

PULME KPS3050D

PULME KPS3050D 0-30V 0-50A DC Power Supply Instruction Manual

Model: KPS3050D | Brand: PULME

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your PULME KPS3050D DC Power Supply. This device is a high-precision, adjustable, and regulated digital power supply designed for various applications including product aging tests, production line testing, battery charging, electronic device testing, laboratory research and development, and school teaching experiments. Please read this manual thoroughly before use and retain it for future reference.

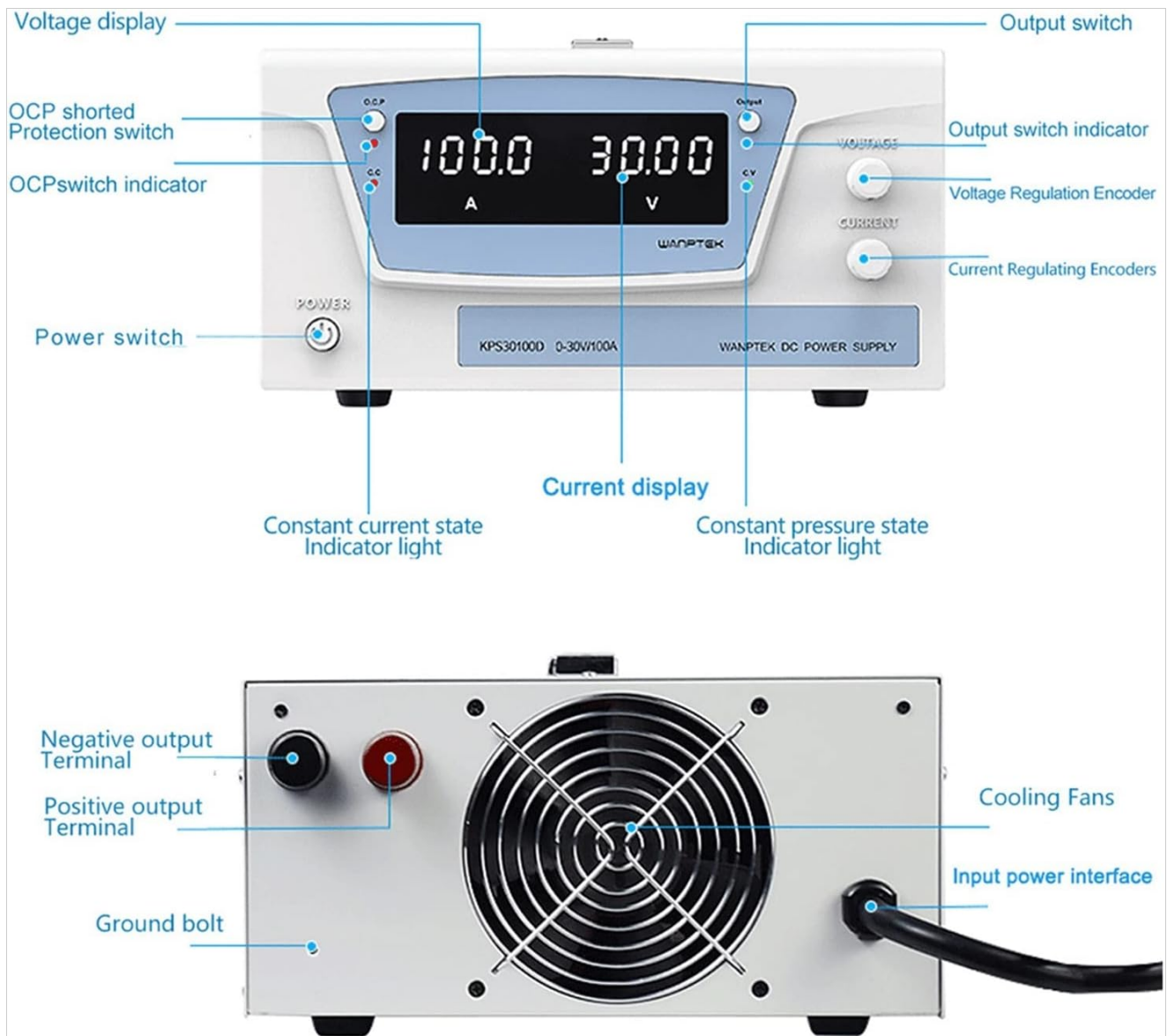
2. SAFETY INFORMATION

To ensure safe operation and prevent damage to the device or injury to personnel, observe the following safety precautions:

