450W Single Output Switching Power Supply

LRS-450 series

User's Manual
Click Me



EN61558-1
EN61558-2-16
(Note.14)
CNS15598-1
(Note.13)
TPTC004
IEC62368-1
IEC61558-1
IEC61558-2-16
UL62368-1
(Note.12)

ECO Automate Industrial Security Network Telecom

Features

- MEANWELL Patent Number :ZL202220241473.0
- AC input range selectable by switch
- Withstand 300VAC surge input for 5 second
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling
- Built-in cooling Fan ON-OFF control
- 1U low profile
- Withstand 5G vibration test
- High operating temperature up to 70℃
- Operating altitude up to 5000 meters (Note.10)
- 3 years warranty
- MTBF>1KK hrs

Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

LRS-450 series is a 450W single-output enclosed type power supply with 35mm of low profile design. Adopting the input of 115VAC or 230VAC (select by switch), the entire series provides an output voltage line of 5V, 12V, 15V, 24V, 36V and 48V.In addition to the high efficiency up to 92%, with the built-in long life fan LRS-450 can work under -20~+70℃ with full load. LRS-450 has the complete protection functions and 5G anti-vibration capability; It is complied with complete international safety regulations LRS-450 series serves as a high price-to-performance power supply solution for various industrial applications.

Model Encoding

LRS - 450 - 5

- 5 — Output voltage
- 450 — Output power
- LRS — Series name

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SPECIFICATION

MODEL		LRS-450-5	LRS-450-12	LRS-450-15	LRS-450-24	LRS-450-36	LRS-450-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	75A	37.5A	30A	18.8A	12.5A	9.4A
	CURRENT RANGE	0 ~ 75A	0 ~ 37.5A	0 ~ 30A	0 ~ 18.8A	0 ~ 12.5A	0 ~ 9.4A
	RATED POWER	375W	450W	450W	451.2W	450W	451.2W
	RIPPLE & NOISE (max.) Note.2	200mVp-p	200mVp-p	200mVp-p	240mVp-p	360mVp-p	360mVp-p
	VOLTAGE ADJ. RANGE Note.3	4.75 ~ 5.5V	11.4 ~ 13.2V	14.25 ~ 16.5V	22.8 ~ 26.4V	34.2 ~ 39.6V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.4	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.5	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.6	±2.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	1500ms, 50ms/230VAC 1500ms,50ms/115VAC at full load					
	HOLD UP TIME (Typ.)	16ms/230VAC 12ms/115VAC at full load					
INPUT	VOLTAGE RANGE Note.8	90 ~ 132VAC / 180 ~ 264VAC by switch 255 ~ 370VDC (swith on 230VAC)					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	87%	90%	90%	91%	92%	92%
	AC CURRENT (Typ.)	10A/115VAC 6A/230VAC					
	INRUSH CURRENT (Typ.)	35A/115VAC 60A/230VAC					
	LEAKAGE CURRENT	<2mA / 240VAC					
PROTECTION (Note.9)	OVER LOAD	105 ~ 150% rated output power					
		Constant current limiting, unit will shutdown after 3 sec. re-power on to recover					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	18 ~ 21V	27.6 ~ 32.4V	41.4 ~ 48.6V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover					
FUNCTION	FAN ON/OFF CONTROL (Typ.)	RTH3≧50℃ FAN ON, ≦40℃ FAN OFF					
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes					
	OVER VOLTAGE CATEGORY	III: According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters					
SAFETY & EMC (Note.11)	SAFETY STANDARDS	BS IEC/UL 62368-1, EAC TP TC 004,KC62368-1(except for 5V), BIS IS13252(Part1):2010/IEC60950-1: 2005(NOTE 14),BSMI CNS15598-1,GB 4943.1,BS EN/EN61558-1,BS EN/EN61558-2-16 approved, Designed by AS/NZS 61558.1/2.16, AS/NZS 62368.1					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to EAC TP TC 020, BSMI CNS15936,KC KSC 9832, KSC 9835					
	EMC IMMUNITY	Compliance to EAC TP TC 020,KC KSC 9832, KSC 9835					
OTHERS	MTBF	1508.9K hrs min. Telcordia SR-332(Bellcore) ; 252.2K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	225*124*35mm (L*W*H)					
	PACKING	0.85Kg/15pcs/14.11Kg/0.84CUFT					

NOTE

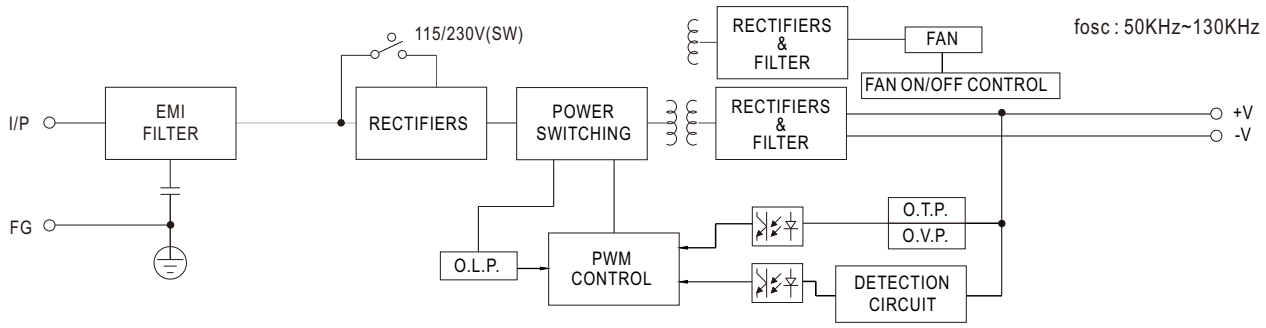
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Voltage adjustment can only be operated within the input range of 100~120VAC or 200-240VAC.
   If the voltage adjustment is performed outside this range, it may cause abnormal output.
4. Tolerance : includes set up tolerance, line regulation and load regulation.
5. Line regulation is measured from low line to high line at rated load.
6. Load regulation is measured from 0% to 100% rated load.
7. Length of set up time is measured at cold start. Turning the power supply on/off frequently may lead to increase of the set up time.
8. Derating may be needed under low input voltages. Please refer to"Static Characteristics" sections for details.
9. Once protections are triggered, 3min(Typ.) of cold down time is required before restart.
10. The ambient temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m(6500ft).
11. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.” (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
12. This power supply does not meet the harmonic current requirements outlined by EN61000-3-2. Please do not use this power supply under the following conditions:
    a) the end-devices is used within the European Union, and
    b) the end-devices is connected to public mains supply with 220Vac or greater rated nominal voltage, and
    c) the power supply is:
    - installed in end-devices with average or continuous input power greater than 75W, or
    - belong to part of a lighting system

