



*Wavecom*

# **PS-3000 & PS-6000 Series DC Power Supplies User Manual**



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## SAFETY INSTRUCTION

This section contains important safety instructions that you must follow when operating and storing the PS-3000 and PS-6000 series of power supplies. Read the following before operating to ensure the safety of the operator and to avoid issues with your power supply.

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### Safety Symbols

These safety symbols may appear in this manual or on the series.



WARNING



DANGER High Voltage



Earth (ground) Terminal

## General Introduction

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### Safety Guidelines

- Do not block or obstruct the cooling fan vent opening.
  - Avoid severe impacts or rough handling that leads to damage.
  - Do not discharge static electricity.
  - Do not disassemble unless you are qualified as service personnel.
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### AC INPUT



- AC Input Voltage: 110V/120V/220V/230V, 50/60 Hz.
  - Connect the protective grounding conductor of the AC power cord to an earth ground, to avoid electrical shock.
- 

### Operation Environment

- Location: Indoor, no direct sunlight, dust free, almost non-conductive pollution ( note below ).
  - Relative Humidity: <80%
  - Altitude: < 2000m
  - Temperature: 0-40°C
- 

### Storage environment

- Location: Indoor
  - Relative Humidity: <70%
  - Temperature:-10-70°C
- 

### FUSE



Model	110/120V	220/230V
PS-3005D/P	T5A/250V	T3A/250V
PS-3010D/P	T10A/250V	T5A/250V
PS-6005D/P	T10A/250V	T5A/250V

- To ensure fire protection, replace the fuse only with the specified type and rating.
- Disconnect the power cord before fuse replacement.
- Make sure the cause of fuse blowout is fixed before fuse replacement.

## OVERVIEW

### Models Introduction

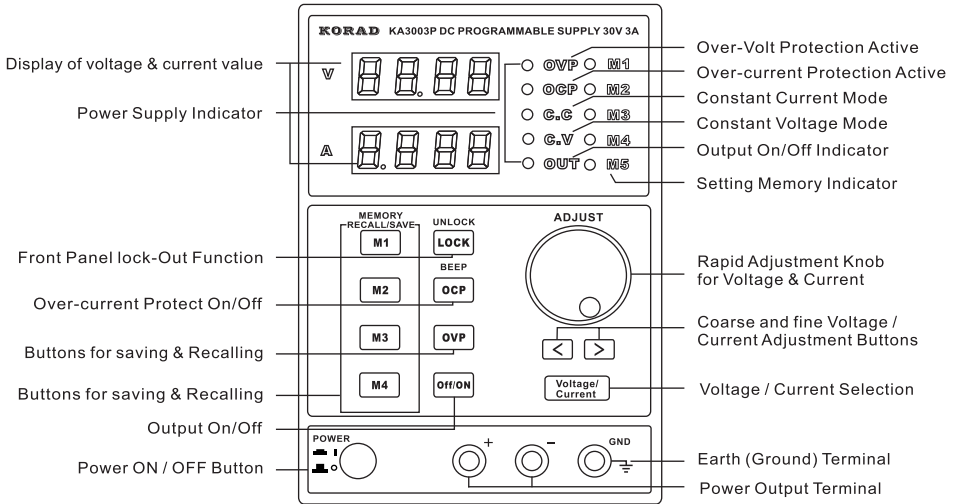
Model	V Meter	A Meter	USB	Resolution
PS-3005D	4 digit	4 digit	NO	10mv / 1mA
PS-3005P	4 digit	4 digit	YES	10mv / 1mA
PS-3010D	4 digit	4 digit	NO	10mv / 1mA
PS-3010P	4 digit	4 digit	YES	10mv / 1mA
PS-6005D	4 digit	4 digit	NO	10mv / 1mA
PS-6005P	4 digit	4 digit	YES	10mv / 1mA

### Main Characteristics

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- |             |                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | <ul style="list-style-type: none"> <li>• Low noise: cooling fan controlled by heatsink temperature</li> <li>• Compact size, light weight</li> </ul>                                                                                                                                                                                                                           |
| Operation   | <ul style="list-style-type: none"> <li>• Constant voltage / constant</li> <li>• Corrent operation</li> <li>• Output On / Off control</li> <li>• Digital panel control</li> <li>• 4 pairs of panel setup save / recall</li> <li>• Conarse and fine voltage / current control</li> <li>• Software calibration</li> <li>• Beep output</li> <li>• Button lock function</li> </ul> |
| Protection  | <ul style="list-style-type: none"> <li>• Overload protection</li> <li>• Reverse polarity protection</li> </ul>                                                                                                                                                                                                                                                                |

## Front Panel Overview



## DISPLAY

Voltage level  Voltmeter displays the setup value of output voltage.

