inverter monobloc
air to water heat pump

User Manual

CE

Before operating this product, please read the instructions carefully and save this manual for future use.

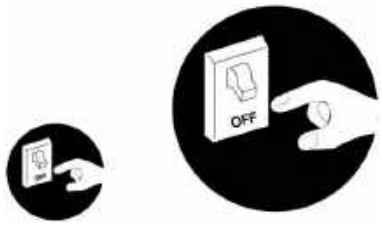
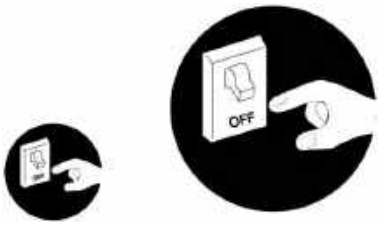
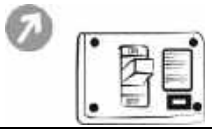
1 Safety precautions

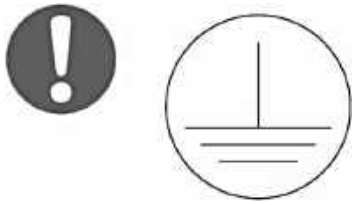
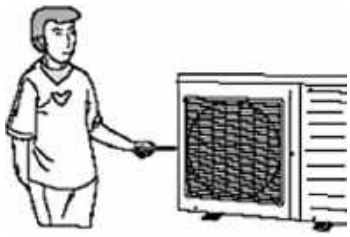
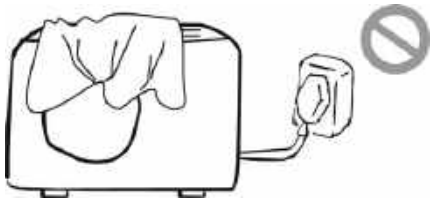
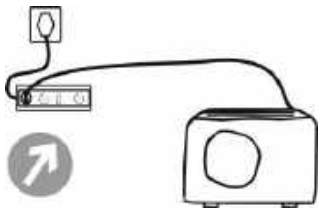
IMPORTANT

If heat pump is not running in the winter, it is necessary to keep power supply connected for Anti-freeze protection. In cold weather (≤ 0°C), if heat pump is no longer needed, do drain out all the water inside the system.

1.1 Safety precautions

- warning **- suggestion** **- prohibition**

Once abnormality like burning smell occurs, please cut off the power supply immediately and then contact with service center.  If the abnormality still exists, the unit may be damaged and electric shock or fire may result.	Be sure to pull out the power plug and drain the indoor unit and water tank when unit is not in use for a long time.  Otherwise, the accumulated dust may cause overheating fire or freeze of water tank or coaxial heat exchanger in winter.	Special circuit must be adopted for power supply to prevent fire.  Do not use octopus multipurpose plug or mobile terminal board for wire connection.
Before installation, please see if the voltage of local place accords with that on nameplate of unit and capacity of power supply, power cord or socket is suitable for input power of this unit. 	Don't operate the unit with wet hand.  Otherwise, it may cause electric shock.	Never damage the electric wire or use the one which is not specified.  Otherwise, it may cause Overheating or fire.
Before cleaning please cut off the power supply. Otherwise, it may cause electric shock or damage.  	The power supply must adopt special circuit with leakage switch and enough capacity. It is mandatory to use a suitable circuit-breaker for the heat pump and make sure the power supply to the heater corresponds to the specifications. Otherwise the unit might be damaged. 	User can not change power cord socket without prior consent. Wiring working must be done by professionals. Ensure good earthing and don't change earthing mode of unit.

Earthing: the unit must be earthed reliably ! The earthing wire should connect with special device of buildings.  If not, please ask the qualified personnel to install. Furthermore, don't connect earth wire to gas pipe, water pipe, drainage pipe or any other improper places which professional does not recognize.	Never insert any foreign matter into unit to avoid damage . And never insert your hands into the air outlet of unit. 	Don't attempt to repair the unit by yourself.  Improper repair may cause electric shock or fire, so you should contact the service center to repair.
Don't step on the top of the unit or place anything on it.  There is the danger of fall of things or people.	Never block the air inlet and outlet of unit.  It may reduce efficiency or cause stop of the unit and even fire.	Keep pressurized spray ,gas holder and so on away from the unit above 1m . It may cause fire or explosion. 
Please note whether the installation stand is firm enough or not.  If damaged, it may cause fall of the unit and injury of people.	Make sure to use a dedicated power line for the heat pump only. Do not add other appliances to the line. 	Make sure no water or other liquid drips into the electric box of the unit Otherwise the unit might be damaged. 

2. System and Main Components

2.1 refrigerant system

The refrigerant system consists of 5 main components:DC inverter type compressor, 4-way-valve, heat exchanger (condenser, refrigerant to water), electronic expansion valve, evaporator(air to refrigerant).

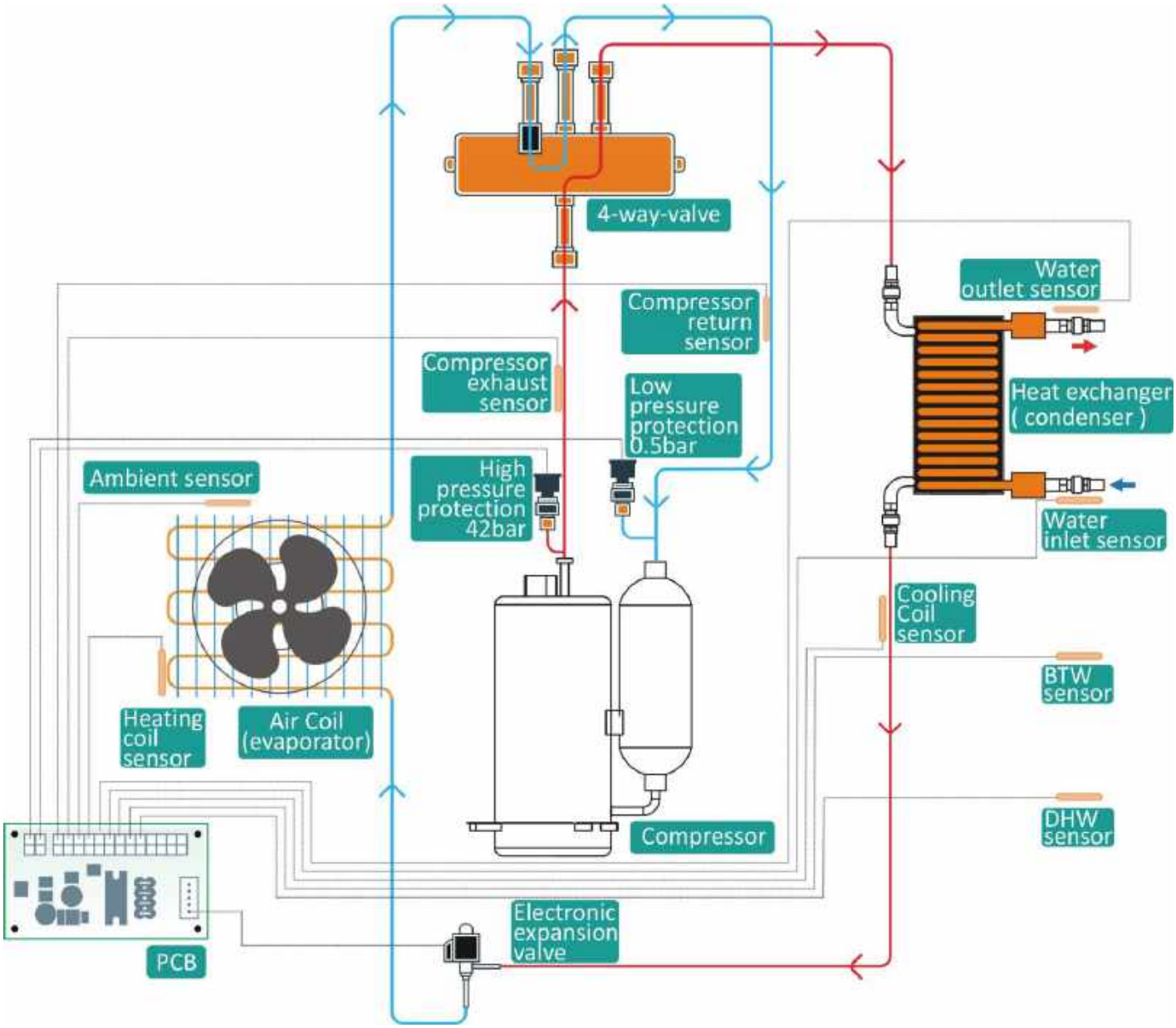
Heat pump can absorb the heating from air source. This makes the heat pump a very environmentally friendly and economically sound alternative for space heating.

* evaporator (air coil): low temperature, low pressure refrigerant go through evaporator to boil and turn from liquid to gas.
* compressor: compressor absorb refrigerant in gas status, and compress to high temperature, high pressure status.
* condenser (heat exchanger): refrigerant release heat energy to heat exchanger. refrigerant temperature reduce, and it return from gas to liquid status.

The heat energy is absorbed by water, circulated by a circulation pump to TANK or HOUSE HEAT systems.

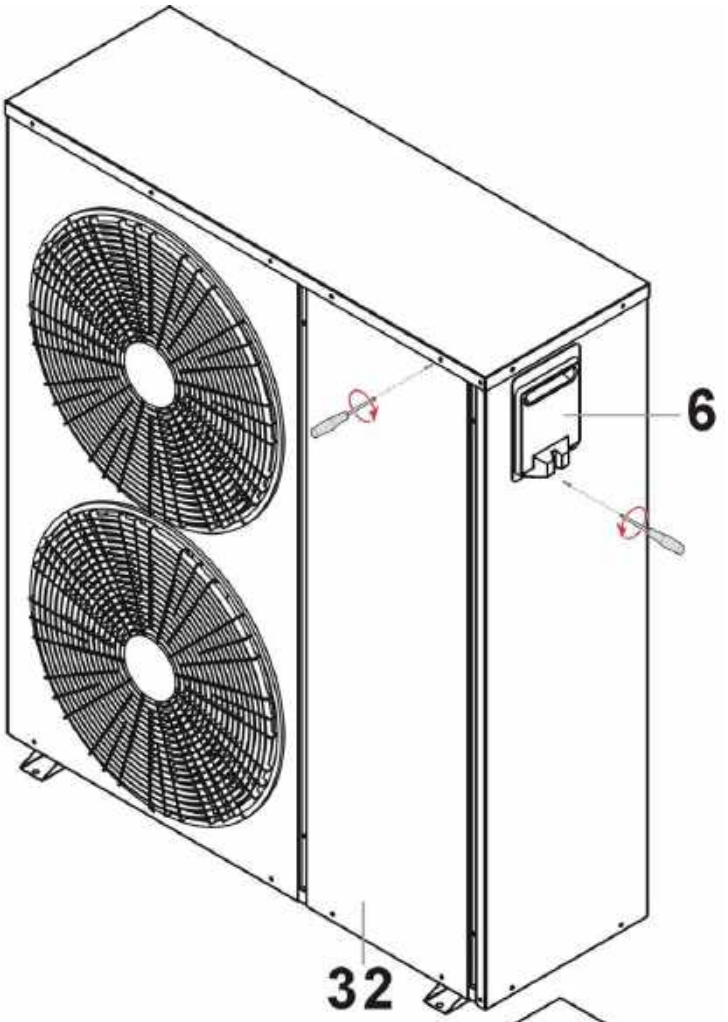
* EEV: refrigerant go through the electronic expansion valve, where its pressure is reduced.

Refrigerant system install 1 high pressure switch (42bar), 1 low pressure switch (0.5bar).

