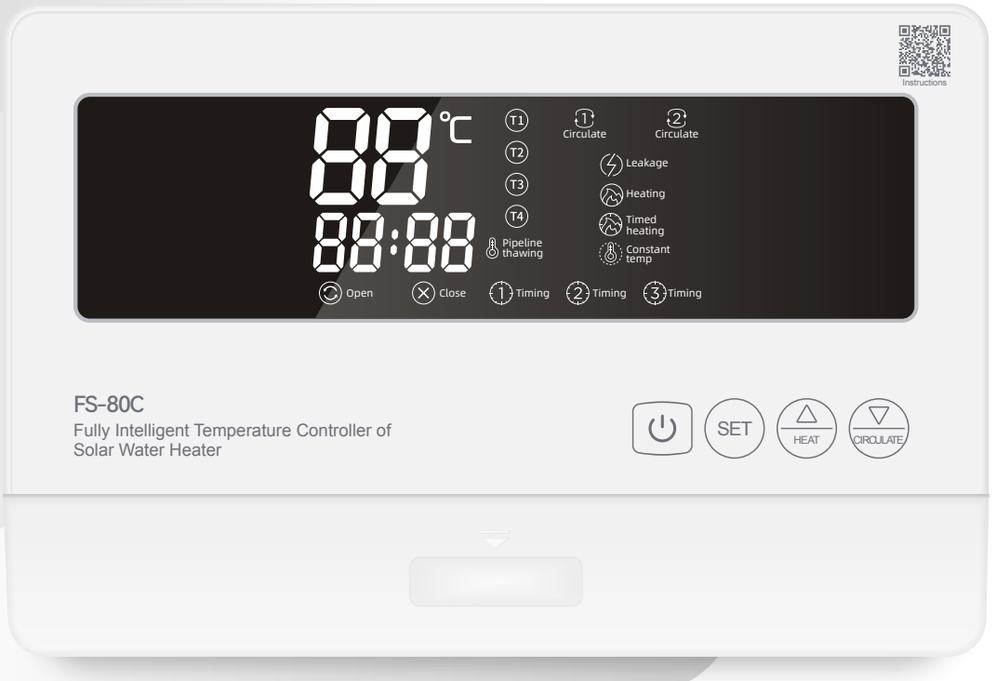
FS-80C

SOLAR WATER HEATER INTELLIGENT CONTROLLER
OPERATION INSTRUCTION MANUAL



* Welcome to choose this product, please read this manual carefully before using.

Dear User:

Thank you for choosing our solar water heater intelligent controller. It is our great honor that you become one of our customers. You will surely appreciate the convenience given by the superiority of this product. Before you install and operate this product, please read this manual carefully to ensure the proper operation and give a full superior performance. This manual is a random accessory, please keep this manual properly after usage for future maintenance of this product.

01 / MAIN TECHNICAL PARAMETERS

1.Power Consumption: ≤8W
2.Power Supply: AC100-240V, 50Hz
3.Temperature Measurement Precision: ±1℃
4.Temperature Display Range:0~99℃
5.Environmental Temperature Range: -10℃~60℃
6.Residual Operating Current: ≤20mA 0.1S
7.Power Off Memory: The data will not be lost when power off.

INPUT:

1.T1 Solar Collector Sensor
2.T2 Water Tank Temperature Sensor.

OUTPUT:

1.Max Heating Resistor Power Capacity: ≤1500W/2400W/3000W (220V)
≤1500W (110V)
2.Max Circulation Pump Power Capacity: ≤500W

02/ THE MAIN FUNCTION

1.Power-on Self-test: The white screen displays water temperature, clock and working status. The two big digits display the water temperature of 88℃, the four small digits display Beijing time, and the texts and graphics display the working status.

2.Beijing Time: Will show the actual Beijing time on screen.

