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inverter MINI CHILLER WIRE CONTROLLER

OPERATION MANUAL

Thank you for purchasing our product. Read this specifications. Please read this manual carefully, before running the unit and keep it for future reference.

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MAN-OP-WRCIMCH-0615



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- This manual gives detailed description of the precautions that should be brought to your attention during operation.
- In order to ensure correct service of the wired controller please read this manual carefully before using the unit.
- For convenience of future reference, keep this manual after reading it.

1. Safety precautions



WARNING

- Please assign the distributor or professionals to install the device.
 - Improper installation may lead to electric shock or fire.
 - Do not install the unit in a place vulnerable to leakage of flammable gases. Once flammable gases are leaked and left around the wire controller, fire may occur.
 - Do not operate with wet hands or let water enter the wire controller. Otherwise, the device lifespan will be shortened.
-

2. Technical data and characteristic

2.1 Technical data

- 1) Input voltage: 10VAC.
- 2) Operating environment temperature of wired controller: $-10^{\circ}\text{C}\sim+43^{\circ}\text{C}$.
- 3) Operating RH of wired controller: RH 40%~RH 90%.

2.2 Characteristic

- 1) Touch key operation;
- 2) LCD displays operation parameters; Refresh your life
- 3) Multiple timer;
- 4) Real-time clock (battery life:5~8 years).

3. Overview

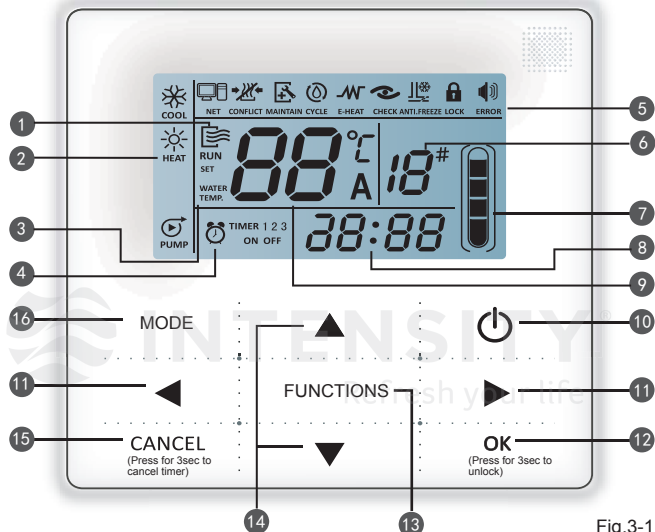



Fig.3-1


- | | | |
|------------------------|---|------------------------|
| 1. Operation icon | 7. Water Level Indication
(reserved) | 12.OK Key |
| 2. Mode area | | 13. Function key |
| 3. Setting temperature | 8. Clock | 14. Add and Reduce key |
| 4. Timing On/Off | 9. Water temp. | 15. Cancel key |
| 5. Function Icon | 10.ON/OFF Key | 16. Mode key |
| 6. Unit number | 11.Left / Right Key | |

1 **Operation icon**  : Indicate unit ON and OFF status; the icon displays when the unit is on and does not display when the unit is off;


2 **Mode area:** Indicate the main unit operating mode; details refer to Page 7;


3 **Water temperature:** 2 status can be displayed:


	SET
WATER TEMP.	WATER TEMP.


4 **Timing ON/OFF indication**  ^{1 2 3} : Indicate the timing information; details refer to Page 9;


5 **Function icon**

1)  : Displays when the unit controlled by remote switch;
NET


2)  : Displays when the unit operation forced cooling mode;
CONFLICT


3)  : Displays when the unit is needed. Press and hold "MODE" key for 3 seconds to cancel the icon and timing will restart until next maintenance;
MAINTAIN

4)  : The reserved icon;
CYCLE

5)  : The reserved icon;
E-HEAT

6)  : Displays when check function is on; details refer to Page 17;
CHECK

7)  : Displays when ambient temperature is low which means the main unit need anti-freezing action;
ANTI.FREEZE

