

Mean Well RSP-2400-12

Mean Well RSP-2400-12 2000W Single Output Power Supply User Manual

Model: RSP-2400-12

Brand: Mean Well

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Mean Well RSP-2400-12 2000W Single Output Power Supply. The RSP-2400-12 is a high-efficiency power supply featuring a built-in active Power Factor Correction (PFC) function, forced air cooling, and remote control capabilities for voltage trimming and ON/OFF functions. Please read this manual thoroughly before use to ensure safe and optimal performance.

2. SAFETY INSTRUCTIONS

- Installation and servicing must be performed by qualified personnel only.
- Ensure proper grounding of the unit to prevent electrical shock.
- Do not operate the power supply in environments with excessive moisture, dust, or extreme temperatures outside the specified range.
- Ensure adequate ventilation around the unit. Do not block the air intake or exhaust vents.
- Before any installation or maintenance, disconnect the AC input power.
- Avoid touching internal components when the unit is powered on or recently powered off, as high voltages may still be present.

3. PRODUCT OVERVIEW

The Mean Well RSP-2400-12 is a robust 2000W power supply designed for various industrial and commercial applications. It features a compact design with clearly labeled input and output terminals.

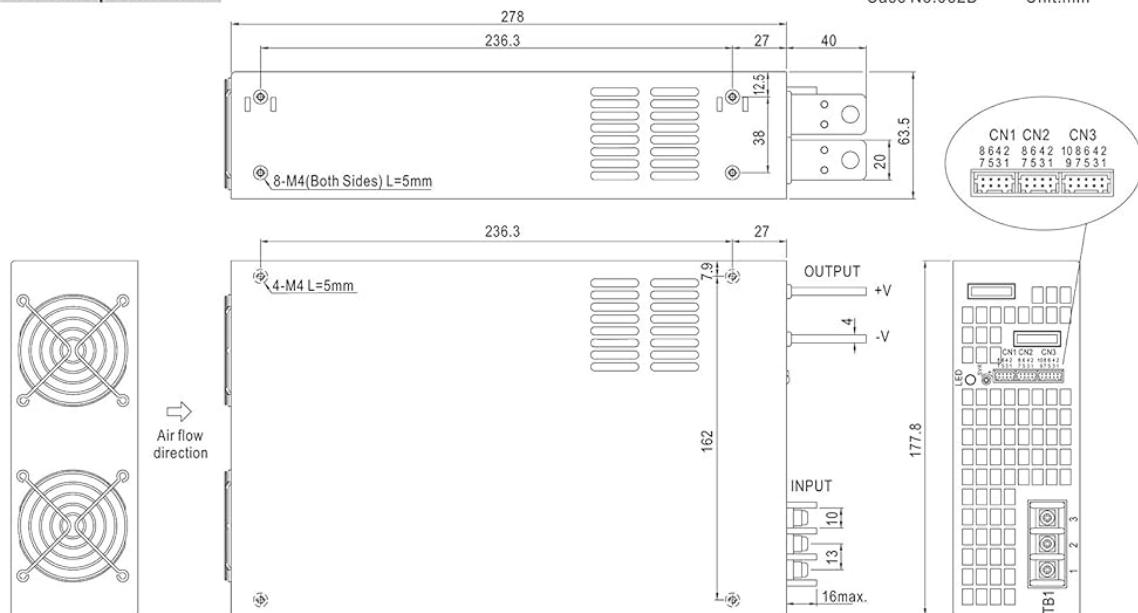


Figure 3.1: Front-side view of the Mean Well RSP-2400-12 power supply, showing the casing, ventilation grilles, and product label.

3.1 Mechanical Specifications and Connections

Refer to the diagram below for mechanical dimensions, AC input terminal assignments, control pin assignments, and the internal block diagram.

■ Mechanical Specification



AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG \pm

Control Pin No. Assignment(CN1,CN2) : HRS DF11-8DP-2DS or equivalent

Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	RCG	5, 7	-S		
2	RC	6	CS (Current Share)	HRS DF11-8DS or equivalent	HRS DF11-**SC or equivalent
3	PV	8	+S		
4	PS				

RCG: Remote ON/OFF Ground -S : -Remote Sensing

RC : Remote ON/OFF CS: Load Share

PV : Output Voltage External Control +S: +Remote Sensing

PS : Reference Voltage Terminal

PV and PS are shorted when shipping (Note.6)

