

Digital Control Power Supply **step-down** WZ10020L

WZ10020L

—DIGITAL CONTROL POWER SUPPLY—

High voltage • High Power • Large current
Constant voltage and current

STEP-DOWN



Special battery
charging

MPPT solar charging



Note: This product is a step-down module, and the output voltage range is lower than the input voltage!

DCDC CNC adjustable step-down power supply

Special battery charging and solar charging power supply

High voltage, high current, high power, constant voltage and constant current

(DIY desktop CNC power supply can be easily handled by yourself)

Note: This product is a step-down module, and the output voltage range is lower than the input voltage!

1. Product highlights

1.1 Multiple working modes are optional :

- ① DCDC power supply and battery charging mode.**
- ② MPPT solar charging mode.**

1.2 Output special charging interface :

- ① The relay is physically isolated to prevent reverse pouring and charging is safer.
- ② Intelligent switching of multiple charging modes.
- ③ When the battery is fully charged and the input voltage power is insufficient, it will turn off automatically, and when the battery voltage is insufficient or the input power increases, it will recover automatically.
- ④ Over temperature, over power, over-voltage, over-current and other protection shutdown.
- ⑤ Automatic shutdown at fixed time and capacity.
- ⑥ MPPT solar charging, maximum power automatic tracking, improve charging efficiency.

1.3 Multiple interface display :LCD can display input voltage / output voltage / temperature, output current / output power / output capacity / output time.

1.4 CNC constant voltage and current regulation, accurate and fast, step-down output, output voltage 0-100.00v can be adjusted arbitrarily. When the voltage output setting is less than 50V, the limiting current 0-20.00A can be adjusted arbitrarily; When the voltage output setting is greater than 50V, the limiting current 0-10.00a can be adjusted arbitrarily.

1.5 The module can be set to be on / off by default, and the power down parameters can be saved.

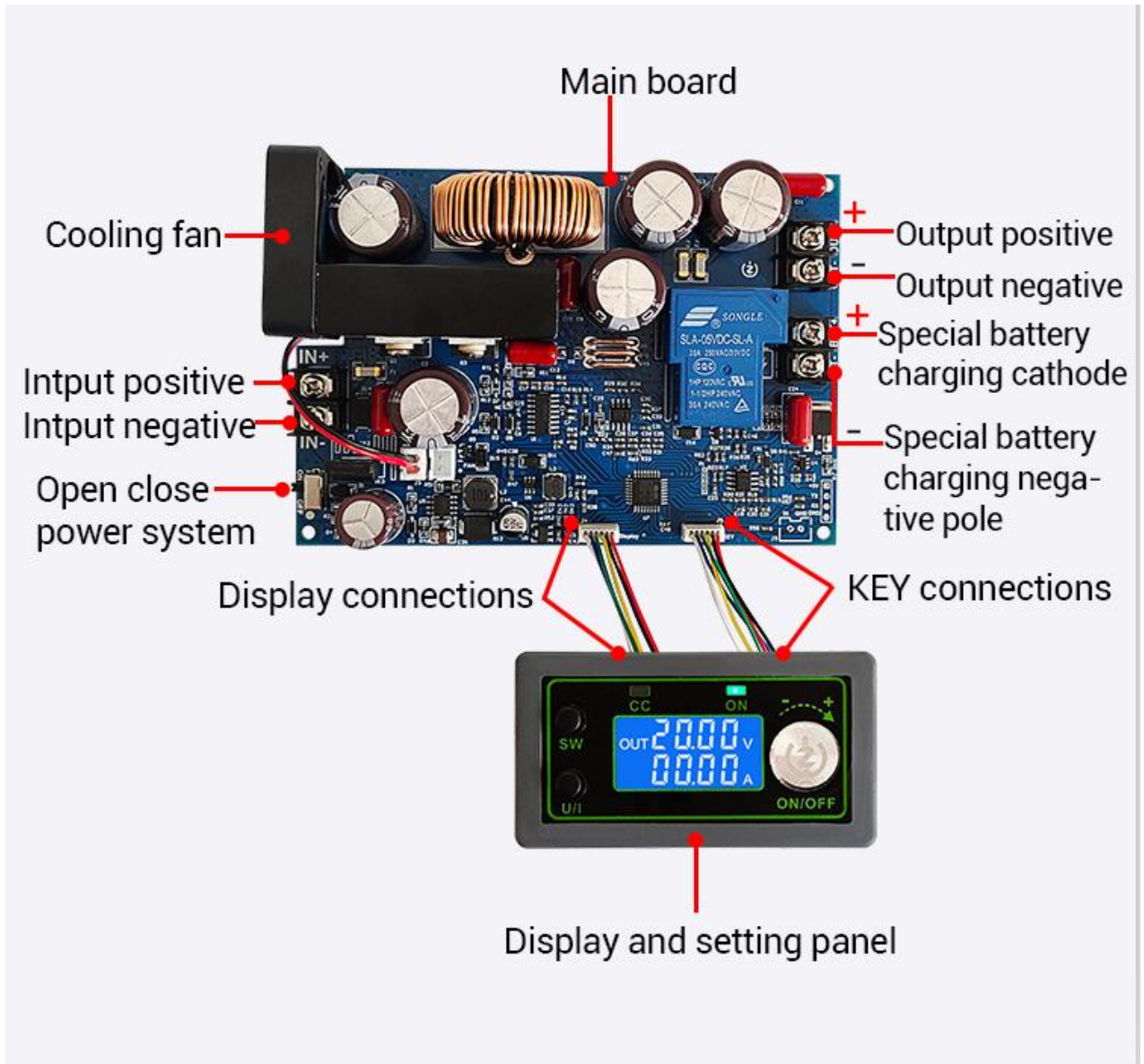
1.6 It has a variety of software protection mechanisms, and the protection threshold can be set and adjusted. When the working parameters of the module exceed the protection threshold, the output will be automatically turned off.

