



WPS Series Programmable DC Power Supply User Manual

MATRIX TECHNOLOGY INC.



Preface

Respected users:

Thank you for choosing a new MAC electronic equipment. In order to use this instrument correctly, please read the full text of this manual carefully before using this instrument, especially about the "safety precautions" part.

If you have read the full text of this manual, it is recommended that you keep it properly together with the instrument or where you can read it for future use.



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Verification and Correction Statement

The company specifically declares that the instruments and equipment listed in this manual fully conform to the specifications and characteristics stated in the company's technical specifications. This instrument has passed the factory calibration of the company before leaving the factory, and the calibration procedures and steps are in line with the specifications and standards of the electronic inspection center.

Product quality assurance

The company guarantees that the new instruments manufactured have been subject to strict quality confirmation, and in case of construction defects or parts faults, the company is responsible for free repair. However, if the user has changed the circuit, function, or repaired the instrument and parts or external box damage, the company will not provide free warranty service. No free warranty is provided for any abnormal failure to complete all the ground lines or to operate the machine according to the safety specifications.

This warranty does not include the auxiliary equipment and other accessories not produced by our company.

During the one-year warranty period, please send the faulty unit back to the company's maintenance center or the dealer designated by the company, and the company will repair it properly.

If the unit is under abnormal use, or human negligence, or under human control, such as earthquake, flood, riot, or fire and other factors under human control, the company will not free warranty services.

(The Company follows the sustainable development strategy and reserves the right not to improve the contents of this specification.)



Safety precautions

The following general safety precautions must be followed during all stages of this instrument operation. If these are not followed

Preventive actions or specific warnings described in other parts of this manual will violate the design and manufacture of the instrument

Safety standards for use. The Company assumes no responsibility for the users' failure to comply with these precautions.

Warning

- Do not use damaged equipment. Check the equipment before using the equipment.request.
- Do not operate the equipment in an environment containing explosive gas, steam or dust..
- The power supply is supplied with a three-core power cable, and your power supply should be connected to a three-core connection Line box. Before operating the power supply, you should first determine that the power supply is well grounded to avoid accidental injuries.
- Before connecting the device, observe all the markers on the device.
- Always use the cables provided at the factory to avoid accidental injuries.
- Using wires with appropriately rated loads, the capacity of all load wires must be able to withstand the maximum power supply Large short-circuit output current without overheating. If there are multiple loads, each pair of load wires must be used Full-load rated short-circuit output current that can safely carry the power supply.
- To reduce the risk of fire and shock, make sure that the voltage fluctuation of the mains supply does not exceed 10% of the operating voltage range.
- If you use the power supply to charge the battery, to confirm the positive and negative polarity of the battery when wiring, otherwise it will burn out the power supply!
- Do not use the device when the cover is removed or is loose.
- Do not install the substitute parts on the instrument yourself, or perform any unauthorized modifications.
- We are not liable for any direct or indirect financial losses that may occur from the use of this product.
- Never use the equipment on the life support system or any other equipment with safety requirements.
- Not being used in the manner specified by the manufacturer may damage the protection provided by the equipment.
- Always clean the equipment enclosure with a dry cloth. Do not clean the instrument interior.



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Chapter I Inspection and Installation

Before installation or operation, read this manual.

1.1 Packing list

Open the package, please check the items in the box before operating the instrument. If there is any discrepancy, missing or external wear, Please contact the seller quickly.

Accessories name	quantity	Note instructions
Programmable power supply host	1	
power line	1	The user can follow the power socket specifications in the region To select the different power cords,
Communication line	1	The RS232 / USB communication line
user's manual	1	
Product warranty card	1	

Note:

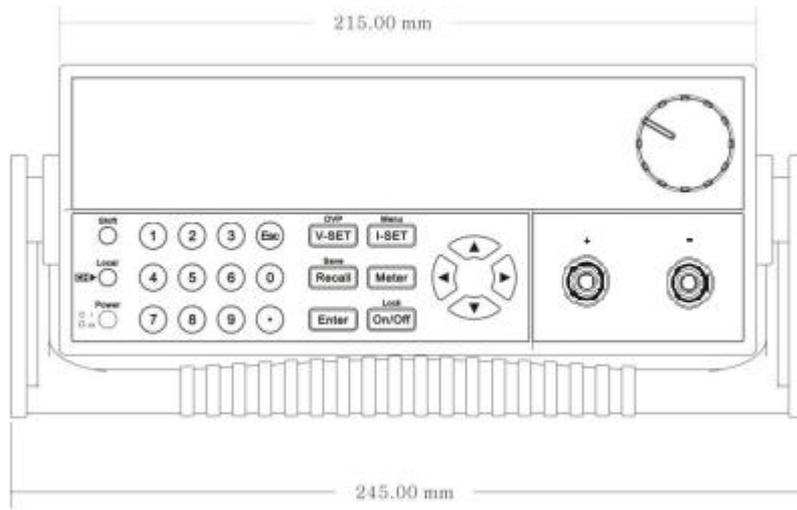
After confirming that the packing contents are consistent and there is no problem, please keep the packing box and related contents properly, needed when the instrument returns to the factory. Meet the packing requirements.

1.2 Install the power supply

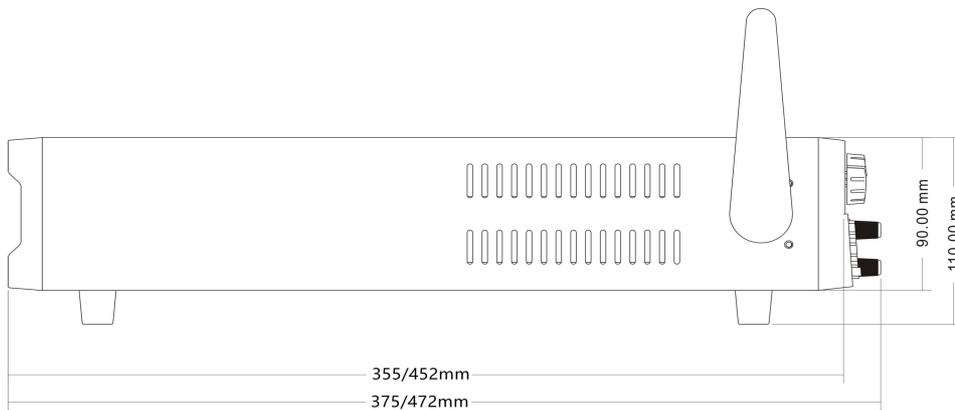
This instrument needs to be installed in a space with good ventilation environment and reasonable size. Please follow the following power supply size introduction Select the right space for the installation.

