NJBVRS 1502D

NJBVRS 1502D DC Regulated Power Supply User Manual

1. Introduction and Safety Information

This manual provides essential instructions for the safe and effective operation, maintenance, and troubleshooting of your NJBVRS 1502D DC Regulated Power Supply. Please read this manual thoroughly before using the device and retain it for future reference.

1.1 Safety Precautions

- Always connect the power supply to a grounded outlet.
- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation to prevent overheating. Do not block ventilation openings.
- Do not open the casing of the power supply. Refer all servicing to qualified personnel.
- Verify the input voltage matches your local power supply before connecting.
- Disconnect power before making any connections or disconnections to the output terminals.

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2. Product Overview

The NJBVRS 1502D is a DC regulated power supply designed for precise voltage and current control, featuring a digital display and advanced protection mechanisms. It is suitable for various laboratory, educational, and repair applications.

2.1 Key Features

- Precise Voltage and Current Control: Coarse and fine tuning for accurate output adjustments.
- Intelligent Temperature Control: Fan speed adjusts based on load, reducing noise and extending lifespan.

- Portable and Sturdy Build: Designed for easy handling and durability.
- Advanced Protection Features: Includes Overvoltage Protection (OVP), Short Circuit Protection (OCP), and Over Temperature Protection.
- High Efficiency Circuit Design: PWM switch pre-stabilization and MOS linear adjustment for energy-saving performance.

2.2 Front Panel Components

The front panel provides all controls and indicators for operating the power supply.

This image shows the front panel of the NJBVRS 1502D DC Regulated Power Supply, highlighting the power switch, current regulation knobs (coarse and fine), voltage regulation knobs (coarse and fine), and output terminals (GND, positive, negative). The digital display for current and voltage is also visible.

1. **Power Switch:** Turns the unit on or off.
2. **Current Regulation Knobs (0.6A, 2A, ON/OFF):** Selects the current range and enables/disables current output.
3. **Voltage Fixed Gear Knobs (1.5V, 3.6V, 4.8V, 6V, 7.2V, 0-15V):**Selects preset voltage outputs or the adjustable range.

4. **Voltage Coarse Adjustment Knob:** For large adjustments of the output voltage.
5. **Voltage Fine Adjustment Knob:** For precise, small adjustments of the output voltage.
6. **Current Display:** Digital readout for the output current in Amperes (A).
7. **Voltage Display:** Digital readout for the output voltage in Volts (V).
8. **Output Terminals:** Red (+) for positive, Black (-) for negative, Yellow (GND) for ground connection.

The digital display of the NJBVRS 1502D DC Regulated Power Supply, showing the current output in Amperes (A) on the left and the voltage output in Volts (V) on the right. This display provides precise readings of the output parameters.

3. Setup

3.1 Unpacking

Carefully remove the power supply and all accessories from the packaging. Inspect the unit for any signs of damage during transit. If any damage is found, contact your supplier immediately.

3.2 Placement

Place the power supply on a stable, level surface. Ensure there is adequate space around the unit for proper ventilation, especially around the rear fan opening. Avoid placing it near heat sources or in direct sunlight.

3.3 Power Connection

1. Ensure the power switch on the front panel is in the 'OFF' position.
2. Connect the provided power cord to the AC input socket on the rear of the power supply.
3. Plug the other end of the power cord into a grounded electrical outlet.

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4. Operating Instructions

4.1 Powering On and Initial Check

1. Ensure no load is connected to the output terminals.
2. Turn the power switch to the 'ON' position. The digital displays should illuminate.
3. Set the voltage fixed gear to '0-15V' for adjustable output.
4. Adjust the Voltage Coarse and Fine knobs to set the desired output voltage.
5. Adjust the Current Regulation knob to the desired current limit (e.g., 2A).

4.2 Connecting a Load

1. With the power supply still on, ensure the output voltage and current limit are set to appropriate values for your load.
2. Connect the positive (+) terminal of your load to the red (+) output terminal of the power supply.
3. Connect the negative (-) terminal of your load to the black (-) output terminal of the power supply.
4. If grounding is required for your application, connect the yellow (GND) terminal to the appropriate ground point.

4.3 Adjusting Output Voltage and Current

- **Voltage Adjustment:** Use the **Voltage Coarse** knob for large changes and the **Voltage Fine** knob for precise adjustments. The digital display will show the set voltage.
- **Current Limit Adjustment:** The **Current Regulation** knob sets the maximum output current. When the load draws current exceeding this limit, the power supply will enter constant current (CC) mode, and the output voltage will drop to maintain the set current.
- **Fixed Voltage Output:** For specific applications, you can select one of the fixed voltage outputs (1.5V, 3.6V, 4.8V, 6V, 7.2V) using the **Voltage Fixed Gear** knob.

4.4 Protection Features

The power supply is equipped with:

- **Overvoltage Protection (OVP):** Prevents damage to the load by limiting the output voltage.
- **Short Circuit Protection (OCP):** Automatically limits current in case of a short circuit at the output terminals.
- **Over Temperature Protection:** Shuts down the unit if internal temperatures exceed safe operating limits.

This model includes a warning buzzer that may activate under certain fault conditions, such as short circuits, to alert the user.

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5. Maintenance

5.1 Cleaning

Regularly clean the exterior of the power supply with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the ventilation openings are free from dust and debris to maintain proper airflow.

5.2 Fan Maintenance

The intelligent temperature control fan helps dissipate heat. Periodically check the fan intake and exhaust for obstructions. If the fan becomes excessively noisy or stops working, discontinue use and seek professional servicing.

5.3 Storage

When not in use for extended periods, store the power supply in a cool, dry, and dust-free environment. Disconnect it from the main power supply.

An illustration of the high-quality wiring used in the NJBVRS 1502D DC Regulated Power Supply, emphasizing the robust construction and connection cables for stable power transmission and long-term reliability.

6. 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 cord disconnected, power switch off, no AC power from outlet.	Check power cord connection, ensure power switch is ON, verify outlet power.
No output voltage/current	Output terminals not connected, current limit set too low, protection activated.	Ensure load is properly connected, increase current limit, check for short circuits.
Warning buzzer sounds	Short circuit detected, overcurrent condition.	Immediately disconnect the load and check for short circuits or excessive current draw.
Unit overheats, fan runs constantly	Blocked ventilation, prolonged high load operation.	Ensure clear ventilation, reduce load if possible, operate in a cooler environment.

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

7. Specifications

Parameter	Value
Output Voltage	DC 0-15V (Adjustable)
Output Current	0-2A (Adjustable)
Load Stability	0.01+2mV
Recovery Time	100 µs
Ripple Noise	1mVRms (effective value)
Short Circuit Protection	Yes
Beep Alarm	Yes (for warning conditions)
Main Body Size	18.5CM x 12.5CM x 15CM
Package Dimensions	12.99 x 9.84 x 7.87 inches
Item Weight	6.61 pounds
Model Number	1502D

8. Warranty and Support

For warranty information, technical support, or service inquiries, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase.