

MEAN WELL HDR-150-48

MEAN WELL HDR-150-48 LED DIN Rail Power Supply User Manual

Model: HDR-150-48

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the MEAN WELL HDR-150-48 Ultra Slim Step Shape LED DIN Rail Power Supply. Please read this manual thoroughly before using the product and retain it for future reference.

The HDR-150-48 is a high-performance, ultra-slim power supply designed for LED lighting and other industrial control applications requiring a stable 48V DC output. Its compact design allows for easy integration into DIN rail systems.

2. SAFETY INFORMATION

WARNING: Risk of electric shock. Installation and servicing should only be performed by qualified personnel.

- Ensure the power supply is disconnected from the main power source before any installation, wiring, or maintenance.
- Do not operate the unit in environments with excessive moisture, dust, or extreme temperatures outside its specified operating range.
- Verify correct input voltage and polarity before connecting the power supply.
- Ensure proper grounding to prevent electric shock.
- Do not open the casing of the power supply; there are no user-serviceable parts inside.
- Observe all local and national electrical codes during installation.

3. PRODUCT OVERVIEW

The MEAN WELL HDR-150-48 is an ultra-slim, step-shape power supply designed for efficient power conversion in various applications. It features a robust design suitable for DIN rail mounting.

3.1 Key Features

- Ultra slim design for space-saving installations.
- DIN rail mountable (TS-35/7.5 or TS-35/15).
- Universal AC input / Full range.
- Protections: Short circuit / Overload / Over voltage / Over temperature.
- Cooling by free air convection.
- LED indicator for power on.

3.2 Product Components

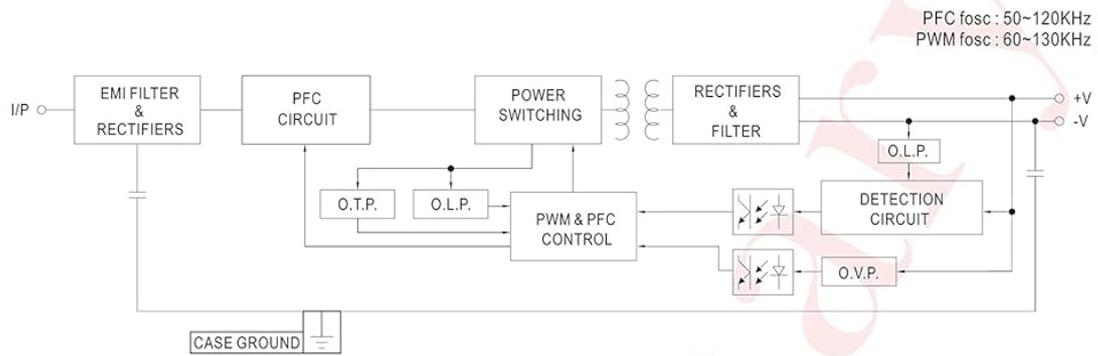
Refer to the images below for a visual representation of the HDR-150-48 power supply and its connection terminals.

