DC POWER SUPPLY

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（300W）| USER MANUAL

PRODUCT MAINTANCE

1.Disconnect the power when the product is not in use.
2.Unplug the power supply before cleaning.
3. Do not use hydrocarbons, chlorides or similar solvents,or use abrasive cleaners.

PRODUCT WARRANTY

1. This product is offered free maintenance service within one year from the date of purchase. Except in the following cases:
A:Failures caused by improper use, such as improper handling and improper repair, modification or adjustment of the device.
B:Consumable materials are not covered by the warranty.
C:Naturally irresistible disasters such as floods, fires,earthquakes,etc.

2. Maintenance costs are charged for repairs that exceed the warranty period,and the costs incurred for maintenance are the responsibility of the user.

PACKING LIST

1. 1x Power Supply
2.1x Power Cord
3. 1x Output Load Cord
4.1x User's Manual

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SAFETY BRIEF

Congratulations on your purchase of the adjustable programmable DC power supply(hereinafter referred as Power Supply), which produced by Ningbo Kaijia Electronic Commerce Co., Ltd. To fully utilize this power supply, please keep this manual for reference carefully, especially on the safety contents, to avoid personal injury or damage on the power supply.

This user manual includes the operation procedure and the storage environmental conditions on this adjustable programmable DC power supply SPS3010X series.

Please make the necessary checking once you get this new power supply and make sure it can be worked well.

1- Whether there are any damages during the transportation.
2- Whether the standard accessories are all packed.
3- Whether the power supply is compliant with the actual input voltage before power on
4- Whether the output voltage and current works normal after power on

If any problems were found, please contact your local distributor for assistance.

SAFETY SYMBOL

The safety symbols below will appear in this manual or on the DC power supply.


Attention


High Voltage


Grounding

PRODUCT BRIEF

The model SPS3010X is the 3rd generation of voltage and current adjustable switching mode power supply, which developed and produced by Ningbo Kaijia Electronic Co., Ltd. With the features of light-weighted compact design, multifunctional and user friendly operation, especially on excellent accuracy, low ripple noise and high stability, all of these enable SPS3010X is an ideal choice on wide applications among hobbyist, product facility, education and so on.

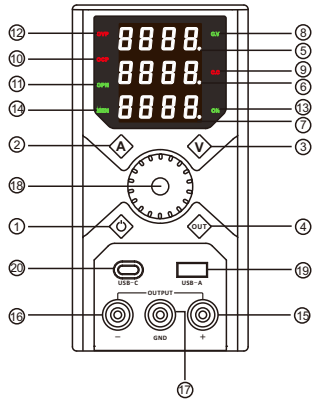
1-The voltage and current value are adjustable
2-With USB-C and USB-A dual output
3-Store and recall 5 groups of voltage/current data simultaneously
4-To set overflow protection and unit switch on status
5-With the protections on overload, over current, reversed connect.

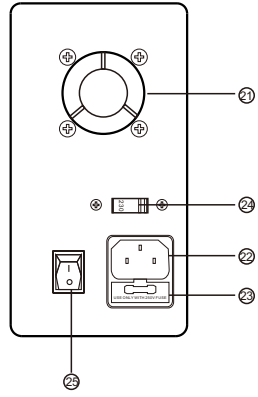
SPECIFICATION

1.Switchable DC regulated power supply

Model Number	SPS-3005X	SPS-3010X	SPS-6005X	SPS-12003X
Output Voltage	0-30V	0-30V	0-60V	0-120V
Output Current	0-5A	0-10A	0-5A	0-3A
Output Power	150W	300W	300W	360W
Input Voltage: AC110V/220V±5% 50/60Hz				
Auxiliary Functions: Output OCP short-circuit protection, USB charging port				
Operating Temperature: 0℃~40℃ Relative humidity: <80%RH				
Storage Temperature: -10℃~70℃ Relative humidity: <70%RH				
Constant Voltage Status	Voltage Stability: ≤0.5%+3mV Load Stability: ≤0.5%+3mV Ripple Noise: ≤0.5%V P-P(20MHz)			
Constant Current Status	Current Stability: ≤0.5%+3mV Load Stability: ≤0.5%+3mV Ripple Noise: ≤0.5%V P-P(20MHz)			
Protection Mode: Short-Circuit, Over-Voltage, Over-Current				
Display: Four-digit tube, 3-group display on voltage, current, power				
Display Accuracy: 0.5%+5digit				
Display Resolution:Voltage 0.01V, Current: 0.001A (>100V at 0.1V ; >10A at 0.01A)				
Product Dimension: 83×190×163mm(L×W×H)				
Product Weight: 1.17Kg				
Fuse Standard	T4A/T6A	T5A/T8A	T5A/T8A	T5A/T8A

