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› LONGWEI K3010D DC Power Supply User Manual

LONGWEI K3010D

LONGWEI K3010D DC Power Supply User Manual

Model: K3010D

1. INTRODUCTION AND OVERVIEW

The LONGWEI K3010D is a professional-grade variable DC power supply designed for precision applications in laboratories, schools, home electronics repair, DIY projects, and aging tests. It features a high-resolution 4-digit LED display for accurate voltage and current readings, visible even in low-light conditions. This power supply offers adjustable output from 0-30V and 0-10A, making it versatile for various electrical and electronic tasks.



Figure 1.1: Front view of the LONGWEI K3010D DC Power Supply with test leads.

Various Application, Easy Operation



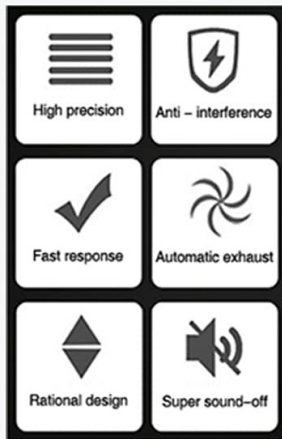
Figure 1.2: The power supply integrated into a laboratory setup, demonstrating its application in electronic testing.

2. SAFETY INSTRUCTIONS

Safety is paramount when operating any electrical equipment. This power supply incorporates essential safety features including limited flow protection, overpower protection, over-temperature protection, and voltage overload protection. Always adhere to the following guidelines:

- Ensure the grounding wire is properly connected before operation.
- Do not exceed the maximum rated voltage (30V) or current (10A) of the device.
- Avoid blocking the ventilation openings to ensure proper heat dissipation.
- Operate the device in a dry, well-ventilated area, away from flammable materials.
- In case of abnormal operation, immediately disconnect power and consult the troubleshooting section or contact support.

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Over Temperature Protection ◀
Over Current Protection ◀
Over Power Protection ◀

Figure 2.1: Internal components of the power supply, highlighting robust design for protection.

3. PRODUCT FEATURES

The K3010D power supply is engineered with several key features to enhance performance and user experience:

- **High Precision 4-Digit LED Display:** Provides accurate readings of voltage (0.01V resolution) and current (0.01A resolution), ensuring precise control over your experiments and repairs.
- **Adjustable Output:** Easily tune voltage from 0-30V and current from 0-10A.

- **Excellent Heat Dissipation:** Equipped with an intelligent temperature-controlled fan and multiple heat radiation grooves. The fan activates automatically when the internal temperature reaches a certain threshold, reducing noise and prolonging product lifespan.
- **Compact Design:** Weighing less than 2kg and measuring approximately 2.7 x 8.6 x 6.3 inches, it is highly portable and space-efficient for various work environments.

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Figure 3.1: Front panel features including the digital display, voltage and current adjustment knobs, and output terminals.

4. PACKAGE CONTENTS

Upon unpacking, please verify that all the following items are included:

- 1 x LONGWEI K3010D DC Power Supply
- 1 x Output Power Cord (with alligator clips)
- 1 x Input Power Cord
- 1 x Test Probes
- 1 x User Manual



Figure 4.1: All items included in the product package.

5. SETUP

Follow these steps to set up your DC power supply:

1. **Placement:** Place the power supply on a stable, flat surface with adequate ventilation around the unit. Ensure the rear fan is not obstructed.
2. **Power Connection:** Connect the provided input power cord to the power input socket on the rear of the unit and then to a suitable AC power outlet.
3. **Grounding:** Connect the grounding terminal (GND, typically yellow) on the front panel to a reliable ground source using the appropriate cable.
4. **Output Connection:** Connect the red output power cord to the positive (+) terminal and the black output power cord to the negative (-) terminal. Attach the alligator clips or test probes to the other end of these cords, ready for connection to your load.



Figure 5.1: Labeled components on the front and rear panels for proper connection.