Current level  Displays the setup value of output current.

## Status Indication

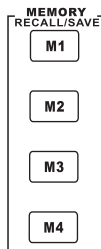
- **OVP** OVP is the indicator of overvoltage protection. When overvoltage function is turned on, ● **OVP** indicator lights on; when output voltage is higher than protection setup value due to unexpected conditions, output cuts off and OVP indicator flickers; Press the button OVP again, and the power supply recovers.

- **OCP** OCP is OCP indicator. When overcurrent function is turned on,
    - **OCP** indicator lights on.
  - **C.C** C.C is constant current indicator. When power supply is in the mode of constant current, this light is on.
  - **C.V** C.V is constant voltage indicator. When power supply is in the mode of constant voltage, this light is on.
  - **OUT** OUT is output indicator. If light on, there is voltage output in the output terminal.
- 

## Storage Indication

- **M1**
  - **M2** Indication of saving and recalling 4 setups stored internally;
  - **M3** When LOCK indication turns on, the front panel button operation
  - **M4** is locked.
  - **M5**
- 

## Brief Introduction of Panel Buttons



Saves or recalls panel settings. For settings, 1~4 are available. For save / recall details, see Page 13. For M5, press M4 and adjust the knob, then you will enter M5 mode.

**UNLOCK**

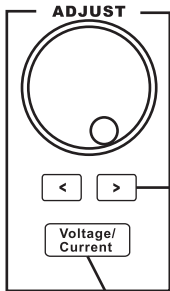
**LOCK** — Front panel LOCK function. For details, see Page 11.

**BEEP**

**OCB** — Over-Current protect on/off. Pressing this button for more than 2 seconds will make beep On/OFF.

**OVP** — Over-voltage Protect On/Off.

**Off/ON** — Output On/Off.



— Voltage-Current Setting Adjustment.

— Digit Selector Buttons.

Selection Voltage / Current for Adjustment Pressing the button, the volt indicator starts to blink; pressing it again, the ampere indicator starts to blink. Then turn the ADJUST knob and the settings of voltage or current can be adjusted.

**POWER**



On / Off main power. For power up sequence, see Page 10.

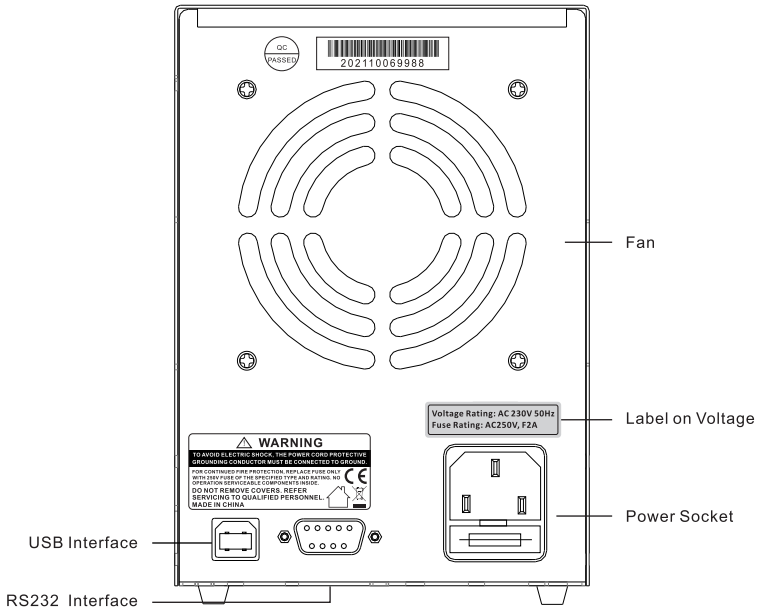


outputs voltage and current.

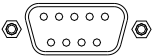


Connects the ground (earth) terminal.

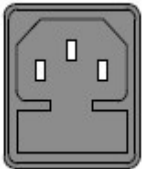
## REAR PANEL INTRODUCTION



USB dependent interface based on remote control order (see Page 14); only for PS-\*\*\*\*P models.



