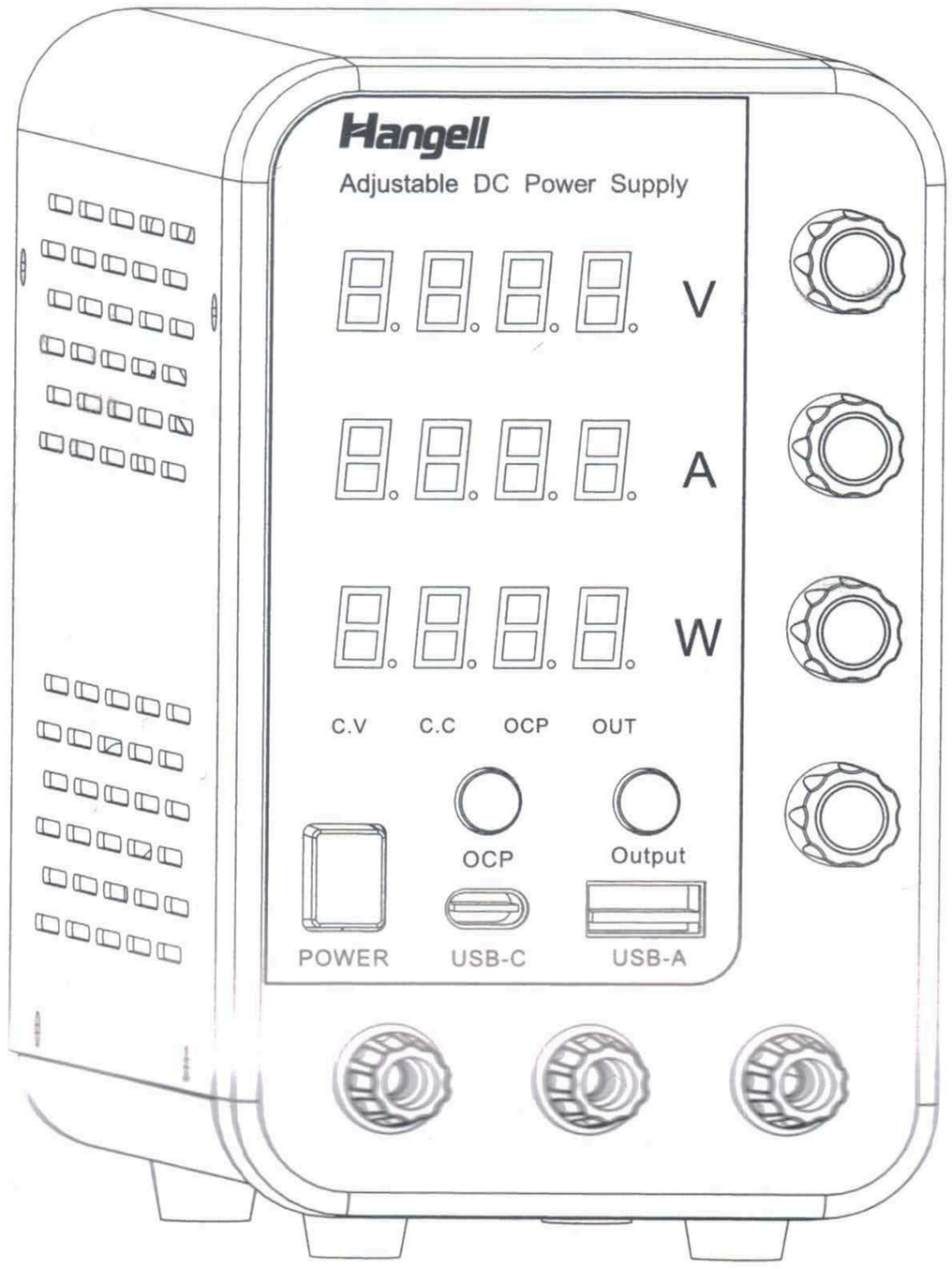
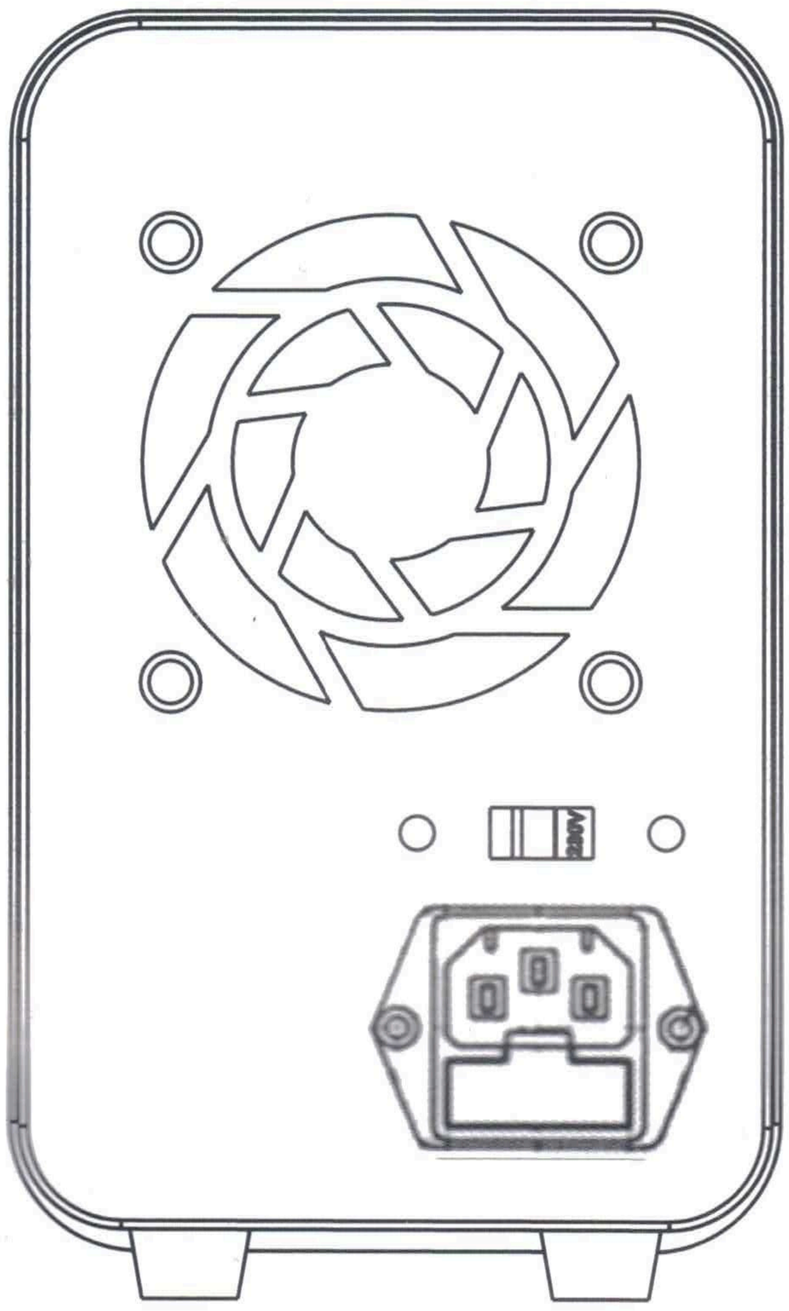
Hangell

