## Real Instruments AVP-63

# Real Instruments AVP-63 Single Phase Voltage Protector

User Manual

## 1. Introduction

The Real Instruments AVP-63 is an intelligent single-phase voltage and current protective device designed to safeguard electrical equipment from damage caused by over-voltage, under-voltage, and over-current conditions. It features dual LED displays for real-time monitoring of voltage and current, and offers adjustable protection parameters with automatic reconnection capabilities. This manual provides detailed instructions for the proper installation, operation, and maintenance of your AVP-63 device.

## 2. Safety Information

Please read all safety warnings and instructions carefully before installing or operating this device. Failure to do so may result in electric shock, fire, or serious injury.

- Installation must be performed by a qualified electrician in accordance with local electrical codes and regulations.
- Ensure the main power supply is disconnected before any installation, wiring, or maintenance work.
- Do not operate the device if it is damaged or appears to be malfunctioning.
- Keep the device away from water, moisture, and extreme temperatures.
- Do not attempt to disassemble or modify the device. There are no user-serviceable parts inside.

## 3. Product Overview

The AVP-63 is a compact device designed for DIN rail mounting, featuring clear indicators and controls for easy monitoring and adjustment.




Figure 3.1: Front view of the AVP-63 device, showing dual LED displays and control buttons.

## 3.1. Components and Indicators




Figure 3.2: Labeled diagram of the AVP-63, highlighting input/output terminals and control buttons.

- **IN (N, L) Terminals:** Power input terminals (Neutral, Live).
- **OUT (N, L) Terminals:** Protected power output terminals (Neutral, Live).
- **Voltage Display:** Top LED display showing real-time voltage.
- **Current Display:** Bottom LED display showing real-time current.
- **>V Indicator:** Red LED illuminates when over-voltage condition is detected.
- **<V Indicator:** Red LED illuminates when under-voltage condition is detected.
- **>A Indicator:** Red LED illuminates when over-current condition is detected.

- **POWER Indicator:** Green LED illuminates when the device is powered on.
- **SET Button:** Used to enter and confirm parameter settings.
- **Up/Down Buttons:** Used to adjust parameter values.
- **ON/OFF Button:** Used to manually switch the output on or off.




Figure 3.3: Detailed view of AVP-63 indicators and display functions.




Figure 3.4: Real-time display of working current and voltage on the AVP-63.

## 4. Technical Specifications

| Feature | Specification |
|---|---|
| Model | AVP-63 |
| Rated Current | 63A |
| Over Voltage Protection Range | 230V - 300V (Adjustable) |
| Under Voltage Protection Range | 140V - 210V (Adjustable) |
| Over Current Protection Range | 1A - 63A (Adjustable) |
| Fault Recovery Delay Time | 1 - 600 seconds (Adjustable) |
| Display Type | Dual Digital LED |
| Mounting Type | DIN Rail |
| Color | White |
| Item Weight | 210 g |
| Package Dimensions | 11 x 7.4 x 4.4 cm |

## 5. Installation

The AVP-63 is designed for easy installation on a standard DIN rail within an electrical distribution box. Ensure all power is OFF before proceeding.




Figure 5.1: Side view of the AVP-63, illustrating its DIN rail compatibility.

### 5.1. Wiring Diagram

Connect the device according to the following steps:

1. **Disconnect Power:** Turn off the main circuit breaker to ensure no power is supplied to the installation area.
2. **Mount Device:** Clip the AVP-63 onto the DIN rail in your electrical panel.
3. **Input Wiring:** Connect the incoming Live (L) wire to the 'L' terminal marked 'IN' and the incoming Neutral (N) wire to the 'N' terminal marked 'IN'.
4. **Output Wiring:** Connect the outgoing Live (L) wire to the 'L' terminal marked 'OUT' and the outgoing Neutral (N) wire to the 'N' terminal marked 'OUT'. These wires will lead to the protected electrical load.
5. **Secure Connections:** Ensure all wire connections are tight and secure to prevent loose contacts and overheating.
6. **Restore Power:** Once all connections are verified, restore power to the main circuit breaker. The device will power on and display current voltage and current readings.

