OWON SPE3102

OWON SPE3102 Programmable Lab Power Supply User Manual

Model: SPE3102 | Brand: OWON

1. Overview and Key Features

The OWON SPE3102 is a programmable single-channel DC power supply designed for laboratory and benchtop applications. It offers a voltage output range of 0-30V and a current output range of 0-10A, with a maximum power output of 200W. The device features a 2.8-inch TFT LCD for displaying multiple parameters simultaneously and includes various protection functions to ensure safe operation.



Figure 1.1: Front view of the OWON SPE3102 Programmable Lab Power Supply.

Key Features:

- **Multi-Information Display:** A 2.8-inch TFT LCD shows voltage (set and actual), current (set and actual), actual output power, cumulative execution time, and channel output status.
- **Multiple Protection Functions:** Includes limit current protection, thermal protection, voltage overload protection (OVP), short circuit protection, and over power protection (OCP) for enhanced durability and safety.
- **Convenient USB Port:** Features a 5V/1A USB output port for charging mobile devices and a rear USB device communication port for firmware updates and PC software control.
- **Adjustable and Programmable Output:** Constant power design allows flexible configuration of voltage and current within the rated power range. Includes 4 groups of memory shortcut parameters for quick output and 10 groups of editable timing output for list waveform editing.
- **Compact and Lightweight Design:** Measures approximately 3.2 x 8.9 x 5.6 inches and weighs 3.3 pounds, optimizing workbench space and portability.



Figure 1.2: The 2.8-inch LCD display provides comprehensive output information.

2. Setup

2.1 Unpacking and Inspection

Carefully unpack the OWON SPE3102 power supply and inspect it for any signs of damage during transit. Ensure all accessories listed in the packing list are present. The standard package includes the programmable DC power supply, a user manual, a power cord, and a USB cable.

2.2 Power Connection

1. Ensure the power switch on the rear panel is in the OFF position.
2. Connect the provided power cord to the power input socket on the rear panel of the device.
3. Plug the other end of the power cord into a grounded AC power outlet.
4. Turn on the power switch on the rear panel. The LCD display should illuminate, indicating normal operation.