Adjustable DC power supply

Instruction Manual





Directory

Safety Summary

Welcome to use the adjustable program-controlled DC stable voltage power supply (hereinafter referred to as the power supply) . Please read this manual, especially about safety, to avoid personal injury or cause damage to the power supply and other electronic equipment connected to the power supply.

This manual contains important safety instructions that must be followed for the operation and storage environment of the adjustable program controlled DC regulator.

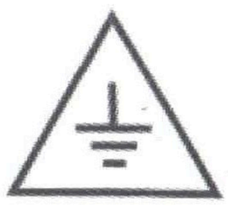
When you get a new power supply, you need the necessary checks to ensure the instrument.

1. Check if there is any damage caused by transportation.
2. Check whether the accessories are complete.
3. Before powering on be sure to check whether the product meets your actual input voltage.
4.Check whether the output voltage and current of the machine are normal

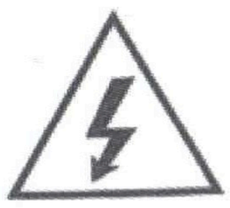
If any problems are found in the above inspection. please contact the dealer in time.

Safety symbol

The following safety symbols will appear in the manual or in the machine



Connect ground signs



High-pressure hazard signs

Note the warning signs

Product Overview

The HPS series is a digital display programmable switch DC voltage stabilization supply to simultaneously display voltage, current and power. This power supply is widely used for product aging, R&D testing, school and production line use, its output voltage and output current are presently adjusted by the encoder knob and can be continuously adjustable between 0 and nominal values. The stability and ripple coefficient of the power supply are very good, with short circuit protection, over-pressure protection, over-current protection. Over-temperature protection and other protection circuits. The product design is beautiful, convenient for operation, and can work for a long time. This computer is equipped with USB fast charging interface; computer PC-terminal software control function. Popular by the majority of users.

Product parameters

Model Number： HPS series (see product label for details)

Output voltage： 0-Nominal value voltage is continuously adjustable

Output current ： 0-Nominal value current is continuously adjustable

Output power： Voltage V* Current A

Auxiliary function Output： MUTE Settings, OCP short circuit protection, USB fast charging interface, TYPE-C quick charge.

Input voltage: AC115V±10%, AC230V±10%. The input AC voltage is switched optional.