1.7 Synchronous rectification technology is adopted with high conversion efficiency.

1.8 Increase the heat sink, install an intelligent fan to enhance heat dissipation, and reserve a 5V interface connected to the fan to facilitate the increase of fans and enhance heat dissipation.

1.9 TTL serial port and input control IO are reserved to facilitate customization.

2. Product introduction



3. Product parameters

Model : WZ10020L	Display : LCD
Input voltage range : 10-110.00V	Input voltage resolution : 0.01V
Output voltage range : 0-100.00V (step-down)	Output voltage resolution : 0.01V
Output current range : 0-20.00A(output voltage 0-50V) 0-10.00A(output voltage 50-100V)	Output current resolution : 0.01A
Output power range : 0-1000W	Input voltage accuracy : $\pm(1\%+5 \uparrow)$
Output voltage accuracy : $\pm(0.3\%+5)$	Output current accuracy : $\pm(0.5\%+5)$
Output ripple : 300mV	Temperature : -20°C~50°C
Capacity range : 0-999.9AH	Capacity energy error : $\pm 2\%$
Time range : 0-100 hour	Differential pressure : > input voltage X0.05%+1V
Net weight: about 285g Package weight: about 340g	Panel size: 79*43*25mm Motherboard size: 130*90*40mm

Soft start: Yes

Protection mechanism:

Input under voltage protection (9-110V adjustable, default 9V)

Output overvoltage protection (0-101.0V adjustable, 101.0V by default)

Output over current protection (0-20.10A adjustable, default 20.10A)

