

MEAN WELL SPV-150-24

MEAN WELL SPV-150-24 Power Supply User Manual

Model: SPV-150-24

1. INTRODUCTION

This manual provides essential instructions for the safe and efficient operation of the MEAN WELL SPV-150-24 Switching Power Supply. Please read this manual thoroughly before installation and use, and retain it for future reference.

The MEAN WELL SPV-150-24 is a 150W single output switching power supply designed for various industrial and scientific applications. It features universal AC input, active Power Factor Correction (PFC), and comprehensive protection functions.

2. SAFETY INSTRUCTIONS

To ensure safe operation, always observe the following precautions:

- **Electrical Hazard:** Do not open the power supply casing. High voltages are present inside.
- **Qualified Personnel:** Installation and servicing should only be performed by qualified personnel.
- **Ventilation:** Ensure adequate ventilation to prevent overheating. Do not block ventilation openings.
- **Environment:** Install in a dry, well-ventilated area, free from excessive dust, moisture, and corrosive substances.
- **Grounding:** Ensure proper grounding of the unit.
- **Input Voltage:** Verify the input voltage range (88~264VAC) before connecting to the AC mains.

3. PRODUCT OVERVIEW

3.1 Features

- Universal AC input / Full range (88~264VAC, 47~63Hz)
- Built-in active Power Factor Correction (PFC) function, PF>0.94
- Protections: Short-circuit, Overload, Over-voltage, Over-temperature
- Built-in remote On-Off control

- Output voltage programmable
- 100% full load burn-in test
- No load power consumption <0.75W

3.2 Components and Connections

The following image illustrates the general layout and connection terminals of the MEAN WELL SPV-150 series power supply. Note that the specific output voltage and current ratings shown on the label in the image may differ from your SPV-150-24 model, which provides 24VDC at 6.25A.



Figure 1: MEAN WELL SPV-150 Series Power Supply. This image displays the AC input terminals (N, L, Ground), DC output terminals (+V, -V), and the +V ADJ potentiometer for fine-tuning the output voltage. The label indicates a 12V, 12.5A output, but the SPV-150-24 model provides 24V, 6.25A.

Key components and terminals:

- **AC Input Terminals (N, L, Ground):** For connecting the AC mains power.
- **DC Output Terminals (+V, -V):** For connecting the load requiring 24VDC.
- **+V ADJ Potentiometer:** Used to adjust the output voltage within a small range.
- **Ventilation Slots:** Located on the casing for heat dissipation.

4. SETUP AND INSTALLATION

4.1 Mounting

- Mount the power supply in a location that allows for adequate airflow around the unit.
- Ensure the mounting surface is stable and can support the weight of the power supply.
- Maintain proper clearance from other heat-generating components.

4.2 Wiring Connections

Before making any connections, ensure the AC mains power is disconnected.

1. **AC Input:** Connect the AC mains supply to the input terminals labeled 'L' (Line), 'N' (Neutral), and 'Ground' (Earth). Use appropriate gauge wiring for the expected current.
2. **DC Output:** Connect your load to the DC output terminals labeled '+V' (Positive) and '-V' (Negative). Ensure correct polarity. The SPV-150-24 provides 24VDC.
3. **Remote On-Off (if applicable):** Refer to the specific datasheet for detailed instructions on utilizing the remote On-Off function.

Warning: Incorrect wiring can cause damage to the unit or connected equipment, and poses a risk of electric shock. Always double-check connections before applying power.

5. OPERATING INSTRUCTIONS

5.1 Initial Power-Up

1. After all connections are securely made and verified, apply AC mains power to the unit.
2. The power supply should output 24VDC.

5.2 Output Voltage Adjustment

The output voltage can be fine-tuned using the '+V ADJ' potentiometer. Use a small screwdriver to carefully turn the potentiometer clockwise to increase the voltage or counter-clockwise to decrease it. Do not exceed the specified adjustment range to avoid damaging the unit or connected devices.

5.3 Overload Protection

The unit includes overload protection. If the output current exceeds the rated value (6.25A), the power supply may enter protection mode, shutting down or limiting the current. To reset, remove the overload condition and cycle the input power.

6. MAINTENANCE

The MEAN WELL SPV-150-24 power supply is designed for reliable operation with minimal maintenance. However, periodic checks are recommended:

- **Cleaning:** Ensure ventilation openings are free from dust and debris. Use a soft, dry cloth for external cleaning. Do not use liquid cleaners.
- **Connections:** Periodically check all wiring connections for tightness and signs of corrosion.
- **Environment:** Verify that the operating environment remains within specified temperature and humidity limits.

Caution: Disconnect all power before performing any maintenance.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No output voltage	No AC input power; Blown fuse; Overload protection activated; Internal fault.	Check AC input connection and power source; Check for external fuse (if applicable); Remove load and cycle power; Contact support if problem persists.

Problem	Possible Cause	Solution
Output voltage too low/high	'+V ADJ' potentiometer misadjusted; Overload condition; Faulty load.	Adjust '+V ADJ' potentiometer; Check load for short circuits or excessive current draw; Disconnect load to test power supply independently.
Unit overheating	Insufficient ventilation; Excessive ambient temperature; Overload condition.	Ensure proper airflow and clearances; Reduce ambient temperature; Reduce load.

If troubleshooting steps do not resolve the issue, contact MEAN WELL technical support or your distributor.

8. SPECIFICATIONS

Parameter	Value
Model	SPV-150-24
Output Voltage	24 VDC
Output Current	6.25 A
Output Power	150 W
Input Voltage Range	88 VAC to 264 VAC (47 Hz to 63 Hz)
Input Voltage DC Range	124-370 VDC
Efficiency	(Typically >85%, refer to datasheet for exact value)
Ripple and Noise	150mVp-p
Line Regulation	+/-0.2%
Load Regulation	+/-0.5%
Protection Features	Short-circuit, Overload, Over-voltage, Over-temperature
Dimensions (L x W x D)	8.46" x 4.53" x 1.97" (215mm x 115mm x 50mm)
Weight	2.43 lbs (1.1 kg)

9. WARRANTY INFORMATION

The MEAN WELL SPV-150-24 Power Supply comes with a **3-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage resulting from improper installation, misuse, unauthorized modifications, or external causes such as accidents or natural disasters.

For warranty claims, please contact your original point of purchase or an authorized MEAN WELL distributor with your proof of purchase.

10. SUPPORT AND CONTACT

For technical assistance, product inquiries, or further information, please contact MEAN WELL customer support or visit the official MEAN WELL website.

- **Manufacturer:** MEAN WELL
- **Website:** www.meanwell.com (Please refer to the official website for the most current contact information and resources.)