Operating temperature: 0 ℃ ~40 ℃; relative humidity: <80%RH

Storage temperature： -10C~70 C; relative humidity: <70%RH

Constant pressure state: Voltage Stability≤0.5%+3mV

Load Stability≤0.5%+3mV

Ripple noise≤0.5%A P-P

Constant current status: Current Stability.≤0.5%+3mA

Load Stability≤0.5% +3mA

Ripple noise≤0.5%A P-P

Protection mode: Over-pressure protection, over-current protection, over- temperature protection, short-circuit protection

Displayed: Four digital tubes. voltage, current and power

Display accuracy: 0.5% + 5 words

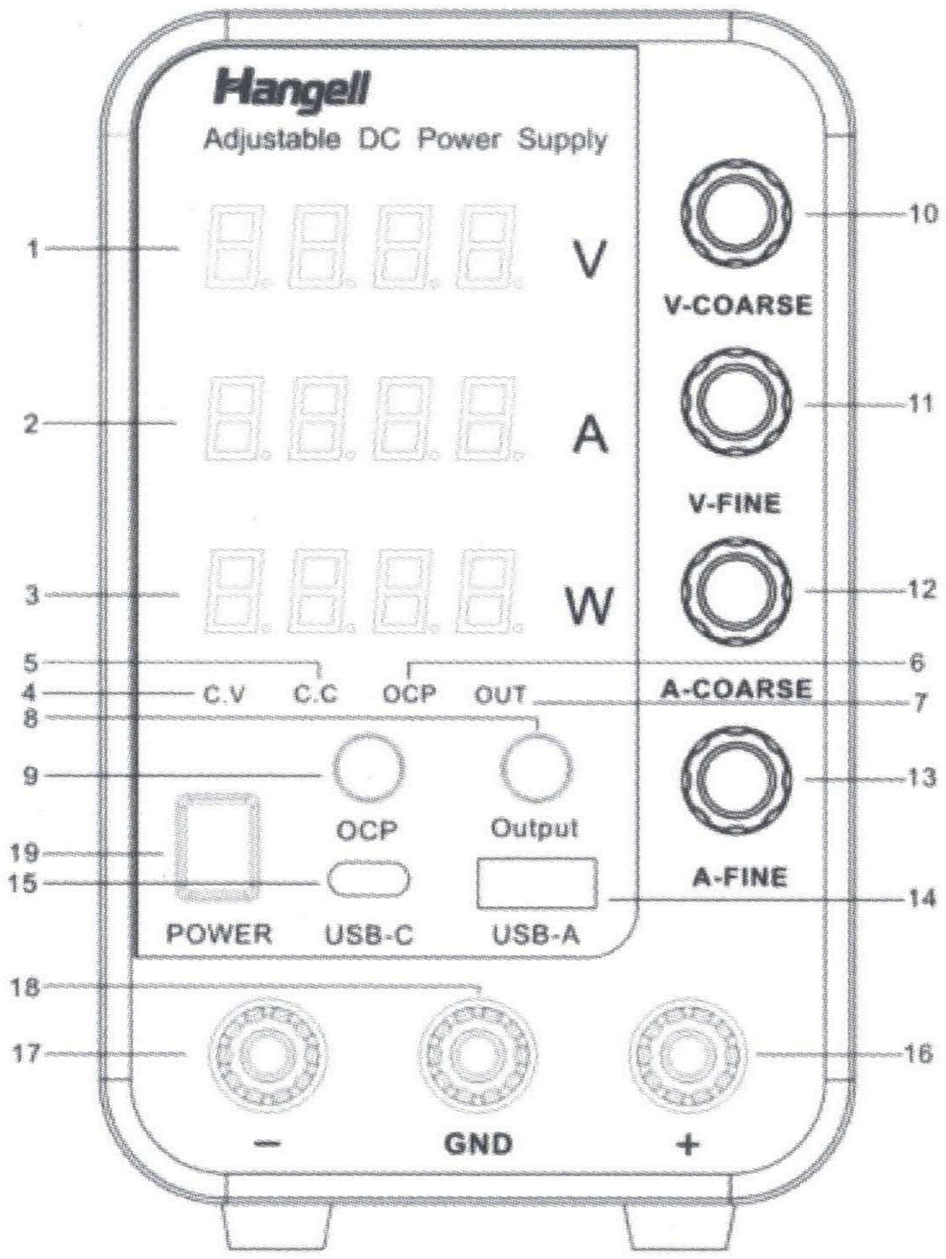
Display Resolution Voltage: 0.01V.Current:0.001A (when over 100V: 0.1V, when greater than 10A: 0.01A)

