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> OWON ODP3033 Programmable DC Power Supply User Manual

**OWON ODP3033**

# OWON ODP3033 Programmable DC Power Supply User Manual

Model: ODP3033

## 1. INTRODUCTION

The OWON ODP3033 is a high-performance programmable DC power supply designed for various applications in R&D labs, educational institutions, automotive electronic testing, and production quality assessment. It features three independently controllable output channels, a maximum output power of 198W, and a 4-inch high-resolution TFT color LCD for clear display of parameters and data.

This manual provides essential information for the safe and efficient operation of your ODP3033 power supply. Please read it thoroughly before use.



Figure 1: Front view of the OWON ODP3033 Programmable DC Power Supply.

## 2. PRODUCT FEATURES

- Three independent controllable output channels.
- Maximum output resolution: 1mV / 1mA.
- Low ripple and low noise output characteristics.
- Up to 100 group timers for automated testing sequences.
- Multiple working modes: individual, parallel, and series operation.
- Integrated over-voltage protection (OVP) and over-current protection (OCP).
- Data-logging function to record output voltage and current, with data display in chart format.
- Automatic cooling system for optimal performance and longevity.
- 4-inch high-resolution (480 × 320 pixels) TFT color LCD.
- Multiple communication interfaces: USB, RS232, and LAN.
- Supports SCPI commands and LabVIEW integration.

## 3. SETUP

### 3.1 Power Connection

1. Ensure the power supply is switched off.
2. Verify that the input voltage selector (if present) matches your local power grid (100V/120V/220V/230V supported).
3. Connect the provided power cord to the AC input on the rear panel of the device and then to a grounded power outlet.

### 3.2 Output Connections

Connect your load to the appropriate output terminals (CH1, CH2, CH3) on the front panel. Ensure correct polarity (red for positive, black for negative, green for ground). For series or parallel operation, refer to section 4.2.

### 3.3 Interface Connections

For remote control or data logging via PC, connect the appropriate cable (USB, RS232, or LAN) to the corresponding port on the rear panel.



Figure 2: Rear panel connections of the ODP3033, including power input and communication interfaces.

## 4. OPERATING MODES

### 4.1 Basic Operation

1. Press the **POWER** button on the front panel to turn on the device.
2. Use the channel selection buttons (CH1, CH2, CH3) to select the desired output channel.
3. Adjust the voltage and current settings using the rotary knob and numerical keypad. The display will show the set values.
4. Press the **ON/OFF** button for the selected channel to enable or disable its output.
5. Monitor the actual output voltage and current on the TFT-LCD display.



Figure 3: Front panel controls and display of the ODP3033.

### 4.2 Multi-Channel Operation (Individual, Parallel, Series)

The ODP3033 supports three multi-channel operation modes:

- **Individual Mode:** Each channel operates independently with its own voltage and current settings.

- **Parallel Mode:** Combines the current capabilities of multiple channels to provide a higher total output current at a common voltage. Connect channels in parallel externally.
- **Series Mode:** Combines the voltage capabilities of multiple channels to provide a higher total output voltage at a common current. Connect channels in series externally.

Refer to the detailed instructions in the full product manual for specific wiring diagrams and configuration steps for parallel and series modes.

### 4.3 Protection Functions

The device includes Over-Voltage Protection (OVP) and Over-Current Protection (OCP) to safeguard both the power supply and the connected load. These protections can be configured via the utility menu.

## 5. DATA LOGGING

The ODP3033 features a data-logging function that allows recording of output voltage and current over time. This data can be displayed graphically on the device's LCD or transferred to a PC for further analysis.

- **Recording:** Access the 'Record' menu to configure logging parameters such as sampling rate and duration.
- **Timers:** Up to 100 group timers can be set for automated output sequences, allowing for complex test profiles.
- **Output Curve Adjustment:** The power output curve can be adjusted either directly on the device or via PC software, enabling simulation of varying power outputs.

## 6. INTERFACES

The ODP3033 offers multiple communication interfaces for remote control and data acquisition:

- **USB Device:** For direct connection to a computer.
- **USB Host:** For connecting USB storage devices to save data.
- **RS232:** Serial communication interface.
- **LAN:** Ethernet interface for network connectivity.

The device supports Standard Commands for Programmable Instrumentation (SCPI) and is compatible with LabVIEW for advanced automation and control.

## 7. SPECIFICATIONS

Parameter	Value
Model	ODP3033
Output Channels	3 (CH1, CH2, CH3)
CH1/CH2 Output	0-30V / 0-6A
CH3 Output	0-6V / 3A
Max Output Power	198W

Parameter	Value
Output Resolution	1mV / 1mA
Display	4-inch TFT-LCD (480 × 320 pixels)
Input Voltage	100V/120V/220V/230V
Interfaces	USB Device, USB Host, RS232, LAN
Dimensions (W×H×D)	250mm × 158mm × 358mm
Weight	12 kg (approximately 26.4 lbs)

## 8. MAINTENANCE

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Proper maintenance ensures the longevity and reliable operation of your ODP3033 power supply.

- **Cleaning:** Regularly clean the exterior of the device with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Ventilation:** Ensure that the ventilation openings on the rear and sides of the unit are clear and unobstructed. The automatic cooling system relies on proper airflow.
- **Storage:** When not in use for extended periods, store the device in a dry, dust-free environment.
- **Power Cord:** Inspect the power cord periodically for any signs of damage. Replace if necessary.

## 9. TROUBLESHOOTING

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If you encounter issues with your ODP3033, consider the following basic troubleshooting steps:

- **No Power:** Check the power cord connection, the power outlet, and the power switch on the device. Ensure the correct input voltage is selected.
- **No Output:** Verify that the output for the selected channel is enabled (ON/OFF button). Check load connections for shorts or open circuits. Ensure voltage and current limits are set appropriately.
- **Incorrect Output:** Confirm the voltage and current settings. Check the load for proper operation.
- **Communication Issues:** Ensure correct cable connections for USB, RS232, or LAN. Verify driver installation on the PC and correct communication settings (e.g., baud rate for RS232).
- **Overload/Protection Triggered:** If OVP or OCP activates, reduce the load or adjust the protection limits. Disconnect the load and re-evaluate the circuit.

For persistent issues, consult the comprehensive troubleshooting guide in the full product manual or contact OWON technical support.

## 10. WARRANTY AND SUPPORT

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For information regarding product warranty, technical support, and service, please refer to the warranty card included with your product or visit the official OWON website. Contact details for customer support are typically provided by the manufacturer or your authorized distributor.