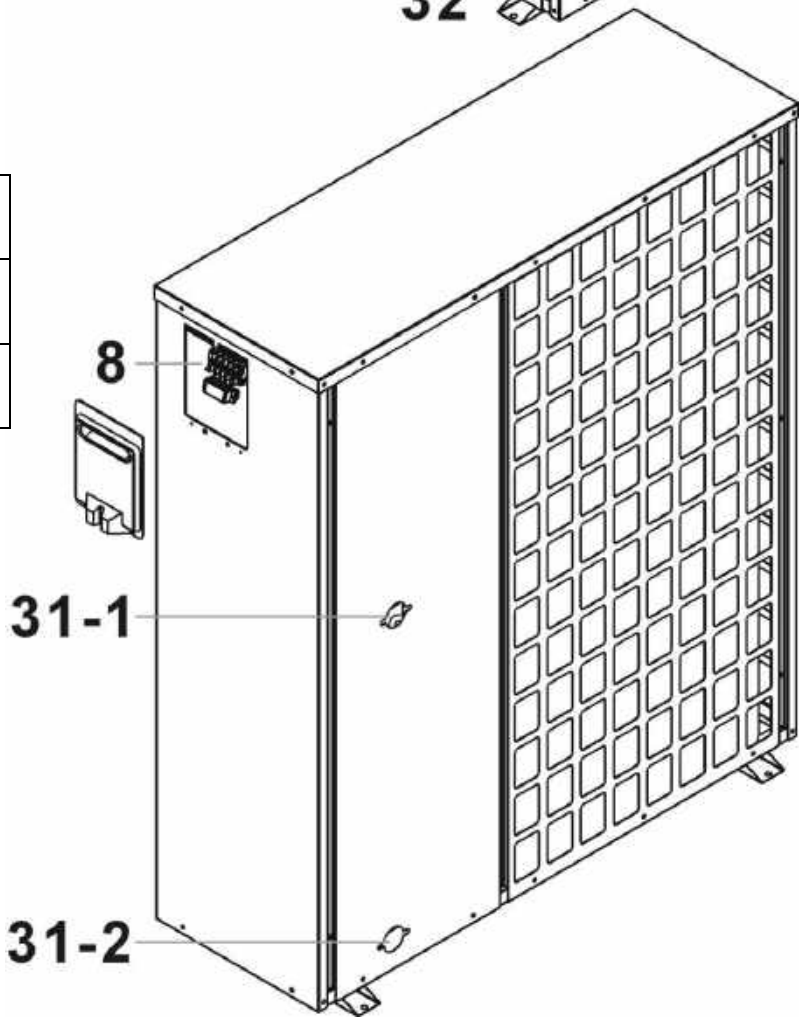


2.2 Part location

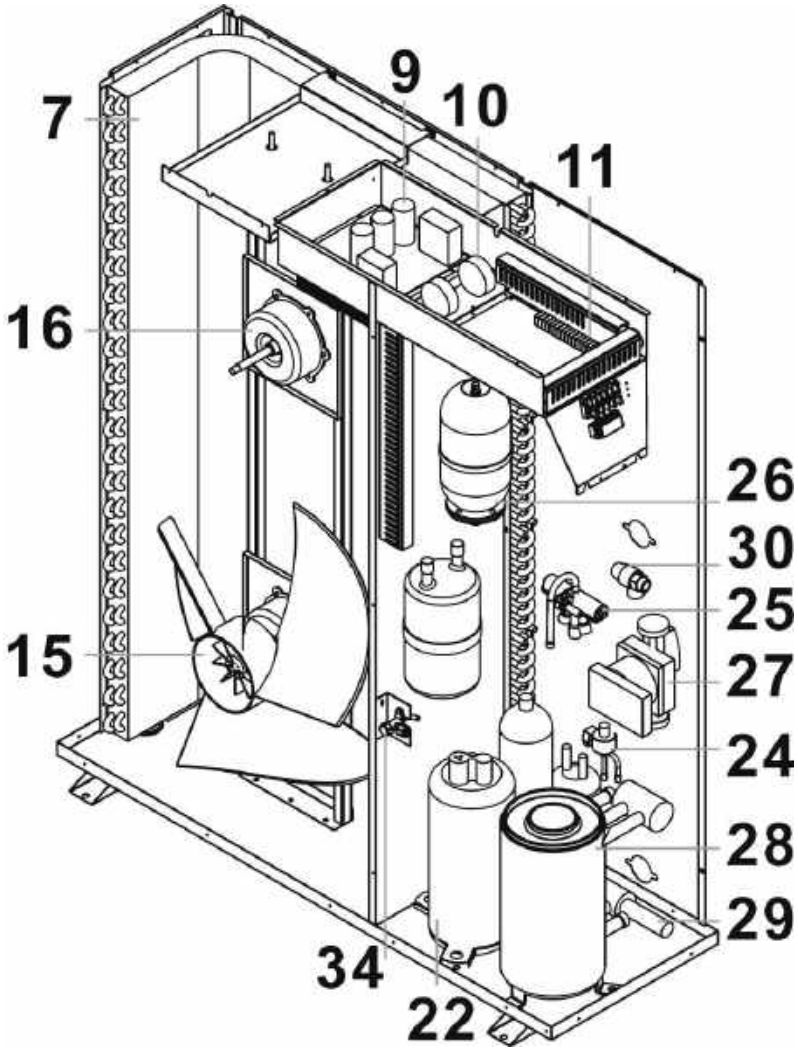
32	Service panel
6	handle



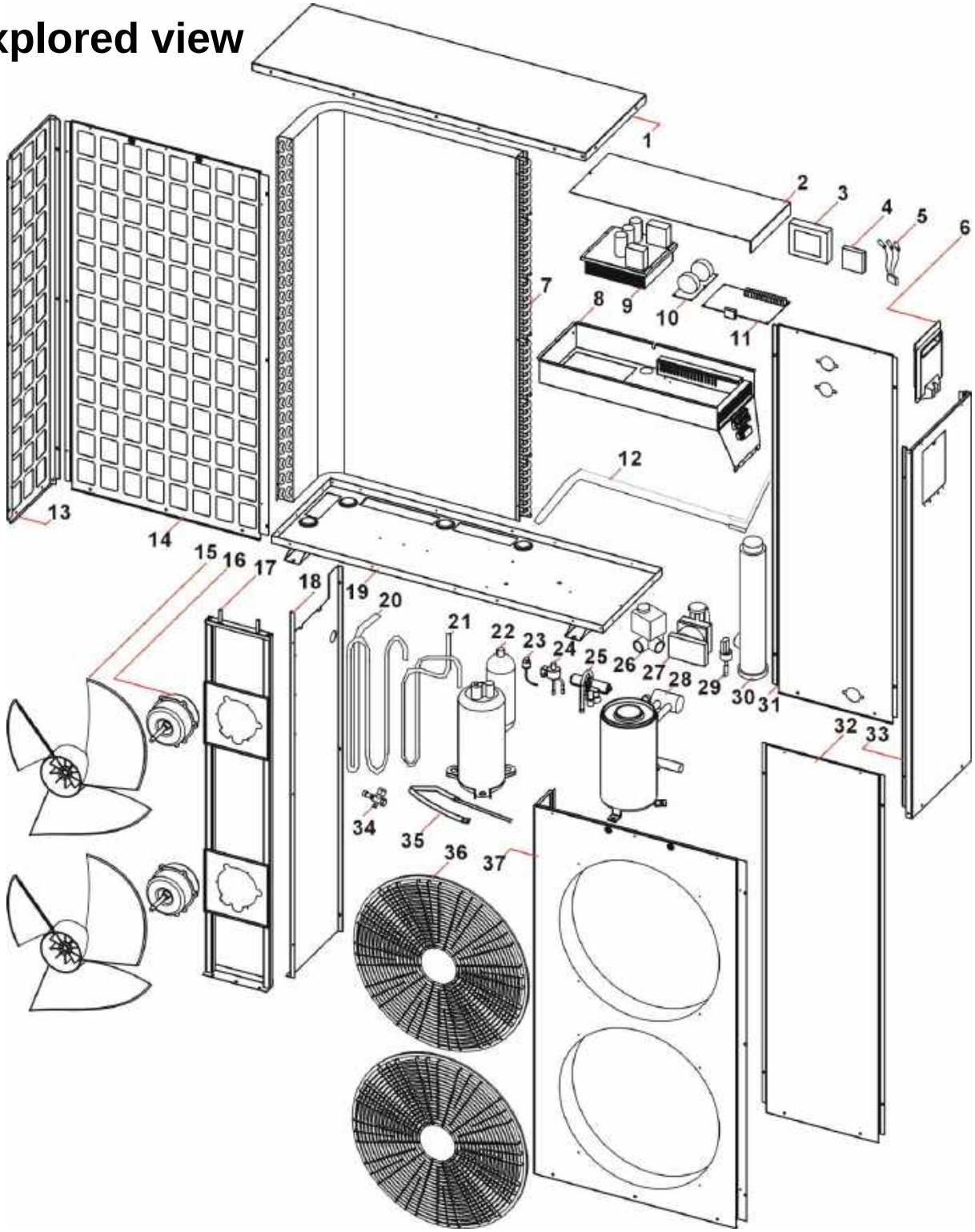
8	Terminal for Power cable, water sensor
31-1	Hot water outlet G1-1/4” male
31-2	Cold water inlet G1-1/4” male



7	Evaporator
16	Motor
15	Fan
34	Service valve for vacuum, filling R32
22	Compressor
29	Water-flow-switch
28	Heat-exchanger
24	Electronic expansion valve (EEV)
27	Water pump
25	4-way-valve
30	3 bar pressure release valve
26	2L expansion vessel
11	Function PCB
10	Filtering PCB
9	IPM PCB



2.3 Explored view



1	Top panel		14	Back net		27	Water pump
2	Cover of electrical box		15	fan		28	Shell-tube heat exchanger
3	Wire controller		16	motor		29	Water-flow-switch
4	WIFI box		17	Motor bracket		30	3 bar pressure release valve
5	Sensor		18	Middle panel		31	Back panel
6	handle		19	Base panel		32	Service panel
7	evaporator		20	Copper return pipe		33	Right panel
8	Electronic control box		21	Copper exhaust pipe		34	Service valve
9	IPM PCB		22	High/Low pressure protection		35	Compressor heater
10	Filtering PCB		23	compressor		36	Fan front net
11	Function PCB		24	Electronic expansion valve		37	Front panel
12	Evaporator heater		25	4-way-valve			
13	Left net		26	2L Expansion vessel			