Model List

BPS serials

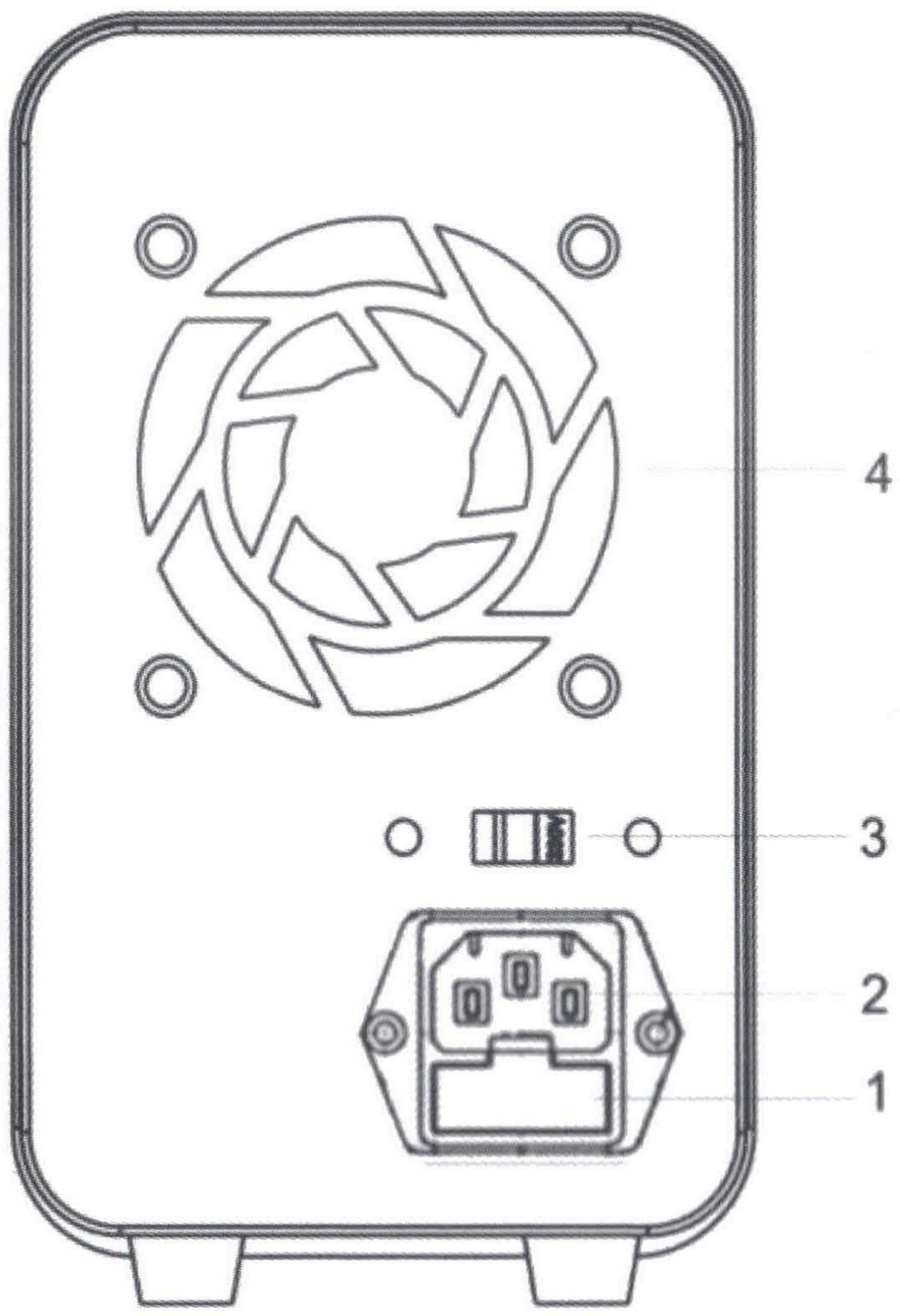
Product Model	Output Voltage	Output Current	Output Power
HPS305	0-30V	0-5A	150W
HPS3010	0-30V	0-10A	300W
HPS605	0-60V	0-5A	300W
HPS1203	0-120V	0-3A	360W
HPS3001	0-300V	0-1A	300W
Product Size	3.54inch * 5.7inch * 7.48inch		
Package Size	10.4inch * 5.3inch * 7.67inch		
Product Weight	Net weight： 2.5lb, Gross weight： 3.3lb		

Appearance Description



Front Panel

1 Voltage display
2 Current display
3 Output power display
4 C.V Constant voltage status indicator
5 C.C Constant current status indicator
6 OCP short circuit indicator
7 OUT Output indicator
8 Output switch
9 OCP Over-current protection key
10 Voltage coarse regulation encoder
11 Voltage fine tuning encoder
12 Current coarse regulation encoder
13 Current fine-tuning encoder
14 Quick charge USB interface
15 Quick charge TYPE-C interface
16 Positive output terminal+
17 Negative output terminal-
18 Ground terminal
19 Power switch



Rear Panel

1 Fuse box
2 AC input power outlet
3 AC input voltage selector switch
4 Cooling fan

Panel function description

Front Panel

1. Power switch
Used to turn the power on or off

2. Voltage display
Used to display the voltage setting value or output value. When setting the voltage, it displays the setting voltage value. When the power output is turned on, the actual output voltage value is displayed.