8)  : Displays when no key operation for 2 minutes and all keys are locked.
LOCK

Press and hold "OK" key for 3 seconds to unlock;

9)  : Displays when error or protection occurs and means the unit need

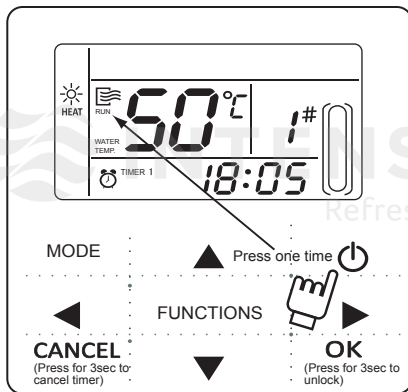

ERROR

maintenance by professionals.

- 6 **The unit number:** The user can set the number, details refer to Page 15;
- 7 **Water level indication:** The reserved icon;
- 8 **Clock:** Under normal status displays clock; Under timing setting displays the setting timing, details refer to Page 14;
- 9 **Water temperature:** Under normal status display water temperature; Under water temperature setting status displays the setting value; Under check status displays check parameter, details refer to Page 8;
- 10 **ON/OFF key:** Turn on and turn off functions, details refer to Page 6;
- 11 **Right and Left key:** Press these keys to check setting water temperature; Press right key to shift to the next step setting under timing setting status; Press these keys to turn over the unit parameter information under check status;
- 12 **OK key:** Press this key to confirm settings. Press and hold this key for 3 seconds to unlock under locking status;
- 13 **Function key:** Setting water temperature, timing and clock etc, details refer to Page 9-19; Press and hold this key for 3 seconds to enter check status, details refer to Page 17; setting unit number, details refer to Page 15; forced open water pump, details refer to Page 16;
- 14 **Add and Reduce key:** Move up or move down values of temperature, timing etc;
- 15 **Cancel key:** Press this key to cancel parameter setting under setting status; Press and hold this key for 3 seconds to cancel timing when timing is valid;
- 16 **Mode key:** Power on the cooling function, heating function or water pump function, details refer to Page 7.

4. Operation instruction

4.1 Turn On and Turn Off the main unit

- 1) Press the On/Off key to control On and Off status of the main unit.
- 2) Under Off status, press the On/Off key “

The diagram illustrates the LCD display and control panel. The LCD shows the following information:

 - HEAT icon (sun)
 - RUN icon (water pump)
 - 50°C (Temperature)
 - 1# (Unit/Zone)
 - 18:05 (Time)
 - TIMER 1 icon (clock)

The control panel includes the following buttons and labels:

 - MODE (Left arrow)
 - FUNCTIONS (Center)
 - CANCEL (Press for 3sec to cancel timer) (Bottom left)
 - OK (Press for 3sec to unlock) (Bottom right)
 - Power button (Top right, labeled "Press one time")

Fig.4-1



NOTE

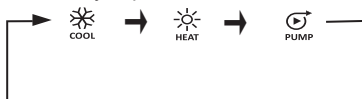
- When outdoor unit is in restore-to-factory- default setting mode(outdoor unit displays "OFF"), wire controller won't start the unit. Quit "OFF" status through outdoor unit display operation panel.
- If outdoor unit is forced shutdown by remote control, then the unit won't start by using wire controller. Relieve the unit from shutdown status by remote control.

4.2 Setting operating mode and function parameters

4.2.1 Setting operating mode and water temperature

1) Setting operating mode

Press “MODE” key to choose operation mode. The setting mode will change as the following order each time the key is pressed:



Press “OK” key or wait for 7 seconds to confirm. During the setting process pressing the “CANCEL” key to exit without saving.

