High cost performance programmable CNC adjustable step-down power supply module

(DIY desktop CNC small power supply, you can easily do it yourself)

1. highlights:

1.1 LCD can display input/output voltage, output current/output power/output capacity/output time;

1.2. CNC adjustment, accurate and fast, can lower voltage, output voltage can be adjusted at will from

0-50.00v, limit current 0-12.00a can be adjusted at will;

1.3. the output end is poured backward without burning;
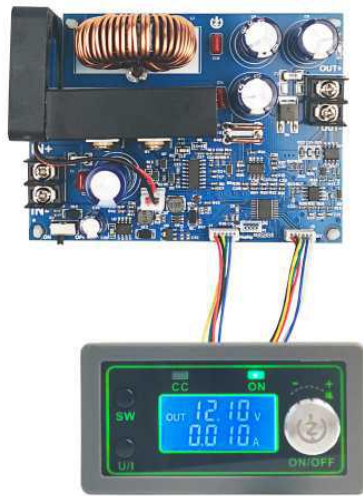
1.4. The module can be set to open/close by default;

1.5. Multiple software protection mechanisms are available, and the protection threshold is adjustable.When the working parameters of the module exceed the protection threshold, the output will be automatically closed.

1.6. Using synchronous rectification technology, the conversion efficiency is high: the efficiency is more than 90%.

1.7. Increase heat sink, install fan, strengthen heat dissipation.
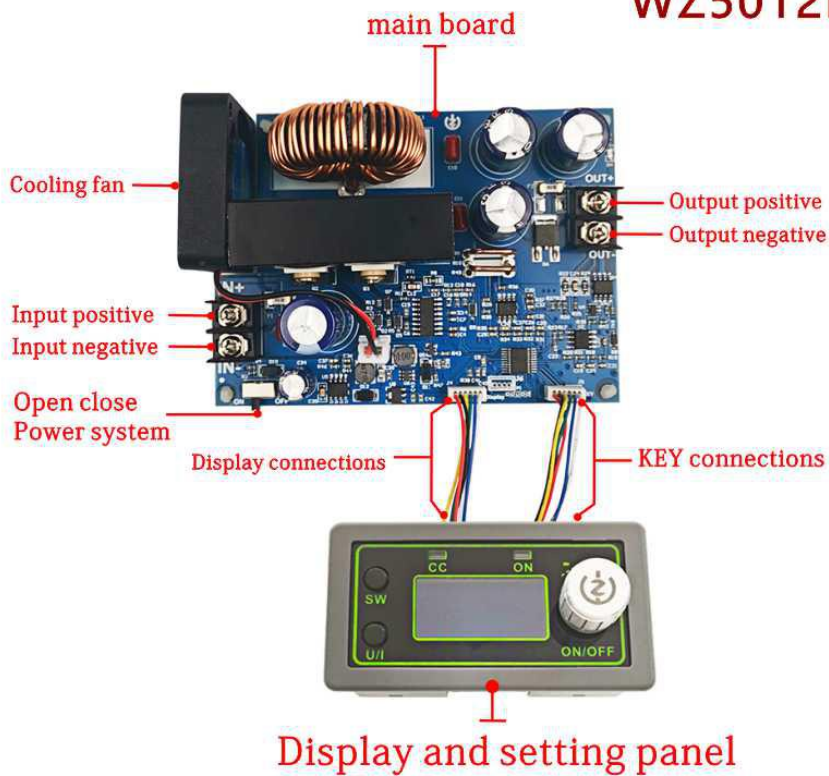
Digital Control Power Supply

WZ5012L

0-50.00V	0-12.00A	0-600.0W
Output Voltage	Output Current	Output Power

WZ5012L

main board

Cooling fan

Output positive
Output negative

Input positive
Input negative

Open close
Power system

Display connections

KEY connections

Display and setting panel

2. Product parameters

model：WZ5005L	display：LCD
Input voltage range：6-55.00V	Input voltage resolution：0.01V
Output voltage range：0-50.00V	Output voltage resolution：0.01V
Output current range：0-12.00A	Output current resolution：0.01A
Output power range：0-600.0W	Input voltage accuracy：±(1%+5)
Output voltage accuracy：±(0.3%+5)	Output current accuracy：±(0.5%+5)
Typical value of output ripple：150mV Peak value	Normal operating temperature range：-10℃~40℃
Capacity measurement range：0-999.9AH	Statistical error of capacity energy：±2%
Statistical time range：0-100 hour	Depressurization mode：differential pressure >0.05%+1V
The weight of nude: 199g Including packing：242g	Product size: panel79X43X42mm main board：106x76x40mm

