MEAN WELL

# 60W Single Output LED Power Supply PLN-60 series

## Features :

- Universal AC input / Full range
- Fully isolated plastic case with IP64 level
- Built-in constant current limiting circuit with adjustable OCP level
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- IP64 design for indoor or outdoor installations
- UL1310 Class 2 power unit
- 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

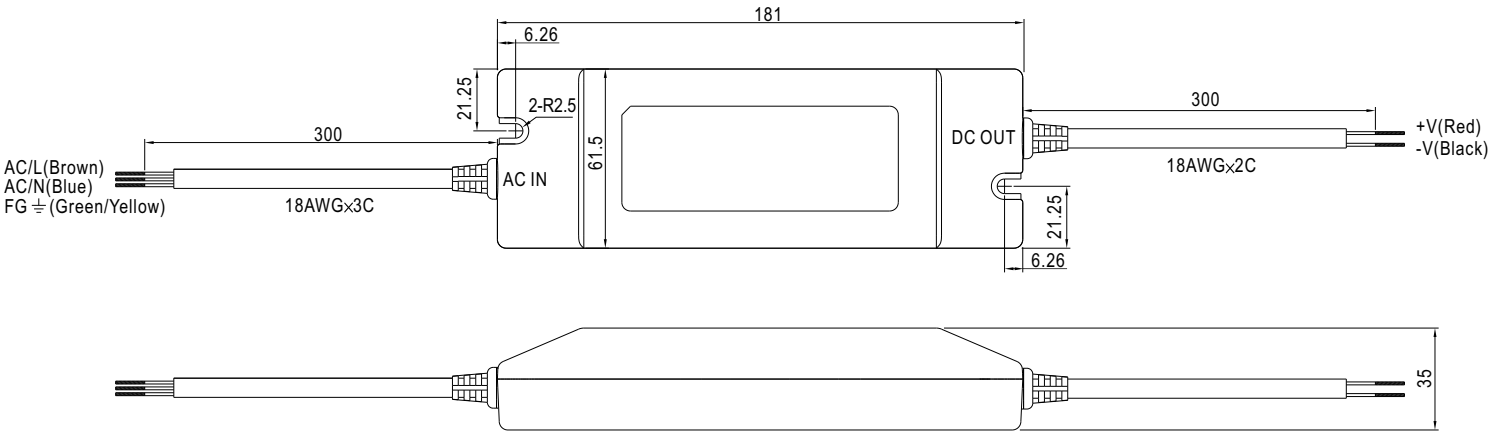
| MODEL | | PLN-60-12 | PLN-60-15 | PLN-60-20 | PLN-60-24 | PLN-60-27 | PLN-60-36 | PLN-60-48 |
|---|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 27V | 36V | 48V |
| | CONSTANT CURRENT REGION Note.7 | 8.4 ~ 12V | 10.5 ~15V | 14 ~ 20V | 16.8 ~24V | 18.9 ~27V | 25.2 ~ 36V | 33.6 ~ 48V |
| | RATED CURRENT | 5A | 4A | 3A | 2.5A | 2.3A | 1.7A | 1.3A |
| | CURRENT RANGE | 0 ~ 5A | 0 ~ 4A | 0 ~ 3A | 0 ~ 2.5A | 0 ~ 2.3A | 0 ~ 1.7A | 0 ~ 1.3A |
| | RATED POWER | 60W | 60W | 60W | 60W | 62.1W | 61W | 62.5W |
| | RIPPLE & NOISE (max.) Note.2 | 2Vp-p | 2.4Vp-p | 1.8Vp-p | 2.7Vp-p | 2.7Vp-p | 3.6Vp-p | 4.6Vp-p |
| | VOLTAGE ADJ. RANGE Note.6 | 11 ~ 13V | 13.8 ~ 16.2V | 18 ~ 22V | 22 ~ 26V | 25 ~ 30V | 32.5 ~ 39V | 43.6 ~ 51.8V |
| | | Can be adjusted by internal potential meter SVR1 | | | | | | |
| | CURRENT ADJ. RANGE Note.6 | 3% ~ -25%. Can be adjusted by internal potential meter SVR2 | | | | | | |
| | VOLTAGE TOLERANCE Note.3 | ±10% | | | | | | |
| | LINE REGULATION | ±3.0% | | | | | | |
| | LOAD REGULATION | ±5.0% | | | | | | |
| | SETUP TIME | 1500ms / 230VAC 3000ms / 115VAC at full load | | | | | | |
| INPUT | VOLTAGE RANGE Note.5 | 90 ~ 264VAC 127 ~ 370VDC | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | |
| | POWER FACTOR | PF≧0.9 at 75 ~ 100% load, 115VAC / 230VAC | | | | | | |
| | EFFICIENCY(Typ.) | 83% | 84.5% | 86.5% | 86.5% | 87% | 87% | 88% |
| | AC CURRENT | 0.8A/115VAC 0.4A/230VAC | | | | | | |
| | INRUSH CURRENT(max.) | 40A/230VAC | | | | | | |
| | LEAKAGE CURRENT | <0.75mA / 240VAC | | | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 110% | 130% (max) | | | | | |
| | | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | |
| | SHORT CIRCUIT Note.4 | Hiccup mode, recovers automatically after fault condition is removed. | | | | | | |
| | OVER VOLTAGE | 13.8 ~ 16V | 17.5 ~ 21V | 22.8 ~ 25V | 28 ~ 32V | 31 ~ 35V | 41 ~ 46V | 54 ~ 60V |
| | | Protection type : Shut down o/p voltage, re-power on to recover | | | | | | |
| | OVER TEMPERATURE | 95℃ ±10℃ (TSW1) detect on heatsink of power transistor | | | | | | |
| | | Protection type : Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | |
| 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 | UL1310 Class 2, TUV EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V), IP64 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:100M Ohms / 500VDC / 25℃/ 70% RH | | | | | | |
| | EMI CONDUCTION & RADIATION | Compliance to EN55015, EN55022 (CISPR22) Class B | | | | | | |
| | HARMONIC CURRENT | Compliance to EN61000-3-2 Class C (≧75% load) ; EN61000-3-3 | | | | | | |
| | EMS IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024,EN61547, light industry level, criteria A | | | | | | |
| OTHERS | MTBF | 497.8Khrs min. MIL-HDBK-217F (25℃) | | | | | | |
| | DIMENSION | 181*61.5*35mm (L*W*H) | | | | | | |
| | PACKING | 0.5Kg; 24pcs/13Kg/0.75CUFT | | | | | | |