WPS series of programmable power supply size: 215mmW * 90mmH * 355mmD / 215mmW * 90mmH * 452mm (W: width; H: Height; D: depth)

See the following dimension diagram for details:



front outline

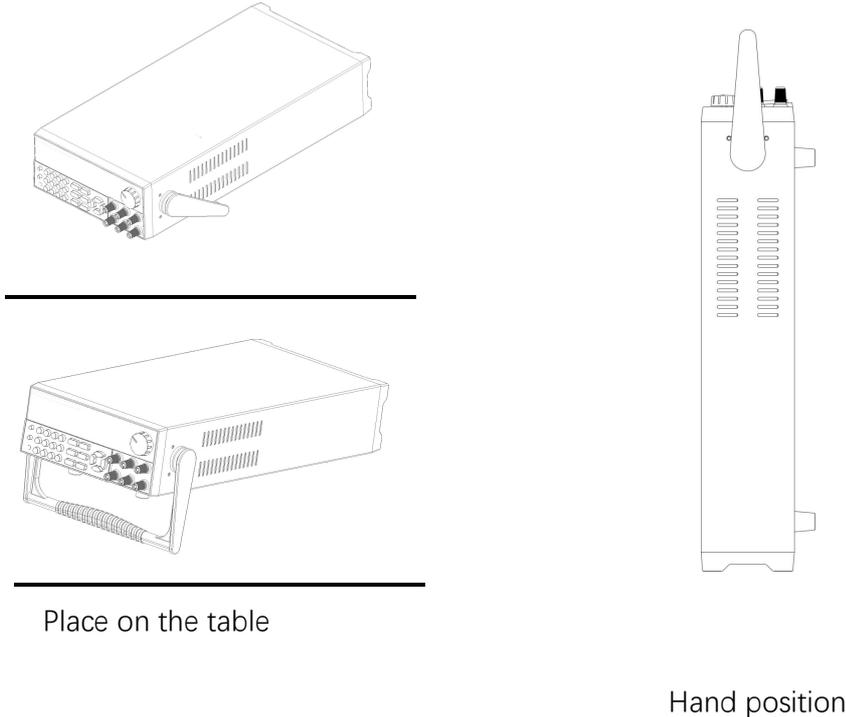


side elevation

Unit: mm (mm)

1.3 Adjust the power supply handle

Adjust the position of the power supply, grasp the handle with both hands, pull it out to the left and right sides, and then turn the handle to the desired position place. The location of the power supply has the following three options:



Place on the table

Hand position

Note: Don't push too hard when loading and unloading the power handle.

1.4 Install the power supply cord

Connect the standard accessory power cord to ensure that the power supply has been properly supplied and reliably grounded.

Input requirements for power supply:

The working voltage of the three way power supply has two ways: 110V and 220V. Please pay attention to the input voltage of the power supply. There is a power input line in the attachment that matches your local area. If a mismatch is found, please immediately contact the authorized dealer or after-sales service department of the company.

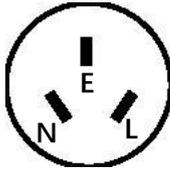
AC power input levels (can be selected through the toggle switch at the bottom of the power supply)

Option Opt.1: 220VAC $\pm 10\%$ 47Hz-63Hz

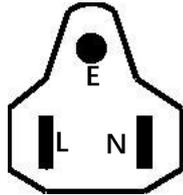
Option Opt.2: 110VAC $\pm 10\%$ 47Hz-63Hz

Types of power cords:

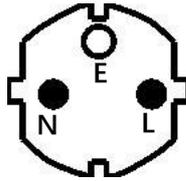
The power cord model provided as standard with the power supply is shown in the following figure. Please select the power cord model that is suitable for the voltage in your region from the power cord specification table below. If the model is incorrect during purchase, please contact the dealer or directly contact the manufacturer for replacement.



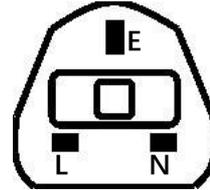
China



America and Canada



Europe



Britain

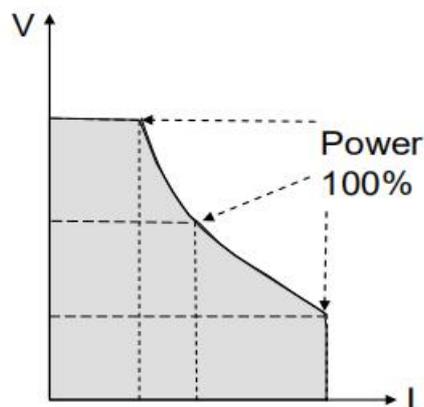
Chapter II Quick Start

This chapter briefly introduces the front and rear panels, keyboard button functions, and VFD display functions of the WPS series power supply, to ensure a quick understanding of the appearance, structure, and button usage functions of the power supply before operating it, and to help you better use the power supply of this series.