Control Pin No. Assignment(CN3) : HRS DF11-10DP-2DS or equivalent

Pin No.	Assignment	Mating Housing	Terminal						
1	P OK GND	4	P OK2	7	AUXG	10	OL-SD		
2	P OK	5	RCG	8	AUX			HRS DF11-10DS or equivalent	HRS DF11-**SC or equivalent
3	P OK GND2	6	RC	9	OLP				

P OK GND: Power OK Ground

P OK: Power OK Signal (Relay Contact)

P OK2: Power OK Signal (TTL Signal)

RCG: Remote ON/OFF Ground

RC: Remote ON/OFF

AUXG: Auxiliary Ground

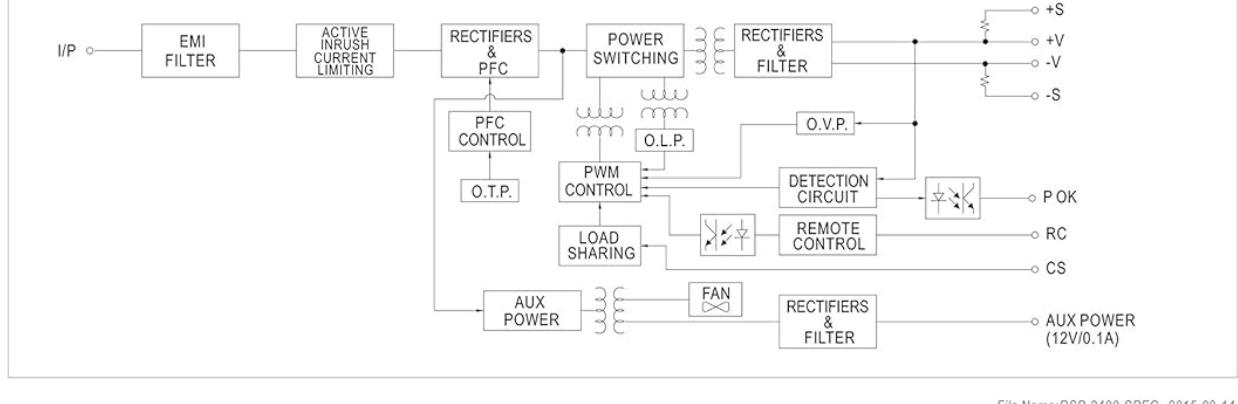
AUX: Auxiliary Output

OLP: OLP mode select

OL-SD: OLP mode select

 PFC fosc : 88KHz
PWM fosc : 100KHz

■ Block Diagram



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Figure 3.2: Detailed diagram showing the mechanical dimensions, AC input terminal assignments, control pin assignments (CN1, CN2, CN3), and a block diagram of the power supply's internal components.

AC Input Terminal Pin Assignment:

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG \pm

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG (Frame Ground)

Control Pin Assignment (CN1, CN2):

These pins are used for remote sensing and remote ON/OFF functions. Refer to Figure 3.2 for pin locations.

Control Pin Assignment (CN3):

These pins are used for remote ON/OFF, power OK signal, and auxiliary output. Refer to Figure 3.2 for pin locations.

Block Diagram:

The internal block diagram illustrates the power supply's architecture, including the EMI filter, active current sharing, PFC control, PWM control, detection circuit, and fan control. This design ensures stable and efficient power delivery.

4. SETUP AND INSTALLATION

4.1 Mounting

Mount the power supply in a location that allows for proper airflow and heat dissipation. The unit utilizes forced air cooling via a built-in DC fan. Ensure the airflow direction (indicated in Figure 3.2) is not obstructed. The dimensions are 10.94 x 7 x 2.5 inches (L x W x H).

4.2 AC Input Connection

1. Connect the AC Live (L) wire to Pin 1 (AC/L).
2. Connect the AC Neutral (N) wire to Pin 2 (AC/N).
3. Connect the Frame Ground (FG) wire to Pin 3 (FG).

Ensure all connections are secure and comply with local electrical codes. Use appropriate wire gauges for the expected current.

4.3 DC Output Connection

Connect your load to the DC output terminals. Observe correct polarity (+V and -V). For optimal performance and to minimize voltage drop, use thick, short cables for the DC output.

4.4 Grounding

Proper grounding is essential for safety and to minimize electromagnetic interference. Connect the FG terminal to a reliable earth ground.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off

Once all connections are made and verified, apply AC input power. The unit will power on. To power off,

disconnect the AC input power or use the remote ON/OFF function.