2.4 main components

compressor

Shell tube heat exchanger

evaporator

Pressure protection

Electronic expansion valve

4-way-valve

Fan blade

Motor

sensor

Driver PCB

Filtering PCB

Function PCB

Wire controller

WIFI box

Water pump

Water flow switch

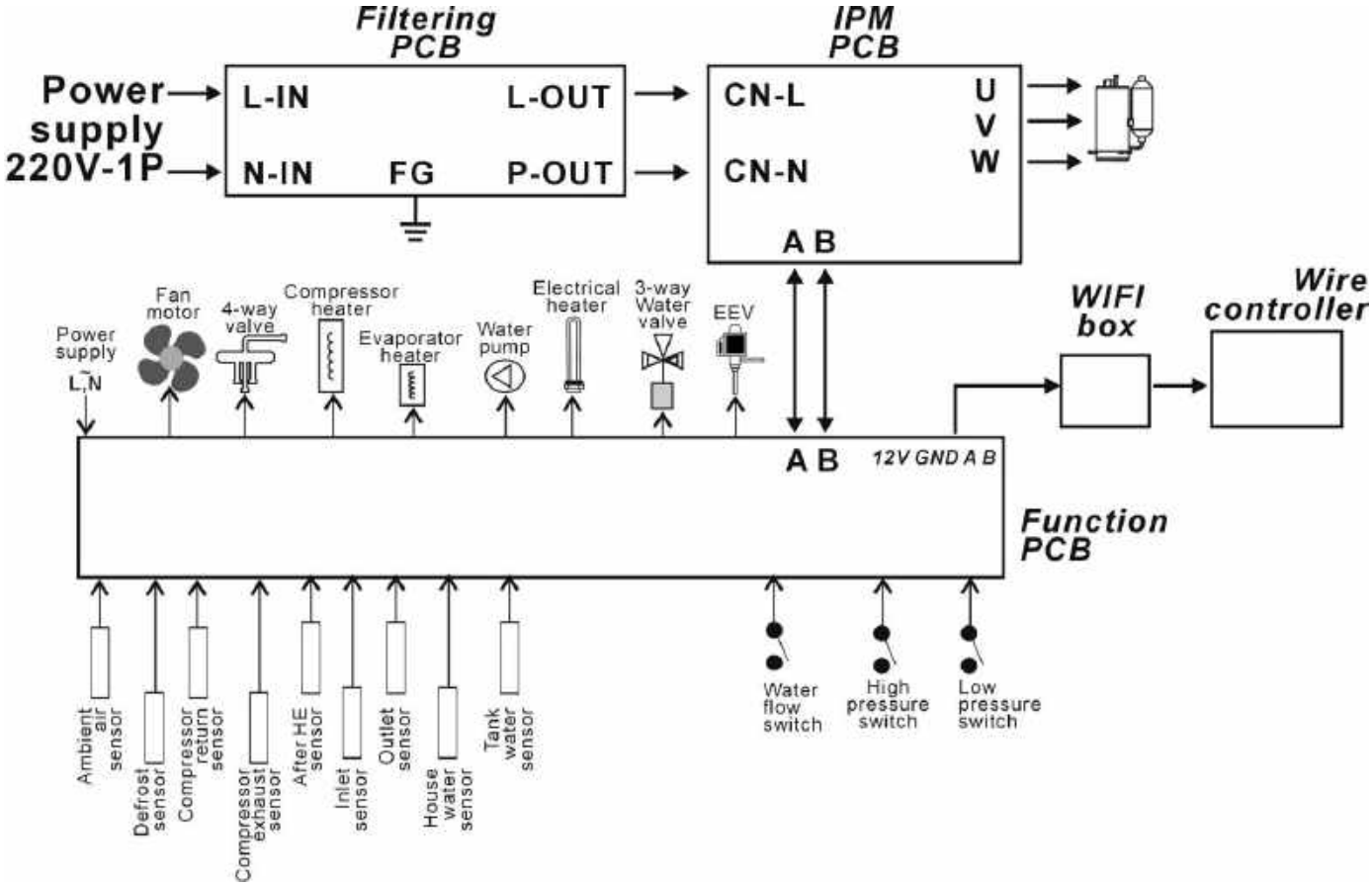
Compressor heater

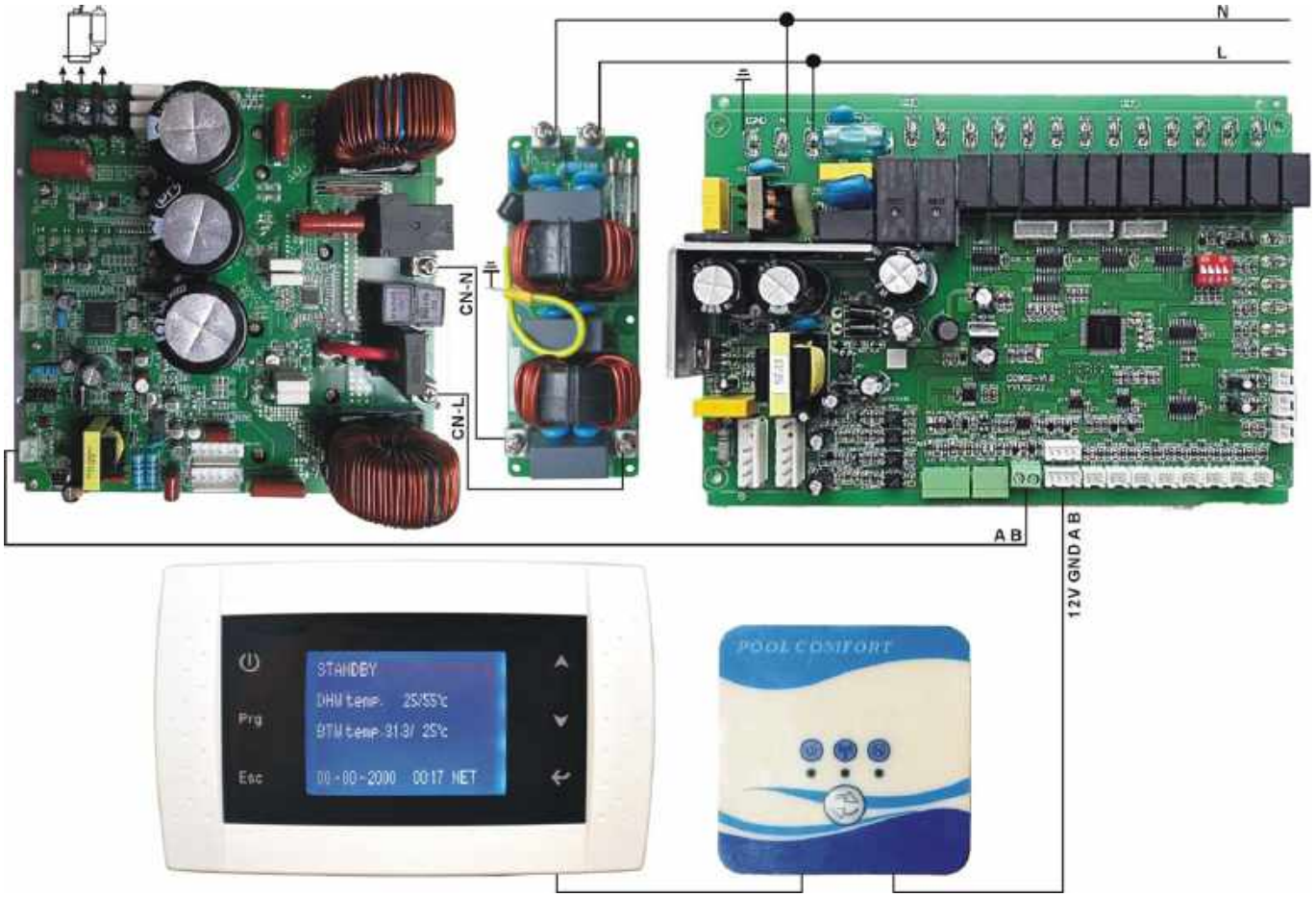
Evaporator bottom heater

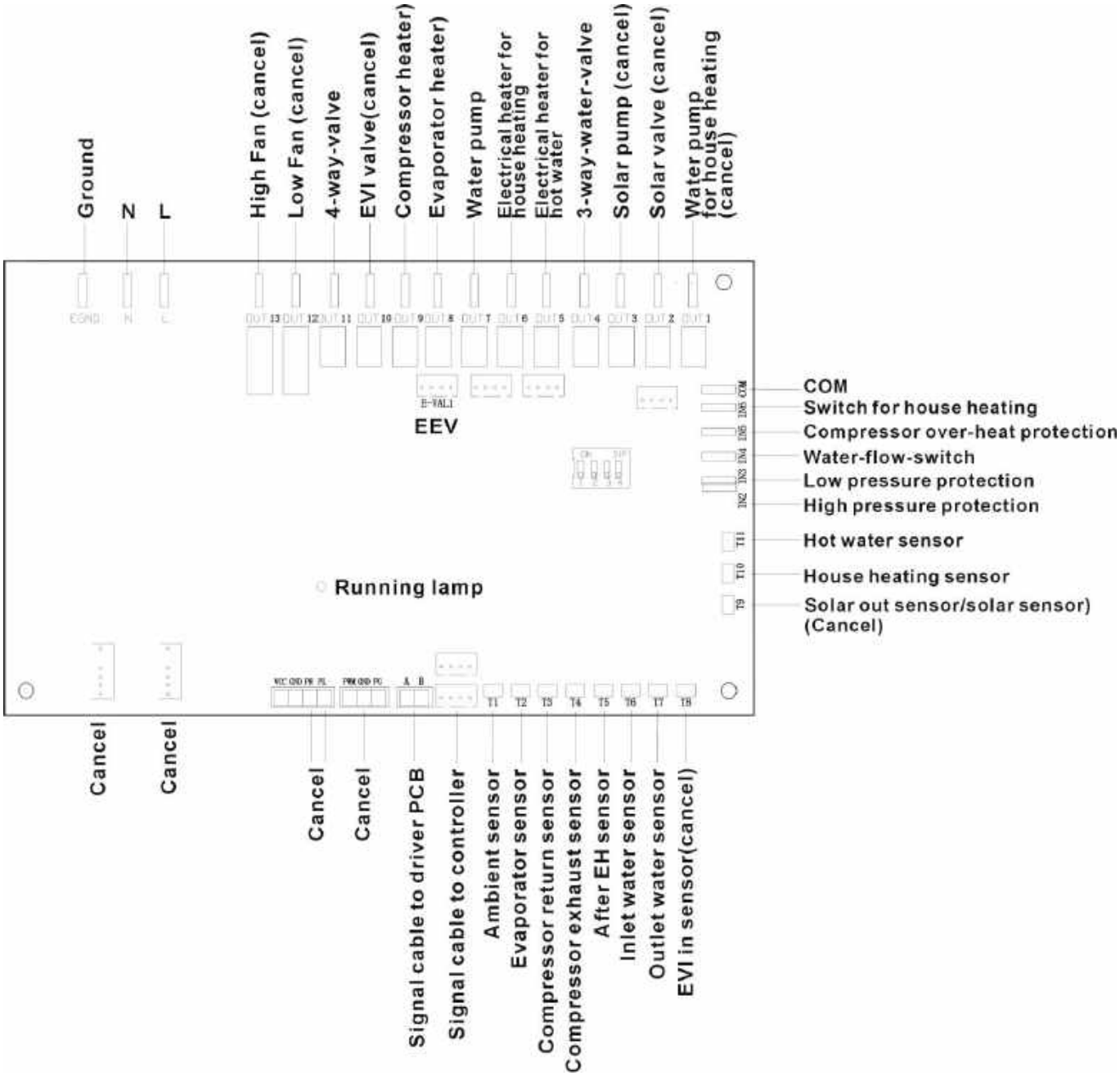
Electrical heater and holder

3-way-water-valve

2.5 principle of Circuit board

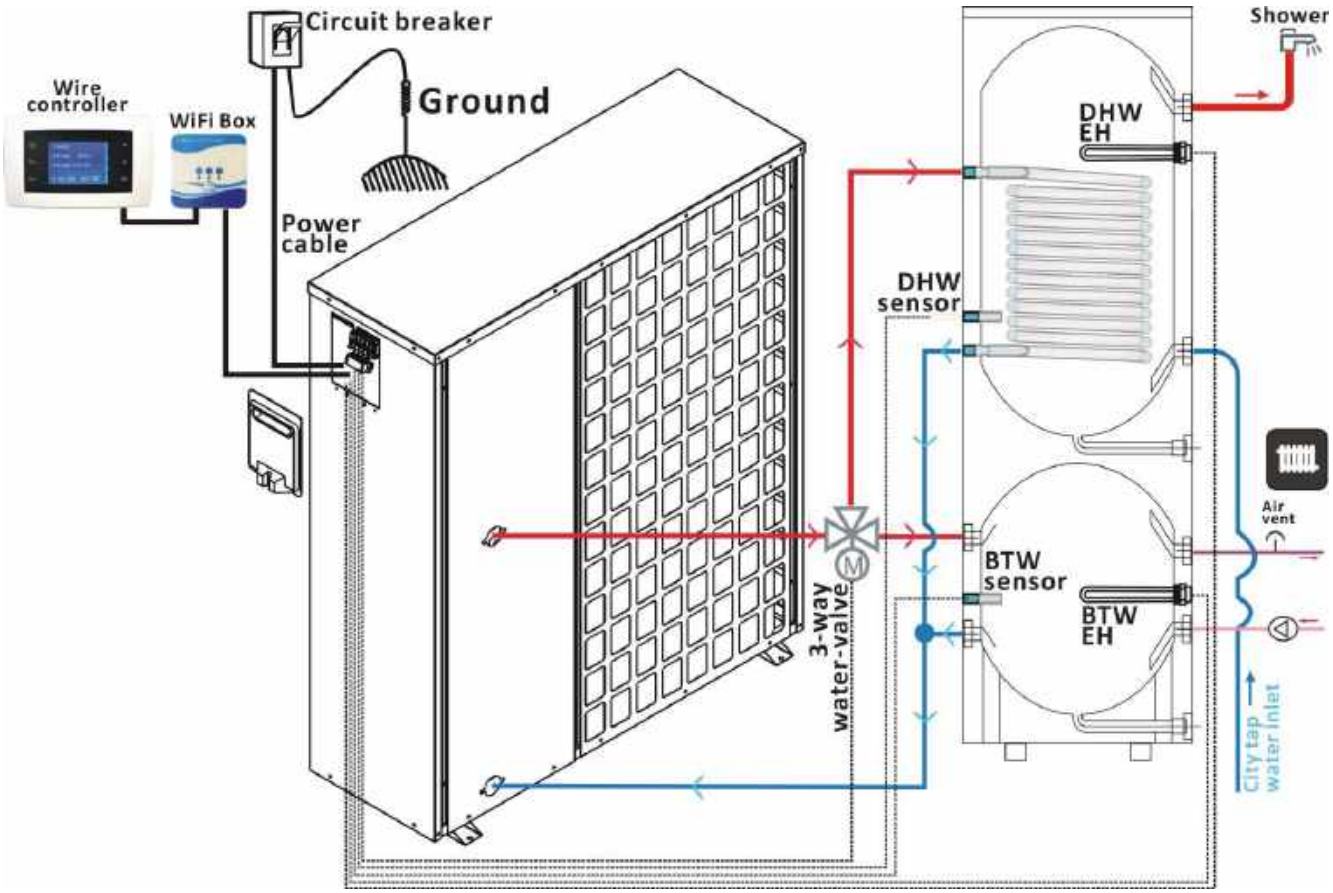





Ground
N
L
High Fan (cancel)
Low Fan (cancel)
4-way-valve
EVI valve(cancel)
Compressor heater)
Evaporator heater)
Water pump
Electrical heater for house heating
Electrical heater for hot water
3-way-water-valve
Solar pump (cancel)
Solar valve (cancel)
Water pump for house heating (cancel)
EEV
COM
Switch for house heating
Compressor over-heat protection
Water-flow-switch
Low pressure protection
High pressure protection
Hot water sensor
House heating sensor
Solar out sensor/solar sensor) (Cancel)
Running lamp
Cancel
Cancel
Cancel
Cancel
Signal cable to driver PCB
Signal cable to controller
Ambient sensor
Evaporator sensor
Compressor return sensor
Compressor exhaust sensor
After EH sensor
Inlet water sensor
Outlet water sensor
EVI in sensor(cancel)

3. Installation

3.1 installation plan



3.2 Installation Heat Pump Unit

3.2.1 Select the Installation Place of Unit

* The unit should be installed on a solid wall and fastened securely.

