DROK 200517

DROK Adjustable Voltage Regulator DC Buck Boost Converter User Manual

Model: 200517

1. Product Overview

The DROK Adjustable Voltage Regulator is a versatile DC Buck Boost Converter designed for various power supply applications. It features a wide input voltage range and an adjustable output, making it suitable for DIY lab power supplies, LED drivers, and more.

Key Features:

- **Variable Power Supply:** Input voltage range DC 6.0-36V, output voltage range DC 0.6-36V, max output current 5A, max output power 80W.
- **Easy to Use:** Allows setting voltage and current limits, power on/off control, and accurate voltage setting retention after power down.
- **Digital Display:** Shows input/output voltage, current, temperature, power, electric capacity, electric quantity, running time, voltage and current curves, and system parameters.
- **Memory Data:** 10 data groups (M0-M9) can be stored for quick recall.
- **Hardware Protection:** Includes output short circuit protection and output anti-backflow protection, allowing direct charging of rechargeable batteries without an additional anti-backflow diode.
- **Software Protection:** Features Over Voltage Protection (OVP), Over Current Protection (OCP), Over Power Protection (OPP), Over Temperature Protection (OTP), Input Low Voltage Protection (LVP), and power chip self-protection (OEP).

This module is compact and powerful, offering precise control for your electrical projects.

2. Product Components and Dimensions

Figure 2.1: Front view of the DROK Adjustable Voltage Regulator, highlighting the clear digital display, rotary encoder for adjustments, and the power button.

Figure 2.2: Angled view of the converter, illustrating the input (VIN+, VIN-) and output (OUT+, OUT-) screw terminals for secure wiring connections.

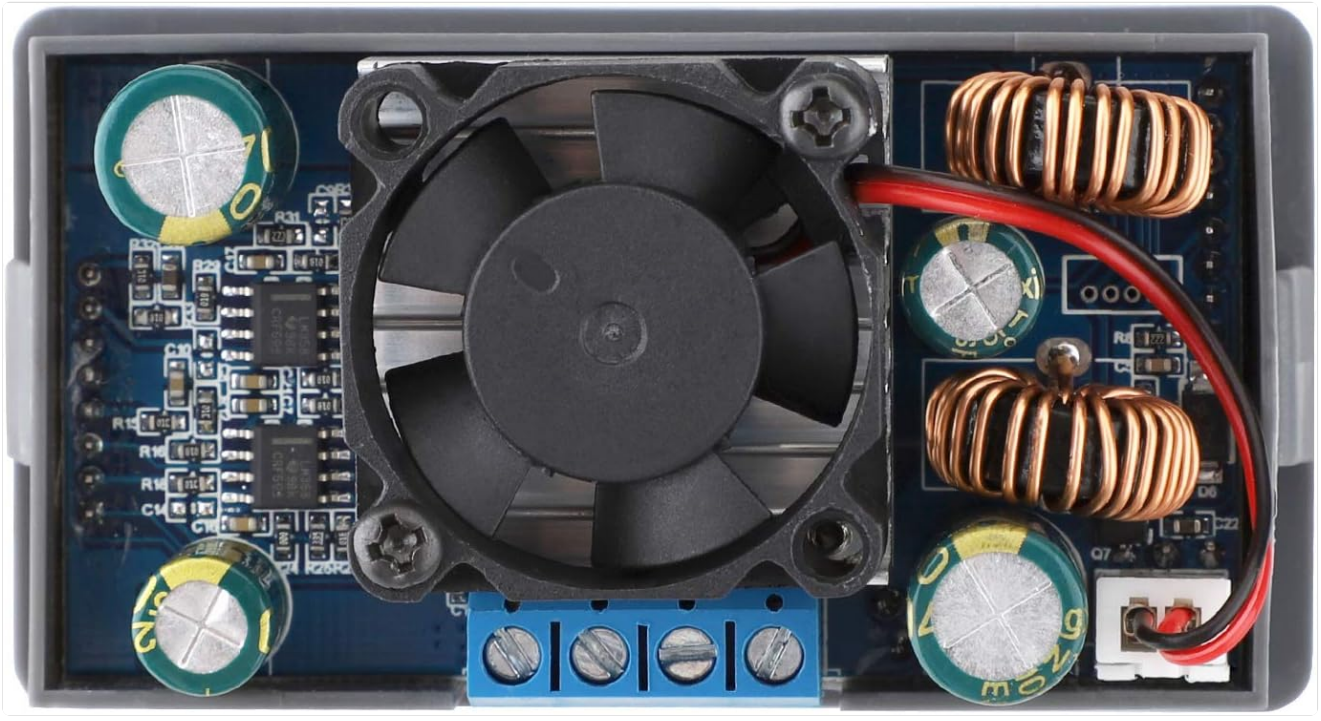

Figure 2.3: Bottom view of the module, revealing the integrated cooling fan designed to maintain optimal operating temperatures

under load.

