

OWON SPE6053

OWON SPE6053 Programmable Laboratory DC Power Supply User Manual

Model: SPE6053

1. INTRODUCTION

The OWON SPE6053 is a high-performance, single-channel programmable DC power supply designed for a wide range of laboratory and industrial applications. It offers a stable output of 0-60V and 0-5A with a maximum power of 300W. Featuring a 2.8-inch TFT LCD display, it provides comprehensive information at a glance, including set and actual voltage/current values, output power, and cumulative running time. The device incorporates multiple protection functions to ensure safe and reliable operation, along with convenient USB connectivity for charging and PC software control.



Figure 1: OWON SPE6053 Programmable DC Power Supply

2. SETUP

2.1 Unpacking and Inspection

Carefully unpack the OWON SPE6053 power supply and inspect it for any signs of damage during transit. Retain the packaging for future transport or storage. The package should contain the following items:

- OWON SPE6053 Programmable DC Power Supply
- Power Cord
- USB Cable
- User Manual (this document)

2.2 Power Connection

Connect the provided power cord to the AC input socket on the rear panel of the power supply and then to a suitable AC power outlet. Ensure the power supply is placed on a stable, level surface with adequate ventilation.

2.3 Output Terminal Connection

Connect your load to the output terminals on the front panel using appropriate test leads. The red terminal is for positive (+) output, and the black terminal is for negative (-) output. Ensure connections are secure before powering on the unit.



Figure 2: OWON SPE6053 connected in a typical laboratory setup.

3. OPERATING INSTRUCTIONS

3.1 Front Panel Overview

The front panel of the SPE6053 features a 2.8-inch TFT LCD display, control buttons, an adjustment knob, and output terminals. Familiarize yourself with the layout for efficient operation.



Figure 3: Front Panel Controls and Indicators.

- **2.8-Inch LCD:** Displays output parameters and status.
- **Adjustment Knob:** Used to adjust voltage, current, and navigate menus.
- **On/Off Button:** Toggles the channel output. Long press to activate automatic output function.
- **Front USB Port (5V/1A):** For charging external devices.
- **Channel Output Terminals:** Connect to the load.
- **Voltage Setting Button (V):** Enters voltage setting mode.
- **Current Setting Button (I):** Enters current setting mode.
- **Overvoltage Protection Setting (OVP):** Configures OVP limits.
- **Overcurrent Protection Setting (OCP):** Configures OCP limits.
- **Display Button:** Switches curve display.
- **Memory Button:** Accesses memory functions for saving/recalling parameters.

3.2 Display Information

The 2.8-inch TFT LCD provides real-time feedback on the power supply's status and output. Key information

displayed includes:

- Set Output Voltage and Actual Output Voltage
- Set Output Current and Actual Output Current
- Actual Output Power
- Cumulative Running Time
- Channel Output Status (ON/OFF, CV/CC mode)
- Set values for Overvoltage Protection (OVP) and Overcurrent Protection (OCP)