* The unit should be installed close to the house, on a terrace, on the facade or in a garden. They are designed to operate in the rain but can also be installed under cover as long as there is sufficient ventilation. There should be no obstacles to hinder the free circulation of air to the exchanger inlet and outlet (see installation diagrams below).

* The emplacement of the unit should be carefully chosen and protected from prevailing winds in order for it to be compatible with environmental requirements: integration into the site, noise level.

* We particularly recommend:

• Not placing the unit close to sleeping areas

• Not placing it opposite a glazed wall

• Avoiding proximity to a terrace

* Moreover, we recommend positioning the unit above the average depth of snowfall in the region in which it is installed.

* It is necessary to provide clearance all around the appliance to carry out connection, commissioning and maintenance operations.

* The following procedure must be observed before connecting the pipes or electric cables.

1) decide which is the best position on the wall and leave enough space to be able to carry out maintenance easily.

2) fasten the unit support to the wall using screw anchors which are particularly suited to that type of wall.

3) use a larger quantity of screw anchors than normally required for the weight they have to bear: during operation the machine vibrates and has to remain fastened in the same position for years without the screws becoming loose.

4) mount the unit on the support using the four bolts supplied.

* Please install the drain connector to the unit when necessary. In some cold areas (temperature below 0), please don't use the drain connector, otherwise it may clogged by ice.

3.3 Hydraulic connection

Pipe installation must be carried out in accordance with current norms and directives. Heat pump can operate with a return temperature of up to 50°C and and outgoing temperature from the unit of 55°C.

Heat pump is not equipped with shut off valves ; these must be installed outside the heat pump to facilitate any future servicing.

Heat pump can be connected to the radiator system, floor heating system and/or fan coil units.

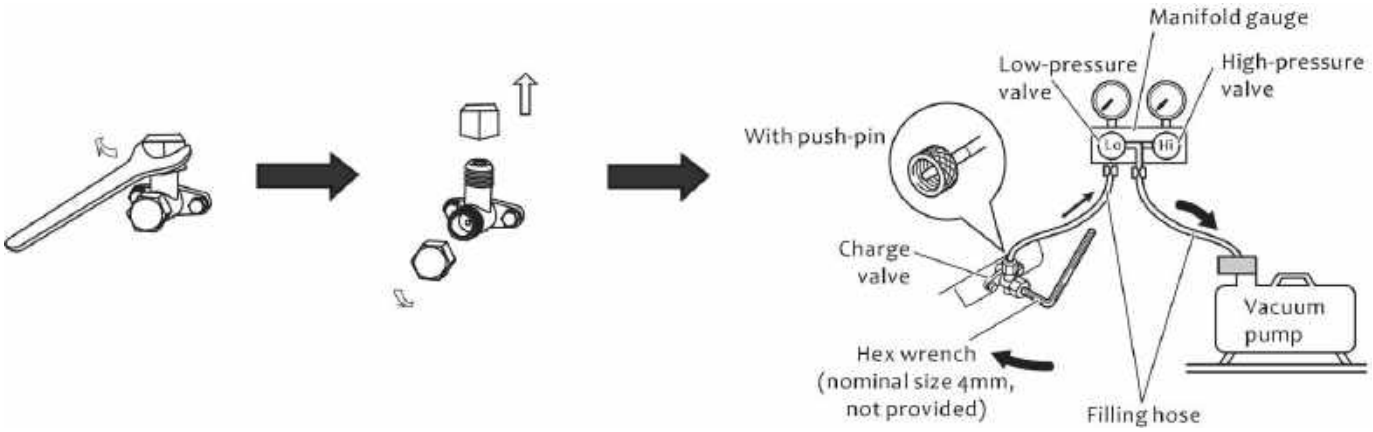
Install the safety valve and manometer.

Heat Pump Unit is equipped with water pump, water-flow-switch, water-valve, electrical heater backup, compressor, heat exchanger.

Note : take care of water freeze when ambient temperature is low than 3’c.

3.4 Vacuum

A vacuum pump and maniflod gauge are needed.

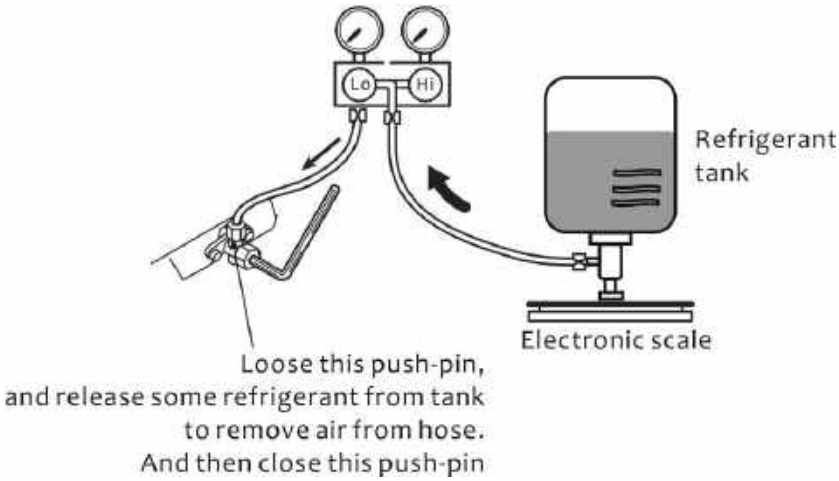


Remove the copper nut. Connect the pressure gauge to the vacuum pump.Vacuum heat pump at least 15 minutes till negative value shown on the pressure gauge, and close the charge valve.

3.5 Filling refrigerant

Refrigerant is very stable and should not degrade or break down even under severe operating conditions. If the unit has a leak in the sealed refrigeration system, please locate the leakage and repaired before charge refrigerant.

WARNING refrigerant charging must be performed by qualified person.



Loose the push-pin, and release some refrigerant from tank to remove air from hose. And then close push-pin.

Open the charge valve by hex wrench, fill refrigerant into heat pump. And close the charge valve when fill enough refrigerant into heat pump.

4 Wire controller

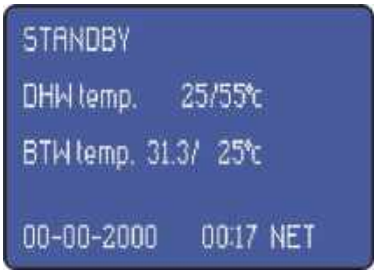
4.1 description of wire controller

ON/OFF button: hold 2s to ON/OFF unit	
menu button :	1) press to menu 2) Hold 5s to manual disinfection
return button :	1) press to previous menu 2) Hold 5s to force defrost
UP button :	1) change parameter 2) page up
DOWN button :	1) change parameter 2) page down
confirm button :	1) enter next menu 2) enter parameter modification 3) Hold 5s to lock/unlock key

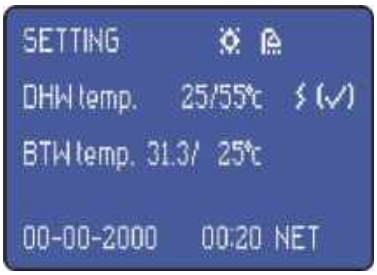
4.2 Display of current operating mode

During normal operation, the screen will display following information:

* STANBY -> unit operation mode
* DHW temp. 25/55°c -> DHW sensor / DHW setpoint
* BTW temp. 31.3/ 25°c -> BTW sensor / DHW setpoint
* 00-00-2000 00:17 NET -> data clock WIFI connected



Press  to start/stop heat pump.



 DHW symbol (HOT WATER mode)

 BTW symbol (HOUSE mode)

If heat pump set STANDBY mode for long time during winter, please remove out all the water the heating system to avoid any damage caused by freezing.

4.3 Main Menu

Press  to MAIN MENU.

Press  or  to navigate other menu.

Press  to enter to next menu.

Press  to previous menu.

4.4 Sub-Menu Mode select

DHW : HOT WATER mode On/Off
BTW : HOUSE mode Cooling / Auto heating / Heating / Off

Compressor start/stop by DHW sensor for DHW mode.
Compressor start/stop by BTW sensor for BTW mode.

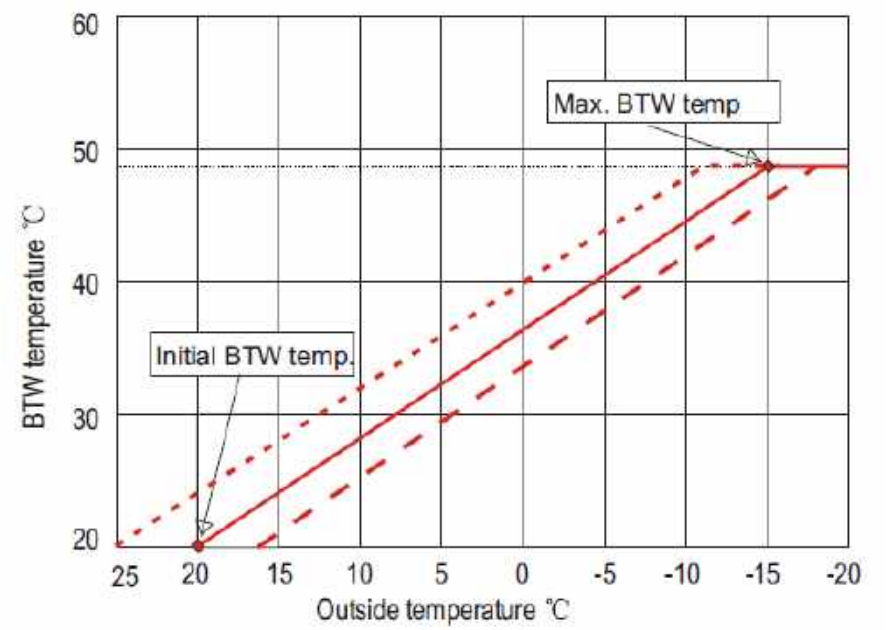
DHW setting range : 30°c ~ 55°c

HOUSE heating range : 18°c ~ 60°c

HOUSE cooling range : 8°c ~ 28°c

Auto heating : heat-curve function.

Initial BTW temp.	Starting temperature for heat-curve
Max. BTW temp.	Max. Temperature for heat-curve

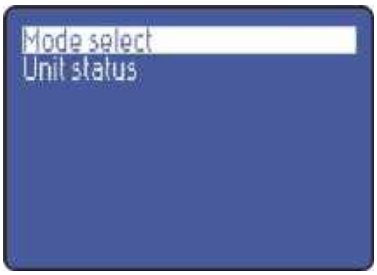


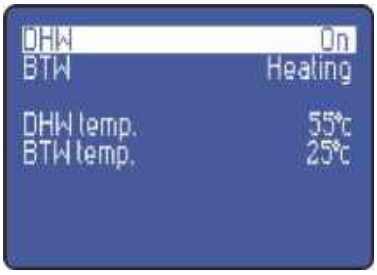
BTW Setpoint adjusted by ***Set room temp***, ***initial BTW temp.***, ***Max. BTW temp.***, and ambient sensor.

