the set-up succeeded, screen shows as follow with “SmartLink completed”.



5.1.9 If the set-up failed, you will see “ time out” display on the screen , showed as follow, in this case, you need to redo the operation of step 4 and step 5.



### Important notice:

**One key set-up may not succeed for the first time, if it does not completed, please try again for a few more times.**

### III.CONTROLLER INTRODUCTION

## 5 How to connect your heat pump to WIFI

### 5.2 2# Method

5.2.1 Without setting up the network connection, when the heat pump machine is on , a WIFI signal of “ HF-LPB100” will be available when you search from your mobile phone.

5.2.2 Use laptop or smart phone to find wifi “HF-LPB100”and connect it.

5.2.3 Open website of “10.10.100.254” , input user name and password as below.

User name: admin Password: admin

After that, you could find below interface.



5.2.4 Select work mode, change to STA mode. And then press Save. See below ref pic.



### III. CONTROLLER INTRODUCTION

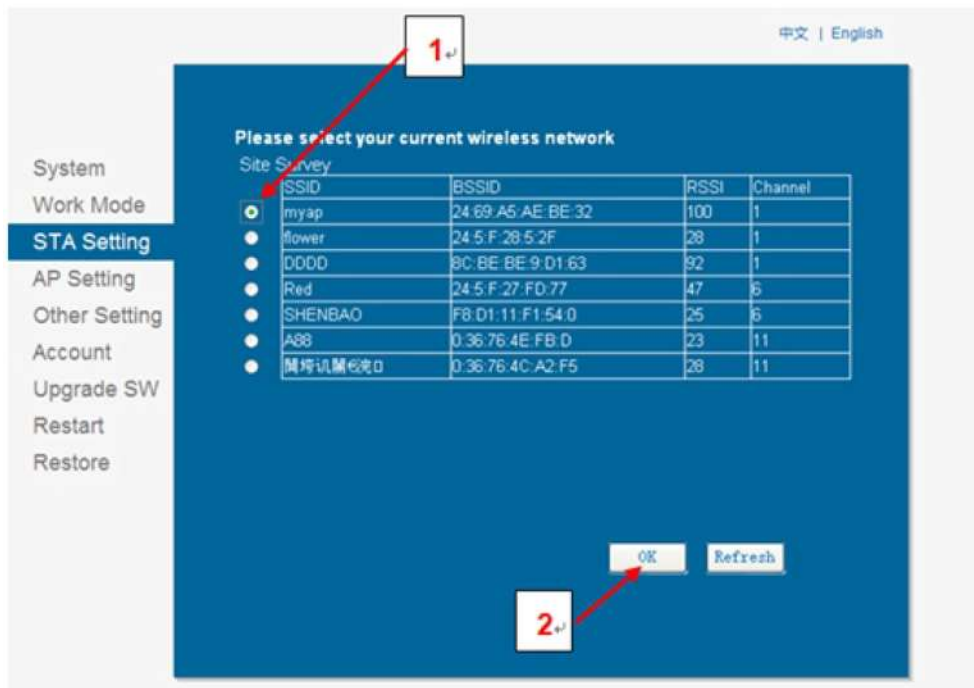
## 5 How to connect your heat pump to WIFI

