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RUZIZAO 768351109703

RUZIZAO Dual Channel DC Lab Power Supply

Model: 768351109703 - User Manual

1. Introduction

The RUZIZAO Dual Channel DC Lab Power Supply is a versatile instrument designed for various laboratory, educational, and repair applications. This 4-in-1 unit provides two independent 60V 5A outputs, which can be configured for higher voltage (120V 5A in series mode) or higher current (60V 10A in parallel mode). It features precise encoder adjustment for voltage and current, ensuring accurate control for your experiments and projects.



Figure 1: The RUZIZAO 4-in-1 Dual Channel DC Lab Power Supply, highlighting its independent dual-channel capabilities.

2. Safety Precautions

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

- Always connect the power supply to a grounded electrical outlet.

- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation around the unit to prevent overheating.
- Before making any connections or disconnections, ensure the power supply is turned off and disconnected from the main power source.
- **Warning:** When switching from no-load to short-circuit conditions, large capacitors within the unit may discharge, potentially leading to significantly higher short-circuit currents than the set limit. Exercise caution during experimentation, especially with sensitive circuits.
- Do not attempt to open or repair the unit yourself. Refer all servicing to qualified personnel.

3. Product Overview and Components

The RUZIZAO Dual Channel DC Lab Power Supply features a clear digital display and intuitive controls for ease of use.



Figure 2: Front view of the RUZIZAO Dual Channel DC Lab Power Supply.

3.1 Front Panel Layout



Figure 3: Detailed diagram of the power supply's front panel, indicating controls and displays.

1. **CH1 Voltage Display:** Shows output voltage for Channel 1.
2. **CH1 Current Display:** Shows output current for Channel 1.
3. **CH1 Power Display:** Shows output power for Channel 1.
4. **CH2 Voltage Display:** Shows output voltage for Channel 2.
5. **CH2 Current Display:** Shows output current for Channel 2.
6. **CH2 Power Display:** Shows output power for Channel 2.
7. **Current Adjustment Knobs (CH1/CH2):** Rotary encoders for setting output current.
8. **Voltage Adjustment Knobs (CH1/CH2):** Rotary encoders for setting output voltage.
9. **Power Switch:** Turns the unit on/off.
10. **Mode Buttons (INDEP/SER/PAR):** Selects independent, series, or parallel operation mode.
11. **USB 5V/2A Output:** Provides a fixed 5V, 2A USB power output.
12. **Output Terminals (CH1/CH2):** Positive and negative terminals for Channel 1 and Channel 2.
13. **Series/Parallel Output Terminals:** Combined positive and negative terminals for series or parallel mode.

3.2 Package Contents

Upon unpacking, verify that all items are present:

- 1 x RUZIZAO Dual Channel DC Lab Power Supply
- 1 x Power Cable
- 1 x English User Manual
- 2 x Output Cables (low power)

4. Setup

Follow these steps for initial setup:

1. **Placement:** Place the power supply on a stable, level surface with adequate ventilation. Ensure no objects block the cooling vents on the sides and rear of the unit.
2. **Power Connection:** Connect the provided power cable to the AC input on the rear of the unit and then to a grounded electrical outlet.
3. **Initial Power On:** Press the Power Switch on the front panel. The display should illuminate, indicating the unit is operational.
4. **Output Connections:** Depending on your application, connect your load to the appropriate output terminals (CH1, CH2, or SER/PAR) using the provided cables or suitable laboratory leads. Ensure correct polarity.

5. Operating Instructions

The power supply offers three main operating modes: Independent, Series, and Parallel.

5.1 Encoder Adjustment

The voltage and current are adjusted using rotary encoder knobs. This allows for precise setting of values.



Figure 4: Encoder knob operation. Press to select a digit, rotate to change its value.

- **To Adjust:** Press the desired Voltage or Current knob to select the digit you wish to change. The selected digit will typically blink or be highlighted.
- **Change Value:** Rotate the knob clockwise to increase the value or counter-clockwise to decrease it.
- **Fine Adjustment:** You can move between digits (e.g., from units to tenths, or tens to units) by pressing the knob again. This allows for fine-tuning of the output.

5.2 Independent Mode (INDEP)

In INDEP mode, Channel 1 (CH1) and Channel 2 (CH2) operate as two separate power supplies, each with its own adjustable voltage and current limits.