3. Current display
Used to display the current setting value or output value. When setting the current, it displays the setting current value. When the power output is turned on, the actual output current value is displayed.

4. Power display：
Used to display the output power.

5. CV constant voltage status indicator
The CV indicator lights up, and the machine is working in a constant voltage state.

6. CC constant current status indicator：
The CC indicator lights up and the machine is working in a constant current state.

7. OCP short circuit indicator：
Used to prompt whether the OCP function is enabled. Lights up to indicate that the OCP function is enabled

8. Output indicator：
The indicator light is on to indicate that the power output is on, and the indicator light is off to indicate that the power output is off.

9. Output switch:
Used to turn on or off the output of the power supply. When the short-circuit protection alarms, press to release the alarm and enter the closed output state.

10. OCP Over-current protection key
Used to set the over-current protection function. Press once to turn on, press again to turn off.

11. V-COARSE voltage coarse adjustment encoder
Used to adjust the first two digits of the set voltage value. Turn clockwise to increase the value; turn counterclockwise to decrease the value. Press the coding switch to shift to the left. 3 seconds after the voltage setting operation is completed, the flashing stops and the current setting value is stored.
2: V-FINE voltage fine-tuning encoder
Used to adjust the size of the last two digits of the set voltage value. Turn clockwise to increase the value; turn counterclockwise to decrease the value. Press the coding switch to shift to the left. 3 seconds after the voltage setting operation is completed, the flashing stops and the current setting value is stored.

12. A-COARSE current coarse adjustment encoder
Used to adjust the first two digits of the set current. Turn clockwise to increase the value; turn counterclockwise to decrease the value. Press the coding switch to shift to the left. 3 seconds after the setting current operation is completed, the flashing stops and the current setting value is stored.
2: A-FINE current fine-tuning encoder
Used to adjust the size of the last two digits of the set current value. Turn clockwise to increase the value; turn counterclockwise to decrease the value. Press the coding switch to shift to the left. 3 seconds after the setting current operation is completed, the flashing stops and the current setting value is stored.

13. Quick charge USB interface
This machine supports USB fast charging, built-in fast charging protocol chip, and the output power is up to 18W. It can provide fast charging for mobile phones,

PADs, power banks and other devices with fast charging function. Automatically adjust the output voltage and current according to the fast charging protocol of the charging device. When an electronic device that does not support fast charging function is used, it will be charged according to the standard 5V.

14. Quick charge TYPE-C interface
Same as 14 above, charging with TYPE-C interface.

15. Positive output terminal
The "+" positive output terminal is used to connect the positive pole of the load device

16. Negative output terminal
The "-" negative output terminal is used to connect the negative pole of the load device

17. Grounding bolt
Used for grounding.

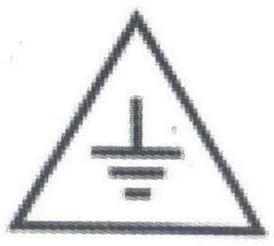
Rear Panel

1. Fuse box
Used to store the fuse for easy replacement.

2. AC input power outlet
AC power input socket.

3. AC input voltage selector switch
This machine supports AC115V or AC230V dual-voltage input work, which needs to be selected and switched through this switch.

4. Cooling fan
Used for chassis heat dissipation, temperature control type, and starts the fan when the temperature that needs for heat dissipation is reached.



Note: When using this product, please make sure that the power cord is well grounded. If the power socket has no ground wire, wires can be used to connect the casing of the machine to the ground.
Good grounding can effectively prevent machine leakage and reduce output ripple interference.

Requirements

1. Please use a power cord that meets the power requirements of this product
2. Before use, the power supply must be grounded reliably, and the weak leakage current caused by the internal anti-electromagnetic interference circuit of the power supply should be led to the ground, otherwise "false leakage will occur which may cause damage to the load equipment or cause the power supply to resist interference decrease in ability.
3. When using this power supply to charge reusable batteries (such as lead-acid batteries), be sure to connect the positive and negative poles of the power supply to the positive and negative poles of the battery correctly.
4. If the connection is reversed, it may burn out the internal rectifying parts of the power supply, or damage the load equipment.
5. It is strictly forbidden to use this product in an environment with flammable, explosive materials, humidity, and corrosive gas.
6. When this product is working, it will generate heat. especially under full power usage, Therefore, please use this product in an environment with good ventilation and heat dissipation, and ensure that there are no other obstacles in the vicinity of the product□s cooling fan and vents
7. When using this power supply, please select an output wire with sufficient wire diameter according to the output current of the product. The connection area between the wire and the power supply, the wire and the load equipment is large enough, the contact surface is clean and free of corrosion, and the connection must be firm to avoid heat damage to the terminal or load equipment, which may cause a fire in severe cases.
8. If you encounter product use problems and quality problems, please consult our after-sales personnel. If necessary, the power supply must be sent to our company

for maintenance. Because there is a high voltage inside the machine. (Even if the power is off, the circuit will still have high voltage for a certain period of time.) Please do not repair or modify it by yourself. otherwise. it may cause the expansion of the fault or cause personal injury.