*Note: For optimal performance and safety, use appropriate wire gauges for your electrical load.*

## 6. Operating Instructions

The AVP-63 provides real-time monitoring and allows for custom adjustment of protection parameters.

### 6.1. Real-time Monitoring

Upon power-up, the top LED display will show the current line voltage (V) and the bottom LED display will show the current load current (A).

### 6.2. Parameter Setting

To adjust the protection parameters (over-voltage, under-voltage, over-current, and recovery delay time):




Figure 6.1: Flowchart for adjusting protection parameters on the AVP-63.

1. **Enter Setting Mode:** Press and hold the **SET** button for approximately 3-5 seconds until the display starts flashing, indicating entry into setting mode.
2. **Navigate Parameters:** Briefly press the **SET** button to cycle through the adjustable parameters: Over-Voltage (OV), Under-Voltage (UV), Over-Current (OC), and Fault Recovery Delay Time (dEL).

3. **Adjust Value:** When the desired parameter is displayed and flashing, use the **Up** and **Down** buttons to increase or decrease the value.
4. **Confirm Setting:** After setting the value, briefly press the **SET** button again to confirm the value and move to the next parameter, or wait for 5-10 seconds for the device to automatically save the setting and exit setting mode.
5. **Exit Setting Mode:** Once all parameters are set, the device will automatically exit setting mode after a period of inactivity, or you can press and hold the **SET** button again to exit.

### 6.3. Manual ON/OFF Control

The device can be manually switched on or off using the ON/OFF button. A brief press will toggle the output state. This function is independent of the protection settings.

## 7. Maintenance

The AVP-63 is designed for minimal maintenance. Follow these guidelines to ensure its longevity and proper function:

- **Regular Inspection:** Periodically inspect the device and its wiring for any signs of damage, loose connections, or discoloration.
- **Cleaning:** If necessary, gently wipe the device with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges to prevent premature failure.
- **No User Serviceable Parts:** Do not attempt to open the casing or repair the device yourself. Refer all servicing to qualified personnel.

## 8. Troubleshooting

If you encounter issues with your AVP-63, refer to the following table for common problems and solutions:

| Problem | Possible Cause | Solution |
|---|---|---|
| Device does not power on. | No input power; Incorrect wiring. | Check main circuit breaker. Verify input wiring (L and N) is correct and secure. |
| Output is off, and >V, <V, or >A indicator is lit. | Over-voltage, under-voltage, or over-current condition detected. | Identify and resolve the electrical fault. The device will automatically reconnect after the set delay time once conditions return to normal. |
| Device trips frequently. | Protection parameters set too sensitively; Unstable power supply. | Adjust protection parameters (OV, UV, OC) to appropriate levels for your electrical system. Consult an electrician to check power supply stability. |
| Cannot enter setting mode. | SET button not held long enough. | Press and hold the SET button for at least 3-5 seconds until the display flashes. |
| Display shows erratic readings. | Loose wiring connections; Electrical interference. | Check and tighten all input and output wiring connections. Ensure proper grounding. |

If the problem persists after attempting these solutions, please contact customer support.

# 9. Warranty and Support

## 9.1. Warranty Information

Real Instruments products are manufactured to high-quality standards. This product comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to your purchase documentation or contact Real Instruments customer service for specific warranty terms and conditions applicable to your region.

## 9.2. Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact Real Instruments customer support through the following channels:

- **Website:** Visit the official Real Instruments website for support resources and contact forms.
- **Email:** Refer to your product packaging or purchase invoice for customer service email addresses.
- **Phone:** Contact numbers may be available on the Real Instruments website or product documentation.

When contacting support, please have your product model (AVP-63) and purchase details ready.

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