

MPS-3260 Series DC Power Supply User Manual

MATRIX TECHNOLOGY INC.

Application model: MPS-3263, MPS-3264

Preface

Dear user:

Hello! Thank you for purchasing the new instrument of MATRIX TECHNOLOGY INC. In order to use the instrument correctly, please read the full text of this manual carefully before using the instrument, especially the part related to "Safety Precautions".

If you have read the entire manual, it is recommended that you keep it with the instrument or in a place where you can read it at any time so that you can refer to it during future use.

Copyright information

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- MATRIX TECHNOLOGY INC. reserves the right to change the product specifications and prices.
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Verification and Calibration Statement

In particular, we declare that the instruments and equipment listed in this manual are in full compliance with the specifications and characteristics stated in our technical specifications. The instrument has passed the factory calibration of our 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 by the company are subject to strict quality confirmation. At the same time, the company guarantees that within one year after leaving the factory, if any construction defect or part failure is found, the company will be responsible for free repair. However, if the user changes the circuit, function, or repairs the instrument and parts, or the outer box is damaged, the company will not provide free warranty service. If all the ground wires are not properly connected in accordance with the regulations or the machine is not operated in accordance with the safety specifications, the company will not provide free warranty service.

This warranty does not cover accessories not manufactured by our company, such as auxiliary equipment of this instrument.

During the one-year warranty period, please return the faulty unit to our repair center or our designated dealer, and we will repair it properly.

If the unit breaks down due to abnormal use, human negligence, or uncontrollable factors, such as earthquake, flood, riot, or fire, the company will not provide free warranty service.

(The Company follows the sustainable development strategy and reserves the right to improve the contents of this Statement without prior notice)

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Chapter I Product Introduction

MPS-3260 series DC power supply is a new generation of high-quality multi-channel DC power supply, with automatic conversion of voltage and current, high stability, high reliability and high precision. Two channels can display output voltage, current and power at the same time, with high cost performance advantages.

This series of power supply has the following features:

- Intelligent fan system,
- Preset of voltage and current,
- Independently controlled output ON/OFF,
- Over-temperature protection,
- High resolution of 10 mV, 1mA,
- Voltage and current range limiting function,
- Both independently adjustable voltage and current
- One key series-parallel function,
- Builds positive and negative voltages in series mode.

Chapter II Technical Specifications

2.1 Main technical specifications

MPS-3260 Series DC Power Supply Specifications:

Model		MPS-3263			MPS-3264			
Channel		CH1	CH2	CH3	CH1	CH2	CH3	CH4
Output voltage		0-32V		2.5V/3.3V/5V	0-32V		2.5V/3.3V/5V	5V
Output current		0-6A		3A	0-6A		3A	2A
Load regulation rate	Voltage	< 0.1%+5mV			< 0.1%+5mV			
	current	< 0.2%+3mA			< 0.2%+3mA			
Power regulation rate	Voltage	< 0.1%+5mV	< 0.1%+10mV		< 0.1%+5mV	< 0.1%+10mV		< 0.1%+10mV
	current	< 0.2%+3mA			< 0.2%+3mA			
Setting accuracy	Voltage	<0.1%+30mA	< 0.1%+50mV		< 0.1%+30mA	< 0.1%+50mV		
	current	< 0.5%+2bit			< 0.5%+2bit			
Readback accuracy	Voltage	< 0.1%+1bit			< 0.1%+1bit			
	current	≤0.2%+3mA			≤0.2%+3mA			
Readback resolution	Voltage	10mV			10mV			
	current	1mA			1mA			
Ripple(5Hz-1Mhz)	Voltage	≤10mVrms	≤10mVrms		≤10mVrms	≤10mVrms		≤10mVrms
	current	≤3mAms			≤3mAms			
OVP	0-32±0.2%FS			0-32V±0.2%FS				
Max. Voltage	32V±0.2%			32V±0.2%				
OCP	0-6.1A± 0.2%FS	3.1A±0.1A		0-6.1A± 0.2%FS				
Max. current	6.1A±0.2%	3.1A±0.1A		6.1A±0.2%				
Temperature	Operating Environment	0-40°C ≤ 80%RH		0-40°C ≤80%RH				
	Storage Environment	-15-70°C ≤ 80%RH		-15-70°C ≤80%RH				
Bare machine size (W*H*D)	MM	220*150*330			220*150*330			
Net weight	KG	3.5			3.5			
Gross weight	KG	4.3			4.3			

2.2 Supplementary characteristics

Recommended calibration frequency: 1 year/1 time

Cooling mode: forced air cooling

Operating ambient temperature: 0 to 40 °C

Storage ambient temperature: -15 to 80 °C

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

Chapter III Quick Start

This chapter will briefly introduce the appearance and basic functions of MPS-3260 series DC power supply, so that you can quickly understand MPS-3260 series DC power supply. At the same time, it will tell you the basic checks to be done after getting the power supply to ensure the normal operation of the product.

