MEAN WELL

12W Single Output LED Power Supply

PLM-12 series



SELV IP30 (for Blank type only) (for E type only) CB

Features

- 230VAC only or Full range (up to 295VAC) models available
- Built-in active PFC function
- Constant current design
- Protections:Short circuit
- Cooling by free air convection
- Fully isolated plastic case
- Class Ⅱ power unit, no FG
- Class 2 power unit (Blank type only)
- No load power consumption <0.5W
- High reliability,low cost
- 2 years warranty

Applications

- Indoor LED lighting
- LED office lighting
- LED commercial lighting
- LED decorative lighting

Description

PLM-12 is a 12W economical AC/DC LED power supply series. Incorporating a built-in active PFC design, PLM-12 provides a high Power Factor value greater than 0.9. In addition, with the low no load power consumption below 0.5W, and the setup time less than 500ms, PLM-12 is complied with the ErP regulation required by European Union for lighting fixtures.

PLM-12 is a class Ⅱ (without FG pin) power unit housed with the UL 94V-0 rated flame retardant plastic case. The I/O terminals are designed with screw-less clamp style terminal block that greatly simplifies the wiring installation. Two types of models with different input voltage range are offered: PLM-12 series, which operates from 110~295VAC, and PLM-12E series, which operates from 180~295VAC.These two series are both constant current output design, supplying models with the current of 350mA, 500mA, 700mA and 1050mA, respectively.

Model Encoding

PLM - 12 E - 350

- 350: Output current
- E: Blank: AC input range 110~295VAC / E:AC input range 180~295VAC
- 12: Output wattage
- PLM: Series name

SPECIFICATION

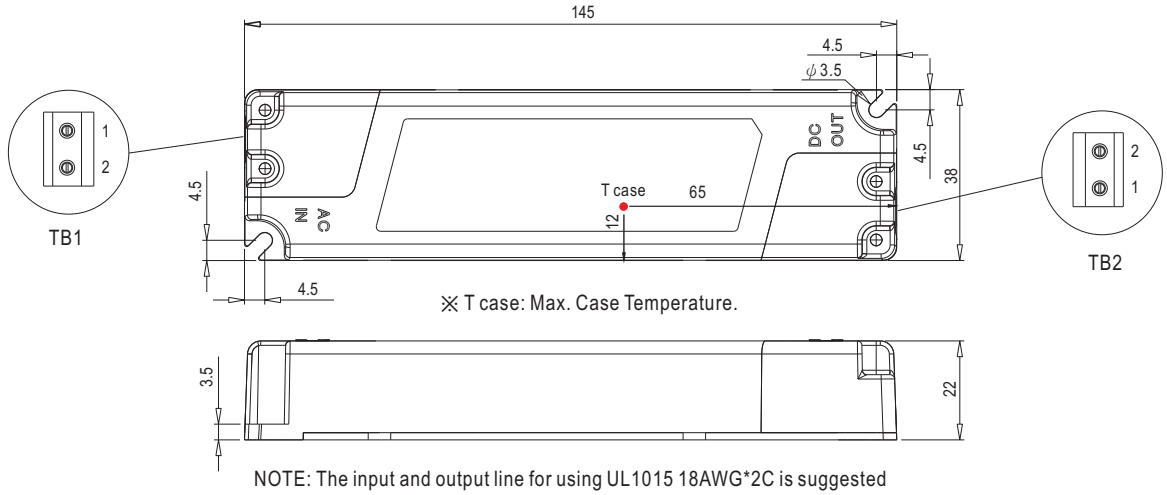
MODEL			PLM-12□-350	PLM-12□-500	PLM-12□-700	PLM-12□-1050
OUTPUT	CONSTANT CURRENT REGION Note.5		22 ~ 36V	15 ~ 24V	11 ~ 18V	7 ~ 12V
	RATED CURRENT		0.35A	0.5A	0.7A	1.05A
	NO LOAD OUTPUT VOLTAGE(max.)		42V	30V	22V	16V
	RATED POWER		12.6W	12W	12.6W	12.6W
	RIPPLE & NOISE (max.) Note.2	Blank type	3.6Vp-p	2.4Vp-p	2.4Vp-p	1.8Vp-p
		E type	5.5Vp-p	3.6Vp-p	3.6Vp-p	2.7Vp-p
	CURRENT ACCURACY Note.3		±5.0%			
	SETUP TIME		Blank type: 500ms / 115VAC, 230VAC at full load; E type: 500ms / 230VAC at full load			
INPUT	VOLTAGE RANGE Note.4		Blank type: 110 ~ 295VAC 156 ~ 417VDC; E type: 180 ~ 295VAC 254~ 417VDC			
	FREQUENCY RANGE		47 ~ 63Hz			
	POWER FACTOR	Blank type	PF ⩾ 0.97/115VAC,PF ⩾ 0.95/230VAC,PF>0.9/277VAC(at full load)(Please refer to "Power Factor Characteristic" curve)			
		E type	PF ⩾ 0.95/230VAC,PF ⩾ 0.9/277VAC (at full load)(Please refer to "Power Factor Characteristic" curve)			
	TOTAL HARMONIC DISTORTION	Blank type	THD< 20% when output loading≧60% at 115VAC/230VAC input and output loading≧75% at 277VAC input			
		E type	THD< 20% when output loading≧60% at 230VAC input and output loading≧75% at 277VAC input			
	EFFICIENCY (Typ.)	Blank type	85%	84%	83%	81%
		E type	84%	83%	82%	78%
	AC CURRENT		Blank type: 0.15A/115VAC 0.08A/230VAC 0.07A/277VAC; E type: 0.08A/230VAC 0.07A/277VAC			
	INRUSH CURRENT(Typ.)		COLD START 15A(twidth=50μs measured at 50% Ipeak) at 230VAC			
	MAX. No. of PSUs on 16A CIRCUIT BREAKER		160 units (circuit breaker of type B) / 160 units (circuit breaker of type C) at 230VAC			
	LEAKAGE CURRENT		0.25mA / 240VAC			
PROTECTION	SHORT CIRCUIT		Hiccup mode, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.		-30 ~ +50℃			
	WORKING HUMIDITY		20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY		-40 ~ +80℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT		±0.06%/℃ (0 ~ 50℃)			
	VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS		UL8750, CSA C22.2 No. 250.13-12(for Blank type only); ENEC EN61347-1, EN61347-2-13, EN62384, GB19510.14,GB19510.1(for E type only),IP30 approved			
	WITHSTAND VOLTAGE		I/P-O/P:3.75KVAC			
	ISOLATION RESISTANCE		I/P-O/P:100M Ohms/500VDC / 25℃/ 70%RH			
	EMC EMISSION		Compliance to EN55015, GB17743, GB17625.1(for E type only),EN61000-3-2 Class C(⩾60% load);EN61000-3-3			
	EMC IMMUNITY		Compliance to EN61000-4-2,3,4,5,6,8,11;EN61547, light industry level, criteria B(surge 2KV)			
OTHERS	MTBF		808.162Khrs min. MIL-HDBK-217F (25℃)			
	DIMENSION		145*38*22mm (L*W*H)			
	PACKING		0.126Kg;60pcs/8.6 Kg/0.48CUFT			

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. Please see "AC input voltage drop vs. output current characteristics" table.
4. Derating may be needed under low input voltage, please check the static characteristic for more details.
5. Constant current operation region is within 60% ~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.
6. 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.
7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

■ Mechanical Specification

Case No.PLM-25 Unit:mm



※ T case: Max. Case Temperature.

