

AIR MAGNA 100

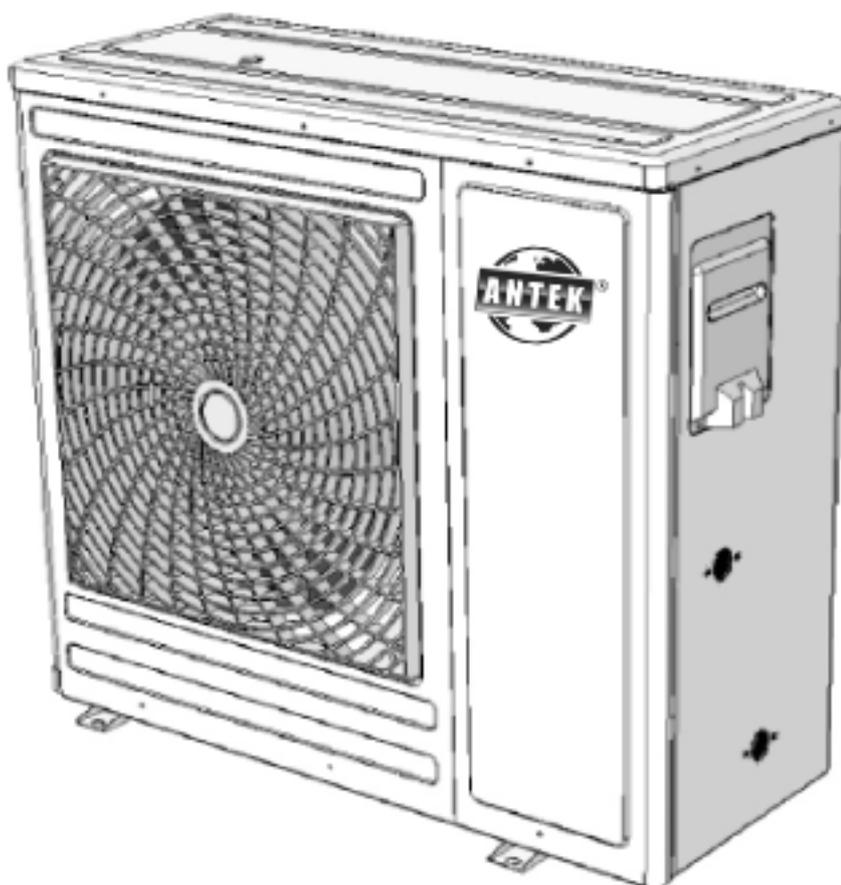
GREEN ENERGY SYSTEMS

Green
Energy

ANTEK®

AIR TO WATER HEAT PUMP DC INVERTER INSTALLATION AND MAINTENANCE MANUAL

The piping connection should be installed according to the local legal laws and regulations as well as the profession standard.



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CONTENT

1. Safe precautions	4
2. Structure	5
3. Installation	6
4. User instruction	13
5. Trial operation	23
6. Unit operation and performance	24
7. Maintenance and trouble shooting	26
8. Wiring diagram	28
9. WIFI function	29



Warning

The safety of you and your families is the most important!

This machine belongs to class I equipment.
Please ensure the reliable grounding before using it.



Note: Please don't use this machine if there is no grounding or the grounding is not reliable
If you are not sure if the grounding is reliable, please let the professional to check.

Please carefully read the safety precautions and notes about the machine before using it.

All the important notes and warning have the corresponding marks, the following is the meaning of the marks.



Attention ! There is potential risk to cause the physical injury.



Warning ! Please strictly obey the instructions, otherwise there would be life danger and serious injury.

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I. Safety Precautions



Warning

Requirements for the installation environment

The installation location must be ventilated, waterproof, sun-proof, and requires a convenient power supply, water supply and drainage channels.

Customer's electrical environment must be in accordance with local electrical safety regulations. The power supply specifications conform to the requirements of the local rating. There must be reliable grounding, leakage protector and give the machine power supply directly by the leakage switch wiring way.

The wall or stand must meet the bearing requirements. The installation, maintenance and renovation must be done by the designated dealer and professionals.

If the operator does not have relevant professional knowledge and authorization, but install and repair to result in the damage on furniture and decoration, injury or electric shock, and even serious accidents such as fire, we'll not assume legal responsibility.

The requirement on installation accessories. Please use the accessories in the packing according to the requirement, do not replace them with any other similar.

The purchased parts must be the designated model or specification, if the parts beyond the specified are used and result in the accidents, we'll not take the responsibility.



Attention

The household power supply, circuit to comply with relevant standards

The power circuit should be equipped with leakage protector.

Check whether the socket is qualified, after the unit runs for half an hour, remove the plug, if the pin is hot, that means the plug has more than 50 °C and must be replaced by another qualified one.

The location of the power supply should be not less than 1.8 meters from the ground, and be water-proof well and far from children.

The power lines have no damage. If there is any damage, please contact the relevant dealer or professional staff for replacement.

The unit should be installed firmly to run without vibration and the noise will not affect the neighbors.

Drainage piping can smoothly drain and will not lead to leakage or make the furniture wet.

The installation space is well ventilated, once there is refrigerant leakage, the gas will not gather, so there is no combustible gas leak near the installation location. If there is such risk, please change the installation environment, otherwise, it's easy to cause poisoning, fire accident, etc.

Do not keep the unit in the humid environment or exposed to the rain, otherwise it's easy to damage the unit.

If there is refrigerant leak during the installation, ventilation measures must be taken immediately. Otherwise, if the leaked refrigerant meets fire, such as heater, stove or electric cooker, etc., poisonous gas may be produced.

AIR MAGNA 100

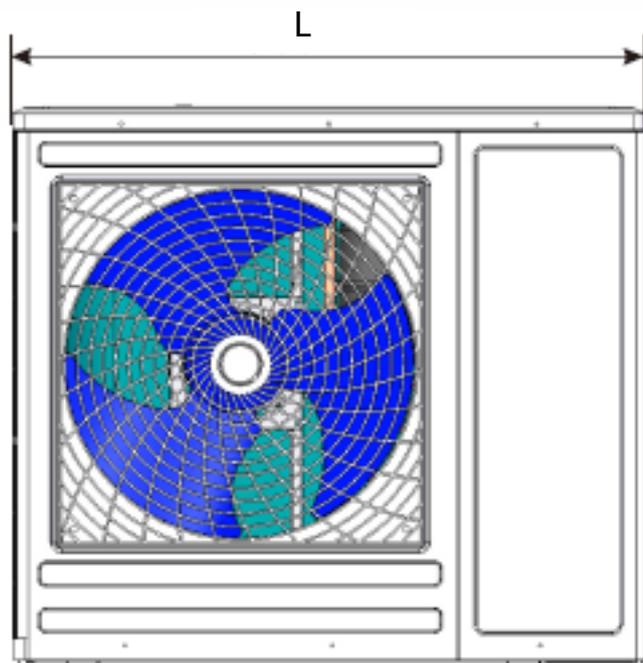
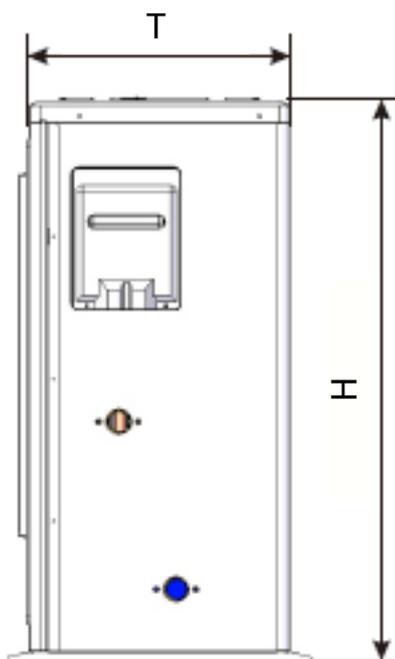
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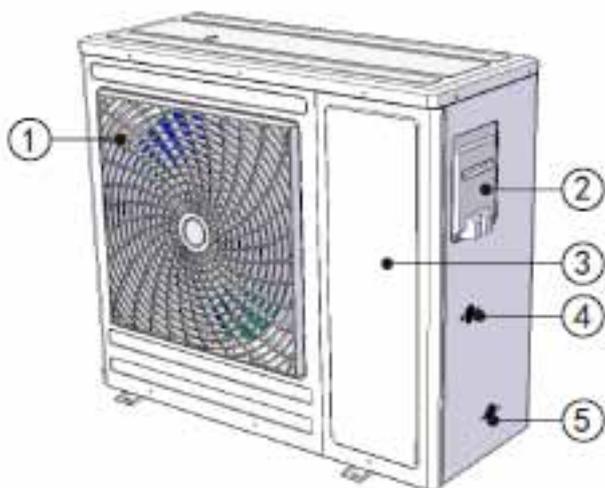
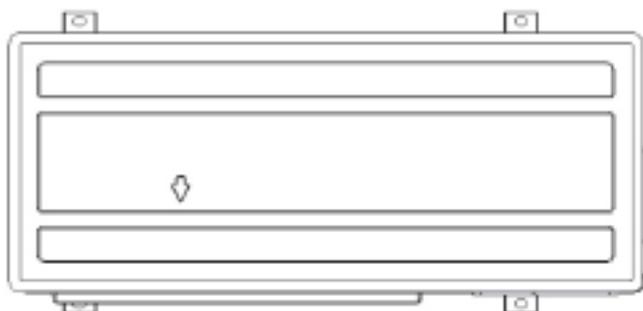
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2. Structure

2-1 Outer Structure



	6kW	9kW	12kW	16kW	21kW
L	1030	960	1030	1030	1110
H	803	810	803	1335	1250
T	380	370	380	380	450



- 1-Wind net
- 2-Wiring cover
- 3-Maintenance panel
- 4-Water outlet
- 5-Water inlet

The photo in this manual is only for explanations purpose. If the appearance, function are not in accordance with the real one, please in kind prevail.