2.1 Introduction

The WPS series programmable DC power supply is a single channel output programmable DC power supply. This series of programmable DC power supplies can achieve multiple combinations of voltage and current outputs under fixed power. A single power supply can meet the testing requirements of high voltage and low current or high current and low voltage, greatly saving your cost and space, and improving the utilization rate of the power supply. The WPS series power supply is also equipped with a standard RS232/USB/RS485 communication interface and an optional LAN interface, which combines the characteristics of desktop and system models. It is widely used in various testing fields such as DC-DC power modules, battery charging, and sensors. The main special features and advantages are as follows:

- High visibility vacuum fluorescent display (VFD)
- Voltage and current can be adjusted using a digital keyboard or knob
- The digital step value can be adjusted using the cursor
- High accuracy and resolution
- List output function
- Adjustable timed output time (0.1~99999.9 seconds)
- Low ripple and low noise
- Intelligent fan control, saving energy and reducing noise
- Remote measurement function, compensating for online voltage drop
- Equipped with SCPI and MODBUS commands, it is convenient to build an intelligent testing platform
- Equipped with fast overvoltage, overcurrent protection, and over temperature protection functions
- Support front and rear panel output
- Equipped with temperature monitoring function



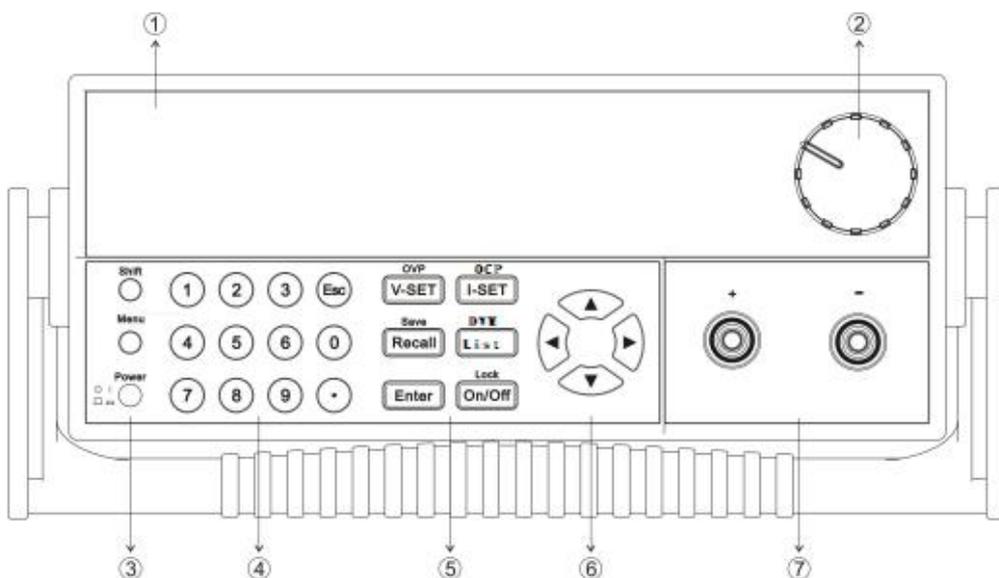
WPS series power output U-I curve diagram

WPS series power supply selection table:

type	voltage	current	output power
WPS600-8030L	80V	30A	600W
WPS 400-8020L	80V	20A	400W
WPS200-8010L	80V	10A	200W
WPS 100-8005L	80V	5A	100W

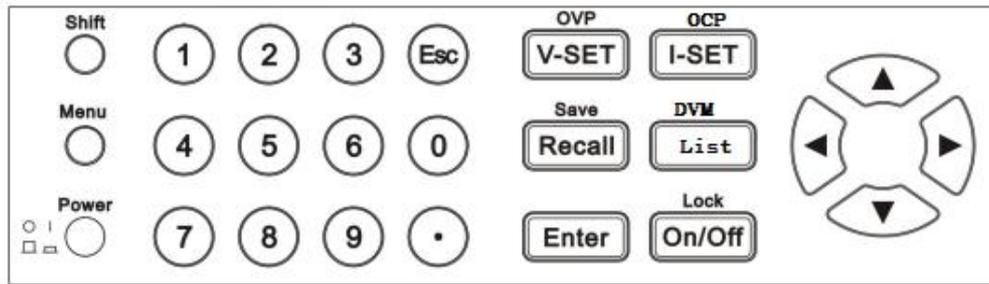
2.2 Introduction to the front panel

Front panel layout:



2. Knob
3. Power switch, Menu key, and Shift key
4. Number keys and Esc exit key
5. Function buttons
6. Move the buttons up, down, left, and right
7. Output terminal

2.3 Introduction to Keyboard Keys



The key instructions are shown in the table below:

	Name and function
0-9	Digital input key
⊙	Decimal point / version number, machine temperature query (version number, machine temperature query, and shift composite key combination)
Esc	Cancel / return to the key
V-SET	Voltage setting key, set the power supply output voltage value / overvoltage protection function key, with To set the overvoltage protection point of the power supply.
I-SET	Current setting key, set the power output voltage value / over current protection function key, with To set the overcurrent protection point of the power supply.
Recall	Storage / callback key, storage system parameter setting value (storage time and shift composite key combination) / call up an already stored system parameter setting value.
List	The List key is used to set the List parameter / voltmeter function key (DVM) to switch to the measurement state of the voltmeter (DVM function and shift composite key combination), and the key indicator flashes in the DVM state.
Enter	Confirm the key, confirm the input number and operation
On/Off	Output on / off key to control the output status / keyboard lock function of the power supply Key to lock panel keys (Lock function is combined with shift composite keys).
▲	Move the key up and down to select menu items or increase or lose in the menu operation
▼	Out of the voltage and current value.
●	Shift composite keys, combined with OVP, OCP, Save, DVM, Lock functions are used.
●	The Menu menu function key, used to set the relevant parameters of the power supply.
●	Power power switch button