Soft start: Yes
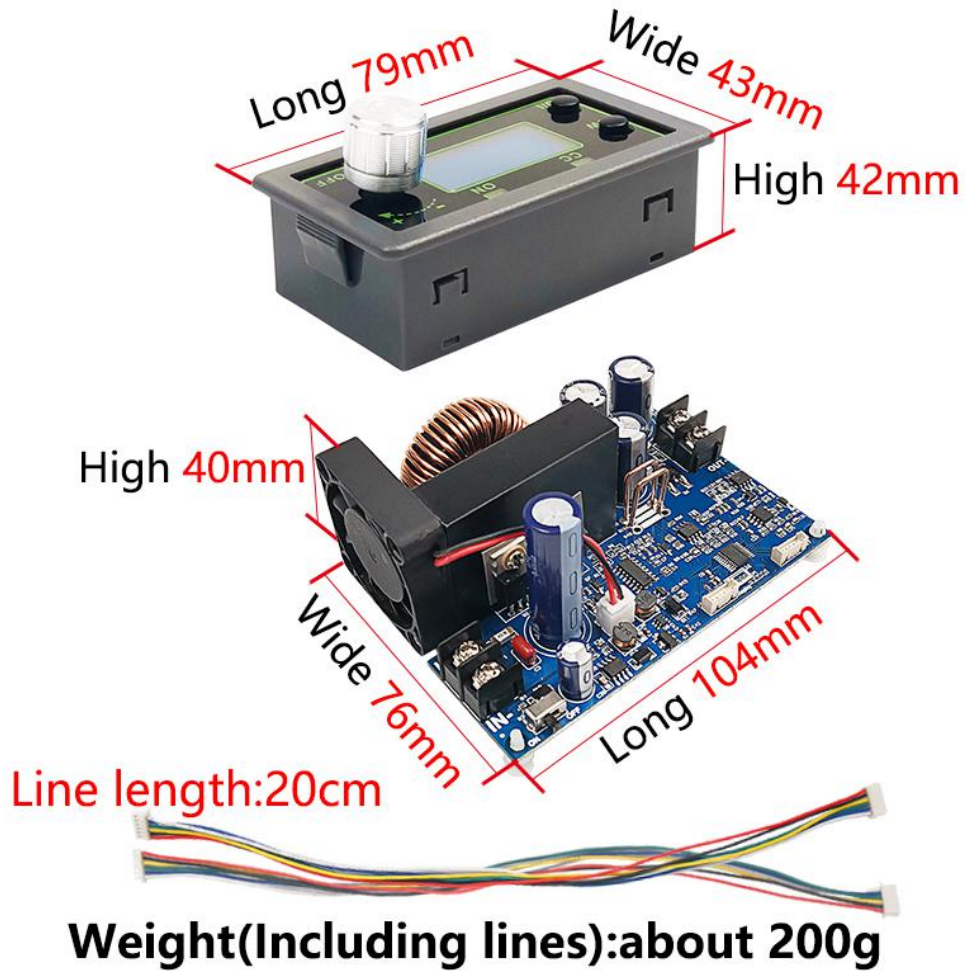
Protection mechanism:

Input undervoltage protection (5.8-50v adjustable, default 5.8v)

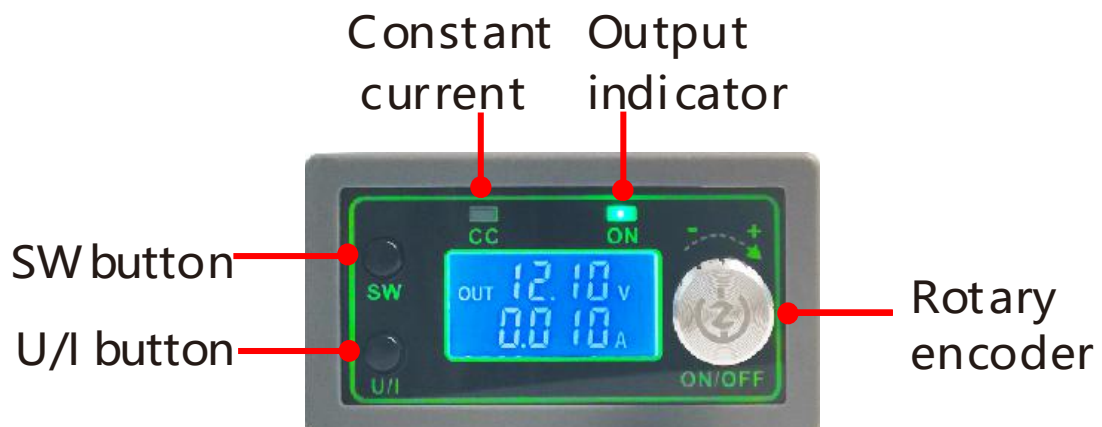Output overvoltage protection (0-51.00v adjustable, default 51V)

