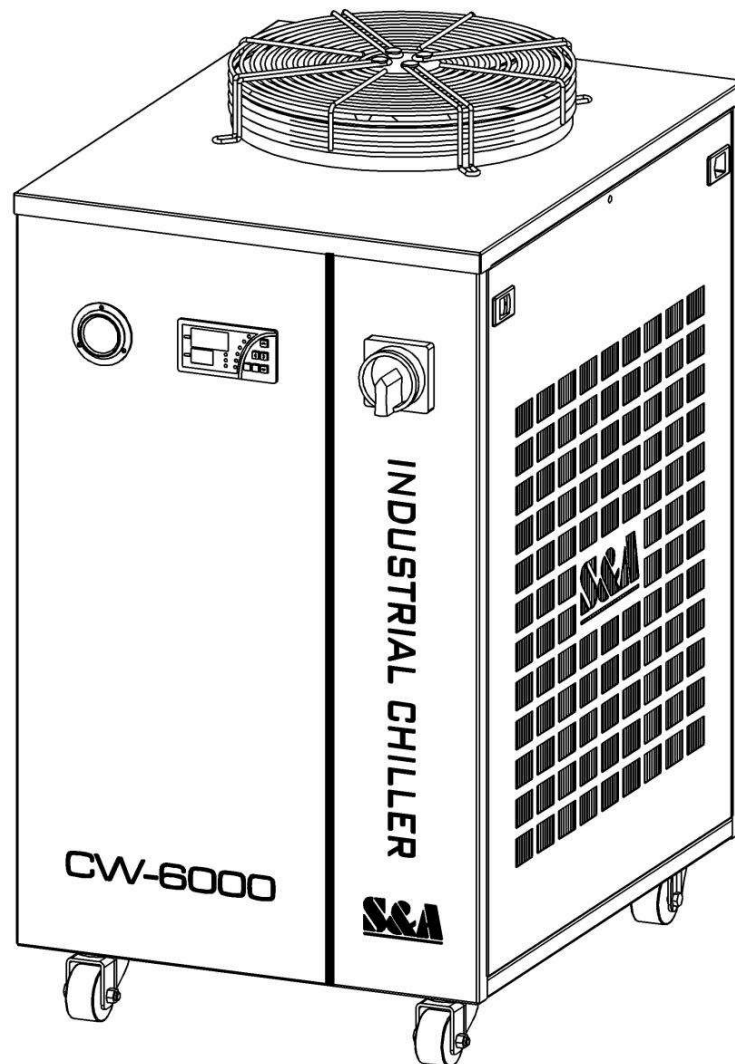


CW-6000/6100/6200 INDUSTRIAL CHILLER

USER MANUAL



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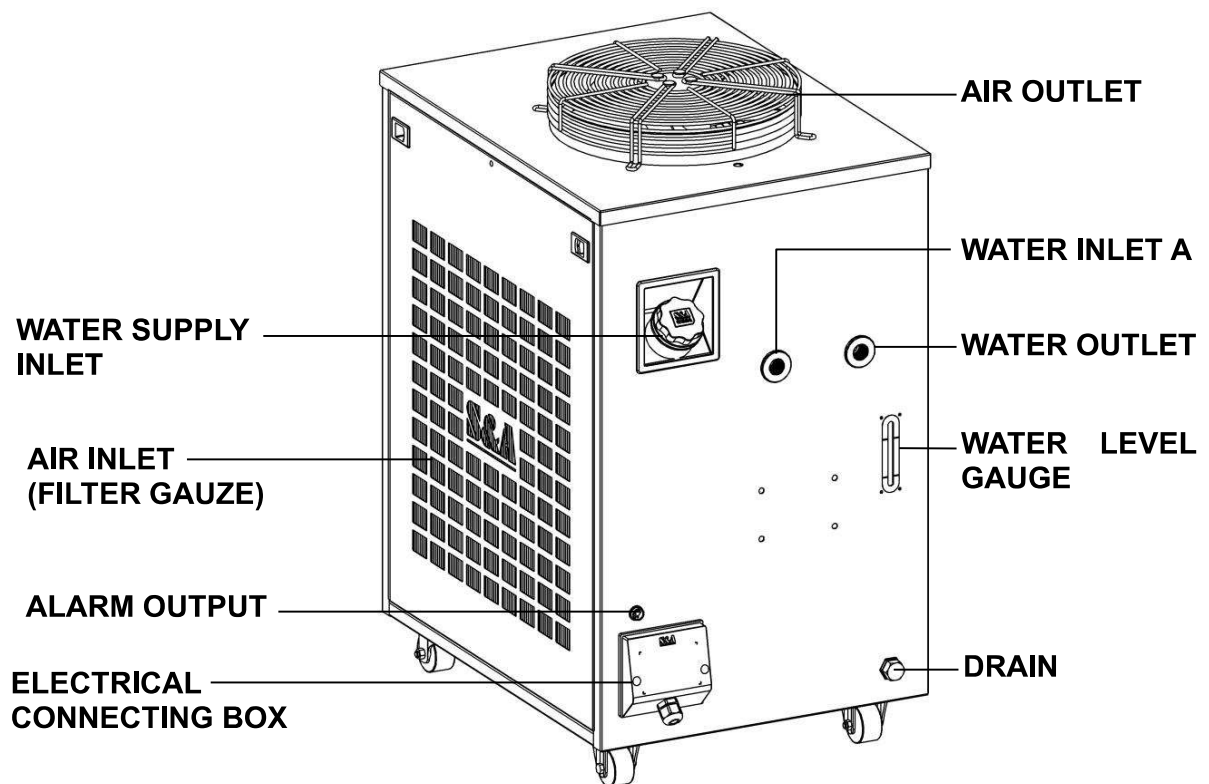