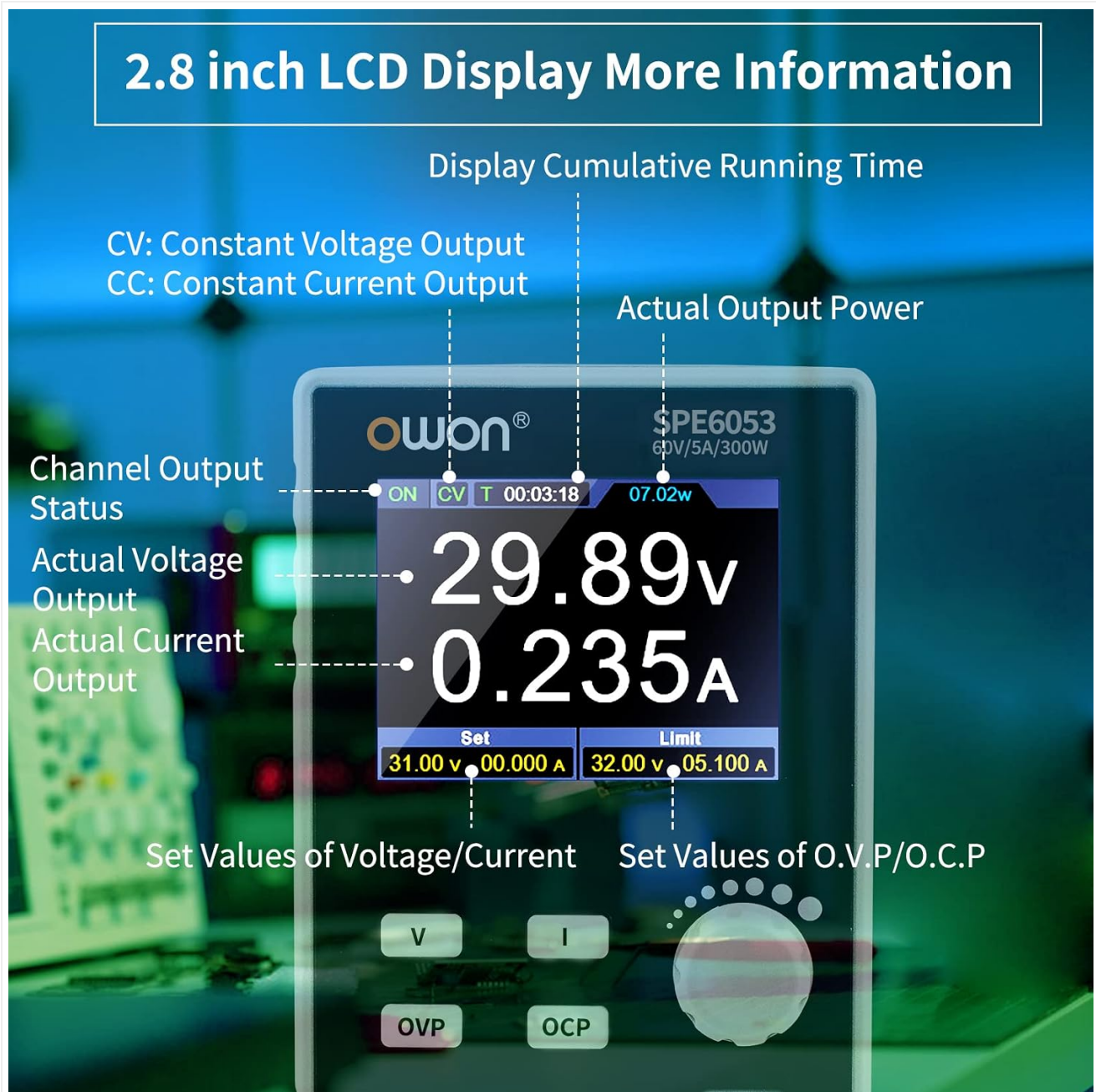


Figure 4: Detailed view of the 2.8-inch LCD display showing various parameters.

When the actual current exceeds the set current value, the power supply automatically switches to Constant Current (CC) mode to protect the circuit.

3.3 Setting Voltage and Current

1. Press the **V** button to enter voltage setting mode. The voltage value on the display will become editable.
2. Rotate the **Adjustment Knob** to change the desired voltage value. Press the knob to move between digits.
3. Press the **I** button to enter current setting mode. The current value on the display will become editable.

4. Rotate the **Adjustment Knob** to change the desired current value. Press the knob to move between digits.
5. Once the desired voltage and current limits are set, press the **On/Off** button to enable the output.

3.4 Protection Functions (OVP, OCP)

The SPE6053 includes multiple protection features:

- **Overvoltage Protection (OVP):** Prevents damage to the load by limiting the maximum output voltage. Press the **OVP** button to set the overvoltage limit.
- **Overcurrent Protection (OCP):** Protects the load from excessive current. Press the **OCP** button to set the overcurrent limit.
- **Short Circuit Protection:** Automatically shuts down output in case of a short circuit.
- **Over Power Protection:** Limits the total output power.
- **Thermal Protection:** Protects the unit from overheating.

It is recommended to set OVP and OCP values slightly above your desired operating voltage and current to provide a safety margin for your connected circuit.

3.5 Memory Functions

The power supply features 4 groups of memory parameters for quick recall of frequently used settings. Press the **Memory** button to access these functions. Refer to the on-screen prompts for saving and recalling parameters.

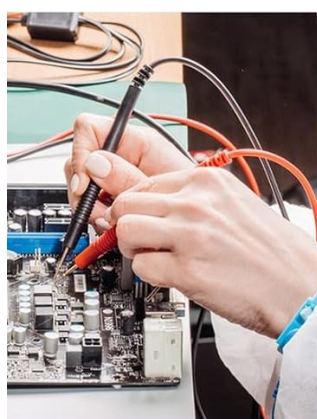
3.6 USB Charging and PC Software Control

The front panel includes a 5V/1A USB output port for charging mobile phones or other compatible devices. Additionally, the rear USB communication port allows for firmware updates and control via PC software. This enables advanced programming and monitoring capabilities.

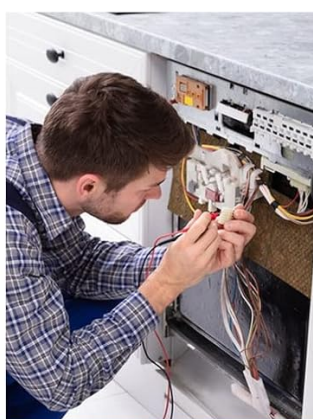
Single Channel Output with PC Software and USB Charging



Application Area



Circuit Board Repair



Appliance Repair



Phone Repair



Computer Repair

Figure 5: USB charging capability and typical application areas including circuit board, appliance, phone, and computer repair.