3.1 Introduction of front and rear panels

The MPS-3260 series DC power supply front panel is shown in the figure below.

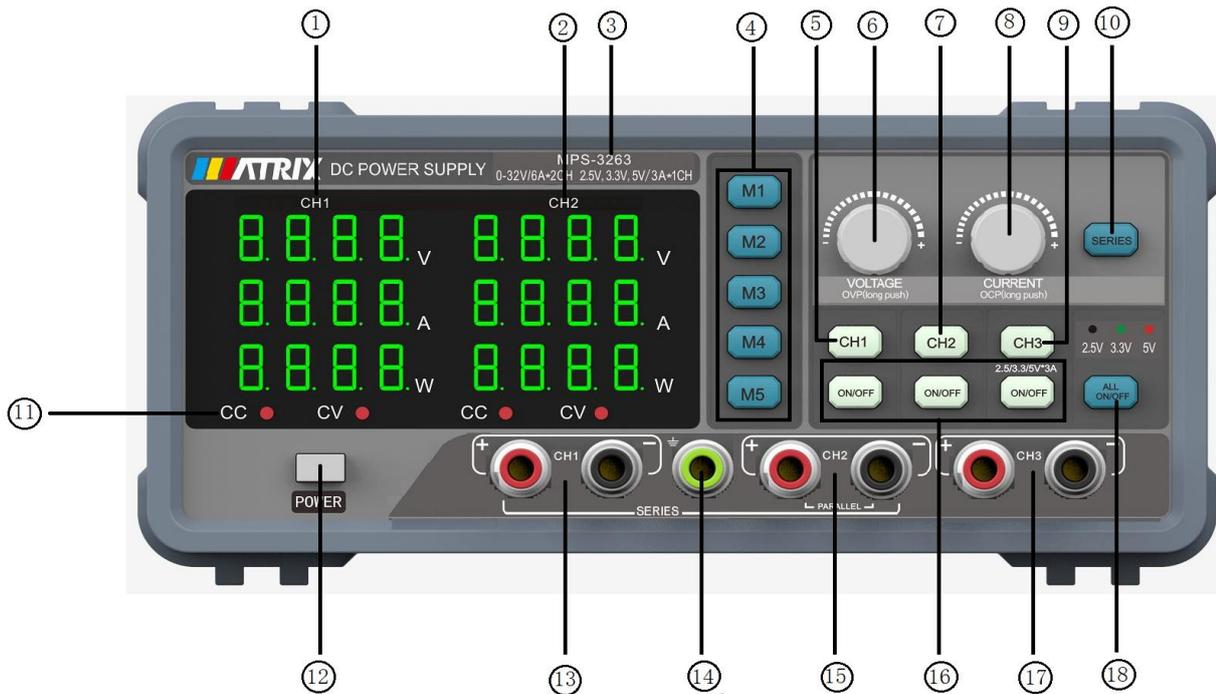


Figure 3.1

- ①CH1 voltage, current, power display window
- ②CH2 voltage, current, power display window
- ③Instrument model specification label
- ④Five groups of voltage and current parameters storage/recall keys
- ⑤CH1 channel switching key
- ⑥Voltage adjustment knob/OVP setting knob
- ⑦CH2 channel switching key
- ⑧Current adjustment knob/OCP setting knob
- ⑨CH3 channel switching key
- ⑩One-touch series-parallel function button/menu button
- ⑪CH1, CH2 constant voltage and constant current indicator
- ⑫Instrument power switch
- ⑬CH1 output terminal
- ⑭ Ground terminal
- ⑮CH2 output terminal
- ⑯CH1, CH2, CH3 output control button
- ⑰ CH3 output terminal
- ⑱ Total output control button

Main output control key

The rear panel of MPS-3260 series DC power supply is shown in the figure below.

