Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

RUZIZAO SPS305 Black

RUZIZAO DC Power Supply Variable 30V 5A (Model SPS305 Black) User Manual

Comprehensive instructions for safe and efficient operation.

1. Introduction

Thank you for choosing the RUZIZAO DC Power Supply Variable 30V 5A (Model SPS305 Black). This professional power supply regulator offers high accuracy, low ripple, and a backlit 4-digit LED display for clear readings. It features automatic switching between Constant Voltage (C.V) and Constant Current (C.C) modes, making it suitable for a wide range of applications including LiFePO4 battery charging, Arduino projects, laboratories, electronic maintenance, and DIY tasks.



Figure 1: RUZIZAO DC Power Supply Variable 30V 5A, Model SPS305 Black.

This manual provides detailed instructions for the safe and effective use of your power supply. Please read it thoroughly before operation and retain it for future reference.

2. Product Overview: Controls and Display

Familiarize yourself with the various components and controls of your RUZIZAO DC Power Supply.



Figure 2: Front Panel Layout and Functions.

- **Voltage Display:** Shows the output voltage in Volts (V).
- **Current Display:** Shows the output current in Amperes (A).
- **Power Display:** Shows the output power in Watts (W).
- **Constant Voltage (C.V) Indicator:** Illuminates when the unit is operating in Constant Voltage mode.
- **Constant Current (C.C) Indicator:** Illuminates when the unit is operating in Constant Current mode.
- **Coarse Voltage Knob:** For large adjustments of the output voltage.
- **Fine Voltage Knob:** For precise adjustments of the output voltage.
- **Coarse Current Knob:** For large adjustments of the output current limit.
- **Fine Current Knob:** For precise adjustments of the output current limit.
- **USB Interface (5V/2A):** Provides a fixed 5V, 2A output for charging compatible devices.
- **Output Negative (-) Terminal:** Connects to the negative terminal of your load.
- **GND Terminal:** Ground connection.
- **Output Positive (+) Terminal:** Connects to the positive terminal of your load.



Figure 3: Rear Panel with Cooling Fan and Fuse Holder.

- **Power Switch:** Turns the unit ON/OFF.
- **AC Input Socket:** Connects to the main power supply using the provided input power cord.
- **Intelligent Cooling Fan:** Activates automatically when the internal temperature exceeds 50°C (122°F) to dissipate heat.
- **Spare Fuse Compartment:** Contains a spare fuse for replacement.

3. Setup

Follow these steps to set up your DC power supply for initial use.

1. **Unpacking:** Carefully remove the power supply and all accessories from the packaging. Verify that all components are present: DC Power Supply unit, Output Power Cord, Input Power Cord, and User Manual.
2. **Placement:** Place the power supply on a stable, flat surface with adequate ventilation. Ensure that the cooling fan on the rear panel is not obstructed.

3. **Power Connection:**
    - Ensure the power switch on the rear panel is in the OFF position.
    - Connect the provided input power cord to the AC Input Socket on the rear of the unit.
    - Plug the other end of the input power cord into a suitable AC power outlet.
4. **Output Connection (Initial Check):** Before connecting any load, it is recommended to perform an initial power-on check without a load.

4. Operating Instructions

4.1 Powering On and Initial Adjustment

1. Turn the power switch on the rear panel to the ON position. The LED display will illuminate, showing the current voltage, current, and power readings.
2. Before connecting your load, set the desired voltage and current limit.
    - **Voltage Adjustment:** Use the **Coarse Voltage** knob for significant changes and the **Fine Voltage** knob for precise adjustments. Rotate clockwise to increase, counter-clockwise to decrease.
    - **Current Adjustment:** Use the **Coarse Current** knob to set the approximate current limit and the **Fine Current** knob for precise adjustments. Rotate clockwise to increase, counter-clockwise to decrease.
3. It is recommended to set the current limit slightly higher than the expected operating current of your load to prevent accidental current limiting during normal operation, unless a specific current limit is required.



Figure 4: Coarse and Fine Adjustment Knobs for precise control.

4.2 Connecting a Load

1. Ensure the power supply is OFF or the output is disabled (if applicable, this model does not have a separate output enable button, so ensure voltage/current are set to minimum or desired safe values before connecting).
2. Connect the positive (+) terminal of your load to the Output Positive (+) terminal on the power supply using the red output power cord.
3. Connect the negative (-) terminal of your load to the Output Negative (-) terminal on the power supply using the black output power cord.
4. If grounding is required, connect the GND terminal to your system's ground.
5. Once the load is connected, turn on the power supply and adjust the voltage and current as needed. Observe the C.V/C.C indicators to understand the operating mode.

4.3 Constant Voltage (C.V) and Constant Current (C.C) Modes

The RUIZIZAO DC Power Supply automatically switches between Constant Voltage (C.V) and Constant Current (C.C)

modes depending on the load and your settings.

- **Constant Voltage (C.V) Mode:** When the load resistance is high, the output current is less than the set current limit. The power supply maintains the set output voltage, and the C.V indicator will be lit.
- **Constant Current (C.C) Mode:** When the load resistance is low, the output current reaches the set current limit. The power supply limits the output current to the set value, and the output voltage will drop. The C.C indicator will be lit.



