

RD RD6006W

RD RD6006W Digital Control Power Supply User Manual

Model: RD6006W | Brand: RD

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and effective operation, setup, maintenance, and troubleshooting of the RD RD6006W Communication Version 60V 6A Multimeter DC DC Voltage Current Adjustable Step Down Power Supply Buck Converter Voltmeter. The RD6006W is a versatile digital control power supply module designed for various applications requiring precise voltage and current regulation.

2. SAFETY INFORMATION

Please read and understand all safety warnings and operating instructions before using this device. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure the input power supply matches the specifications of the RD6006W (6-70.00V DC).
- Do not operate the device in wet or damp conditions.
- Always disconnect power before making any connections or performing maintenance.
- Do not exceed the maximum output voltage (60.00V) or current (6.000A).
- Ensure proper ventilation to prevent overheating.
- This product is a module and requires an external case and AC-DC power source for safe and complete operation.
- Only use the specified fuse type (10A, 1808-125V) for replacement.

3. PRODUCT OVERVIEW

The RD6006W is a highly integrated DC-DC buck converter with advanced features for precise power control and monitoring.



Figure 3.1: Front view of the RD6006W Digital Control Power Supply, showing the LCD screen, keypad, rotary encoder, and output terminals.

USB Communication

Wi-Fi Communication

Digital Control Power Supply

HD Display | Numeric keypad | Safe & Accurate | Easy Operation

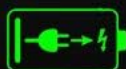
RD6006



HD Screen



Keypad Control



Battery Charging



PC Software



App Control



Firmware Upgrade

SPECIAL NOTE:

RD6006 supports firmware upgrade, so that new functions can be added, and the product will be more powerful. The product you received may be different from description in terms of page and function.

Figure 3.2: Key features of the RD6006W, highlighting its HD display, numeric keypad for precise control, and emphasis on safe and accurate operation. It supports USB and Wi-Fi communication.

Key Features:

- **Digital Control:** Precise adjustment of output voltage and current.
- **Wide Input/Output Range:** Input 6-70V DC, Output 0-60V DC, 0-6A.
- **Communication Functionality:** Supports USB connection to PC software and Wi-Fi connection to mobile APP (Android 5.0+).
- **High Accuracy:** Output voltage accuracy of $\pm(0.3\%+3 \text{ digits})$, output current accuracy of $\pm(0.5\%+5 \text{ digits})$.
- **Safety Protections:** Over Voltage Protection (OVP), Over Current Protection (OCP), Over Temperature Protection (OTP).
- **User-Friendly Interface:** 2.4-inch color LCD display and numeric keypad for easy operation.
- **Firmware Upgradeable:** Allows for future function enhancements.
- **Removable Fuses:** Features dual 10A removable fuses for easy replacement.

4. SETUP

The RD6006W is a module that requires integration into a suitable enclosure and connection to an external AC-DC power source. This section outlines the necessary steps for initial setup.

4.1 Components Required (Not Included):

- **External AC-DC Power Supply:** A stable power source with an output voltage between 6V and 70V DC, capable of supplying the required current for your application.
- **Enclosure/Case:** A protective housing for the RD6006W module to ensure safety and proper ventilation.
- **CR1220 Battery:** Required for the time display function.

4.2 Installation Steps:

1. **Mounting:** Securely mount the RD6006W module within your chosen enclosure. Ensure adequate space for wiring and airflow.
2. **Power Connection:** Connect the external AC-DC power supply to the input terminals of the RD6006W. Observe correct polarity (+ and -).
3. **CR1220 Battery Installation:** Install a CR1220 battery into the designated slot on the circuit board for the time display function.
4. **Output Connections:** Connect your load to the output terminals of the RD6006W.
5. **Optional Communication Setup:**
 - **USB Connection:** Connect the RD6006W to your PC using a USB cable. Install the necessary PC software (supports Windows 7 and above).
 - **Wi-Fi Connection:** Ensure the Wi-Fi communication board is installed (if applicable). Download the official RD APP (supports Android 5.0 and above) and follow the in-app instructions to connect to your device.



