LPS PLC-100 Series 100W Single Output Switching Power Supply Owner's Manual

Contents

LPS

PLC-100 Series 100W Single Output Switching Power Supply

Product Usage Instructions

1**. Installation**

– Ensure the input voltage range is compatible with the power supply requirements.

2. Connection

– Connect the positive and negative output terminals of the power supply to the corresponding terminals of your device.

3. Adjustments

– Use the voltage adjustment range to set the desired output voltage within the specified limits.

4. Power On

– Apply power to the input terminals and switch on the power supply.

5. Monitoring

– Monitor the output voltage and current to ensure they are within the rated values for safe operation.

Features

- Universal AC input / Full range
- High efficiency up to 88.5%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in active PFC function
- Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting

- 2 years warranty

GTIN CODE

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

SPECIFICATION

MODEL			PLC-100-12	PLC-100-15	PLC-100-20	PLC-100-24	PLC-100-27	PLC-100-36	PLC-100-48
OUTPUT	DC VOLTAGE		12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note. 4		9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	20.25 ~ 27V	27 ~ 36V	36 ~ 48V
	RATED CURRENT	Note. 6	5A	5A	4.8A	4A	3.55A	2.65A	2A
	CURRENT RANGE	Note. 6	0 ~ 5A	0 ~ 5A	0 ~ 4.8A	0 ~ 4A	0 ~ 3.55A	0 ~ 2.65A	0 ~ 2A
	RATED POWER	Note. 6	60W	75W	96W	96W	95.85W	95.4W	96W
	RIPPLE & NOISE (max.) Note.2		150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE(Vo ADJ)		10.2 ~ 12V	12.8 ~ 15V	17 ~ 20V	20.4 ~ 24V	23 ~ 27V	30.6 ~ 36V	40.8 ~ 48V
	CURRENT ADJ. RANGE(Io ADJ)		3.75 ~ 5A	3.75 ~ 5A	3.6 ~ 4.8A	3 ~ 4A	2.6 ~ 3.55A	2 ~ 2.65A	1.5 ~ 2A
	VOLTAGE TOLERANCE Note.3		±3.0%	±3.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
	LINE REGULATION		±1.0%						
	LOAD REGULATION		±2.0%						