6. OPERATING INSTRUCTIONS

Operating the LONGWEI K3010D is straightforward:

1. **Power On:** Press the 'On/Off' button on the front panel to power on the unit. The LED display will illuminate.
2. **Adjust Voltage:** Use the 'Voltage' knob to set the desired output voltage. The 4-digit display will show the precise voltage.
3. **Adjust Current:** Use the 'Current' knob to set the desired current limit. This acts as a safety feature, preventing excessive current draw by the connected device.
4. **Connect Load:** Once voltage and current are set, connect your device or circuit to the output terminals using the test leads.
5. **Monitor Output:** The display will show the real-time voltage and current being supplied to your load. The 'C.V' (Constant Voltage) and 'C.C' (Constant Current) indicators will show the operating mode.

Video 6.1: Demonstration of setting voltage and current, and connecting an LED strip as a load.

Note: When setting the current limit, it is often recommended to short the output leads (briefly and safely) and adjust the current knob to the desired maximum current. Then, remove the short and connect your load. The unit will then limit the current to this preset value if the load attempts to draw more.

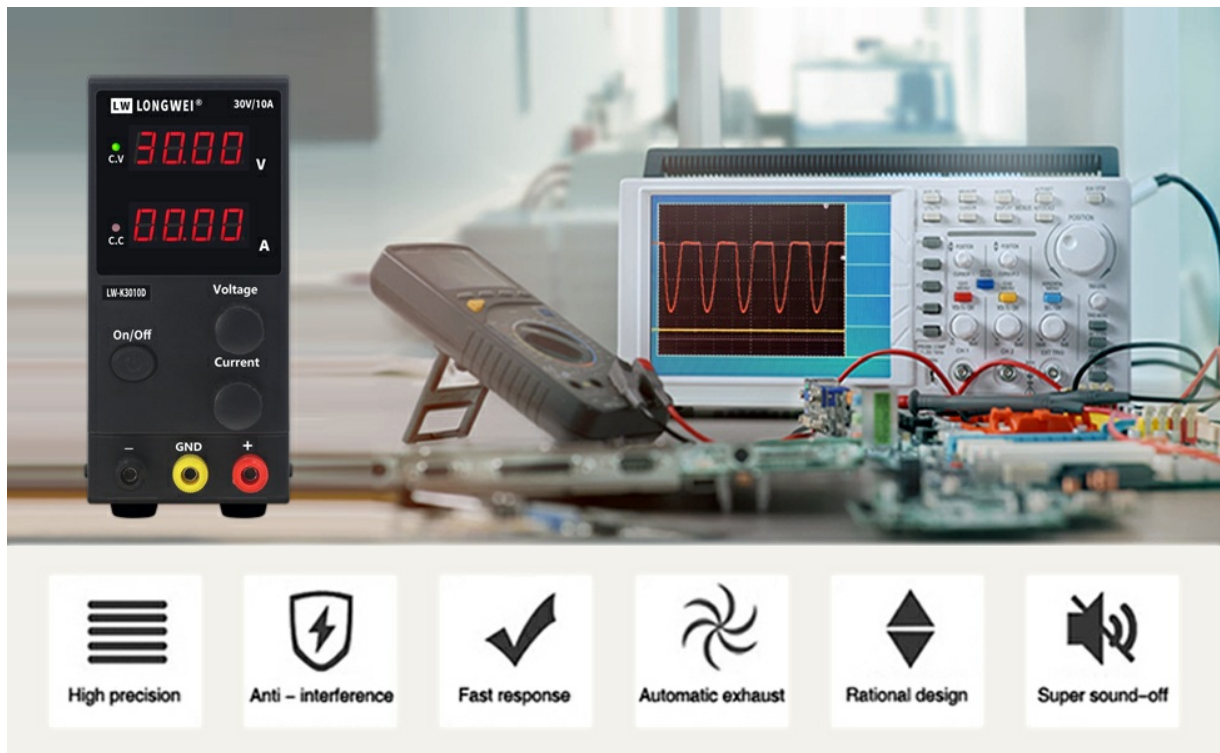


Figure 6.1: Examples of common applications for the power supply.

7. MAINTENANCE

To ensure the longevity and optimal performance of your LONGWEI K3010D DC Power Supply, follow these maintenance guidelines:

- **Cleaning:** Regularly wipe the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure no liquids enter the device.
- **Ventilation:** Periodically check that the cooling fan and ventilation openings are free from dust and debris. Use compressed air to clear any blockages if necessary.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Cable Inspection:** Inspect power cords and test leads regularly for any signs of damage, fraying, or exposed wires. Replace damaged cables immediately.

