WEP WEP 3005D-III

WEP 3005D-III DC Variable Power Supply User Manual

Model: WEP 3005D-III

1. Introduction

The WEP 3005D-III DC Variable Power Supply is a high-precision bench lab power supply designed for various applications including anodizing, electroplating, Arduino projects, and breadboard circuits. It offers accurate voltage and current regulation with advanced safety features.

2. Key Features

- **High Precision Readings:** Accurate numerical voltage reading up to 0.01V (10mV), current reading up to 0.0001A (0.1mA), and power reading up to 0.1W.
- **Digital Rotary Encoders:** Easy and precise adjustment of output parameters with greater lifespan. Eliminates the need to short-circuit terminals for setting.
- **Comprehensive Protection:** Includes short-circuit protection (ScP code and warning beep), active temperature management with automatic cooling fan, and overload protection (CC/CV mode).
- **Compact Design:** Space-saving size, similar to a lunch box.
- **Strong Power Capacity:** Maximum output of 30V 5A (150W) with low voltage drop under load.
- **Included Accessories:** Comes with U-shape to Alligator clip test leads for easy connection.

3. Product Overview

3.1 Front Panel



Figure 3.1: Front view of the WEP 3005D-III power supply, showing the digital display for voltage, current, and power, along with the voltage and current adjustment knobs and output terminals.

3.2 Precision Readings Display



Figure 3.2: The power supply's display provides highly accurate readings: Voltage to 0.01V, Current to 0.0001A, and Power to 0.10W.

3.3 Rear Panel and Safety Features



Figure 3.3: Rear view highlighting safety features including the automatic cooling fan, ground wire connection, and fuse holder.