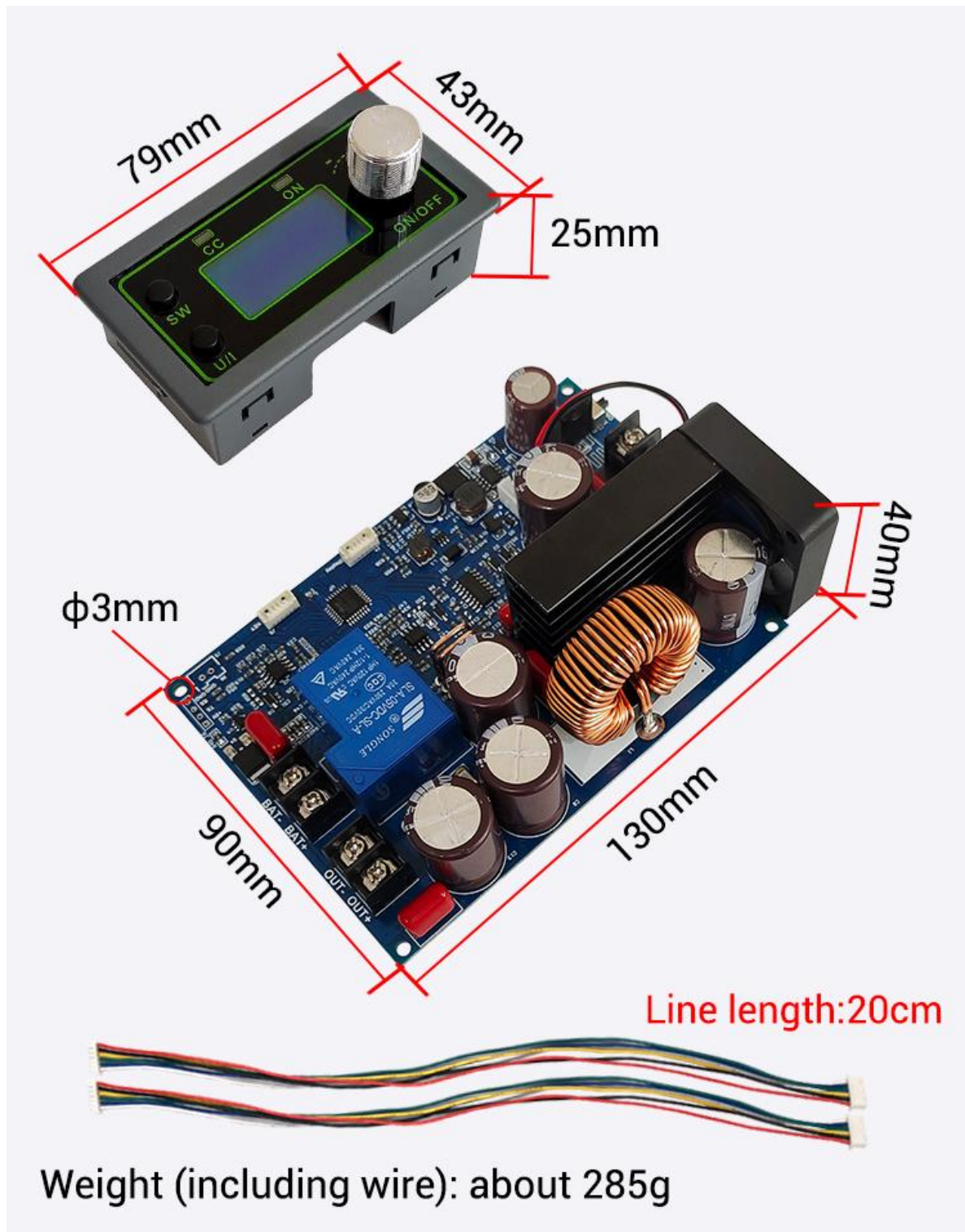
Output over-power protection (0 - 1010W adjustable, default 1010W)

Over temperature protection (80-110 °C adjustable, default 110°C)