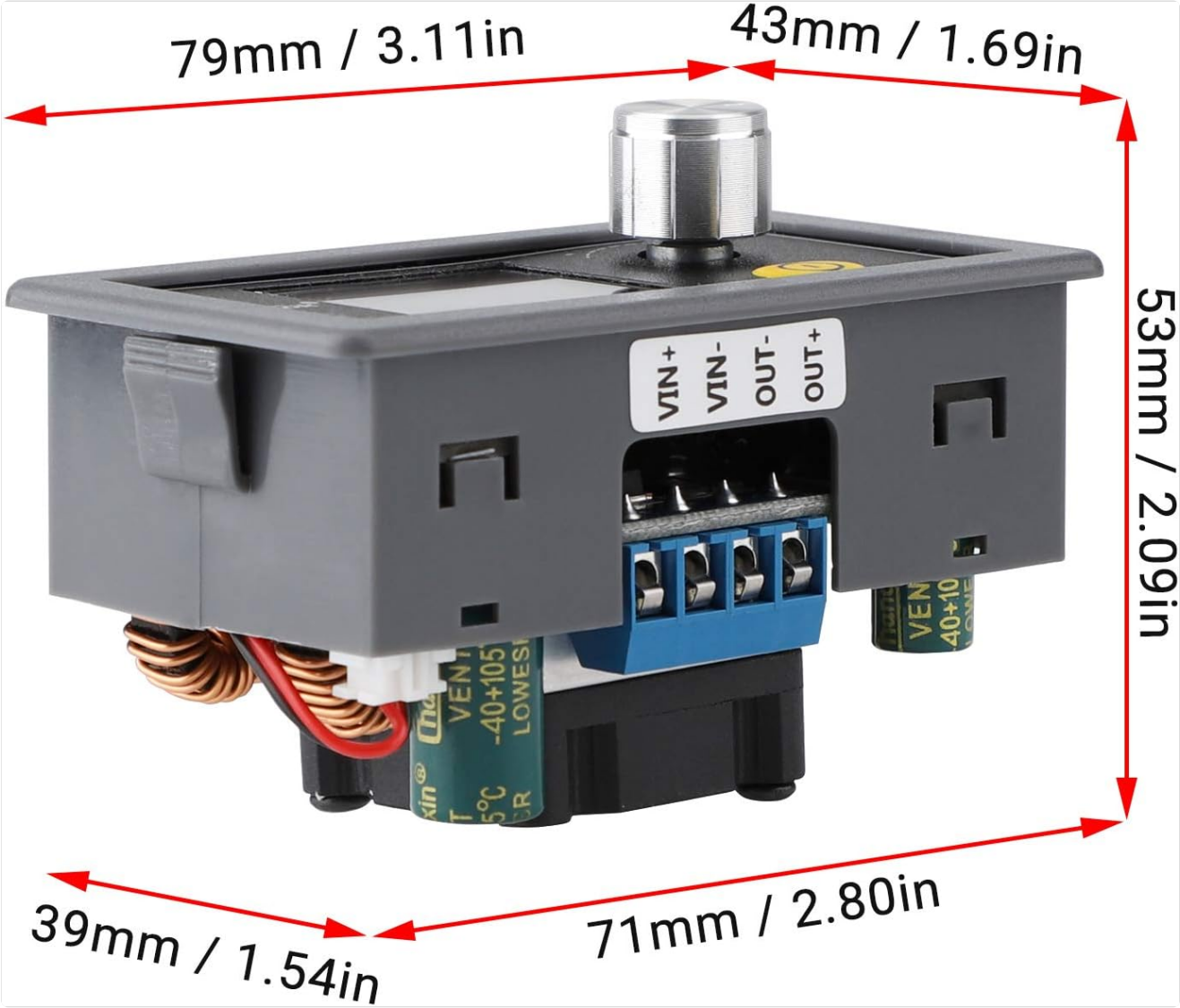

Figure 2.4: Detailed dimensions of the converter, useful for integration into custom enclosures or projects.

3. Setup Instructions

Before connecting the module, ensure all power sources are disconnected. Proper wiring is crucial for safe and effective operation.

3.1 Wiring Connections:

1. Identify the input terminals: **VIN+** (positive input) and **VIN-** (negative input).
2. Identify the output terminals: **OUT+** (positive output) and **OUT-** (negative output).
3. Connect your DC power source to the **VIN+** and **VIN-** terminals. Ensure the input voltage is within the specified range of DC 6.0-36V.
4. Connect your load (e.g., LED, motor, battery) to the **OUT+** and **OUT-** terminals.
5. Ensure all connections are secure and that no bare wires are exposed to prevent short circuits. The screw-down terminals are designed to accept large-gauge wire for secure connections.

