

Wavecom Instruments

Winston LRS 100W

Power Supply Series



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Overview

The Winston LRS-100 Series are 100W single-output enclosed power supplies. Featuring a full range 85V - 264V AC input, the LRS-100 range provides output voltages from 3.3V through to 48V and offers efficiencies of 84.5%-91%. 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-100 delivers less than 0.3W zero 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-100 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 0.3W 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

- | | |
|--------------------------------------------------|----------------|
| ◇ 100W 3.3V Single Output Switching Power Supply | WCM-LRM-100-03 |
| ◇ 100W 5V Single Output Switching Power Supply | WCM-LRM-100-05 |
| ◇ 100W 12V Single Output Switching Power Supply | WCM-LRM-100-12 |
| ◇ 100W 15V Single Output Switching Power Supply | WCM-LRM-100-15 |
| ◇ 100W 24V Single Output Switching Power Supply | WCM-LRM-100-24 |
| ◇ 100W 36V Single Output Switching Power Supply | WCM-LRM-100-36 |
| ◇ 100W 48V Single Output Switching Power Supply | WCM-LRM-100-48 |

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Specifications

Model	LRS-100-03	LRS-100-05	LRS-100-12	LRS-100-15	LRS-100-24	LRS-100-36	LRS-100-48	
Output	DC Voltage	3.3V	5V	12V	15V	24V	36V	48V
	Rated Current	20A	18A	8.5A	7A	4.5A	2.8A	2.3A
	Current Range	0 - 20A	0 - 18A	0 - 8.5A	0 - 7A	0 - 4.5A	0 - 2.8A	0 - 2.3A
	Rated Power	66W	90W	102W	105W	108W	100.8W	110.4W
	Ripple and Noise	100mVp-p	100mVp-p	120mVp-p	120mVp-p	150mVp-p	200mVp-p	200mVp-p
	Voltage Adj. Range	2.97 - 3.6V	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	±3.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	Line Regulation	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Load Regulation	±2.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Setup, Rise Time	500ms, 30ms/230VAC - 500ms, 30ms/115VAC at full load						
Hold up Time (Typ)	55ms/230VAC - 10ms/115VAC at full load							
Input	Voltage Range	85 - 264VAC 120 - 373VDC - (Withstand 300VAC surge for 5sec. Without damage)						
	Frequency Range	47 - 63Hz						
	Efficiency (Typical)	84.5%	86%	88%	88.5%	90%	90.5%	91%
	AC Current (Typical)	1.9A/115VAC - 1.2A/230VAC						
	Inrush Current (Typical)	COLD START 50A/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	3.8 - 4.45V	5.75 - 6.75V	13.8V - 16.2V	18.75 - 21.75V	28.8 - 33.6V	41.4 - 46.8V	55.2 - 64.8V
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, approved						
	Withstand Voltage	I/P-O/P:3KVAC 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	720.6K hrs min. MIL-HDBK-217F (25°C)						
	Dimensions	129 x 97 x 30mm (L*W*H) - 0.4Kg						

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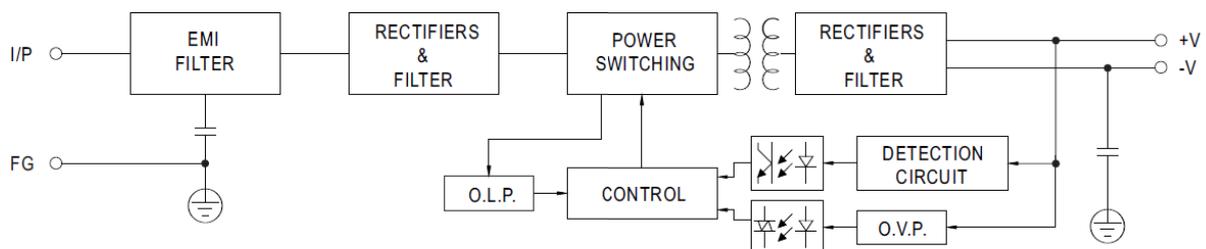
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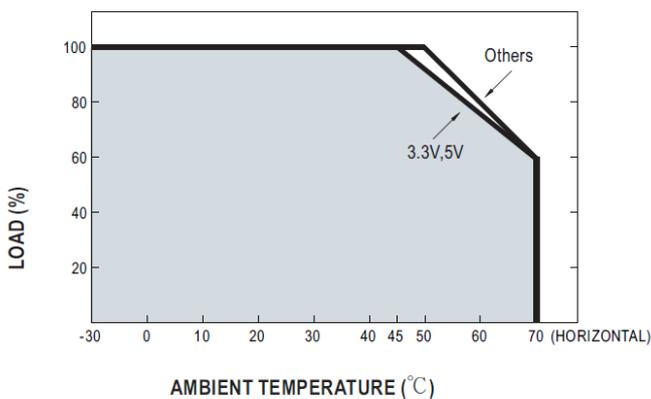
Notes

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. The ambient temperature derating of 5°C/1000m is needed for operating at altitudes greater than 2000m.
8. 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.

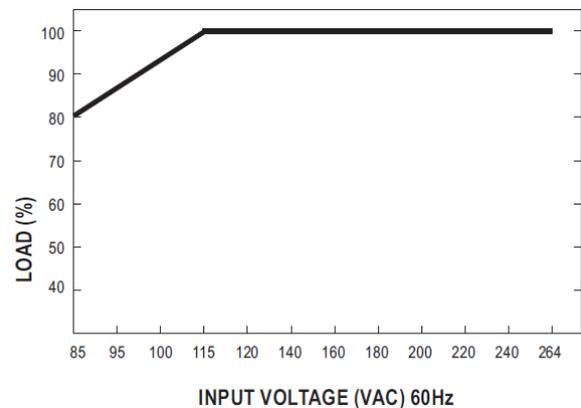
Block Diagram



Derating Curve



Static Characteristics



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