MEAN WELL

100W Single Output Switching Power Supply PLC-100 series



■ Features :

- Universal AC input / Full range
- High efficiency 90%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- UL1310 Class 2 power unit
- Pass LPS
- Cooling by free air convection
- 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

SPECIFICATION

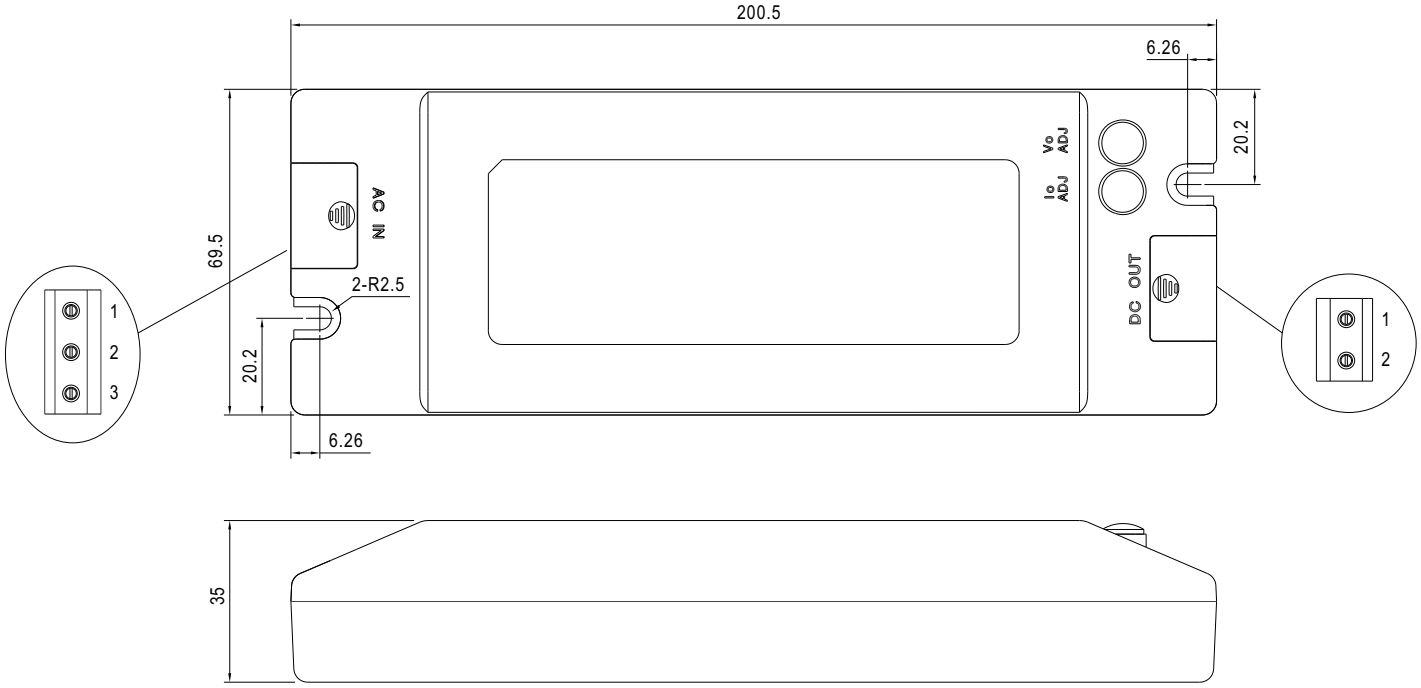
MODEL		PLC-100-12	PLC-100-15	PLC-100-20	PLC-100-24	PLC-100-27	PLC-100-36	PLC-100-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.4	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	20.25 ~ 27V	27 ~ 36V	36 ~ 48V
	RATED CURRENT Note.6	5A	5A	4.8A	4A	3.55A	2.65A	2A
	CURRENT RANGE Note.6	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	1200ms, 80ms/230VAC 1200ms, 80ms/115VAC at full load						
	HOLD UP TIME (Typ.)	60ms/230VAC 30ms/115VAC at full load						
INPUT	VOLTAGE RANGE Note.5	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.95/230VAC PF>0.95/115VAC at full load PF≧0.9 at 75 ~ 100% load						
	EFFICIENCY (Typ.)	84.5%	86.5%	90%	90%	90%	90%	89%
	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/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	90℃±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +50℃ (Refer to output load derating curve)						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	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 Class 2, TUV EN60950-1, EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V) approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMI CONDUCTION & RADIATION	Compliance to EN55015, EN55022 (CISPR22) Class B						
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3, Class C (≧70% load) ; EN61000-3-3						
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN61547, EN55024, light industry level, (surge 4KV), criteria A						
OTHERS	MTBF	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℃ 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. Constant current operation region is within 75% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
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 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.