NOTE: The input and output line for using UL1015 18AWG*2C is suggested

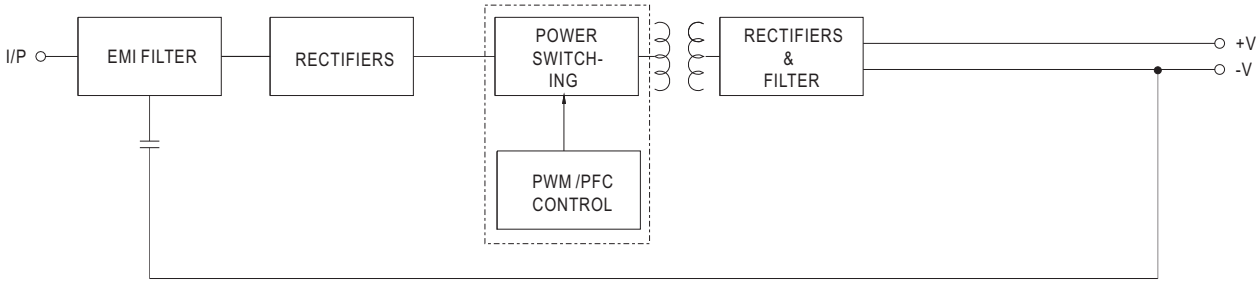
Terminal Pin No. Assignment (TB1) :
SWITCHLAB MWX201-75002EB(GRAY)

Pin No.	Assignment
1	AC/L
2	AC/N

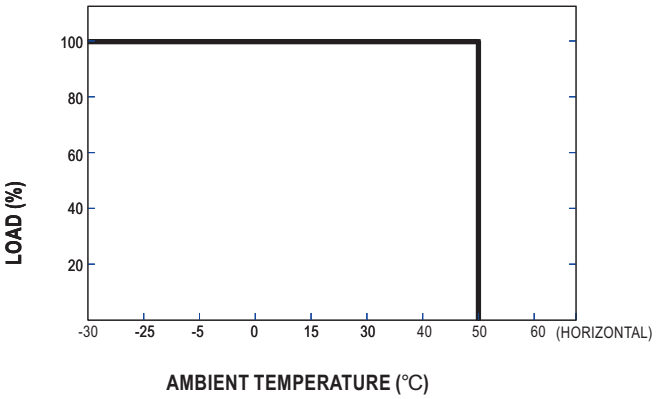
Terminal Pin No. Assignment (TB2) :
SWITCHLAB MWX201-75002B(BLUE)