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3. Installation



Attention

The following installation places may cause the malfunction of the machine

The places where there is mineral oil;

The place that contains salt in the air, such as the seaside;

The place that contains corrosive gas, such as hot spring area;

The place where the powers supply voltage fluctuates seriously;

In the car or cabin etc.;

The place where is full of oil gas and oil spray, such as the kitchen;

The place where there is strong electromagnetic waves;

The place where exists flammable gas or material;

The place where there is acidic or alkali gas evaporation;

Other places where belongs to special environmental conditions

3-1 The choice of the installation location

The unit can be installed on the balcony or external wall; meanwhile, please waterproof measures should be done well.

There is sufficient space for installation and maintenance.

There is no barrier in front of the heat pump air outlet and strong wind can't blow there.

The installation place should be well ventilated and avoid the environment where there is flammable, explosive gas and strong corrosive gas.

The installation place should be convenient to install the pipe and electric wiring.

The bearing surface is flat, can withstand the unit weight and doesn't increase the vibration and noise.

If the installation base is metal parts, insulation treatment must be done well, and to comply with relevant standards.

The running noise and discharge cold air will not affect yourselves and your neighbours

The high voltage and strong magnetic field should be avoided.

There should be no water logging in the installation place.

The unit should be blocked up to install if sundries or snow may accumulate in the installation place.

3.Installation

3-2 Movement

- 1) Because the gravity center of the unit is not in the middle, when you move the machine, please beware of the drumming.
- 2) Please do not hold the air inlet, or it will be deformed.
- 3) In the movement, please don't touch the fan blade by hand or other things in order to prevent from the damage on the fan blade.
- 4) Please don't lean it more than 45°C or lie it down.
- 5) Please try to use the auxiliary equipment, such as the forklift or crane to prevent the body injury caused by the overweight in the movement of the big models.



Warning

Determine the feasible moving path.
Please try to move the unit under the condition of the original
Install the accessories according to the requirements.

3-3 Installation

The installation should be done by the qualified dealer or professional technicians.
If the installation is improper, it may cause the water leak, current leak or accidents such as fire.

The installation bearing surface should be flat and can support the weight of the unit.
Please install the unit firmly by using the MB expansion valve to fix it on the stand and antivibration rubber pads should be used to prevent the abnormal vibration and noise.

Please try to remove the barrier around the unit, otherwise the air circulation range will be too small and affect the performance.

If the unit is installed in the basement, indoor or in the other closed space, good air circulation between the unit and outdoor should be ensured.

If the unit is installed at the seaside or in the high place where there is strong wind, to make sure the normal operation of the fan blade, it must be installed against the wall. If necessary please use the baffle.

In the place where there is strong wind, please make sure the air outlet of the unit and the strong wind are the same direction, in order to prevent the strong wind blow to the indoor unit and affects the performance. If the wind direction can't be ensured, please put baffle in front of wind.



Attention

The installation of the unit should comply with the user manual.
When the unit is moved to another place, the movement and installation should be done by the professionals.
If the user installs the unit on their own, we'll not be responsible for the accidents such

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3. Installation

3-4 The space of installation and maintenance

Please leave enough maintenance space as the below before the installation.

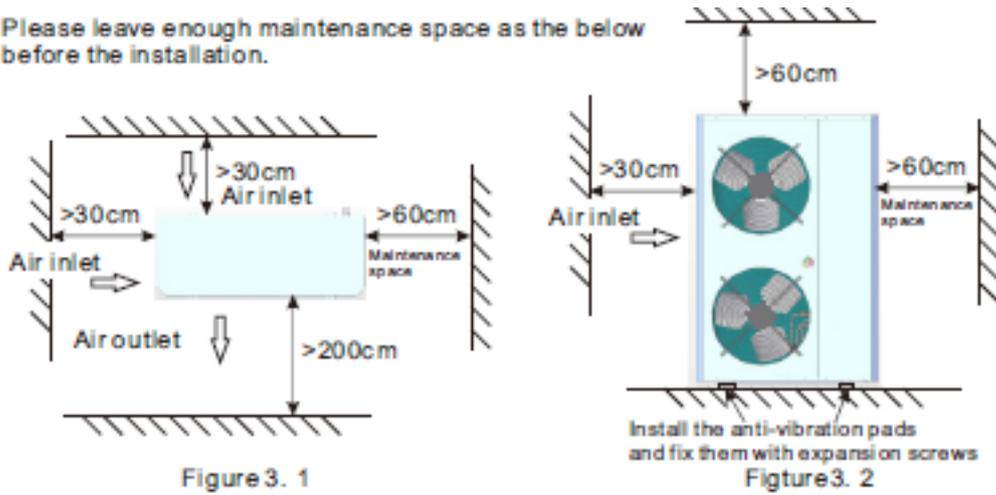


Figure 3. 1

Figure3. 2

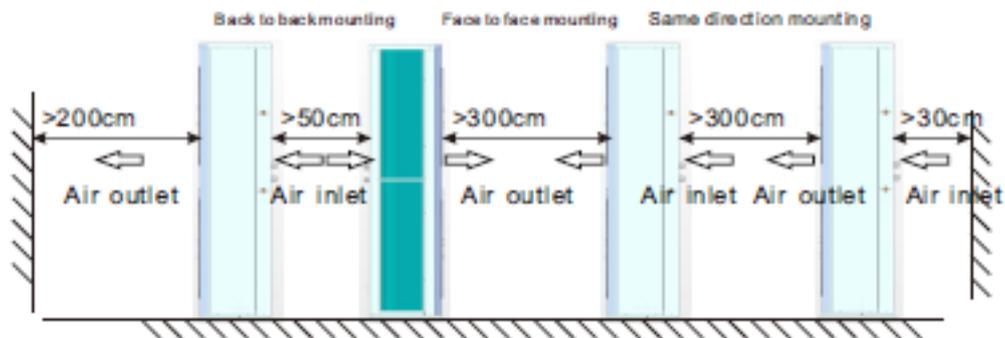


Figure3. 3

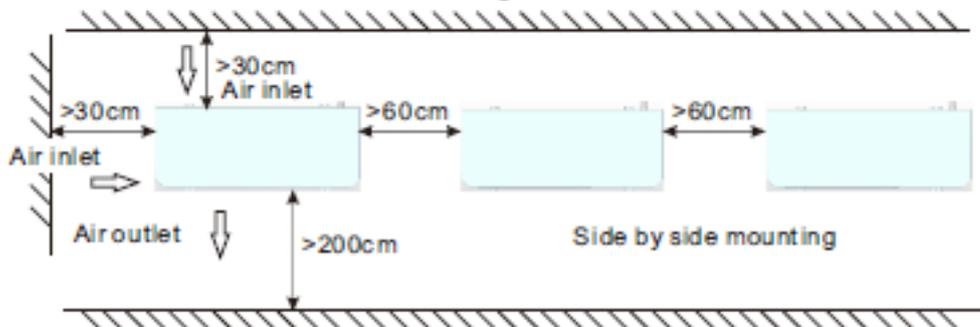


Figure 3. 4

3. Installation

3-5 Installation of the water pipes

- 1) To reduce the resistance of the water pipe as much as possible, reducing the elbow position and variable diameter can be adopted.
- 2) In the process of the piping connection, please make sure the whole system to be clean, no rust and no other dirt, in order to prevent the piping blockage.
- 3) Leak test should be done after the piping connection is finished. The test should focus on the screw thread connection to ensure the whole system without leakage, then thermal insulation should be done.
- 4) After all the piping are connected and tested leakage, 20mm thick thermal insulation must be packed on the piping in order to reduce the heat loss and prevent the water pipe freezing in winter.
- 5) Expansion tank needs to be installed in the highest point of the water circuit. The water level of the expansion tank should be at least 0.5 M higher than the highest point.
- 6) Check the water flow of the water circuit system to ensure the normal water flow rate. If there is water flow fault, check the installation of the water circuit system. In order to make sure the protection on the unit when the system has no water, do not bridge the water flow switch casually.
- 7) Auto vent valve should be installed in the highest point of the water circuit, to prevent the air trapping which will affect the operating effect.
- 8) Thermometer and pressure gauge should be installed for the water inlet and water

3-6 Water injection and evacuation

- 1) Vent valve needs to be installed in the highest point of the water circuit system and drain valve needs to be installed in the lowest point of the water circuit system.
- 2) When the installation is finished, please keep the power supply off.
- 3) When the inlet valve is opened, the water injection begins. At this time, please keep the vent valve open, the air in the system will be evacuated via the vent valve outlet, and there is sound "tehee" from the vent valve.
- 4) Double check all the connections and elbows of the water circulation system, make sure there is no leak.
- 5) If there is no leak, then start the water pump to run the water circuit and double check if there is leak from the connections and elbows.
- 6) When the sound "tehee" disappears from the vent valve, the water injection is finished and water pump can be stopped, then prepare to energize the unit and start it.