2.4 VFD indicator light function description

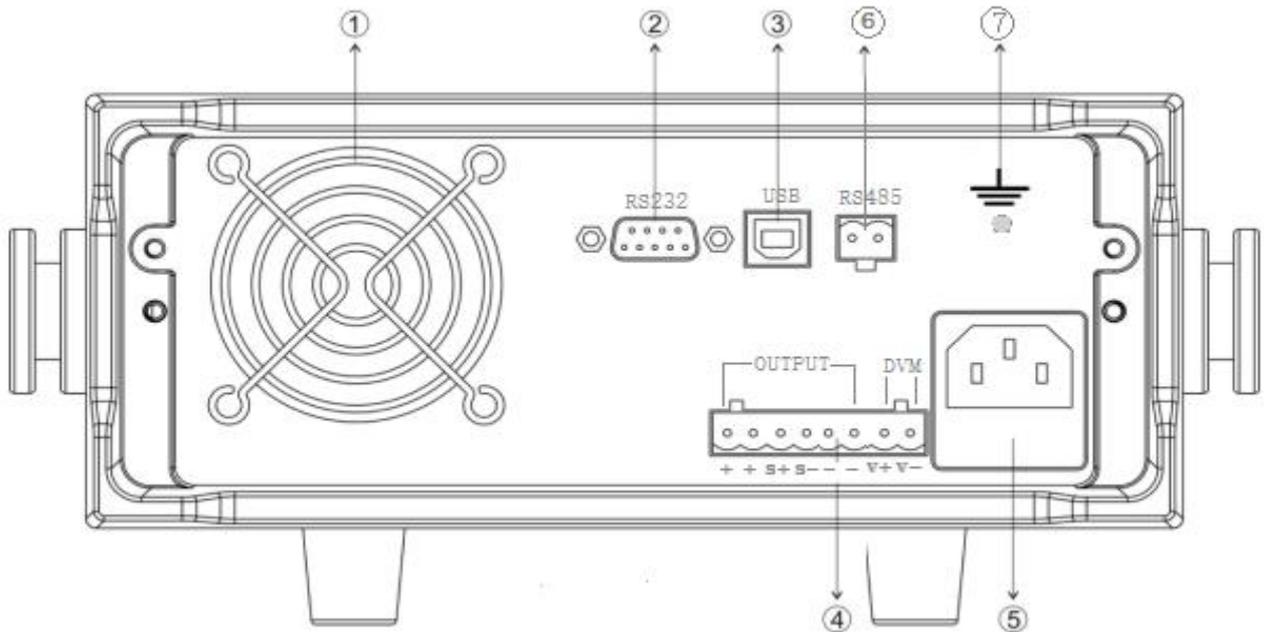
When the power is turned on, if any of the marked states appear on the power, the relevant mark will be displayed in the lower left corner of the screen.

The functional description of VFD indicator light is shown in the table below:

symbol	Functional Description
C	CC
V	CV
	Front disc locking mode
	Remote mode
↑	Shift key pressed
<	Page Left
>	Page Right

2.5 Introduction to the rear panel

Power supply, rear panel layout.



1. Heat dissipation window
2. RS232 communication interface
3. USB communication interface

4. Remote measurement terminal
5. AC power input socket and fuse
6. RS485 communication interface
7. Housing grounding terminal (When using the instrument, the housing must be grounded to prevent accidents.)

Note:

The 110V/220V power switch is located at the bottom of the instrument. Please check the switch position before inserting the power to avoid burning the instrument.

2.6 Power-on self-test

The successful self-test process indicates that the power supply product purchased by the user meets the factory standards and can be normally made by the user need. Before operating the power supply, make sure you know the safety instructions.

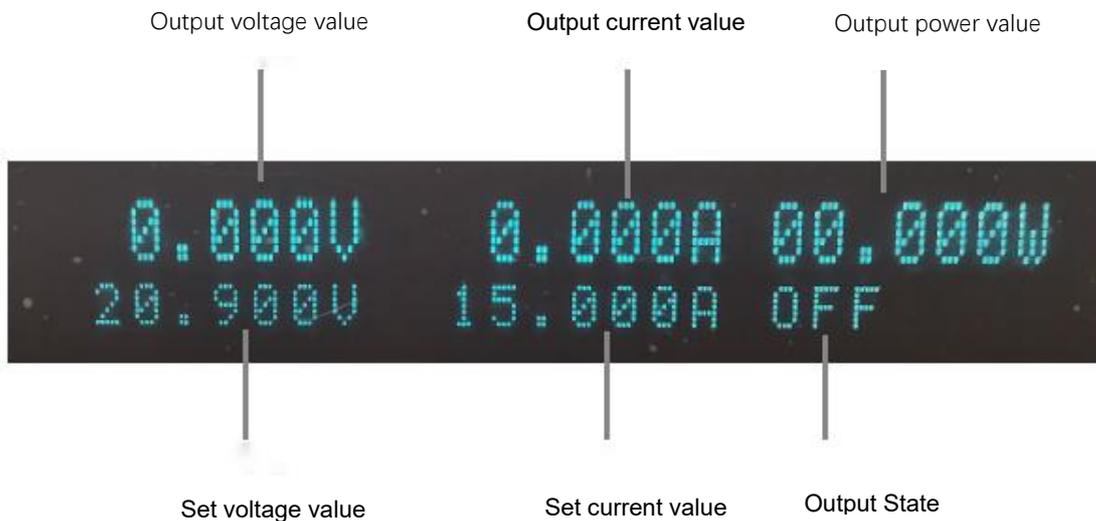
Warning

1. Please ensure that the power supply voltage matches the supply voltage before turning on the power, otherwise it may burn out the power supply.
2. Please make sure to connect the main power plug to a power socket with protective grounding, and do not use a wiring board without protective grounding. Before operating the power supply, you should first ensure that the power supply is well grounded.
3. Please pay attention to the positive and negative pole markings before wiring the power supply, otherwise it will burn out the power supply.

Self inspection steps:

The normal self check process of the power supply is as follows:

1. Connect the power cord correctly and press the power button to power on. Perform self check on the power supply.
2. The power self check is completed, and the VFD display screen shows the following status.



exception handling:

When starting the power supply, the power supply cannot start normally. Please refer to the following steps for inspection and handling.

1. Check if the power cord is connected correctly and confirm that the power supply is in a powered state.

Good power cord connection =>2

Power connection error=>Please reconnect the power cord and check if the abnormality is cleared.

2. Is the power on. Press the power switch key to be in the power on state.

Yes =>3

No =>Please press the voltage switch to turn on the power and check if the abnormality is cleared.