Pin No.	Assignment
1	+V
2	-V

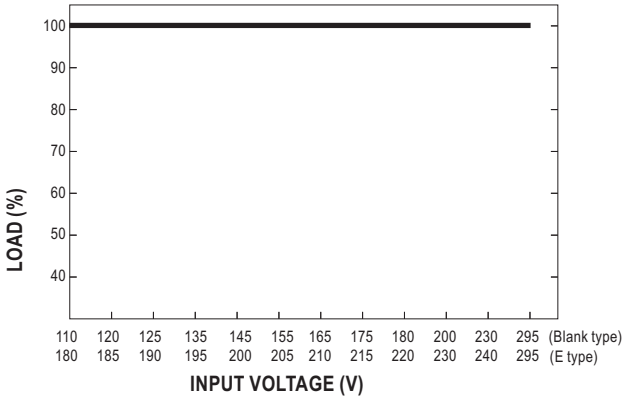
■ Block Diagram



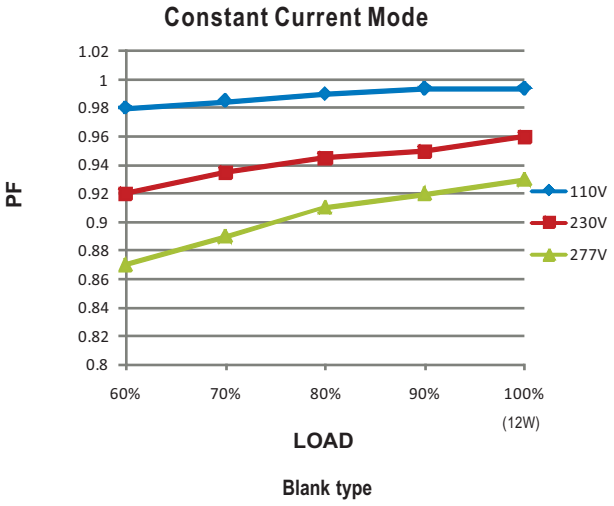
■ Derating Curve



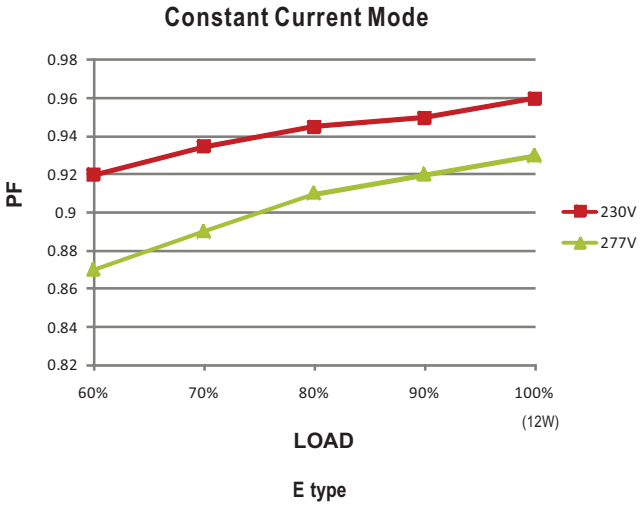
■ Static Characteristics



■ Power Factor Characteristic

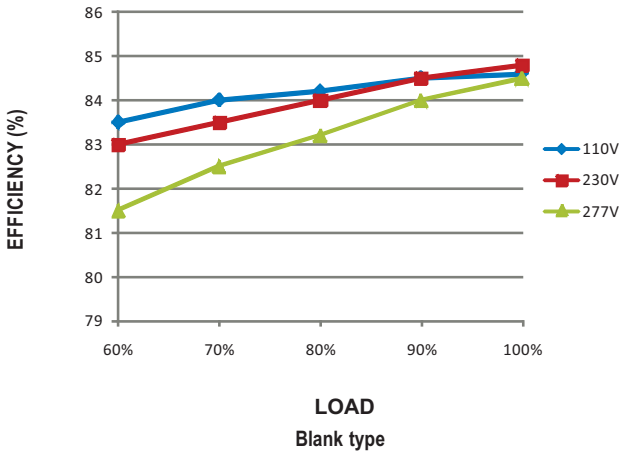


Blank type

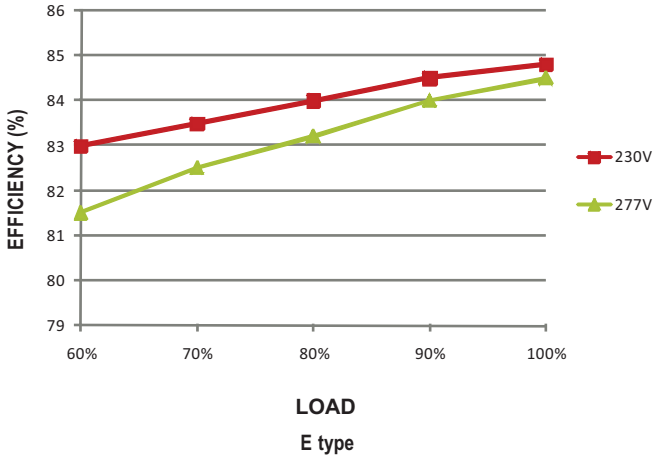


E type

■ EFFICIENCY vs LOAD (500mA Model)



Blank type



E type

■ AC input voltage drop vs. output current characteristics

AC input drop	10%	8%	5%	3%
Io drop	<15%	<11%	<7%	<6%

NOTE: Output current will return to the rated value within 50ms