AIR MAGNA 100

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3. Installation

3-7 Antifreezing measures

- 1) When the ambient is lower than minus 5°C , please make sure the unit is energized.
- 2) The unit is set with anti-freeze protection program, in the state of power on, when the ambient temp gets to the protection value, the unit will run the water pump automatically and even start the heating to prevent the freeze of the water circuit, in order to make sure the normal operation of the system.
- 3) If the unit can't be energized for a long time, please make sure the water in the buffer tank and water circuit system is totally drained to prevent from the freezing of the water system and the damage on the unit.
- 4) If the power failure or power off happen, and the water is not timely drained from the water circuit system, then cause the damage on the unit and crack of the water system, our company will not take the responsibility of the maintenance.



Warning

In the situation of the power failure or power off, if the water circuit is not timely drained, it will cause the crack of the water pipe system, even damage the heat exchanger and compressor, and then the whole system will scrap, so please strictly obey the antifreeze requirements.



Attention

Choose one of the water supply valves to install.

The temp of the water supply to the buffer tank needs to be less than 50°C.

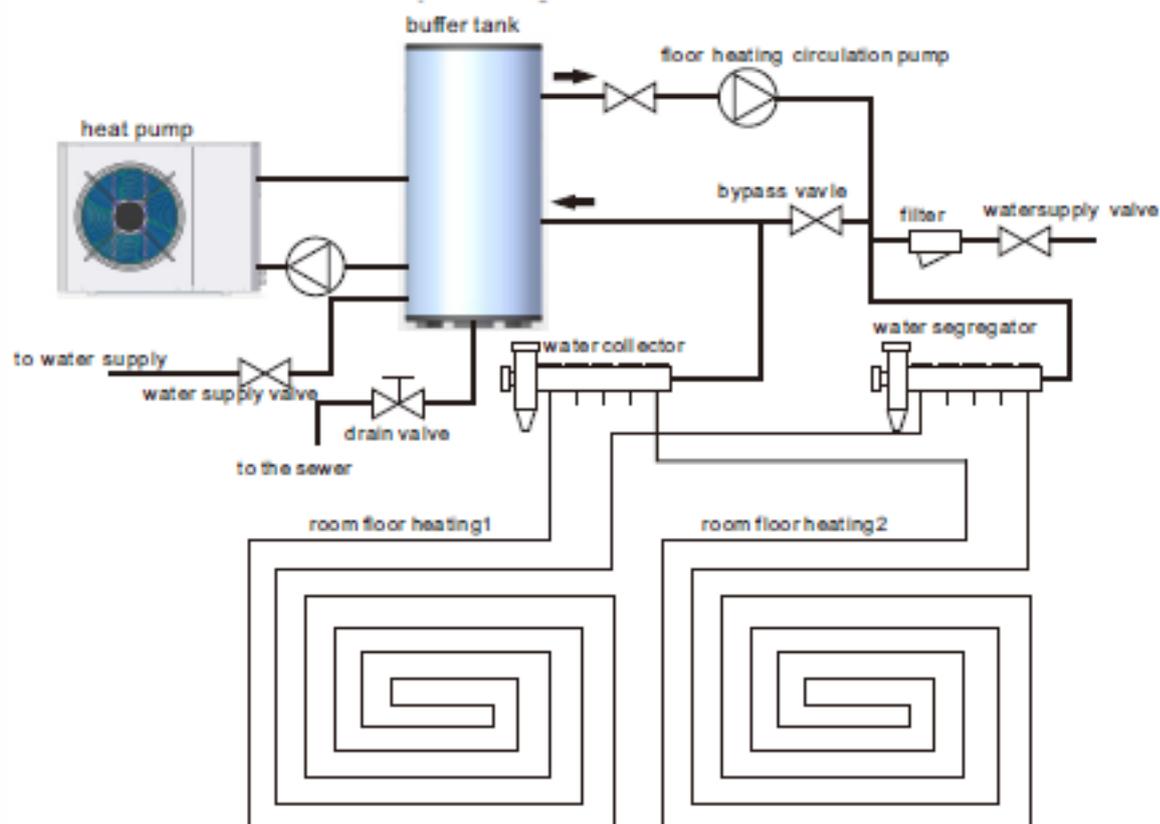
The water quality needs to meet the requirements in the following table, otherwise, the heat exchanger and the floor heating pipes will scaling after a period of using. It will affect the heat exchange efficiency.

Ph value	total hardness	conductivity	sulfide	chlorid ion	ammonia ion
6.5-8.0	200 μ V/cm(25°C)	<50 ppm	No	<50ppm	No
sulfate ions	silicon	iron content	sodion	calcium ion	_____
<50ppm	<30ppm	<0.3ppm	no requirement	<50ppm	_____

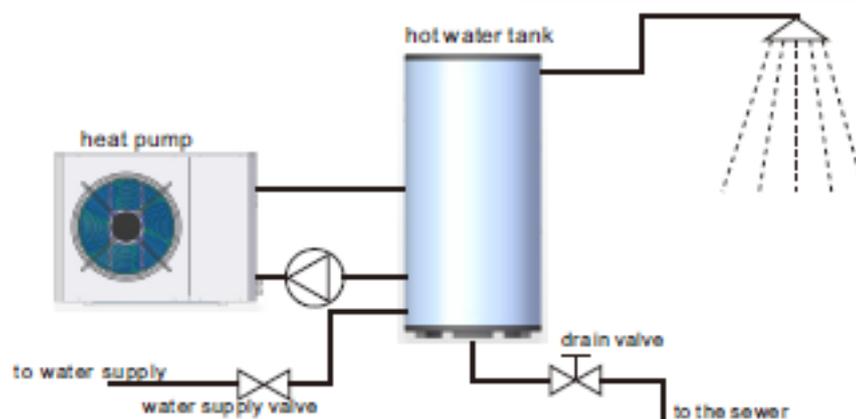
3. Installation

3-8 Installation diagram

a. Installation for only heating



b. Installation for only hot water



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3. Installation

3-8 Installation diagram

c. Installation for hot water & heating

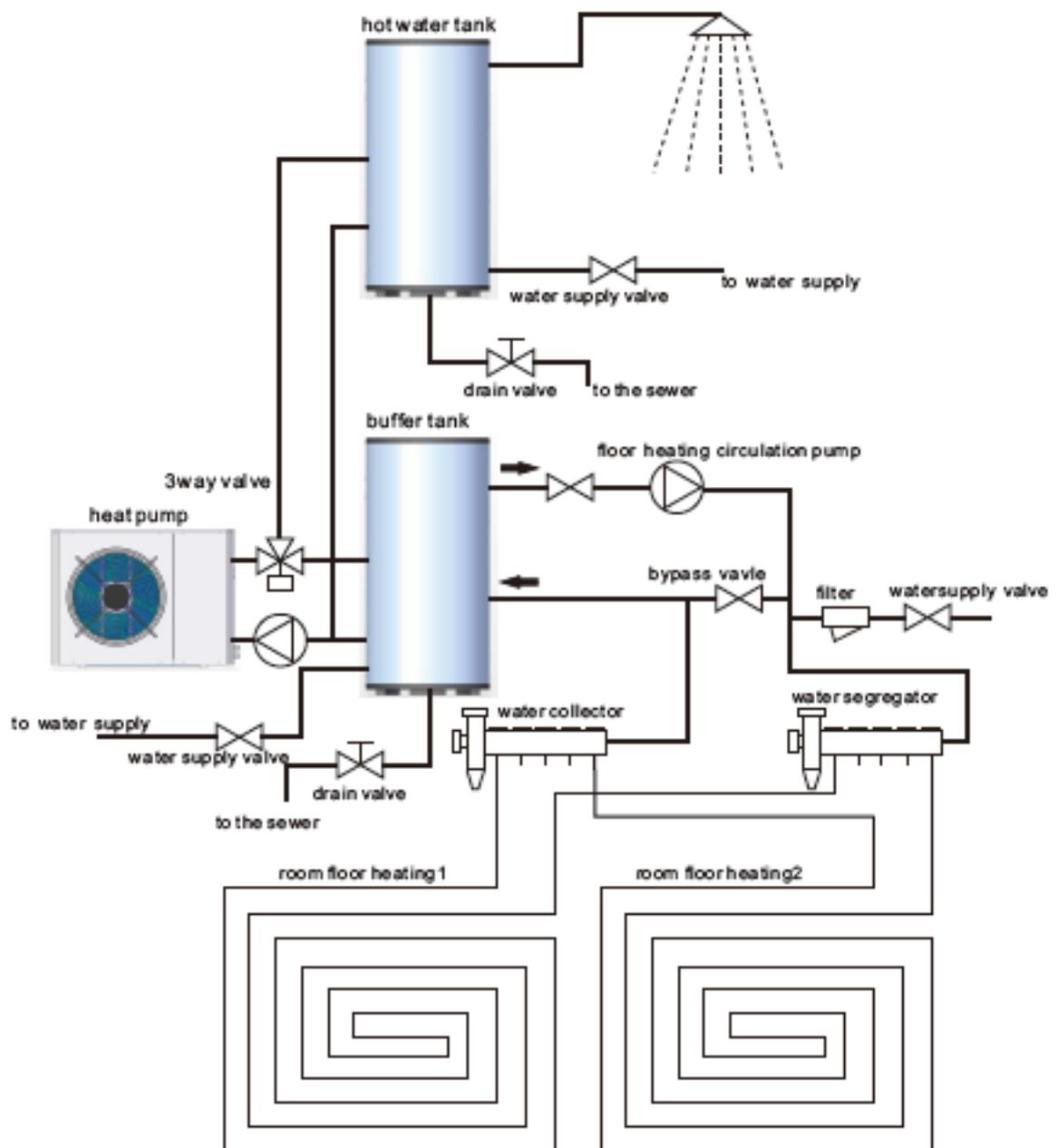


Figure 3. 5 recommended installation way

4. User instruction

The unit can be pre-programmed by the wire controller and will then be run automatically.