■ Mechanical Specification

Case No.981A Unit:mm



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

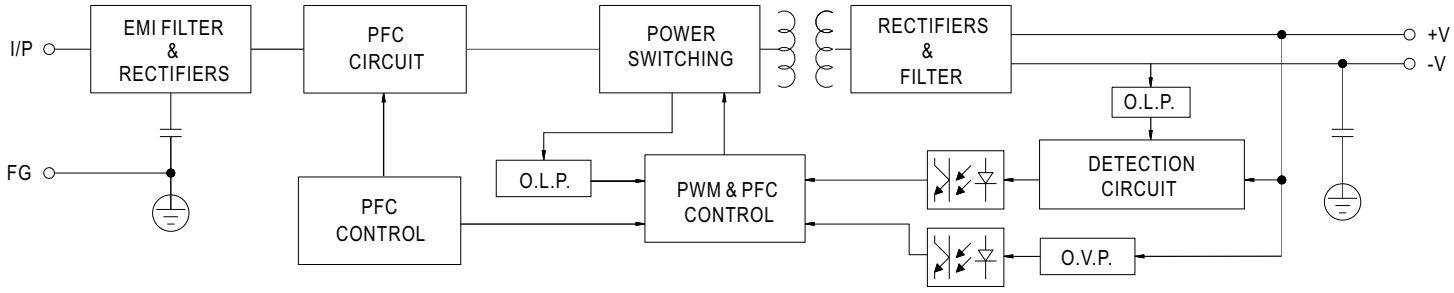
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

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

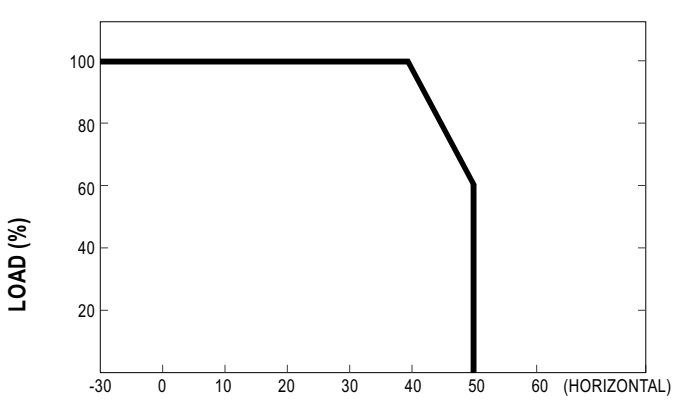
Pin No.	Assignment
1	+V
2	-V

■ Block Diagram

Fosc : 100KHz

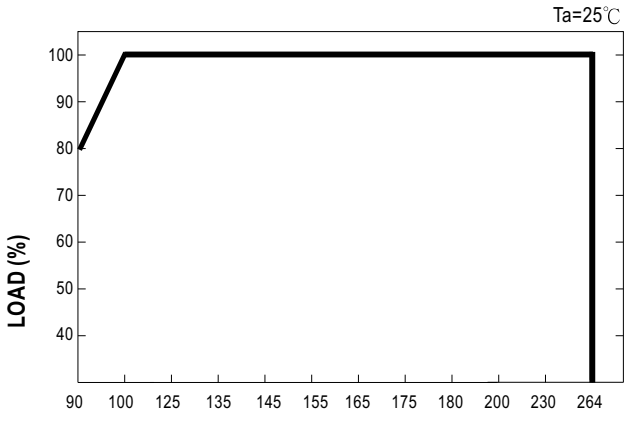


■ Derating Curve



AMBIENT TEMPERATURE (℃)