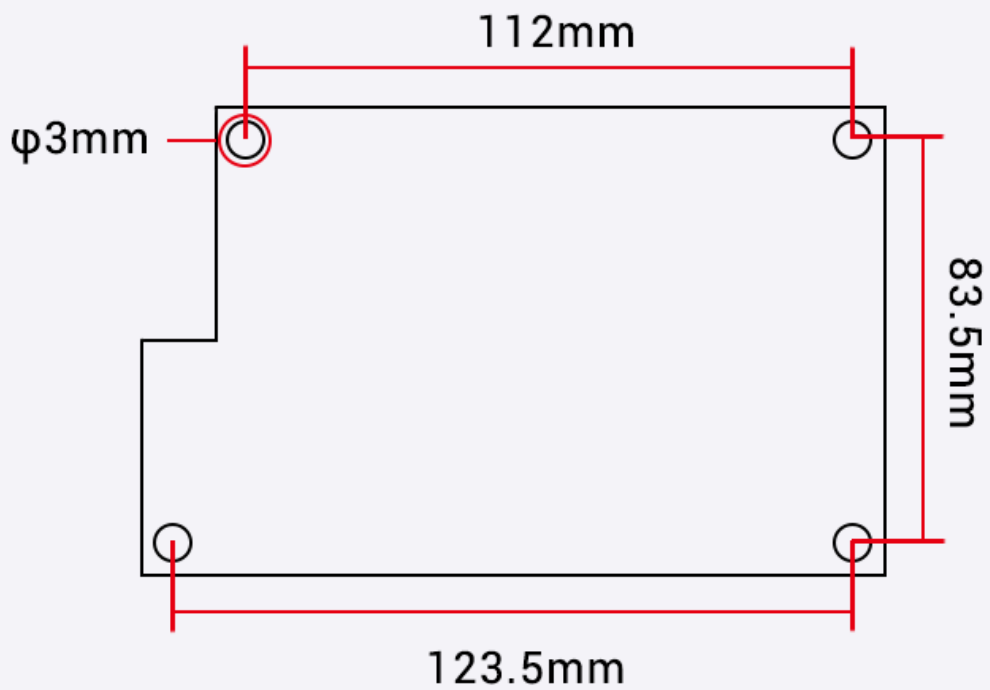
Timeout protection (0-100h adjustable, closed by default)

Over capacity protection (0-999.9Ah adjustable, off by default)

4. Product size



Schematic diagram of installation opening size



5. Button description



Interface KEY	normal interface	regulating voltage and constant current	Set the parameters
SW	<p>Short press: Downlink switching Current a/power W/capacity ah/Time h</p> <p>Long press: LCD upstream switching Input voltage / output voltage/ temperature</p>	NULL	<p>Short press: switch the parameters to be set</p> <p>Long press : null</p>
U/I	<p>Short press: enter the interface of regulating voltage constant current</p> <p>Long press: enter the interface of setting parameters</p>	<p>Short press: Switch between adjusting voltage value, adjusting constant current value and exiting regulation interface</p> <p>Long press: null</p>	<p>Short press: null</p> <p>Long press: exit setting parameter interface and return to normal interface</p>
Rotary encoder	<p>Short press: switch output on /off state</p> <p>Long press: null</p> <p>Left rotation: output voltage decreases</p> <p>Right rotation: output voltage increases</p>	<p>Short press:adjust the parameter shift accordingly</p> <p>Long press: null</p> <p>Left rotation:the corresponding bit of adjustment parameter decreases</p> <p>Right rotation:the corresponding bit of adjustment parameter increases</p>	<p>Short press: adjust parameter shift</p> <p>Long press: If the parameter allows turning on and off, switch the parameter to turn on and off</p> <p>Left rotation: the corresponding bit of adjustment parameter decreases</p> <p>Right rotation: the corresponding bit of adjustment parameter increases</p>

Note: after the product triggers the protection mechanism, the output will automatically turn off, the LCD will display the protection code, and press any key to exit the protection interface.

