40W Single Output AC Dimmable LED Power Supply PLM-40 series

■ Features :

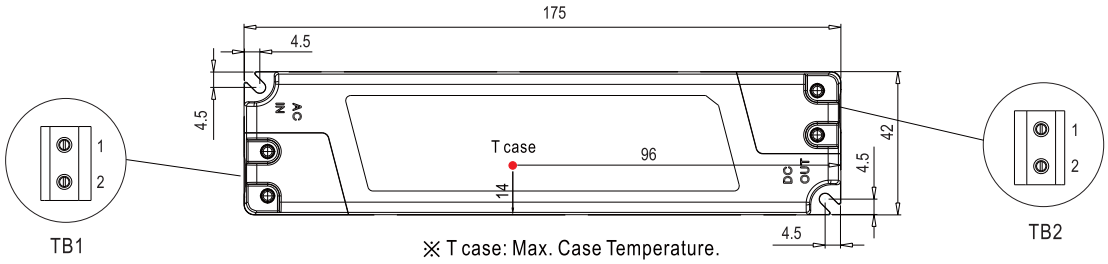
- Universal AC input / Full range (up to 295VAC)
- Three-step analog dimming
- Built-in active PFC function
- Constant current design
- Protections: Short circuit / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- IP30 design
- Class Ⅱ power unit, no FG
- Suitable for indoor LED lighting applications
- 100% full load burn-in test
- No load power consumption <0.5W
- Low cost
- High reliability
- 2 years warranty

SPECIFICATION

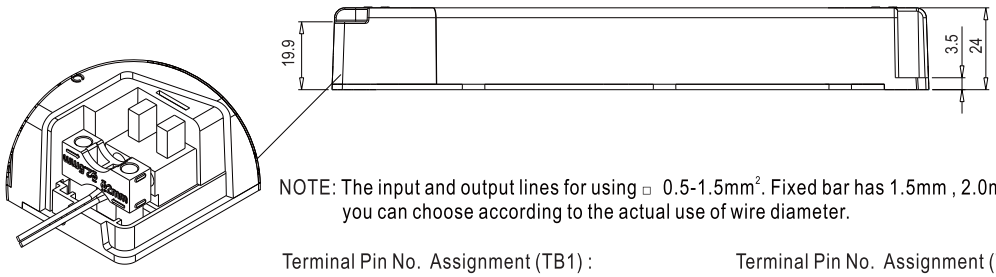
MODEL		PLM-40-350	PLM-40-500	PLM-40-700	PLM-40-1050	PLM-40-1400	PLM-40-1750
OUTPUT	RATED CURRENT	350mA	500mA	700mA	1050mA	1400mA	1750mA
	OPERATING VOLTAGE RANGE Note.5	53 ~ 105V	40 ~ 80V	29 ~ 57V	19 ~ 38V	15 ~ 29V	12 ~ 23V
	CURRENT ACCURACY Note.3	±5.0%					
	RATED POWER	36.75W	40W	38.5W	39.9W	40.6W	40.25W
	RIPPLE & NOISE (max.) Note.2	10Vp-p	8Vp-p	6Vp-p	4Vp-p	3Vp-p	2.5Vp-p
	NO LOAD OUTPUT VOLTAGE (max.)	115V	86V	63V	43V	34V	27V
	SETUP TIME	500ms / 115VAC, 230VAC at full load					
INPUT	VOLTAGE RANGE Note.4	110 ~ 295VAC 156 ~ 416VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF ≥ 0.97/115VAC,PF ≥ 0.95/230VAC,PF>0.9/277VAC(at full load)(Please refer to "Power Factor Characteristic" curve)					
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≧60% at 115VAC/230VAC input and output loading≧75% at 277VAC input					
	EFFICIENCY (Typ.)	88%	88%	87%	87%	86%	86%
	AC CURRENT (Typ.)	0.5A/115VAC 0.3A/230VAC 0.25A/277VAC					
	INRUSH CURRENT(Typ.)	COLD START 15A(twidth=75μs measured at 50% Ipeak) at 230VAC					
	LEAKAGE CURRENT	<0.5mA / 240VAC					
PROTECTION	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.					
	OVER TEMPERATURE	115℃ ±5℃ (TSW1)					
		Protection type : Hiccup mode, recovers automatically after temperature goes down.					
ENVIRONMENT	WORKING TEMP.	-30 ~ +45℃ (Refer to "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	UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13, EN62384, 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, EN61000-3-2 Class C (≧50% load) ; EN61000-3-3					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level, criteria A (Surge 2KV)					
OTHERS	MTBF	822.7Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	175*42*24mm (L*W*H)					
	PACKING	0.175Kg; 60pcs/11.5kg/0.68CUFT					
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. 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 50% ~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-40 Unit:mm