3.4 Compact Dimensions

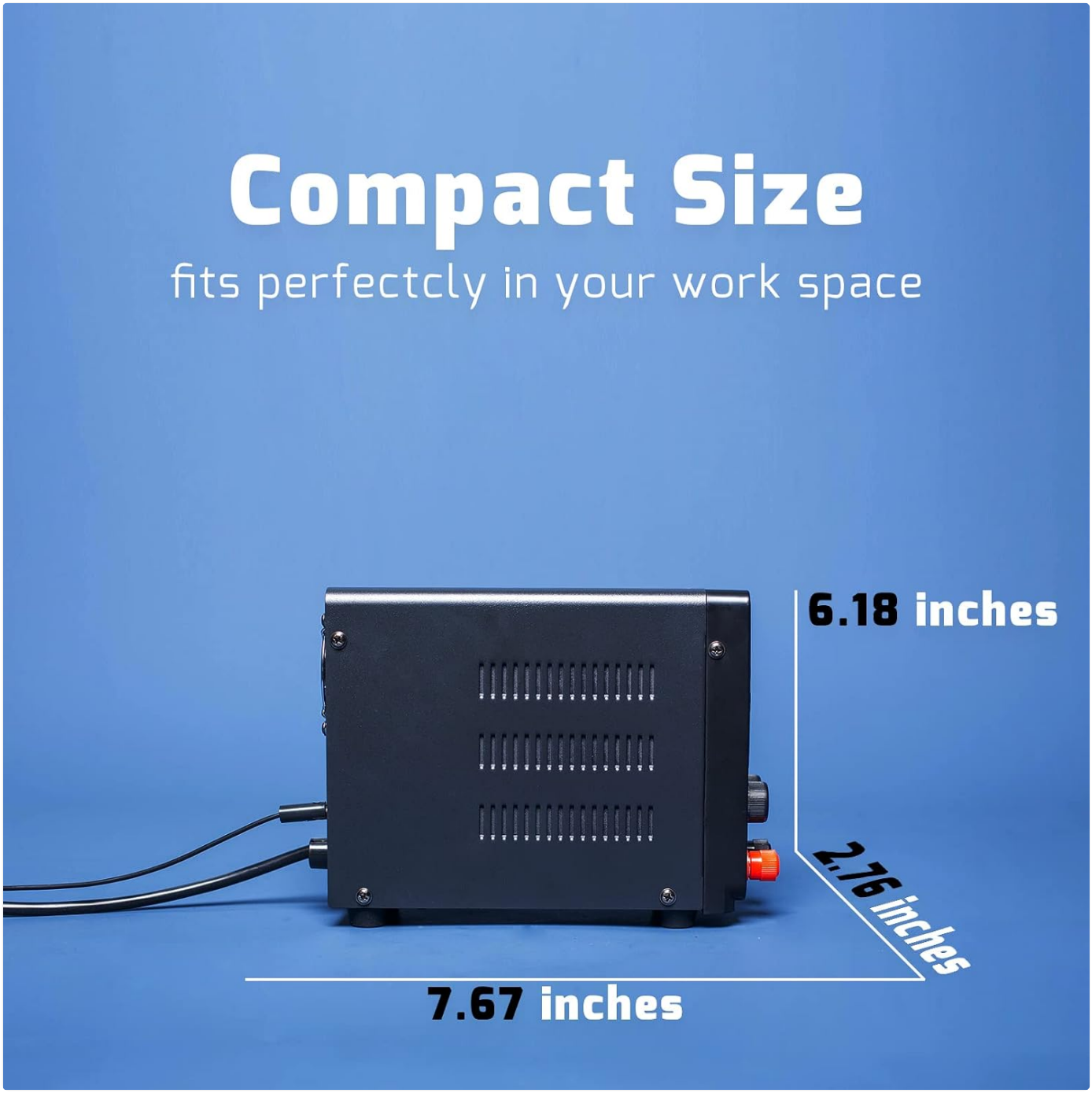


Figure 3.4: The compact dimensions of the power supply, measuring approximately 7.67 inches in length, 2.76 inches in width, and 6.18 inches in height, optimize workspace.