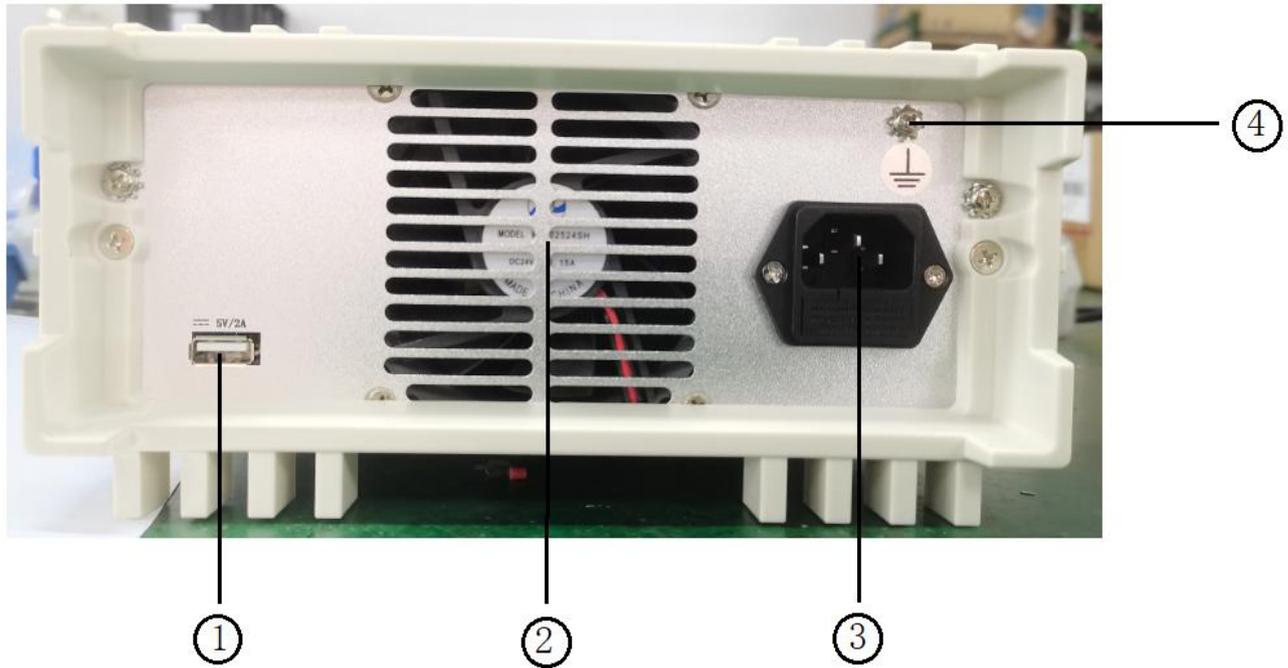


Figure 3.2 MPS-3260 series DC Power Supply Rear Panel

- ① 5V/2A USB output socket(only MPS-3264 has this output)
- ② Instrument cooling ventilation hole
- ③ Instrument power supply socket
- ④ Instrument shell grounding terminal (The shell must be grounded when the power supply is in use.)

3.2 Pre-inspection

Follow these steps to check the power supply to make sure it is working properly.

1. Inspection of goods

Please check whether you have received the following accessories when you receive the power supply. If there is any missing, please contact your nearest dealer.

- One power line (in accordance with the voltage standard used in the region)
- One operation manual (standard configuration)
- Alligator clip output line 3 pairs (standard)

2. Connect the power cord and turn on the power

Before powering on, confirm whether the input voltage is consistent with the instrument. After powering on, the power supply first carries out the system self-test, and then enters the standby state.



Warning: The power supply is shipped with a three-pronged power cord, your power supply should be connected to a three-pronged junction box. You should first make sure that the power supply is well grounded before operating this power supply

3.3 If the power supply does not start

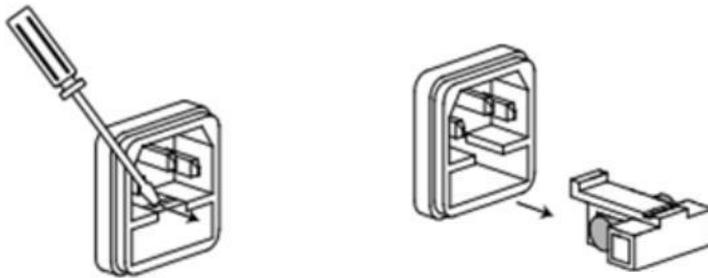
Use the following methods to solve problems that you may encounter when you turn on the power.

