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MEAN WELL SE-600-12

MEAN WELL SE-600-12 AC to DC Power Supply User Manual

Brand: MEAN WELL | Model: SE-600-12 (Item Model Number: 374011)

1. INTRODUCTION AND OVERVIEW

The MEAN WELL SE-600-12 is a high-performance AC to DC power supply designed for various industrial and scientific applications. It provides a stable 12V DC output with a maximum current of 50 Amps, delivering up to 600 Watts of power. This unit features a switch-selectable AC input, allowing operation from 85-264VAC at 47-63Hz, and includes a built-in remote sense function for precise voltage regulation.

Key features include a compact design with dimensions of 9.7" x 5.0" x 2.5" and a weight of approximately 4.9 lbs. It boasts excellent load and line regulation of 0.5%, ensuring consistent power delivery under varying conditions.

2. SAFETY INSTRUCTIONS

WARNING: Improper installation or use can lead to electric shock, fire, or damage to the unit and connected equipment. Please read and understand all instructions before installation and operation.

- Ensure the power supply is installed by qualified personnel.
- Disconnect all power before making any connections or performing maintenance.
- Verify input voltage selection switch (115V/230V) is set correctly for your region's AC supply.
- Ensure proper grounding of the unit.
- Do not operate the unit in environments with excessive moisture, dust, or extreme temperatures.
- Provide adequate ventilation around the power supply to prevent overheating.
- Do not open the power supply casing; there are no user-serviceable parts inside.
- Avoid touching live terminals.

3. PRODUCT FEATURES

- **Output:** Single output, +12V, 50A, 600W.
- **Input:** 85-264VAC (47-63Hz) switch-selectable.
- **Dimensions (L x W x H):** 9.72" x 5.0" x 2.5" (247mm x 127mm x 63.5mm).
- **Weight:** Approximately 4.62 lbs (2.1 kg).
- **Load Regulation:** 0.5%.
- **Line Regulation:** 0.5%.

- **Ripple and Noise (Mv P-P):** 150mV.
- Built-in remote sense function.
- Cooling Method: Air (internal fan).
- Protections: Overload, Over Voltage, Over Temperature.

4. SETUP AND INSTALLATION

Before installation, ensure the power supply is suitable for your application's power requirements. Mount the unit in a well-ventilated area, ensuring sufficient clearance for airflow, especially around the cooling fan.

4.1 Input Voltage Selection

Locate the red switch on the side of the power supply. This switch allows you to select between 115V and 230V AC input. Ensure this switch is set to match your local AC mains voltage before connecting the power supply to the mains.



Image: Rear view of the power supply, highlighting the cooling fan and the input voltage selection switch.

4.2 Wiring Connections

Refer to the terminal block for input and output connections. Always use appropriate gauge wiring for the current draw to prevent overheating and ensure stable operation.

- **AC Input:** Connect the Live (L), Neutral (N), and Ground (\oplus) wires from your AC mains to the corresponding terminals.
- **DC Output:** Connect your load to the +V (positive) and -V (negative) terminals. Multiple +V and -V terminals are provided for convenience and current distribution.
- **Remote Sense (Optional):** The power supply features remote sense terminals (S+ and S-) to compensate for voltage drop across the load wires, ensuring precise voltage at the load. Connect S+ to the positive terminal of your load and S- to the negative terminal of your load. If not used, these terminals should be shorted to their respective output terminals (+V to S+, -V to S-).



Image: Front view of the power supply, detailing the input and output terminal blocks.



Image: Angled view of the power supply, providing a general perspective of the unit.

5. OPERATING INSTRUCTIONS

Once all connections are securely made and verified, the power supply can be powered on. The internal cooling fan will activate as needed to maintain optimal operating temperature. The output voltage can be fine-tuned within a small range using the V.ADJ potentiometer, typically located near the output terminals.

Monitor the load to ensure it does not exceed the power supply's rated output (600W / 50A at 12V). The unit is designed with overload, over-voltage, and over-temperature protections to prevent damage to itself and connected equipment.

6. MAINTENANCE

The MEAN WELL SE-600-12 power supply requires minimal maintenance. Follow these guidelines to ensure longevity and reliable operation:

- **Cleaning:** Periodically clean the exterior of the unit, especially the fan intake and exhaust vents, to prevent dust buildup. Use a soft, dry cloth. Do not use liquid cleaners.
- **Ventilation:** Ensure that the ventilation openings are not obstructed. Adequate airflow is crucial for dissipating heat.
- **Connections:** Periodically check all wiring connections to ensure they remain tight and secure. Loose connections can lead to poor performance or overheating.
- **Environmental Conditions:** Operate the power supply within its specified temperature and humidity ranges.

No internal user-serviceable parts. Refer all servicing to qualified service personnel.