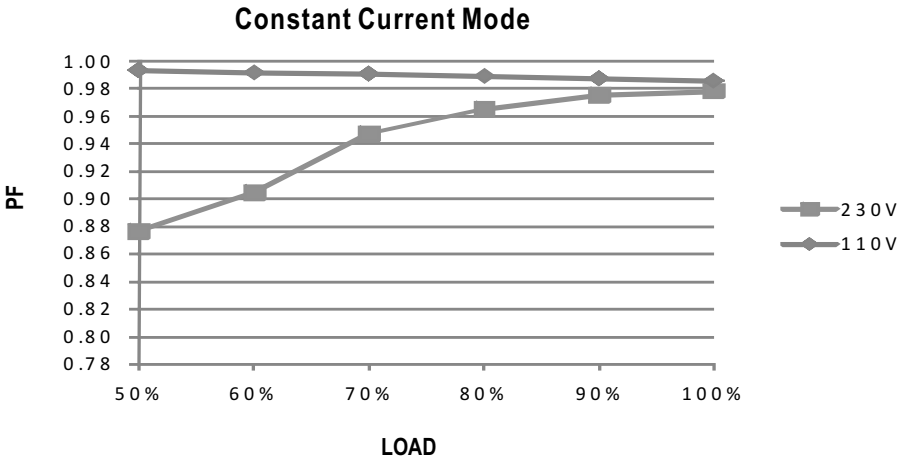
■ Static Characteristics



INPUT VOLTAGE (V) 60Hz

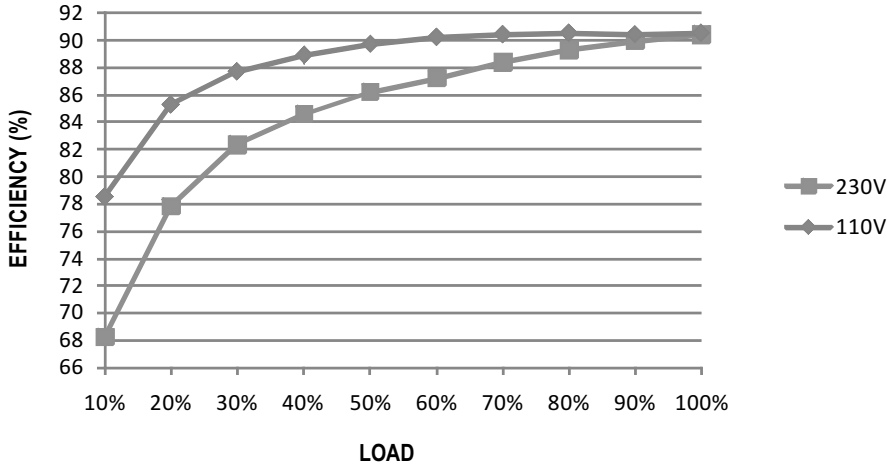
■ Power Factor Characteristic

Power factor will be higher than 0.9 when output loading is 75% or higher.



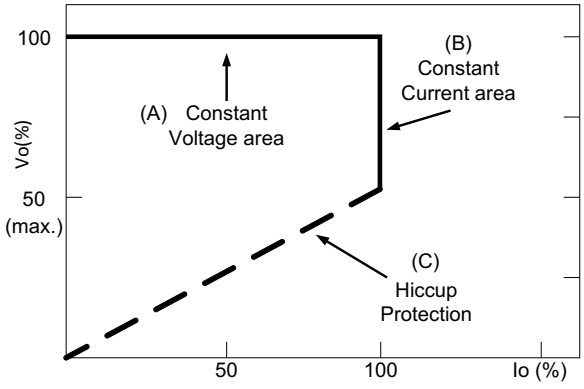
■ EFFICIENCY vs LOAD (48V Model)

PLC-100 series possess superior working efficiency that up to 91% can be reached in field applications.



■ 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