1. Check whether the power cord is connected properly

Model	Fuse specification	
	230V	115V
MPS-3263	5A	6A
MPS-3264	5A	6A

2. Replacement method of fuse

Use a screwdriver to open the small plastic cover under the power input socket on the rear panel of the power supply (as shown in the figure below), and you can see the fuse. Please use the fuse with the same specification.



Chapter IV Panel Operation

This chapter details the operation of the power supply front panel and is divided into the following sections:

- CH1 and CH2 voltage/current settings
- Output on/off operation
- Series/parallel setting operation
- Menu setting operation
- CH3 and USB output function introduction
- Introduction to store/recall function
- OVP/OCP Function Introduction
- Introduction to initialization function

4.1 CH1 and CH2 voltage/current settings

When the power supply is in the standby or output state, press the "CH1" key or "CH2" key to select the channel that need to set current/voltage. When the channel is selected, the key backlight will be on. At this time, lightly press the voltage/current knob, and the corresponding setting bit on the screen will flash.

At this time, rotate the knob left and right to change the setting value. Clockwise is to increase the value, and counterclockwise is to decrease the value. When the setting value is flashing, lightly press the knob again to change the setting bit." If there is no operation on the knob within 5 seconds, the system will automatically exit the setting state.

Remark

1. The voltage/current setting methods of CH1 and CH2 are the same.

4.2 Output on/off operation

1. When the power supply is in the standby state, the "ON/OFF" and "ALL ON/OFF" buttons control the on/off status of the power output. "ON/OFF" is output control key for the current channel. "ALL ON/OFF" is the main output control key, when "ON/OFF" and "ALL ON/OFF" are both lit at the same time, the channel is in the output state, otherwise, the channel is in the output off state and can press "ON/OFF" to control the on/off working state of a certain channel separately, or use "ALL ON/OFF" to control the on/off operation of three channels simultaneously."

Remark

Press "ON/OFF" of CH1 or CH2 in parallel or series mode. the other one will also be illuminated, so as to ensure that both CH1 and CH2 are working in parallel or series mode."

4.3 Series/Parallel Setting Operation

When the power supply is in standby or output state, press "IN/SE/PA" lightly. The key power will enter the series/parallel working state, and the CH1 current window will prompt the corresponding working state, as shown in the figure:



series mode



Parallel mode



independent mode

Remark

1. Tap "IN/SE/PA" to enter the series working state. "IN/SE/PA" indicator is green, and the CH1 display window prompts "SE", as shown in the figure "Series Mode". At this time, the output should be connected to the positive terminal of CH1 and the negative terminal of CH2.
2. Tap "IN/SE/PA" twice to enter the parallel working state. "IN/SE/PA" indicator is red, and the CH1 display window prompts "PA", as shown in the figure "Parallel Mode". At this time, it is recommended to connect the output to the positive and negative ends of CH2. If the current is too large, it is recommended to use appropriate wires to connect the positive and negative terminals of CH1 and CH2 in parallel.
3. Tap "IN/SE/PA" three times to return the power supply to the independent working state. "IN/SE/PA" Key indicator light is off, as shown in the figure "Independent mode". At this time, CH1 and CH2 are no longer associated.

4.4 Menu setting operation

1. Long press "IN/SE/PA" to enter the menu setting mode, the current knob changes the parameter setting, and the voltage knob switches the menu. The setting contents are as follows:
2. Power-on parameter hold setting: SE1 P-ST ON/OFF (ON is to hold the data at the last power off, and OFF is to hold the factory default value. Use the current knob to switch the ON/OFF state, use the voltage knob to switch the menu steps, and press "IN/SE/PA" lightly. "Pressing the power key will exit the menu.")



4. Setting of output state at power-on: SE2 P-UP ON/OFF (ON means the output is kept at power-on, and OFF means the output is kept closed at power-on. Use the current knob to switch the ON/OFF state, use the voltage knob to switch the menu steps, and press "IN/SE/PA" lightly."Pressing the power key will exit the menu.)"



5. Buzzer sound setting: SE3 BEEP ON/OFF (ON means that the buzzer sound is on, and OFF means that the buzzer sound is off. Use the current knob to switch the ON/OFF state, use the voltage knob to switch the menu steps, and press "IN/SE/PA" to exit the menu.)"



6. Voltage lower limit setting: SE4 CH1 VOL L 0.000 0.000 (change the setting value with the current knob, change the setting position with the light voltage current knob, switch the menu steps with the voltage knob, and press the key "CH1" or "CH2" to select the channel to be set. When the channel is selected, the

key backlight will be lit. Press "" to exit the menu.)"