- Always connect the power supply to a grounded AC outlet.
- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation to prevent overheating. Do not block the cooling fan vents.
- Verify the input voltage matches the power supply's rating (220V for this model).
- Do not open the casing; there are no user-serviceable parts inside. Refer servicing to qualified personnel.
- Disconnect power before making any connections or disconnections to the output terminals.
- Avoid short-circuiting the output terminals for extended periods, even with protection features.

3. PRODUCT OVERVIEW

3.1 Front Panel Components



The image above illustrates the front and rear panels of the power supply, highlighting key components:

- **Voltage Display:** Shows the output voltage in Volts (V).
- **Current Display:** Shows the output current in Amperes (A).
- **Output Switch:** Toggles the power output ON/OFF.
- **Output Switch Indicator:** Lights up when output is active.
- **OCP Shorted Protection Switch:** Activates/deactivates Over Current Protection.
- **OCP Switch Indicator:** Lights up when OCP is active.
- **Voltage Regulation Encoder:** Rotary knob for adjusting output voltage.
- **Current Regulating Encoder:** Rotary knob for adjusting output current.
- **Power Switch:** Main power ON/OFF for the unit.
- **Constant Current State Indicator Light (CC):** Illuminates when the power supply is operating in constant current mode.
- **Constant Voltage State Indicator Light (CV):** Illuminates when the power supply is operating in constant voltage mode.

3.2 Rear Panel Components

- **Negative Output Terminal (Black):** Connects to the negative lead of the load.
- **Positive Output Terminal (Red):** Connects to the positive lead of the load.

- **Cooling Fans:** Provide active cooling for the internal components.
- **Input Power Interface:** Connects the AC power cord.
- **Ground Bolt:** Provides an additional grounding point for safety.

3.3 Key Features

- High precision digital display for voltage and current.
- Adjustable voltage and current output for precise control.
- Multiple safety protections: Over Voltage Protection (OVP), Over Current Protection (OCP), Overload Protection (OPP), Overheating Protection (OTP), and short circuit protection.
- Intelligent temperature-controlled fan for low noise operation.
- Compact and lightweight design suitable for benchtop use.
- High-gain amplifier circuit design for good fast load transient response.
- PWM modulation for high efficiency and power saving.

4. SETUP

1. **Unpacking:** Carefully remove the power supply from its packaging and inspect for any signs of damage. Retain packaging for future transport or storage.
2. **Placement:** Place the power supply on a stable, level surface with adequate ventilation. Ensure that the front and rear cooling vents are not obstructed.
3. **Power Connection:** Connect the provided AC power cord to the input power interface on the rear panel and then to a grounded 220V AC outlet.
4. **Initial Power On:** Turn on the main power switch on the front panel. The digital displays should illuminate.
5. **Output Terminal Connection:** Before connecting any load, ensure the output switch is OFF. Connect the positive (+) lead of your load to the red output terminal and the negative (-) lead of your load to the black output terminal. Ensure connections are secure.

5. OPERATING INSTRUCTIONS

5.1 Basic Operation



This image highlights the voltage and current adjustment knobs on the front panel.

1. **Set Voltage:** With the output switch OFF, rotate the Voltage Regulation Encoder to set the desired output voltage. The display will show the set value.
2. **Set Current:** Rotate the Current Regulating Encoder to set the desired output current limit. This acts as a maximum current the supply will deliver.
3. **Enable Output:** Once voltage and current limits are set and the load is connected, press the Output Switch to enable the power output. The Output Switch Indicator will light up.
4. **Monitor Output:** The displays will show the actual output voltage and current being delivered to the load.
5. **Disable Output:** To stop power delivery, press the Output Switch again. The Output Switch Indicator will turn off.