6. Interface description

OUT: indicates output IN: indicates input



Normal interface



output voltage(V)



input voltage(V)



temperature(°C)



output current(A)



output power(W)



output capacity(Ah)



output time(h)

Interface for setting voltage and constant current



← Set output voltage

← Set limiting current

Interface to set parameters

Normally open	Normally closed	Under voltage	Over voltage	Over current
Over power	Over temperature	Overcapacity OFF	Overcapacity	Timeout OFF
Timeout	Output current zero calibration	Mode setting		

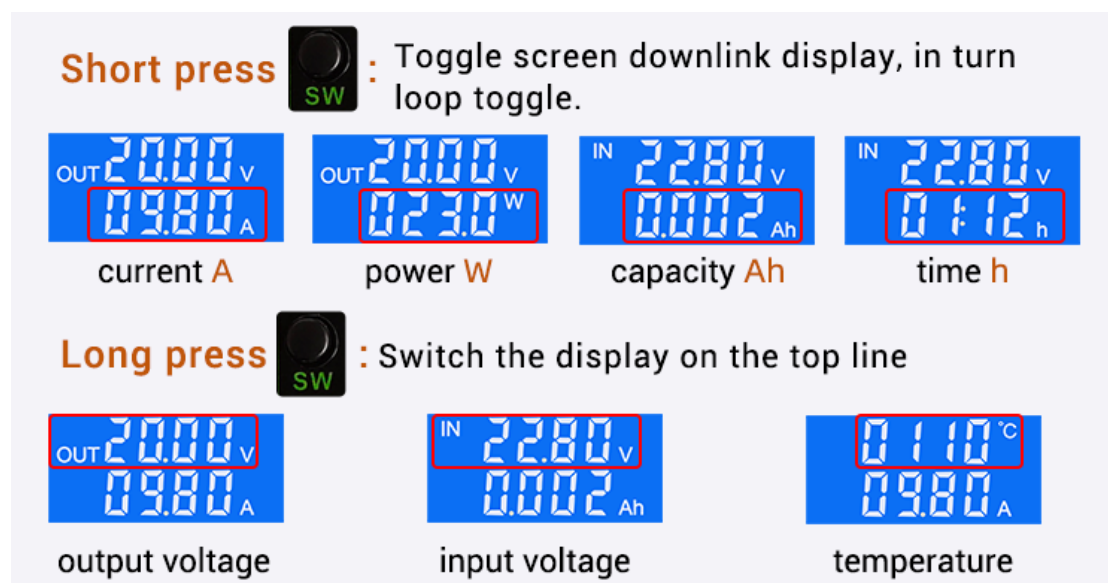
Protection interface

Under voltage protection	Over voltage protection	Over current protection	Over power protection
Over capacity protection	Timeout protection	Over temperature protection	

7. Usage method

7.1. Toggle display parameters—In the normal interface, briefly press the SW key to switch the display down the display screen. The display content is switched between current A power W capacity Ah time h.

Long press the SW key to switch the display on the upper side of the display screen, and the display content switches between the input voltage IN and the output voltage OUT temperature.

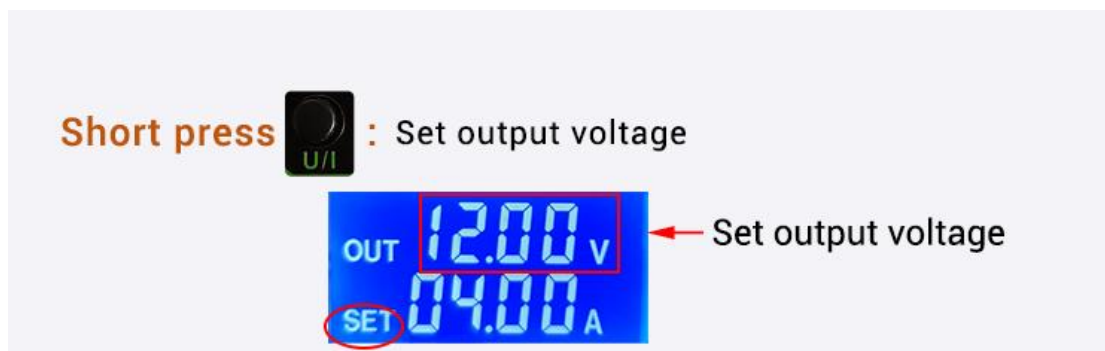


7.2. Set output voltage / charging voltage

value—Briefly press the U / I button in the normal interface to enter the setting voltage constant current interface. It can be seen that a certain digit of the set output voltage value is flashing. Turn the rotary encoder