Figure 5: Automatic Switching between C.V and C.C Modes.

4.4 Using the 5V/2A USB Port

The power supply includes a convenient 5V/2A USB port on the front panel.

1. Connect your mobile phone, tablet, or other compatible USB device to the 5V/2A USB port using a standard USB cable.
2. The USB port provides a fixed 5V output with a maximum current of 2A, independent of the main DC output settings.



Figure 6: Charging a device using the 5V/2A USB port.

5. Safety Features

The RUIZIZAO DC Power Supply is designed with multiple safety protections and holds CE & FCC certifications to ensure safe operation.



Figure 7: Multiple Security Protections.

- **Overvoltage Protection (OVP):** Protects the connected load from excessive voltage.
- **Overcurrent Protection (OCP):** Limits the output current to prevent damage to the load or power supply.
- **Overheating Protection (OTP):** Shuts down the unit if internal temperatures become too high.
- **Over Power Protection (OPP):** Prevents the unit from exceeding its maximum power output.
- **Short Circuit Protection (SCP):** Protects against damage in case of a short circuit at the output terminals.
- **Leakage Protection:** Provides additional safety against electrical leakage.



Figure 8: CE, FCC, and RoHS Certifications.

6. Maintenance

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

- **Cleaning:** Disconnect the power supply from the mains before cleaning. Use a soft, dry cloth to wipe the exterior. Do not use liquid cleaners or solvents.
- **Ventilation:** Ensure the ventilation openings on the sides and rear of the unit are kept clear of dust and obstructions. The intelligent cooling fan will activate automatically when the internal temperature exceeds 50°C (122°F) to maintain optimal operating temperature and prolong equipment life.
- **Fuse Replacement:** The unit is equipped with a spare fuse. If the power supply fails to turn on, check the fuse located in the compartment next to the AC input socket on the rear panel. Replace it with a fuse of the same type and rating if necessary.



Figure 9: Intelligent Cooling Fan and Spare Fuse Access.

7. Troubleshooting

If you encounter issues with your RUZIZAO DC Power Supply, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
No power/Unit does not turn on.	◦ Power cord not properly connected. ◦ Power outlet malfunction. ◦ Blown fuse.	◦ Check power cord connections at both the unit and the wall outlet. ◦ Test the power outlet with another device. ◦ Replace the fuse with a spare fuse of the same rating (refer to Section 6. Maintenance).

Problem	Possible Cause	Solution
Output voltage/current is unstable or incorrect.	◦ Loose output connections. ◦ Load impedance fluctuations. ◦ Knobs not set precisely.	◦ Ensure output cables are securely connected to both the power supply and the load. ◦ Verify the load is stable. ◦ Use the fine adjustment knobs for precise setting of voltage and current. Note that the knobs can be sensitive.
Unit enters Constant Current (C.C) mode unexpectedly.	◦ Load drawing more current than the set limit. ◦ Short circuit in the load.	◦ Increase the current limit using the current adjustment knobs. ◦ Check your load for any short circuits or excessive current draw.
Cooling fan runs frequently or loudly.	◦ High ambient temperature. ◦ Heavy load causing internal heating. ◦ Obstructed ventilation.	◦ Ensure the unit is in a well-ventilated area. ◦ Reduce the load if possible. ◦ Check for and clear any obstructions around the fan and vents.

8. Specifications

Key technical specifications for the RUZIZAO DC Power Supply Variable 30V 5A (Model SPS305 Black).

Feature	Specification
Model Name	RUZIZAO DC Power Supply Variable: 30V 5A
Model Number	SPS305 Black
Brand	RUZIZAO
Output Voltage	0-30V (Adjustable)
Output Current	0-5A (Adjustable)
Output Wattage	150 Watts
USB Output	5V/2A
Display	4-Digits LED Display (Voltage, Current, Power)
Voltage Accuracy	0.01V
Current Accuracy	0.001A
Cooling Method	Intelligent Air Cooling Fan (activates > 50°C / 122°F)
Item Weight	1.2 Kilograms
Dimensions (approx.)	24 x 8.5 x 15.5 cm
Certifications	CE, FCC

Feature	Specification
Connector Type	Banana Jack (Output)
Minimum Input Voltage	207 Volts
Maximum Input Voltage	253 Volts

9. Warranty and Support

RUZIZAO is committed to providing high-quality products and customer satisfaction.

- **Quality Assurance:** All DC power supplies and accessories undergo inspection before shipment to ensure product quality.
- **Customer Service:** If you have any questions or concerns regarding your RUZIZAO DC Power Supply, please contact customer support. We aim to respond within 24 hours.
- **Included Components:** The package includes:
  - DC Power Supply x 1
  - Output Power Cord x 1
  - Input Power Cord x 1
  - User Manual x 1

© 2026 RUZIZAO. All rights reserved.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

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

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

Open the live page

https://manuals.plus/asin/B09H7D1FDS

More documents and user manuals: **https://manuals.plus/**