Figure 4.1: The RD6006W module as supplied, indicating it is a component requiring further integration.

5. OPERATING INSTRUCTIONS

This section details the basic operation of the RD6006W, including setting voltage and current, using protection features, and utilizing communication functions.

5.1 Basic Operation:

1. **Power On/Off:** Press the **ON/OFF** button to toggle the output power.
2. **Setting Voltage (V-SET):**
 - Press the **V-SET** button.
 - Use the numeric keypad or rotary encoder to set the desired output voltage.
 - Press **ENTER** to confirm.
3. **Setting Current (I-SET):**

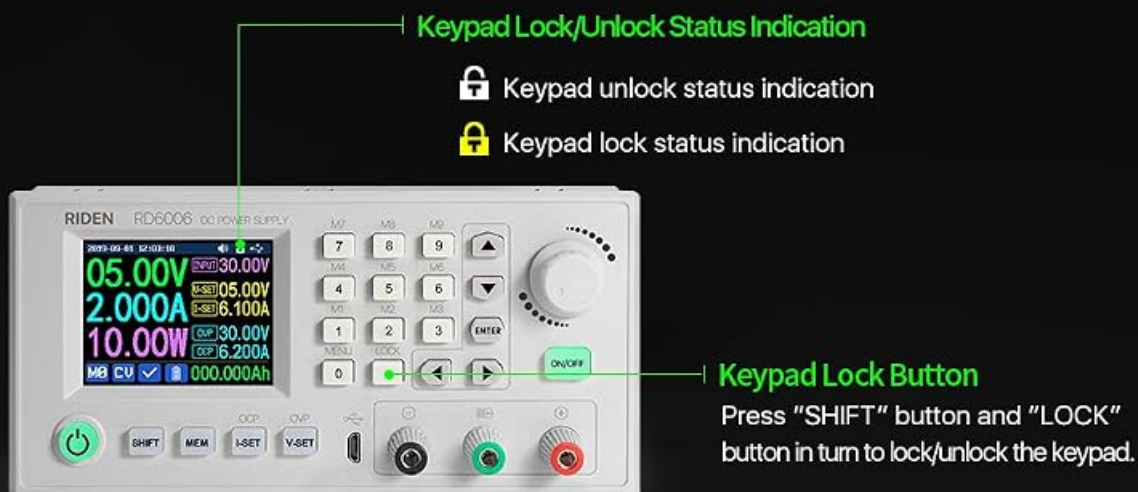
- Press the **I-SET** button.
 - Use the numeric keypad or rotary encoder to set the desired output current limit.
 - Press **ENTER** to confirm.
4. **Memory Functions (MEM):** The device supports saving and recalling frequently used settings. Refer to the on-screen menu for detailed memory operations.
5. **Button Lock Function:** To prevent accidental changes, press **SHIFT** and then **LOCK** to lock/unlock the keypad. A lock icon will appear on the display when locked.

Traditional Design · Useful Function

Support ON/OFF button to control the output and panel lock function, convenient and useful, ready to use whenever you want.

Button Lock Function

Press "SHIFT" button and "LOCK" button in turn to lock/unlock the keypad, prevent operation by mistake.