9. Please confirm the AC voltage allowed by the machine first. This machine can realize two kinds of AC voltage input through the switch on the rear panel: AC 230V ± 10% or AC 115V ± 10% (when "230V" appears, allowable input voltage:AC230V±10% when □115V□appears, allowable input voltage: AC 115± 10%).

Warn:
Wrong AC voltage input will cause serious damage to the machine. Please confirm the input voltage value required by the machine.

Main features of the product

1. Constant voltage and constant current automatic switching function. Constant voltage value and constant current value can be preset with coding switch, which is convenient to use

2. There is a separate power output switch button, through which the power output can be turned on or off conveniently. When the output is stopped, the screen displays the set voltage value and set current value. which is convenient for setting.

3. Short-circuit protection alarm function (OCP). When this function is enabled, the power supply will stop outputting when the load equipment is short-circuited, and there will be a buzzer sound and OCP characters to indicate. After the external short circuit is released, press the output button to release the alarm or restore the output. It can effectively protect the load equipment.

4. The setting voltage, setting current, actual voltage and actual current are all displayed in four digits.

5. The use of low-noise, temperature-controlled cooling fans to ensure that the power supply works within the appropriate temperature.

6. This power supply has an overheating protection function. When the internal temperature of the power supply reaches 75 degrees or more, the power supply will be forbidden to output to avoid damage to the machine due to overheating.
7. The constant voltage and constant current values are automatically memorized when the machine is turned off(or power down), and the set value at the last shutdown (or power down) will be used when the machine is turned on again.

Method of operation

1. Power on

Press the POWER button to turn on the power, and the screen will display the voltage and
current values that were set when the machine was turned off last time.

2. Voltage setting

Regardless of whether the power supply is in the output state or not, you can turn the "V-COARSE/V-FINE" coding switch to set the voltage. When it enters the voltage setting state, the currently set "bit" will be prompted by flashing; Turn clockwise to increase the value and counterclockwise to decrease the value. Press the coding switch to shift to the left. 5 seconds after the voltage setting operation is completed, the flashing stops and the current setting value is stored.

3. Current setting

Regardless of whether the power supply is in the output state or not, you can turn the "A-COARSE/A-FINE" coding switch to set the current. When it enters the current setting state, the currently set "bit" will be prompted by flashing; Turn clockwise to increase the value and counterclockwise to decrease the value. Press the coding switch to shift to the left. 5 seconds after the current setting operation is completed, the flashing stops and the current setting value is stored.

4. Output switch

Short press the "Output" button on the panel, you can switch the power output and turn off.

5. OCP short circuit protection

Press the "OCP" button to turn on (or off) the OCP short circuit protection alarm function. After the OCP protection alarm function is turned on, when the machine detects that the external load has a short circuit or over-current, the machine will stop output and give an alarm prompt to effectively protect the external load. In the OCP short circuit alarm state, short press the Output key to release the alarm state and enter the closed output state.

Examples of use:

Set the power supply to 12V and the current to 3A

The operation is as follows:

1.Turn on the power switch.

2.Rotate the "V-COARSE/V-FINE" coding switch to preset the voltage to "12.00" V.

3. Rotate the "A-COARSE/A-FINE" coding switch to preset the current to "3.000" A.

4. Connect the output terminals on the panel of the machine to the load equipment correctly and firmly with appropriate wires.

5. Short press the "Output" output button, the indicator light will light up, and the machine will output normally.

6. If you need to enable the short circuit protection (over-current protection) function, you can press the "OCP" button at any time to enable this function.

Warn:

1. In the actual CV operation, if the load resistance value decreases and the output current increases to the set current value, the power supply will automatically switch to CC mode. When the load resistance value continues to decrease, the current will remain at the current setting value, and the voltage will decrease proportionally (I=V/R). At this time, increase the load resistance value or increase the current setting value to restore the CV output state.

2. The machine judges whether there is a short circuit in

the output based on whether the output current is greater than the current set by the user. Therefore, when the OCP short-circuit protection function is enabled, the machine cannot be used in constant current mode.