5.2 Constant Voltage (CV) Mode

In CV mode, the power supply maintains a constant output voltage as set by the user, provided the load current does not exceed the set current limit. The CV indicator light will be illuminated.

5.3 Constant Current (CC) Mode

In CC mode, the power supply maintains a constant output current as set by the user, provided the load resistance allows for the voltage to drop below the set voltage. The CC indicator light will be illuminated. This mode is useful for applications like battery charging or driving LEDs.

5.4 Over Current Protection (OCP)

The OCP feature protects the connected load and the power supply from excessive current. When OCP is enabled (OCP indicator light ON) and the output current exceeds the set limit, the power supply will automatically cut off the output and sound an alarm. To reset, disable the output, clear the fault condition, and then re-enable the output.

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the power supply. Do not use abrasive cleaners or solvents. Ensure the device is powered off and unplugged before cleaning.
- **Ventilation:** Regularly check that the cooling vents are free from dust and debris to ensure proper airflow.
- **Storage:** When not in use for extended periods, store the power supply in a dry, dust-free environment.
- **No User Serviceable Parts:** Do not attempt to open or repair the unit yourself. Refer all servicing to qualified service personnel.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No power when switched on	Power cord not connected; AC outlet fault; Main power switch off	Check power cord connection; Test AC outlet; Ensure main power switch is ON
No output voltage/current	Output switch OFF; Voltage/current set to zero; OCP triggered	Press Output Switch ON; Adjust voltage/current knobs; Check OCP status and reset if necessary
Output voltage/current unstable	Loose connections; Overload; Faulty load	Check all connections; Reduce load; Test with a different load

Problem	Possible Cause	Solution
Overheating	Blocked ventilation; Excessive ambient temperature; Prolonged high load	Clear vents; Operate in cooler environment; Reduce load or operating time
OCP alarm sounds	Output current exceeded set limit; Short circuit in load	Disable output, identify and fix the cause of overcurrent, then re-enable output.

8. SPECIFICATIONS



The image above provides the physical dimensions of the power supply.

Parameter	Value
Model	KPS3050D
Input Voltage	AC 220V $\pm$ 10%; 50Hz
Output Voltage	0-30V (Adjustable)
Output Current	0-50A (Adjustable)
Output Power	3000W
Operating Temperature	0-40°C; Relative humidity:<80%RH
Storage Temperature	-10-70°C; Relative humidity:<70%RH
Set Value Resolution (Voltage)	0.01V

Parameter	Value
Set Value Resolution (Current)	0.01A
Display Accuracy	0.5%±3 words
Display Resolution	Voltage 0.01V, Current 0.01A
Voltage Stability (CV)	0.5%±20mV
Load Stability (CV)	0.5%±20mV
Ripple Voltage (CV)	0.5%Vp-p
Current Stability (CC)	0.5%±20mA
Load Stability (CC)	0.5%±20mA
Ripple Current (CC)	0.5%Vp-p
Temperature Coefficient	100ppm/°C
Rise Time (No load)	15ms
Rise Time (Fully loaded)	30ms
Dynamic Response Time	2ms
Protective Functions	OVP, OCP, OPP, OTP
Dimensions (Approx.)	260mm (W) x 130mm (H) x 335mm (D)
Item Weight	500 Grams (Note: This weight seems unusually low for a 3000W power supply and may be a data entry error. Please refer to product packaging for accurate weight.)

9. WARRANTY AND SUPPORT

9.1 Warranty Information

This PULME KPS3050D DC Power Supply comes with a standard manufacturer's warranty against defects in materials and workmanship. The warranty period typically begins from the date of purchase. Please refer to the warranty card included with your product for specific terms, conditions, and duration. Keep your proof of purchase for warranty claims.

9.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or warranty service, please contact your retailer or the manufacturer directly. You may need to provide your product model number (KPS3050D) and proof of purchase.

Contact Information: Please refer to the contact details provided on the product packaging or the official PULME website for the most up-to-date support information.