3. Check if the fuse of the power supply is burnt out.

If the fuse is burnt out, please replace it. The specific steps are as follows:

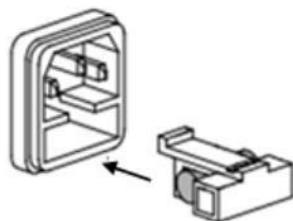
1) Unplug the power cord and use a small screwdriver to remove the fuse box. (Please refer to the introduction on the rear panel for the location of the fuse)



List of fuse specifications:

model	Fuse specifications (220V)	Fuse specifications (220V)
WPS600-8030L	6.3A	10A
WPS400-8020L	5A	8A
WPS200-8010L	3.15A	5A
WPS100-8005L	3.15A	3.15A

2) Replace the fuse with the same specification, install it in the box, and reinstall it.



2.7 Output check

The output check ensures that the power supply reaches its rated output and performs the front panel operation correctly.

Output voltage check:

Verify the basic voltage function of the power supply without load.

1. Turn on the power supply.
2. Set the power supply current value ($\geq 0.1A$).
3. Turn on the power output.

Press the ON/OFF function button to turn on the CV status flag on the VFD display.

4. Set the power supply voltage.

Set different power supply voltages and check if the voltage value displayed on the VFD is close to the set voltage value, and if the current value displayed on the VFD is close to 0A.

5. Ensure that the power supply voltage can be adjusted from 0V to the maximum output voltage.

----End

Output current check:

Verify the basic current function of the power supply during output short circuits.

1. Turn on the power supply.
2. Turn off the power output and ensure that the power is in the OFF state, with the OFF status flag displayed on the VFD.
3. Connect an insulated wire between the output terminals (+) and (-) of one of the power supply channels.

The wires used should be able to withstand the maximum output current of the power supply.

4. Set the power supply voltage value to 1V.

5. The power output is turned on.

6. Set the power current.

Set different power supply currents and check if the current displayed on the VFD is close to the set current value.

7. Ensure that the power supply current can be adjusted from 0A to the rated full output current of the channel.

8. Turn off the power output and remove the short-circuit wire.

----End

Chapter III Functions and Features

This chapter details the functions and characteristics of the power supply. It will be divided into the following sections:

- Switch between local / remote operations
- Voltage setting operation
- Current-setting operation
- Output the on / off operation
- Adjust the voltage, the current, and the power
- access operation
- List operate
- Vacation menu function
- Over-voltage / overcurrent protection function
- Keyboard-lock function
- DVM measuring function
- Power supply temperature query

3.1 Switch between local / remote operation

The power supply provides two operation modes: local operation and remote operation. The two operating modes can be switched through communication commands. The power initialization mode defaults to local operation mode.

- Local operation mode: Use the buttons on the front panel of the power supply for related operations.
- Remote operation mode: Connect the power supply to the PC and perform power related operations through communication instructions on the PC. When the power supply is in remote operation mode, except for the Shift and Local keys, other buttons on the panel do not work. You can switch to local operation mode by Shift+number key 7 (Local). When the operating mode changes, it will not affect the output parameters of the power supply.

3.2 Voltage setting operation

The voltage is set between 0V and the maximum output voltage value. When the key is pressed '**V-SET**', The button light will be illuminated, the voltage setting operation can be performed. It can be set up through the front panel using the following three methods

Output voltage value.

- ① After the power supply is powered up, press the button '**V-SET**' to move the cursor to the specified position (or press the knob  to move the cursor to the specified position) and then press the key to adjust the voltage setting. 
- ② After the power supply is on, press the button '**V-SET**' to move the cursor to the specified position (or press the knob  move the cursor to the specified position), and then directly rotate the knob to adjust the voltage setting value.
- ③ after the power supply, press the key '**V-SET**' + 0 to 9 to set the voltage value.

3.2 Current setting operation

The current is set between 0V and the maximum output current value. When the key 'I-SET' is pressed, The button light will be illuminated, the current setting operation can be performed. It can be set up through the front panel using the following three methods

Output current value.

① After the power supply is on, press 'I-SET' button to move the cursor to the specified position (or press the knob  move the cursor to the specified position), and then press the key  and  to adjust the current setting.

② After the power supply is on, press 'I-SET' button to move the cursor to the specified position (or press the knob  move the cursor to the specified position), and then directly rotate the knob to adjust the current setting value.

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③ After the power supply, press 'I-SET' key + 0 to 9 number key than press the 'ENTER' key to set the current value.

3.4 Output on / off operation

The output switch of the power supply can be controlled by pressing the 'ON/OFF' key on the front panel, with the key 'ON/OFF' light on, indicating The output is on, and the key 'ON/OFF' light is off, indicating that the output is off. Work on the VFD when the power output is turned on. The status flag (CV / CC) is lit and the working status flag (OFF) on the VFD when the power output is OFF will be lit up.



explain

After the power supply is connected to the object to be tested, then press the On / Off key to open the output, otherwise it is easy to fire when wiring. If the output is turned on, The power supply has no output, please check the voltage and current setting value, please set the voltage and current to the non-zero value, and then open the output.

3.5 Adjust the voltage, current and power

The output voltage of the power supply and the resistance value of the load determine the output current. Only the output current is below the set current limit value when the power supply works in the constant voltage CV mode and indicates in the CV state.

If the output current is limited to the current setting or rated current, the power supply will switch to constant current mode CC and to CC status indicates out. The output of the power supply voltage and current is also controlled by the limit power, due to the mutual shadow of the voltage and current and the power limit ring, take WPS600-8030L (80V / 30A / 600W) as an example, when the set voltage value is 20V and the current value is 30A, The output power is 600W; when the voltage value is 80V and the current value is 10A, the rated power is 600W limit, the voltage value is 80V, the current value automatically jumps to 7.5A.

3.6 Access operation

The power supply can save some commonly used parameters in 99 sets of non-volatile memory for user convenience fast call-up for use.

Storage operation: Through the composite buttons on the front panel (Shift) + 'Recall' + 1-9 number keys to real store the operation now.

Storage contents include: voltage setting and current setting, OVP / OCP setting.