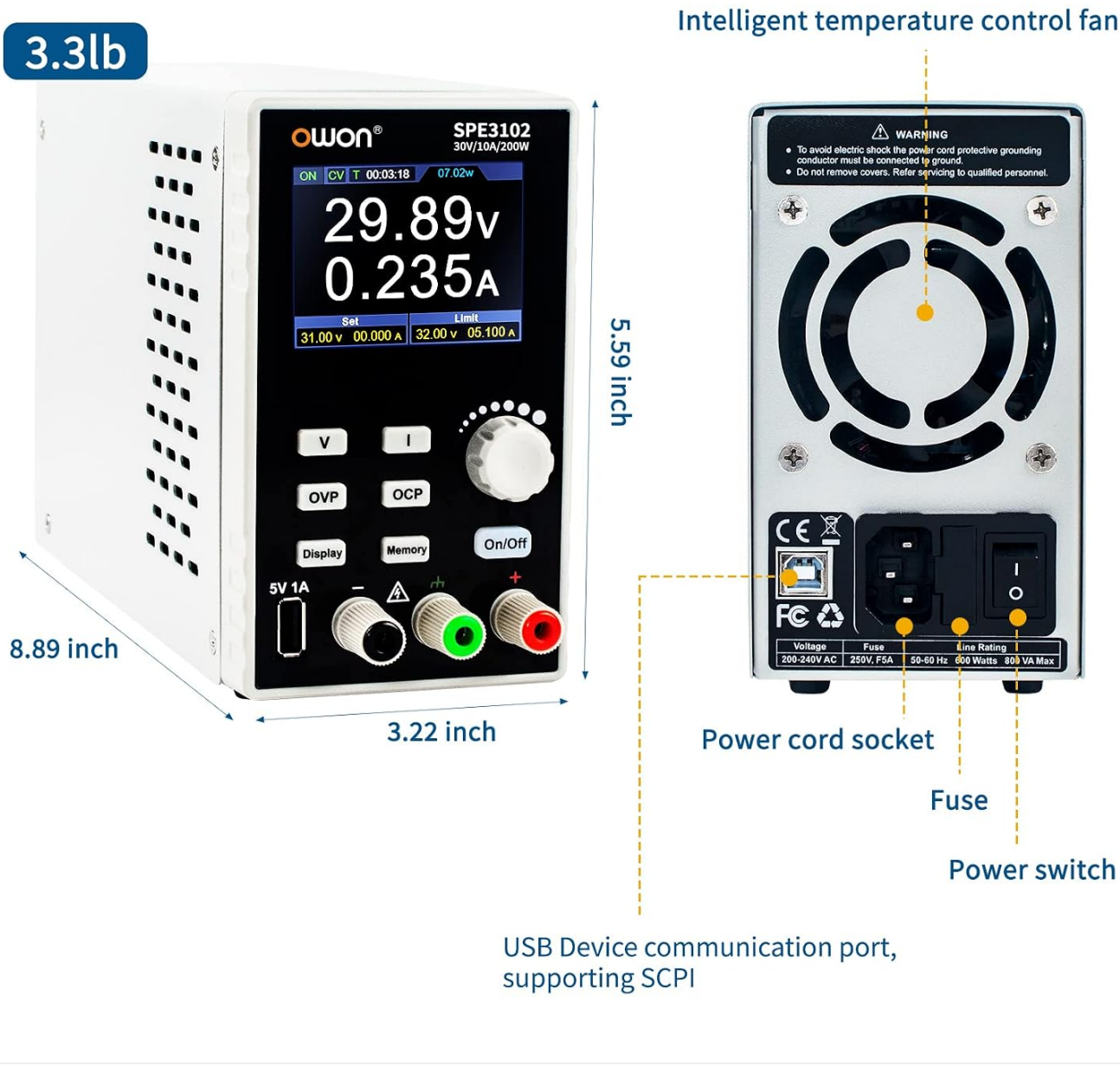


Figure 2.1: Rear panel connections including the power cord socket and USB device communication port.

2.3 Connecting to a PC (Optional)

For PC software control and firmware updates, connect the device to your computer using the provided USB cable via the USB device communication port on the rear panel. Install the necessary drivers and PC software as instructed in the software documentation.

3. Operating Instructions

3.1 Front Panel Controls



Figure 3.1: Front panel controls and output terminals.

- **Adjustment Knob:** Used to adjust voltage, current, and other parameter values. Pressing the knob confirms selections.
- **V Button:** Voltage setting button.
- **I Button:** Current setting button.
- **OVP Button:** Overvoltage Protection setting.
- **OCP Button:** Overcurrent Protection setting.
- **Display Button:** Curve display switch button.
- **Memory Button:** Shortcut button for memory parameters. Long press to enter the list waveform timing output interface.
- **On/Off Button:** Enables or disables the channel output. Long press to turn on the automatic output function.
- **Front USB Port (5V/1A):** For charging external devices.
- **Channel Output Terminals:** Red (+) for positive, Green (ground) for ground, Black (-) for negative.

3.2 Setting Voltage and Current

1. Ensure the output is disabled (On/Off button is off).
2. Press the **V** button to select voltage adjustment. The voltage value on the display will be highlighted.
3. Turn the **Adjustment Knob** to set the desired voltage. Press the knob to confirm.
4. Press the **I** button to select current adjustment. The current value on the display will be highlighted.
5. Turn the **Adjustment Knob** to set the desired current limit. Press the knob to confirm.
6. Connect your load to the output terminals.
7. Press the **On/Off** button to enable the output. The device will now supply the set voltage and current to the load.

3.3 Overvoltage and Overcurrent Protection (OVP/OCP)

The SPE3102 includes OVP and OCP features to protect your circuit and the power supply. When the actual current exceeds the preset current value, the power supply automatically switches to CC (Constant Current) mode to protect the circuit.

1. Press the **OVP** button to set the overvoltage protection limit. Use the **Adjustment Knob** to set the value and press to confirm.
2. Press the **OCP** button to set the overcurrent protection limit. Use the **Adjustment Knob** to set the value and press to confirm.