3.Water Temperature Display: Press the setting key to switch to display T1 temperature. T1 is the solar collector temperature and T2 is the water tank temperature. The water tank temperature T2 is displayed when the controller is turned on.

4.Preset The Upper Limit of Heating Resistor Temperature: The preset heating temperature range is: 35℃~80℃, the default is 55℃ (heating temperature refers to T2).

5.Manual Heating: Press the "heating" button to start/stop the heating resistor heating

6.Auxiliary Heating: The temperature of the scheduled heating can be set three times a day, and the initial state of the scheduled heating in three periods is off by default.

7.Constant Temperature Heating: When the water tank temperature T2 is 10°C lower than the upper temperature limit, the heating resistor starts working until reaching to upper temperature limit. Once the heating resistor is turned off manually during heating, it will resume heating after one hour. Press and hold the heating button for 3 seconds to turn this function on or off. The initial state of the constant temperature is off, and the factory temperature value is 55℃.

8.Anti-dry-burn Protection Function: When it is detected that the water tank temperature rises by more than 5 degrees within 50 seconds, the heating resistor heating output is automatically cut off, and "E4" is displayed on the instrument display. Re-power on or press heating button again to resume.

9.Solar Collector Temperature Difference Cycle: When T1-T2≥ 8℃, the circulation pump (P1) is turned on, and the "collector cycle" icon flashes. When T1-T2≤ 3℃, the circulation pump (P1) is turned off, and the "cycle 1" icon light goes out. Press the "cycle" button manually to force it to close, and it will reopen in 3 minutes. It is generally recommended not to modify the start and stop temperatures of the solar collector cycle. If it must be modified, the minimum difference between the start temperature and the stop temperature should not be less than 2℃.

10. Time-sharing Control of Solar Collector Cycle: from 08:00 to 20:00, the heat exchanger function is effective and the time can be set.

11. Water Tank Antifreeze Protection: When the water tank temperature is lower than 5℃, the heating resistor will be turned on; when it reaches 10℃, heating resistor will be turned off automatically.

12. High Temperature Circulation Protection: When the water tank temperature sensor T2 ≥ 80℃, it is forbidden to start the solar collector circulation pump P1. When the water tank temperature sensor T2 ≤ 75 ℃, the solar collector circulation pump P1 will be resumed.

13. PCBA Overheat Protection: When the actual temperature of the PCBA is detected to be over 85℃, all outputs are prohibited. When the actual temperature of the PCBA is detected to be lower than 65℃, it will be restored.

14. Fault Prompt: T1 fault display --, T2 fault display --.

15. Electric Leakage Alarm: When detected that the heating resistor is in electric leakage, the buzzer alarm will sound 6 times, and the "Leakage" icon will light up. Re-power on or press the manual heating button again to resume.

16. Power-off Memory Protection Function: All parameters, once set, will be retained permanently.

03/ METHOD OF APPLICATION

Press and hold the "SET" button for 3 seconds, and enter the setting state after hearing a "beep" sound. Set in sequence: Beijing time - upper limit of heating temperature - three-time timing heating time and temperature – solar collector cycle start value - solar collector cycle shutdown value - solar collector cycle start time - solar collector cycle shutdown time. When setting, press the "SET" button to enter the next parameter setting, and press the "HEAT/+ button" and "CIRCULATE/- button" to adjust the parameters. The following are the parameters to be set in sequence:

1.Current time (hours), range is (0-23);

2.Current time (minutes), range is (0-59);

3.The upper temperature limit of heating resistor is in the range of (35-80℃), and the factory setting is 55℃;

4.Three-time Heating Parameter Settings:

a.First time heating (hours), range is (0-23, --), -- is off, factory value is 55℃, range (35-80℃). If it is lower than 10 degrees, restart heating. Factory setting is off "--:00".

b.The second timed heating (hours), the range is (0-23, --), -- is off, the factory value is 55℃, the range is (35-80℃), if it is lower than 10 degrees, the heating will be turned on again. The factory setting is off"--:00".

c.The third time heating (hours), the range is (0-23, --), -- is off, the factory value is 55℃, the range is (35-80℃), if it is lower than 10 degrees, the heating will be turned on again. The factory setting is off "--:00".