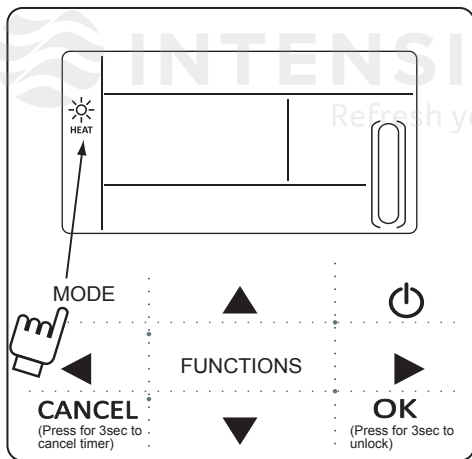


Fig.4-2

2) Setting water temperature

Method 1: Press the “▲” or “▼” to adjust the water temperature under main interface. Press “OK” key or wait for 7 seconds to confirm.

Method 2: Setting water temperature in function parameters. Press “FUNCTIONS” key under main interface once to enter water temperature setting interface. Press the “▲” or “▼” to adjust the water temperature. Press “OK” key or wait for 7 seconds to confirm.

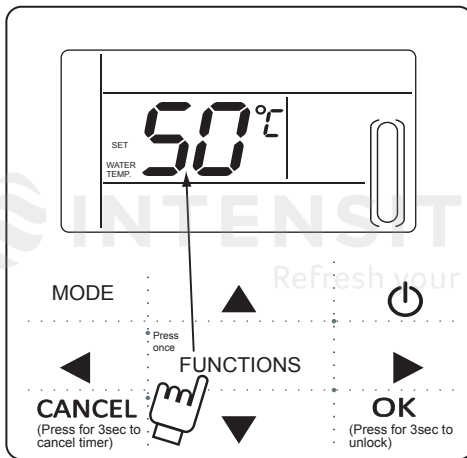


Fig.4-3

Water temperature setting check: To check the water temperature setting value, press the “◀” or “▶” key under the main page (the page displayed after the controller is powered on).

4.2.2 Setting function parameters

Press “FUNCTIONS” key to choose operation parameters. The setting function parameters will change as the following order each time the key is pressed:



- 1) Timing setting: 3 timing periods can be set on the wire controller: Timer 1, Timer 2, Timer 3. These 3 timers can control the main unit to be turned ON and OFF 3 times at most during a day.

Setting method: press “FUNCTIONS” key under main page twice to enter timing setting. Then the LCD will display as the following:



Fig.4-4

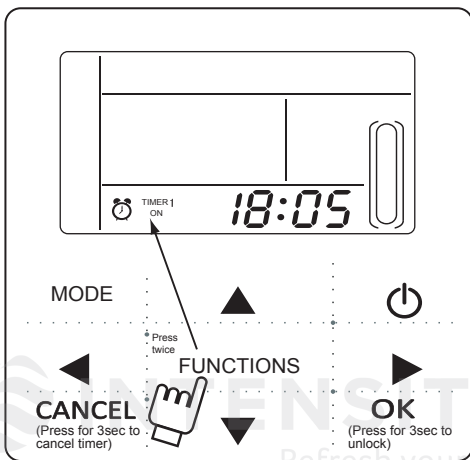


Fig.4-5

- 2) At this time the hour of the clock will flash, which means the current setting is the hour of Timer 1 “On”, press the “▲” or “▼” to adjust, press “▶” key when finished, and then the minute of the clock will flash, which means the current setting is the minute of Timer 1 “On”, press the “▲” or “▼” to adjust, press “▶” key when finished, the LCD will display as the following:



Fig.4-6

- 3) At this time the hour of the clock will flash, which means the current setting is the hour of Timer 1 "Off", press the "▲" or "▼" to adjust, press "▶" key when finished, and then the minute of the clock will flash, which means the current setting is the minute of Timing 1 "Off", press the "▲" or "▼" to adjust, press "▶" key when finished, the LCD will display as the following:

