



## ■ Features :

- Universal AC input / Full range (up to 295VAC)
- 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
- Fully isolated plastic case with IP64 level
- Pass LPS
- Class 2 power unit
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Suitable for dry / damp locations
- Compliance to worldwide safety regulations for lighting
- 2 years warranty



## ■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

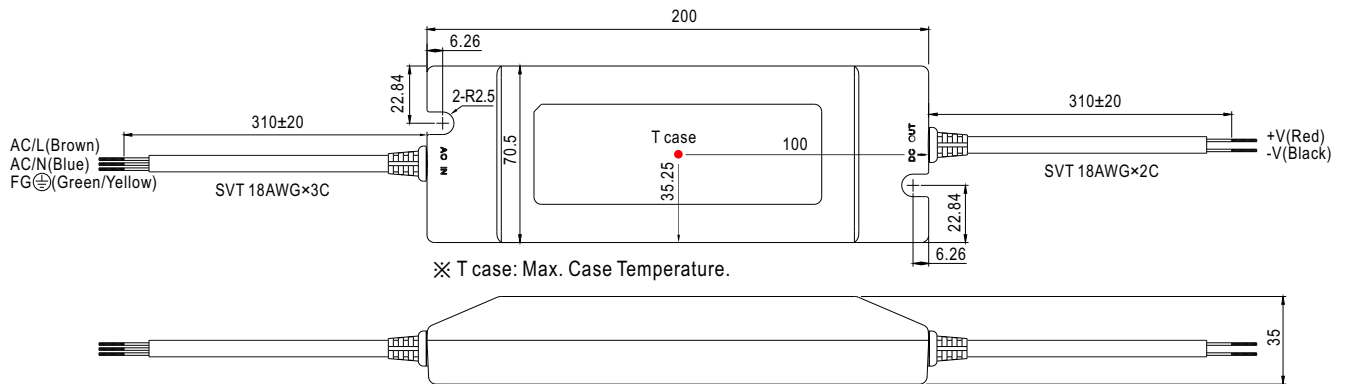


## SPECIFICATION

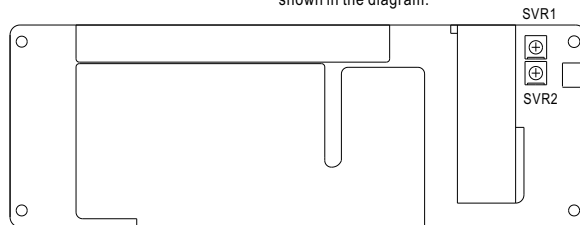
| MODEL               |                                               | PLN-100-12                                                                                                                                                                                                                                             | PLN-100-15  | PLN-100-20 | PLN-100-24 | PLN-100-27  | PLN-100-36 | PLN-100-48 |
|---------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------------|-------------|------------|------------|
| OUTPUT              | DC VOLTAGE                                    | 12V                                                                                                                                                                                                                                                    | 15V         | 20V        | 24V        | 27V         | 36V        | 48V        |
|                     | CONSTANT CURRENT REGION <small>Note.6</small> | 9 ~ 12V                                                                                                                                                                                                                                                | 11.25 ~ 15V | 15 ~ 20V   | 18 ~ 24V   | 20.25 ~ 27V | 27 ~ 36V   | 36 ~ 48V   |
|                     | RATED CURRENT <small>Note.5</small>           | 5A                                                                                                                                                                                                                                                     | 5A          | 4.8A       | 4A         | 3.55A       | 2.65A      | 2A         |
|                     | RATED POWER <small>Note.5</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 (SVR1)                     | 10.2 ~ 12V                                                                                                                                                                                                                                             | 12.8 ~ 15V  | 17 ~ 20V   | 20.4 ~ 24V | 23 ~ 27V    | 30.6 ~ 36V | 40.8 ~ 48V |
|                     | CURRENT ADJ. RANGE(SVR2)                      | 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.4</small>           | 90 ~ 295VAC    127 ~ 417VDC                                                                                                                                                                                                                            |             |            |            |             |            |            |
|                     | FREQUENCY RANGE                               | 47 ~ 63Hz                                                                                                                                                                                                                                              |             |            |            |             |            |            |
|                     | POWER FACTOR (Typ.)                           | PF>0.95/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve)                                                                                                                                      |             |            |            |             |            |            |
|                     | TOTAL HARMONIC DISTORTION                     | THD< 20% when output loading≥75% at 115VAC/230VAC input and output loading≥75% at 277VAC input                                                                                                                                                         |             |            |            |             |            |            |
|                     | EFFICIENCY (Typ.)                             | 83%                                                                                                                                                                                                                                                    | 87%         | 88.5%      | 88.5%      | 88%         | 88%        | 88.5%      |
|                     | AC CURRENT (Typ.)                             | 12V:0.8A/115VAC    0.4A/230VAC    0.3A/277VAC    15V:0.9A/115VAC    0.45A/230VAC    0.35A/277VAC<br>20V ~ 48V:1.1A/115VAC    0.55A/230VAC    0.45A/277VAC                                                                                              |             |            |            |             |            |            |