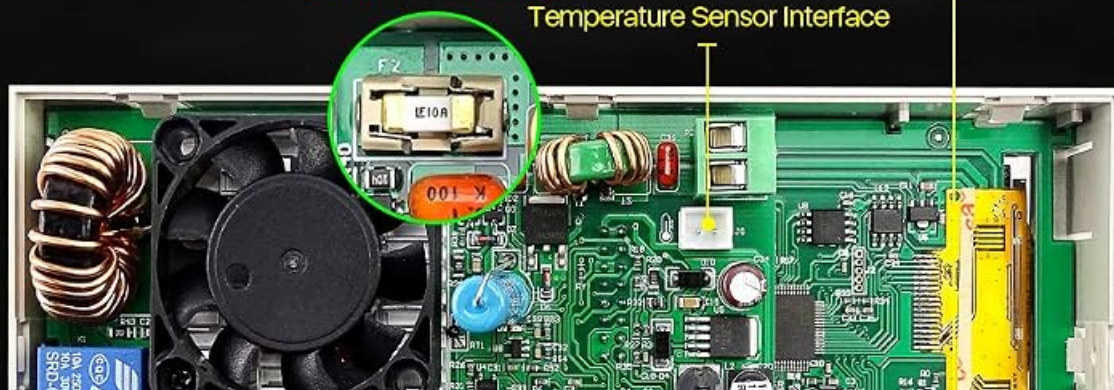
Removable Dual 10A Fuse

The previous generation fuse is soldered on the circuit board, and it is inconvenient to replace a new one when the fuse is burnt. RD6006 adopts removable snap type fuse, convenient to replace a new fuse, make it easy to repair.

(Please prepare CR1220 battery yourself)
Clock Battery Slot

10A Removable Fuse

Temperature Sensor Interface



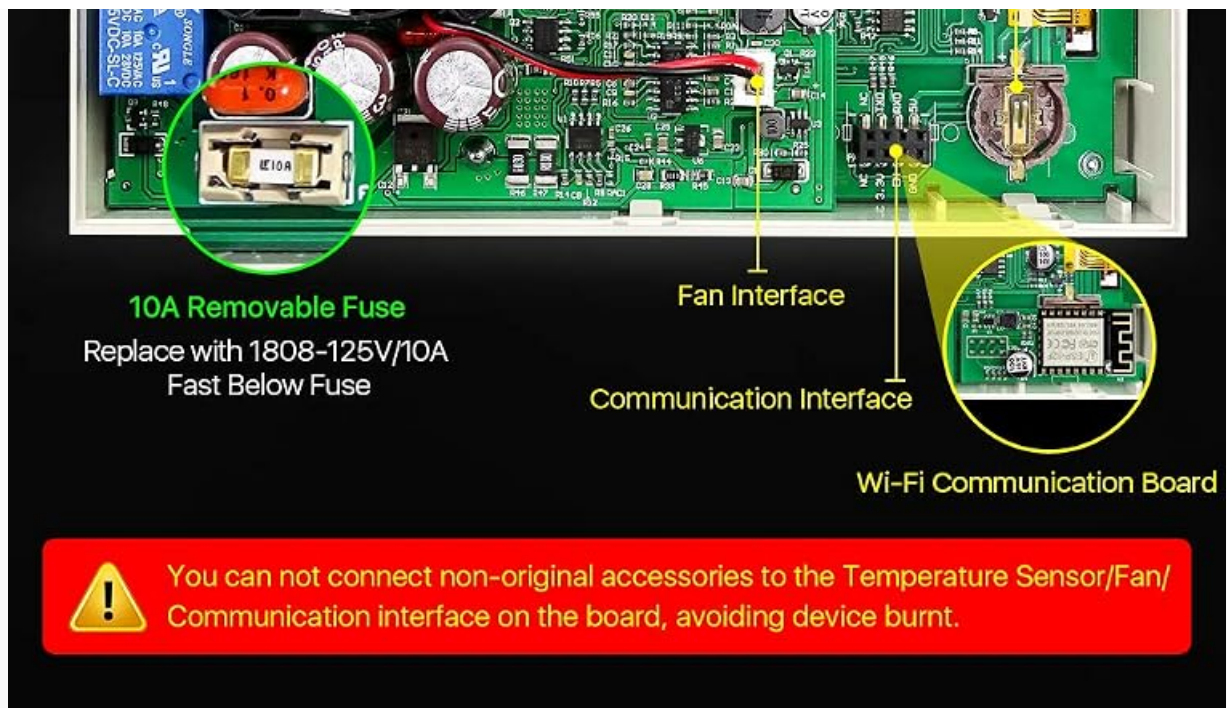


Figure 5.1: Illustration of the button lock function and the location of the removable 10A fuses within the RD6006W module.