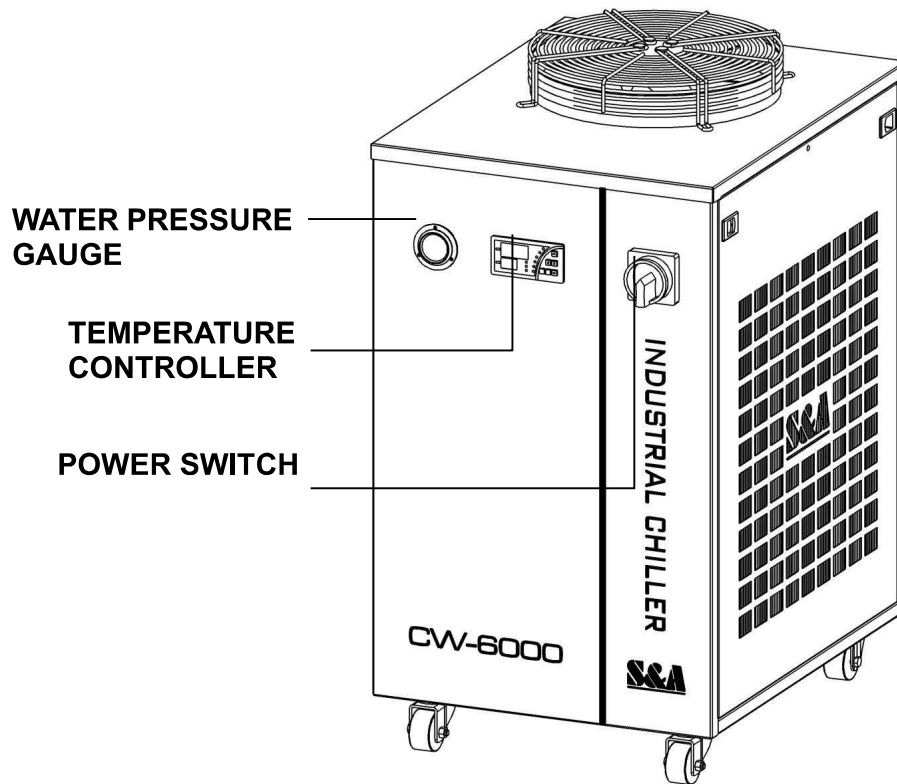
Thank you for using the machine from GUANGZHOU TEYU ELECTROMECHANICAL CO., LTD. Please read the installation instructions carefully before installing and operating and keep it properly.