Output over-current protection (0-12.10a adjustable, default 12.10a)

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

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

Long 79mm

Wide 43mm
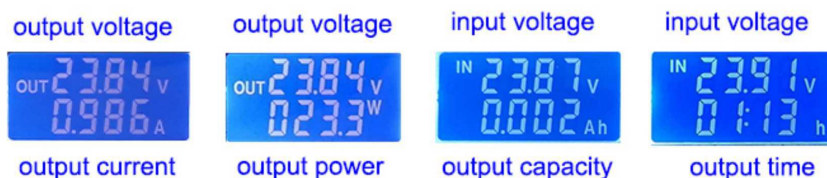
High 42mm

High 40mm

Wide 76mm

Long 104mm

Line length:20cm

Weight(Including lines):about 200g

3. Key description

Constant current

Output indicator

SW button

U/I button

CC

ON

OUT 12.10 V

0.010 A

SW

U/I

ON/OFF

Rotary encoder

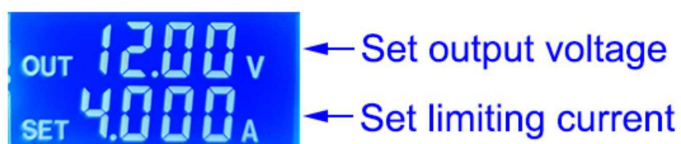| KEY \ Interface	normal interface	regulating voltage and constant current	Set the parameters
SW	Short press: switching current A| power W| capacity Ah| time h display Long press: switching input voltage | output voltage display	NULL	Short press: toggle the parameters to be set Long press: null
U/I	Short press: enter the interface of regulating voltage constant current Long press: enter the interface of setting parameters	Short press: switch between regulating voltage value, regulating constant current value and exiting regulating Long press: null	Short press: null Long press: exit the setting parameters interface and return to the normal interface
Rotary encoder	Short press: toggle output to turn on and off Long press: null	Short press: adjust the parameter shift accordingly Long press: null Left-rotation: the corresponding bit of adjustment parameter decreases Right-rotation: the corresponding bit of adjustment parameter increase	Short press: adjust the parameter shift accordingly Long press: turn | off if parameters allow Left-rotation: the corresponding bit of adjustment parameter decreases Right-rotation: the corresponding bit of adjustment parameter increase

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.
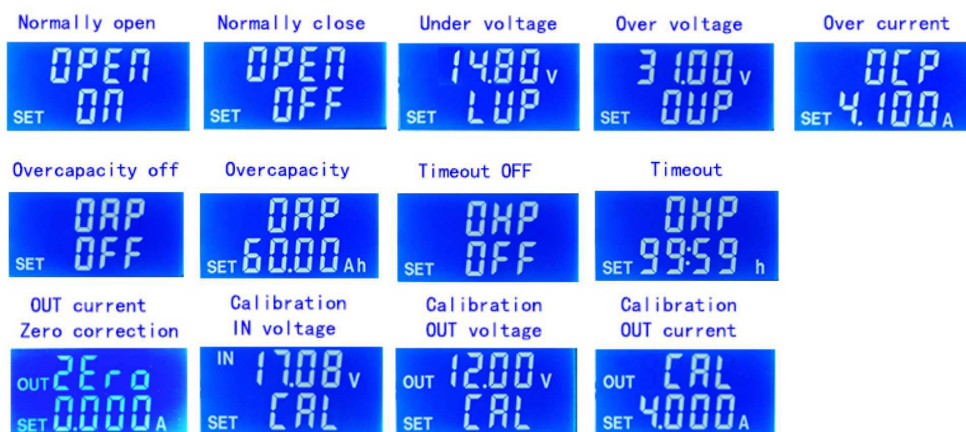
4. Interface description

Normal Interface

output voltage	output voltage	input voltage	input voltage
OUT 23.84 V	OUT 23.84 V	IN 23.87 V	IN 23.91 V
0.986 A	023.3 W	0.002 Ah	01:13 h
output current	output power	output capacity	output time

Interface for setting voltage and constant current

OUT **12.00** V ← Set output voltage

SET **4.000** A ← Set limiting current

Interface to set parameters

Normally open	Normally close	Under voltage	Over voltage	Over current
OPEN	OPEN	14.80 V	31.00 V	OCP
SET ON	SET OFF	SET LUP	SET OUP	SET 4.100 A