SPECIFICATION

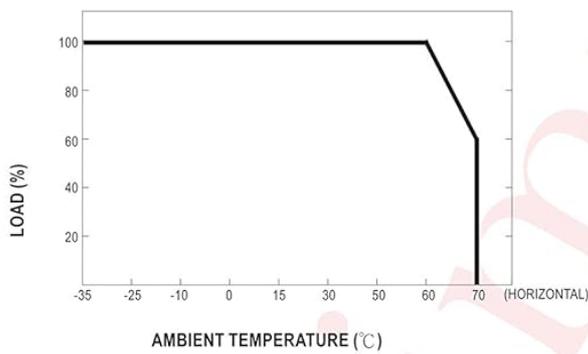
MODEL		ELG-240-12□	ELG-240-24□	ELG-240-36□	ELG-240-42□	ELG-240-48□	ELG-240-54□
OUTPUT	DC VOLTAGE	12V	24V	36V	42V	48V	54V
	CONSTANT CURRENT REGION <small>Note.4</small>	6 ~ 12V	12 ~ 24V	18 ~ 36V	21 ~ 42V	24 ~ 48V	27 ~ 54V
	RATED CURRENT	16A	10A	6.66A	5.71A	5.0A	4.45A
	RATED POWER	192W	240W	239.76W	239.82W	240W	240.3W
	RIPPLE & NOISE (max.) <small>Note.2</small>	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE <small>Note.6</small>	11.2 ~ 12.8V	22.4 ~ 25.6V	33.5 ~ 38.5V	39 ~ 45V	44.8 ~ 51.2V	50 ~ 57V
	CURRENT ADJ. RANGE <small>Note.6</small>	8 ~ 16A	5 ~ 10A	3.33 ~ 6.66A	2.86 ~ 5.71A	2.5 ~ 5A	2.23 ~ 4.45A
	VOLTAGE TOLERANCE <small>Note.3</small>	±3.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
	LINE REGULATION	±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%
SETUP, RISE TIME <small>Note.7</small>	500ms, 100ms at 95% load 230VAC						
HOLD UP TIME (Typ.)	10ms at 95% load 230VAC						
INPUT	VOLTAGE RANGE <small>Note.5</small>	180 ~ 295VAC		255 ~ 417VDC			
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR	PF ≥ 0.95/230VAC PF ≥ 0.92/277VAC at full load (Please refer to "Power Factor Characteristic Curve")					
	TOTAL HARMONIC DISTORTION	THD < 20% when output loading ≥ 50% at 230VAC input and output loading ≥ 75% at 277VAC input					
	EFFICIENCY (Typ.)	90%	92%	92%	92.5%	93%	93%
	AC CURRENT	2A / 230VAC 1.2A/277VAC					
	INRUSH CURRENT(Typ.)	COLD START 75A(twidth=570μs measured at 50% Ipeak) at 230VAC					
LEAKAGE CURRENT	<0.75mA / 277VAC						
PROTECTION	OVER CURRENT	95 ~ 108% Protection type : Constant current limiting, recovers automatically after fault condition is removed					
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	14 ~ 18V	27 ~ 34V	42 ~ 49V	47 ~ 54V	54 ~ 63V	60 ~ 67V
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recovery					
ENVIRONMENT	WORKING TEMP.	-40 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	IP65 or IP67 approved ; Design refer to UL8750, EN61347-1, EN61347-2-13					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:1.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH					
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C (≥ 50% load) ; EN61000-3-3					
EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge 6KV)						
OTHERS	MTBF	Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	244*63*35.5mm (L*W*H)					
	PACKING	Kg					
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Please refer to "DRIVING METHODS OF LED MODULE".</p> <p>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.</p> <p>6. A type only.</p> <p>7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.</p> <p>8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.</p>						

Figure 1: Front view of the MEAN WELL HDR-150-48 power supply, showing the input/output terminals and status indicator.

■ Block Diagram



■ Derating Curve



■ Static Characteristics

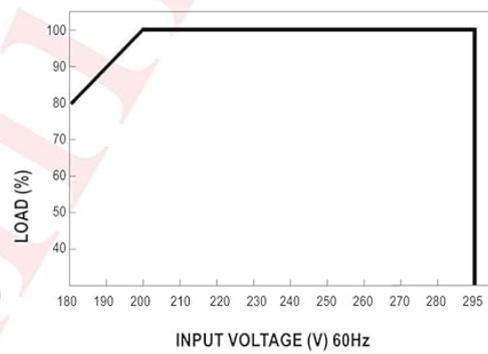
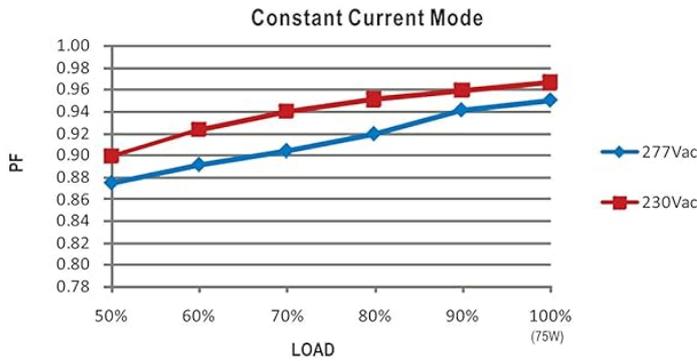