This installation instructions is not a quality assurance. GUANGZHOU TEYU ELECTROMECHANICAL CO., LTD reserves the right to the interpretation of correction of typographical errors, improper mentioned information and product improvement. The amended content will be reprinted in installation instructions without notice in advance.

<1> Cautions

1. Please ensure that the power supply and electrical outlet are in good contact and the earth wire must be firmly grounded!
2. Please make sure there is stable and normal voltage for the working chiller!
As the refrigeration compressor is more sensitive to the power supply and voltage, so the operating voltage of our standard product is of 210 ~ 240V (110V model is of 100 ~130V). If you do need a wider operating voltage range, customization is available for us.
3. Unmatched power frequency can cause the chiller damage!
Please choose model of 50Hz or 60Hz according to actual circumstance.
4. To protect the pump, it's strictly forbidden to run the chiller without water in the storage water tank!
The new machine is packed after draining whole water in the tank, so please make sure the tank has water inside before machine starting, otherwise it's easily to have the pump damaged. When the water level is below the green (NORMAL) range of the water level gauge, the cooling capacity of our chiller will go down slightly. Hence please ensure the water level is within the green (NORMAL) range. To drain through circulating pump is strictly prohibited!
5. Please be sure that the air inlet and air outlet are in good ventilation!
There must be at least 50cm from obstructions to the air outlet which is in the back of the cooler, and should leave at least 30cm between obstructions and the side air inlet.
6. The filter screen must be regularly cleaned!
It's essential to unpick and wash the dust gauze, or the serious blockage will cause breakdown to the chiller.
7. Please pay attention to the effect of the condensate water!
With greater ambient humidity, when the water temperature is lower than the ambient temperature, the condensate water will generate on the surface of water circular pipes and the cooled components. If above circumstance appears, it is recommended to set a higher water temperature or keep pipes and cooled parts warm.
8. This product is an industrial equipment. For professional use only.

<2> Contour and parts introduction



<3> Installation

It is very simple to install this industrial cooling machine. The installation for the first time of the new machine can be carried out by following steps:

1. Open the package to check if the machine is intact and all the necessary accessories are completed.
2. Open the injection port to feed cooling water. (Do not let the water spill over!) Observing the water level gauge and adding water slowly, be careful not to have the water overflowed! For the cooling of carbon steel equipment, the water should be added an appropriate amount of cooling water additive (anti-corrosion water aqua). Working in cold north area, it's better to use noncorrosive antifreeze fluid.
3. According to system conditions, please connect the water inlet and outlet pipe well.
4. Plug in power, turn on the power switch. (Do not start up without water in the water tank!)
 - (1) Power switch turned on, the circulation pump of the chiller starts working. The first time of operating may cause more bubbles in the pipe leading to a flow alarming occasionally, but running for a few minutes later, it will go back to normal.
 - (2) After the first boot, you must immediately check whether the water pipe leaks.
 - (3) Power switched on, if the water temperature is below the set value, it is normal that fans and other components of the machine do not work. The temperature controller will automatically control the working conditions of the compressor, magnetic valve, fans and other parts based on the set controlling parameters.
 - (4) As it takes a longer time to start over the compressor and other components, according to different conditions, the time is range from seconds to minutes, so do not turn off the power and again on frequently.
5. Check the water level in the water tank.

The first startup of the new chiller empties the air in the water pipe, leading a slight water level decline, but in order to keep the water level in the green area, it's allowed to add adequate water again. Please observe and record the current water level, and inspect it again after the chiller running for a period of time, if the water level drops obviously, please re-inspect the water pipeline leakage.
6. Adjust parameters of temperature controller.

CW-6000/6100/6200 series use an intelligent thermostat. Normally users do not need to adjust it. If it is really necessary, please refer to page 6, "Operating status and parameters adjustment."