5.2 Protection Settings:

The RD6006W includes built-in protection features to safeguard your connected load and the device itself.

- **Over Voltage Protection (OVP):** Set the maximum allowable output voltage. If the output exceeds this value, the output will shut down.
- **Over Current Protection (OCP):** Set the maximum allowable output current. If the output exceeds this value, the output will shut down.
- **Over Temperature Protection (OTP):** The device will automatically shut down if its internal temperature exceeds a safe operating limit.

Protect The Load In All Aspects • Safely And Reliably

You can press the corresponding button to set the over voltage protection value and over current protection value, when the output voltage/current exceeds the protection value, the output will be shut down automatically to prevent damage to the load.

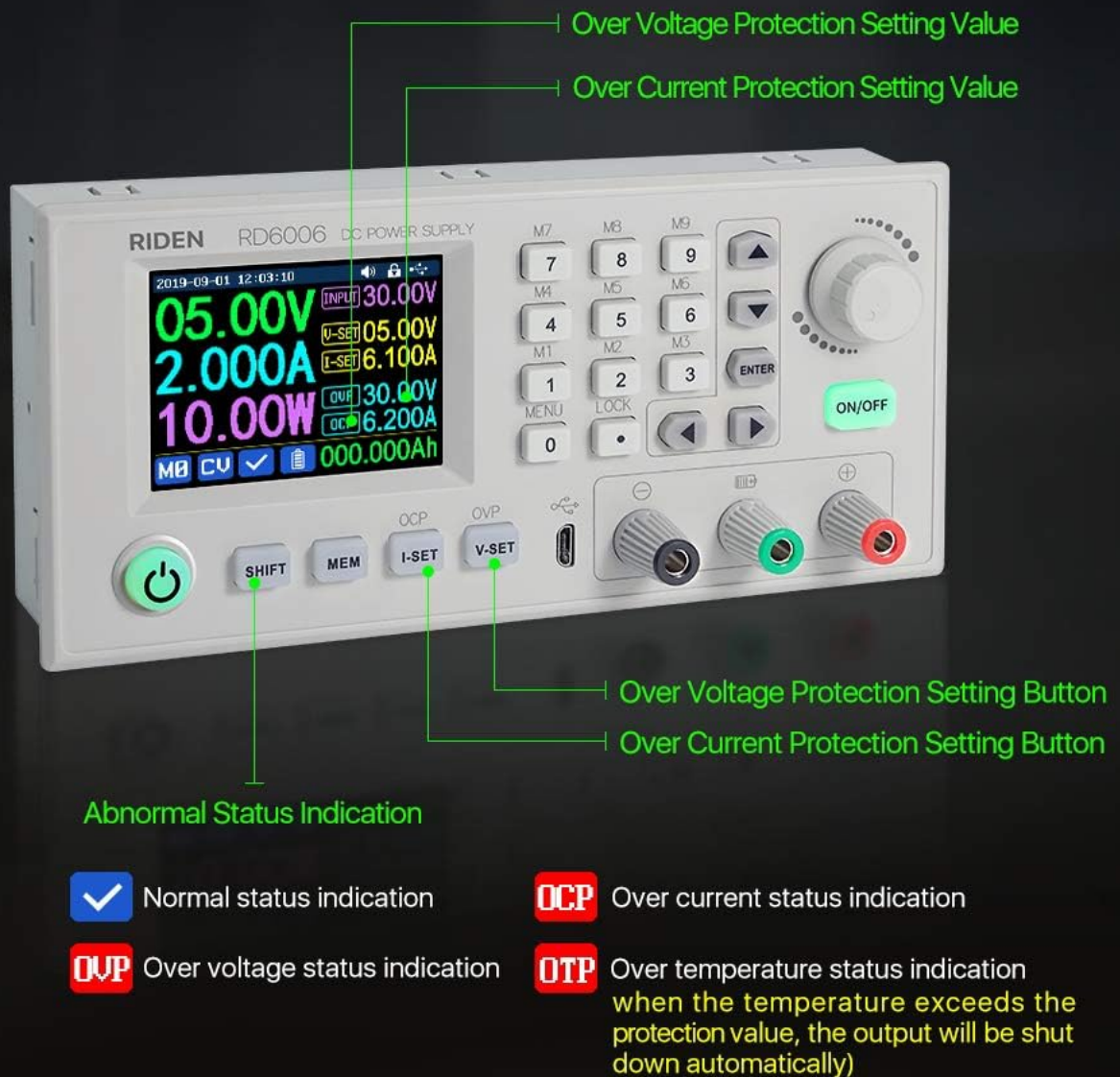


Figure 5.2: Display indicators for normal status, Over Voltage Protection (OVP), Over Current Protection (OCP), and Over Temperature Protection (OTP).

5.3 Communication Features:

The RD6006W offers advanced control and monitoring via PC software and a mobile application.

- **PC Software Control:** Connect the device via USB to a Windows PC (Windows 7 or above). The software allows for remote monitoring, setting parameters, and data recording.
- **Mobile APP Control:** Connect wirelessly via Wi-Fi to an Android device (Android 5.0 or above). The APP provides remote control, monitoring, and data visualization.
- **Firmware Update:** The device supports firmware updates to introduce new features or improve performance.

