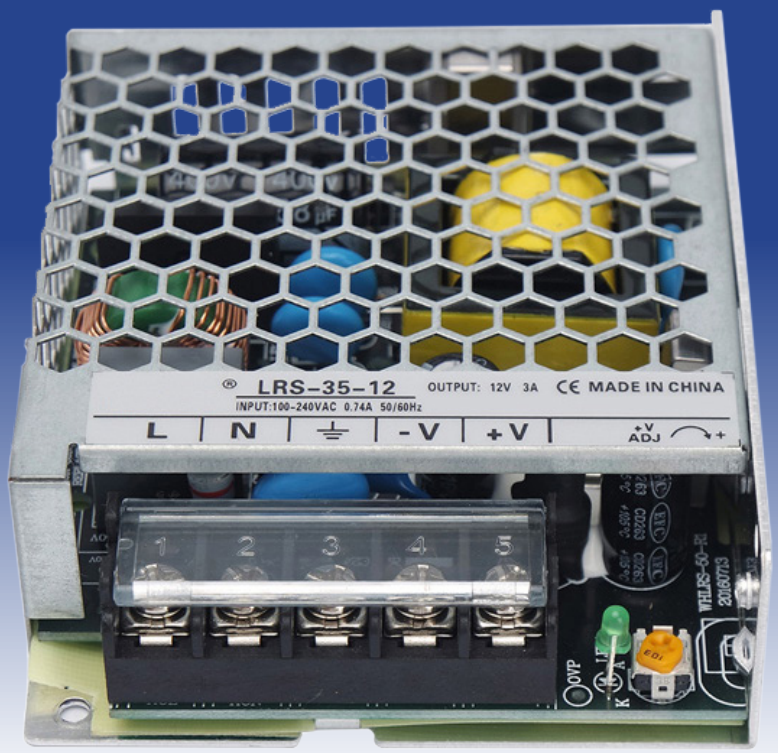
Wavecom Instruments

Winston LRS 35W

Power Supply Series



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WAVECOM INSTRUMENTS

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Overview

The Winston LRS-35 Series are 35W single-output enclosed power supplies. Featuring a full range 85V - 264V AC input, the LRS-35 range provides output voltages from 5V through to 48V and offers efficiencies of 82%-89%. The 1.8mm pure aluminium case features a specially designed mesh enclosure to maximise heat dissipation, and operates at temperatures between -30°C to 70°C without fan airflow. The LRS-35 delivers less than 0.2W no load power consumption making it an excellent option for meeting energy standards, and for reducing overall energy usage. With all these features and more, the LRS-35 series offers an excellent price to performance power supply solution.

Features

- Universal AC input/Full range
- Withstands up to 300V AC surge input for 5 seconds
- Less than 0.2W zero load power consumption
- Miniature size and 1U low profile
- Operates without external cooling in environments up to 70°C
- Short circuit, overload and overvoltage protections
- Cooling by free air convection
- Operating altitude up to 5000 meters
- High efficiency, long life and high reliability
- LED Power Indicator
- 100% full load burn-in test
- 3 years warranty

Ordering Information

35W 5V Single Output Switching Power Supply	WCM-LRM-35-05
35W 12V Single Output Switching Power Supply	WCM-LRM-35-12
35W 15V Single Output Switching Power Supply	WCM-LRM-35-15
35W 24V Single Output Switching Power Supply	WCM-LRM-35-24
35W 36V Single Output Switching Power Supply	WCM-LRM-35-36
35W 48V Single Output Switching Power Supply	WCM-LRM-35-48