Call operation: The parameters are retrieved from the designated memory area using the front panel 'Recall' key + numeric keys 1-9 key.

3.7 List (List test function)

Press the 'List' key in the standby state, enter the "List" menu setting function, the screen shows below, available  key to move the cursor and press the button 'ESC' to return to the previous menu.:



Load sequence operation

Edit sequence operation

3.7.1 Load list test

When choosing **Load** Press **Enter** to enter the List loading option, displayed as follows (with File 1-File 5 five sets of storage files for calling, press the sum key  and  to move the cursor):



3.7.2 Edit list test

1. When choosing **Edit** Press **Enter** to enter the List edit option as follows (File 1-File 5Five sets of storage files for editing, press  and  key to move the cursor, each file can edit up to 100 steps):



2. When choosing **List1-List5** either file press the "Enter" key to automatically enter the "Edit"Edit list testing option, shown as follows:



Step=3: Total list length is 3 steps (up to 100 edits with number key 0-9)

When the total list length is set press the **Enter** key to enter list cycle test settings options, shown as follows:(global cycle Up to 9999 times can be edited, and 0 is an infinite loop.)



Cycles=3:3 cycles (9999 times)

3. When the total number of cycles is set Press the **Enter** key to enters list the setting of the test parameters Options, displayed below (press the Enter key confirm the parameters and move the cursor, press and click to switch the list):



Note:

List test each step minimum stay time 0.5 seconds maximum 10 seconds.

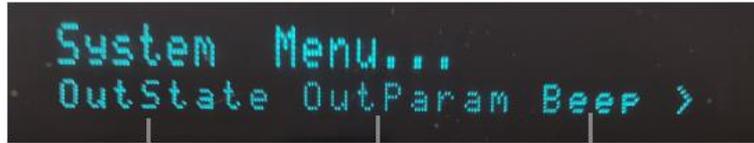
3.8 Menu function

After pressing the "Menu" key and enter the menu function, the VFD can use the left and right operation keys to flip the VFD on the screen, the following functions will appear in order, press the Enter key and enter the function option of the location of the cursor. Press **'ESC'** key return to the previous level menu.



3.8.1 System

Press the "Enter" key to enter the System (System Settings) when the VFD appears as follows, you can use the left and right operation key to flip the VFD screen, press the Enter key, will enter the function option of the location of the cursor. Press the button **'ESC'** to return to the previous layer menu.



Output Status Setting Output parameter settings beeper setup



Communication settings Command Settings



Reset Exit

3.8.1.1 Out State

Move the cursor to the position where "Out State" is located and press the "Enter" key. The power supply will enter the function options for output state settings, as shown below (you can move the cursor with the  key and confirm with the  key):



Output off state Maintain the state from the last power outage

3.8.1.2 Out Param

Move the cursor to the "Out Param" position and press "Enter", and the power will enter the output parameter setting

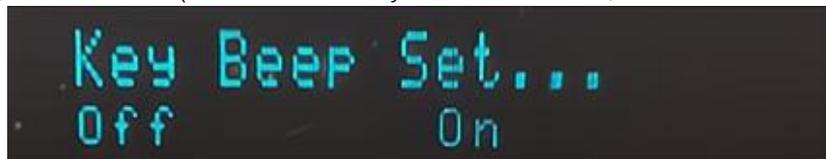
Can option, shown below (available  key move the cursor, 'ENTER' button confirmation):



3.8.1.3 Keep (buzzer setup):

Move the cursor to the "Keep" position and press "Enter", the key, the power supply will enter the work of the buzzer setting

Can option, shown below (available  key move the cursor, 'ENTER' button confirmation):



3.8.1.4 Communication Settings:

Move the cursor to the Communication position and press Enter, and the power supply will enter the power of the communication setting

Can option, shown below (available  key move the cursor, 'ENTER' button confirmation):

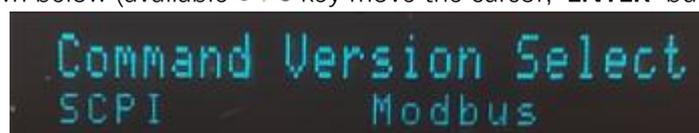


Porter rates were 4800,9600,19200,38400,57600,115200, and addresses between 001 and 255, respectively.

3.8.1.5 Command Settings:

Move the cursor to the Communication position and press Enter, and the power supply will enter the power of the communication setting

Can option, shown below (available  key move the cursor, 'ENTER' button confirmation):



* SCPI protocol has the setting of the end character, namely CR, LF, CR + LF, LF + CR. The setting of the end must be communicated with the host computer the consistent power supply can communicate normally.

3.8.1.6 Reset (reset system set to factory default)

Move the cursor to the "Reset" position and press the "Enter" key, the power supply will enter the reset function option, display the following (available   key Move the cursor, 'ENTER' button confirmation):



Factory default:

1. Out State (output state): Off (keep Off state)
2. Out Param (output parameter): Keep (maintain the last shutdown parameter)
3. Buzzer (buzzer sound): ON
4. Baud Rate (Porter rate): 9600
5. Address (mailing address): 001
6. Command (command category) SCPI
7. Communication end character: LF
8. Min Voltage (minimum voltage value): 0.000V
9. Max Voltage (minimum voltage value): 80.00V
10. Min Current (Min. current value): 0.000A
11. Max Current (Maximum current value): the maximum rated current value

3.8.2 Config (power supply configuration):

Move the cursor to the "Config" position and press the "Enter" key, the power supply will enter the power configuration function option, display

The following (available   key move the cursor, 'ENTER' button confirmation):



After the maximum / minimum range of the voltage / current is set, the output parameters of the voltage / current can only be adjusted in this range.

