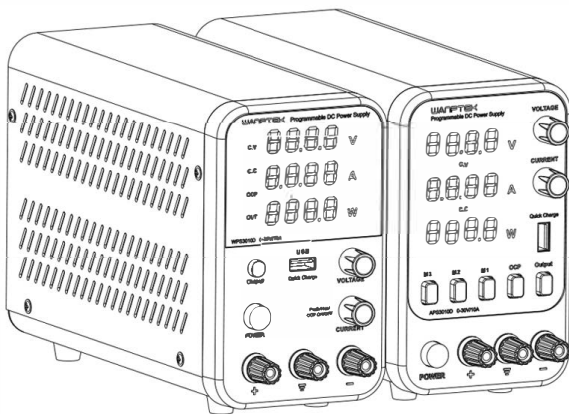


DC POWER SUPPLY

WPS/APS series programmable adjustable DC power supply

Instruction manual



Shenzhen Guce Electronic Technology Co., Ltd.



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Safety Summary

Welcome to use the adjustable program-controlled DC stable voltage power supply (hereinafter referred to as the power supply) produced by Shenzhen Solid Measurement Electronic Technology Co., Ltd. Before use, 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 WPS/APS series 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 and 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 sign



High-pressure hazard signs



Note the warning signs

Product Overview

The WPS /APS 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, overpressure protection, overcurrent protection, overtemperature 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	WPS/APS 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, OCP short circuit protection, USB fast charging interface, data storage (APS model)
Input voltage	AC115V $\pm$ 10%, AC230V $\pm$ 10%, the input AC voltage is switched optional.
Operating temperature	0 $^{\circ}$ C $\sim$ 40 $^{\circ}$ C; relative humidity: <80%RH
Storage temperature	-10 $^{\circ}$ C $\sim$ 70 $^{\circ}$ C; relative humidity: <70%RH
Constant pressure state	Voltage Stability $\leq$ 0.5% + 3mV
	Load Stability $\leq$ 0.5% + 3mV
	Ripple noises $\leq$ 0.5%A P-P
Constant current status	Current Stability, $\leq$ 0.5% + 3mA
	Load Stability $\leq$ 0.5% + 3mA
	Ripple noises $\leq$ 0.5%A P-P
Protection mode	Overpressure 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

WPS-Series Model

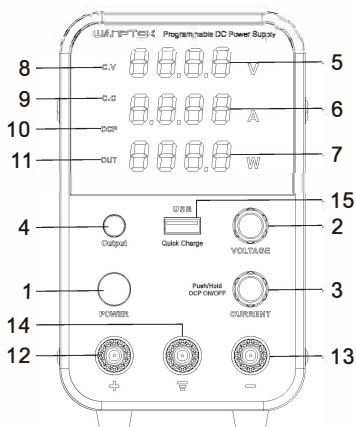
Product model	Output voltage	Output current	Output power
WPS305D	0-30V	0-5A	150W
WPS3010D	0-30V	0-10A	300W
WPS605D	0-60V	0-5A	300W
WPS1203D	0-120V	0-3A	360W
WPS1602D	0-160V	0-2A	320W
Product Size	Product Size: 3.54inch*5.7inch*7.48inch		
Package dimensions	Package Size: 10.4inch*5.3inch*7.67inch		
Product Weight	Net product quantity: 2.5lb , gross weight: 3.3lb		

APS-Series Model

Product model	Output voltage	Output current	Output power
APS305D	0-30V	0-5A	150W
APS3010D	0-30V	0-10A	300W
APS605D	0-60V	0-5A	300W
APS1203D	0-120V	0-3A	360W
APS1602D	0-160V	0-2A	320W
Product Size	Product Size: 3.54inch*5.7inch*7.48inch		
Package dimensions	Package Size: 10.4inch*5.3inch*7.67inch		
Product Weight	Net product quantity: 2.5lb , gross weight: 3.3lb		

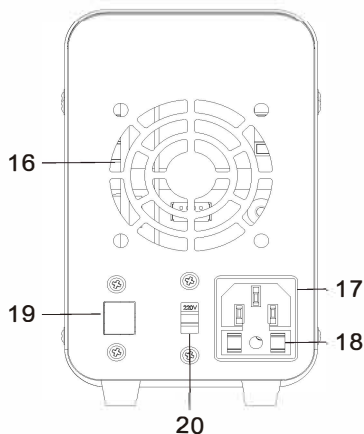
Appearance description of the WPS model

Front panel



1	Power supply switch
2	Voltage regulation encoder
3	Current regulation encoder
4	Output switch
5	Voltage display
6	Current display
7	Power display
8	Constant pressure status indicator
9	Constant current status indicator
10	OCP short circuit indicator
11	Output indicator
12	Positive output terminal+
13	Negative output terminal-
14	Ground terminal
15	USB fast charge interface