Overcapacity off	Overcapacity	Timeout OFF	Timeout	
ORP	ORP	OHP	OHP	
SET OFF	SET 60.00 Ah	SET OFF	SET 99:59 h	

OUT current Zero correction	Calibration IN voltage	Calibration OUT voltage	Calibration OUT current	
OUT ZEro	IN 17.08 V	OUT 12.00 V	OUT CAL	
SET 0.000 A	SET CAL	SET CAL	SET 4.000 A	

Protection Interface

Under voltage protection	Over voltage Protection	Over current Protection	Over capacity Protection	Timeout Protection
LUP	OUP	OCP	ORP	OHP

5. Method of use

5.1. **Switch display parameters** -- in the normal interface, press SW to switch the display below the display screen, and switch the display content between current A power W capacity Ah time h.Long press SW button to switch the uplink display on the display screen and switch the display content between input voltage IN output voltage OUT.

5.2. **Set output voltage** -- press U/I button in the normal interface to enter the interface of setting voltage constant current.It can be seen that a certain digit of the output voltage value is flashing. Rotate the encoder left and right to adjust the major and minor.Short press the rotary encoder to choose which bit of output voltage to set.After setting, press U/I button 2 times to return to the normal interface.Or automatically return to the normal interface after stopping operation for 10s.

5.3. **Set constant current value** (that is, the maximum current value allowed to output by the module) -- press U/I button in the normal interface to enter the setting voltage constant current interface.Then press U/I button and switch to setting constant current value. You can see a bit of the setting constant current value flashing. Rotate the rotary encoder left and right to adjust the major and minor.Short press the rotary encoder to choose which bit to set the constant current value.After setting, press U/I to exit the setting voltage constant current interface and return to the normal interface.Or automatically return to the normal interface after stopping operation for 10s.

5.4. **Set the default on/off state of module power-on** -- long press U/I in the normal interface to enter the parameter setting interface.You can see that it shows "OPEN OFF" or "OPEN ON". "OPEN OFF" means the output is turned OFF by default when power is ON, and "OPEN ON" means the output is turned ON by default when power is ON.Long press rotate encoder to switch two

states.After setting, long press U/I to return to the normal interface.

5.5. **Setting of protection parameters on state and threshold** -- long press U/I to enter the parameter setting interface in the normal interface.Press SW until the protection you want appears.LUP -- undervoltage protection threshold;OUP -- overvoltage protection threshold;OCP -- overcurrent protection threshold;OAP -- ultra-capacity protection threshold;OHP timeout protection threshold.Short press rotate encoder to select which bit you want to set the protection parameter.Long press the rotary encoder to set the protection parameters on or off (only timeout protection and supercapacity protection can be set to turn on/off, and other protection parameters are turned on by default.).Rotate the encoder left and right to make the parameters bigger and smaller.After setting, long press U/I to return to the normal interface.

5.6. **Calibration voltage and current** -- press U/I button to enter the parameter setting interface under normal interface. Press SW key for a short time until the interface with zero appears, with zero + out + a symbol. Press and hold the rotary encoder to complete zero calibration. Short press SW button until a parameter interface with CAL appears.The calibration input voltage interface with the symbol CAL+IN+V;The calibration output voltage interface with the symbol CAL+OUT+V;The calibration output current interface with the symbol CAL+OUT+A.Rotate the encoder left and right to adjust the size of parameters.After the adjustment is completed, long press the rotary encoder to confirm the adjustment is completed, and the parameter value is no longer flashing.Long press U/I to return to the normal interface.

Note: in order to ensure the accuracy of calibration, calibration voltage -- above 12V can only be started;Calibration current - start calibration only when the current is above 1A.

6. Packing form

Long 156mm
Wide 103mm
High 69mm

Weight(Box included):about 242g

7. Cautions

7.1. The module input positive in + and negative in - must not be reversed, and the module input in - must not be short circuited with the output out -, otherwise the module may be burnt out.

7.2. Please ensure that the power moment of the power supply exceeds the required power of the output load!

7.3. This module is a step-down module, the input voltage should be higher than the output voltage, and a certain margin should be reserved. For full load output, the input voltage should be 55v.

7.4. High power use of this module, serious heating, high temperature, be careful of scald! Please pay attention to ventilation and heat dissipation when using high power for a long time!

7.5. The module has input undervoltage protection function. The default value is about 5.8v (can be set). When the value 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).