PANEL INSTRUCTION





① Sleep switch
② Current adjustable button
③ Voltage adjustable button
④ Output push button
⑤ Voltage value display
⑥ Current value display
⑦ Power value display
⑧ CV (constant voltage) indicator
⑨ CC (constant current) indicator
⑩ OCP short circuit indicator
⑪ OPN indicator
⑫ OVP indicator
⑬ Output indicator
⑭ Memory indicator light or sleep indicator
⑮ Positive output terminal
⑯ Negative output terminal
⑰ Grounding bolt
⑱ Current or voltage adjustment knob
⑲ USB charging port
⑳ TYPE-C charging port
㉑ Cooling Fan
㉒ Input power socket
㉓ Fuse Box
㉔ Transfer switch: 110V/220V
㉕ Power switch

NOTICE

When operating the power supply, please ensure the power cord is grounded well, if the power socket has no grounding, you can connect the housing case of power supply with the wire to ground. Good grounding can prevent power supply leakage and reduce output ripple interference.

CAUTIONS

1- Please use the power cord which is compliant with the rated power of this device.
2- Before operating, the device must be grounded in order to conduct the week leakage current, which caused by the anti-electromagnetic interference circuit inside the power supply, into the earth. Otherwise the false leakage might be occurred, and it can damage the loading deices or decrease the capacity of anti-interference of this power supply.
3- Once use the power supply to charge the rechargeable battery (like lead-acid battery), ensure that the positive and negative poles of the power supply are connected to positive and negative poles of battery respectively, if not, it might damage the internal rectifying parts of power supply or the load devices.
4- Do not operate this power supply in the environments such as flammable, explosive, corrosive gas.
5- Do not block the vent and keep the power supply to be operated at ventilation environment.
6- Based on the output current value to select the suitable output wire and keep the connection tightly, to avoid damages on terminals, load devices, or fire in serious case, please keep contact surface is clean and rust-free.
7- If malfunction occurred, please consult with your local A/S for assistance, or return the defective unit for repairing. Since there is high voltage inside of device (even power off, the high voltage is still remains in circuit for a certain of period), please do not tempt to repair or modify by yourself.
8- Make sure the rating voltage, there are two type of input voltage: AC220V±5% or AC 110V±5%

NOTICE

Make sure input the correct AC voltage, the wrong AC voltage will damage the device.

Push-Buttons Introduction

1-Push-button “A”
Push this “A” to activate the current setting function, single press “A” to set the bit selection of the current value. For example 8.8.8.8 , along as the arrow direction to selected bit is flickered, and then select the encoding switch in the flashing state to adjust the required current value.

2-Push-button “V”
Push this “V” to activate the voltage setting function, single press “V” to set the bit selection of the voltage value. For example 8.8.8.8 , along as the arrow direction to selected bit is flickered, and then select the encoding switch in the flashing state to adjust the required voltage value.

3-Encoding switch
Under the voltage display bit flashing or current display bit flashing status, turn the encoding swtich clockwise to increase values, and turn the encoding switch anticlockwise to decrease values.

4-Hibernate button⏻
Under power off status and LED displays “OFF”, press ⏻ the power supply reduce input power and enter hibernate mode, at the same time “MEN” indicator lights up and the other indicators light off. If press ⏻ again, the “MEN” indicator will be lighted off. Under hibernate state, the power supply has the power off memory function.
Note: The output of the USB port is not affected when the power supply is under hibernate state.

5-Output Button “OUT”
Press “OUT”, the power supply will output the setting values, press “OUT“ again to exit output function and LED displays “OFF”.

USB Port Function

1-Both “USB-A” and “USB-C” are the fast charging interfaces, with the mobile phone fast charging function and support QC2.0,QC3.0,PD2.0,PD3.0,FCP,SCF,AFC,SFCP,BC1.2 fast charging protocol, The max.output is 20W.