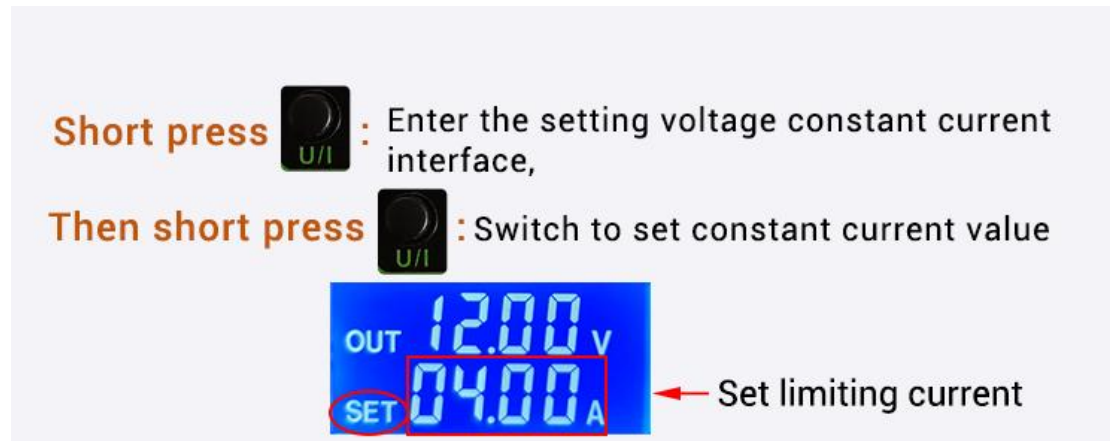
left and right to increase and decrease.

Short press the rotary encoder to select which bit to set the output voltage. After setting, briefly press the U / I button twice to return to the normal interface. Or after stopping the operation for 10s, it will automatically return to the normal interface.

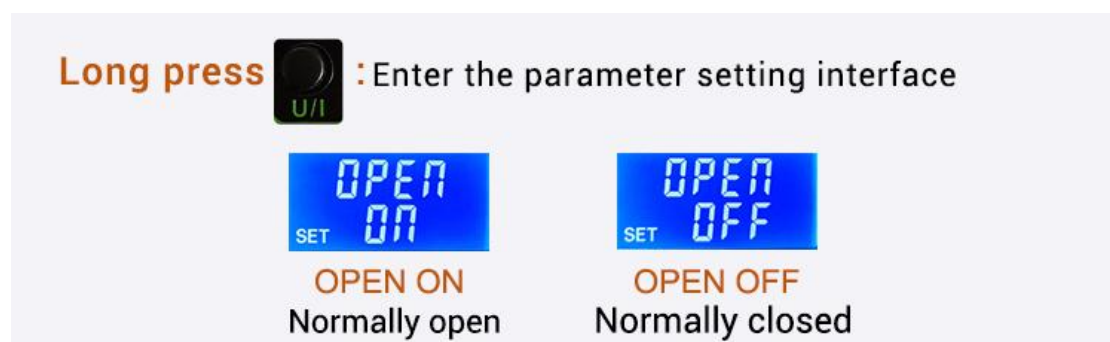


7.3. Set constant current value / maximum charging current (That is, the maximum current allowed to be output by the module) — Briefly press the U / I button in the normal interface to enter the setting voltage constant current interface. Briefly press the U / I button again to switch to the setting of constant current value. You can see that a bit of the setting of constant current value is flashing. Turn the rotary encoder left and right to adjust the size. Short press the rotary encoder to select which bit to set the constant current value. After setting, briefly press the U / I key to exit the setting voltage constant

current interface and return to the normal interface. Or after stopping the operation for 10s, it will automatically return to the normal interface.