### 5.2 2<sup>#</sup> Method

5.2.5 Then select STA setting, press Scan, then press Save. See below refer pic.



5.2.6 Please choose the safety and reliable local area network which available. Then press OK to Confirm.



### III. CONTROLLER INTRODUCTION

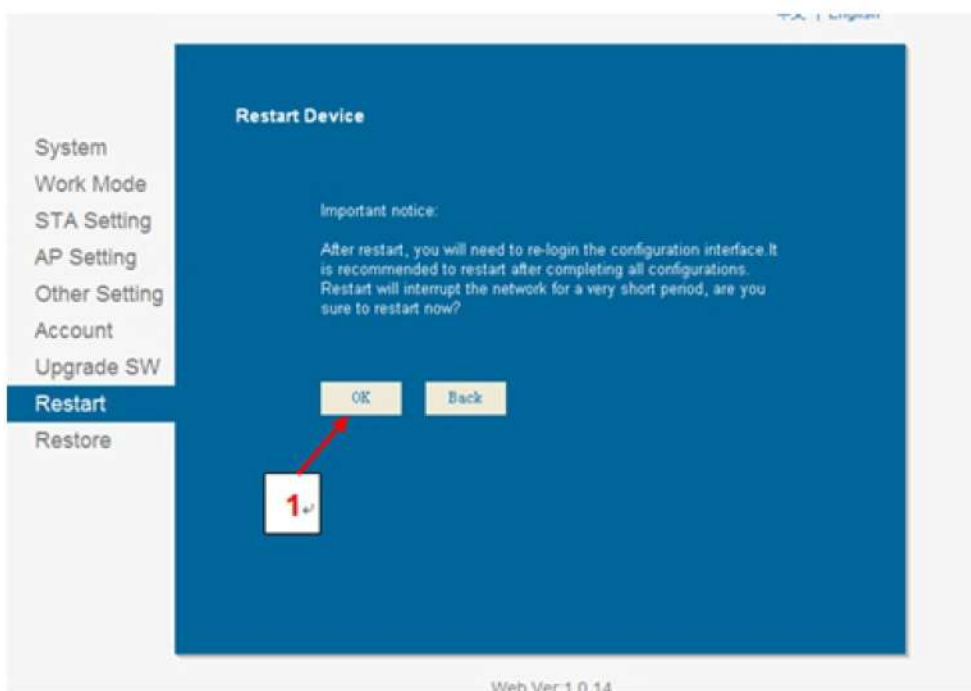
## 5 How to connect your heat pump to WIFI

### 5.2 2<sup>#</sup> Method

5.2.7 Make sure the Encryption Method choose **WPA2PSK**, and Encryption Algorithm choose **AES**. Input the **password** of your local area network. Then press **Save**.



5.2.8 After finished all above steps, come to Restart interface, and press OK to confirm RESTART. See below pic.





### **III.CONTROLLER INTRODUCTION**

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#### **5 How to connect your heat pump to WIFI**

##### **5.2 2# Method**

- 5.2.9 a. If you have linked/set up your heat pump to internet ,and want to reset , but the setting on “SmartLink3 Demo” failed, You can access to 1.2 WIFI query and press “Initialization”, input password “8912”, reinitialize the set up process ,as to make sure the WIFI signal appear again.
- b. When your internet connection disconnected during your setup by the 2nd method , you can also access to 1.2 WIFI query and press “Initialization”, input password “8912”, reinitialize the set up process ,as to make sure the WIFI signal appear again.

##### **5.3 Important Notice:**

- 5.3.1 Make sure the heat pump installation side covered with WIFI internet signal.
- 5.3.2 Each step during the set-up process needs to press “confirm” to continue. After the set-up finished, you don't need to set up again even heat pump is restart, unless the router address has changed, then you need to re-set up again.

##### **5.4 Fast Inquiry**

- 5.4.1 After WIFI set-up finished, you may access to following website <http://app.xlink.cn:9001/query.html> ,and input MAC code and heat pump barcode number to query /check the heat pump status or to change parameter settings.
- 5.4.2 MAC code and heat pump barcode can be found on heat pump (normally it shall be on back side of wire controller, if you cannot find it, please contact us )
- 5.4.3 All the heat pump data will be uploaded every minute .
- 5.4.4 Each parameter amendment on website require to press “push” and “ confirm” to proceed.

##### **Fast Enquiry QR code**



##### **Dealer website QR code:**



Fast Enquiry can only access to one unit.

Dealer website can access to all units belong to the same dealer.



## IV.INSTALLATION INSTRUCTION

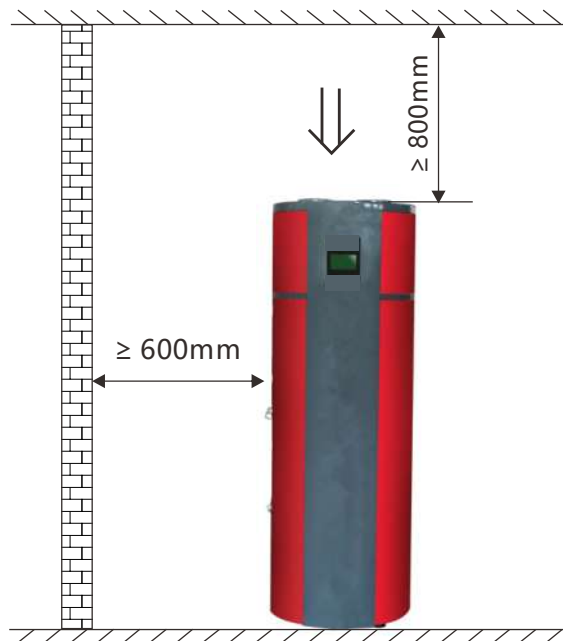
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### Please pay attention to following information before installation