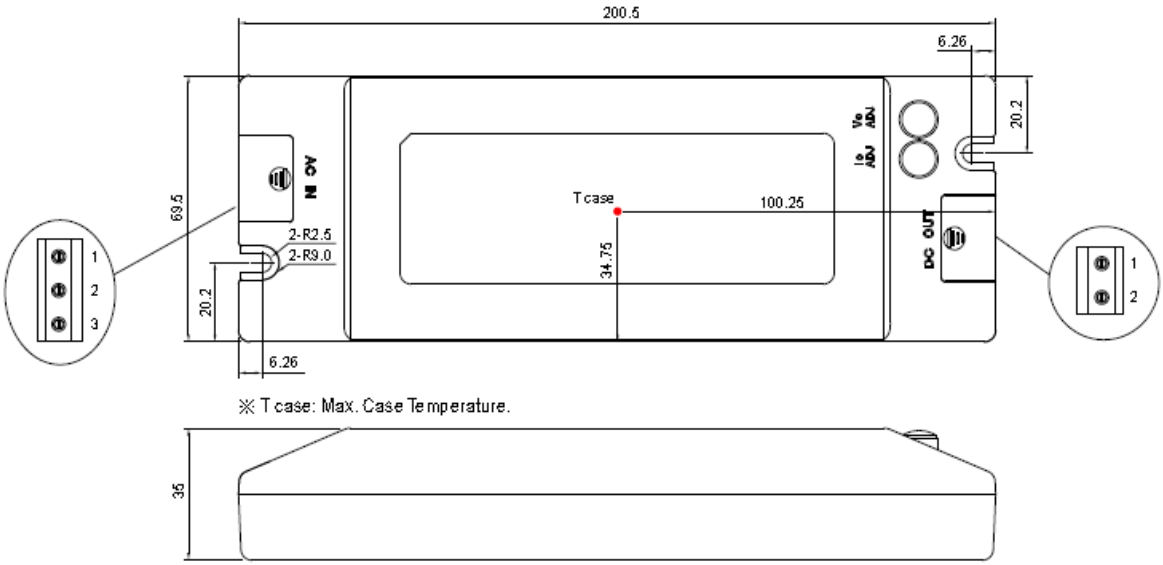
	SETUP, RISE TIME		500ms, 80ms/230VAC 1200ms, 80ms/115VAC at full load						
	HOLD UP TIME (Typ.)		60ms/230VAC 16ms/115VAC at full load						
INPUT	**VOLTAGE RANGE**	**Note. 5**	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE		47 ~ 63Hz						
	POWER FACTOR (Typ.)		PF>0.95/115VAC, PF>0.95/230VAC at full load (Please refer to “Power Factor Characteristic” curve)						
	TOTAL HARMONIC DISTORTION		THD< 20% when output loading≧75% at 115VAC/230VAC input						
	EFFICIENCY (Typ.)		83%	87%	88.5%	88.5%	88%	88%	88.5%
	AC CURRENT (Typ.)		12V:0.8A/115VAC 0.4A/230VAC 15V:0.9A/115VAC 0.45A/230VAC 20V ~ 48V:1.1A/115VAC					0.55A/230VAC	
	INRUSH CURRENT (Typ.)		COLD START 40A(twidth=950μs measured at 50% Ipeak) at 230VAC						
	MAX. No. of PSUs on 16A CIRCUIT BREAKER		3 units (circuit breaker of type B) / 5 units (circuit breaker of type C) at 230VAC						
	LEAKAGE CURRENT		<0.75mA / 240VAC						
PROTECTION	**OVER CURRENT (Typ.) Note.4**		95 ~ 102%						
			Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	OVER VOLTAGE		13 ~ 16V	16.5 ~ 20V	22 ~ 27V	27 ~ 34V	30 ~ 36V	39 ~ 48V	52 ~ 64V
			Protection type : Shut down and latch off o/p voltage, re-power on to recover						
	OVER TEMPERATURE		Shut down o/p voltage, re-power on to recover						
ENVIRONM	**WORKING TEMP.**		-30 ~ +50℃ (Refer to “Derating Curve”)						
	WORKING HUMIDITY		20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY		-40 ~ +80℃, 10 ~ 95% RH						

ENT	**TEMP. COEFFICIENT**	±0.03%/℃ (0 ~ 50℃)
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes
SAFETY & EMC	**SAFETY STANDARDS Note.7**	UL1310, TUV BS EN/EN60950-1, BS EN/EN61347-1, BS EN/EN61347-2-13, GB19510.14, GB19510.1, CAN/CSA C22.2 No. 223-M91(except for 48V), EAC TP TC 004 approved
	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 BS EN/EN55015, GB/T 17743, GB17625.1, BS EN/EN61000-3-2,-3, Class C (≧70% load) ; BS EN/EN61000-3-3, EAC TP TC 020
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61547, BS EN/EN55035, light industry level, (surge 4KV), EAC TP TC 020
OTHERS	**MTBF**	2688.3K hrs min. Telcordia SR-332 (Bellcore) ; 297.9Khrs min. MIL-HDBK-217F (25℃)
	DIMENSION	200.5*69.5*35mm (L*W*H)
	PACKING	0.52Kg; 25pcs/14Kg/0.65CUFT

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. Please refer to “DRIVING METHODS OF LED MODULE”. 5. Derating may be needed under low input voltage. Please check the static characteristics for more details. 6. This is the maximum possible output current and power. Over load protection may be activated slightly below this level to comply with the requirement of UL1310 class 2. 7. Safety and EMC design refer to BS EN/EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18. 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. (as available on https://**www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)** 9. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains. 10. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 11. PLC-100-12 is used for any light source that exempt from the ErP-Directive (EU) 2019/2020 requirement, for example this model could be use for signalling products (including, but not limited to road-, railway-, marineorair traffic-signalling , traffic control or airfield lamps). Product Liability Disclaimer For detailed information, please refer to https://**www.meanwell.com/serviceDisclaimer.aspx**

Mechanical Specification

Case No.981A Unit:mm Tolerance:±1



※ Tcase: Max. Case Temperature.