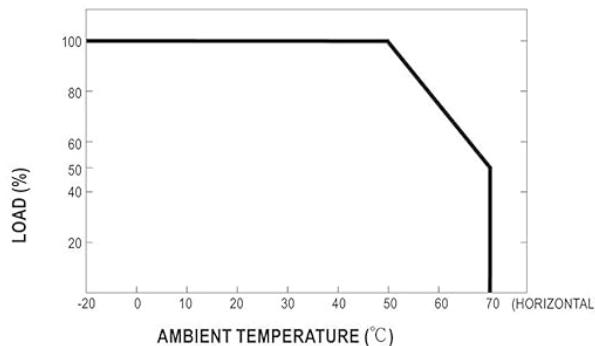
5.2 Output Voltage Trimming

The output voltage (V_o) can be trimmed by an external control signal. Refer to the product datasheet for specific instructions on connecting the external control signal to the designated control pins (CN1/CN2/CN3) to adjust the output voltage within its specified range.

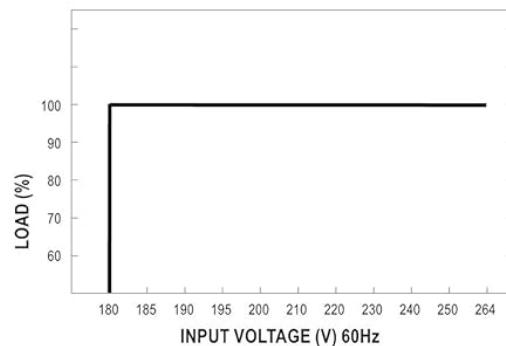
5.3 Remote ON/OFF Function

The RSP-2400-12 supports remote ON/OFF control. This function allows the power supply to be turned on or off remotely using an external signal. Refer to the diagram below for connection examples.

■ Derating Curve



■ Static Characteristics



■ Function Manual

1. Remote ON/OFF

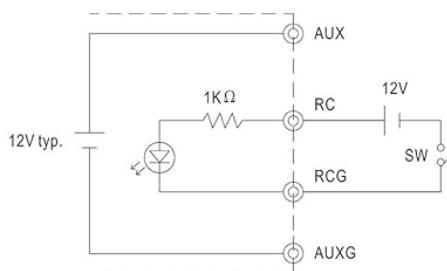
- (1) Remote ON/OFF control becomes available by applying voltage in CN1 & CN2 & CN3.
- (2) Table 1.1 shows the specification of Remote ON/OFF function.
- (3) Fig.1.2 shows the example to connect Remote ON/OFF control function.

Table 1.1 Specification of Remote ON/OFF

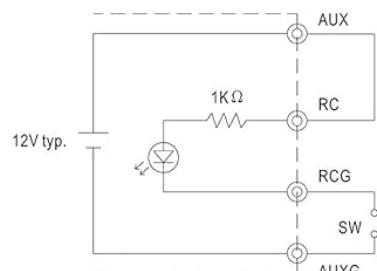
Connection Method	Fig. 1.2(A)	Fig. 1.2(B)	Fig. 1.2(C)
SW Logic	Output on SW Open	SW Open	SW Close

Fig.1.2 Examples of connecting remote ON/OFF

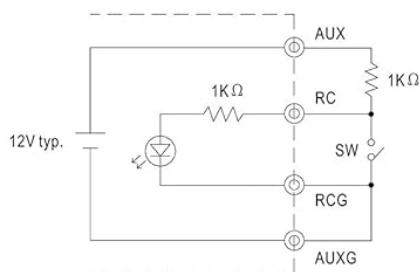
(A) Using external voltage source



(B) Using internal 12V auxiliary output



(C) Using internal 12V auxiliary output



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Figure 5.1: Graphs illustrating the power supply's derating curve based on ambient temperature and static characteristics based on input voltage. Also includes detailed diagrams and tables for implementing the remote ON/OFF function using external voltage sources or auxiliary outputs.

Remote ON/OFF Connection Methods:

The remote ON/OFF control is available via applying voltage in CN1 & CN2 & CN3. The table below summarizes the connection methods:

Connection Method	SW Logic	Fig. 1.2(A)	Fig. 1.2(B)	Fig. 1.2(C)
Remote ON/OFF	Output on	SW Open	SW Close	SW Close
	Output off	SW Close	SW Open	SW Open

Figure 5.1 illustrates examples of connecting remote ON/OFF using an external voltage source (A) and using the internal 12V auxiliary output (B and C).

5.4 Load Considerations

The power supply's performance is affected by ambient temperature and input voltage. Refer to the Derating Curve and Static Characteristics graphs in Figure 5.1 to understand the maximum permissible load under different operating conditions. Ensure the load does not exceed the power supply's rated capacity, especially at higher ambient temperatures.