4-1 Controller description

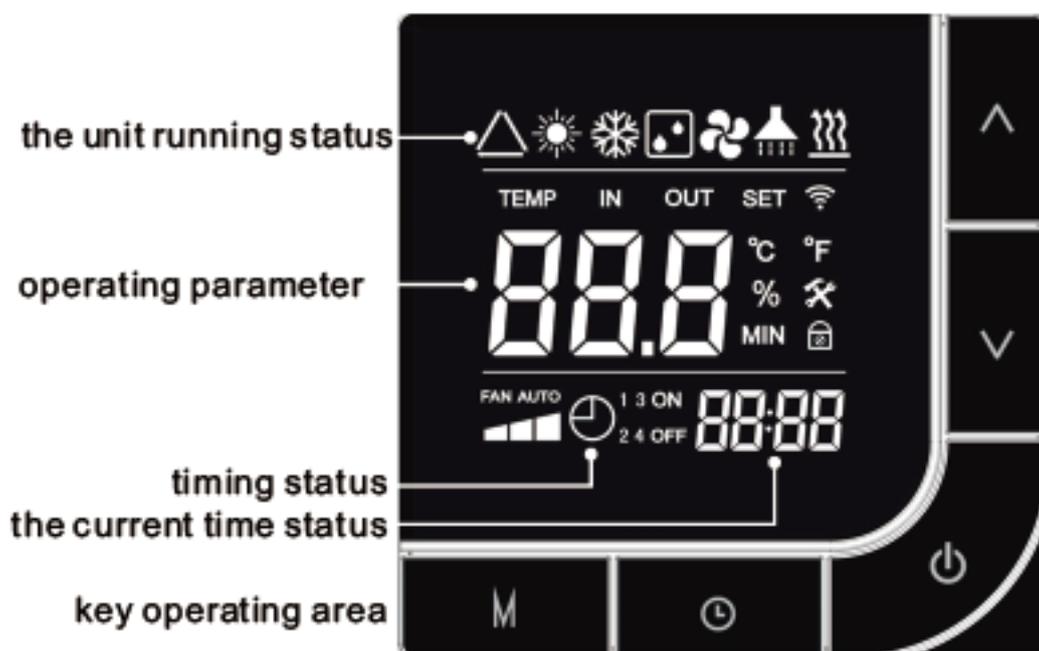


figure 5. 1

4-2 Key function

Remarks: The control panel will be locked automatically if there is no key operation within 60s and icon  is displayed on the screen.

Press on/off key for 3s to unlock it.

4-2-1 On/off key

- In unlock status, press On/off key to switch on the machine and press the key again to switch off the machine.
- In other status, press this key to return to the main screen.
- When the screen is locked, hold down this key for 3 seconds to unlock the screen.

AIR MAGNA 100

GREEN ENERGY SYSTEMS

4. User instruction

4-2-2 Function key



On the main screen, press this key to switch modes: room heating, auto mode, heating + hot water, cooling + hot water, room cooling, the corresponding icon will be light.

4-2-3 Clock key



Hold down this key for 3 seconds to enter the clock setting state.

Press this key can enter the timing on/off setting state, combined with "+" and "-", you can set the timing on/off time.

4-2-4 Page up and down key



Page up and down to query and modify parameter values.

Combine the "function" key to query and set various parameters.

In the main interface, press the "+" key and "-" key to set the temperature of the current mode.

In the temperature setting interface, when the mode is dual mode, press the function key to switch the temperature of each mode.

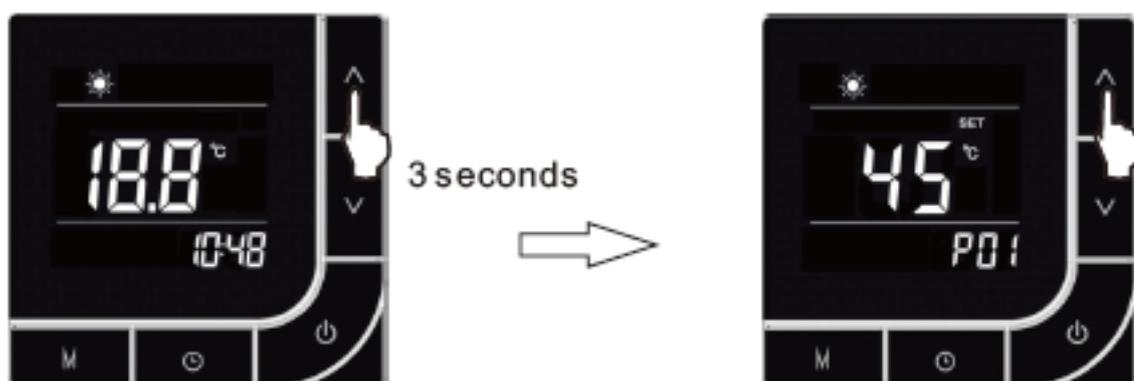
4-3 Controller operation

4-3-1 Parameters query and set (table 4.1)

Hold down "+" for 3 seconds to enter the parameter query page.

Press "+" or "-" to query each parameter.

In the parameter query interface, press the "function" key to enter the current user parameter setting interface, at this time press the "+" key or "-" key to modify the current user parameter value, and then press the "function" key to Return to query status.



4. User instruction

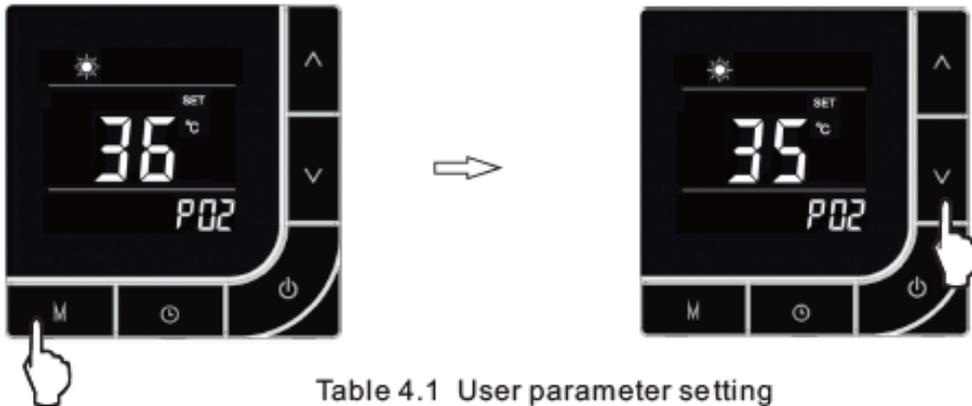


Table 4.1 User parameter setting

Parameter code	Meanings of parameters	Range of value	The default value	Remark
P01	DHW mode setting temperature	30℃~55℃	50℃	
P02	Heating mode setting temperature	Heating mode: 18℃~60℃ Cooling mode: 8℃~18℃	25℃	
P03	Automatic heating curve initial temperature	15℃~25℃	20℃	
P04	Automatic heating curve maximum temperature	24℃~50℃	45℃	
P05	DHW mode delta temperature	1℃~20℃	5℃	
P06	Heating mode delta temperature	1℃~20℃	2℃	
P07	Superheat temperature on heating mode	-20℃~20℃	1℃	
P08	Superheat temperature on cooling mode	-20℃~20℃	1℃	
P09	Electronic expansion valve control	Auto/Manual	Auto	
P10	Operation mode of circulation pump	0-Non stop/ 1-Stop with compressor/ 2-Intermittent operation	0	
P11	High-temperature sterilization mode	ON/OFF	OFF	
P12	Opening temperature of spray solenoid valve	0℃~20℃	8℃	
P13	Aambient temperature for turning on the electric heater	-17~7℃	-5℃	
P14	Delta temperature of heating mode when turning on the electric heater	0~15℃	2℃	
P15	Delta temperature of DHW mode when turning on the electric heater	0~20℃	5℃	
P16	Delay time of electric heater start	10~90M	30M	

