

Professionally approved products.

Datasheet

Constant Voltage LED Driver 96W 48V 2A RS

RS Stock number 706-6644



■ 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

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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 <small>Note.4</small>	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	20.25 ~ 27V	27 ~ 36V	36 ~ 48V	
	RATED CURRENT <small>Note.6</small>	5A	5A	4.8A	4A	3.55A	2.65A	2A	
	CURRENT RANGE <small>Note.6</small>	0 ~ 5A	0 ~ 5A	0 ~ 4.8A	0 ~ 4A	0 ~ 3.55A	0 ~ 2.65A	0 ~ 2A	
	RATED POWER <small>Note.6</small>	60W	75W	96W	96W	95.85W	95.4W	96W	
	RIPPLE & NOISE (max.) <small>Note.2</small>	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	
	VOLTAGE ADJ. RANGE(V_o ADJ)	10.2 ~ 12V	12.8 ~ 15V	17 ~ 20V	20.4 ~ 24V	23 ~ 27V	30.6 ~ 36V	40.8 ~ 48V	
	CURRENT ADJ. RANGE(I_o 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 <small>Note.3</small>	±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 <small>Note.5</small>	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%	85%	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.) <small>Note.4</small>	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	
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover Protection type : Shut down and latch off o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	-30 ~ +50°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)							
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes							
	SAFETY STANDARDS <small>Note.7</small>	UL1310, TUV EN60950-1, EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V), J61347-1, J61347-2-13 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°C/ 70% RH							
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2,-3, Class C (≥70% load) ; EN61000-3-3							
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level, (surge 4KV), criteria A							
	MTBF	297.9Khrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	200.5*69.5*35mm (L*W*H)							
	PACKING	0.52Kg; 25pcs/14Kg/0.65CUFT							
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Please refer to "DRIVING METHODS OF LED MODULE". Derating may be needed under low input voltage. Please check the static characteristics for more details. 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. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18. 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-quality EMC Directive on the complete installation again. 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. 								

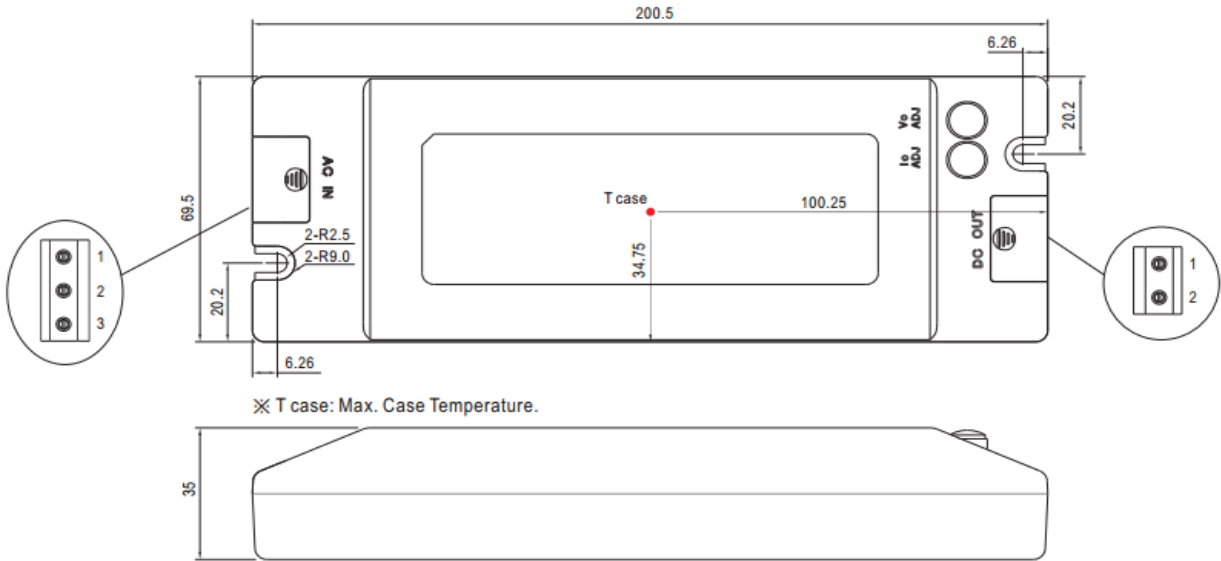
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Mechanical Specification