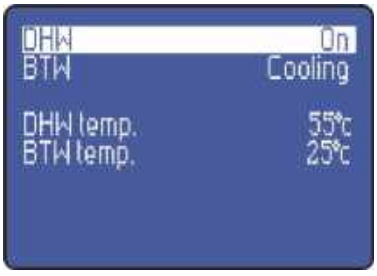
Setpoint = *initial BTW temp* + (*Max. BTW temp* - *initial BTW temp*) / 35 x (*Set room temp* - ambient sensor)

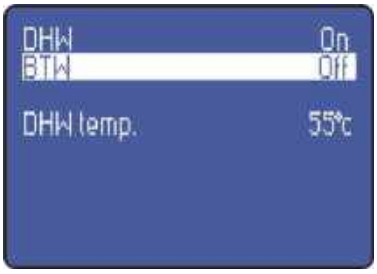
For example : Set room temp = 20°c
Initial BTW temp = 20°c
Max. BTW temp = 48°c

Then
When ambient sensor = 20°c, setpoint = 20+(48-20)/35x(20-20) = 20°c
When ambient sensor = 0°c, setpoint = 20+(48-20)/35x(20-0) = 36°c
When ambient sensor = -15°c, setpoint = 20+(48-20)/35x(20+15) = 48°c







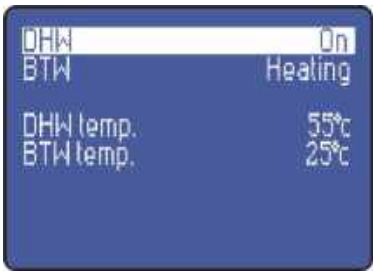


4.4.1 DHW (Hot water) mode: display

4-way-valve turn OFF, 3-way-water-valve turn ON,
water pump turn ON.

Fan speed adjust by ambient sensor.
Ambient temperature low, fan speed increase.
Ambient temperature high, fan speed reduce.

Compressor stop when DHW sensor ≥ setpoint
Compressor start when DHW sensor ≤ setpoint - ***DHW ΔT***



4.4.2 BTW (Cooling) mode: display

4-way-valve turn ON, 3-way-water-valve turn OFF,
water pump turn ON.

Fan speed adjust by ambient sensor.
Ambient temperature low, fan speed reduce.
Ambient temperature high, fan speed increase.

Compressor stop when BTW sensor ≤ setpoint
Compressor start when BTW sensor ≥ setpoint + ***DHW ΔT***

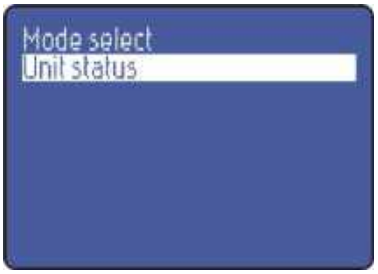
4.4.3 BTW (Heating) mode: display

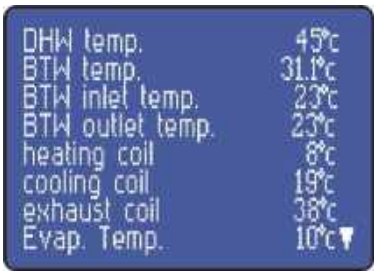
4-way-valve turn OFF, 3-way-water-valve turn OFF,
water pump turn ON.

Fan speed adjust by ambient sensor.
Ambient temperature low, fan speed increase.
Ambient temperature high, fan speed reduce.

Compressor stop when BTW sensor ≥ setpoint
Compressor start when BTW sensor ≤ setpoint - ***BTW ΔT***

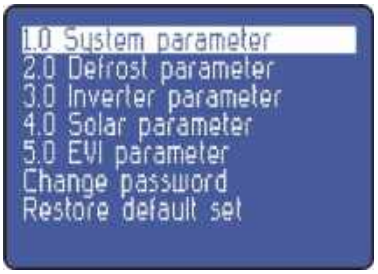
4.5 Sub-Menu Unit status

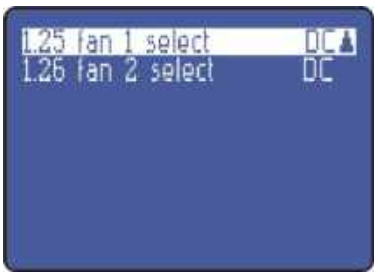




DHW temp.	hot water sensor
BTW temp.	HOUSE sensor
BTW inlet temp.	Inlet sensor
BTW outlet temp.	Outlet sensor
Heating coil	Evaporator sensor (defrosting)
Cooling coil	Cooling coil sensor
Exhaust coil	Compressor exhaust sensor
Evap. temp.	Compressor return sensor
Ambient temp.	Ambient air sensor
Expansion valve	Current step of EEV
EVI inlet temp.	Cancel at this unit
Solar water temp.	Cancel at this unit
IPM temp.	IPM PCB temperature
Comp. Current	Compressor running Amp
Comp. Type	Compressor adjust type
EVI outlet temp.	Cancel at this unit
EVI valve	Cancel at this unit
DC. Voltage	DC voltage
Fan1 speed	1st DC brushless motor speed
Fan2 speed	2nd DC brushless motor speed

4.6 Sub-Menu Parameter setting





1.1 DHW ΔT	Temperature different of hot water
1.2 BTW ΔT	Temperature different of HOUSE
1.3 EEV overheat/C	Heating target superheat
1.4 EEV overheat/H	Cooling target superheat
1.5 EEV Mode	Auto/Manual
1.6 BTW pump	Water pump mode at BTW mode 0 : continue 1 : stop 2 : Intermittent operation
1.7 Disinfection	ON/OFF
1.8 Spray valve	Cancel at this unit
1.9 EH start temp.	Start ambient temp. to turn ON EH
1.10 BTW ΔT EH	Temp. different to start BTW EH
1.11 DHW ΔT EH	Temp. different to start DHW EH
1.12 EH start	DHW EH delay 30minutes to start
1.13 Initial step	EEV initial step
1.14 Adjust step	EEV manual step
1.15 DHW factor	Frequency add for DHW
1.16 frequency code	Compressor frequency code
1.17 DC. fan manual	DC fan motor select 6 speed

4.6.1 EEV step

4.6.1.1 EEV step for DHW, BTW Heating

PCB check ***P1.13 Initial step***, ambient sensor, begin target Hz to calculate begin EEV step P0 (480 ≥ P0 70)
P0 = 60 + (***P1.13 Initial step*** - 60) * F / 62 * (0.825 + 0.025t)

For example :
P1.13 Initial step = 150P, begin target frequency F = 62Hz, ambient sensor = 16°C
Then P0 = 60 + (150 - 60) * 62 / 62 * (0.825 + 0.025 * 16) = 170P

4.6.1.2 EEV step for BTW Cooling

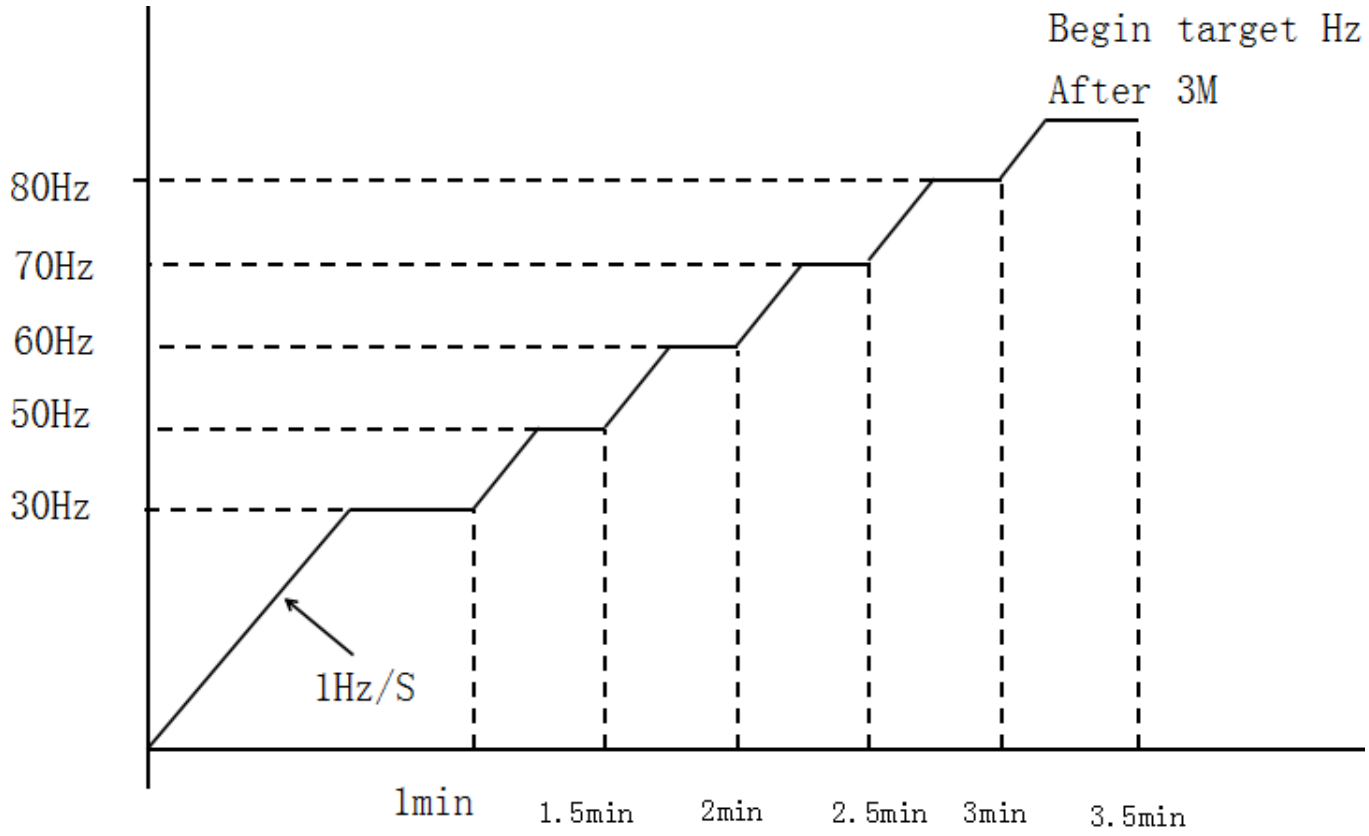
PCB check ***P1.13 Initial step***, begin target Hz to calculate begin EEV step P0 (480 ≥ P0 65)
P0 = 60 + (***P1.13 Initial step*** + 40) * F / 65

For example :
P1.13 Initial step = 150P, begin target frequency F = 56Hz
Then P0 = 60 + (150 +40) * 56 / 65 = 224P

4.6.2 Frequency at BTW Heating

4.6.2.1 compressor frequency when compressor start

When compressor start, Inverter compressor frequency increase to 55Hz in 1 minute,
if 2 minute later, calculated begin target frequency > 55Hz, and more than next step, then compressor frequency increase 10Hz every 30 seconds.
Compressor run calculated Hz Hz after 3 minutes.



4.6.2.2 Compressor MAX frequency table by P1.16 frequency code

P1.16	Ambient sensor Ta (°C)	Ta≥6	3≤Ta<6	0≤Ta<3	-3≤Ta<0	-6≤Ta<-3	Ta<-6
1	Max frequency F_{max} (Hz)	56	62	68	74	80	86
2	Max frequency F_{max} (Hz)	60	65	70	75	80	86
3	Max frequency F_{max} (Hz)	62	66	72	76	81	86
4	Max frequency F_{max} (Hz)	68	72	76	79	82	86
5	Max frequency F_{max} (Hz)	70	73	76	79	82	86
6	Max frequency F_{max} (Hz)	76	80	84	88	92	96
7	Max frequency F_{max} (Hz)	62	68	75	82	88	96
8	Max frequency F_{max} (Hz)	60	66	72	78	84	90

4.6.2.3 begin target Frequency

Begin target frequency decide by $\triangle T$ = BTW sensor - setpoint.

If $\triangle T > 4°C$, then begin target frequency = F_{max}

If $2°C \leq \triangle T \leq 4°C$, then begin target frequency = 55Hz.