- 1). Applied working temp of heat pump -7 ~ 43°C
- 2). Check whether the power supply and wire meet the standard of the unit.
- 3). Do not alter the power wiring or socket. Do not change the GND connection of the system.
- 4). Do not insert hands or object into the vent of heat pump, it may cause dangerous or damaged.
- 5). Ensure that water tank is full filled with water before turn the heat pump on.
- 6). The Maximum temp of outlet water can up to 60 °C, strongly recommend to mix up some water when using water.
- 7). Heat pump should be checked and maintained once a time every year by a qualified technical people. And all power should be disconnected when servicing.
- 8). The magnesium stick should be replaced 1 or 1.5 year according to the water quality.
- 9). Please provide serial No. on the nameplate, when asking for after- sale service.

### Installation Instruction

- 1). The air inlet and outlet should be free from obstacles and strong wind.
- 2). The bearing surface should be flat, able to bear weight of the unit and suitable for installing the unit vertically without increasing noise or vibration.
- 3). No flammable gas is leaked nearby.
- 4). It is convenient for piping and wiring.
- 5). This heat pump unit can be installed at Garden, Garage , Balcony or other place, but make sure there is enough space for proper installation and maintenance. Find Reference installation pic in below.



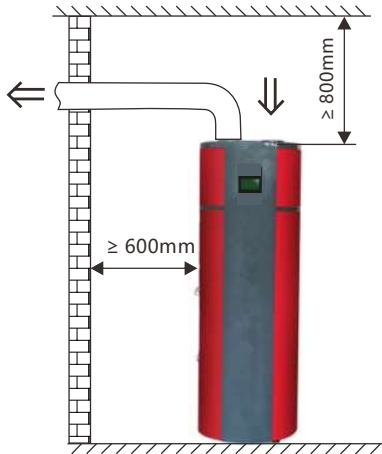
## IV. INSTALLATION INSTRUCTION

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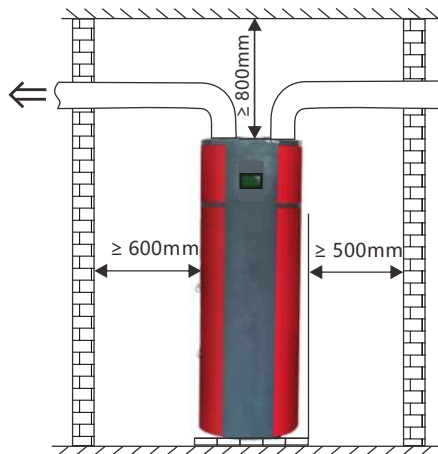
6). The air inlet and outlet are at the top side, main unit should not place at an open air.

Avoid the rain to enter the vents.

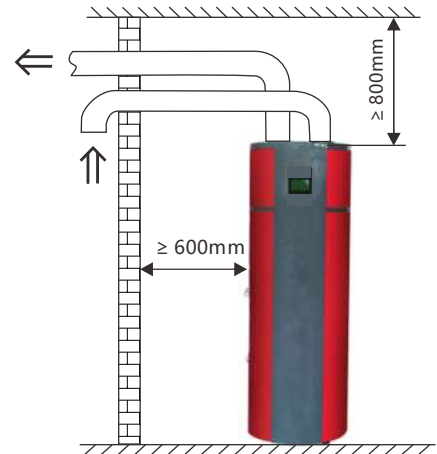
The air inlet and outlet can connect the  $\phi 150$  air duct for air ventilation, see below pic.



(Fig.1)



(Fig.2)



(Fig.3)

## V. TRIAL RUNNING

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### Trial Running

- 1). Check if the heat pump is placed in a well ventilated and installed in a dry place.
- 2). Check if the water tank is full of water, and open the water outlet tap till water flows out.
- 3). Make sure the water pressure is normal (0.1Mpa ~0.7 Mpa).
- 4). Check the power supply is normal or not, (voltage range 220v +-10 %)
- 5). Check if all the equipped parts are well secured and well connected.
- 6). A suitable circuit breaker must be connected.
- 7). Check whether the condensation and drain pipe are connected well.
- 8). After power is switched on, check if the LCD controller displays normally.

