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VOLTCRAFT VLP-2403

Voltcraft VLP-2403 USB Adjustable Laboratory Power Supply Instruction Manual

Model: VLP-2403 (VC-8146860)

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Voltcraft VLP-2403 USB Adjustable Laboratory Power Supply. Please read this manual thoroughly before using the device and retain it for future reference. The Voltcraft VLP-2403 is a high-precision laboratory power supply designed for various applications requiring stable and adjustable DC voltage and current. It features two independent outputs, USB connectivity, and overvoltage protection.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to prevent injury or damage to the device:

- Ensure the power supply is connected to a grounded outlet.
- Do not operate the device in wet or damp conditions.
- Do not open the casing; refer servicing to qualified personnel.
- Avoid short-circuiting the output terminals.
- Verify voltage and current settings before connecting to a circuit.
- Keep ventilation openings clear to prevent overheating.

3. PRODUCT OVERVIEW AND COMPONENTS

Familiarize yourself with the main components of the Voltcraft VLP-2403 power supply.



Figure 1: Front Panel Overview

This image displays the front panel of the Voltcraft VLP-2403, showing the two main outputs (A and C) with their respective voltage and current displays, adjustment knobs, and output terminals. The central section features Output B-USB controls and USB ports. The power switch is located on the left.



Figure 2: Rear Panel Overview

This image shows the rear panel of the power supply, highlighting the cooling fins, product label, and the AC power input socket with its fuse holder. Proper ventilation is crucial for device operation.

Front Panel Controls:

- Power Switch:** Turns the unit on/off.
- Output A/C Displays:** Digital readouts for Voltage (V) and Current (A).
- Voltage Adjustment Knobs:** Fine and coarse adjustment for output voltage.
- Current Adjustment Knobs:** Fine and coarse adjustment for output current limit.
- Output Terminals:** Red (+) and Black (-) terminals for connecting loads.
- Output B-USB Section:** Controls and USB ports for dedicated USB power output.
- OVP (Overvoltage Protection) Adjustment:** Sets the overvoltage protection limit.

4. SETUP

4.1 Unpacking and Inspection

1. Carefully remove the power supply from its packaging.
2. Inspect the device for any signs of physical damage. If damage is found, do not operate the unit and contact your supplier.
3. Ensure all accessories (e.g., power cord, test leads) are present.

4.2 Placement

- Place the power supply on a stable, level surface.
- Ensure adequate ventilation around the unit. Do not block the air vents on the sides and rear.

- Keep the device away from direct sunlight, heat sources, and excessive dust or moisture.

4.3 Power Connection

1. Ensure the power switch on the front panel is in the "OFF" position.
2. Connect the provided AC power cord to the power input socket on the rear panel.
3. Plug the other end of the power cord into a suitable grounded AC power outlet (230V AC, 50Hz).

5. OPERATING INSTRUCTIONS

5.1 Basic Operation (Output A and C)

1. **Power On:** Flip the power switch to the "ON" position. The displays will illuminate.
2. **Pre-setting Voltage and Current:**
 - Before connecting your load, turn the voltage adjustment knobs (coarse and fine) to set the desired output voltage.
 - Adjust the current adjustment knobs (coarse and fine) to set the maximum current limit. This acts as a protection mechanism for your circuit.
3. **Connecting the Load:** Connect the positive (+) terminal of your load to the red output terminal and the negative (-) terminal of your load to the black output terminal.
4. **Monitoring:** The displays will show the actual output voltage and current being supplied to your load.
5. **Oversupply Protection (OVP):** The OVP function protects the connected load from excessive voltage. Adjust the OVP knob to set the maximum permissible voltage. If the output voltage exceeds this limit, the power supply will shut down the output.



Figure 3: Connecting Test Leads

This image demonstrates how to connect test leads to the output terminals of the power supply. Red leads connect to positive terminals, and blue/black leads connect to negative terminals.

5.2 USB Output Operation (Output B-USB)

The central Output B-USB section provides dedicated USB power outputs.

- Connect your USB device to one of the USB ports (USB-B1 or USB-B2).
- Use the "MODE" and "SHOW VALUE" controls to select the desired USB output voltage (e.g., 5V, 9V, 12V) and monitor its status.



Figure 4: Adjusting Controls

A hand is shown adjusting one of the control knobs on the front panel, illustrating the user interaction with the device's settings.

5.3 Output Modes (Parallel, Series, Independent)

The VLP-2403 offers flexible output configurations for Outputs A and C:

- **Independent Mode (IND):** Outputs A and C operate as two separate, isolated power supplies.
- **Series Mode (SER):** Outputs A and C are connected in series to provide a higher voltage (up to 80V). Ensure proper wiring and voltage settings.
- **Parallel Mode (PAR):** Outputs A and C are connected in parallel to provide a higher current (up to 6A). Ensure proper wiring and current settings.

Refer to the front panel "MODE" switch in the Output B-USB section to select the desired configuration for Outputs A and C.

6. MAINTENANCE

6.1 Cleaning

- Disconnect the power supply from the mains before cleaning.
- Wipe the exterior with a soft, damp cloth. Do not use abrasive cleaners or solvents.

- Ensure no liquid enters the device.

6.2 Ventilation

- Regularly check that the ventilation openings on the sides and rear are free from dust and obstructions.
- Blocked vents can lead to overheating and damage.

6.3 Fuse Replacement

If the power supply does not turn on, check the fuse located in the AC input socket on the rear panel. Replace it only with a fuse of the same type and rating (e.g., T 3.15A / 250V).

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No power, displays off.	Power cord disconnected, power outlet faulty, fuse blown.	Check power cord connection. Test outlet with another device. Replace fuse if blown (refer to 6.3).
No output voltage/current.	Output disabled, OVP triggered, current limit set too low, load disconnected.	Ensure output is enabled. Check OVP setting. Increase current limit. Verify load connection.
Output voltage fluctuates.	Unstable input power, faulty connection, internal issue.	Check mains power stability. Secure all connections. If problem persists, contact support.
Unit overheats.	Blocked ventilation, excessive load.	Clear ventilation openings. Reduce load or operating time.

8. SPECIFICATIONS

Feature	Detail
Brand	VOLTCRAFT
Model Number	VC-8146860 (VLP-2403)
Output Channels	4 (2 independent 0-40V/0.01-3A, 2 USB)
Output Voltage (A/C)	0 - 40 V DC (Adjustable)
Output Current (A/C)	0.01 - 3 A (Adjustable)
Maximum Power	273 W
Regulation Type	Electronic linear regulation (low ripple)
Protection	Overvoltage Protection (OVP)
Connector Type	USB (for Output B)
Cooling Method	Air
Dimensions (L x W x H)	27 x 44 x 12.5 cm
Weight	11 kg
Special Features	High-precision multi-turn potentiometer, USB developments

9. WARRANTY AND SUPPORT

Information regarding warranty terms and conditions is typically provided with the product packaging or on the manufacturer's official website. Please refer to these resources for detailed warranty coverage.

For technical support, service, or inquiries, please contact VOLTCRAFT customer service. Contact details can usually be found on the product packaging, the VOLTCRAFT website, or through your point of purchase.

Manufacturer: VOLTCRAFT

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