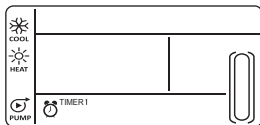


Fig.4-7

- 4) At this time the mode icon will flash, it means the current setting is the running mode in the Timer 1, press the "▲" or "▼" to adjust, press "▶" key when finished, the LCD will display as the following:



Fig.4-8

- 5) At this time the water temperature icon will flash, it means the current setting is the water temperature, press the "▲" or "▼" to adjust, press "▶" key when finished, the LCD will display as the following:



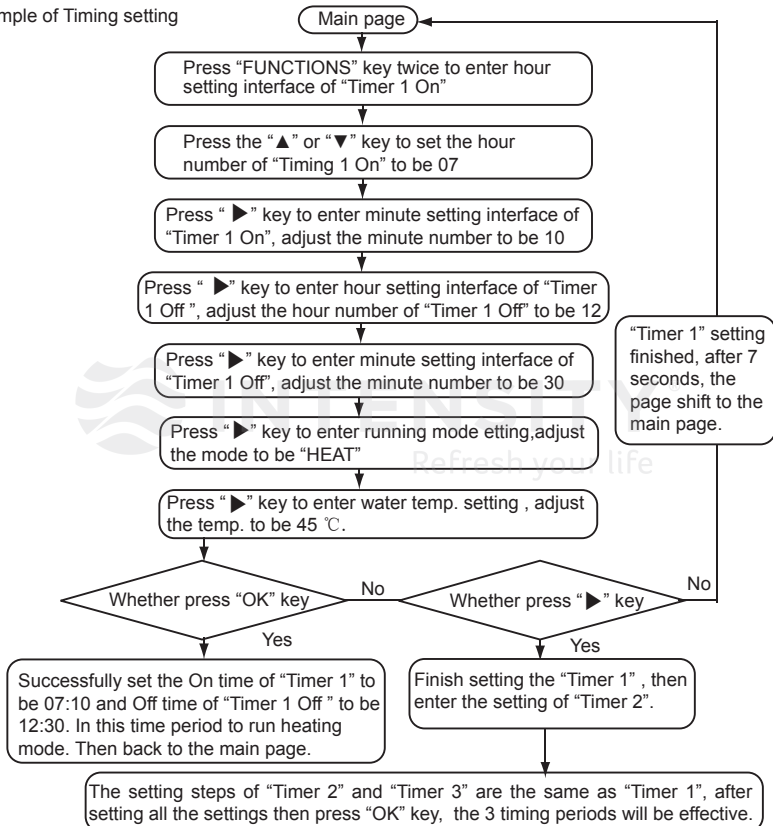
Fig.4-9

- 6) At this time the hour of the clock will flash, it means the current setting is the hour of the Timer 2 "On". And the following setting method will be the same as the Timer 1. Similarly, the setting of Timing 3 is the same as this method. After setting is finished, press "OK" key or wait for 7 seconds to confirm the setting, and the LCD will display the effective timing information, as the following display:



Fig.4-10

Example of Timing setting



During any period of timing setting to press “OK” key , the timing periods which have been set will be effective (only if the “On” and “Off” of one timing period have been set, the setting is effective).

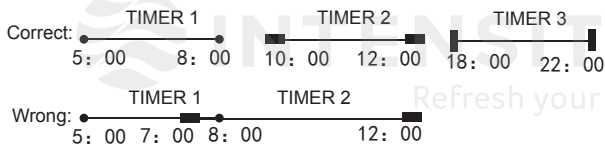
Check timing information: to check the timing which has been set, press “◀” or “▶” key under main page, the “On ”and “ Off ” time of Timer1, Timer 2 and Timer3 will be displayed in turns.

Cancel timing: press and hold “CANCEL” key for 3 seconds, then all the effective timing periods will be cancelled.