4.6.2.4 Frequency Calculation

$\triangle T$ = BTW sensor - setpoint
$\triangle T'$: previous 1 minutes temperature different
F : running Hz
$\triangle F$: Hz different

When $\triangle T > 4°C$, then $F = F_{max}$

When setpoint - 4°C ≤ BTW sensor < setpoint - 1°C, then

* $\triangle F = 2 * \triangle T - 12 * (\triangle T' - \triangle T)$ ($|\triangle F| \leq 10Hz$)

* $F = F + \triangle F$ $(20 \leq F \leq F_{max})$

4.6.3 Frequency at DHW

P1.16	Ambient sensor Ta (°C)	Ta≥30	20≤Ta<30	12≤Ta<20	4≤Ta<12	-5≤Ta<4	Ta<-5
1	Fmax (Hz)	36	40	48	56	65	76
2	Fmax (Hz)	40	43	52	60	70	80
3	Fmax (Hz)	40	44	54	62	72	80
4	Fmax (Hz)	45	48	58	68	74	80
5	Fmax (Hz)	45	50	60	70	75	80
6	Fmax (Hz)	50	54	65	76	80	80
7	Fmax (Hz)	40	44	54	62	72	80
8	Fmax (Hz)	40	43	52	60	70	80

P1.15 DHW factor, range 1~10

F = F_{max} * P1.15 DHW factor / 10

For example: F_{max} = 62 , P1.15 = 7, then F = 62 * 7 / 10 = 62 * 0.7 = 43Hz

4.6.4 Frequency at BTW Cooling

P1.16	Ambient sensor Ta (°C)	Ta≥43	38≤Ta<43	38≤Ta<32	32≤Ta<26	26≤Ta<20	Ta<20
1	Fmax (Hz)	52	56	59	56	52	48
2	Fmax (Hz)	56	60	63	60	56	52
3	Fmax (Hz)	58	62	65	62	58	54
4	Fmax (Hz)	62	66	70	66	62	58
5	Fmax (Hz)	64	68	72	68	64	60
6	Fmax (Hz)	68	72	78	72	68	64
7	Fmax (Hz)	58	62	65	62	58	54
8	Fmax (Hz)	56	60	63	60	56	52

4.6.4.1 begin target Frequency

Begin target frequency decide by ΔT = setpoint - BTW sensor

If ΔT > 4°C, then begin target frequency = F_{max}

If 2°C ≤ ΔT ≤ 4°C, then begin target frequency = 55Hz.

4.6.4.2 Frequency Calculation

When ΔT > 4°C, then F = F_{max}

When setpoint - 1°C ≤ BTW sensor < setpoint + 4°C, then

* ΔF = 2 * ΔT - 12 * (ΔT' - ΔT) (|ΔF|≤10Hz)

* F = F + ΔF (20≤F≤F_{max})

4.7 Sub-Menu Defrost parameter

2.1 Def. cycle	defrost period
2.2 Def. start temp.	defrost start temperature
2.3 Def. stop temp.	Defrost stop temperature
2.4 Def. max time	Max. Deforst running time

4.7.1 force defrost

When ambient sensor ≤ 15°C, hold Esc button to force defrost.
Compressor run 10 minute (*2.4 Def. max time*)

4.7.2 Defrost

Defrost start condition:

During heating operation, When ambient sensor ≤ 15°C, compressor running 35 minute (*2.1 Def. cycle*), and heating coil sensor ≤ -4°C (*2.2 Def. start temp.*), then defrost start.

Action of Defrost start:

Compressor and fan stop, but water pump run normally.
4-way-valve turn ON 25 second.
Compressor start 30 second.

Defrosting stop condition:

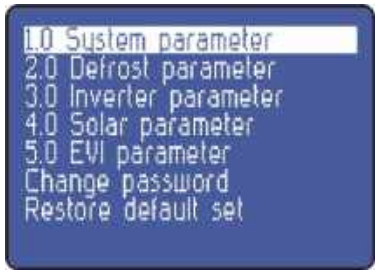
compressor running 10 minute (*2.4 Def. max time*), or heating coil sensor ≥ 10°C (*2.3 Def. stop temp.*), then defrost stop.

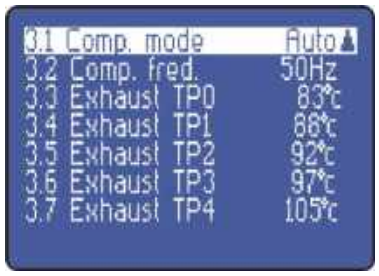
Action of Defrost start:

Compressor stop, fan run.
4-way-valve turn OFF 5 second.
Compressor start 30 second.

4.8 Sub-Menu Inverter parameter

3.1 Comp. mode	Auto
3.2 Comp. fred.	Only valid at 3.1 = manual
3.3 Exhaust TP0	Compressor exhaust protection TP0
3.4 Exhaust TP1	Compressor exhaust protection TP1
3.5 Exhaust TP2	Compressor exhaust protection TP2
3.6 Exhaust TP3	Compressor exhaust protection TP3
3.7 Exhaust TP4	Compressor exhaust protection TP4





Protection by frequency

Frequency reduced by Compressor over-heat protection

Compressor exhaust sensor Te	Hz reduce adjusted	EEV step adjusted
3.3 Exhaust TP0, when Te ≥ 83°C	Keep 1 minute, Hz normally control	Keep same
3.4 Exhaust TP1, when Te ≥ 88°C	Hz can reduce, do not increase	EEV step increase > 2P
3.5 Exhaust TP2, when Te ≥ 92°C	Hz reduce by 1Hz/8s to keep at min. frequency	EEV step increase > 4P
3.6 Exhaust TP3, when Te ≥ 97°C	Hz reduce by 1Hz/4s to keep at min. frequency	EEV step increase > 6P
3.7 Exhaust TP4, when Te ≥ 105°C	Unit stop, and resume 3 minutes when Te < 90°C	--

Frequency reduced by heating coil over-heat protection

At BTW Cooling mode, if heating coil sensor too high, frequency change by blew table:

Heating coil sensor Th	Hz reduce adjusted
Th ≥ 64°C	Stop unit, if 3 minutes later Th< 50°C, then resume operation
Th ≥ 60°C	Frequency reduce 1Hz/2S to min Hz
Th ≥ 56°C	Frequency do not increase, allow reduce
Th < 56°C	Resume to normal operation

Frequency reduced by Amp

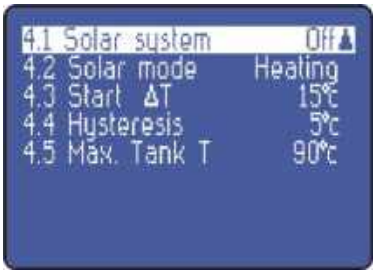
1) Limit frequency	2) Reduce	3) Stop unit
20A	22A	25A
Frequency do not increase	Frequency 1Hz/1S reduce to min Hz	Stop unit, give error alarm

Frequency reduced by IPM radiator sensor

IPM radiator temperature Tr		Control
BTW Cooling, defrost	BTW Heating, Hot water	
Tr ≥ 85°C	Tr ≥ 75°C	Stop unit
Tr ≥ 75°C	Tr ≥ 66°C	Frequency 1Hz/10S reduce to min. Hz
Tr ≥ 70°C	Tr ≥ 60°C	Frequency do not increase, allow to reduce
Tr ≥ 65°C	Tr ≥ 55°C	Frequency normal control

4.9 Sub-Menu Solar parameter

This unit do not support solar



4.10 Sub-Menu EVI parameter

This unit do not support EVI

4.11 Sub-Menu WiFi configure

the internet access module install at Wifi Box.
WiFi Box connect to server by your current WIFI.
Install WiFi Box where can access your current WIFI.
You have to put your Mobile and WiFi Box at same place during installation.

4.11.1 App installation

Scan below to install App on your phone.

Smart Life

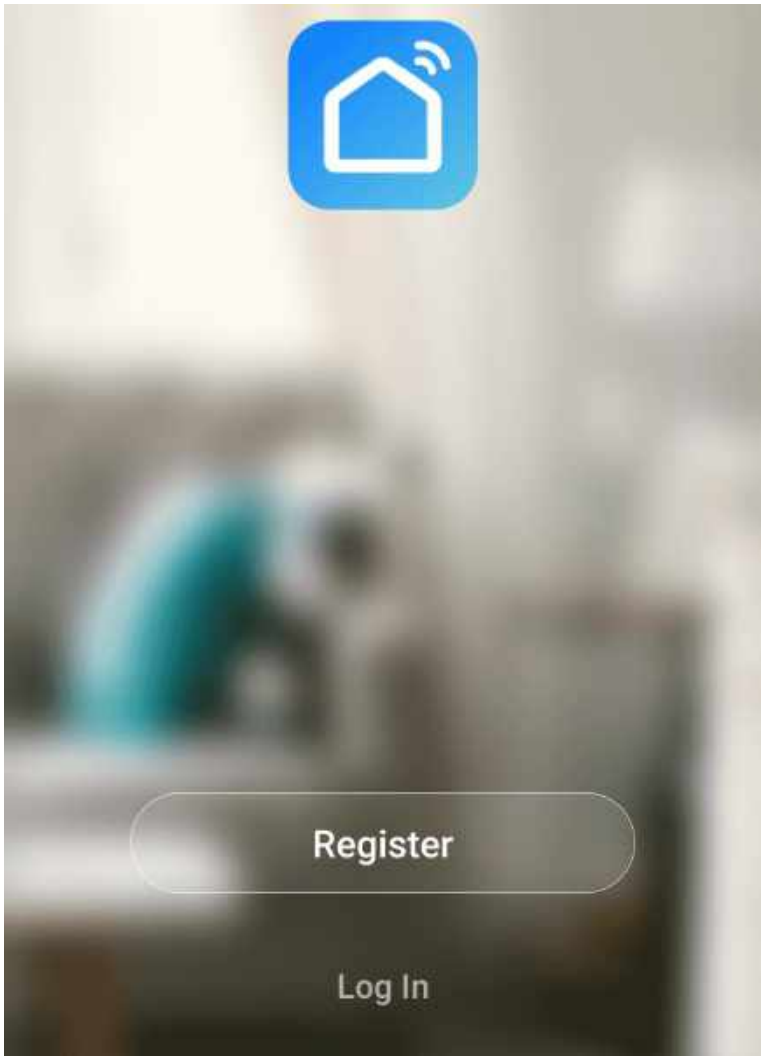
Maybe the installation request to install another App in advance.
You can delete it after installation finish.

应用宝

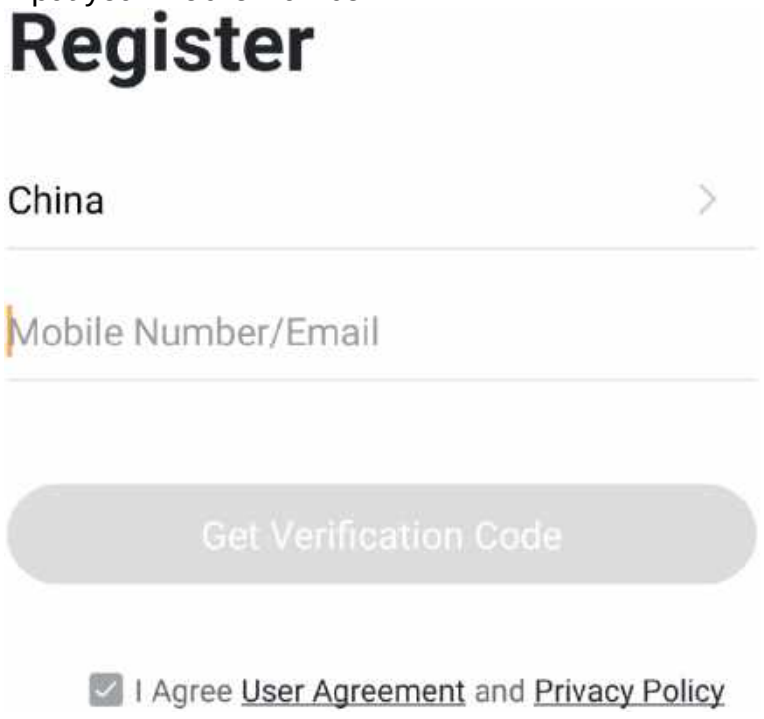
Smart Life will request GPS location at your mobile.