Follow the instructions provided with the firmware update package.

PC Software/Android APP

Awesome interface, powerful PC software/APP, remote control, data recording, easy to operate.

PC Software Control

You can remotely monitor and set the digital power supply on your computer, friendly user interface, powerful functions, convenient to use.



Figure 5.3: The PC software interface for controlling and monitoring the RD6006W, compatible with Windows 7 and above.



Figure 5.4: The mobile application interface for wireless control of the RD6006W, available for Android devices.

6. MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your RD6006W.

- **Fuse Replacement:** The RD6006W features dual 10A removable fuses. If a fuse burns out, replace it with a new 10A, 1808-125V fast-blow fuse. Always disconnect power before replacing fuses.
- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use liquid cleaners or solvents.
- **Ventilation:** Ensure that the ventilation openings are clear of dust and obstructions to maintain proper airflow and prevent overheating.

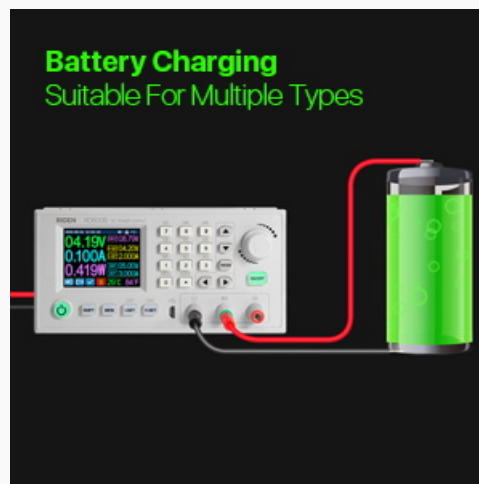


Figure 6.1: Location of the dual 10A removable fuses on the RD6006W circuit board.

7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with the RD6006W.

Problem	Possible Cause	Solution
No output voltage/current.	Output is off; OVP/OCP/OTP triggered; Blown fuse; Input power issue.	Press ON/OFF button; Check OVP/OCP/OTP settings and clear fault; Inspect and replace fuses; Verify input power supply is connected and functional.