NOTE

- To avoid timing error, each period of timing should not be crossed. E.g.:



- Once timer on works, the unit will run as the timer on set mode and set water temperature.
 - When timing on and timing off work at the same time, wire control execution timing off.
-

5) Set clock

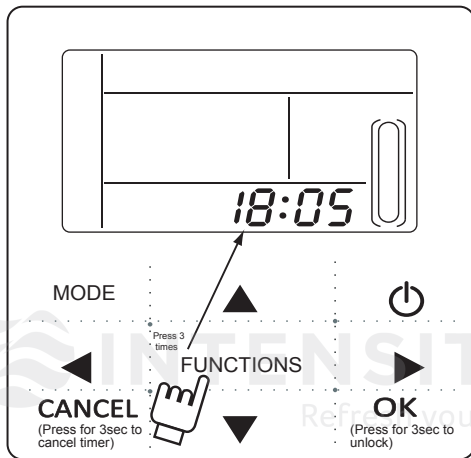


Fig.4-11

Press the "FUNCTIONS" key 3 times to enter clock setting. The hour of the clock will flash, which means the current setting is the hour of the clock, press the "▲" or "▼" to adjust, press "▶" key when finished, and then the minute of the clock will flash, it means the current setting is the minute of the clock, press the "▲" or "▼" to adjust, press "OK" key when finished or wait for 7 seconds to confirm. During the setting process pressing the "CANCEL" key to exit without saving.



NOTE

To get the correct timing On and timing Off time, please correctly set the clock!

6) Set unit number

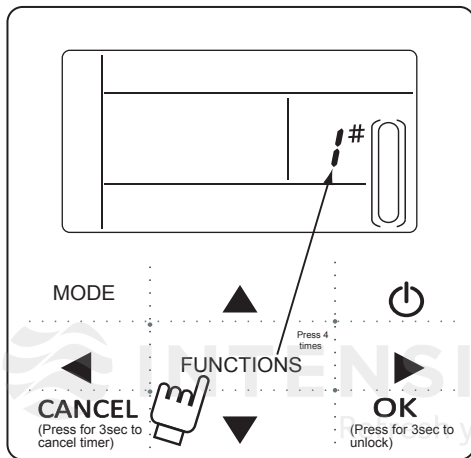


Fig.4-12

Press the "FUNCTIONS" key 4 times to enter the unit number setting. Press "▲" or "▼" to adjust the unit number. press "OK" key when finished or wait for 7 seconds to confirm. During the setting process pressing the "CANCEL" key to exit without saving. The setting value is 0-19.

7) Forced open water pump

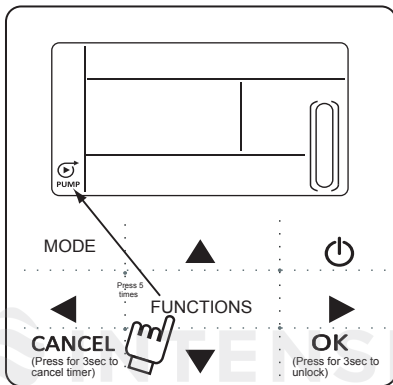


Fig.4-13

Press the “FUNCTIONS” key 5 times to force open the water pump. The water pump icon will flash. Press “OK” key to confirm. During the setting process pressing the “CANCEL” key to return to the main interface, and log off the forced water pump mode.



NOTE

- Forcing water pump function is only limited to stand-by mode, others modes not response.
- Under forcing water pump function, other settings will not responsible, except stopping
- When communication disconnects, it will show E2 error in 2 mins, the wire controller will automatically cancel the forcing water pump function; while connected, the wire controller keeps synchronizing with the unit(If forcing water pump function is still on-going, the controller keeping showing its status).
- The outdoor unit does not response after activating the forcing water pump function, (eg: forcing water pump function cannot be activated under forcing heating in stand-by mode), the function will be automatically stopped if it is not activated within 5 mins.