Terminal Pin No. Assignment (TB1) :
SWITCHLAB MB310-75003

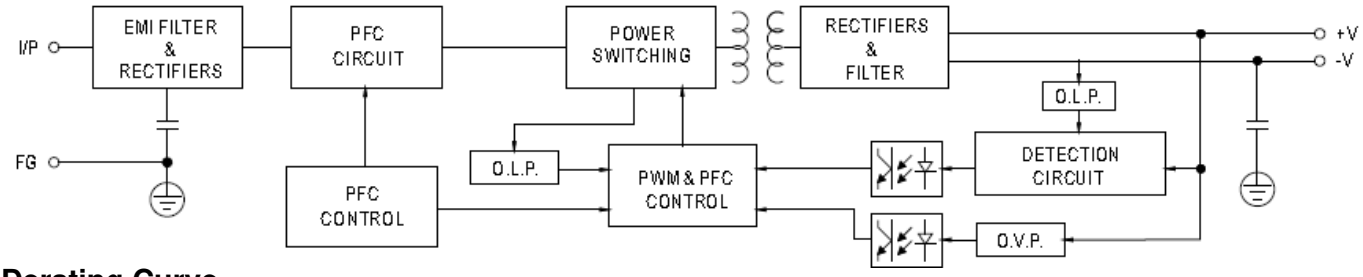
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2) :
SWITCHLAB MB310-75002