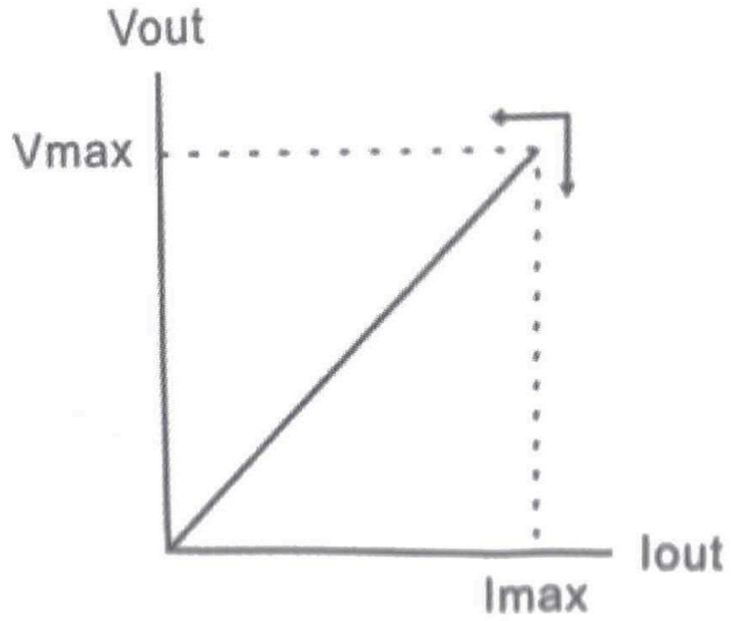
Connect load equipment

1. Rotate counterclockwise to loosen the terminal knob.
2. Put the output wire terminals into the terminal screw according to the positive and negative poles.
3.Turn clockwise to tighten the terminal knob.
4. Firmly connect the other end of the wire with the positive and negative poles of the load device.

Warn:
Incorrect connection may cause damage to the power supply and the load connected to the power supply. When connecting a battery load, do not connect the "+" and "-" poles reversely as this may damage the power supply.

Constant voltage/constant current characteristics:

The working characteristic of this series of power supplies is constant voltage/constant current automatic conversion type which can automatically change between constant voltage and constant current states with the change of load. The intersection point between constant voltage and constant current is called the conversion point. For example, if the load



makes the power supply work in a constant voltage mode, it outputs a constant voltage. As the load increases, the output voltage will remain stable and the output current will increase. When the current value reaches the set current limit value, the power supply will automatically switch to constant current mode. The output current remains stable, and the output voltage decreases proportionally with the further increase of the load. The conversion between constant voltage and constant current is indicated by the LED on the front panel. The CV indicator light is on when the voltage is constant and the CC indicator light is on when the current is constant.

System settings

Press and hold the Output button for 5 seconds to enter the system setting function. According to the needs of use, the machine can be set by default.

The system default setting items include:

1. The power supply output status.
2. Screen brightness.

After entering the system settings, turn the voltage encoding switch to change the default parameters of the current project, press the voltage encoding switch to switch to the next item, if you have switched to the last item, click the voltage encoding switch again, the machine will Save the parameters and exit the setting state. If any other key is pressed during the parameter setting process, the setting state will be exited and the parameter setting will not be saved.