8. TROUBLESHOOTING

If you encounter issues with your power supply, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No power/Display off	Power cord disconnected, power switch off, blown fuse.	Check power cord connection. Ensure 'On/Off' switch is pressed. Check and replace fuse if necessary (refer to specifications for fuse type).
No output voltage/current	Output terminals not connected, voltage/current knobs set to zero, protection activated.	Ensure test leads are securely connected. Adjust voltage/current knobs to desired values. Check for OVP/OCP indicators on display; disconnect load and reset if protection is active.
Fan not running	Normal operation (temperature below threshold), fan malfunction.	The fan is temperature-controlled and only runs when needed. If the unit is hot and the fan is not running, contact support.

Problem	Possible Cause	Solution
Inaccurate readings	Loose connections, faulty test leads, external interference.	Check all connections. Try different test leads. Ensure the unit is not near strong electromagnetic fields.

If the problem persists after attempting these solutions, please contact LONGWEI customer support.

9. SPECIFICATIONS

Detailed technical specifications for the LONGWEI K3010D DC Power Supply:

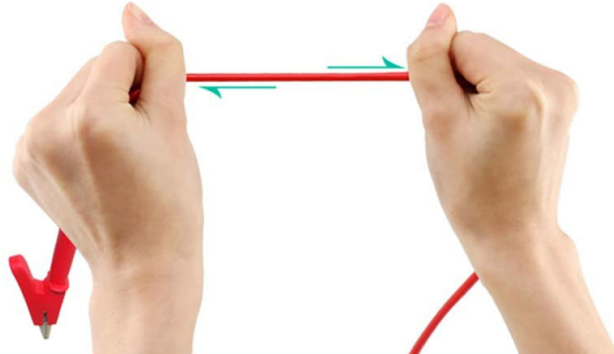
- **Model Number:** K3010D
- **Brand:** LONGWEI
- **Input Voltage:** 2.4E+2 Volts (AC) (Typically 110V/220V switchable, check rear panel)
- **Output Voltage:** 0-30V DC (Adjustable)
- **Output Current:** 0-10A (Adjustable)
- **Display:** 4-Digit LED (Voltage, Current)
- **Voltage Resolution:** 0.01V
- **Current Resolution:** 0.01A
- **Product Dimensions:** 8.66 x 2.76 x 6.3 inches
- **Weight:** 3.95 Pounds (approx. 1.8 kg)
- **Manufacturer:** LongWei Ltd.
- **First Available Date:** January 1, 2019
- **Connector Type:** Barrel Connector (for output leads)
- **Safety Protections:** Limited Flow Protection, Overpower Protection, Over Temperature Protection, Voltage Overload Protection

Weight: 1.33kg



FLEXIBLE & TENSILE RESISTANCE

High quality insulated wire, Pull resistant, Longer service life



	LONGWEI	VS	NA
Photos:			
Banana Plug Size:	Banana Plug Tip Length: 16mm Banana Plug Overall Length: 51mm		NA
Clip Copper Sheet Thickness:	0.5mm; Clip overall Length: 55mm		NA
Cable Conductor Wire Size:	50pcs of Dia. 0.15mm Copper Wire, 18AWG, super flexible		40pcs of Dia. 0.1mm Copper Wire, 22AWG
Cable Outside:	4.0mm		2.8mm
Max. Current:	15A		5A

Figure 9.1: Product dimensions and cable specifications.

10. WARRANTY AND SUPPORT

LONGWEI is committed to providing high-quality products and excellent customer service. Your K3010D DC Power Supply comes with:

- **12-Month After-Sale Service:** Comprehensive support for one year from the date of purchase.
- **Lifetime Technical Support:** Assistance with any technical queries or operational issues throughout the product's lifespan.
- **30 Days Free of Return:** Risk-free return policy within 30 days of purchase.

For any concerns or technical assistance, please feel free to contact LONGWEI Instruments Co.,LTD. We aim to reply and resolve your problem within 24 hours.