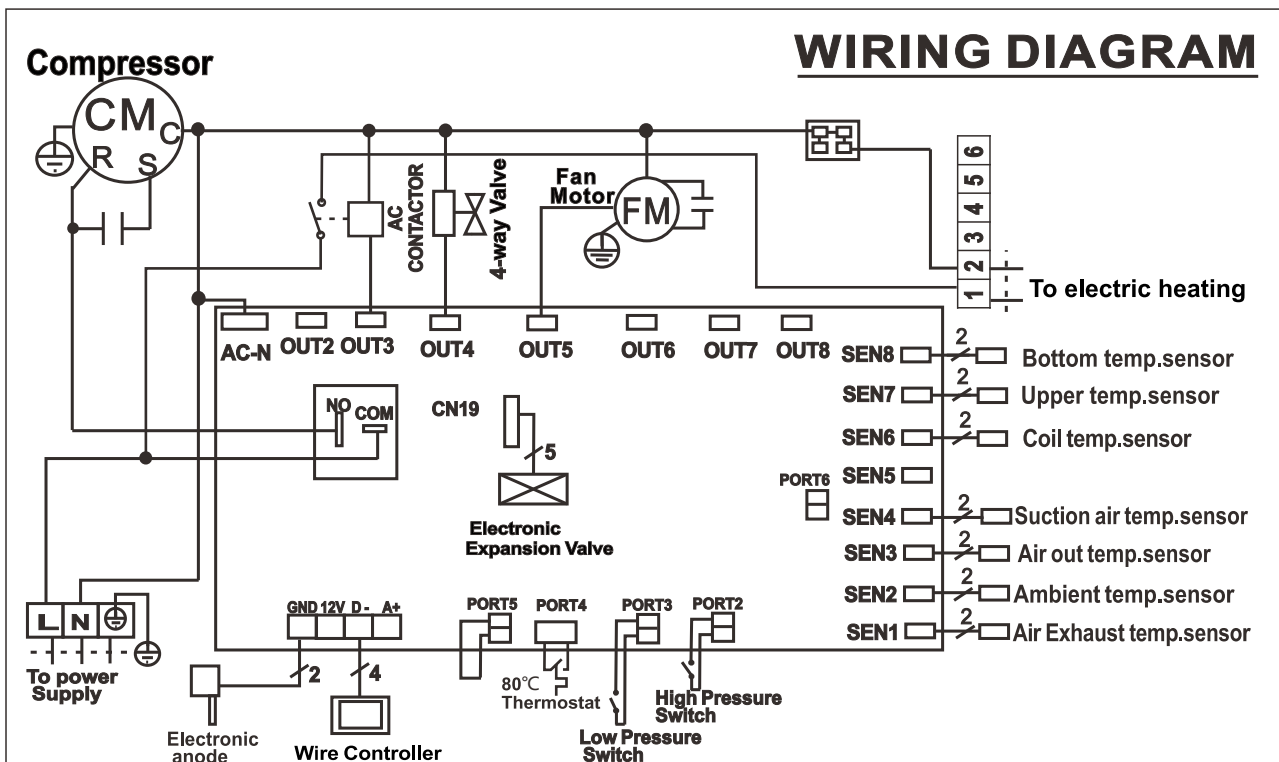
## VI.MAINTENANCE

### Maintenance

Heat pump water heater is a high automatic equipment, please perform regular inspection termly. If the unit can be long-term and efficiently maintenance, the operating reliability and service life will have an unexpected increase.

- 1).The extra water filters should be cleaned regularly to ensure clean water quality of the system, and to avoid damage caused by dirty water filter blocking.
- 2).Frequently check the power supply and electrical wiring system is solid or not, whether electrical components are abnormally working, if yes, should timely maintenance and change for a new one.
- 3).Perform regular checks of the water supply system, check whether the tank safety valve, liquid level controller and exhaust devices work properly, so as to avoid air into the system , and reduce the water cycle volume, thus affect the heating function and operation reliability.
- 4).Check whether pumps and water valves are normal working or not, whether water tubing and water pipes connector are leakage or not.
- 5).The unit and around should remain clean , well-ventilated. To maintain a good effect of heat exchange, DON'T put things around the unit.
- 6).If the unit stops for a longer time, should drain all the water in the pipeline, cut off power supply, and sets the protective equipment. When re-run the unit, complete inspection is a must before reboot.
- 7).Water tanks need to remove the Water scale after some time (normally two months, according to the water quality of local place). It can clean the scale by the drain hole.

## VII. Wiring diagram





CE