3.8.2.1 Min Voltage:

Move the cursor to the Min Voltage position and press Enter and the power supply to the minimum voltage range

Set function options as follows (number key 0-9 available import 'ENTER', Key confirmation):



```
Min Voltage Set ...  
Min Voltage = 0.000 V
```

3.8.2.2 Max Voltage:

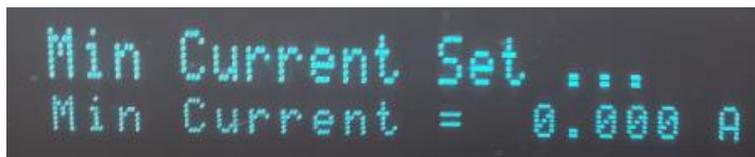
Move the cursor to the "Max Voltage" position and press Enter and the power will enter the maximum voltage range set function options as follows (number key 0-9 available import 'ENTER', Key confirmation):



```
Max Voltage Set ...  
Max Voltage = 81.000 V
```

3.8.2.3 Min Current:

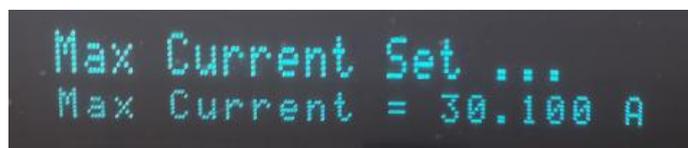
Move the cursor to the Min Current position and press the Enter key, and the power supply reaches the minimum current range set function options as follows (number key 0-9 available import 'ENTER', Key confirmation):



```
Min Current Set ...  
Min Current = 0.000 A
```

3.8.2.4 Max Current:

Move the cursor to the "Max Current" position and press the "Enter" key, and the power supply will enter the maximum current range set function options as follows (number key 0-9 available import 'ENTER', Key confirmation):



```
Max Current Set ...  
Max Current = 30.100 A
```

3.8.3 Exit :

Move the cursor to the "Exit" position and press the "Enter" key, the power supply exits the menu setting, the 'Esc' button can also go backset the menu.

3.9 Over voltage / over current protection function (OVP / OCP)

The overcurrent protection function allows the user to set an overvoltage / overcurrent protection point, when the tested voltage / current is greater than this protection point, the power supply will be OVP / OCP protected. For overvoltage current protection, the power output will be closed and accompanied by buzzer calling, VFD display the relevant alarm prompt.

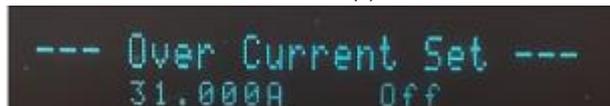
3.9.1 OVP (Overvoltage protection):

Press (Shift) + 'V-SET' the Power Supply will enter the OVP settings are displayed as follows (the OVP can be modified with the 0-9 number key,  key move the cursor, turn the knob left and right to change the protection on / off state, 'ENTER' confirm and 'Esc' exit setup):



3.9.2 OCP (Overcurrent protection):

Press (Shift) + 'I-SET' Power to enter the OCP settings, displayed as follows (use the 0-9 number key to modify the OCP,  key move the cursor, turn the knob left and right to change the protection on / off state, 'ENTER' confirm and 'Esc' exit setup):



3.10 Keyboard lock function

The instrument panel button can be locked through the composite key

(Shift) + 'ON/OFF' (Lock) key on the panel, then VFD display  icon, except for ON / OFF key, Shift, key available, other keys are locked, press the compound key eliminate lock.

3.11 DVM measuring function

WPS series power supply built-in four and a half voltmeter. Through the DVM port on the back of the instrument can be measured at 0.001V

DC voltage to 80.000V and measured through the panel composite key (Shift) + 'List' (DVM) button on the VFD display screen, repress to exit the DVM measurement function, and the key indicator light flashes when in the DVM state.

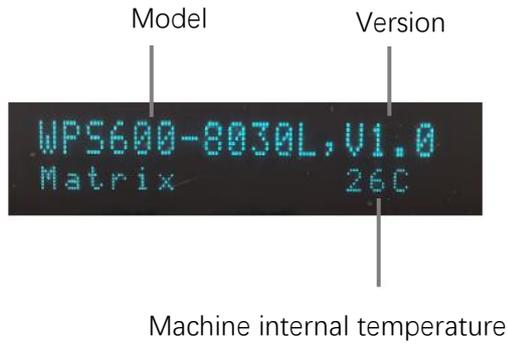


explain

The maximum input voltage of WPS series power supply DVM is 81V, which will damage the instrument,

3.12 Power supply temperature / version number query

Through the front panel composite button (Shift) +  button, you can query the power supply temperature / version number and other information, the VFD display is as follows, press 'Esc' Key exit:



Chapter IV Technical

4.1 Main technical specifications

Technical specification sheet:

Model		WPS100-8005L	WPS200-8010L	WPS400-8020L	WPS600-8030L
Rated output voltage		0~80V	0~80V	0~80V	0~80V
Rated output current		0~5A	0~10A	0~20A	0~30A
Rated output power		100W	200W	400W	600W
Load regulation rate	voltage	$\leq 0.01\%+3\text{mV}$	$\leq 0.01\%+10\text{mV}$	$\leq 0.01\%+30\text{mV}$	$\leq 0.01\%+30\text{mV}$
	current	$\leq 0.05\%+2\text{mA}$	$\leq 0.05\%+4\text{mA}$	$\leq 0.05\%+6\text{mA}$	$\leq 0.1\%+10\text{mA}$
Line regulation rate	voltage	$\leq 0.01\%+3\text{mV}$	$\leq 0.01\%+10\text{mV}$	$\leq 0.01\%+30\text{mV}$	$\leq 0.01\%+30\text{mV}$
	current	$\leq 0.05\%+2\text{mA}$	$\leq 0.05\%+4\text{mA}$	$\leq 0.05\%+6\text{mA}$	$\leq 0.1\%+10\text{mA}$
Setting resolution	voltage	1mV	1mV	1mV	1mV
	current	0.1mA	1mA	1mA	1mA
Read back resolution	voltage	1mV	1mV	1mV	1mV
	current	0.1mA	1mA	1mA	1mA
Setting accuracy (25°C±5°C)	voltage	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$
	current	$\leq 0.1\%+3\text{mA}$	$\leq 0.1\%+5\text{mA}$	$\leq 0.1\%+10\text{mA}$	$\leq 0.1\%+15\text{mA}$
Read back accuracy (25°C±5°C)	voltage	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$	$\leq 0.03\%+5\text{mV}$
	current	$\leq 0.1\%+3\text{mA}$	$\leq 0.1\%+5\text{mA}$	$\leq 0.1\%+10\text{mA}$	$\leq 0.1\%+15\text{mA}$
Ripple (20Hz~20MHz)	voltage	$\leq 5\text{mVp-p}$	$\leq 8\text{mVp-p}$	$\leq 15\text{mVp-p}$	$\leq 20\text{mVp-p}$
	current	$\leq 5\text{mA}_{\text{rms}}$	$\leq 6\text{mA}_{\text{rms}}$	$\leq 8\text{mA}_{\text{rms}}$	$\leq 15\text{mA}_{\text{rms}}$
Rising time	voltage	$\leq 150\text{ms}(10\%-90\%)$	$\leq 150\text{ms}(10\%-90\%)$	$\leq 200\text{ms}(10\%-90\%)$	$\leq 150\text{ms}(10\%-90\%)$
Falling time	current	$\leq 2\text{s}(10\%-90\%)$	$\leq 2\text{s}(10\%-90\%)$	$\leq 2.5\text{s}(10\%-90\%)$	$\leq 2\text{s}(10\%-90\%)$
Size	mm	255*110*380		255*110*475	
Weight	kg	7	8	11	12