4.5 Check

- 1) Check function allows the user to check all the operating parameters, error and protection information of the unit.
- 2) Enter method: press and hold “FUNCTIONS” key for 3 seconds to enter check interface, as the figure display:

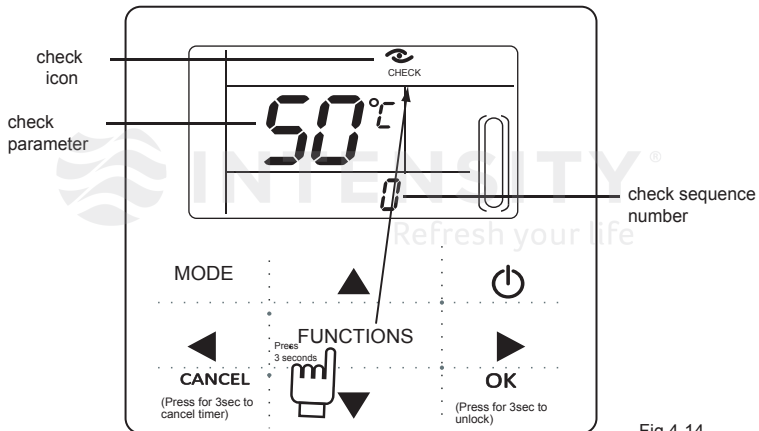


Fig.4-14

3) Press “◀” or “▶” to check all the status information of the unit.


Check content :

Table 4-1

No.	Meanings
0	When in standby mode, water pump mode, displays water inlet temperature. In cooling and heating mode, displays the operating frequency. When defrosting, displays dF. when anti-freezing, displays Pb. when oil returning, displays d0. When remote controlling, displays d8.
1	Running model:0-shutdown,1-Pump mode,2-Cooling,3-Heating, 4-Forced cooling, 5-Forced heating.
2	Fan speed:0-Shutdown,1~7-Fan speed.
3	Total capacity requirements.
4	The revised capacity requirements.
5	Cooling/heating temp. setting.
6	Condenser temp. Value.(T3)
7	Outdoor ambient temp. Value.(T4)
8	Comp. Discharge temp. Value.(Tp)
9	Inlet water temp. Value.(Tin)

10	Outlet water temp. Value.(Tout)
11	Plate heat exchanger anti-freezing temp. Value 1.(Tb1)
12	Plate heat exchanger anti-freezing temp. Value 2.(Tb2)
13	T6 temp. Value (Reserved)
14	Outdoor unit current
15	Power supply voltage AD value
16	Electronic expansion valve opening steps
17	The unit model
18	The program version number
19	The last error record
20	The second error record
21	The first error record
22	-- --

5. Error handling

When the unit has error or protection, “” icon will flash. If the “error” icon is on, it means the corresponding unit has error or protection at that time. The last 3 error or protection codes of the unit can be checked. The error icon will disappear if the error or protection is cleared.

Error code list .

Table 5-1

EE	EEPROM error code(Wire controller)	C0	Tin temperature sensor malfunction
E9	EEPROM malfunction	C1	Tout temperature sensor malfunction
EA	5-minute error for heating mode fan in area A	C8	Flow switch malfunction
Eb	Two times of E6 protection in 10 minutes	CH	High temperature protection in heating mode
E4	T3&T4 temperature sensor malfunction	CL	Low temperature protection in heating mode
E5	Voltage protection	CP	Anti-idling protection of water pump
E6	DC fan motor malfunction	F7	Tb1 temperature sensor malfunction
H0	Communication malfunction between the main controlling chip and IPDU	F8	Tb2 temperature sensor malfunction

Table 5-1

P1	High pressure protection	Pb	Outdoor units anti-freezing protection
P2	Low pressure protection	PL	Radiator high temperature protection
P3	Outdoor units current protection	PH	Water inlet and outlet temp. difference too large protection
P4	Compressor discharge temp. Protection		
P5	Condenser high temperature protection		
P6	IPM mode protection		
P8	Typhoon protection		

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