AIR MAGNA 100

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4. User instruction

Parameter code	Meanings of parameters	Range of value	The default value	Remark
P17	Initial step of electronic expansion valve	150~500N	200	
P18	Manual step of electronic expansion valve	30~500N	250	
P19	Correction coefficient of hot water tank	1~10	10	
P20	Frequency code	1~8	3	
P21	DC fan gear	1~6	1	
P22	DC fan gear 1	30~120	30	
P23	DC fan gear 2	30~120	40	
P24	DC fan gear 3	30~120	50	
P25	DC fan gear 4	30~120	60	
P26	DC fan gear 5	30~120	75	
P27	DC fan gear 6	30~120	85	
P28	DC fan operation mode	Auto/manual	Auto	
P29	Fan 1 select	AC/DC	DC	
P30	Fan 2 select	AC/DC	DC	
P31	Low pressure sensor select	None/use	None	
P32	High pressure sensor select	None/use	None	
P33	Refrigerant	R32/R410	R32	
P34	Defrost cycle	30min~90min	45min	
P35	Defrost start temperature	-20~5℃	-7℃	
P36	Defrost stop temperature	1℃~30℃	20℃	
P37	Defrost maximum time	1min~12min	10min	
P38	Defrost temperature difference of coil with ambient	0℃~12℃	0℃	

4. User instruction

Parameter code	Meanings of parameters	Range of value	The default value	Remark
P40	Compressor operation mode	Auto/manual	Auto	
P41	Compressor operation frequency of manual	30~90	50	
P42	Exhaust temperature protection setting TP0	50~125℃	96℃	
P43	Exhaust temperature protection setting TP1	50~125℃	102℃	
P44	Exhaust temperature protection setting TP2	50~125℃	106℃	
P45	Exhaust temperature protection setting TP3	50~125℃	110℃	
P46	Exhaust temperature protection setting TP4	50~125℃	114℃	
P47	Solar system turn on or off	ON/OFF	OFF	
P48	Solar system operation mode	0- Heating 1- DHW 2- DHW+Heating	Heating	
P49	Solar system start delta temperature	1~30℃	15℃	
P50	Correction coefficient of solar system	1~10	5	
P51	Maximum temperature of hot water tank	50~99	90	
P52	EVI function turn on or off	ON/OFF	OFF	
P53	EVI function start ambient temperature	-5~20℃	7℃	
P54	EVI function start delta temperature	20~60℃	38℃	
P55	EVI superheat	1~15	6	
P56	Expansion valve operation mode of EVI	Auto/manual	Auto	
P57	Initial step of EVI expansion valve	0~480	30	
P58	Manual step of EVI expansion valve	0~480	30	

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4. User instruction

4-3-2 Run parameters query (table 4.2)

In the main interface, long press the „-“ key for 3 seconds to enter to check the run parameters. As shown in the table below:



Table 4.2 Run parameter

parameter code	parameter meaning	parameter range	remark
0 1	Hot water tank temperature	-30 ℃~99 ℃	Measured value
0 2	Heating buffer tank temperature	-30 ℃~99 ℃	Measured value
0 3	water inlet temperature	-30 ℃~99 ℃	Measured value
0 4	water outlet temperature	-30 ℃~99 ℃	Measured value
0 5	Heating coil temperature	-30 ℃~99 ℃	Measured value
0 6	Cooling coil temperature	-30 ℃~99 ℃	Measured value
0 7	Discharge temperature	0 ℃~125 ℃	Measured value
0 8	Suction temperature	-30 ℃~99 ℃	Measured value
0 9	Ambient temperature	-30 ℃~99 ℃	Measured value
1 0	Opening of expansion valve	100~480N	Measured value
1 1	EVI inlet temperature	-30 ℃~99 ℃	Measured value
1 2	Solar water tank temperature	-30 ℃~99 ℃	Measured value

4.User instruction

parameter code	parameter meaning	parameter range	remark
13	IPM temperature	-30℃~99℃	Measured value
14	Compressor frequency	0~90Hz	Measured value
15	Compressor running current	0~50A	Measured value
16	Compressor model code	1~8	Measured value
17	EVI outlet temperature	-30℃~99℃	Measured value
18	Opening of EVI expansion valve	0~480N	Measured value
19	DC voltage		Measured value
20	DC fan speed 1		Measured value
21	DC fan speed 2		Measured value
22	Low pressure	0~2MPa	Measured value
23	High pressure	0~5MPa	Measured value
24	the temperature converted by low pressure	-30~70	Measured value
25	the temperature converted by high pressure	-30~70	Measured value
26	error record 1		Measured value
27	error record 2		Measured value
28	error record 3		Measured value

4-3-3 Current clock setting

In the main interface, press the „timing“ key for 3 seconds to enter the current clock setting interface;

In the current clock interface, press the „timing“ key once, and the digits of the hour part will flash. At this time, press the „+“ or „-“ key to set the hour of the current clock;

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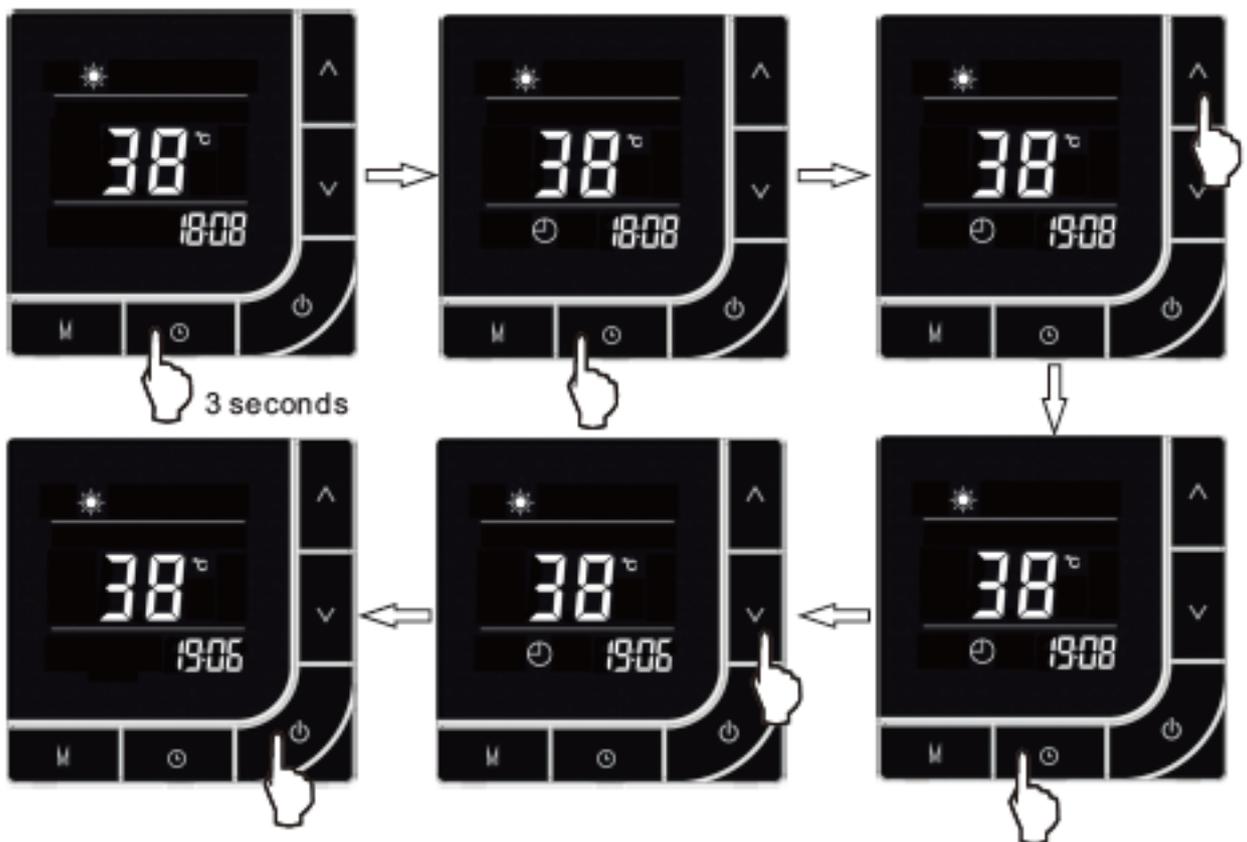
4. User instruction

After setting the hour part, press the "timing" key again, and the number of the minute part will flash. At this time, press the "+" key or "-" key to set the minutes of the current clock;

When the minute part is set, press the "timing" key again to confirm the current clock setting and return to the main interface;

In the current clock setting interface, if there is no key operation for 60 seconds, confirm the current clock setting value and return to the main interface;

In the current clock setting interface, press the "switch" key to confirm the current clock setting value and return to the main interface;



4-3-4 Timing setting on/off

On the main interface, press the "timing" key to enter the timing setting interface;

4. User instruction

When the timing is flashing, press the "timing" button to enter the hour part setting interface of the timing power-on time. The number of the hour portion of the timing power-on time flashes. At this time, press the "+" key or "-" key to start the timer hour;