Special Functions

1-“OCP” - Over Current Protection
Once the output of power supply is switched off and LED display “OFF”, hold-press “A” for 3 seconds to activate OCP setting mode, the power supply displayed “OCP/8.8.8./0”, single press “A” and the current value is flickered, to rotary the encoding switch to adjust the desired value. When the bit selection is finished and the end current value will be flashed, turn the encoding switch clockwise and power supply display “OCP/8.8.8./1” as well as “OCP” indicator lights up, which means “OCP” function is activated. ,If turn the encoding switch anticlockwise and power supply display “OCP/8.8.8./0”, as well as “OCP” indicator lights off, after that hold press “A” for 3 seconds to exit OCP function. In addition, the power-off memory function is available on OCP mode.
Under OCP mode, once the output current is reached the setting value, the OCP function will be activated automatically and the output will be shut off immediately, as well as the indicator “OCP” flickered, press any button to restore.

2-“OVP” - Over Voltage Protection
The over voltage protection value for this series power supply is as below:
SPS3010X Over Voltage Protection Value: 33V
SPS6005XOver Voltage Protection Value: 63V
SPS12003XOver Voltage Protection Value: 123V
If the output voltage value is exceeded above over voltage protection value respectively, the voltage output is shut off and “OVP” indicator flickered, press any button to restore.

3-Output Function Setting
The default setting once the power supply is switched up, the output is under turn-off mode. By holding press “OUT” for 3 seconds to activate the selection on power-on output function. Under output turn-off state, hold press “OUT” for 3 seconds and power supply shows “OPn 0”, and then single press “OUT” and displays “OPn 1” as well as “OPN” indicator lights up to activate power-on output function, which enable power supply to output voltage and currently directly after powered on.
Press again “OUT” and display “OPn 0”, as well as “OPN” indicator lights off, hold press “OUT” for 3 seconds to exit this function. The power-off memory function is available under this mode.

4-Groups of Voltage and Current Value Store and Recall Function
Under output turn-off and display “OFF” state, hold press ⏻ for 3 seconds to enter store and recall mode, and LED display “8.8.8.8. 8.8.8.8 EE01” for the 1st group stored value of voltage and current, and rotary the encoding switch to display from EE01 to EE05 these 5 groups data. After selected the desired data and press “OUT” to output this value. If you want to modify the data, you can press “V” or “A” and by rotating encoding switch to modify the values of voltage or current, and the new value will be saved once the ending bit stop flashing. Hold press ⏻ again for 3 seconds to exit this function.

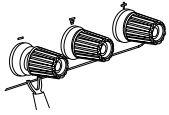
5-Brightness Adjustment
Under output turn-off and display “OFF” state, by turning the encoding switch clockwise or anticlockwise to adjust the brightness of display. The power-off memory function is available under this mode.

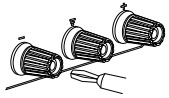
Attention

In 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 value continues to decrease, the current will remain at the current set value.The voltage is proportionally reduced. At this time, increase the load resistance or increase the current set value to restore the CV output state.

CONNECT THE LOAD

1. Rotate the terminal knob by turning it counterclockwise
2. Insert the load terminal
3. Turn the terminal knob clockwise
4. Banana plug can be directly inserted into the terminal hole





Attention

Improper connection may result in damage to the power supply and the load connected to the power supply.When connecting the battery load, do not reverse the polarity of the “+” and “-" as this may damage the power supply.

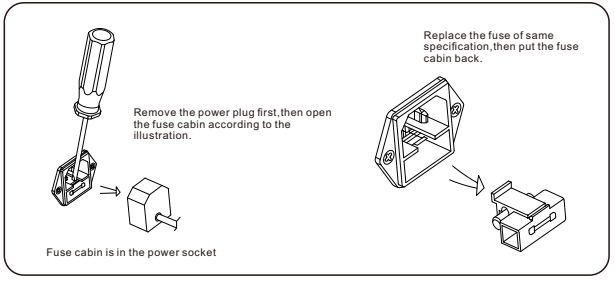
CONSTANT VOLTAGE/CONSTANT CURRENT CHARACTERISTICS

The working characteristics of this series of power supplies are constant voltage/constant current automatic conversion type, which can automatically change between constant voltage and constant current states with load changes. The intersection between constant voltage and constant current mode is called conversion point.For example, if the load causes the power supply to operate in a constant voltage mode, a constant voltage is output. As the load increases, the output voltage will remain constant 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 as the load increases further.The conversion of constant voltage and constant current is indicated by the LED on the front panel.
CV indicator light is on during constant voltage, CC indicator is on when constant current.

FUSE REPLACEMENT

If the fuse blows, the power supply will stop working.To find and correct the cause of the blown fuse, then replace it with a fuse of the same specification.



HIGH VOLTAGE!
DANGER!

For effective safety protection, it is only necessary to 4replace the fuse of a specific specification. Before replacing the fuse,the power must be turned off and the power cord must be unplugged from the power outlet.