LRS-35 series

35W Single Output Switching Power Supply

User's Manual

Features

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 second
- No load power consumption<0.2W
- Miniature size and 1U low profile
- High operating temperature up to 70℃
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Compliance to IEC/BS EN/EN 60335-1(PD3) and IEC/BS EN/EN61558-1, -2-16 for household appliances
- Operating altitude up to 5000 meters (Note.8)
- Withstand 5G vibration test
- High efficiency, long life and high reliability
- LED indicator for power on
- Over voltage category III
- 100% full load burn-in test
- 3 years warranty

Applications

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

GTIN CODE

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

Description

LRS-35 series is a 35W single-output enclosed type power supply with 30mm of low profile design. Adopting the full range 85~264VAC input, the entire series provides an output voltage line of 5V, 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 89%, the design of metallic mesh case enhances the heat dissipation of LRS-35 that the whole series operates from -30℃ through 70℃ under air convection without a fan. Delivering an extremely low no load power consumption (less than 0.2W), it allows the end system to easily meet the worldwide energy requirement. LRS-35 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as TUV BS EN/EN62368-1, BS EN/EN60335-1,BS EN/EN61558-1/-2-16, UL62368-1 and GB 4943.1. LRS-35 series serves as a high price-to-performance power supply solution for various industrial applications.

Model Encoding

LRS - 35 - 5

- 5 — Output voltage
- 35 — Rated wattage
- LRS — Series name

SPECIFICATION

MODEL		LRS-35-5	LRS-35-12	LRS-35-15	LRS-35-24	LRS-35-36	LRS-35-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	7A	3A	2.4A	1.5A	1A	0.8A
	CURRENT RANGE	0 ~ 7A	0 ~ 3A	0 ~ 2.4A	0 ~ 1.5A	0 ~ 1A	0 ~ 0.8A
	RATED POWER	35W	36W	36W	36W	36W	38.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	32.4 ~ 39.6V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 30ms/230VAC 2000ms,30ms/115VAC at full load					
	HOLD UP TIME (Typ.)	30ms/230VAC 12ms/115VAC at full load					
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 373VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	82%	86%	86%	88%	88%	89%
	AC CURRENT (Typ.)	0.7A/115VAC 0.42A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 45A/230VAC					
	LEAKAGE CURRENT	<0.75mA / 240VAC					
PROTECTION	OVER LOAD	110 ~ 150% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.9V	13.8 ~ 16.2V	18.75 ~ 21.75V	28.8 ~ 33.6V	41.4 ~ 48.6V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing					
	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 BS EN/EN61558, BS EN/EN50178, BS EN/EN60664-1, BS EN/EN62477-1; altitude up to 2000 meters					
SAFETY & EMC (Note 9)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1/-2-16,GB 4943.1, BSMI CNS15598-1, EAC TP TC 004,AS/NZS 60950.1(by CB),KC K60950-1(for LRS-35-12/24 only), BIS IS13252(Part1): 2010/IEC 60950-1: 2005(NOTE 10) approved					
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN55014, BS EN/EN61000-3-2,-3, GB17625.1,GB/T 9254.1, BSMI CNS15936, EAC TP TC 020,KC KN32,KN35(for LRS-35-12/24 only)					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61000-6-2 (BS EN/EN50082-2), BS EN/EN55035, heavy industry level, EAC TP TC 020,KC KN32,KN35(for LRS-35-12/24 only)					
OTHERS	MTBF	3201.5K hrs min. Telcordia SR-332 (Bellcore) ; 655.5Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	99*82*30mm (L*W*H)					
	PACKING	0.21Kg ; 60pcs/14Kg/0.93CUFT					