4.11.2 register

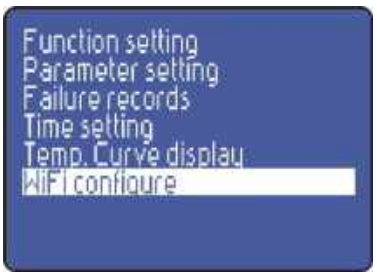
Click Register button



Input your Mobile Number



4.11.3 Add Device



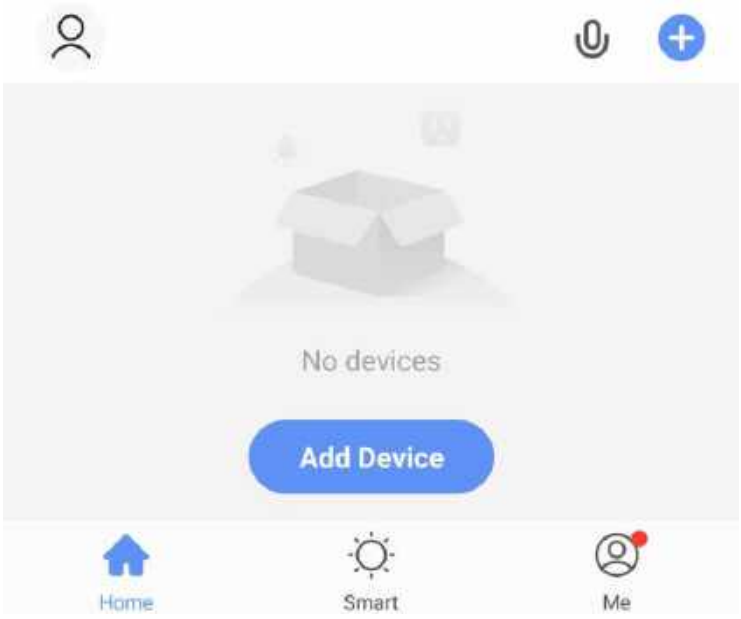
WiFi configure by SmartConfig or AP.Config

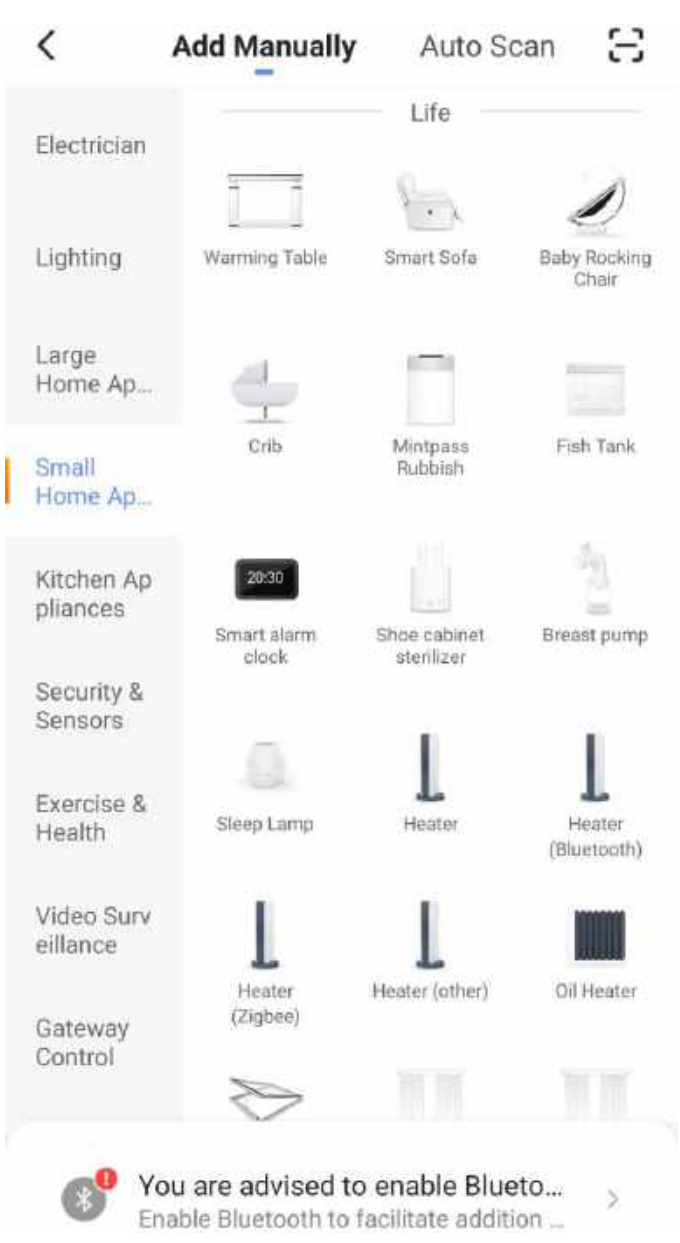
Hold  button 3S, then  flash.