※ T case: Max. Case Temperature.



NOTE: The input and output lines for using □ 0.5-1.5mm^2. Fixed bar has 1.5mm , 2.0mm , 2.5mm , 3.0mm four grooves, you can choose according to the actual use of wire diameter.

Terminal Pin No. Assignment (TB1) :
SWITCHLAB DG235-7.5-2P(GRAY)

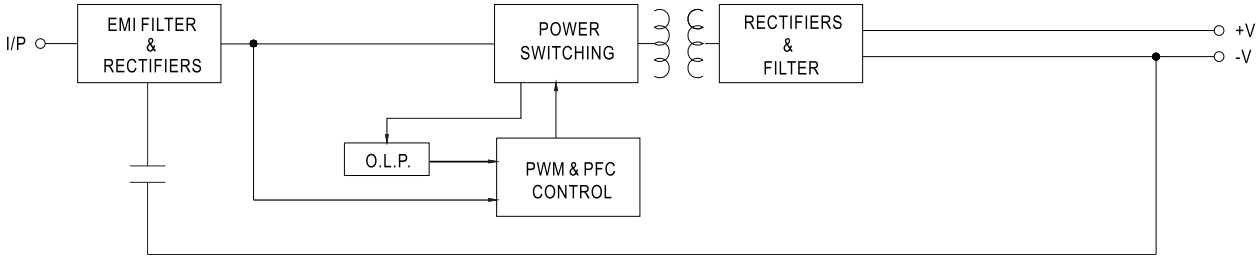
Pin No.	Assignment
1	AC/L
2	AC/N

Terminal Pin No. Assignment (TB2) :
SWITCHLAB DG235-7.5-2P(BLUE)