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Specifications

Model		LRS-35-05	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 and Noise (see 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 (see note 3)	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	Line Regulation (see note 4)	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Load Regulation (see 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 (Typical)	82%	86%	86%	88%	88%	89%
	AC Current (Typical)	0.7A/115VAC - 0.42A/230VAC					
	Inrush Current (Typical)	COLD START 45A/230VAC					
	Leakage Current	<0.75mA / 240VAC					
Protection	Overload	110 - 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	Over Voltage	5.75 - 6.9V	13.8V - 16.2V	18.75 - 21.75V	28.8 - 33.6V	41.4 - 48.6V	55.2 - 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
Environment	Working Temp.	-20 - +70°C (Refer to "Derating Curve")					
	Working Humidity	20 - 90% RH non-condensing					
	Storage Temperature Humidity	-40 - +85°C, 10 - 95% RH					
	Temperature Coefficient	±0.03% per °C (0 - 50°C)					
	Vibration	10 - 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes					
Safety	Safety Standards	EN60950-1, EN60335-1, EN61558-1 2 16 approved					
	Withstand Voltage	I/P-O/P:3.0KVAC 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°C/ 70% RH					
Others	MTBF	763.6K hrs min. MIL-HDBK-217F (25°C)					
	Dimensions	99 x 92 x 30mm (L*W*H) - 0.23Kg					

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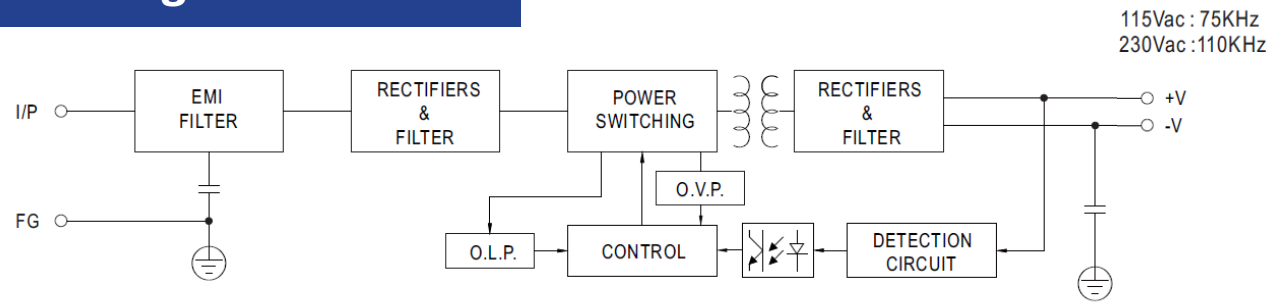
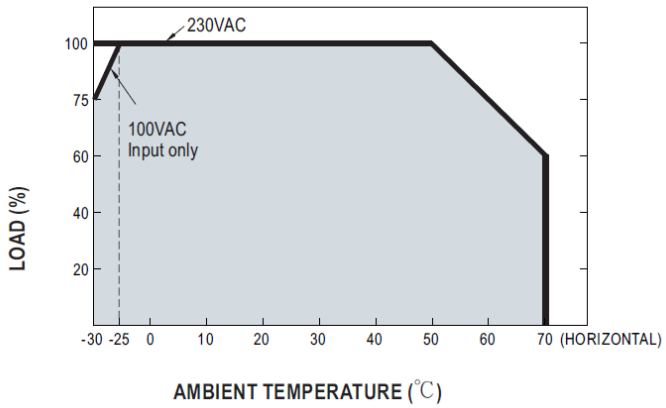
Notes

1. All Parameters not specifically mentioned are measured at 230V AC input, rated load and 25°C ambient temperature
2. Ripple and noise are measured at 20MHz bandwidth by using a 30cm twisted pair-wire terminated with a 0.1uf and 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% rate load.
6. Length of set up time is measured at cold first start. Turning the power supply ON/OFF very quickly may lead to an 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 specification.
8. The ambient temperature derating of 5°C/1000m is needed for operating at altitudes greater than 2000m.
9. The power supply is considered a component which will be installed into a final product. The EMC tests have been executed by mounting the unit on a 360mm by 360mm, 1mm thick metal plate. The final equipment must be reconfirmed that it still meets EMC directives.