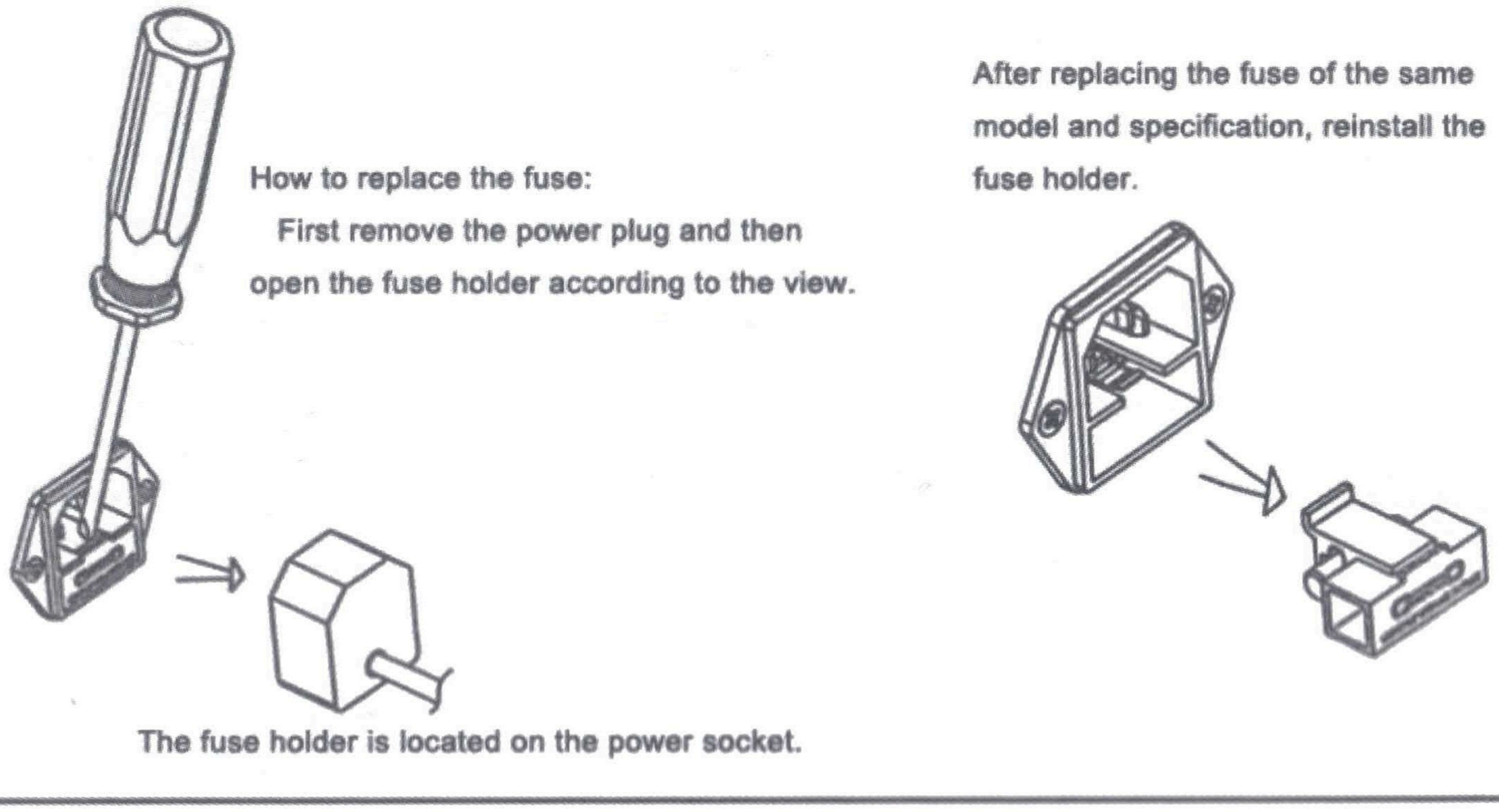
3.Buzzer Switch

The specific setting items and parameter meanings are shown in the following table:

Serial number	Item	parameter	Meaning	Defaults
1	Output default state	0	When the power is turned on, the OUT output is turned off by default	0
		1	When the power is turned on,the OUT outputis turned on by default	
2	Screen brightness	0	Low brightness	0
		1	high brightness	
3	Buzzer Switch	0	No beeps	1
		1	Buzzer Sound	

Fuse replacement

If the fuse blows, the machine will stop working. It is necessary to find out and correct the cause of the blown fuse and then replace it with a fuse of the same



specification.

Fuse replacement method

High voltage danger:
For effective safety protection, it is only limited to replacing the fuse of a specific specification. Before replacing the fuse, you must turn off the power and unplug the power cord from the power socket.

Product Maintenance

1. When the machine is not in use, please disconnect the power supply.
2. Unplug the power plug before cleaning the machine.
3. Do not use solvents containing hydrocarbons, chlorides or similar, nor use detergents containing abrasive ingredients.

Warranty Service:

1. We provide warranty service for our products within one year from the date of purchase. Except for the following cases:
a. Faults caused by abnormal use, such as improper manual operation and improper repair, modification or adjustment of devices:
b. Consumable materials are not covered by the warranty:
c. Natural and irresistible disasters, such as floods, fires, earthquakes, etc.

If you purchase our products from Amazon, we will provide 365-days after-sale service based on the time you place the order. Just contact us when you need a warranty through this path:
Go to Your Orders - Find your order in the list - Select Contact seller

Package Included:

1x Power Supply
1x Power Supply Cable
1x Output Power Cord
1x User Manual

Questions& Answers:

The power supply cannot be turned on
Check and verify whether the power wire has AC power and whether the fuse is intact.

There is no power output
Check whether the output button is on and whether the wire is in good condition as well as whether the voltage or current is adjusted to output.

What is constant voltage mode (C.V)
The power supply constantly outputs at a voltage set by the user, and the current will be output and supplied according to the actual needs of the load.

What is constant current mode (C.V)
When the current required by the load exceeds the limit current value set by the user, the power supply will automatically switch to the constant current mode for operation. At this time, the current will remain unchanged, and the voltage will be output and supplied according to the demand of the load.

The power supply cannot be output according to the current value set by the user
The current value set by the user refers to the maximum limit current value allowed to be output by the power supply. The current value of actual output is supplied according to the

actual demand of the load, but will not exceed the current limit value set by the user.

The voltage cannot reach the maximum value of this machine

Please determine the input voltage required by the machine: 230V+10%; 115V+10%. There is a voltage switch on the back of the power supply. If you use 110V, you need to turn it to 115V.

Scratches on power supply display

The LED digital display has a protective film to protect it from scratches during transportation. If you feel that the screen is not clear, you can remove the protective film on it.

The fan of the power supply does not work

The exhaust fan is located behind the power supply. In the process of use, when the power supply reaches a certain temperature, it will automatically turn on, instead of always turning on.