6. MAINTENANCE

The RSP-2400-12 is designed for reliable operation with minimal maintenance. However, periodic checks can extend its lifespan and ensure optimal performance.

- **Cleaning:** Keep the power supply free from dust and debris. Use a soft, dry cloth or compressed air to clean the vents and casing. Ensure the unit is powered off and disconnected from AC input before cleaning.
- **Fan Inspection:** Periodically check the cooling fan for proper operation and ensure it is free from obstructions. A malfunctioning fan can lead to overheating and reduced lifespan.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges to prevent premature failure.

7. TROUBLESHOOTING

If you encounter issues with your RSP-2400-12 power supply, consider the following common troubleshooting steps:

- **No Output Voltage:**
 - Check if the AC input power is connected and active.
 - Verify that the remote ON/OFF function is not engaged (i.e., the unit is commanded to be ON).
 - Inspect input and output wiring for loose connections or damage.
- **Overload Protection:**
 - If the power supply shuts down or cycles, it may be due to an overload. Reduce the load connected to the output.
 - Check for short circuits in the load.
- **Over-Temperature Protection:**
 - If the unit is hot and shuts down, it may be due to over-temperature. Ensure adequate ventilation and that the fan is operating correctly.
 - Reduce ambient temperature if possible.

If the problem persists after performing these checks, contact customer support.

8. SPECIFICATIONS

Below are the key technical specifications for the Mean Well RSP-2400-12 power supply:

Specification	Value
Product Dimensions	10.94 x 7 x 2.5 inches
ASIN	B07M6CSV79
Item Model Number	LI series RSP-2400-12
Date First Available	December 30, 2018
Manufacturer	Mean Well
Brand (Seller)	EverSale
Compatible Devices	Personal Computer
Output Wattage	2000 Watts
Wattage	2000 watts
Cooling Method	Air (Forced air cooling by built-in DC fan)
Fan Count	1
Minimum Input Voltage	12 Volts
UPC	888777027662
PFC Function	Built-in active PFC function
Auxiliary Power	Built-in auxiliary power
Voltage Trim	Vo can be trimmed by external control signal

9. WARRANTY AND SUPPORT

The Mean Well RSP-2400-12 power supply comes with a **5-year warranty** from the manufacturer. This warranty covers defects in materials and workmanship under normal use.

For warranty claims, technical support, or further assistance, please contact your authorized Mean Well distributor or the seller (EverSale) directly. Ensure you have your product model number (RSP-2400-12) and proof of purchase available when contacting support.

Related Documents - RSP-2400-12

 <p>MEAN WELL RSP-2400 Series 2400W Single Output Power Supply Technical Specifications</p> <p>Comprehensive technical specifications, features, applications, and functional manual for the MEAN WELL RSP-2400 series 2400W single output AC/DC power supply. Details electrical and mechanical parameters, safety compliance, EMC characteristics, and operational functions including remote sense, output voltage programming, remote ON-OFF control, alarm signals, overload protection, current sharing, and three-phase connectivity.</p>	
 <p>MEAN WELL RSP-500 Series 500W Single Output PFC Power Supply Datasheet</p> <p>Detailed technical specifications, features, applications, and mechanical information for the MEAN WELL RSP-500 series of 500W single output AC/DC power supplies with Active PFC.</p>	
 <p>MEAN WELL RSP-150 Series: 150W Single Output AC/DC Power Supply with PFC</p> <p>Detailed technical specifications, features, and applications for the MEAN WELL RSP-150 series 150W single output AC/DC power supplies with active PFC. Includes dimensions, electrical characteristics, safety certifications, and derating curves.</p>	
 <p>MEAN WELL RSP-150 Series 150W Single Output AC/DC Power Supply Datasheet</p> <p>Comprehensive technical specifications, features, applications, mechanical details, and performance curves for the MEAN WELL RSP-150 series of 150W single output AC/DC power supplies. This datasheet covers models with universal AC input, active PFC, high efficiency, and robust protections, suitable for industrial and automation applications.</p>	
 <p>MEAN WELL RSP-750 Series 750W Single Output Power Supply Datasheet and Specifications</p> <p>Detailed specifications, features, applications, and function manual for the MEAN WELL RSP-750 series 750W single output AC/DC power supply. Includes electrical and mechanical data, safety certifications, and operational guidance.</p>	
 <p>MEAN WELL RSP-2000 Series 2000W Single Output Power Supply Datasheet</p> <p>Comprehensive technical specifications, features, applications, and mechanical details for the MEAN WELL RSP-2000 series of 2000W single output AC/DC power supplies, designed for industrial and automation applications.</p>	