3.5 Digital Encoder Knobs

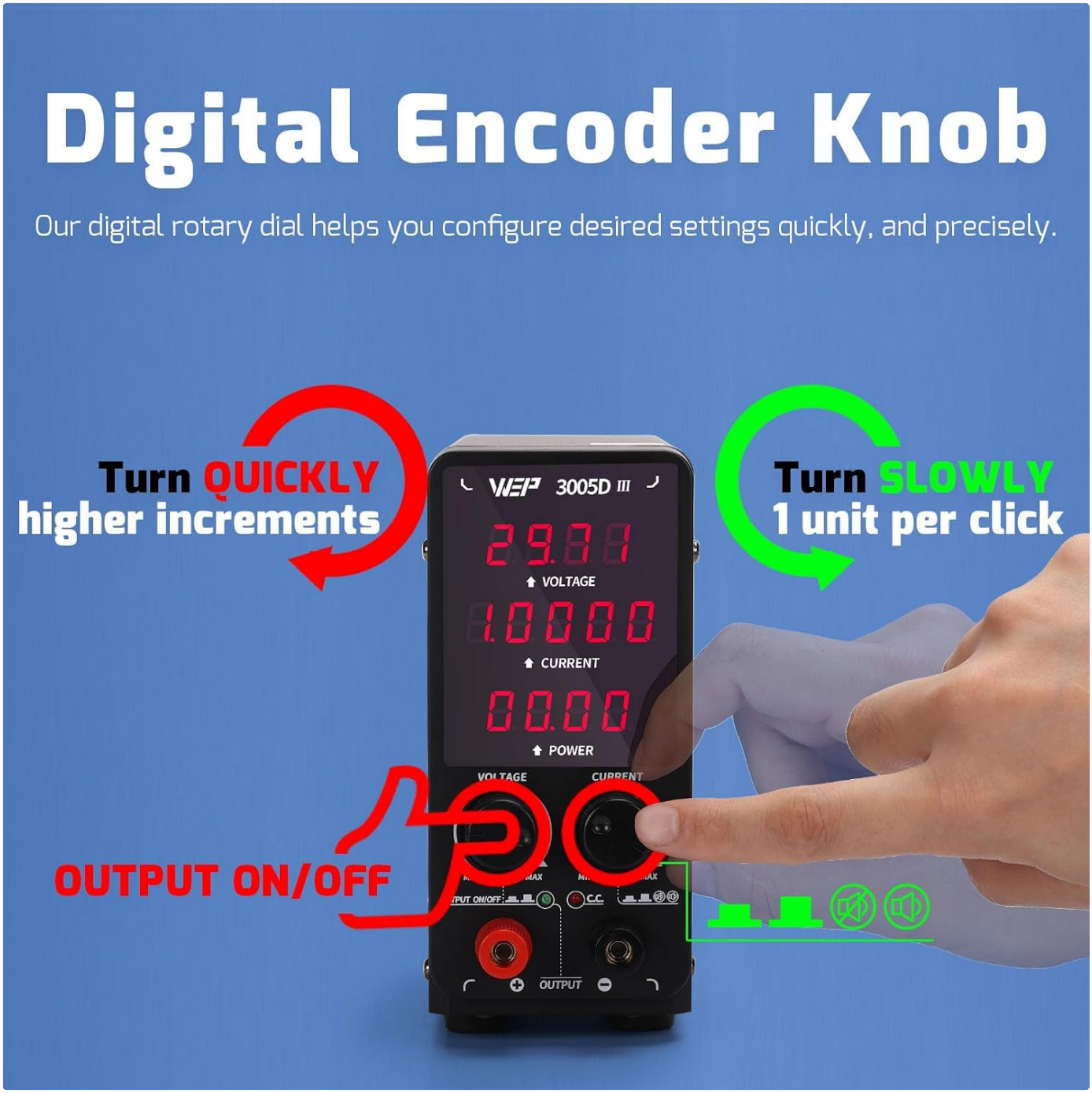


Figure 3.5: The digital rotary encoder knobs allow for both quick adjustments (higher increments) and precise, slow adjustments (1 unit per click).

3.6 Automatic Constant Voltage (CV) & Constant Current (CC) Modes



Figure 3.6: The power supply automatically switches between Constant Voltage (CV) and Constant Current (CC) modes depending on the load characteristics, ensuring stable output.