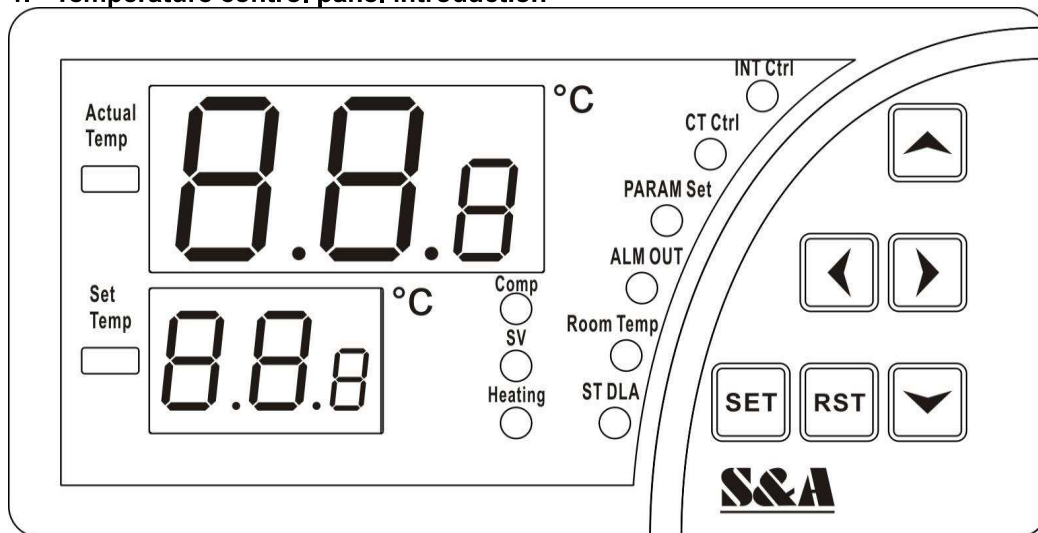
<4> Operation status and parameters adjustment

The new T-506A intelligent temperature controller does not need to adjust the controlling parameters under normal circumstance. It will self-adjust controlling parameters according to room temperature for meeting equipment cooling requirements.

The new T-506B intelligent temperature controller is selected constant temperature control mode as factory setting with water temperature at 25°C. User can adjust it as needed.

T-506A and T-506B controllers are of same functions and structure except default setting.





1. Temperature control panel introduction



(1). Indicators of temperature controller working status:

COMP	ON, compressor working
SV	ON, solenoid valve working
Heating	ON, heating rod working
INT Ctrl	ON, controller working in intelligent control mode
CT Ctrl	ON, controller working in constant temperature control mode
PARAM Set	ON, controller working in parameters setting mode
ALM OUT	ON, alarm output status
Room Temp	ON, displaying room temperature
ST DLA	ON, starting up delay status

(2). Press  key to show the room temperature, 6 seconds later default display restored. (Meanwhile, Room Temp light is on, displaying room temperature.)

(3).   keys are for modifying parameters values and   keys are for switching parameter items.

(4). RST key: confirm

(5). SET key: setting function

2. Restore to factory settings

Before machine startup, press and hold   keys until the controller displays rE, 6 seconds later after releasing the keys, the controller works in normal order. All parameters values settings of the controller have been restored to factory settings.

3. Alarm function

(1) Alarm Display:

When alarm occurs, the error code and the temperature will be alternately displayed.

E1	E2	E3	E4	E5	E6	E7
Ultrahigh room temperature	Ultrahigh water temperature	Ultralow water temperature	Room temperature sensor failure	Water temperature sensor failure	External alarm input	Water flow alarm input

(2) To suspend the alarm:

In alarming state, the alarm sound could be suspended by pressing any button, but the alarm display remains until the alarm condition is eliminated.