After setting the hour part of the timed start-up, press the "timing" button again, and the number representing the minute part of the timed start-up time will flash. Set in minutes;

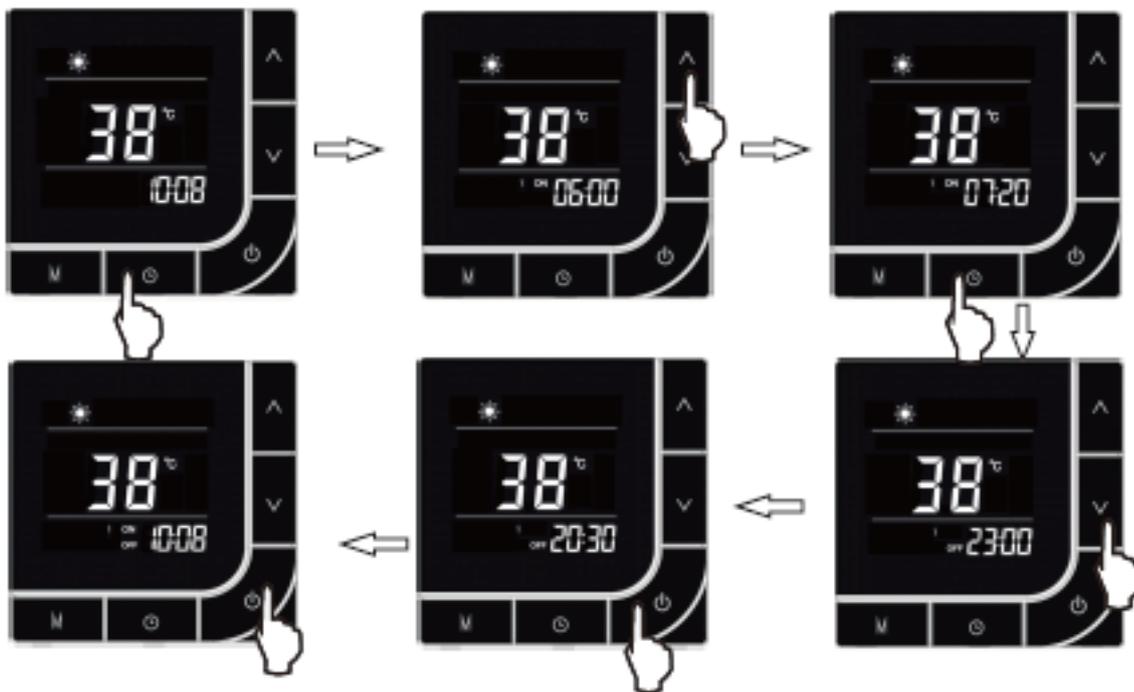
After setting the minutes for timing power-on, press the "timing" button again to enter the hour setting of timing power-off, the setting method is the same as above;

After setting the scheduled shutdown time, press the "timing" button again to return to the hour setting interface of the scheduled startup time;

In the timing interface, if there is no key operation for 60 seconds, confirm the current set timing time and return to the main interface; (the setting time will be record after power)

In the timing interface, press the "switch" button to confirm the current set timing time and return to the main interface.

When the timing switch time is the same, cancel the current timing setting.



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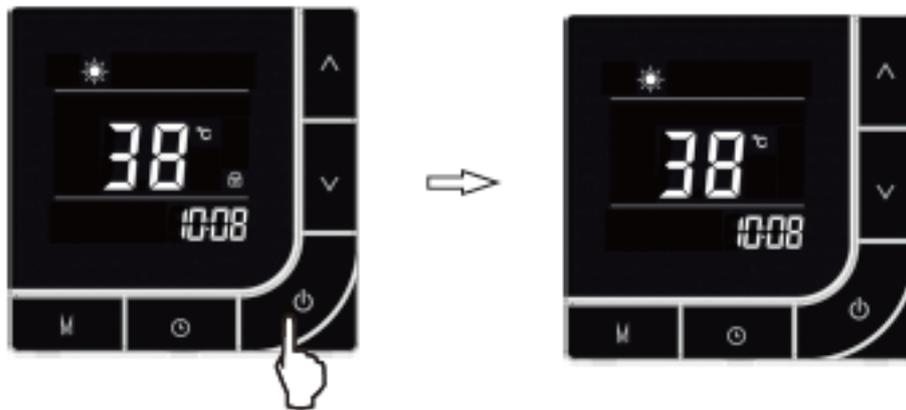
4. User instruction

4-3-5 Key lock and unlock

When there is no operation for 60 seconds, the screen will be locked automatically and icon is displayed on the screen.



⇒ key-locked state, press and hold the "switch" key for 3 seconds, and the key-lock will be released after the buzzer beeps once.



4-3-6 Forced defrost

In the power-on state, press and hold the "-" key and the "function" key for 3 seconds to enter the forced defrost.

4-3-7 Parameters reset

In the main interface, long press the "timing" key, "-" key, "+" key and the "function" key for 3 seconds to reset the factory default values of the parameters.

4-3-8 Clear historical error code

In the historical error code query interface, long press the "function" key for 3 seconds to clear the previously stored historical error codes.

5. Trial operation

5-1 Inspection before the trial operation

Please check if the following items before the trial operation.

- 1) If the unit is installed correctly;
- 2) If the piping and wiring are correct;
- 3) If the drainage is smooth;
- 4) If the thermal insulation is well done;
- 5) If the grounding wire is connected properly;
- 6) If the power supply voltage fits the rated voltage of the unit;
- 7) If there is any barrier in front of the air inlet/outlet;
- 8) If the air inside the water circuit system is totally evacuated, if all the valves are opened;
- 9) The current leak protector can act effectively;
- 10) The inlet water pressure is no less than 0.15MPa.

5-2 Trial operation

When all the above items are normal, connect the power supply and start the unit. During the trial operation, check the following items:

- 1) If the unit working performance is normal, if it can normally produce the demanded heating capacity or cooling capacity.
- 2) If the water connection is tightly fixed without water leak
- 3) If the fan blade runs normally; if the outlet air is smooth and if there is abnormal vibration from the fan motor;
- 4) During the unit running, if there is abnormal vibration and noise.
- 5) If the operation keys of the controller is flexible, reliable and responds normally.
- 6) If the controller display is normal, if there is missing or wrong segment, if the back light brightness is normal.
- 7) If there is any abnormal vibration and pipeline collision from the pipe system during the operation.
- 8) If the power line is hot abnormally during the unit operation; If all the above is normal, the unit can be sent to the customer to put in use.

AIR MAGNA 100

GREEN ENERGY SYSTEMS

6. Unit operation and performance

6-1 explanation for some phenomena during the unit operation

1) Start delay

During the unit running, if the unit is turned off or stops automatically, if restart the unit, the unit has to wait for 3 minutes to start. This setting is the protection on compressor instead of fault.

2) Defrosting

In the heating mode, when the outdoor evaporator surface has white frost (when the air temp is low or the air is humid, this phenomenon will be more obvious), the heat exchanging and performance will be affected, so when the frost gets to a certain degree, the system will run the defrosting automatically.

In the defrosting mode, the outdoor fan motor will stop run. Sometimes there is white vapor from the outdoor evaporator. Those are normal defrosting phenomenon instead of fault.

3) Antifreeze protection

In the cold winter, when the unit is standby mode, sometimes it will run the water pump automatically or even starts the compressor to run for a short time, in order to prevent the freezing of the water circuit at the low temp. Those are the antifreeze protection operation of the system instead of fault.

In the cold winter, if the unit is no longer used, please keep the unit energized. Please do not cut off the power supply, otherwise, it will be impossible to run the antifreeze protection mode and result in the water circuit freezing and damage on the unit.

If the unit will not be used for a long time, please make sure the water circuit system is completely drained before cutting off the power supply.

4) Fault displaying

During the normal operation, if the unit suddenly stops, please immediately check the content displayed on the controller in order to make clear if it is the action of some protective device.

The unit system is set with many protection measures, if there is fault code on the controller displayer, please immediately contact your dealer or after service support to solve the problem.

5) Screen lock function

In the running of the unit, if the controller can't be operated, please check if the controller screen is locked. Please refer to the item 7) "screen lock setting" in the part of 5-2.

6-2 Notes about unit running

Please keep the air inlet/outlet surroundings clean, do not block the air inlet/outlet channel in order to not affect the heat exchanging efficiency.

Set a comfortable water temp instead of over-high water temp, otherwise it will cause the electricity waste and overload operation of the compressor, possibly also affect the life span of the unit.

In any case, if the unit has abnormal noise and over vibration, please immediately contact your dealer or after-sales technician.

If any problem happens during the operation, please contact your dealer or after-sales technician to solve the problem. Please do not try to dismantle machine or repair the machine by your own in order to avoid unnecessary injury.

