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› Mean Well EDR-120-24 AC/DC DIN Rail Power Supply User Manual

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Model: EDR-120-24

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Mean Well EDR-120-24 AC/DC DIN Rail Power Supply. The EDR-120 series is an economical, slim 120W power supply designed for industrial applications. It is suitable for installation on TS-35/7.5 or TS-35/15 mounting rails, featuring a compact 40mm width for space-saving within cabinets. This unit operates effectively in ambient temperatures between -20°C and 60°C under air convection.

Please Note: The EDR series is primarily for industrial applications. For household applications, please choose the NDR series.

2. SAFETY INFORMATION

Read all instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Qualified Personnel:** Installation and maintenance should only be performed by qualified personnel.
 - **Power Disconnection:** Always disconnect the main power supply before any installation, wiring, or maintenance work.
 - **Proper Grounding:** Ensure proper grounding to prevent electric shock.
 - **Ventilation:** Maintain adequate ventilation around the unit. Do not obstruct ventilation openings.
 - **Environmental Conditions:** Operate the power supply within the specified temperature and humidity ranges. Avoid exposure to moisture or corrosive environments.
 - **Wire Specifications:** Use copper wire only, rated for a minimum of 75°C.
 - **Industrial Use:** This product is designed for industrial control equipment.
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3. PRODUCT OVERVIEW AND FEATURES

The EDR-120-24 is a robust AC/DC power supply offering reliable performance for various industrial needs. Key features include:

- **Output:** 24V, 5A, 120W.
- **Input Voltage:** 90 ~ 264VAC / 124 ~ 370VDC.
- **Protections:** Short circuit, Overload, Over Voltage, Over Temperature.
- **Efficiency:** High efficiency of 87.5% (typical).
- **Certifications:** UL and CE certified, UL 508 (Industrial Control Equipment) approved.
- **Compact Design:** Slim 40mm width for space-saving DIN rail mounting.
- **Cooling:** Air convection cooling.



Figure 1: Front view of the Mean Well EDR-120-24 power supply, showing input/output terminals, voltage adjustment, and DC OK indicator.

4. MECHANICAL SPECIFICATIONS

The EDR-120-24 features a compact design suitable for DIN rail mounting. Detailed dimensions are provided below.



Figure 2: Mechanical drawing of the EDR-120-24, showing top, side, front, and bottom views with dimensions in millimeters (tolerance $\pm 1\text{mm}$).

Terminal Pin Assignment

Table 1: Terminal Pin Assignment (TB1 - Input)

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

Table 2: Terminal Pin Assignment (TB2 - Output)

Pin No.	Assignment
1,2	DC OUTPUT -V
3,4	DC OUTPUT +V

5. INSTALLATION (SETUP)

Follow these steps for proper installation of the EDR-120-24 power supply.

5.1 Mounting

1. The EDR-120-24 is designed for DIN rail mounting on TS-35/7.5 or TS-35/15 rails.
2. Ensure sufficient clearance for air circulation. A minimum of 5mm left and right, 40mm above, and 20mm below the power supply is recommended for optimal cooling.
3. To mount, hook the top edge of the power supply onto the DIN rail, then push the bottom edge firmly until it clicks into place.



Figure 3: Side view illustrating the DIN rail mounting mechanism.

5.2 Wiring

All connections are made via screw terminal blocks. Refer to the Terminal Pin Assignment tables in Section 4.

1. **Input Wiring (TB1):** Connect the AC mains (L, N) or DC input (+, -) to the corresponding terminals. Ensure the Frame Ground (FG) terminal is properly connected to earth ground. The input voltage range is 90-264VAC or 127-370VDC.
2. **Output Wiring (TB2):** Connect your load to the DC OUTPUT +V and -V terminals.
3. **Wire Type:** Use copper wire only, rated for a minimum of 75°C.
4. **Torque:** Ensure terminal screws are tightened to the specified torque (Input: 6.5 Lb-in, Output: 5.5 Lb-in) to prevent loose connections.



Figure 4: Example wiring diagrams for different input configurations. Always refer to the product label for specific terminal markings.

6. OPERATION

Once installed and wired correctly, the EDR-120-24 is ready for operation.

- **Power On:** Apply the specified AC or DC input voltage.
- **DC OK Indicator:** A green LED labeled "DC OK" will illuminate when the output voltage is within the acceptable range.
- **Output Voltage Adjustment:** The output voltage can be finely adjusted using the "+V ADJ" potentiometer located on the front panel. Use a small screwdriver to turn the potentiometer clockwise to increase voltage or counter-clockwise to decrease it.

7. MAINTENANCE

The EDR-120-24 is designed for long-term reliability with minimal maintenance. However, periodic checks are recommended.

- **Cleaning:** Keep the unit clean and free from dust and debris, especially around ventilation openings, to ensure proper air convection cooling. Use a soft, dry cloth for cleaning.

- **Connection Checks:** Periodically inspect all wiring connections for tightness and signs of corrosion. Re-tighten screws if necessary after disconnecting power.
 - **Environmental Monitoring:** Ensure the operating environment remains within the specified temperature and humidity limits.
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8. TROUBLESHOOTING

If the power supply is not functioning as expected, consider the following common issues:

- **No Output / DC OK LED Off:**
 - Check input power connections and voltage.
 - Verify that the input fuse (if external) is intact.
 - Check for short circuits or overloads on the output. Disconnect the load and re-test.
 - Ensure the ambient temperature is within the operating range.
- **Intermittent Operation:**
 - Check for loose wiring connections.
 - Verify that the load current does not exceed the rated output current (5A). Overload protection may be activating.
 - Ensure adequate ventilation to prevent over-temperature shutdown.
- **Incorrect Output Voltage:**
 - Adjust the "+V ADJ" potentiometer.
 - Verify the input voltage is stable and within the specified range.

If problems persist after checking these points, contact qualified service personnel or the manufacturer.

9. TECHNICAL SPECIFICATIONS

Parameter	Value
Model Name	EDR-120-24
Output Voltage	24V
Rated Current	5A
Output Power	120W
Input Voltage Range	90 ~ 264VAC / 127 ~ 370VDC
Input Frequency	47 to 63 Hz
Efficiency (Typ.)	87.5%
Ripple & Noise (Max.)	120mVp-p
Line Regulation	0.5%
Load Regulation	1%
Minimum Isolation Voltage	3000VAC
Protections	Short circuit, Overload, Over Voltage, Over Temperature
Operating Temperature	-20°C to 60°C
Cooling Method	Air Convection
Dimensions (L x W x H)	113.5 x 40 x 125.2 mm (4.47 x 1.57 x 4.93 inches)
Mounting	DIN Rail
Weight	600g
Certifications	UL, CE, EU RoHS Compliant

10. WARRANTY AND SUPPORT

This Mean Well power supply is manufactured to high-quality standards. For warranty information, please refer to the documentation provided with your purchase or contact your distributor. For technical support or service inquiries, please reach out to the seller or the official Mean Well support channels.

Manufacturer: MEAN WELL ENTERPRISES CO., LTD.

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