4. Temperature controller parameters list

Order	Code	Item	Range	T-506A Temperature controller Factory Setting	T-506B Temperature controller Factory Setting	Note
1	F0	Temperature setting	F9~F8/ -20~+40	25	25	Constant temperature control effecting
2	F1	Temperature Difference values	-15~+5	-2	-2	Intelligent control effecting
3	F2	Cooling hysteresis	0.1~3.0	0.8	0.3	
4	F3	Way of control	0~1	1	0	1: intelligent 0: constant temperature
5	F4	Alarm for ultrahigh water temperature	1~20	10	10	
6	F5	Alarm for ultralow water temperature	1~20	15	15	
7	F6	Alarm for ultrahigh room temperature	40~50	45	45	
8	F7	Password	00~99	8	8	
9	F8	The allowed highest water temperature	(F9+1) ~40	30	30	
10	F9	The allowed lowest water temperature	1 ~ (F8-1)	20	20	
11	F10	Alarm of sensor pulse frequency	0~99	8	8	Eliminate the alarm by setting to 0




5. General settings adjustment





Press SET key to enter into the user-defined state. Meanwhile, PARAM SET is on, controller in parameters setup status.

- (1) Under intelligent mode, the control panel displays the temperature difference value between water and air (default value is -2).
- (2) Under constant temperature mode, the control panel displays the set temperature value (default value is 25).

At this moment, press   keys to change settings. After modifying the value, press RST key to save and exit, then new parameters take effect, or press SET key to exit without saving parameters. If there is no more action within 20 seconds, it will automatically exit modifying status without saving parameters.

6. Advanced settings adjustment

- (1) Press and hold the  key while press SET key for 5 seconds until 00 displayed in upper window and PAS in lower window. Then press   keys to select the password (default setting is 8), and then press the SET key, if the password is correct, F0 displays, entering into setup status, D1 flashing to indicate that the controller is under parameters setup status. If the password is incorrect, it returns to temperature display.

- (2) Enter setup state, press   keys to switch parameter items circularly, then press   keys to modify the parameter values. Press enter key RST at any time to exit parameters setup with saving modified parameters and return to temperature display, then chiller runs under the new parameters. If no key is pressed within 20 seconds, the controller will automatically exit parameters setup without saving the modified parameters (under parameters setup status, system running in original parameters). Under parameters setup status, SET key does not work.

Note:

1. During parameters setting condition, system runs under original parameters.
2. Under constant temperature control mode, the water temperature is controlled by parameter F0;
3. Under intelligent control mode, the water temperature will be automatically adjusted according to temperature changes. The temperature difference is commanded by F1.

7. Advanced parameters adjustment case:

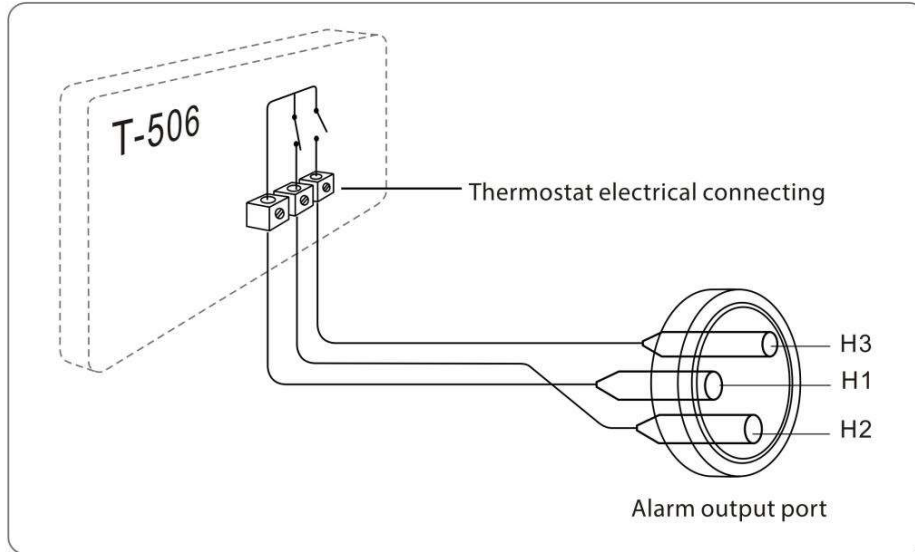
Order	Code	Item	Value in case 1	Value in case 2	T-506A Temperature controller Factory Setting	T-506B Temperature controller Factory Setting
1	F0	Temperature setting	/	28	25	25
2	F1	Temperature Difference values	-3	/	-2	-2
3	F2	Cooling hysteresis	0.5	2.0	0.8	0.3
4	F3	Way of control	1	0	1	0
5	F4	Alarm for over high water temperature	15	5	10	10
6	F5	Alarm for over low water temperature	15	10	15	15
7	F6	Alarm for over high Room temperature	45	45	45	45
8	F7	Password	8	8	8	8
9	F8	The allowed highest water temperature	31	30	30	30
10	F9	The allowed lowest water temperature	25	5	20	20
11	F10	Alarm of sensor pulse frequency	8	8	8	8