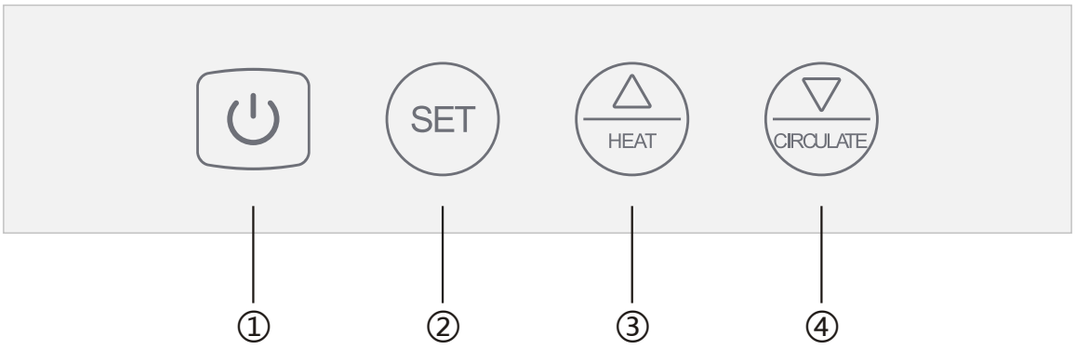
5.The starting value of the solar collector cycle (P1) ranges from (3-30°C), the factory value is 8℃;

6.The closing value of the solar collector cycle (P1) ranges from (0-20°C), the factory value is 3℃;

7.Circulation pump time-sharing control time setting: the factory default opening hour is "08:00", and the setting range is 0-23; the factory default closing hour is "20:00", and the setting range is 0-23;

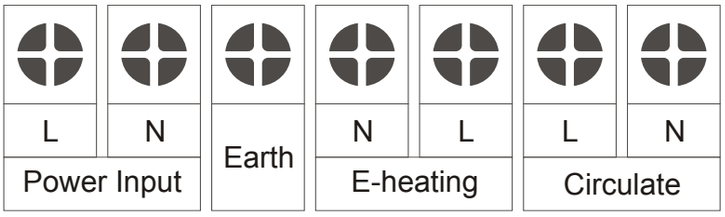
8.Wait for 8 seconds or press the "SET" button again, the controller will automatically save the current setting parameters and return to the main operating interface.

04/ BUTTON INTRODUCTION



BUTTON	SHORT PRESS	LONG PRESS	
①POWER	Press shortly for turning on/off the controller.		
②SET	Short press to switch T1,T2 Temperature.	Long press for 3 seconds to enter Parameter Setting.	
③HEAT/▲	Turn on/off Heating Resistor.	Long press for 3 seconds turn on/off constant temperature heating function.	In the setting state, it is the up key.
④CIRCULATE /▼	Start/Stop Solar Collector Cycle, manually start and stop after 3 minutes.	Press and hold the cycle button for 3 seconds to restore to factory settings. HF is displayed.	In the setting state, it is the down key.

05 / WIRING DIAGRAM



06 / TROUBLE SHOOTING

FAULT DISPLAY	REASON OF FAULT	SOLUTION
Temperature Sensor Failure: --	The sensor signal line has poor contact, or is connected incorrectly, is disconnected, or is damaged.	Connect correctly and firmly. Replace the sensor.
Leakage: Leakage Light is on always.	Product leakage.	Restart or replace the controller.
No Self-test at startup. No display, random display.	Low voltage. Machine Failure.	Restart or replace the controller.
Drying Heating: E4	The water tank temperature rises by more than 5℃ within 50 seconds.	Restart or replace the controller.