RS232 dependent interface based on remote control order (see Page 14); only for PS-\*\*\*\*P models.



The power cord socket mainly accepts AC values: 115V / 230V, 50 / 60 Hz. Please refer to the fuse parameters on the back fuse label to replace the specified fuse.

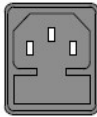


Make sure the correct type of fuse is installed before power up.

## OPERATION

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Connect AC  
power cord



Connecting AC power cord and selecting the corresponding AC voltage according to the back label on voltage; then connecting the AC power cord to the socket on the back panel.

power on



Press the power switch to turn power on. The display initializes, showing the model of the machine and then showing the setting last time.

power off



Press the power switch again to turn power off.

## Output On / Off

---

**Panel Operation** Press the output button to turn on output; and the button LED also turns on. Pressing the Output button again to turn off the output and the LED.

Note: If there are any of the following conditions, the output will automatically turn off.

1. OVP turns on and there are unusual OVP on the output terminal.
2. The setting voltage is more than that of the OVP.
3. Recalling other setups from the memory.

## Beep On / Off

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**Panel Operation** By default, the beep sound is enabled. To turn off the beep, press the OCP(BEEP) button for 2 seconds. A beep comes out and the beep setting will be turned off. To enable the beep, press the OCP(BEEP) button again for 2 seconds.

## Front Panel Lock

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**Panel Operation** Press the LOCK button to lock the front panel button operation. To unlock, press the LOCK button for 2 seconds.



## Output Setup

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### Panel Operation

1. Connecting the load to the front port, red(+), black(-).
2. Setting output voltage and current.  
Press the button Voltage / Current selection to switch voltage adjustment and current adjustment. Adjusting voltage and current with Voltage / Current Adjustment knob. By default, the Voltage and Current knob work in the coarse mode. To activate the fine mode, press the buttons to select the coarse mode or the fine mode.
3. Turning on the output and pressing the output button.  
The button LED turns on and displays CV or CC mode.

## SAVE / RECALL SETUP

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### Save Setup

**Background** The front panel settings can be stored into one of the four internal memories.

**Contents** The following list shows the setup contents.

- Fine / coarse knob editing mode
- Beep on / off
- Output voltage / current level

The following settings are always saved as "off"

- Output on / off
- Front panel lock on / off

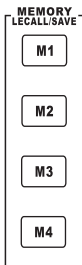
**Panel operation** Press one of the 4 buttons (M1, M2, M3, M4) and the LED light turns on accordingly. After you adjust the value, it is saved automatically once it stops blinking.

## Recall Setup

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The front panel settings can be recalled from one of the four internal memories.

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Recalls panel settings. For settings, 1~4 are available.

- 
- M1 Indication of saving and recalling 4 setups stored internally;
  - M2 Press one of the 1~4 Memory buttons, for example number 1.
  - M3 The panel settings saved in memory NO. 1 are recalled. The LED M1 turns on.
  - M4

**Note:** When a setting is recalled, the output automatically turns off.



## REMOTE CONTROL

### Remote Control Setup

All Programmable models (PS-\*\*\*\*P) can be connected to the PC using the USB/RS232 interfaces on the rear of the power supply, and controlled remotely.

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COM setting	Set up the COM port inside the PC according to the following list. <ul style="list-style-type: none"><li>● Baud rate: 9600</li><li>● Parity bit: None</li><li>● Data bit: 8</li><li>● Stop bit: 1</li><li>● Data flow control: None</li></ul>
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Functionality check	Run this query command via the terminal application such as MTTY (Multi-threaded TTY). *IDN? This should return the identification information: Manufacturer, model name, software version.
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## REMOTE CONTROL PROCEDURES

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### Entering the Remote Control Mode

1. Connect the USB cable.
2. The power supply will automatically connect. After normal connection, there will be a tweet from the power supply itself.
3. The panel buttons are locked, so the power supply can only be controlled by the computer.

**NOTE: KORAD software must be installed first.**

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### Exiting from the Remote Control Mode


1. Close the remote control software.
2. Disconnect USB from the back.
3. The power supply disconnects; a tweet from the beep with the hint that the remote control is over.
4. The power supply automatically comes into the panel control mode.



## FAQ

Q1: The panel buttons don't work when power on.

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A1: The panel is locked. Press the button  for over 2 seconds, and then the panel will unlock.

Q2: Pressing ON/OFF, there is no output when power on.

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A2: Current setup is 0.