Case No.981A

Unit:mm


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

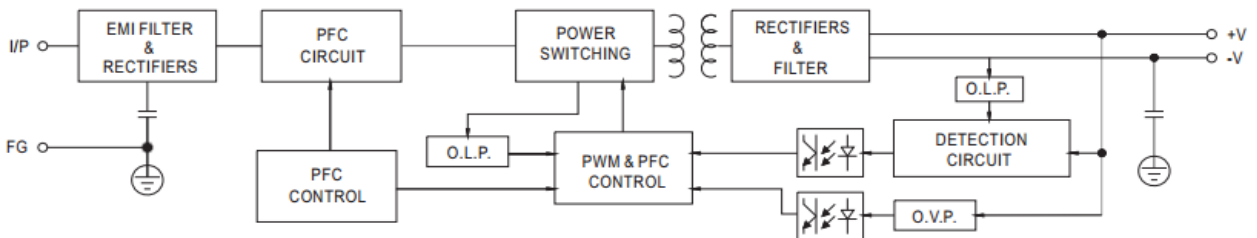
Pin No.	Assignment
1	FG ⊕
2	AC/N
3	AC/L

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

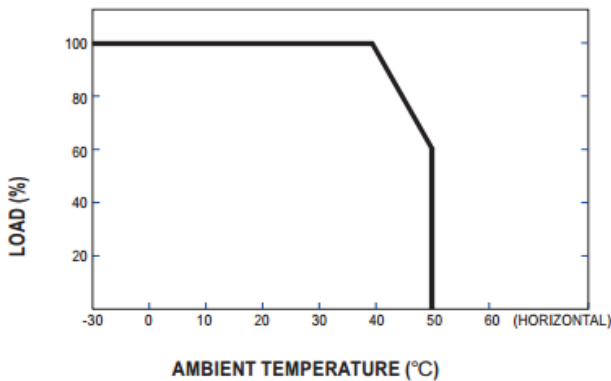
Pin No.	Assignment
1	+V
2	-V

Block Diagram

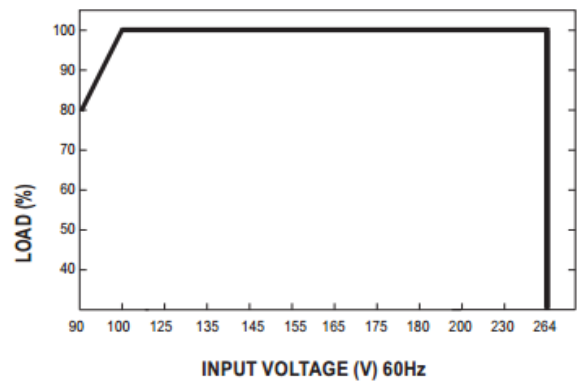
Fosc : 100KHz



Derating Curve

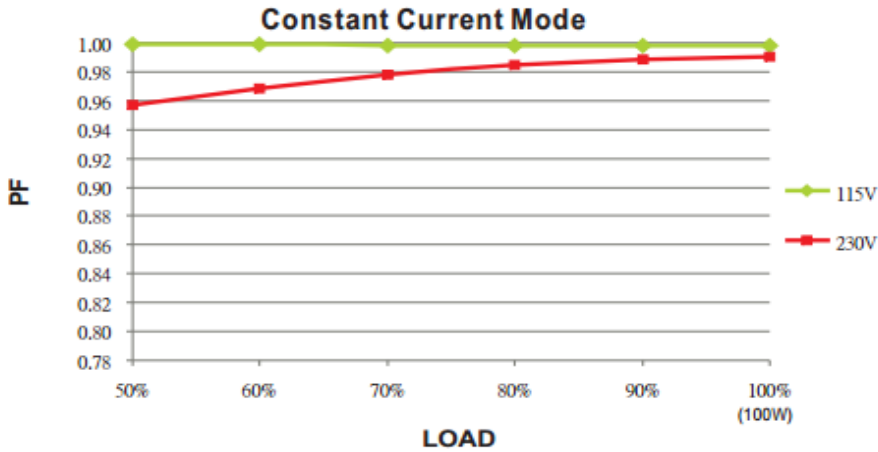


Static Characteristics



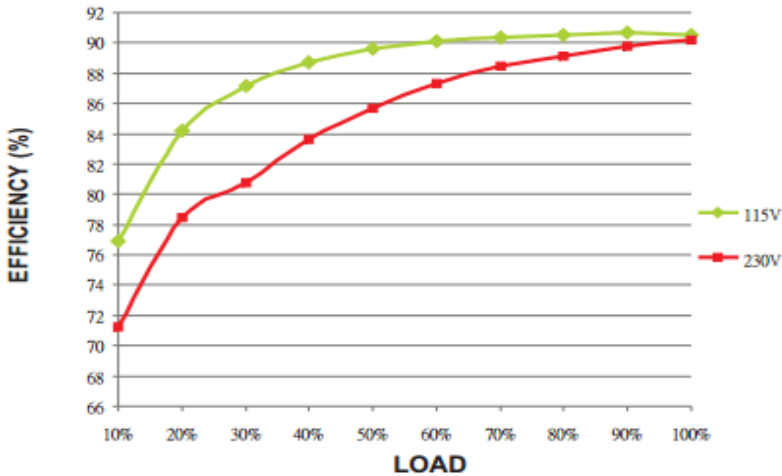
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Power Factor Characteristic

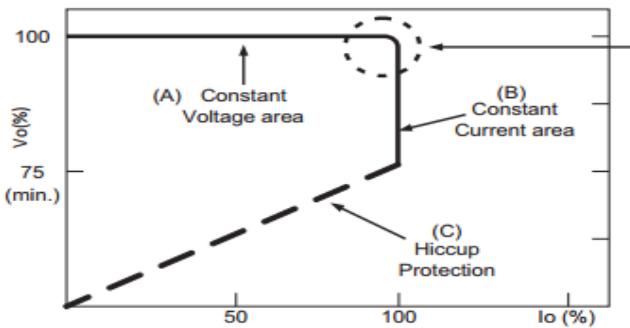


EFFICIENCY vs LOAD (48V Model)

PLC-100 series possess superior working efficiency that up to 88.5% can be reached in field applications.



DRIVING METHODS OF LED MODULE



Typical LED power supply I-V curve