4.2 Supplementary Features

Status memory capacity: 99 sets of operation states

Recommended calibration frequency: 1 year / 1 time

Heat dissipation mode: forced air cooling

Operating ambient temperature: 0 to 40°C

Storage ambient temperature: -20 to 70°C

Use environment: indoor use design, pollution level is 2, the maximum humidity is 80%

Maximum input power:

model	WPS-100-8005L	WPS-200-8010L	WPS-400-8020L	WPS-600-8030L
Maximum input power	150W	300W	600W	900W



Chapter V Communication between power supply and PC

WPS series, power supply standard with three communication interfaces: RS232, USB, RS485, users can choose any one to achieve and calculate machine communication.

Communication Settings

Before doing communication operations, you should first match the power supply with the following parameters of the PC.

Baud rate: 9600 (4800,9600,19200,38400,57600,115200). You can enter the system menu through the panel, set the communication wave rate.

Data bit: 8

Stop position: 1

Check: NONE (8 data bits)

Start Bit	8 Data Bits	Parity=None	Stop Bit
-----------	-------------	-------------	----------

appendix

common problem

1.The thickness specifications of the wires used

AWG	10	12	14	16	18	20	22	24	26	28
Maximum current value (A)	40	25	20	13	10	7	5	3.5	2.5	1.7

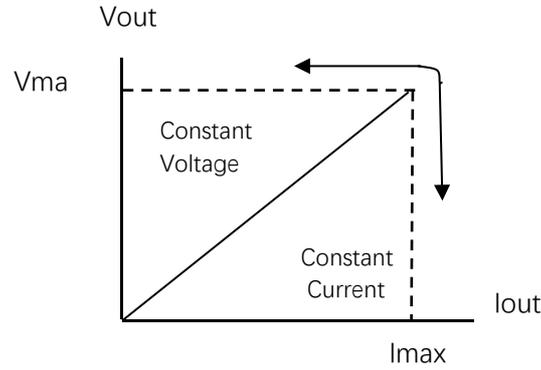
Note: AWG (American Wire Gage), It represents Line X (marked on the wire). The above table lists the current carrying capacity of a single wire at a working temperature of 30 °C. For reference only.

2. The CC mode of the power supply cannot be set

The power supply has a constant voltage/constant current automatic conversion function. Through this function, the power supply can maintain uninterrupted operation during the transition from constant voltage mode to constant current mode that varies with the load.

For the current load, the power supply operates in constant voltage mode, providing a controlled output voltage. As the load resistance decreases, the output voltage drop remains constant until the current increases and is limited by the preset current value, and then a transition occurs. At this point, the power supply becomes a constant current output, and the output voltage will decrease proportionally according to the further decrease in load resistance value.

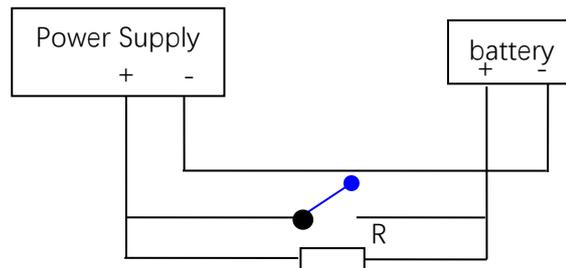
When the current value is lower than the set value, the power supply returns to constant voltage mode.



The working mode of the power supply can be indicated by the marked area of the VFD. If CV is displayed, the power supply operates in constant voltage mode. If CC appears, the power supply operates in constant current mode.

3. How to prevent sparking when testing the battery and connecting it?

The main reason for sparking when connecting the battery is due to the discharge of the battery's (residual voltage) capacitance to the positive and negative terminals of the power supply. Method to avoid sparking: Connect a switch to the wire and parallel a charging current limiting resistor to the switch. After all the wires are connected, close the switch as shown in the following diagram:





Warranty Card

What the warranty covered:

If the machine break down due to its defectiveness, MATRIX will provide free maintenance during warranty period. If the machine break down due to wrong operation or carelessness, then Matrix provide paid service within warranty period.

How long does this warranty last:

This warranty lasts for 3 years from the date of original purchase of all MATRIX branded products.

Who is covered:

This warranty covers only the original purchaser of this product. This warranty is not transferable to subsequent owners or purchasers of this product.

What do customers need to do to get repairs/service under the warranty policy?

If the machine get problem, please contact our local distributor. If you cannot find the local distributor, you can contact us directly, our email is service@szmatrix.com, our telephone No. is 0086 755 2836 4276.

What information do customers need to supply?

Model No.	
Serial No.	
Problem description	
Picture	
Video if necessary	