PDS-E Series DC Power Supply

User Manual

MATRIX TECHNOLOGY INC.

Preface

Dear users:

Thank you for choosing a MATRIX 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.

Copyright information

-  Copyright Matrix Technology Inc.
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- Matrix Technology Inc. reserves the right to change product specifications and prices.
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Check and Correction Statement

In particular, the company declares that the equipment listed in this manual fully complies with the nominal specifications and characteristics of the company's technical specifications. The instrument has passed the factory calibration of the company before leaving the factory, and the verification procedures and steps are in line with the specifications and standards of the electronic inspection center.

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

Catalogue

Chapter 1: A Product Profile

PDS-3020E series is a new generation of high quality adjustable voltage dc power supply, PDS-3020E series adjustable voltage dc power appearance novel, large power, high efficiency, small size, simple operation, good stability, bring great convenience to the use of the user, is the generation of ordinary power supply products, has high cost advantage, can be widely used in production, research and development and scientific research and teaching fields.

This series of power supplies has the following features:

- Electropless servo, intelligent fan system
- 9 sets of data storage
- Standard instrument rack design
- High-resolution values of 1mV 1mV

Chapter II Technical specifications

2.1 Main technical specifications

PDS-3020E Series Adjustable DC Power Supply Technical Specification Table (23℃± 5℃):

Model		**PDS-3020E**	**PDS-2030E**	**PDS-6010E**
Rated input voltage		AC220V±10%		
Rated output voltage		0-30V	0-20V	0-60V
rated output current		0-20A	0-30A	0-10A
Load regulation rate	Voltage	<0.1%+20mV		<0.1%+10mV
	Current	<0.1%+5mA		<0.1%+5mA
Line regulation rate	Voltage	<0.1%+20mV		<0.1%+10mV
	Current	<0.1%+5mA		<0.1%+5mA
Setting resolution	Voltage	1mV		
	Current	1mA		
Setting accuracy (25℃±5℃)	Voltage	≤0.1%+10mV		
	Current	≤0.3%+5mA		
Read back resolution	Voltage	1mV		
	Current	1mA		
Read back accuracy (25℃±5℃)	Voltage	≤0.1%+10mV		
	Current	≤0.3%+5mA		

Temperature	Operational environment	0 to 40 ℃ ≤ 85 R.H.		
	Storage environment	-15 to 70 ℃ ≤ 85 R.H		
Size (W*H*D(mm))		214*108*305		
Package weight (net weight)		4.5Kg	4.5Kg	4.5Kg

Model		**PDS-1560E**	**PDS-3030E**	**PDS-6015E**	**PDS-8010E**	**PDS-15006E**
Rated input voltage		AC220V±10%				
Rated output voltage		0-15V	0-30V	0-60V	0-80V	0-150V
rated output current		0-60A	0-30A	0-15A	0-11A	0-6A
Load regulation rate	Voltage	<0.1%+20mV		<0.1%+10mV		
	Current	<0.1%+5mA		<0.1%+5mA		
Line regulation rate	Voltage	<0.1%+20mV		<0.1%+10mV		
	Current	<0.1%+5mA		<0.1%+5mA		
Setting resolution	Voltage	1mV				
	Current	1mA				
Setting accuracy (25℃±5℃)	Voltage	≤0.1%+10mV				
	Current	≤0.3%+5mA				
Read back resolution	Voltage	1mV				
	Current	1mA				
Read back accuracy (25℃±5℃)	Voltage	≤0.1%+10mV				
	Current	≤0.3%+5mA				

Temperature	Operational environment	0 to 40 ℃ ≤ 85 R.H.		
	Storage environment	-15 to 70 ℃ ≤ 85 R.H		
Size（W*H*D(mm)）		214*108*305		
Package weight (net weight)		4.5Kg	4.5Kg	4.5Kg

2.2 Supplementary Features

Status memory capacity: 9 sets of operation states
Recommended calibration frequency: 1 year / 1 time
Heat dissipation mode: forced air cooling
Operating ambient temperature: 0 to 40℃
Storage ambient temperature: -20 to 60℃
Use environment: indoor use design, pollution level is 2, the maximum humidity is 80%

Chapter 3: A Quick Start

This chapter will briefly introduce the appearance and basic functions of the PDS-3020E series adjustable stable DC power supply, allowing you to quickly understand the PDS-3020E series adjustable stable DC power supply. At the same time, you will be told about the basic inspection after getting the power supply to ensure the normal operation of the product.

3.1 Introduction of the front and rear panel

The front panel of PDS-3020E series adjustable stable DC power supply is shown in the figure below.

Figure 3.1 Front panel of PDS-3020E series adjustable stabilized DC power supply

① The top half of the front panel is divided into a black LED display and a knob.
② The lower half of the front board from left to right is the 0-9 number keys and ESC exit keys, function keys, the up and down movement key and Enter keys, and input and output terminals.

Rear panel layout of PDS-3020E series adjustable stable DC power supply, as shown in the figure below.

Figure 3.2 Rear panel of PDS-3020E series adjustable stabilized DC power supply

① heat emission hole
② Power supply input socket
③ Serial number

3.2 Pre-check

Follow the following below to check the power supply to ensure the power supply is properly.