|                     | INRUSH CURRENT (Typ.)                         | COLD START 40A(twidth=1030μs 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                                  | 95 ~ 102%<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                      |             |            |            |             |            |            |
|                     | SHORT CIRCUIT                                 | Hiccup mode, 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                                                                                                                                                                                                          |             |            |            |             |            |            |
| 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)                                                                                                                                                                                                                                   |             |            |            |             |            |            |
|                     | VIBRATION                                     | 10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                                                |             |            |            |             |            |            |
| SAFETY & EMC        | SAFETY STANDARDS <small>Note.7</small>        | UL879, UL1310, UL8750, CSA C22.2 No. 207-M89, TUV BS EN/EN61347-1, BS EN/EN61347-2-13 independent, CAN/CSA C22.2 No. 223-M91(except for 48V), CAN/CSA C22.2 No. 250.13-12, EAC TP TC 004, GB19510.1,GB19510.14,IP64 approved ; design refer to UL60950 |             |            |            |             |            |            |
|                     | WITHSTAND VOLTAGE                             | I/P-O/P:3.75KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC                                                                                                                                                                                                     |             |            |            |             |            |            |
|                     | ISOLATION RESISTANCE                          | I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH                                                                                                                                                                                                              |             |            |            |             |            |            |
|                     | EMC EMISSION                                  | Compliance to BS EN/EN55015, BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2 Class C (>75% load) ; BS EN/EN61000-3-3;GB17743 and GB17625.1,EAC TP TC 020                                                                                            |             |            |            |             |            |            |
|                     | EMC IMMUNITY                                  | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61547, BS EN/EN55035, light industry level (surge 4KV), EAC TP TC 020                                                                                                                            |             |            |            |             |            |            |
| OTHERS              | MTBF                                          | 2689.6K hrs min.    Telcordia SR-332 (Bellcore) ;    303.2Khrs min.    MIL-HDBK-217F (25°C)                                                                                                                                                            |             |            |            |             |            |            |
|                     | DIMENSION                                     | 200*70.5*35mm (L*W*H)                                                                                                                                                                                                                                  |             |            |            |             |            |            |
|                     | PACKING                                       | 0.52Kg; 20pcs/12.5Kg/0.9CUFT                                                                                                                                                                                                                           |             |            |            |             |            |            |

## Mechanical Specification

Case No.955A Unit:mm

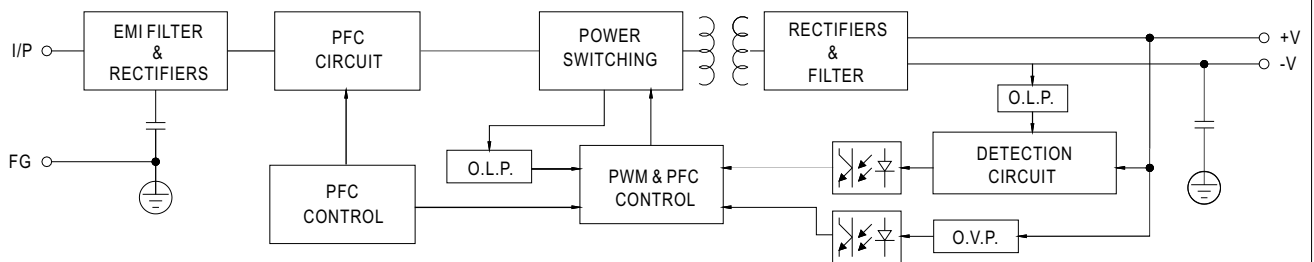


Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.