    Exception:
    Power supplies used within the following end-devices do not need to fulfill EN61000-3-2
    a) professional equipment with a total rated input power greater than 1000W;
    b) symmetrically controlled heating elements with a rated power less than or equal to 200W
13. RCM is on voluntary basis and meets relevant IEC or AS/NZS standards complying with AS/NZS 4417.1.
14. Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

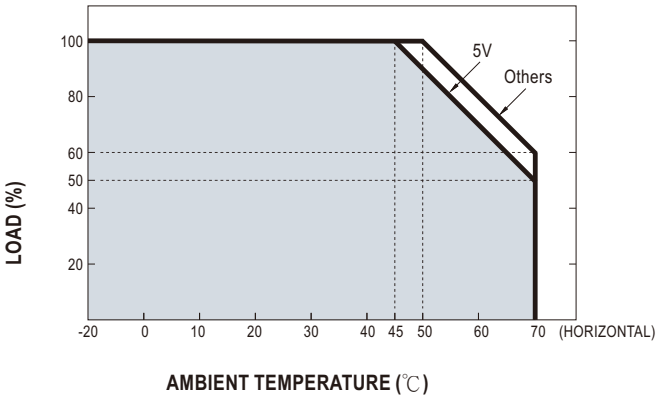
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

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Block Diagram

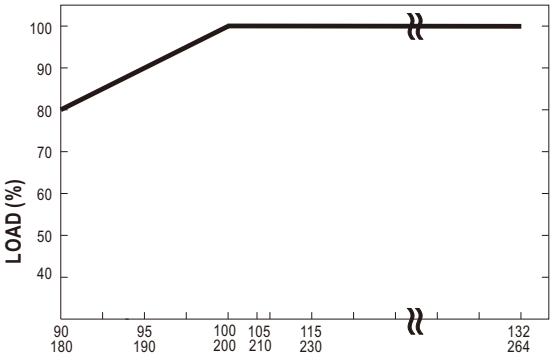


Derating Curve



AMBIENT TEMPERATURE (℃)

Static Characteristics

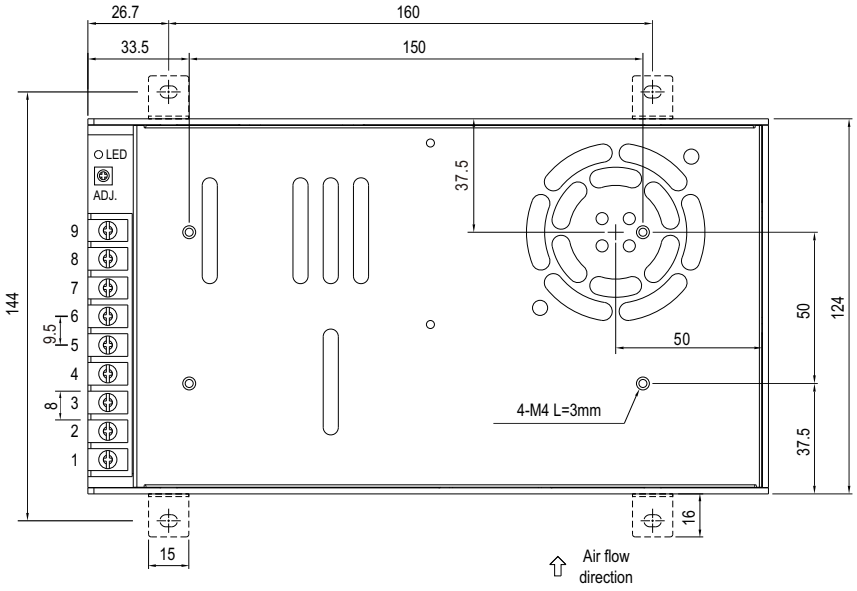


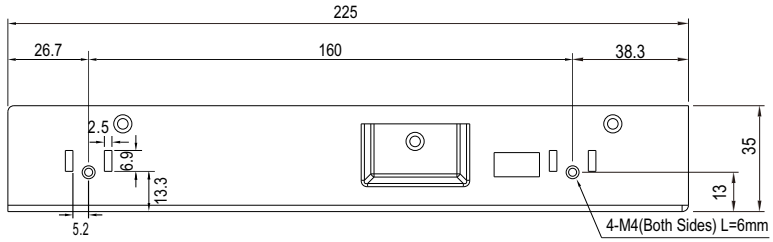
INPUT VOLTAGE (VAC) 60Hz

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■ Mechanical Specification

Case No. 291 Unit:mm Tolerance:±1





Terminal Pin No. Assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html

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