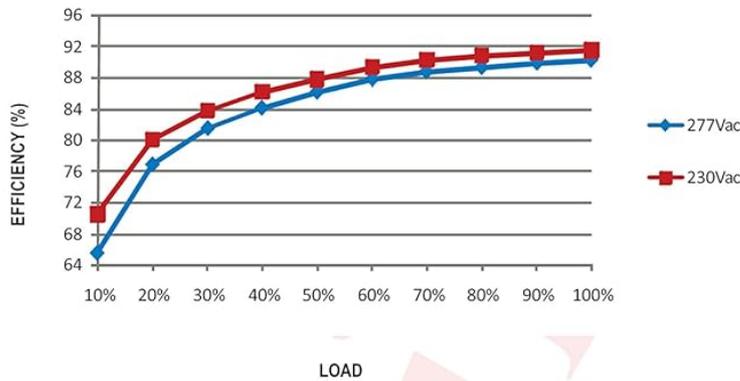
Figure 2: Side view of the MEAN WELL HDR-150-48 power supply, highlighting its ultra-slim profile for DIN rail mounting.

Power Factor Characteristic



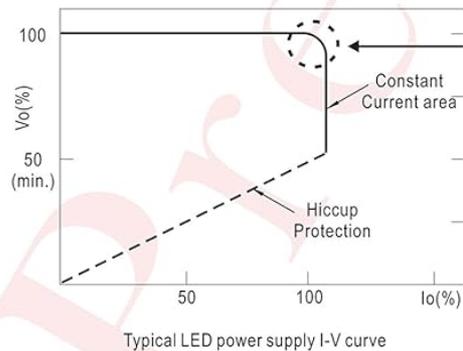
EFFICIENCY vs LOAD (54V Model)

ELG-240 series possess superior working efficiency that up to 91% can be reached in field applications.



DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CV+CC) to drive the LEDs.



In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems. Should there be any compatibility issues, please contact MEAN WELL.

File Name:ELG-240-SPEC 2015-07-01

Figure 3: Detailed view of the terminal block on the HDR-150-48, showing input (AC L, N, FG) and output (V+, V-) connections.

4. SPECIFICATIONS

The following table outlines the key technical specifications for the HDR-150-48 model.

Parameter	Value
Model Number	HDR-150-48
Output Voltage	48V DC
Output Current	3 Amps
Output Power	154W
Input Voltage Range	85 ~ 264VAC
Efficiency	Up to 90%
Dimensions (L x W x H)	9.61 x 2.8 x 1.48 inches (244 x 71 x 37.5 mm)
Item Weight	10.9 ounces (0.31 Kilograms)
Operating Temperature	-30 ~ +70°C
Mounting	DIN Rail TS-35/7.5 or TS-35/15
Protections	Short circuit, Overload, Over voltage, Over temperature

Note: Specifications are subject to change without notice. Refer to the official MEAN WELL datasheet for the most up-to-date and complete information.

5. INSTALLATION

Proper installation is crucial for the safe and reliable operation of the power supply.

5.1 Mounting

1. Ensure the mounting surface is stable and capable of supporting the weight of the power supply.
2. Mount the HDR-150-48 onto a standard TS-35/7.5 or TS-35/15 DIN rail.
3. Allow adequate clearance around the unit for proper ventilation (minimum 10-15mm on all sides). Do not block ventilation holes.
4. Mount the unit vertically to optimize heat dissipation.