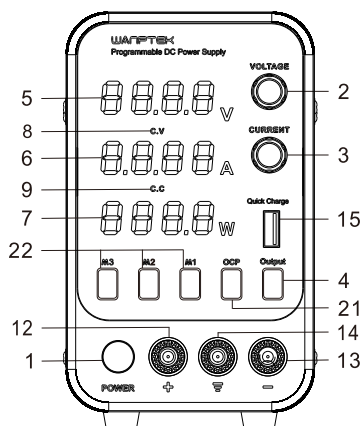
Rear panel



16	Cooling fan
17	AC input power outlet
18	Fuse box
19	USB host computer interface
20	AC input voltage selector switch

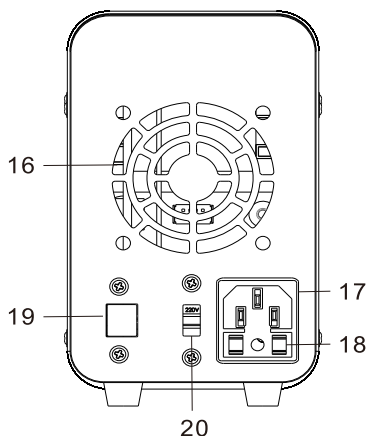
Appearance description of the APS model

Front panel



1	Power supply switch
2	Voltage regulation encoder
3	Current regulated encoder
4	Output switch
5	Voltage display
6	Current display
7	Power display
8	Constant pressure status indicator
9	Constant current status indicator
12	Positive output terminal+
13	Negative output terminal-
14	Ground terminal
15	USB fast charge interface
21	OCP short circuit protection switch
22	M1-M3 storage button

Rear panel



16	Cooling fan
17	AC input power socket
18	Fuse box
19	USB host computer interface
20	AC input voltage selector switch

Panel function description

1. Power switch

Used to turn the power on or off.

2. VOLTAGE voltage regulation encoder:

Used to adjust the setting voltage. 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.

3. CURRENT current regulating encoder:

Used to adjust the setting 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 current setting operation is completed, the flashing stops, and the current setting value is stored. WPS models also have: long press to enable/disable short-circuit protection

4. 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.

5. 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.

6. 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.

7. Power display:

Used to display the output power.

8. CV constant voltage status indicator:

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

9. CC constant current status indicator:

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

10. OCP short circuit indicator:

Used to prompt whether the OCP function is enabled. Lights up to indicate that the OCP function is enabled.

11. 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.

12. Positive output terminal:

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

13. Negative output terminal:

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

14. Grounding bolt:

Used for grounding.



15. USB independent fast charging interface:

This machine supports USB fast charging function, built-in fast charging protocol chip, output power up to 18W. It can provide fast charging for mobile phones, PADs, power banks and other devices with fast charging functions. Automatically adjust the output voltage and current according to the fast charging protocol of the charged device. When electronic devices that do not have the fast charging function are used, they will be charged according to the standard 5V.

16. Cooling fan:

Used for chassis heat dissipation, temperature control type, start the fan when the temperature that needs heat dissipation is reached.

17. Input power socket:

AC power input socket.

18. Fuse box:

Used to store the fuse for easy replacement.

19. USB host computer interface:

It is used to connect to the upper computer of the computer to realize the remote control of the power supply. The upper computer software can be downloaded from the official website.

Download link: wanptek.com

20. AC input voltage selection switch:

This machine supports AC115V or AC230V dual-voltage input work, which needs to be switched by this switch.

21. OCP short circuit protection switch:

APS model: Press the OCP button to enable/disable the OCP short-circuit protection function. After this function is enabled, the indicator will light up. When the load is short-circuited, the machine will stop output and give an alarm. Press the Output output button to release the alarm and enter the closed output state .

WPS model: Long press the current knob to enable/disable the OCP short-circuit protection function. After this function is enabled, the indicator will light up. When the load is short-circuited, the machine will stop output and give an alarm. Press the Output button to release the alarm and enter the shutdown output status.

22. Storage button (applicable to APS models)

The APS model has 3 groups of memory functions for easy storage and recall of commonly used parameters. Long press any button of M1-M3, the machine will memorize the currently set voltage and current value, short press any button of M1-M3, the machine will recall the previously stored voltage and current value. WPS model does not have this function!



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), you must ensure that the positive and negative poles of the power supply are correctly connected to the positive and negative poles of the battery. If they are connected reversely, the internal rectifier components of the power supply may be burned out, Or damage the load equipment.
4. It is strictly forbidden to use this product in an environment with flammable, explosive materials, humidity, and corrosive gas.
5. 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.
6. 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.
7. 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 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.
8. 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 $\pm$ 10% or AC 115V $\pm$ 10% (when  "230V" appears, allowable input voltage: AC 230V $\pm$ 10%, when  "115V" appears When, allowable input voltage: AC 115 $\pm$ 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, you can turn the "VOLTAGE" coding switch to set the voltage. When it enters the voltage setting state, The currently set "bit" is prompted by flashing; turn clockwise to increase the value, and turn 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, you can turn the "CURRENT" coding switch to set the current. When entering the current setting state, the currently set "bit" will flash in a flashing way; turn clockwise to increase the value, and turn 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

WPS model: Press the "CURRENT" coding switch for 3 seconds to turn on (or turn off) the OCP short-circuit protection alarm function.