Problem	Possible Cause	Solution
Display is blank or flickering.	Insufficient input power; Loose connections.	Ensure input voltage is within 6-70V and stable; Check all power connections.
Cannot connect to PC software/APP.	Incorrect software/APP version; Driver issues (PC); Wi-Fi module not installed/configured; Phone OS incompatibility.	Ensure you have the correct software/APP for RD6006W; Install necessary USB drivers; Verify Wi-Fi module is correctly installed and configured; Check phone OS version (Android 5.0+).
Inaccurate readings.	Calibration required; Environmental factors.	Refer to advanced settings for calibration options if available; Ensure stable operating environment.

8. SPECIFICATIONS

Detailed technical specifications for the RD6006W.

Parameter	Value
Model	RD6006W
Input Voltage Range	6-70.00V
Output Voltage Range	0-60.00V
Output Current Range	0-6.000A
Output Power Range	0-360.0W
Output Voltage Accuracy	±(0.3%+3 digits)
Output Current Accuracy	±(0.5%+5 digits)
Output Ripple Typical	100mV VPP
Working Temperature Range	-10°C~40°C
Constant Voltage Mode Response Time	2ms (0.1A-5A load)
Capacity and Energy Statistical Error	±2%
Working Mode	Buck mode: Voltage drop >1V and >10%
Display Screen	2.4 inch color LCD display
Product Dimensions (L x W x H)	6.57 x 3.19 x 2.56 inches (167mm x 81mm x 65mm)
Item Weight	1.23 pounds (with package: ~0.58kg)
Power Source	Battery Powered (module, requires external PSU)
Wattage	360 watts

Parameter	Value
Cooling Method	Air

INFORMATION

Model: RD6006	Display Screen: 2.4 inch color LCD display
Input voltage range: 6-70.00V	Input voltage measurement resolution: 0.01V
Output voltage range: 0-60.00V	Output voltage measurement resolution: 0.01V
Output current range: 0-6.000A	Current setting measurement resolution: 0.001A
Output power range: 0-360.0W	Battery voltage measurement resolution: 0.01V
Output voltage accuracy: $\pm(0.3\%+3\text{digits})$	Output current accuracy: $\pm(0.5\%+5\text{ digits})$
Input voltage accuracy: $\pm(1\%+5\text{digits})$	Battery voltage measurement accuracy: $\pm(0.5\%+3\text{ digits})$
Output ripple typical: 100mV VPP 	Working temperature range: -10°C~40°C
Constant voltage mode response time: 2ms(0.1A-5A load)	external sensor Temperature detection range: -10°C~100°C/0°F~200°F
Constant voltage mode load adjustment rate : $\pm(0.1\%+2\text{ digits})$	external sensor Temperature detection accuracy: $\pm 3^{\circ}\text{C}/\pm 6^{\circ}\text{F}$
Constant current mode load adjustment rate: $\pm(0.1\%+3\text{ digits})$	Capacity measurement range: 0-9999.99Ah
Screen brightness setting: 0-5 level total 6 levels	Energy measurement range: 0-9999.99Wh
Weight(with package): About 0.58Kg	Capacity and energy statistical error: $\pm 2\%$
Product dimension: 167mmX81mmX65mm	Working mode: Buck mode:Voltage drop >1V and >10%



Ripple Measurement Method:

Noise and ripple are measured at X1 range, AC coupling, 20MHz of bandwidth on your oscilloscope with a 0.1uF parallel capacitor at the output terminals.

Product Structure:



Front



Back

Figure 8.1: Technical specifications of the RD6006W module.