- (1) Case 1: cooling water temperature is controlled by intelligent mode. Requiring water temperature to be between 25°C to 31°C. Ambient temperature keeping constant, when the set water temperature is 3°C lower than the ambient, the fluctuation will not exceed ± 0.5 °C. There will be an alert when water temperature is 15 °C lower or higher than target. (e.g. when ambient temperature is 30.0°C, cooling water temperature is between 27.5°C to 26.5°C, if ambient temperature is up to 30.5°C, water temperature will be between 28.0°C to 27.0°C.)
- (2) Case 2: cooling water temperature is controlled by constant mode. Requiring water temperature is constant in 28°C, and the fluctuate does not exceed ± 2 °C. The alarm of over high water temperature will be on when water temperature is 5°C higher than normal, and the alarm of over low water temperature will be on when water temperature is 10°C lower than normal.

<5> Alarm and output terminal

In order to guarantee the equipment will not be effected while abnormal situation h appens on the chiller, CW-6000/6100/6200 series chillers possess alarm protection function.

1. Alarm output terminals and wiring diagram.



2. Alarm causes and working status table.

Condition	Display	Alarm code	Buzzer	OUT H1、H2	OUT H1、H3
Circulating pump works properly				DISCONNECTION	BREAKOVER
Ultrahigh room temp		E1	Sounds	BREAKOVER	DISCONNECTION
Ultrahigh water temp		E2	Sounds	BREAKOVER	DISCONNECTION
Ultralow water temp		E3	Sounds	BREAKOVER	DISCONNECTION
Faulted room temp sensor		E4	Sounds	BREAKOVER	DISCONNECTION
Faulted water temp sensor		E5	Sounds	BREAKOVER	DISCONNECTION
Alarm of water shortage		E6	Sounds	BREAKOVER	DISCONNECTION
low flow rate / water flow alarm		E6/E7	Sounds	BREAKOVER	DISCONNECTION
Faulted circulating pump		E7	Sounds	BREAKOVER	DISCONNECTION
Chiller power failure				BREAKOVER	DISCONNECTION

Note: The flow alarm is connected to the normally open relay and normally closed relay contacts, requiring operating current less than 3A, working voltage less than 300V.

<6> Specifications

CW- 6000

Model	CW-6000AN	CW-6000BN	CW-6000DN
Voltage	AC 1P 220V	AC 1P 220V	AC 1P 110V
Frequency	50Hz	60Hz	60Hz
Current	4.2-8.5A	4.13-9.5A	5.7-17.1A
Nominal cooling capacity	3.27KW	3.14KW	3.45KW
Refrigerant	R-410a		
Precision	±0.5℃		
Reducer	Capillary		
Protection	Overcurrent protection for compressor, flow alarm, over temperature alarm		
Pump power	0.37~0.75 KW		
Tank capacity	15L		
Inlet and outlet	Rp1/2"		
Max. lift	28~53 M		
Max. flow	70L/min		
N.W	72Kgs		
G.W	82Kgs		
Dimension	67 X 47 X 89 cm (L X W X H)		
Package dimension	74 X 61 X 104 cm (L X W X H)		

Note: The current and nominal cooling capacity could be different under different working conditions and configurations. The above information is for reference only. Please subject to the nameplate of the actual delivered product. The max. pump flow is obtained by testing the pump individually on test criteria GB/T 3216-2005.