4. MAINTENANCE

4.1 Cleaning

To clean the instrument, use a soft cloth dampened with a mild detergent. Do not use abrasive cleaners or solvents. Ensure the power supply is disconnected from the main power before cleaning.

4.2 Environmental Conditions

Operate and store the power supply in a clean, dry environment, away from direct sunlight, excessive dust, and moisture. Ensure proper ventilation around the unit to prevent overheating.

5. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with the OWON SPE6053 power supply.

Problem	Possible Cause	Solution
No power when turned on.	Power cord not connected, power switch off, or no power from outlet.	Check power cord connection. Ensure the main power switch is on. Verify the power outlet is functional.
Output voltage/current is zero or unstable.	Output is off, OVP/OCP triggered, or faulty connection.	Press the On/Off button to enable output. Check OVP/OCP settings. Verify load connections.
Protection (OVP/OCP) frequently triggers.	OVP/OCP limits set too low, or load demands exceed limits.	Increase OVP/OCP limits if appropriate for your application, or reduce load requirements.
Unit feels hot.	Inadequate ventilation or prolonged high-power operation.	Ensure clear airflow around the unit. Reduce load or operating time if necessary. The unit has thermal protection.

6. SPECIFICATIONS

The following table lists the key technical specifications for the OWON SPE6053 Programmable DC Power Supply.

Feature	Specification
Model Name	SPE6053
Brand	OWON
Output Voltage Range	0-60V
Output Current Range	0-5A
Output Power	300W
Display	2.8-inch TFT LCD
Input Voltage (AC)	120V (AC) / 230V (AC) (Min/Max)
Cooling Method	Fan
Weight	1.92 Kilograms (approx. 3.3 lbs)
Connectivity	USB (Front 5V/1A, Rear for PC control)
Protection Features	OVP, OCP, Short Circuit, Over Power, Thermal

The Most Important to Buy A Power Supply is STABLE

Stable output, low ripple and noise power supply,
meeting high-precision test requirements.

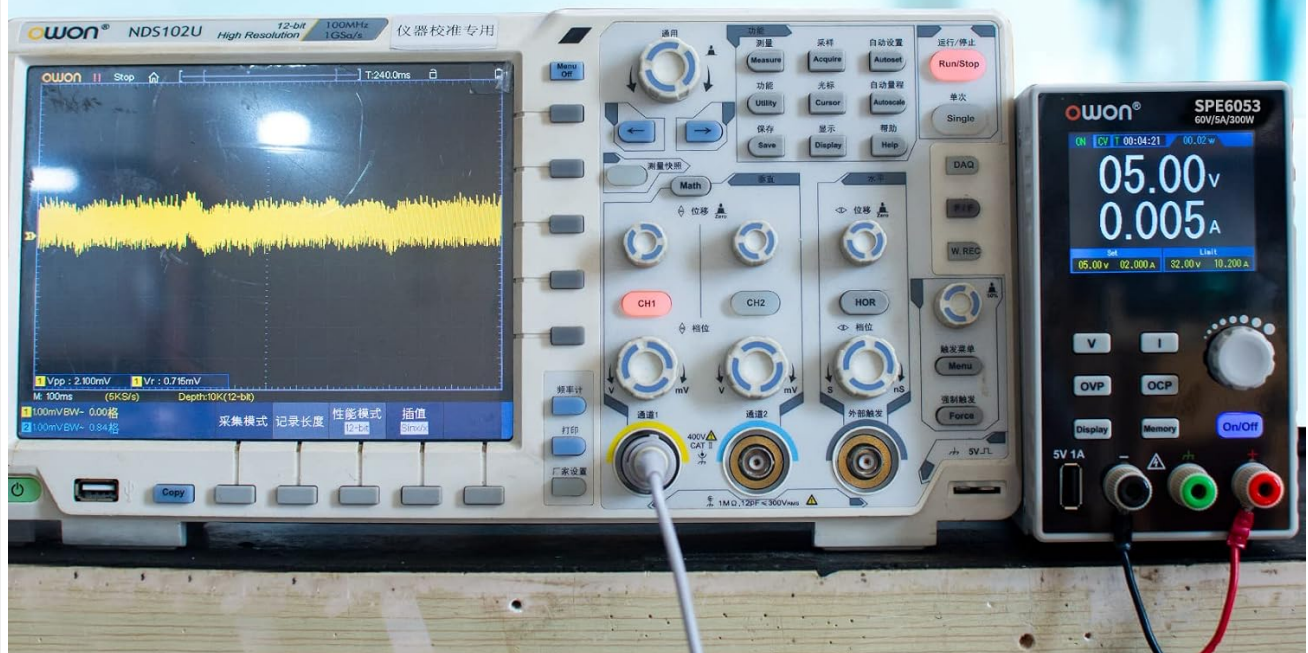


Figure 6: The SPE6053 provides stable output with low ripple and noise, as demonstrated by oscilloscope measurements.

7. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact your local OWON distributor or visit the official OWON website. Ensure you have your product model number (SPE6053) and purchase details available when seeking support.