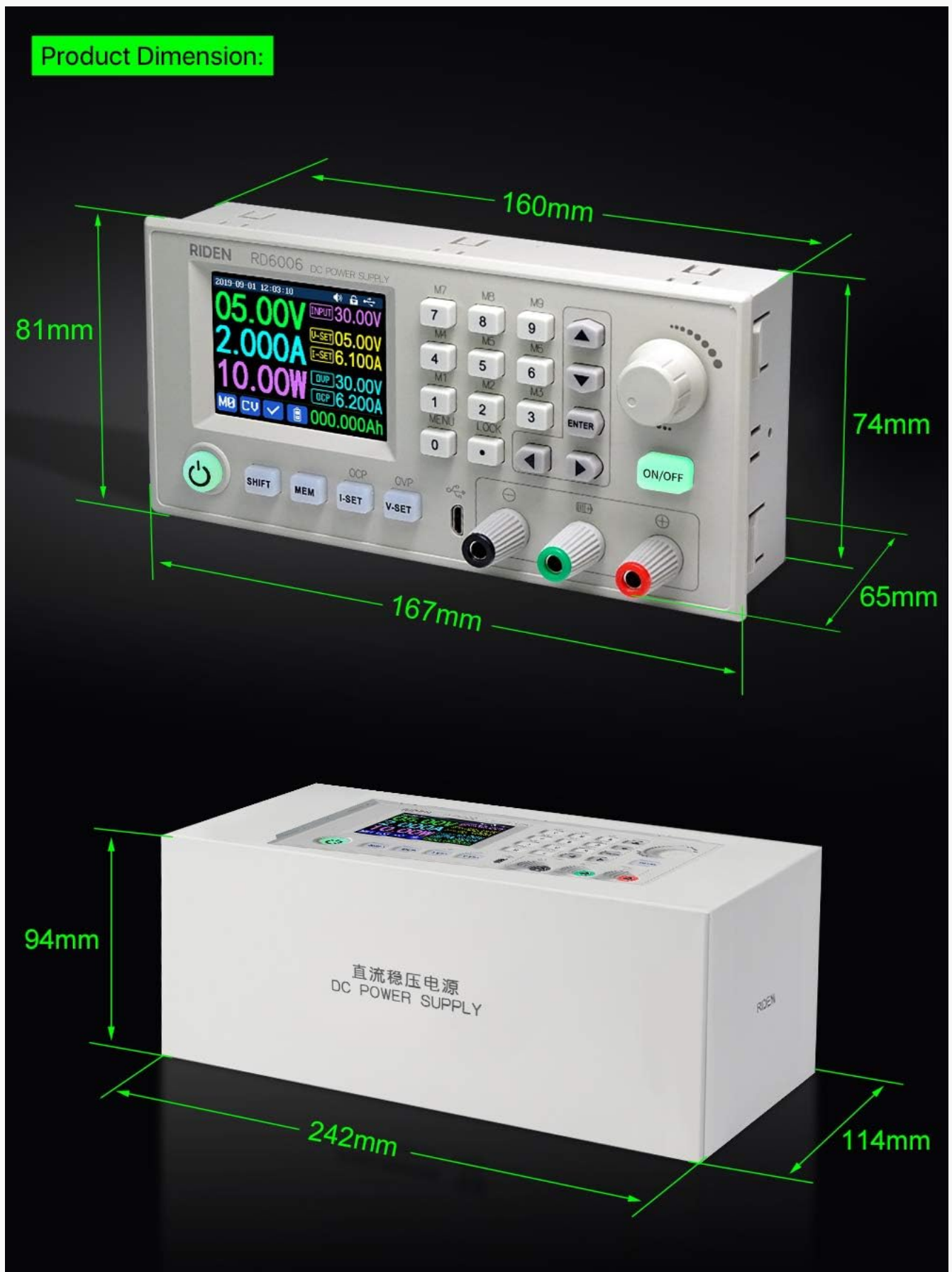


Figure 8.2: Product dimensions of the RD6006W module and its retail packaging.

9. WARRANTY AND SUPPORT

For any issues or support inquiries regarding your RD6006W, please refer to the contact information provided on the product packaging or the official manufacturer's website. It is recommended to download the latest instructions from the card included in the RD6006W box for the most up-to-date information.

The product includes a backup fuse in the box for replacement if the original fuse burns out. Always ensure to use the correct fuse type (10A, 1808-125V fast-blow).

If you encounter any problems, please send a message to the seller for assistance. They aim to reply as soon as possible.

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