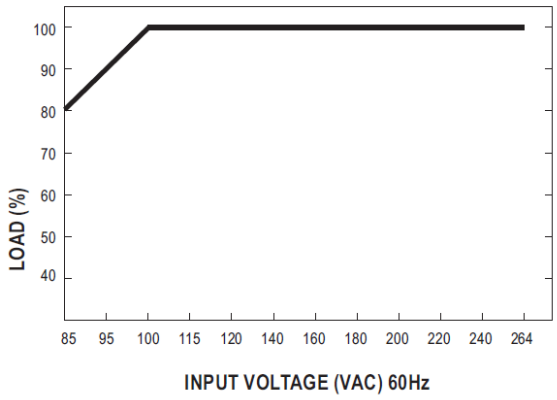
Block Diagram



Derating Curve



Static Characteristics



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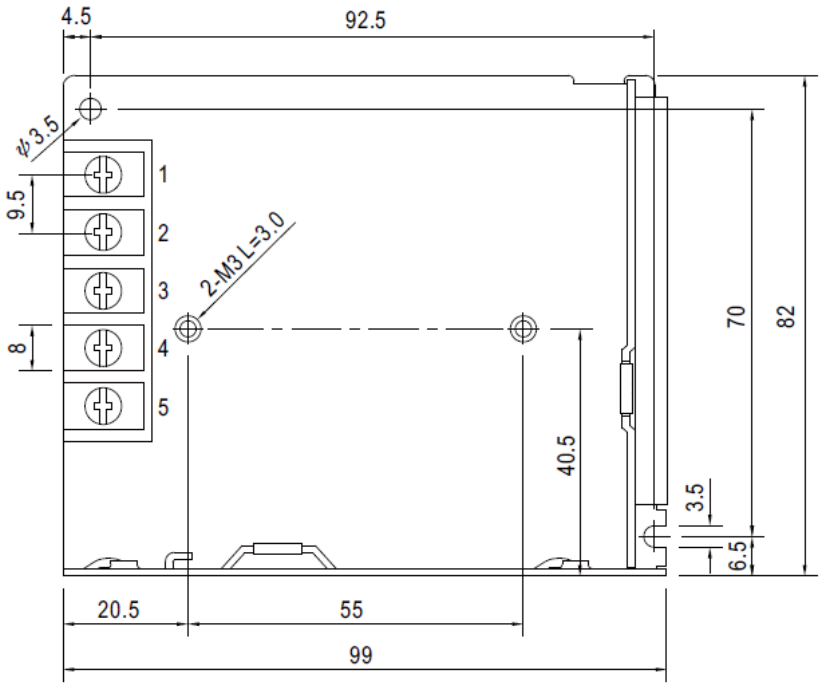
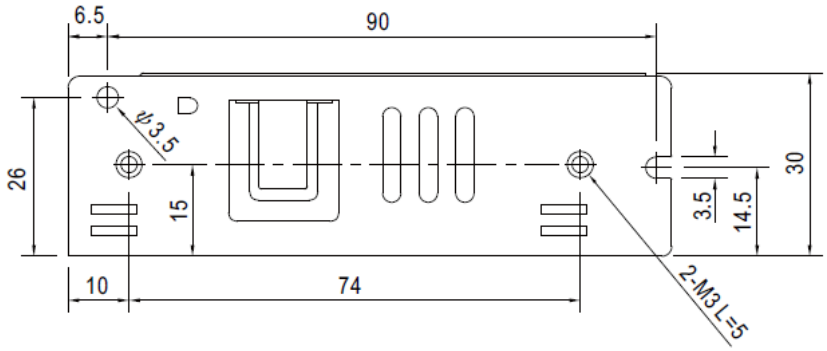
Mechanical Specification





Terminal Pin Number Allocation

Pin Number	Assignment
1	AC/L
2	AC/N
3	FG ⏚
4	DC OUTPUT -V
5	DC OUTPUT +V

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