NOTE

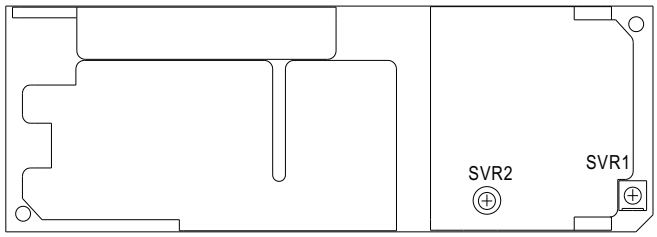
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Direct connecting to LEDs is not suggested for models with "RIPPLE & NOISE" >±10% and using additional drivers is highly recommended.
4. Tolerance : includes set up tolerance, line regulation and load regulation.
5. Please refer to OLP characteristics.
6. Derating may be needed under low input voltage. Please check the derating curve for more details.
7. Output voltage can be adjusted through the SVR1 on the PCB ; limit of output constant current level can be adjusted through the SVR2 on the PCB.

## ■ Mechanical Specification

Case No.960A Unit:mm



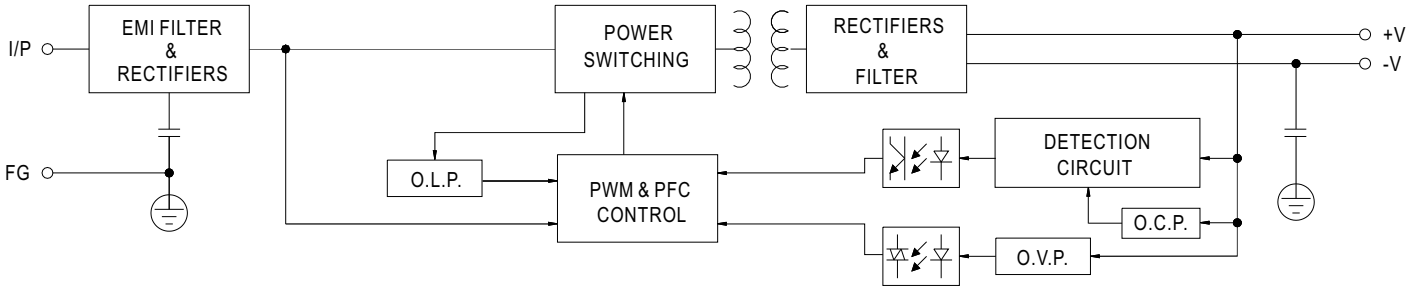

Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.



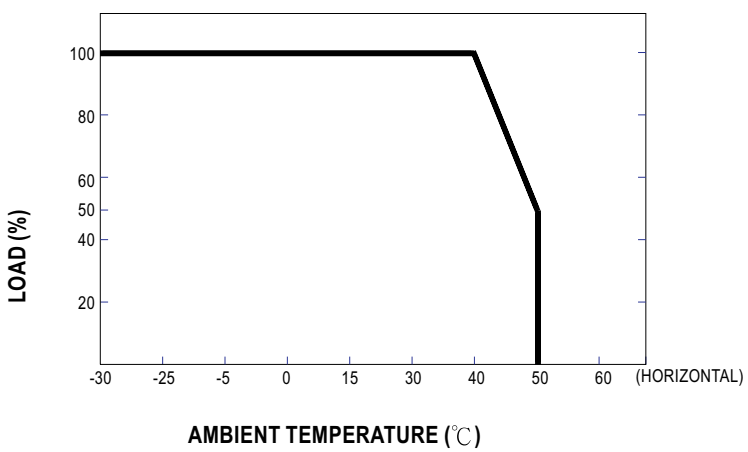

| | |
|---|---|
| SVR1 | Output voltage adjustment |
| SVR2 | Output current adjustment |

## ■ Block Diagram

fosc : 90KHz(115VAC)
120KHz(230VAC)




## ■ Derating Curve




## ■ Static Characteristics