7. TROUBLESHOOTING

If you encounter issues with your MEAN WELL SE-600-12 power supply, consider the following common troubleshooting steps:

Problem	Possible Cause	Solution
No output voltage / Unit not powering on	No AC input power. Incorrect input voltage selection (115V/230V switch). Blown fuse (internal). Overload protection activated.	Check AC power source and connections. Verify the input voltage selection switch matches your mains voltage. Contact qualified service personnel. Reduce load; cycle power to reset.
Output voltage unstable or too low	Excessive load. Poor output wiring connections. Remote sense not connected or incorrectly used.	Reduce load to within specifications. Check and tighten output terminal connections. Ensure remote sense is correctly wired or shorted if not used.
Unit overheating / Fan constantly running at high speed	Insufficient ventilation. Excessive ambient temperature. Overload condition.	Ensure adequate airflow around the unit. Relocate to a cooler environment. Reduce load.

If the problem persists after attempting these steps, contact MEAN WELL customer support or a qualified technician.

8. SPECIFICATIONS

Detailed technical specifications for the MEAN WELL SE-600-12 power supply are provided below and in the accompanying specification sheet image.

Parameter	Value
Brand	MEAN WELL
Model Number	374011 (SE-600-12)
Output Voltage	12 Volts DC
Output Current	50 Amps
Output Wattage	600 Watts
Input Voltage Range	85-264VAC (47-63Hz)
Product Dimensions (L x W x H)	9.72 x 5 x 2.5 inches (247 x 127 x 63.5 mm)
Item Weight	4.62 pounds (2.1 Kilograms)
Load Regulation	0.5%
Ripple And Noise (Mv P-P)	150mV
Cooling Method	Air (internal fan)
First Available Date	January 30, 2013

SPECIFICATION								
MODEL	SE-600-5	SE-600-12	SE-600-15	SE-600-24	SE-600-27	SE-600-36	SE-600-48	
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	27V	36V	48V
	RATED CURRENT	100A	50A	40A	25A	22.2A	16.6A	12.5A
	CURRENT RANGE	0 - 100A	0 - 50A	0 - 40A	0 - 25A	0 - 22.2A	0 - 16.6A	0 - 12.5A
	RATED POWER	500W	600W	600W	600W	599.4W	597.6W	600W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.75 - 5.5V	10 - 13.5V	13.5 - 16.5V	22 - 26.4V	24 - 30V	32 - 40V	43 - 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC	1000ms, 50ms/115VAC at full load					
HOLD UP TIME (Typ.)	20ms/230VAC	15ms/115VAC at full load						
INPUT	VOLTAGE RANGE	90 - 132VAC / 180 - 254VAC selected by switch			254 - 370VDC			
	FREQUENCY RANGE	47 - 63Hz						
	EFFICIENCY (Typ.)	78%	83%	84%	87%	87%	88%	
	AC CURRENT (Typ.)	12A/115VAC	7.5A/230VAC					
	INRUSH CURRENT (Typ.)	25A/115VAC 50A/230VAC						
LEAKAGE CURRENT	<2.0mA / 240VAC							
PROTECTION	OVERLOAD	105 - 125% rated output power Protection type: Shut down o/p voltage, re-power on to recover						
	OVER VOLTAGE	5.75 - 6.3V	13.8 - 16.2V	18 - 21V	27.6 - 32.4V	31 - 36.5V	42 - 50V	57.6 - 67.2V
	OVER TEMPERATURE	85 °C (TSW1) detected on heatsink of power transistor Protection type: Shut down o/p voltage, recovers automatically after temperature goes down						
ENVIRONMENT	WORKING TEMP.	-20 - +60 °C (Refer to output load derating curve)						
	WORKING HUMIDITY	20 - 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 - +85 °C, 10 - 95% RH						
	TEMP. COEFFICIENT	±0.05%/°C (0 - 50 °C)						
	VIBRATION	10 - 500Hz, 2G 10min./cycle, 60min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS	UL60950-1 approved						
	WITHSTAND VOLTAGE	IP-QIP-3KVAC IP-FG-1.5KVAC OIP-FG-0.5KVAC						
	ISOLATION RESISTANCE	IP-QIP, IP-FG, OIP-FG 100M Ohms/500VDC						
OTHERS	MTBF	197K hrs min. MIL-HDBK-217F (25 °C)						
	DIMENSION	247*127*63.5mm (L*W*H)						
	PACKING	2.1Kg, 6pcs/13.4kg/1.03CUFT						
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 °C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.							

Image: Comprehensive specification sheet for the SE-600 series, including the SE-600-12 model.

9. WARRANTY AND SUPPORT

For specific warranty information regarding your MEAN WELL SE-600-12 power supply, please refer to the documentation included with your purchase or visit the official MEAN WELL website. Warranty terms typically cover manufacturing defects for a specified period from the date of purchase.

For technical support, service, or inquiries about replacement parts, please contact MEAN WELL directly through their official channels. Ensure you have your product model number (SE-600-12) and item model number (374011) ready when seeking support.

Manufacturer: MEAN WELL