APS model: Press the "OCP" button to turn on (or turn off) the OCP short-circuit protection alarm function. After the OCP protection alarm function is turned on, when the machine detects a short circuit or overcurrent in the external load, the machine will stop output and give an alarm 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 "VOLTAGE" coding switch to preset the voltage to "12.00"V.
3. Rotate the "CURRENT" 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 (WPS model, long press the "CURRENT" coding switch) to enable this function.



Note

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

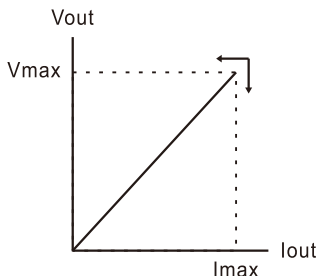


Note

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 ID of the machine.
2. The power supply output status.
3. Screen brightness.
4. Buzzer switch.
5. Serial communication baud rate.
6. Set the size of the serial port data.

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 (item 6), 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.

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

Serial number	project	parameter	meaning	Defaults
1	Native ID	1-4	Specify the number of this machine in the network	1
2	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 output is turned on by default	
3	Screen brightness	0	Low brightness	0
		1	high brightness	
4	Buzzer mute	0	No beeps	0
		1	With beep	
5	Communication baud rate	1	2400	1
		2	4800	
		3	9600	
		4	19200	
6	Communication size endian setting	0	Small end structure	0
		1	Big-endian structure	

Remote operation

This product can be equipped with a communication module (optional) to realize remote operation. The following describes how to realize remote operation and control the output of power supply.

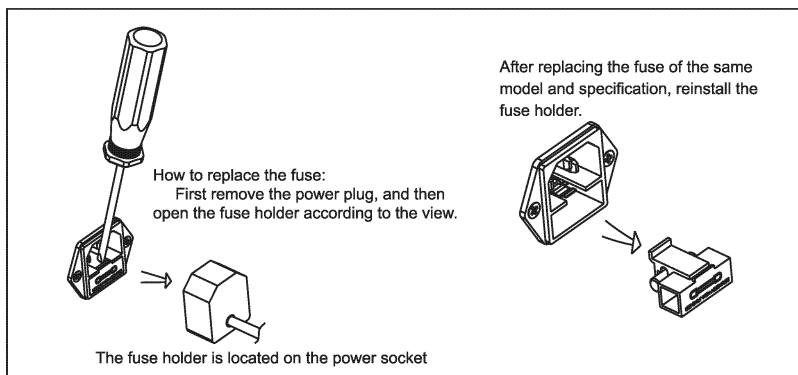
Instructions:

1. Use a USB cable to connect the power supply to the PC. You can also use a different conversion data cable to realize the USB to RS232/485 interface.
2. Select the correct communication port and communication baud rate on the PC interface. After the "receive" and "send" signals on the software interface flash normally, the machine is connected to the PC normally, and the power supply can be controlled through the software interface.

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.
 - 2) If you buy our products from Amazon, we will provide one-year warranty service based on the time you place the order. You can contact us when you need a warranty, we will know if your order is within the warranty period. You do not need to provide a warranty card (we did not send a warranty card to Amazon customers).
You can contact the after-sales support team through this path: Go to Your Orders - Find your order in the list - Select Contact seller.
- Warranty services cannot be provided in the following situations:
- a) Failure caused by abnormal use. Such as improper operation, improper maintenance, modification or adjustment.
 - b) Consumable materials are not covered by the warranty.
 - c) Natural disasters that are irresistible, such as floods, fires, earthquakes, etc.

Package Included:

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

Questions & Answers

- ❖ The voltage cannot reach 30V

Please determine the required input voltage of the machine: 230V $\pm$ 10%; 115V $\pm$ 10%. There is a voltage switch on the back of the power supply that it needs to be flipped to 115V if you are using 110V.

- ❖ The display screen of the power supply is scratched

The LED digital display has a protective film which is used to protect it from being scratched during transport. If you feel that the display is blurry, you can remove the protective film from it.

- ❖ The fan of the power supply does not work

The exhaust fan is located at the back of the power supply. It will turn on automatically when the power supply reaches a certain temperature during use rather than as soon as it is turned on.

- ❖ How to adjust screen brightness

Press and hold the Output button for 5 seconds to enter the system setting function. Press the voltage knob twice (the screen displays "3"), then turn the voltage knob to adjust the brightness ("0" means low brightness, "1" means high brightness), and finally press the OUTPUT key to exit. (For more other settings, please refer to page 11)

- ❖ How to turn on OCP short circuit protection

- If you buy a WPS model: press the "CURRENT" knob for three seconds to turn on or off the OCP short circuit protection alarm function
- If you buy an APS model: press the "OCP" button to turn on or off the OCP short circuit protection alarm function
- The power supply has output but the screen display is incomplete or no display
- This may be caused by the loosening of the Double Head Wire Cable Connector of the power supply during transportation. Open the power supply shell to recheck the Double Head Wire Cable Connector and tighten it.