Q3: Output voltage rises slowly when output button is on.

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A3: Current setup is too small.

Q4: Making OCP on and pressing output switch; and then the output is automatically shut off.

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A4: Current protection value setup is too small. You could press output switch and then make OCP on.

# SPECIFICATIONS

The specifications below are accurate under the following conditions:  
Temperature: 25°C ± 5°C; Warmup: 20 minutes.

Model		PS-3005D	PS-3010D	PS-6005D	PS-3005P	PS-3010P	PS-6005P
<b>Voltage Range</b>		0 - 30V	0 - 30V	0 - 60V	0 - 30V	0 - 30V	0 - 60V
<b>Current Range</b>		0 - 5A	0 - 10A	0 - 5A	0 - 5A	0 - 10A	0 - 5A
<b>Load Regulation</b>	<b>Voltage</b>	≤ 0.01% + 2mV	≤ 0.01% + 3mV	≤ 0.01% + 2mV	≤ 0.01% + 2mV	≤ 0.01% + 3mV	≤ 0.01% + 2mV
	<b>Current</b>	≤ 0.1% + 10mA	≤ 0.1% + 20mA	≤ 0.1% + 10mA	≤ 0.1% + 10mA	≤ 0.1% + 20mA	≤ 0.1% + 10mA
<b>Line Regulation</b>	<b>Voltage</b>	≤ 0.01% + 3mV	≤ 0.01% + 3mV	≤ 0.01% + 3mV	≤ 0.01% + 3mV	≤ 0.01% + 3mV	≤ 0.01% + 3mV
	<b>Current</b>	≤ 0.1% + 3mA	≤ 0.1% + 3mA	≤ 0.1% + 3mA	≤ 0.1% + 3mA	≤ 0.1% + 3mA	≤ 0.1% + 3mA
<b>Setup Regulation</b>	<b>Voltage</b>	10mV	10mV	10mV	10mV	10mV	10mV
	<b>Current</b>	1mA	1mA	1mA	1mA	1mA	1mA
<b>Setup Accuracy</b> (25°C ± 5°C)	<b>Voltage</b>	≤ 0.5% + 20mV	≤ 0.5% + 20mV	≤ 0.5% + 30mV	≤ 0.5% + 20mV	≤ 0.5% + 20mV	≤ 0.5% + 30mV
	<b>Current</b>	≤ 0.5% + 10mA	≤ 0.5% + 20mA	≤ 0.5% + 10mA	≤ 0.5% + 10mA	≤ 0.5% + 20mA	≤ 0.5% + 10mA
<b>Ripple (20-20M)</b>	<b>Voltage</b>	≤ 2mVrms	≤ 2mVrms	≤ 1mVrms	≤ 2mVrms	≤ 2mVrms	≤ 1mVrms
	<b>Current</b>	≤ 3mA <sub>rms</sub>	≤ 5mA <sub>rms</sub>	≤ 3mA <sub>rms</sub>	≤ 3mA <sub>rms</sub>	≤ 5mA <sub>rms</sub>	≤ 3mA <sub>rms</sub>
<b>Temperature Coefficient</b>	<b>Voltage</b>	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm
	<b>Current</b>	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm
<b>Read Back Resolution</b>	<b>Voltage</b>	10mV	10mV	10mV	10mV	10mV	10mV
	<b>Current</b>	1mA	1mA	1mA	1mA	1mA	1mA
<b>Read Back Temperature Coefficient</b>	<b>Voltage</b>	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm
	<b>Current</b>	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm	≤150ppm
<b>Reaction Time</b> (10% Rated Load)	<b>Voltage Rise</b>	≤100mS	≤100mS	≤100mS	≤100mS	≤100mS	≤100mS
	<b>Voltage Drop</b>	≤100mS	≤100mS	≤100mS	≤100mS	≤100mS	≤100mS
<b>Interface</b>		N/A	N/A	N/A	RS232, USB	RS232, USB	RS232, USB
<b>Accessories</b>		User Manual, Power Cable			User Manual, Power Cable, USB Cable		
<b>Dimensions</b>		110 x 165 x 265mm	110 x 172 x 305mm	110 x 172 x 305mm	110 x 165 x 265mm	110 x 172 x 305mm	110 x 172 x 305mm
<b>Weight</b>		4.3kg	8.3kg	8.0kg	4.3kg	8.3kg	8.0kg

## Purchase Information

Date of Purchase

Sold By



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