7. Voltage upper limit setting: SE5 CH1 VOL H 0.000 0.000 (change the setting value with the current knob, change the setting position with the light voltage current knob, switch the menu steps with the voltage knob, and press the key "" or "" to select the channel to be set. When the channel is selected, the key backlight will be lit. Press "" to exit the menu.)"



8. Current lower limit setting: SE6 CH1 CUR L 0.000 0.000 (use the current knob to change the setting value, press the current knob lightly to change the setting position, use the voltage knob to switch the menu steps, and press the key "".Or "" to select the channel to be set. When the channel is selected, the key backlight will be lit. Press "" to exit the menu.)"



9. Current upper limit setting: SE7 CH1 CUR L 0.000 0.000 (use the current knob to change the setting value, press the current knob lightly to change the setting position, use the voltage knob to switch the menu steps, and press the key "CH1" or "CH2" to select the channel to be set. When the channel is selected, the key backlight will be lit. Press "IN/SE/PA" to exit the menu.)"



10. Communication address setting: SE8 ADDR 001 (communication address can be selected from 1 to 254. Use the current knob to switch the parameters, use the voltage knob to switch the menu steps, and press "IN/SE/PA" lightly. "Pressing the power key to exit the menu.")"



11. Communication baud rate setting: SE9 BAUD 9600 (Baud rates include 4800 and 9600, 19200, 38400, 57600, and 115200 can be selected. Use the current knob to switch the parameters, use the voltage knob to switch the menu steps, and press the "IN/SE/PA" to exit the menu.)"



12. Communication protocol selection: SE10 PLC SCPI (two communication protocols, SCPI and MODBUS, can be selected. Use the current knob to switch the parameters, use the voltage knob to switch the menu steps, and press "IN/SE/PA" lightly to exit the menu.)"



13. Selection of communication protocol terminator: SE11 CEND LF (CR, LF, CRLF and LFCR can be selected for communication protocol terminator. Use the current knob to switch parameters, use the voltage knob to switch menu steps, and press "IN/SE/PA" lightly to exit the menu.)" .



Note: The communication interface is optional, and the menu of the communication setting part of the instrument without communication is invalid.

4.5 CH3 and USB output function introduction

1. CH3 function introduction:

CH3 is a fixed output channel of 2.5V/3.3V/5V, the maximum current is about 3A, and the voltage passes through "  "Key Toggle"  "When the key indicator is off, the voltage of CH3 is 2.5V."  "The CH3 voltage is 3.3 V when the key indicator is green. When the key  indicator is red, the voltage of CH3 is 5V."  "Is the channel output control key."  "Is the main output control key, when"  "And"  "When both channels are lit at the same time, the channel is in the output state, otherwise, the channel is in the output off state and can through"  " key to control the on/off working state of this channel separately, or through the"  "Control the on/off operation of three channels simultaneously."

2. USB function introduction:

An independent 5V/2A USB interface is provided at the end of the power supply. (This interface is only standard for MPS-3264).

4.6 Introduction to storage/recall function

The power supply can store some commonly used parameters in five groups of "M1-M5" non-volatile memories for the user to quickly call out.

1. Storage:

The user can set the parameters such as voltage and current to be saved, and then press any key of "M1-M5" for a long time. The key lamp will be lit, and the power supply will make a "drop" sound. At this time, the parameters will be saved in this group of non-volatile memory (the saved parameters include voltage and current parameters, OVP and OCP parameters, and output status).

2. Invoke:

The user can lightly press any key of "M1-M5" to call the parameters such as voltage and current stored in the group of nonvolatile memory, lightly press any key of "M1-M5", the key lamp will be lit, and the power supply will make a "drop" sound. At this time, the parameters stored in the non-volatile memory of this group will be called out (the stored parameters include voltage and current parameters, OVP and OCP parameters, and output status).

4.7 Function introduction of OCP/OVP

Press and hold the voltage/current adjusting knob to enter the OVP/OCP function setting. When the OVP/OCP value is set and the function is in the on state, the corresponding channel will prompt OVP/OCP and turn off the output when the output voltage or current of CH1/CH2 exceeds the set value. The setting contents are as follows:

1. OCP setting: Press and hold the current adjustment knob to enter the OCP function setting (as shown in the figure below). At this time, if you want to change the OCP setting, press the button "CH1" or "CH2" to select the channel to be set. When the channel is selected, the key backlight will be on. Press the current/voltage knob lightly. The number in the display window of the selected channel will flash. Turn the current knob left and right to change the setting value. Turn the voltage knob left and right to change the OCP state (ON means to turn on the OCP function, and OFF means to turn off the OCP function.)