CW- 6100

Model	CW-6100AN	CW-6100BN
Voltage	AC 1P 220V	AC 1P 220V
Frequency	50Hz	60Hz
Current	4.2-13.1A	2.6-9.8A
Nominal cooling capacity	5.04KW	4.08KW
Refrigerant	R-410a	
Precision	±0.5℃	
Reducer	Capillary	
Protection	Overcurrent protection for compressor, flow alarm, over temperature alarm	
Pump power	0.37~0.75 KW	
Tank capacity	15L	
Inlet and outlet	Rp1/2"	
Max. lift	28~53 M	
Max. flow	70L/min	
N.W	77Kgs	
G.W	87Kgs	
Dimension	67 X 47 X 89 cm (L X W X H)	
Package dimension	74 X 61 X 104 cm (L X W X H)	

Note: The current and nominal cooling capacity could be different under different working conditions and configurations. The above information is for reference only. Please subject to the nameplate of the actual delivered product. The max. pump flow is obtained by testing the pump individually on test criteria GB/T 3216-2005.

CW- 6200

Model	CW-6200AN	CW-6200BN
Voltage	AC 1P 220V	AC 1P 220V
Frequency	50Hz	60Hz
Current	4.2-13.1A	2.6-11.8A
Nominal cooling capacity	5.17KW	5.03KW
Refrigerant	R-410a	
Precision	±0.5℃	
Reducer	Capillary	
Protection	Overcurrent protection for compressor, flow alarm, over temperature alarm	
Pump power	0.37~0.75 KW	
Tank capacity	14L	
Inlet and outlet	Rp1/2"	
Max. lift	28~53 M	
Max. flow	70L/min	
N.W	82Kgs	
G.W	92Kgs	
Dimension	67 X 47 X 89 cm (L X W X H)	
Package dimension	74 X 61 X 104 cm (L X W X H)	

Note: The current and nominal cooling capacity could be different under different working conditions and configurations. The above information is for reference only. Please subject to the nameplate of the actual delivered product. The max. pump flow is obtained by testing the pump individually on test criteria GB/T 3216-2005.

<7> Simple troubleshooting

Failure	Failure Cause	Approach
Machine turned on but unenergified	Power cord is not plugged in place	Check and ensure the power interface and the power plug is plugged in place and in good contact.
	Fuse burnt-out	Open the electric box cover, check the protective tube, replace with spare one if necessary and check whether the power supply voltage is stable; Check and ensure the power interface and the power plug are in good contact.
Flow Alarm, use a water pipe directly connect to the water outlet and inlet but still without water flowing	Water level in the storage water tank is too low	Check the water level gauge display, add water until the level shown in the green area; And check whether water circulation pipe leaks.
Flow alarm occurs while running with other equipment, but there is water flowing and no alarm when use a water pipe directly connected to the chiller water outlet and inlet.	Water circulation pipes are blocked or a pipe bending deformation.	Check water circulation pipe
Ultra-high water temperature alarm (controller displays E2)	Blocked dust gauze, bad thermolysis	Unpick and wash the dust gauze regularly
	Poor ventilation for air outlet and inlet	To ensure a smooth ventilation for air outlet and inlet
	Voltage is extremely low or unstable	To improve the power supply circuit or use a voltage regulator
	Improper parameter settings on thermostat	To reset controlling parameters or restore factory settings
	Switch the power frequently	To ensure there is sufficient time for refrigeration (more than 5 minutes)
	Excessive heat load	Reduce the heat load or use other model with larger cooling capacity
Ultra-high room temperature alarm (controller displays E1)	The working ambient temperature is too high for the chiller	To improve the ventilation to guarantee that the machine is running under 40°C.
Serious problem of condensate water	Water temperature is much lower than ambient temperature, high humidity	Increase water temperature or to preserve heat for pipeline
Water drains slowly from outfall during water changing	Injection port is not open	Open the injection port