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MEAN WELL RSP-1000-48

MEAN WELL RSP-1000-48 AC to DC Power Supply User Manual

Model: RSP-1000-48

1. INTRODUCTION

This manual provides essential instructions for the safe and efficient use of your MEAN WELL RSP-1000-48 AC to DC Power Supply. This enclosed switching power supply delivers 48 Volts DC at 21 Amps, providing a maximum output power of 1008 Watts. It features active power factor correction (PFC) and is designed for various industrial and scientific applications requiring a stable and reliable power source.

2. SAFETY INSTRUCTIONS

Please read and understand all safety instructions before installation and operation. Failure to follow these instructions may result in electric shock, fire, or damage to the unit.

- **Qualified Personnel:** Installation and servicing must be performed by qualified personnel only.
- **Power Disconnection:** Always disconnect the AC input power before performing any installation, wiring, or maintenance.
- **Proper Grounding:** Ensure the unit is properly grounded to prevent electric shock.
- **Ventilation:** Do not obstruct the ventilation openings. Ensure adequate airflow around the unit to prevent overheating.
- **Environmental Conditions:** Do not operate the unit in environments with excessive moisture, dust, or extreme temperatures outside the specified range.
- **Overload Protection:** Do not exceed the specified output current or power ratings to avoid damage to the power supply and connected equipment.
- **Internal Components:** Do not open the power supply casing. There are no user-serviceable parts inside.

3. PRODUCT OVERVIEW

The MEAN WELL RSP-1000-48 is a high-efficiency, enclosed switching power supply designed for robust performance. Key features include:

- Universal AC input (90-264VAC)
- Built-in active Power Factor Correction (PFC) function
- Built-in ON-OFF control and remote sense function

- Parallel function capability
- Protections: Short circuit, overload, over voltage, over temperature
- Forced air cooling by built-in DC fan



Figure 1: MEAN WELL RSP-1000 Series AC to DC Power Supply unit. This image shows a typical enclosed power supply from the RSP-1000 series, illustrating the general form factor and terminal layout. This manual specifically pertains to the RSP-1000-48 model.

4. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of the power supply. Refer to the wiring diagram (if available in product packaging) for specific connection details.

1. **Mounting:** Mount the power supply in a well-ventilated area, ensuring that the cooling fan and vents are not obstructed. Use appropriate mounting hardware for secure installation.
2. **Input Wiring:** Connect the AC input (Line, Neutral, Earth Ground) to the designated screw terminals. The unit accepts a universal input voltage range of 90-264VAC. Ensure all connections are tight and secure.
3. **Output Wiring:** Connect the DC output (+V, -V) to your load using appropriate gauge wiring. The output connector type is a

screw terminal block. Observe correct polarity.

4. **Remote Sense (Optional):** If using the remote sense function, connect the remote sense terminals to the load to compensate for voltage drop across the output wiring.
5. **ON-OFF Control (Optional):** If using the ON-OFF control function, connect the control terminals as per your system requirements.
6. **Parallel Function (Optional):** For increased power or redundancy, multiple RSP-1000-48 units can be connected in parallel. Consult the detailed parallel connection guide (if provided with the unit) for proper setup.
7. **Initial Check:** Before applying power, double-check all wiring connections for correctness and security.

5. OPERATING INSTRUCTIONS

Once properly installed, the RSP-1000-48 is ready for operation.

- **Power On:** Apply AC power to the unit. The internal fan will activate, and the output voltage should be present at the DC output terminals.
- **Voltage Adjustment:** The output voltage can be finely adjusted using the internal potentiometer (V.ADJ) if necessary. Use a voltmeter to monitor the output during adjustment.
- **Load Connection:** Connect your load to the DC output terminals. Ensure the load current does not exceed 21 Amps.
- **Monitoring:** Periodically monitor the power supply's operation, ensuring proper ventilation and stable output.

6. MAINTENANCE

The RSP-1000-48 is designed for reliable operation with minimal maintenance. However, periodic checks can help ensure optimal performance.

- **Cleaning:** Keep the power supply clean and free from dust accumulation, especially around the ventilation openings and fan. Use a soft, dry cloth or compressed air for cleaning.
- **Ventilation Check:** Regularly inspect that the cooling fan is operating correctly and that airflow is not restricted.
- **Connection Integrity:** Periodically check all input and output wiring connections to ensure they remain tight and free from corrosion.
- **Environmental Check:** Ensure the operating environment remains within the specified temperature and humidity ranges.

7. TROUBLESHOOTING

If you encounter issues with your power supply, consider the following common troubleshooting steps:

- **No Output Voltage:**
 - Verify AC input power is present and correctly connected.
 - Check for blown fuses in the AC input line (if applicable to your installation).
 - Ensure the ON-OFF control (if used) is in the "ON" position.
 - Disconnect the load to check if the power supply is entering protection mode due to an overload or short circuit.
- **Output Voltage Fluctuates or is Incorrect:**
 - Check the V.ADJ potentiometer setting.
 - Verify the load is not drawing excessive current, causing the unit to enter constant current mode.
 - Inspect output wiring for loose connections or damage.
 - If using remote sense, ensure connections are correct and secure.
- **Overheating:**

- Ensure adequate ventilation and that the cooling fan is operating.
- Clean any dust or debris from the fan and vents.
- Verify the ambient operating temperature is within specifications.
- Reduce the load if it is consistently near the maximum rating.

If problems persist after performing these checks, contact qualified service personnel or MEAN WELL support.

8. SPECIFICATIONS

Parameter	Value
Model	RSP-1000-48
Primary Output Voltage (VDC)	48V
Output Current (A)	21A
Maximum Output Power (W)	1008W
Input Voltage (VAC)	90 to 264VAC
Input Frequency	47 to 63 Hz
Maximum Input Current (A)	12A
Efficiency	90% (typical)
Ripple and Noise (mV p-p)	150mV
Load Regulation	0.5%
Line Regulation	0.5%
Output Connector Type	Screw Terminal Block
Operating Temperature	-20°C to 60°C
Dimensions (L x W x H)	11.6 x 5.0 x 1.6 inches (294.6 x 127 x 40.6 mm)
Agency Approvals	UL/cUL/TUV/CE/CB/PFC
Cooling Method	Air (Built-in DC fan)

9. WARRANTY AND SUPPORT

The MEAN WELL RSP-1000-48 AC to DC Power Supply comes with a **3-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or service inquiries, please contact your authorized MEAN WELL distributor or reseller. Provide your product model number (RSP-1000-48) and purchase details when seeking assistance.