1. Inspection of goods

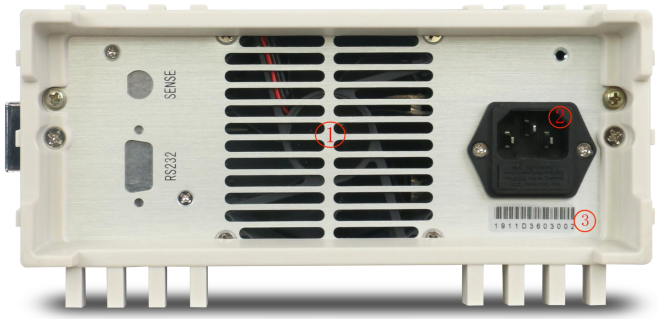
Please check for the following accessories while receiving the power supply. If there is any missing thing, please contact your nearest dealer.

☑ One power cord (meet the voltage standard used in the region)
☑ One operation manual (standard equipment)
☑ One certificate (standard)

2. Connect the power cord and turn the power on

After the power on, the power supply first performs the system self-test, and then enters the standby state.

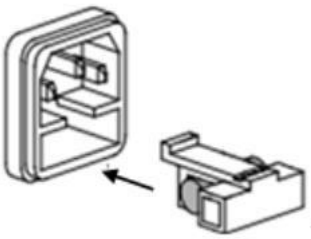
Warning: The power supply comes with a three core power cord, and your power supply should be connected to the three core junction box. Before operating this power supply, you should first ensure that the power supply is well grounded.



3.3 If the power supply cannot be started

1. Check whether the power cord is well connected

2. Fuse replacement method



Use the screwdriver to open the small plastic cover under the power input socket on the back panel of the power supply to see the fuse. Please use the same fuse in the same specification.

Model	Fuse specifications
PDS-3020E	8A
PDS-2030E	8A
PDS-6010E	8A
PDS-1560E	10A
PDS-3030E	10A
PDS-6015E	10A
PDS-8010E	10A
PDS-15006E	10A

Chapter 4: Panel operation

This chapter will provide a detailed introduction to the operation of the power front panel, which is divided into the following parts:

- Keyboard Description
- Introduction to Front Panel Operation
- Voltage setting operation
- Current setting operation
- Store/Call Operations
- Menu Actions
- Output on/off operation

4.1 Keyboard description

Key position	Key function description
0-9：	Numeral key
Battery (Number key "8"):	Battery charging warning function, current upper and lower limit setting (valid when pressed)
I-Set	Set the maximum output current of the power supply
V-Set	Set the power supply output voltage
Save	The storage power supply currently related parameters to the specified storage location
Recall	Call power related setting parameters from the specified storage location
Shift	Composite keys, and multi-function keys
On/off	Control the power supply output status
▲	Turn up the key (select the menu item in the menu operation to increase the output voltage in the working interface)
▼	Down flip key (select the menu item in the menu operation to reduce the output voltage in the working interface)
Enter	Confirm the key
knob	Used to change the power supply voltage, the current setting

4.2 Introduction to the front panel operation

Before using this power supply, please know the following basic introduction about the front panel button operation.

● After the power supply, the power supply automatically is the panel operation mode. In the panel operation mode, all the buttons can be used.

● LED can display the current operating state of the power supply, turn on the power supply, LED shows two data, the first shows the voltage value, the second shows the current value, when the instrument is in the output state, the current window is displayed as the actual output current, when the instrument is closed, the current window is displayed as the set current.

4.3 Voltage setting operation

The voltage setting range is from 0V to the maximum voltage setting value, and you can set the output voltage value through the front panel in the following three methods:

Method 1: After the power supply is powered on, press the ▲ and ▼ keys directly to change the voltage set value.

Method 2: press V-Set key + 0 to 9 number key, and then press Enter key to set the voltage value.

Method 3: change the voltage setting value by rotating the knob, (press the knob in, the screen flashes to rotate left and right to set the voltage, current, press the knob to move the cursor position, press the "Enter" key to confirm and exit the setting mode, "Iset or Vset" key press the knob will be locked,),

4.4 Current setting operation

Current setting range between 0A and full rated output current,

Method 1: Operation steps

1. Press the I-Set key
2. Press the 0 to 9 number keys to enter the current value you need
3. Press Enter to confirm

Method 2: change the voltage setting value by rotating the knob, (press the knob in, the screen flashes to rotate left and right to set the voltage, current, press the knob to move the cursor position, press the "Enter" key to confirm and exit the setting mode, "Iset or Vset" key press the knob will be locked,),

4.5 Access operation

The power supply can save some commonly used parameters in 9 sets of non-volatile memory, for users to use quickly. You can use the front panel Save and Recall keys to access the (0~9) group storage area.

Storage contents include: 1. Voltage setting value; 2. Current setting value

You can use the Save key + 0 to 9 number keys and press Enter to store the power supply parameters in the specified storage area.

You can use the Recall key + 0 to 9 number keys and press Enter to remove the parameters from the specified storage area.

4.6 Battery charging warning function, current upper and lower limits set

Press the shift and then press the number key "8" to enter the battery charging warning function. The upper and lower limits of the current are set, and the screen displays as follows:

A_L X. XXXX (Lower current limit)

A_H X. XXXX (Upper current limit)

Use the number key to change the set value, use the "Enter" key to confirm, when not in the range when the alarm!

Security

Do not install replacement parts on the instrument or make any unauthorized modifications. Please send the instrument to our company's maintenance department for maintenance to ensure its safe use.
Please refer to the specific warning or caution information in this manual to avoid personal injury or instrument damage.

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).

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	