Figure 5: The power supply operating in independent mode, with separate voltage and current settings for Channel 1 and Channel 2.

1. Press the **INDEP** button. The indicator light for INDEP will illuminate.
2. Use the CH1 Voltage and Current knobs to set the desired output for Channel 1.
3. Use the CH2 Voltage and Current knobs to set the desired output for Channel 2.
4. Connect your loads to the respective CH1 and CH2 output terminals.

5.3 Series Mode (SER)

In SER mode, the two channels are connected in series, effectively doubling the voltage while maintaining the current of a single channel. This configuration provides a 120V 5A output.



Figure 6: Illustration of the power supply configured for series mode (left) and parallel mode (right).

1. Press the **SER** button. The indicator light for SER will illuminate.
2. The unit will automatically configure for series operation. The display will show the combined voltage and current.
3. Adjust the voltage and current using the CH1 or CH2 knobs (they will typically control the combined output).
4. Connect your load to the SER/PAR output terminals.

5.4 Parallel Mode (PAR)

In PAR mode, the two channels are connected in parallel, effectively doubling the current while maintaining the voltage of a single channel. This configuration provides a 60V 10A output.

1. Press the **PAR** button. The indicator light for PAR will illuminate.
2. The unit will automatically configure for parallel operation. The display will show the combined voltage and current.
3. Adjust the voltage and current using the CH1 or CH2 knobs (they will typically control the combined output).
4. Connect your load to the SER/PAR output terminals.

6. Maintenance

Proper maintenance ensures the longevity and reliable operation of your power supply.

- **Cleaning:** Regularly clean the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure no liquids enter the unit.
- **Ventilation:** Keep the cooling vents clear of dust and obstructions. The unit is equipped with two temperature-controlled cooling fans that activate as needed to maintain optimal operating temperature.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry environment, away from direct sunlight

and extreme temperatures.

- **Over Current Protection (OCP):** The unit features OCP to prevent damage from excessive current draw. If OCP activates, disconnect the load, identify and resolve the issue, then reset the power supply.

7. Troubleshooting

If you encounter issues with your power supply, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power/Display off	Power cable disconnected, power switch off, faulty outlet.	Check power cable connection, ensure power switch is ON, test outlet with another device.
No output voltage/current	Output terminals not connected, voltage/current set to zero, OCP activated.	Verify load connections, adjust voltage/current settings, check for OCP activation and reset.
Unstable output	Loose connections, faulty load, internal issue.	Check all cable connections, test with a different load. If problem persists, contact support.
High fan noise	Normal operation under heavy load, obstructed vents.	Ensure vents are clear. Fan noise is normal when the unit is working hard to dissipate heat.
Critical Warning: Unexpected high short-circuit current	Internal capacitor discharge during sudden short-circuit.	Be extremely cautious when testing circuits that may experience sudden short-circuits. The initial current surge can exceed set limits. Consider using external current limiting or specialized power supplies for such applications.

8. Specifications

Key technical specifications for the RUZIZAO Dual Channel DC Lab Power Supply:

Feature	Specification
Model Number	768351109703
Input Voltage	120 Volts (AC)
Output Voltage (Independent)	0-60 Volts (DC) per channel
Output Current (Independent)	0-5 Amperes per channel
Output Power (Independent)	300 Watts (nominal)
Output Voltage (Series Mode)	0-120 Volts (DC)
Output Current (Series Mode)	0-5 Amperes
Output Voltage (Parallel Mode)	0-60 Volts (DC)
Output Current (Parallel Mode)	0-10 Amperes

Feature	Specification
Maximum Power (Combined)	600 Watts
Display Accuracy	0.01V, 0.01A
Material	Aluminum
Dimensions (Package)	39 x 22 x 18 cm
Weight (Package)	2.5 kilograms
Certifications	CE, FCC

9. Warranty and Support

RUZIZAO is committed to providing quality products and customer satisfaction.

- **Warranty:** This product comes with a standard manufacturer's warranty. Please refer to your purchase documentation for specific warranty terms and duration.
- **Technical Support:** If you have any questions, encounter issues, or require technical assistance with your RUZIZAO DC Lab Power Supply, please contact our customer support team. We aim to respond to all inquiries within 24 hours.
- **Contact Information:** Refer to the contact details provided with your purchase or on the official RUZIZAO website.

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