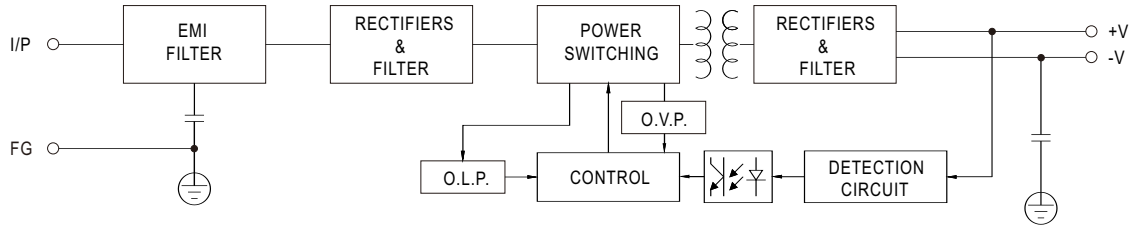
NOTE

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.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 0% to 100% rated load.
6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.
7. 5V when the load factor 0~50%, the switching power less is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
8. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft).
9. 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)
10. Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

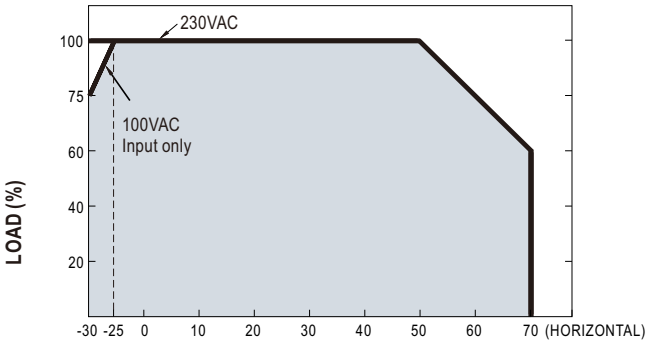
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

Block Diagram

fosc : 115Vac : 75KHz
230Vac :110KHz

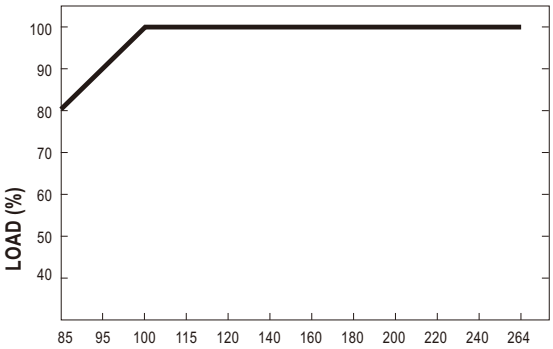


Derating Curve



AMBIENT TEMPERATURE (℃)

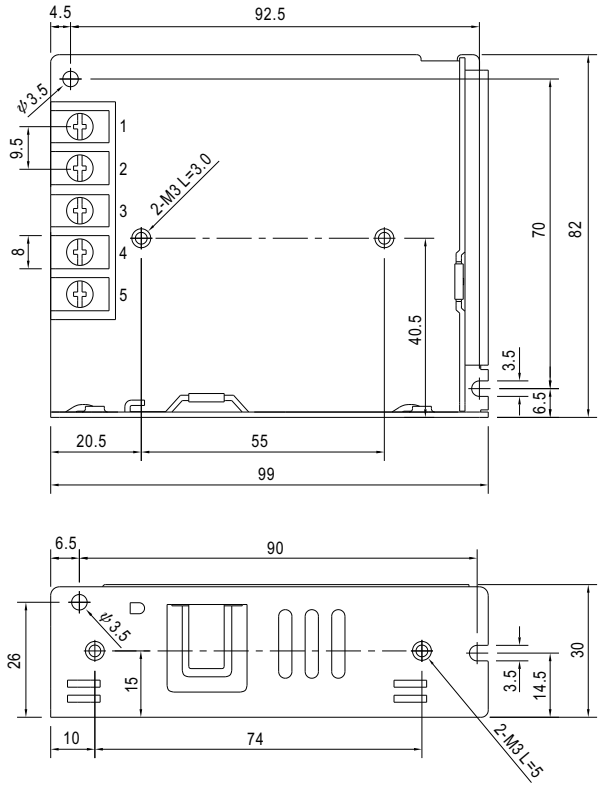
Static Characteristics



INPUT VOLTAGE (VAC) 60Hz

■ Mechanical Specification

Case No.239A Unit:mm Tolerance:±1



Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Installation Manual

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