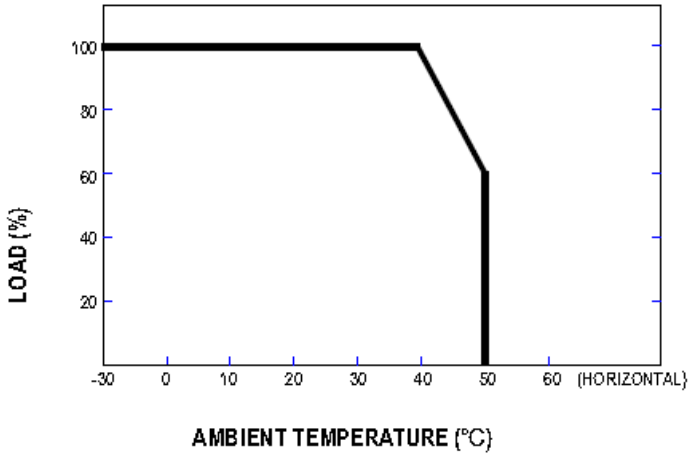
Pin No.	Assignment
1	+V
2	-V

Block Diagram

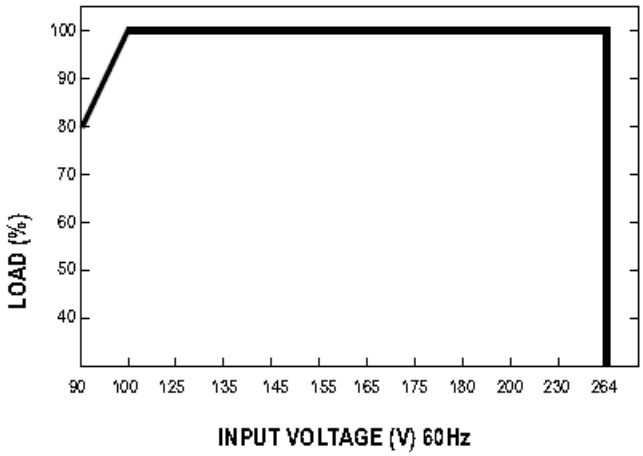
Fosc : 100KHz



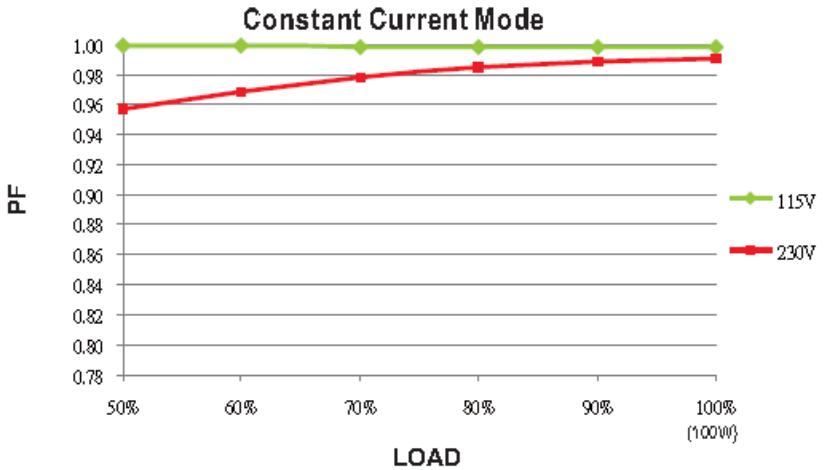
Derating Curve



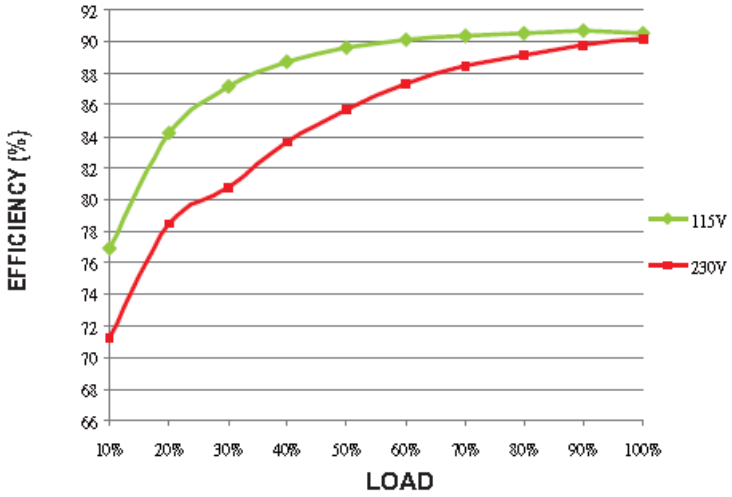
Static Characteristics



Power Factor Characteristic

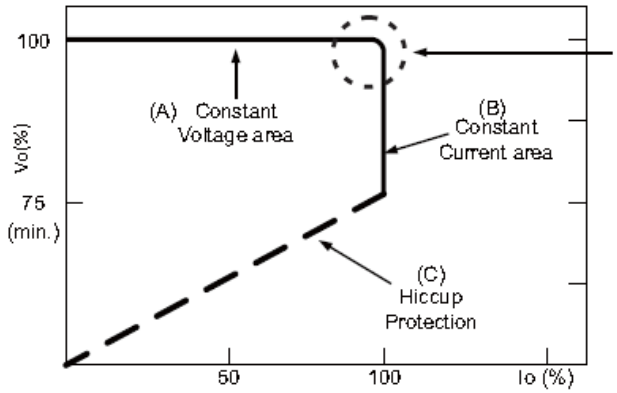


EFFICIENCY vs LOAD (48V Model)



DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method “direct drive” and “with LED driver”. A typical LED power supply may either work in “constant voltage mode (CV) or constant current mode (CC)” to drive the LEDs. Mean Well’s LED power supply with CV+ CC characteristic can be operated at both CV mode [with LED driver, at area (A)] and CC mode [direct drive, at area (B)].



Typical LED power supply I-V curve

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.

More Information

UsersManual

FAQs

Q: What is the maximum number of power supplies that can be connected to a 16A circuit breaker?

- **A:** The maximum number varies based on the type of circuit breaker – 3 units for type B and 5 units for type C

at 230VAC.

Q: How do I adjust the output voltage?

A: Use the voltage adjustment range specified in the manual to set the desired output voltage within the specified limits.

Documents / Resources

	LPS PLC-100 Series 100W Single Output Switching Power Supply [pdf] Owner's Manual PLC-100-12, PLC-100-15, PLC-100-20, PLC-100-24, PLC-100-27, PLC-100-36, PLC-100-48, PLC-100 Series 100W Single Output Switching Power Supply, 100W Single Output Switching Power Supply, Output Switching Power Supply, Switching Power Supply, Power Supply

References

- User Manual