If WIFI connection success, then  light ON

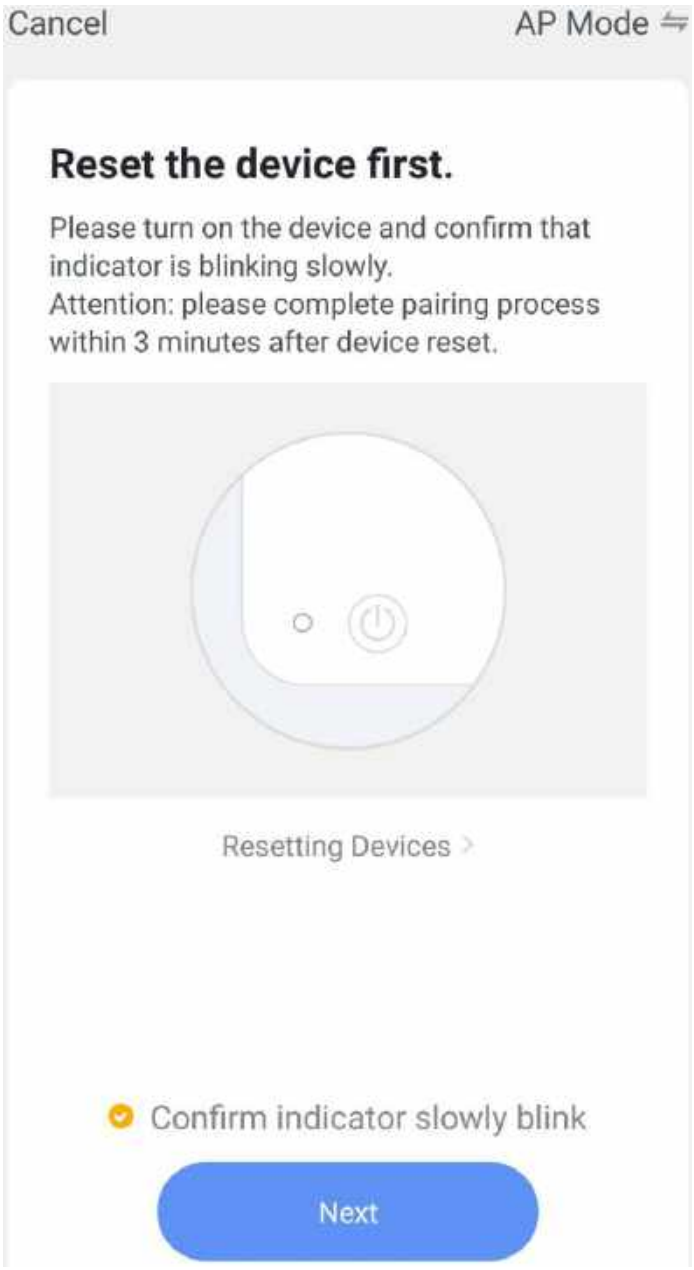
Click Add Device

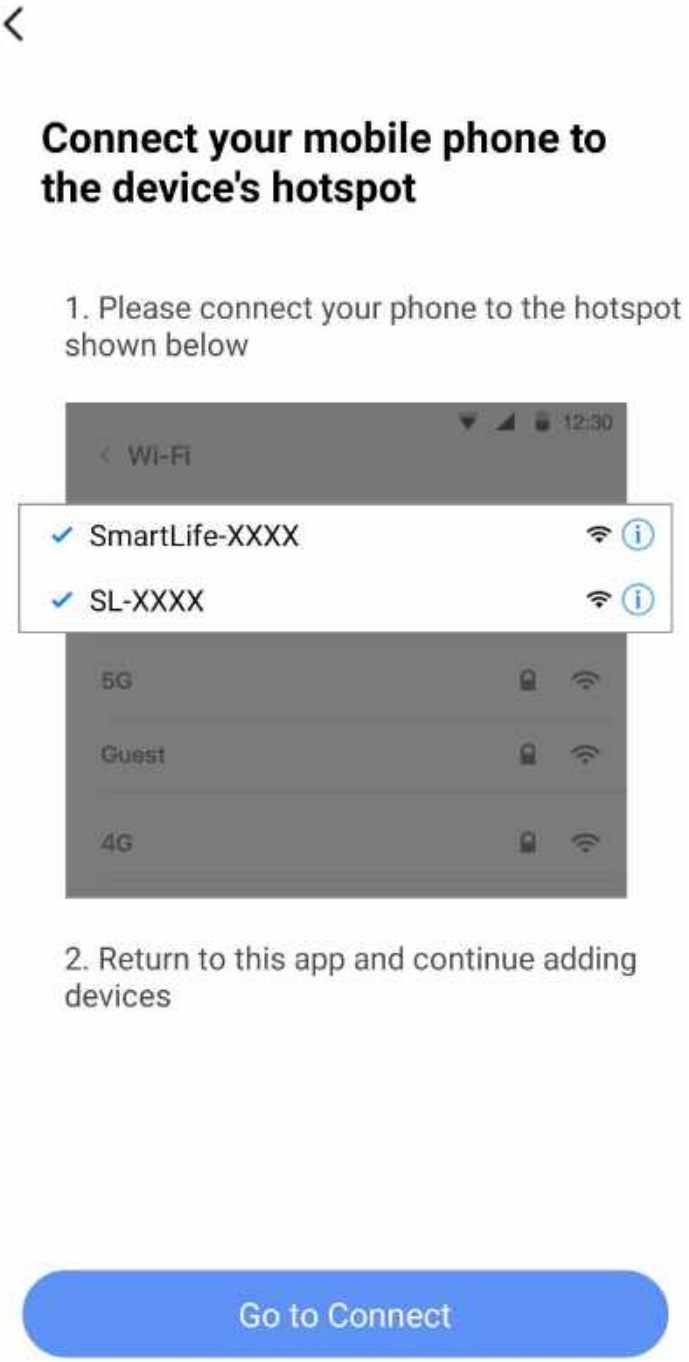
Choose Small Home Appliance -> Heater

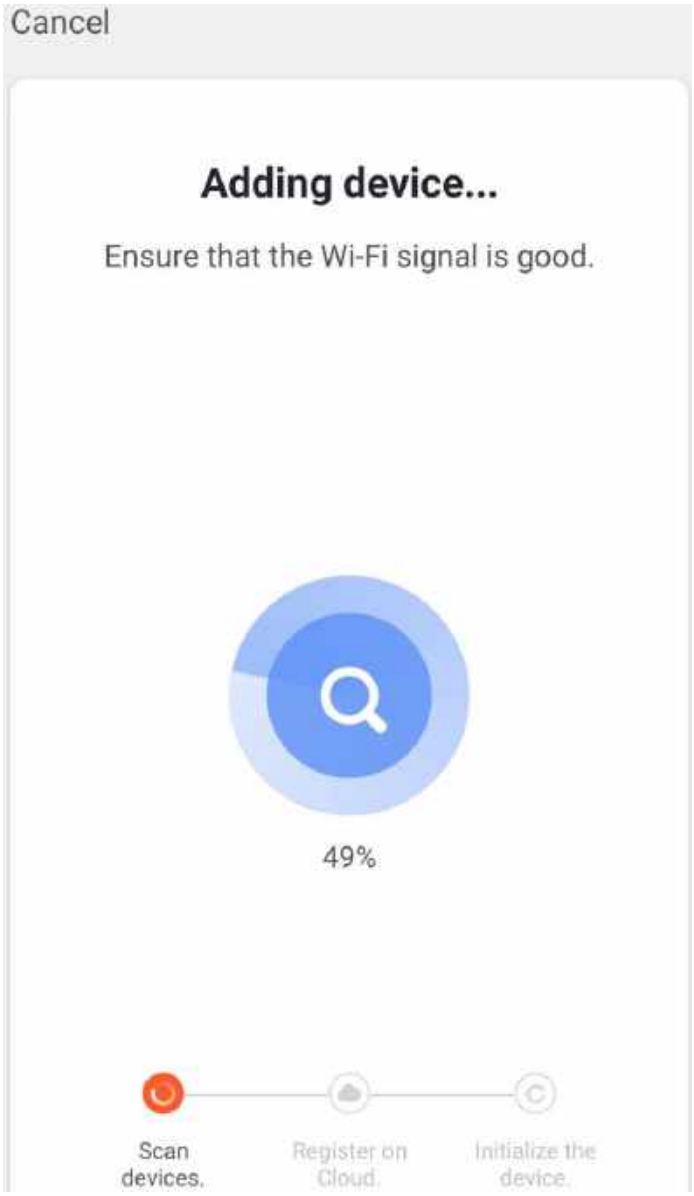




Choose your WiFi, password





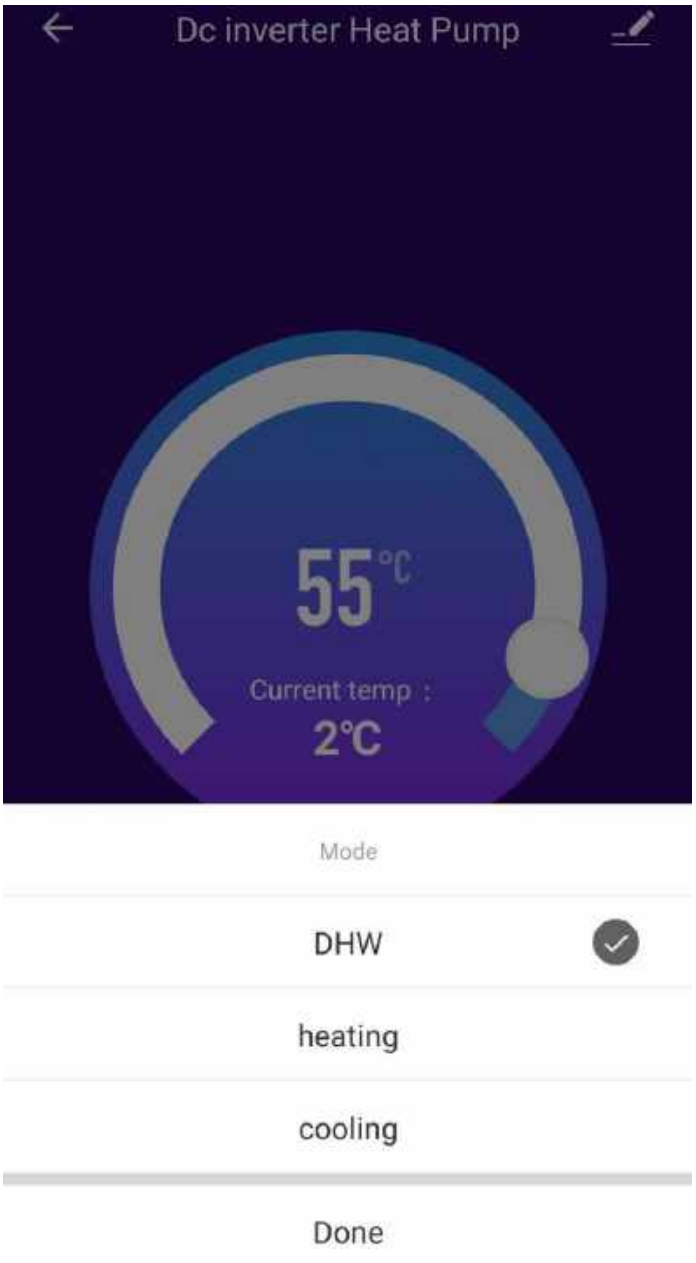

Cancel
Adding device...
Ensure that the Wi-Fi signal is good.
49%
Scan devices.
Register on Cloud.
Initialize the device.


Added successfully
Dc inverter Heat Pump
Device added successfully

You can Turn On/Off unit, change setpoint

App only support:
* DHW only
* BTW only (cooling, heating)

App do not support:
* DHW, heating, Cooling



4.12 Part operation

4.12.1 electrical heater for BTW:

BTW EH turn ON by follow condition:
* BTW EH turn ON during defrost.
* BTW EH turn ON during anti-freeze protection
* ambient sensor ≤ ***P1.9 EH start temp.*** in BTW Heating mode.
* BTW sensor ≤ BTW setpoint - ***BTW ⊿T (P1.2)*** + ***BTW EH ⊿T (P1.10)***

BTW EH turn OFF by follow condition:
* at BTW Heating mode, ambient sensor > ***P1.9 EH start temp.*** + 2°C
* BTW sensor ≥ setpoint

4.12.2 electrical heater for DHW:

DHW EH turn ON by all condition:
* at DHW mode, compressor run 30 minutes (P1.12 EH start)
* DHW sensor ≤ DHW setpoint - (***P1.1 DHW ⊿T*** + ***P1.11 DHW ⊿T EH***)

DHW EH turn OFF by any condition:
* DHW sensor ≥ DHW setpoint

high temperature disinfection, DHW EH is forced to turn ON.

Screen show  when DHW heater turn ON.

4.12.3 four-way-valve:

four-way-valve turn OFF at heating mode. Turn ON at cooling mode, defrost.

4.12.4 compressor heater:

When ambient sensor < 15°C, and compressor stop, then compressor heater turn ON.
When ambient sensor > 17°C, or compressor start, then compressor heater turn OFF.

4.12.5 evaporator heater:

When ambient sensor < 9°C, and HEATING, HOT WATER, defrosting, standby, and outlet sensor ≤ 4°C,
then this heater turn ON.
When ambient sensor > 9°C, or COOLING mode, or outlet sensor ≥ 8°C, then this heater turn OFF.

4.12.6 three-way-water-valve:

3-way-water-valve turn ON at BHW mode.
3-way-water-valve turn OFF at other mode, unit OFF.

OM HEAT/TANK COOL mode, turn OFF on TANK WATER.

4.12.7 water pump:

Water pump run 5 minutes in advance before compressor start.
Water pump continue to run 5 minutes after compressor stop.
Water pump continue to run during defrost.

When water temperature reach setpoint, If BTW turn CLOSE, then water pump operate by above.

When water temperature reach setpoint, If BTW turn OPEN, then water pump operate by below:
BTW Pump (P1.6) = 0, water pump continue to run when water temperature reach setpoint.
BTW Pump (P1.6) = 1, water pump stop 5 minutes after compressor stop.
BTW Pump (P1.6) = 2, water pump operate by ambient sensor when water temperature reach setpoint:

* When ambient sensor > 2°c, then water pump stop.
* When -2°c < ambient sensor < 2°c, then water pump stop 20 minutes, run 10 minutes, cycle.
* When -6°c < ambient sensor < -2°c, then water pump stop 15 minutes, run 15 minutes, cycle.
* When -10°c < ambient sensor < -6°c, then water pump stop 10 minutes, run 20 minutes, cycle.
* When ambient sensor < -10°c, then water pump continue to run.
* When ambient sensor malfunction, then water pump stop 15 minutes, run 15 minutes, cycle.

4.12.8 high temperature disinfection function (when DHW mode selected):

During disinfection, screen show 

- High temperature disinfection cycle 7 days;
- When entering high temperature disinfection, the unit turn ON DHW EH;
- When DHW sensor ≥65°C, and continue 15 minutes ≥ 65°C, then exit disinfection;
- If DHW < 65°C for 3 hours, then disinfection is forced to exit;
- When DHW mode selected, hold 

button 10 seconds, then forced to disinfection;

4.12.9 Anti-freeze protection :

When heat pump is at standby status.
(1) when inlet sensor ≤ 8°C and ambient sensor ≤ 2°C, then water pump run ;
When inlet sensor ≥ 15°C or ambient sensor > 4°C, exit protection
(2) when inlet sensor ≤ 2°C and ambient temperature ≤ 0°C, then heat pump run ;
When return water sensor ≥ 15°C, or ambient temperature > 1°C, exit protection

5. Error messages :

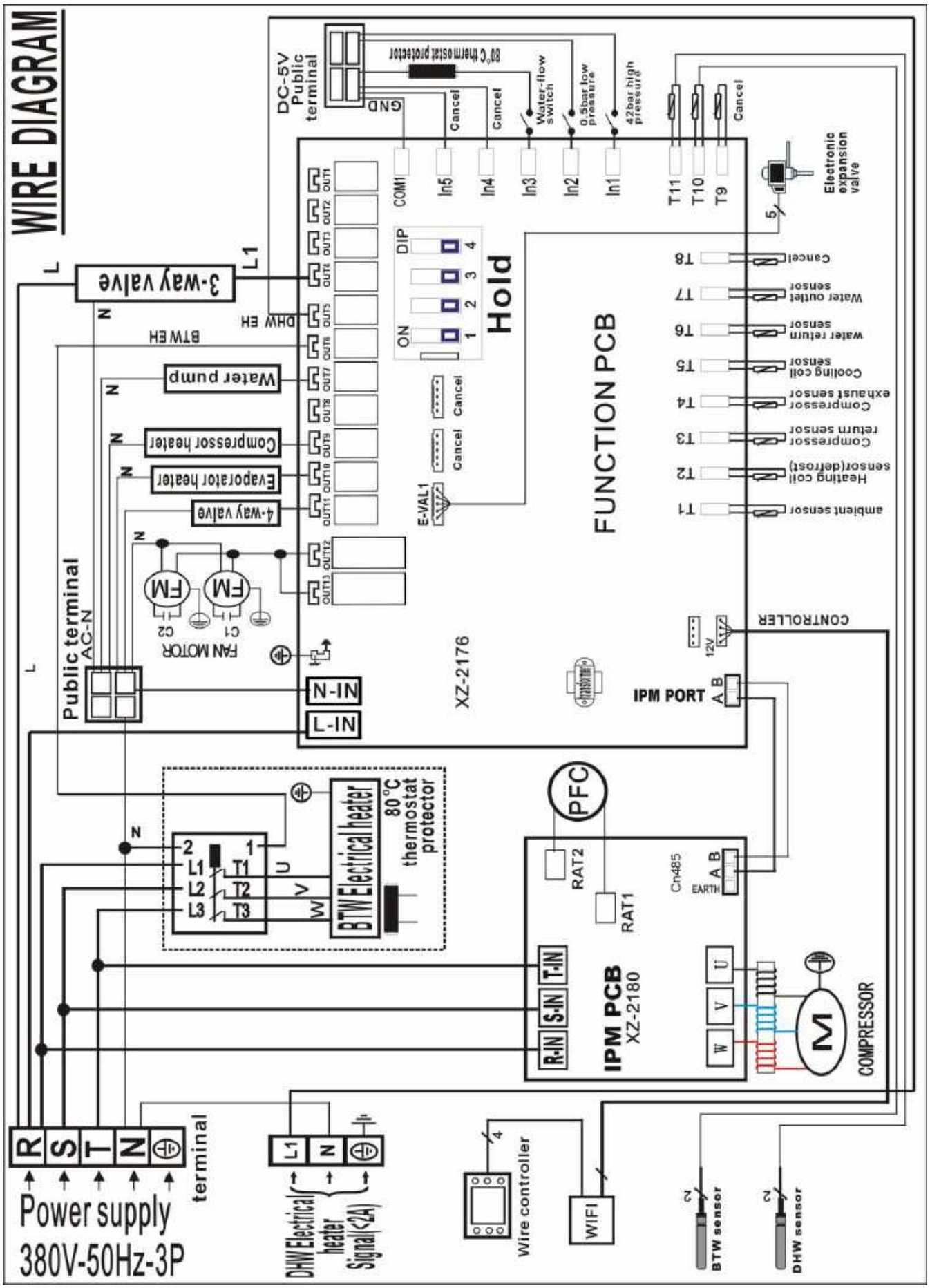
Heat pump is equipped with regulation and safety components; when a regulation component is defective or a safety is activated, a message is posted like it's illustrated below; see the explanation of these messages in the paragraph "Error codes ". Call your installation contractor for help.

When error occur, screen show 

Error code		Running lamp
Err00	Communication error	
Err01	Inlet sensor malfunction	1 flash 1 OFF
Err02	Outlet sensor malfunction	2 flash 1 OFF
Err06	Water-flow-switch protection	12 flash 1 OFF
Err04	Order of power supply	13 flash 1 OFF
Err05	inlet & outlet sensor temperature different > 18 °C	16 flash 1 OFF
Err07	Heating coil sensor ≥ 70°c in COOLING mode	17 flash 1 OFF
Err08	DHW sensor malfunction	3 flash 1 OFF
Err09	BTW sensor malfunction	4 flash 1 OFF
Err10	High pressure protection	10 flash 1 OFF
Err11	Low pressure protection	11 flash 1 OFF
Err12	Outlet temperature too high	14 flash 1 OFF
Err13	Outlet temperature too low	19 flash 1 OFF
Err14	Compressor return sensor malfunction	7 flash 1 OFF
Err15	Compressor exhaust sensor malfunction	8 flash 1 OFF
Err16	Compressor over-heat protection	22 flash 1 OFF
Err18 / Err19	Anti-freeze protection DHW / BTW	21 flash 1 OFF
Err20	Ambient sensor malfunction	9 flash 1 OFF
Err21	Heating coil sensor malfunction (for defrost)	5 flash 1 OFF
Err22	Cooling coil sensor malfunction	6 flash 1 OFF
Err23	Ambient temperature too high	18 flash 1 OFF
Err31	Ambient temperature too low	
Err32	PCB Communication error	
Err33	EVI in sensor malfunction	
Err34	EVI out sensor malfunction	
Err35	Solar sensor malfunction	
E24	IPM PCB Communication error	
E25	IPM PCB abnormal protection	
E26	Radiator of IPM PCB over-heat protection	
E27	Compressor over-current protection	
E28	IPM PCB sensor malfunction	
E29	Compressor over-load protection	
E30	Water inlet temperature too low during defrost	

6. Wiring diagram

380V-50Hz-3phase



220V-50Hz-1phase