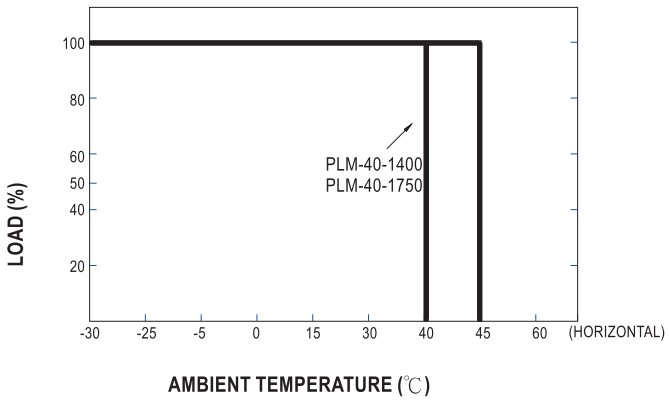
Pin No.	Assignment
1	-V
2	+V

■ Block Diagram

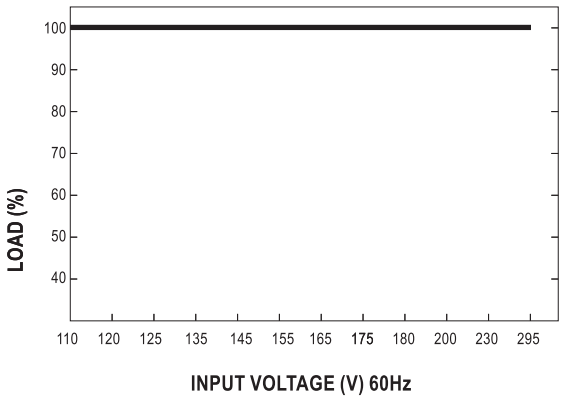
fosc : 67KHz



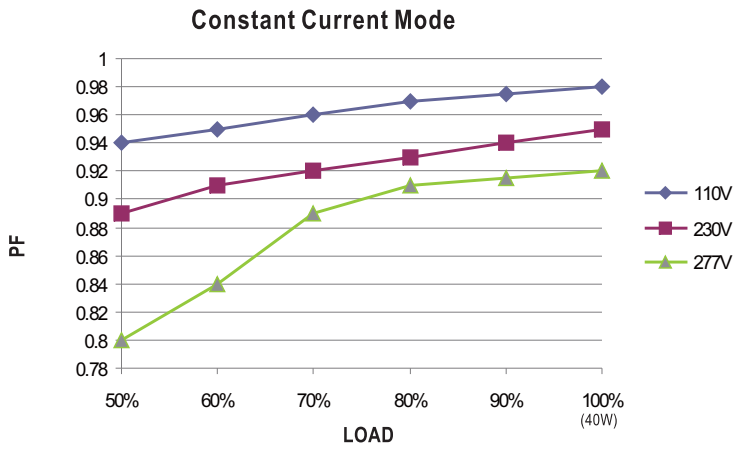
■ Derating Curve



■ Static Characteristics

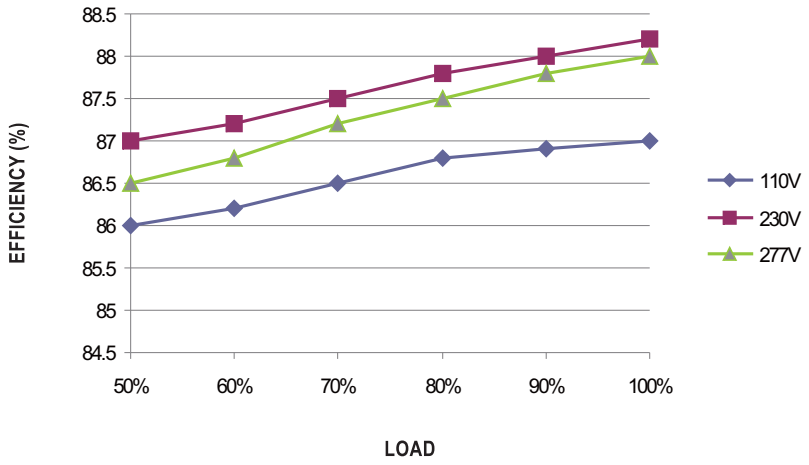


■ Power Factor Characteristic



■ EFFICIENCY vs LOAD (PLM-40-350)

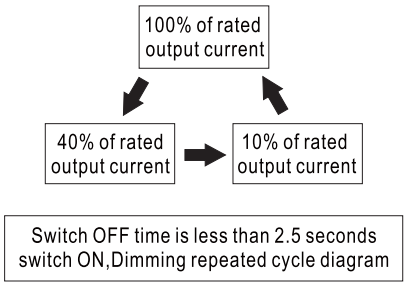
PLM-40 series possess superior working efficiency that up to 88% can be reached in field applications.



■ Three-step analog dimming

3-level analog dimming control using a wall switch

	STEP 1	STEP 2	STEP 3
three-step analog dimming	Switch turn ON	Switch turn OFF Less than 2.5 seconds Switch turn ON	Switch turn OFF Less than 2.5 seconds Switch turn ON
percentage of rated current	100%	40%	10%



Switch OFF time is less than 2.5 seconds switch ON,Dimming repeated cycle diagram

NOTE: if the OFF time is longer than 2.5 seconds, once switch on again, PLM-40 will provide 100% of rated output current

■ AC input voltage drop vs. output current characteristics

AC input drop	10%	8%	5%	3%
Io drop	<18%	<13%	<8%	<6%

NOTE: Output current will return to the rated value within 40ms