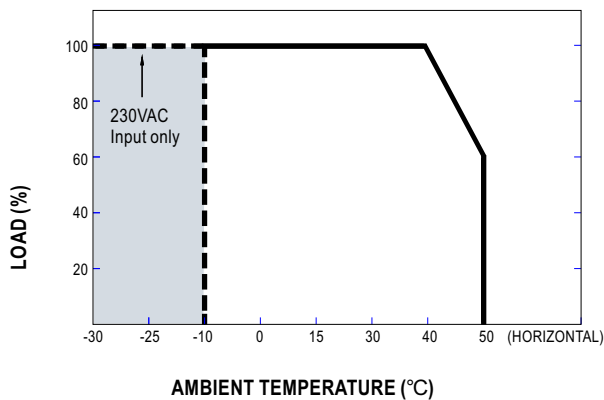


## Block Diagram

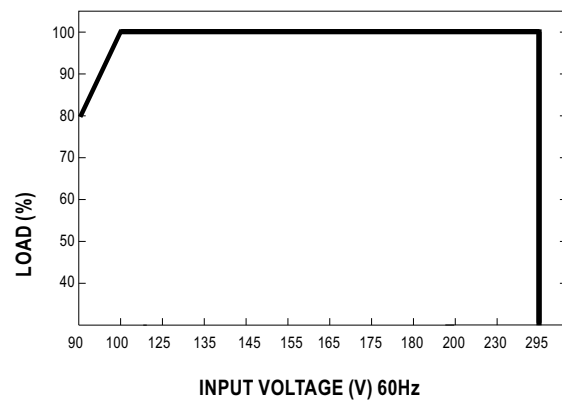
Fosc : 100KHz



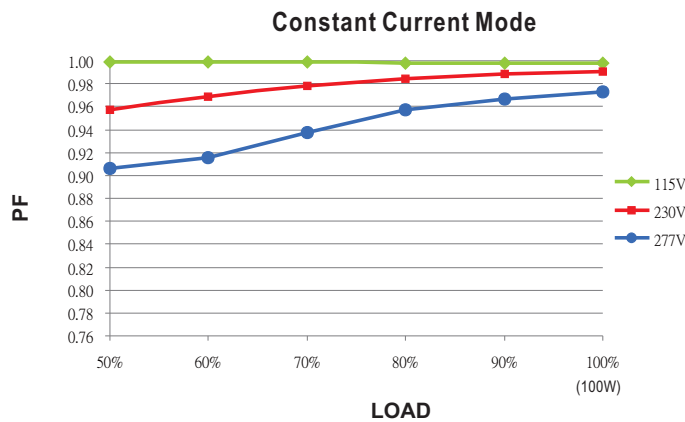
## Derating Curve



## Static Characteristics

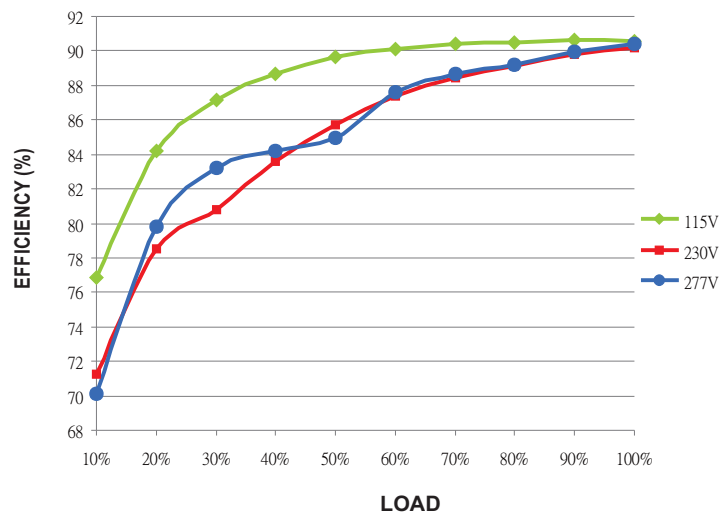


## Power Factor Characteristic



## EFFICIENCY vs LOAD (48V Model)

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

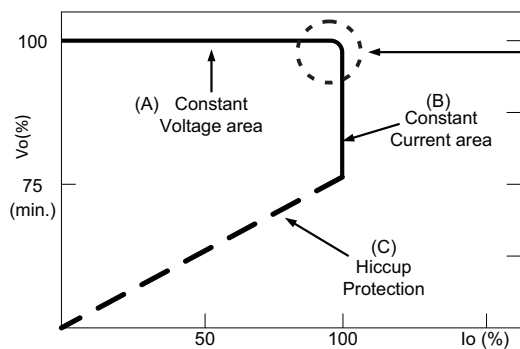


## DRIVING METHODS OF LED MODULE

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

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact MEAN WELL.