2. OVP setting: Press the voltage adjustment knob for a long time to enter the OVP function setting (as shown in the figure below). At this time, if you want to change the OVP setting, press the button "CH1" or "CH2". Select the channel to be set. When the channel is selected, the key backlight will be on. Press the voltage/current knob lightly. The number in the display window of the selected channel will flash. Turn the voltage knob left and right to change the setting value. Turn the current knob left and right to change the OVP state (ON means to turn on the OVP function, and OFF means to turn off the OVP function.)



3.OCP protection: When the output current exceeds the OCP set value, the current window of this channel will prompt "OCP" and turn off the output (as shown in the figure below). CH1 and CH2 channels have independent OCP setting and protection functions. The two channels are not related to each other. Only the channel exceeding the set value will be turned off. In addition, the channel will continue to maintain the output state.



CH1 OCP protection tip



CH2 OCP protection tip

4. OVP protection: When the output voltage exceeds the set value of OVP, the voltage window of this channel will prompt "OVP" and turn off the output (as shown in the figure below). CH1 and CH2 channels have independent OVP setting and protection functions. The two channels are not related to each other. Only the channel exceeding the set value will be turned off, and the other channel will continue to maintain the output state.



CH1 OVP protection prompt



CH2 OVP protection prompt

4.8 Initialization function introduction

Long press the "one-key series-parallel/function menu button" on the left to start the machine. The power supply will initialize the "function menu" in the factory. After initialization, the power supply will beep three times. After initialization, the settings are as follows: Press and hold the "one-button series-parallel connection/function menu button" on the left to start the machine, and the power supply will initialize the "function menu" in the factory. After successful initialization, the power s

1. The power-on parameter remains set to ON: SE1 P-ST ON
2. The output state is set to OFF at power-up: SE2 P-UP OFF
3. Buzzer sound set to ON: SE3 BEEP ON
4. CH1 voltage current lower limit is set to the minimum value: SE4 CH1L 0.000 0.000
5. CH1 voltage current upper limit is set to the maximum value: SE5 CH1L 5.100 31.00
6. Lower limit of voltage and current of CH2 is set to the minimum value: SE6 CH2L 0.000 0.000
7. CH2 Voltage current upper limit is set to the maximum value: SE7 CH2L 5.100 31.00

Remark

The voltage and current upper limit initialization settings are slightly different depending on the model. After initialization, they are all the maximum settings of this model.

Safe



Warning: The power supply is shipped with a three-pronged power cord, your power supply should be connected to a three-pronged junction box. You should first make sure that the power supply is well grounded before operating this power supply



The enclosure must be grounded  when the power supply is used. Do not install substitute parts on the instrument yourself or perform any unauthorized modifications. Please send the instrument to the maintenance department of the company for maintenance to ensure its safe use. Refer to the specific warning or caution information in this manual to avoid personal injury or damage to the instrument.

Safety sign

Warning

It reminds users of certain operating procedures, practices, conditions, and other matters that may lead to personal injury.

Caution

It warns the user of procedures, practices, conditions, etc. that may cause damage to the instrument or permanent loss of data.



Grounding point today



High voltage hazard. (Do not open the machine for non-expert personnel)



Refer to the warnings in the related documents and pay attention to the tips. (High voltage, please wear gloves when operating, and do not use the machine for safety purposes).

Certification and Quality Assurance

This series of programmable DC power supply fully meets the nominal technical indicators in the manual.

Quality Assurance

The material and manufacture of this product are guaranteed for one year from the date of shipment.

Maintenance services

If this product needs to be repaired, please send it back to the maintenance unit designated by our company. The customer is responsible for the one-way shipping cost of the repaired product to our repair department, and we will be responsible for the return shipping cost. If the product is returned from other countries for repair, all freight, duties and other taxes must be borne by the customer.

Quality Assurance Limitations

The foregoing warranty does not apply to damage resulting from:

Incorrect or inappropriate repair of the product by the customer;

Other software or interfaces used by customers;

Unauthorized modification or misuse;

Operate the product outside the designated environment, or configure and repair it at a non-designated service point.

Damage caused by customer installed circuits.

Notice

The contents of this manual are subject to change without notice, and the right of interpretation belongs to our company.

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	