6. Unit operation and performance

6-3 Performance parameter

Heating capacity (A7/W35)	kW	6,0	9,0	12,0	16,0	21,0
Heating power input (A7/W35)	kW	1,38	2,07	2,69	3,66	4,59
COP (A7/W35)		4,42	4,40	4,42	4,43	4,40
Heating capacity (A2/W35)	kW	5,30	8,10	10,20	13,60	17,60
Heating power input (A2/W35)	kW	1,32	2,02	2,53	3,39	4,49
COP (A2/W35)		4,02	4,01	4,03	4,01	3,92
Heating capacity (A-7/W35)	kW	4,30	5,71	8,60	11,70	13,50
Heating power input (A-7/W35)	kW	1,42	1,82	2,72	3,61	4,51
COP (A-7/W35)		3,03	3,14	3,16	3,24	3,22
Heating capacity (A-7/W55)	kW	4,10	6,70	8,10	10,20	13,50
Heating power input (A-7/W55)	kW	2,18	3,50	4,33	5,91	7,42
COP (A-7/W55)		1,88	1,91	1,87	1,73	1,82
Max. water temp.	°C	60				
Rated water temp.	°C	55				
water flow	m ³ /h	1,0	1,5	1,9	2,6	3,4
pressure drop	Kpa	18	22	24	28	31
Net weight	kg	72	90	96	124	190
Noise	dB(A)	50	52	58	58	58
Pipe connection	mm	3/4 inch	1 inch			5/4 inch
Power supply		220V/1PH/50Hz				380V/3PH/50Hz
Net size	mm	1030*380*803	960*370*810	1030*380*803	1030*380*1335	1110*450*1250
Compressor		1	1	1	1	1
Condenser		high efficiency tube in shell heat exchanger				plate heat exchanger
Evaporator		Louverd&hydrophilic fin-tubes				
4-way valve		Yes				
Flow switch		Yes				
Circulation pump		No				Built-in water pump
Expansion valve		Electronic expansion valve				
DC Fan motor		80W	80W	80W	80W*2	80W*2
High pressure switch		4.2/3.6MPa				
Low pressure switch		0.02/0.15MPa				
Working mode		cooling, heating, hot water, cooling+hot water, heating+hot water				
Refrigerant		R32				

AIR MAGNA 100

GREEN ENERGY SYSTEMS

7. Maintenance and trouble shooting

7-1 Fault code table (table 8.1)

The unit will stop automatically if any fault happens during the operation, meanwhile, the fault code will display on the controller screen. Please contact the serviceman to check by referring to the following table and exclude the fault.

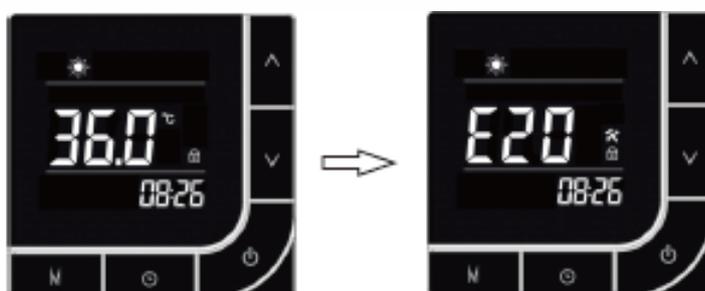


table 7. 1 fault code table

Error code	Error description	Error code	Error description
E00	communication fail	E21	coil sensor failure
E01	water inlet temperature sensor failure	E22	cooling coil sensor failure
E02	water outlet temperature sensor failure	E23	ambient temperature too high
E03	water flow switch protection	E24	Module communication failure
E04	Power phase sequence failure	E25	Module abnormal protection
E05	The temperature difference between the inlet and outlet water is too large	E26	Module heat sink high temperature protection
E07	Tube overtemperature protection	E27	Compressor overcurrent protection
E08	hot water tank temperature sensor failure	E28	module temperature sensor failure
E09	heating buffer tank temperature sensor failure	E29	Compressor overload protection
E10	high pressure protection	E30	Defrosting water temperature is too low
E11	low pressure protection	E31	ambient temperature too low
E12	Outlet water temperature is too high	E32	PCB board communication failure
E13	Outlet water temperature is too low	E33	EVI inlet temperature sensor failure
E14	suction sensor failure	E34	EVI outlet temperature sensor failure
E15	discharge sensor failure	E35	solar temperature sensor failure
E16	discharge temperature too high	E37	DC fan 1 failure
E18	hot water mode secondary antifreeze	E38	DC fan 2 failure
E19	heating mode secondary antifreeze	E39	high pressure sensor failure
E20	ambient sensor failure	E40	low pressure sensor failure

7. Maintenance and trouble shooting

7-2 Malfunctions and treatment

Warning

If any fault occurs and the unit stops running, please contact your dealer or after-sales technician to solve the problem. Please do not dismantle the unit and do repair by your own in order to avoid any unnecessary injury.

When the unit has abnormal fault, please immediately cut off the power supply, do not force it to run, otherwise there will be more damage.

7-3 Cleaning

Warning

For the sake of safety, the unit must be turned off and the power supply is cut off before the cleaning.

Please take care to not damage the temp sensors during the cleaning.

- 1) Please be careful of those sharp metal edges and evaporator fins during the clearing to avoid the injury caused by improper operation.
- 2) Regularly check the air inlet and air out and see if there is any blockage.

7-4 Maintenance

Attention

When the unit is prepared to be put in use again after a period of leaving unused, please check the air inlet and air outlet to see if there is any blockage. If there is blockage, please clean up immediately.

- 1) Before the use of the unit in each season, Please clean the filter on the water circuit system to make sure the smooth water flow
- 2) During the unit operation, when the water flow is small and the water temp difference is too big, please check if the filter of the water circuit is clear.
- 3) Before the use of the unit in each season, please check if the heat exchanger surface is clean. If there is too much dirt or impurities, please contact your dealer or the after-sales serviceman to do the cleaning in order to make sure the good heat exchanging efficiency and using effect.
- 4) If there is plenty of snow in winter, please block up the unit before install it to avoid the blockage of the air outlet because of the deep snow.

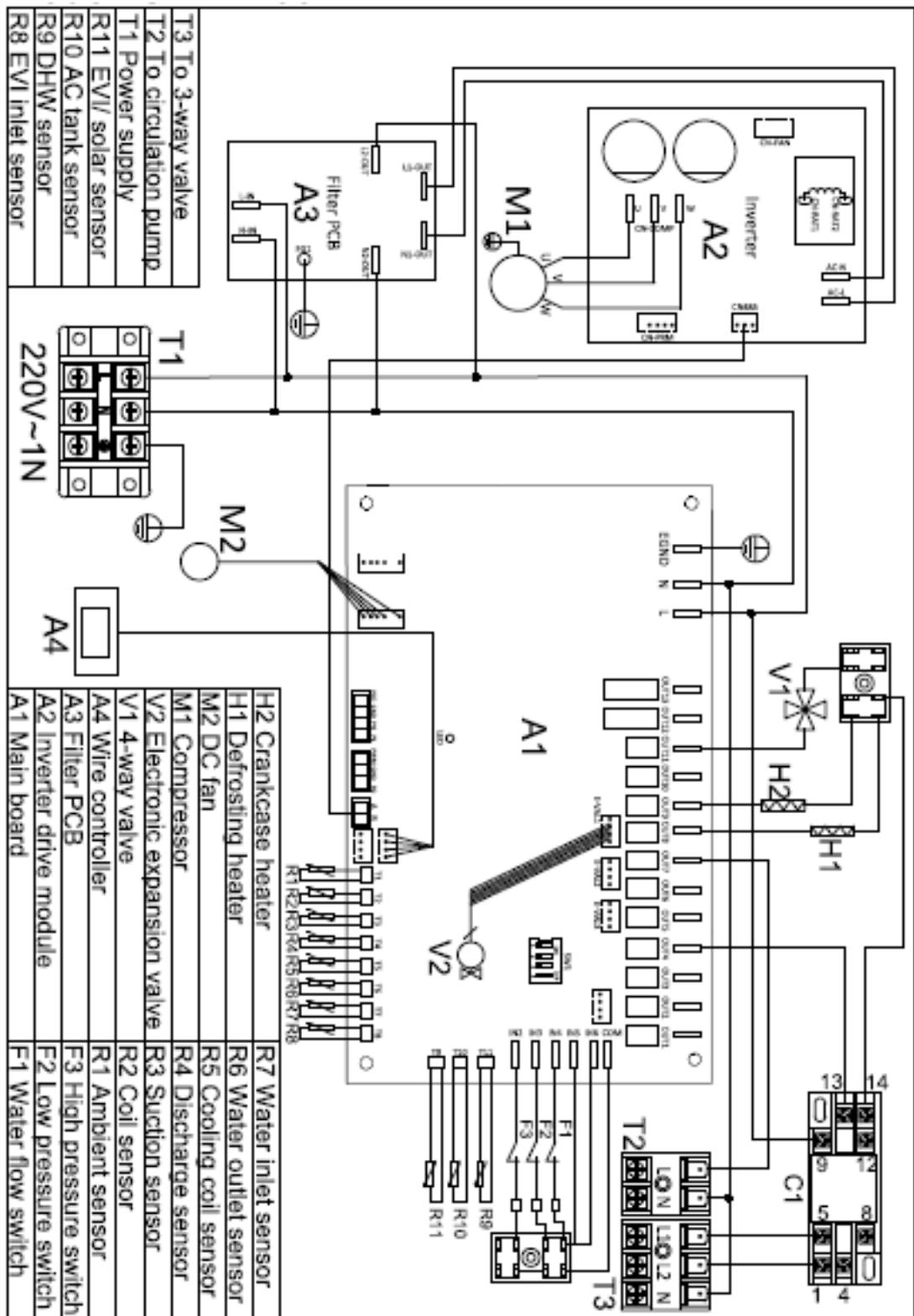
7-5 After-sales service

When the unit can't work normally, please immediately turn off the unit and cut off the power supply, then contact the local dealer or professional technician to solve the problem.