3.4 Using Memory Functions

The device supports 4 groups of memory shortcut parameters (M1-M4) for quick recall of frequently used settings. Press the **Memory** button to access these settings. Use the **Adjustment Knob** to select a memory group and press to load its parameters.

3.5 List Waveform Editing

The SPE3102 allows for list waveform editing with up to 10 groups of timing output. Long press the **Memory** button to enter the list waveform editing interface. Refer to the detailed software manual for comprehensive instructions on creating and executing custom waveforms.

Video 3.1: Demonstration on how to set up current and voltage measurements on the OWON SPE3102.

Video 3.2: An instructional video demonstrating the adjustable DC power supply features of the OWON SPE3102.

4. Maintenance

To ensure the longevity and optimal performance of your OWON SPE3102 power supply, follow these maintenance guidelines:

- **Cleaning:** Regularly clean the exterior of the device with a soft, dry cloth. Avoid using abrasive cleaners or solvents that could damage the casing or display.
- **Ventilation:** Ensure that the ventilation openings on the sides and rear of the unit are clear of obstructions to allow for proper airflow and prevent overheating. The intelligent temperature control fan will activate as needed.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry environment, away from direct sunlight and excessive dust.
- **Power Cord:** Periodically check the power cord for any signs of damage. Replace immediately if damaged.
- **Fuse Replacement:** If the device fails to power on, check the fuse located near the power input socket on the rear panel. Replace with a fuse of the same type and rating if necessary. Refer to the specifications for the correct fuse

type.

5. Troubleshooting

This section provides solutions to common issues you might encounter with your OWON SPE3102 power supply.

5.1 No Power

- **Check Power Cord:** Ensure the power cord is securely connected to both the power supply and the AC outlet.
- **Power Switch:** Verify that the power switch on the rear panel is in the ON position.
- **AC Outlet:** Test the AC outlet with another device to confirm it is supplying power.
- **Fuse:** Inspect and replace the fuse if it is blown. The fuse rating is typically indicated near the fuse holder on the rear panel.

5.2 No Output Voltage/Current

- **Output Enable:** Ensure the front panel On/Off button is pressed to enable the output. The display should indicate 'ON'.
- **Voltage/Current Settings:** Verify that the voltage and current limits are set to appropriate values for your load.
- **Load Connection:** Check the connections to your load. Ensure they are secure and correctly polarized.
- **OVP/OCP Triggered:** If OVP or OCP indicators are active, the protection circuit has been triggered. Adjust your settings or load conditions accordingly.
- **Short Circuit:** A short circuit in the load will cause the power supply to enter constant current mode or trigger OCP. Disconnect the load and check for shorts.

5.3 Display Issues

- **Blank Display:** Refer to 'No Power' troubleshooting steps.
- **Incorrect Readings:** Ensure proper connections to the load. If readings are consistently inaccurate, contact support.

6. Specifications

Parameter	Value
Model Number	SPE3102
Output Voltage	0-30V
Output Current	0-10A
Output Wattage	200 Watts
Display	2.8-inch TFT LCD
Product Dimensions (L x W x H)	8.9 x 3.23 x 5.59 inches
Item Weight	4.27 pounds (1.94 Kilograms)

Parameter	Value
Connector Type	USB 2.0
Manufacturer	OWON
Form Factor	Box-like with handle

7. Warranty Information

OWON products are typically covered by a manufacturer's warranty against defects in materials and workmanship. The specific warranty period and terms may vary by region and retailer. Please retain your proof of purchase for warranty claims.
For detailed warranty information, please refer to the warranty card included with your product or visit the official OWON website.

8. Customer Support

If you require technical assistance, have questions about your OWON SPE3102 power supply, or need to report an issue, please contact OWON customer support through one of the following methods:

- **Official Website:** Visit the OWON official website for FAQs, software downloads, and contact information.
- **Email Support:** Refer to your product documentation for the customer support email address.
- **Authorized Retailer:** Contact the retailer from whom you purchased the product for local support options.

When contacting support, please have your product model (SPE3102) and serial number ready to expedite the process.

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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.

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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