7.4. Set the default on / off state of the module when it is powered on—In the normal interface, long press the U / I key to enter the parameter setting interface. You can see the display OPEN OFF or OPEN ON. OPEN OFF represents the power on default off output, and OPEN ON represents the power on default on output. Long press rotary encoder to switch between two states. After setting, long press the U / I key to return to the normal interface.




7.5. Set the protection parameter open state and threshold—In the normal interface, long press the U / I key to enter the parameter setting interface.

Briefly press the SW key until the protection parameters you want to set appear. LVP – under voltage protection threshold; OVP - overvoltage protection threshold; OCP – over current protection threshold; OAP - over capacity protection threshold; OHP - timeout protection threshold; OTP - over temperature protection threshold.


Short press the rotary encoder to select which bit of the protection parameter you want to set.

Long press the rotary encoder to set whether the protection parameters are on or off (only timeout protection and over capacity protection can be on / off, and other protection parameters are on by default).

The left and right rotary encoders can make the parameters larger and smaller. After setting, long press the U / I key to return to the normal interface.

Long press  : Enter the parameter setting interface



Short press  : Switch to the protection parameter you want to set



OPEN ON
Normally open

OPEN OFF
Normally closed

LVP
Under voltage

OVP
Over voltage

OCP
Over current



OPP
Over power



OTP
Over temperature



OAP OFF
Overcapacity OFF



OAP
Overcapacity



OHP OFF
Timeout OFF



OHP
Timeout



ZERO
Output current zero calibration



MPPT
Mode setting

8. Packaging form



Weight: 340g (including packing box)

9. Matters needing attention

9.1. Module input positive IN+ and negative IN- must not be connected reversely, and module input IN- must not be short circuited with output OUT- otherwise the module may be burned out.

9.2. Please ensure that the power of the power supply is always greater than the power required by the output load!

9.3. This module is a step-down module, the input voltage should be higher than the output voltage, and a certain margin should be reserved. If you want full load output, the input voltage should be 110V.

9.4. This module is used with high power, with serious heating and high temperature. Be careful of scalding! Please pay attention to ventilation and heat dissipation when using high power for a long time!

9.5. The module has input undervoltage protection function, which is about 9V by default (can be set). If it is lower than this value, the output will be automatically disconnected (note that the voltage at the module port is lower than the undervoltage protection threshold. When the input current is relatively large, do not ignore the partial voltage on the input wire).

9.6. When the output is connected to the battery for charging, the battery shall be connected to the special battery charging port to prevent reverse connection and backflow. During solar charging, MPPT solar charging mode shall be set in the menu.

10. Service statement

10.1. All products are guaranteed for one year and returned for seven days without reason; For product quality problems within 30 days (except those caused by man-made damage or improper use), we guarantee to return and replace and bear the freight; For more than 30 days, the buyer shall bear the

round-trip freight. We will repair it free of charge, and charge maintenance fees for the damage caused by the customer.

10.2. If the responsibility is not clear, we will make compensation after finding out the problem. The machine explosion and chip burning caused by improper use such as module overload and short circuit will not be compensated.

10.3. For electronic module products, you need to have a certain electronic foundation and carefully read the product description before use; The product is not designed for medical, life-saving, life support and other purposes, and cannot be used in dangerous places such as coal mine and oil depot. We do not guarantee such responsibilities; The product profit is low, and the user's operation ability and use occasions vary greatly. If our products are compatible with your own valuable instruments and equipment or digital products, we will not guarantee any damage caused. We can only compensate for the module and freight.

10.4. Return instructions: if the returned goods are rejected, please attach a piece of paper stating: ① the name of the purchase store. ② Fault cause ③ contact information.