Note: The module includes output anti-backflow protection, allowing direct charging of rechargeable batteries

without an additional anti-backflow diode. However, always verify polarity before connecting batteries.

4. Operating Instructions

The DROK Buck Boost Converter features an intuitive interface with a digital display and a rotary encoder for precise control.

4.1 Power On/Off:

- Press the yellow **ON/OFF** button to toggle the output power. The display will show "ON" or "OFF" accordingly.
- The display remains active even when the output is off, allowing you to pre-set voltage and current limits before applying power to your load.

4.2 Adjusting Voltage and Current:

- Rotate the silver knob (rotary encoder) to adjust values.
- Press the rotary encoder to select which digit or parameter you wish to adjust. Repeated presses cycle through available settings.
- The display shows the set voltage (SET: XX.XXV) and set current (X.XXXA) at the bottom.
- The module supports constant voltage (CV) and constant current (CC) modes. The "CC" indicator illuminates when the current drawn exceeds the set limit, and the power supply is regulating to the set current value.

4.3 Digital Display Modes:

The display provides comprehensive real-time data. You can cycle through different display screens by pressing the rotary encoder or the ON/OFF button (depending on the specific mode and firmware version).

Figure 4.1: Examples of various display screens, including real-time measurements and configuration menus.

- **Main Screen:** Displays real-time output voltage, current, and power.
- **Capacity/Energy/Time Screen:** Shows accumulated electric capacity (AH), energy (WH), and running time.
- **Settings Screen:** Allows configuration of parameters like over-voltage protection (S-OVP), over-current protection (S-OCP), and input low-voltage protection (S-LVP).
- **Voltage/Current Curve:** Visual representation of voltage and current over time.
- **Theme Colors/Brightness:** Adjust display appearance.

4.4 Memory Functions:

The module can store up to 10 data groups (M0-M9). M0 is the default storage location. M1 and M2 can be quickly recalled using specific button combinations (refer to the detailed manual for exact steps).

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Video 4.1: Demonstration of the DROK Buck Boost Converter's display modes, constant current function, and data group switching. This video illustrates how to navigate the interface and utilize key features.

5. Maintenance

To ensure the longevity and optimal performance of your DROK Voltage Regulator, follow these maintenance guidelines:

- **Cleaning:** Keep the module clean and free from dust and debris. Use a soft, dry cloth for cleaning. Avoid

using liquid cleaners or solvents.

- **Ventilation:** Ensure the cooling fan and ventilation slots are not obstructed. The fan activates automatically when needed to dissipate heat.
- **Storage:** When not in use for extended periods, store the module in a cool, dry place away from direct sunlight and extreme temperatures.
- **Connections:** Periodically check all wiring connections to ensure they remain tight and secure. Loose connections can lead to unstable operation or damage.

6. Troubleshooting

If you encounter issues with your DROK Voltage Regulator, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
"LUP" (Low Voltage Protection) error on display.	Input voltage is below the set low voltage protection threshold (S-LVP).	Increase the input voltage or adjust the S-LVP setting in the menu. Ensure your power source can provide sufficient voltage.
No output voltage despite power being on.	Output is turned off, or protection features are active (OVP, OCP, OPP).	Press the ON/OFF button to enable output. Check the display for any active protection indicators and adjust settings or reduce load if necessary.
Display is on, but no response to knob/button.	Possible internal error or temporary software glitch.	Disconnect power, wait a few seconds, and reconnect. If the issue persists, contact customer support.
Output current is lower than expected.	Constant Current (CC) mode is active, or load resistance is too high.	Check the set current limit (I-SET) and increase if needed. Verify the load's resistance. The "CC" indicator will be lit if current limiting is active.

For more complex issues or if troubleshooting steps do not resolve the problem, please refer to the official DROK support channels.

7. Specifications

Parameter	Value
Input Voltage Range	DC 6.0-36V
Output Voltage Range	DC 0.6-36V
Output Current	0.000A-5.000A (Max 5A)
Output Power	Max 80W
Input Current Limit	Max 6A

Parameter	Value
Voltage Resolution	0.01V
Current Resolution	0.001A
Voltage Precision	±0.3%+1 byte
Current Precision	±0.4%+3 bytes
Capacity	0-999999AH
Energy	0-999999WH
Time	0-1000 Hours
Item Weight	3.84 ounces (0.11 Kilograms)
Product Dimensions	1.69 x 3.11 x 2.09 inches
Mounting Type	Panel Mount
Model Number	200517

8. Warranty and Support

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

8.1 Warranty Information:

Each product purchased from DROK includes a one-year service period. In the event of any quality issues with your item, you may be eligible for a brand new replacement.

8.2 Customer Support:

For further assistance, technical support, or warranty claims, please visit the official DROK store or contact their customer service directly.

Official DROK Store: Visit the DROK Store on Amazon