3.7 Included Alligator Clip Test Leads

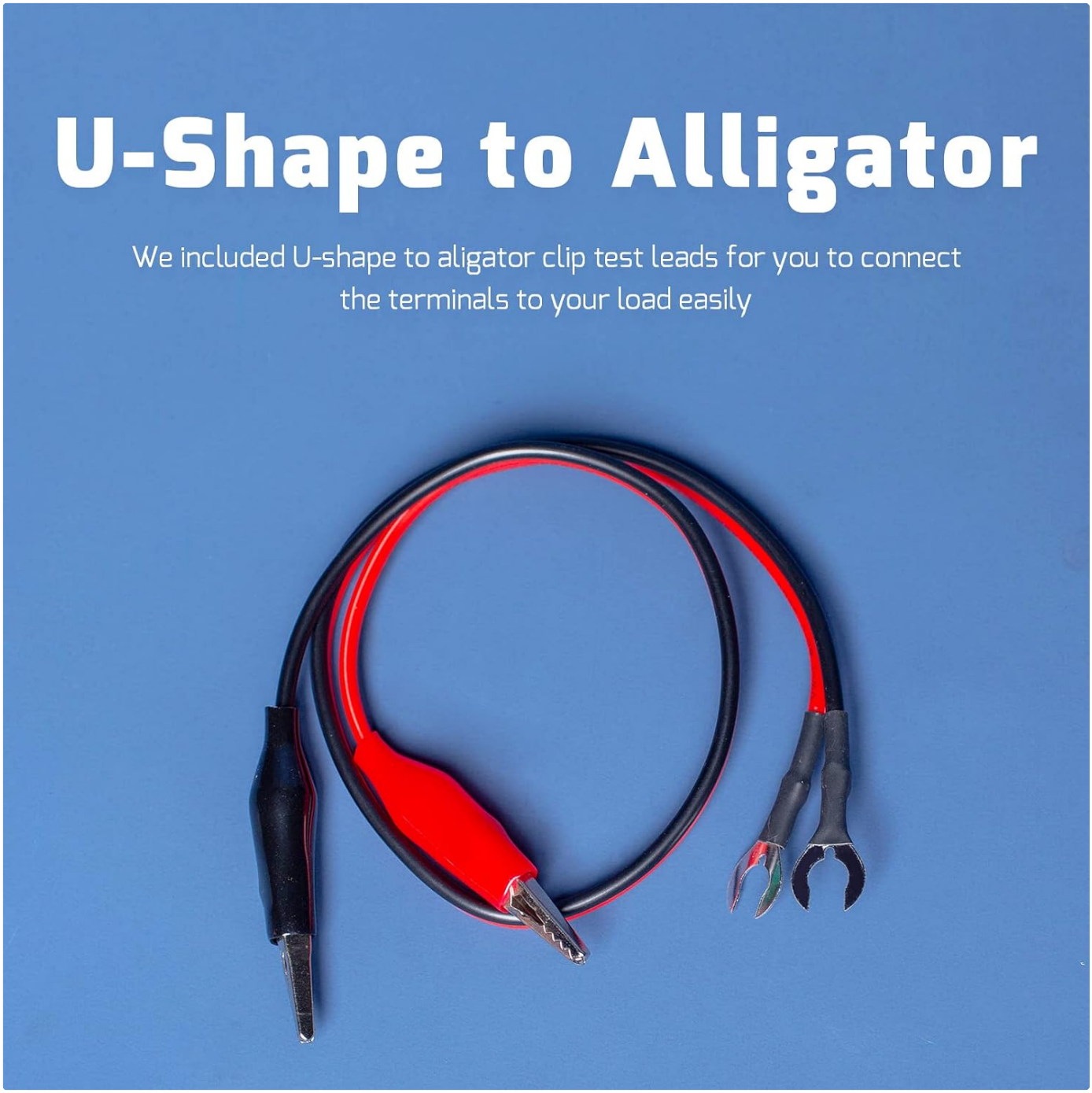


Figure 3.7: The power supply comes with U-shape to Alligator clip test leads for convenient and secure connections to various circuits and components.

4. Setup and Connection

1. **Unpacking:** Carefully remove the power supply and all accessories from the packaging.
2. **Placement:** Place the unit on a stable, flat surface with adequate ventilation around the rear cooling fan. Ensure it is not near any heat sources or in direct sunlight.
3. **Power Connection:** Connect the provided power cord to the AC input on the rear panel and then to a standard 110-127V AC power outlet. **Note: This product is rated for 110-127V USA specifications. Do not connect this unit to a 220V power socket.**
4. **Grounding:** Ensure the unit is properly grounded.
5. **Connecting Test Leads:** Insert the U-shape connectors of the test leads into the output terminals (red for positive, black for negative) on the front panel. Securely tighten the terminals.
6. **Connecting to Load:** Connect the alligator clips to your circuit or device. Always ensure correct polarity (+ to + and - to -) to prevent damage to your device or the power supply.

5. Operating Instructions

5.1 Powering On/Off

Press the power switch on the front panel to turn the unit ON or OFF. The digital display will illuminate upon power-on.

5.2 Adjusting Voltage and Current

1. **Voltage Adjustment:** Use the "VOLTAGE" digital rotary encoder knob to set the desired output voltage. Turn quickly for larger increments, or slowly for precise 0.01V adjustments.
2. **Current Adjustment:** Use the "CURRENT" digital rotary encoder knob to set the desired current limit. This acts as a maximum current threshold.
3. **Output ON/OFF:** Press the "OUTPUT ON/OFF" button to enable or disable the power output to your connected device. The green LED indicates output is ON.

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Video 5.1: Demonstration of adjusting voltage and current on the WEP 3005D-III DC Variable Power Supply. This video illustrates the precise control offered by the digital encoder knobs.

