

MEANWNVV SPV-300-24

Mean Well SPV 300W 24V 12.5A Switching Power Supply (Model SPV-300-24) User Manual

Comprehensive instructions for installation, operation, and maintenance.

1. INTRODUCTION

This manual provides detailed instructions for the safe and efficient use of the Mean Well SPV-300-24 Switching Power Supply. This AC/DC single output power supply delivers 300W at 24V and 12.5A, designed for various industrial and electronic applications. Please read this manual thoroughly before installation and operation to ensure proper functionality and safety.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to prevent injury or damage to the unit:

- Ensure the power supply is disconnected from the AC mains before any installation, wiring, or maintenance.
- Installation should be performed by qualified personnel only.
- Verify that the input voltage range matches the specifications of the power supply.
- Do not operate the unit in environments with excessive moisture, dust, or extreme temperatures outside its specified operating range.
- Ensure proper ventilation to prevent overheating. Do not block ventilation openings.
- Connect the ground terminal (FG) to earth ground to prevent electric shock.
- Avoid exceeding the rated output current for prolonged periods to ensure product longevity.

3. PRODUCT FEATURES

- Integrated Power Factor Correction (PFC) for improved efficiency.
- Remote sensing function for accurate voltage regulation at the load.
- Output voltage adjustable via a 1V to 5.5VDC control signal or internal potentiometer.
- High conversion rate of 83% for AC-DC single output.
- Wide output voltage adjustment range from 20% to 110% of the nominal voltage.

- Operating temperature range: -20°C to +65°C.
- Multiple protection features: short circuit, overload, over-voltage, and over-temperature.
- Durable metal casing with natural air-cooling design.
- Suitable for electromechanical equipment, data systems, and automation applications.

4. SPECIFICATIONS

Parameter	Value
Model Name	SPV-300-24
Output Wattage	300 Watts
Output Voltage	24V
Output Current	12.5A
Input Voltage	100-240VAC (50/60Hz)
Efficiency	83%
Dimensions (L x W x H)	8.46 x 4.53 x 1.97 inches (215 x 115 x 50 mm)
Operating Temperature	-20°C to +65°C
Protection Features	Short Circuit, Overload, Over-voltage, Over-temperature

5. SETUP AND INSTALLATION

Follow these steps for proper installation of the SPV-300-24 power supply:

1. **Mounting:** Securely mount the power supply in a well-ventilated area. Ensure adequate clearance around the unit for natural air circulation.
2. **Wiring Connections:** Refer to the diagram below for terminal connections.



Figure 1: Front view of the SPV-300-24 power supply with terminal block.

This image displays the front panel of the Mean Well SPV-300-24 power supply. Visible are the AC input terminals (L, N, FG), DC output terminals (+V, -V), and control terminals (PV, RC). A blue potentiometer labeled "+V ADJ" is present for output voltage adjustment.

- **AC Input:** Connect the Live (L), Neutral (N), and Earth Ground (FG) wires from your AC mains to the corresponding terminals on the power supply. Ensure correct polarity and a secure ground connection.
- **DC Output:** Connect your load to the +V (positive) and -V (negative) DC output terminals. Observe correct polarity.
- **Voltage Adjustment (+V ADJ):** The blue potentiometer labeled "+V ADJ" allows for fine-tuning the output voltage within the specified range. Use a non-conductive tool for adjustment.
- **Remote Sensing (PV, RC):** These terminals are for remote sensing functionality, which compensates for voltage drop across the load wires. Consult advanced wiring diagrams if using this feature.

After all connections are made, double-check wiring for correctness and security before applying power.

6. OPERATING INSTRUCTIONS

1. **Power On:** Once all connections are secure, apply AC power to the unit. The power supply will begin to operate.
2. **Output Voltage Adjustment:** If necessary, use a small, insulated screwdriver to carefully turn the "+V ADJ" potentiometer to set the desired output voltage. Monitor the output voltage with a multimeter during adjustment. The output voltage can be adjusted from 20% to 110% of the nominal 24V.
3. **Load Connection:** Connect your device or system to the DC output terminals. Ensure the load's current draw does not exceed the power supply's rated output of 12.5A.

The power supply is designed for continuous operation within its specified parameters. Avoid operating the unit beyond its maximum rated output to prevent damage and ensure long-term reliability.

7. MAINTENANCE

The Mean Well SPV-300-24 power supply requires minimal maintenance. However, periodic checks can help ensure optimal performance and longevity:

- **Cleaning:** Ensure the ventilation openings are free from dust and debris. Use a soft, dry cloth or compressed air to gently clean the exterior. Do not use liquid cleaners.
- **Ventilation:** Verify that the installation environment provides adequate airflow for natural air-cooling. Blocked vents can lead to overheating and reduced lifespan.
- **Connections:** Periodically check all wiring connections for tightness and signs of corrosion. Loose connections can cause intermittent operation or overheating.

Always disconnect the power supply from the AC mains before performing any cleaning or inspection.

8. TROUBLESHOOTING

If you encounter issues with your SPV-300-24 power supply, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No output voltage	No AC input power; Blown fuse; Internal fault	Check AC power source and connections. Inspect for blown fuses (if accessible). If problem persists, contact support.
Output voltage too low/high	Incorrect "+V ADJ" setting; Overload condition; Remote sensing issue	Adjust "+V ADJ" potentiometer. Reduce load. Check remote sensing connections if used.
Unit shuts down intermittently	Over-temperature protection activated; Overload protection activated	Ensure adequate ventilation. Reduce ambient temperature. Reduce load current.
Unusual noise or smell	Internal component failure	Immediately disconnect power. Do not attempt to repair. Contact qualified service personnel.

For issues not listed here or if troubleshooting steps do not resolve the problem, please contact the manufacturer's support.

9. WARRANTY AND SUPPORT

This Mean Well power supply is manufactured to high standards and is typically covered by a manufacturer's warranty against defects in materials and workmanship. Please refer to the warranty information provided with your purchase or visit the official MEANWNVV website for specific warranty terms and conditions.

For technical assistance, service, or warranty claims, please contact your authorized dealer or the manufacturer's customer support directly. When contacting support, please have your product model number (SPV-300-24) and purchase details readily available.