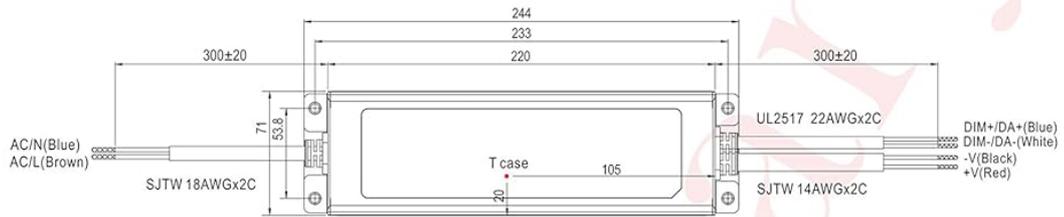
5.2 Wiring

CAUTION: Disconnect all power before wiring. Incorrect wiring can damage the unit and pose a safety hazard.

1. Identify the input terminals (AC L, AC N, FG) and output terminals (V+, V-). Refer to Figure 3 for terminal locations.
2. Connect the AC input wires (Live and Neutral) to the respective AC L and AC N terminals.
3. Connect the Earth Ground wire to the FG (Frame Ground) terminal. This connection is essential for safety.
4. Connect the load to the output terminals: positive (+) to V+ and negative (-) to V-. Ensure correct polarity.
5. Use appropriate wire gauges for the expected current draw to prevent overheating.
6. Tighten all terminal screws securely to prevent loose connections.

■ Mechanical Specification

Unit:mm



※ T case: Max. Case Temperature.



■ Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>

File Name:ELG-240-SPEC 2015-07-01

Figure 4: Example of wiring connections for the HDR-150-48, showing input AC and output DC connections. Always refer to the specific terminal markings on your unit.

6. OPERATION

Once installed and wired correctly, the HDR-150-48 is ready for operation.

1. Before applying power, double-check all wiring connections for correctness and security.

2. Apply AC input power to the unit.
3. The LED indicator on the front panel (refer to Figure 1) should illuminate, indicating that the power supply is operating.
4. The output voltage is factory set to 48V. Some models may have a voltage adjustment potentiometer; if present, use a non-conductive tool to make minor adjustments within the specified range.
5. Ensure the total load connected to the output does not exceed the rated output power of 154W or the rated current of 3A.

7. MAINTENANCE

The HDR-150-48 power supply is designed for reliable, long-term operation with minimal maintenance.

- **Cleaning:** Periodically inspect the unit for dust accumulation, especially around ventilation openings. Disconnect power and use a soft, dry brush or compressed air to gently clean the exterior. Do not use liquid cleaners.
- **Inspection:** Regularly check wiring connections for tightness and signs of wear or damage. Ensure the unit is securely mounted on the DIN rail.
- **Environment:** Maintain the operating environment within the specified temperature and humidity ranges to ensure optimal performance and lifespan.
- **No User Serviceable Parts:** Do not attempt to open or repair the unit. Refer all servicing to qualified personnel.

8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No output, LED off	No input power; Incorrect wiring; Internal fault	Check AC input power source and connections. Verify wiring. If problem persists, unit may be faulty.
Output voltage too low or fluctuating	Overload; Short circuit; Input voltage too low	Reduce load. Check for short circuits in the output wiring. Verify input voltage is within range.
Unit is hot, shuts down intermittently	Overload; Insufficient ventilation; Over-temperature protection activated	Reduce load. Ensure adequate airflow around the unit. Check ambient temperature.
LED is on, but no output	Output wiring issue; Load fault; Internal fault	Check output wiring for breaks or loose connections. Test the load independently.

If troubleshooting steps do not resolve the issue, contact qualified service personnel or the manufacturer for assistance. Do not attempt to repair the unit yourself.

9. WARRANTY AND SUPPORT

This MEAN WELL product is covered by a standard manufacturer's warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary by region and distributor. Please retain your proof of purchase for warranty claims.

For technical support, service, or warranty inquiries, please contact your local distributor or visit the official MEAN WELL website for contact information.

MEAN WELL Official Website: www.meanwell.com