5.3 Constant Voltage (CV) and Constant Current (CC) Modes

The power supply automatically operates in either Constant Voltage (CV) or Constant Current (CC) mode:

- **Constant Voltage (CV):** When the load current is below the set current limit, the power supply maintains the set output voltage. The "C.V." indicator light will be green.
- **Constant Current (CC):** When the load current reaches the set current limit, the power supply automatically switches to Constant Current mode, maintaining the set current while the output voltage adjusts to the load. The "C.C." indicator light will be red.

6. Safety Features and Protections

- **Short-Circuit Protection (SCP):** If a short circuit is detected, the power supply will cut power, display "ScP" on the screen, and emit a warning beep to protect the unit and connected load.
- **Overload Protection (CC/CV Mode):** The unit prevents accidental overload by operating within its set current and voltage limits. If an overload condition occurs, it will enter protection mode.
- **Overheat Protection:** The internal cooling fan automatically activates to maintain optimal operating temperature. If the unit detects overheating, it will cut power and enter protection mode.

7. Applications

The WEP 3005D-III is versatile and suitable for a wide range of applications:

- **Anodizing and Electroplating:** Precise current and voltage control makes it ideal for these chemical processes.
- **Arduino and Raspberry Pi Projects:** Safely power and test microcontrollers and associated components.
- **Breadboard Circuits:** Provide stable power for prototyping and experimentation.
- **Battery Charging:** Charge various battery types with controlled voltage and current.
- **Electronic Device Testing:** Troubleshoot and test a variety of electronic devices and components.

7.1 Electroplating Example

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Video 7.1: An illustration of the WEP 3005D-III being used for an electroplating application, demonstrating its stable output for precise

chemical processes.

8. Maintenance

- **Cleaning:** Regularly wipe the exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Ventilation:** Ensure the cooling fan and ventilation openings are free from dust and obstructions.
- **Storage:** Store the unit in a cool, dry place when not in use.
- **Fuse Replacement:** If the unit does not power on, check and replace the fuse located on the rear panel if necessary. Always use a fuse of the correct rating.

9. Troubleshooting

Problem	Possible Cause	Solution
Unit does not power on.	No power from outlet; Blown fuse; Power cord not connected.	Check power outlet; Replace fuse; Ensure power cord is securely connected.
"ScP" displayed / Warning beep.	Short circuit detected in the connected load.	Disconnect load, identify and fix the short circuit, then reconnect.
"OVER." displayed.	Overload condition or overheating.	Reduce load or allow unit to cool down. Ensure proper ventilation.
Output voltage/current is unstable.	Poor connection; Load characteristics changing rapidly.	Check all connections; Ensure load is within specified limits.
Cooling fan is constantly running.	Normal operation under heavy load or high ambient temperature.	This is normal. Ensure adequate ventilation.
Voltage reading inaccurate below 3V.	Known characteristic for very low voltage outputs.	Use an external multimeter for precise readings below 3V if critical.
Unit unstable near high-voltage discharge.	Interference from strong RF energy.	Operate the power supply away from sources of high-voltage discharge or strong electromagnetic interference.

10. Specifications

Parameter	Value
Model Number	WEP 3005D-III
Output Voltage	0-30.00V (Adjustable)
Output Current	0-5.0000A (Adjustable)
Output Power	150W Max
Voltage Reading Precision	0.01V (10mV)
Current Reading Precision	0.0001A (0.1mA)

Parameter	Value
Power Reading Precision	0.1W
Input Voltage	110-127V AC (USA Specific)
Product Dimensions (L x W x H)	7.68 x 2.76 x 6.18 inches
Item Weight	3.59 Pounds
Connector Type	Alligator Clips, Banana Jack
Manufacturer	Guangzhou Yihua Electronic Equipment Co., Ltd.
Country of Origin	China

11. Warranty and Support

This WEP DC power supply is covered by an exclusive 1-year USA technical support. For assistance, please contact our dedicated support team. We offer 24-hour assistance to address any queries or issues you may encounter.
For further support or warranty claims, please refer to the contact information provided with your purchase or visit the official WEP website.

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Example: How do I reset this device or fix this error?

Details

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