AIR MAGNA 100

GREEN ENERGY SYSTEMS

8. Wiring diagram



9.WIFI function

9-1 Software download and installation:

For IOS:

Enter "Multi-Machine" in Google Play or App Store, search for multifunction machine APP, download and install.

For Android:

Enter the URL in the browser: <http://d.3appstore.com/phx9>, you will find "Multi-Machine" app, download and install.

The following instructions are based on the IOS system

9-2 User registration

Click the icon "Multi-Machine" to open the app.

Enter your mobile phone number or email address and password, press the "Login" button.

After successful registration, click the "Add Device" button.

Click "WIFI Device" button.



AIR MAGNA 100

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9.WIFI function

9-3 WIFI Connection

Long press the "timing" key and "-" key for 3 seconds, the wire controller will make a beep to enter the state of intelligent network distribution, and the "📶" icon will flash for 3 minutes.

Click the "Confirm" button on your phone.

Enter the WIFI password and press the "Next" button.

Press "OK" button, the app start to find and connect to device.

When the device is successfully connected, the phone screen will display the "Connection succeed" information, press "OK" button to confirm the connection.

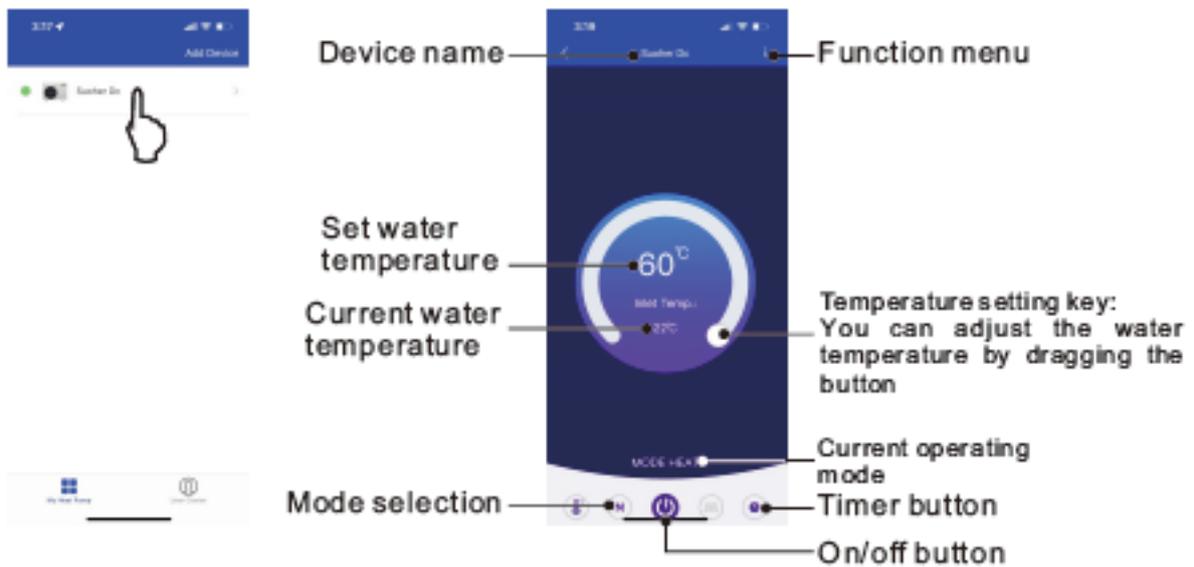


9.WIFI function

9-4 App user guide

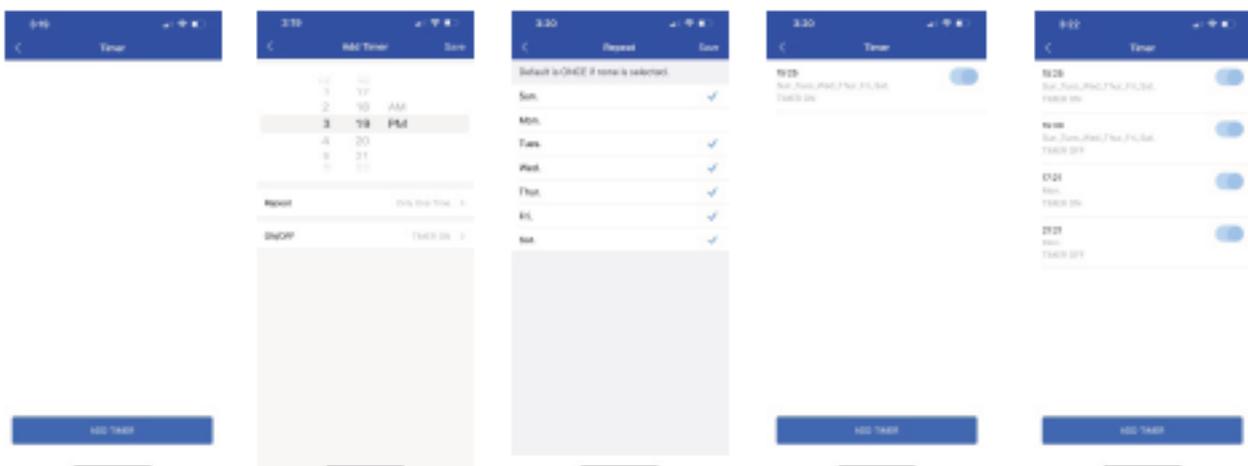
Open the app, click on the device name.

Enter the app control interface, see the description for the name of each part of the interface.



9-4-1 Timer function

- Press timer button.
- Press "ADD TIMER" button.
- Set timing time and select date and timing on/off.



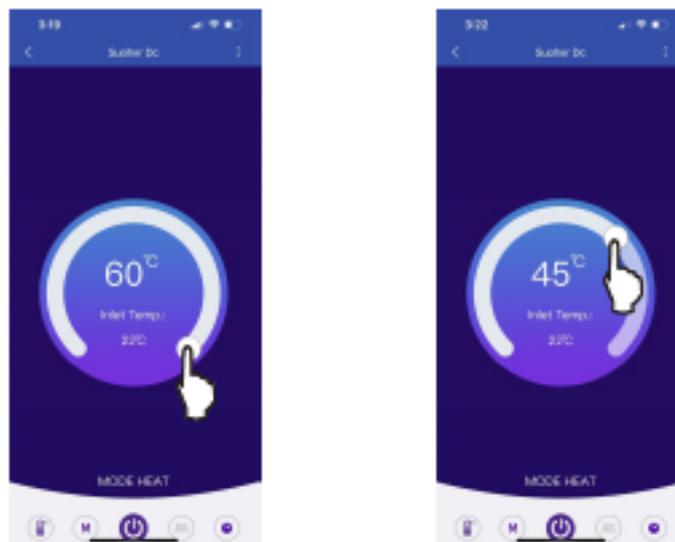
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9.WIFI function

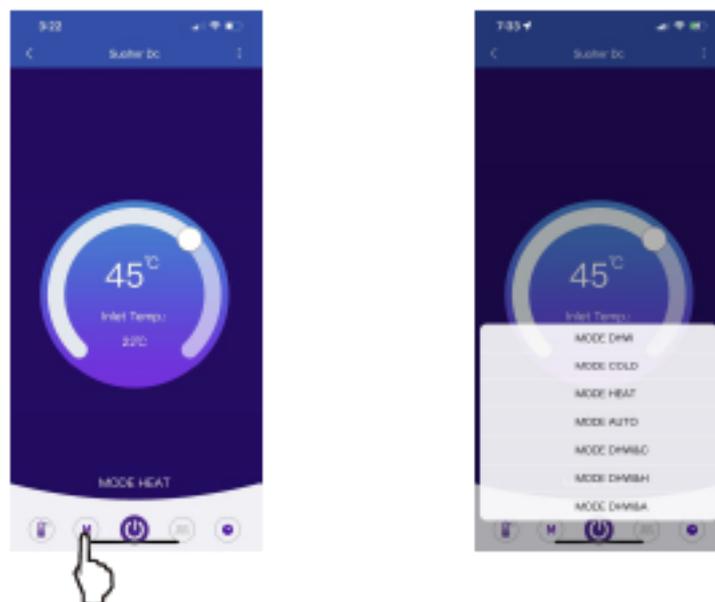
9-4-2 Set water temperature

Drag the big dot on the temperature circle with your finger to adjust the set water temperature.



9-4-3 Operation mode selection

Press the "M" button, You can call out the operating mode menu, you can select the operating mode you need.



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A DIVISION OF ANTEK INDUSTRIAL GROUP

Büro und Lager: Am Wienerweg 8
A-2403 Scharndorf

E-Mail: info@antek.at

www.ANTEK-GreenEnergy.com
www.ANTEK-IndustrialGroup.com
www.ANTEK-BM.com