



## ■ Features

- Universal AC input / Full range
- Built-in active PFC function
- Class 2 power unit (except OWA-90U-12/15)
- High efficiency up to 91%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Class II power unit, no FG
- Fanless design, cooling by free air convection
- No load power consumption <0.15W
- Energy efficiency Level VI
- Comply with EISA 2007 DoE and NRCAN
- UL LISTED, suitable for dry and damp locations
- Various DC plug quick adapter accessory available (Plug kit sold separately, please refer to : [https://www.meanwell.com/upload/pdf/DC\\_plug.pdf](https://www.meanwell.com/upload/pdf/DC_plug.pdf))
- 5 years warranty

## ■ Applications

- LED lighting fixture
- LED decorative lighting
- LED office lighting
- General electronic products in dry or damp environment

## ■ GTIN CODE

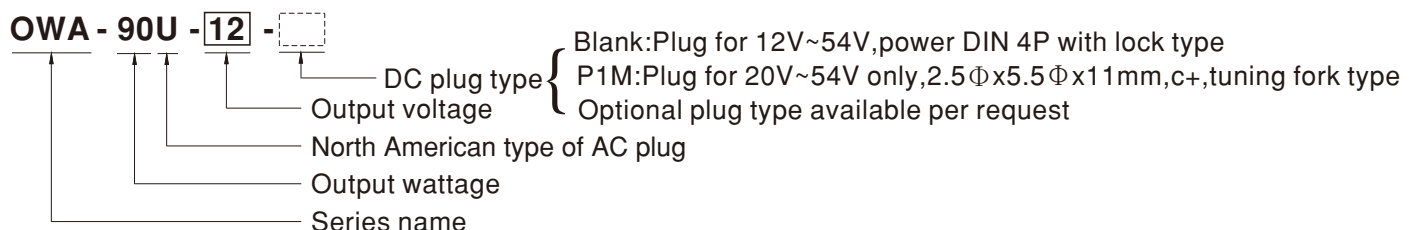
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## ■ Description

OWA-90U is one 90W single-output external LED power supply series. Pairing the North American type of AC plug and the prevailing DC connectors, OWA-90U, working like an adaptor, simplifies the connection with LED lighting fixtures without extra wiring efforts. The entire series is certified with the "UL LISTED" for dry and damp locations.

As a class II (without earth pin) design, the enclosure of OWA-90U is a 94V-0 flame retardant plastic case. The interior is fully potted with silicone that enhances the heat dissipation. With the working efficiency up to 91%, OWA-90U is cooled by free air convection; the working temperature ranges from -40°C to +70°C.

## ■ Model Encoding

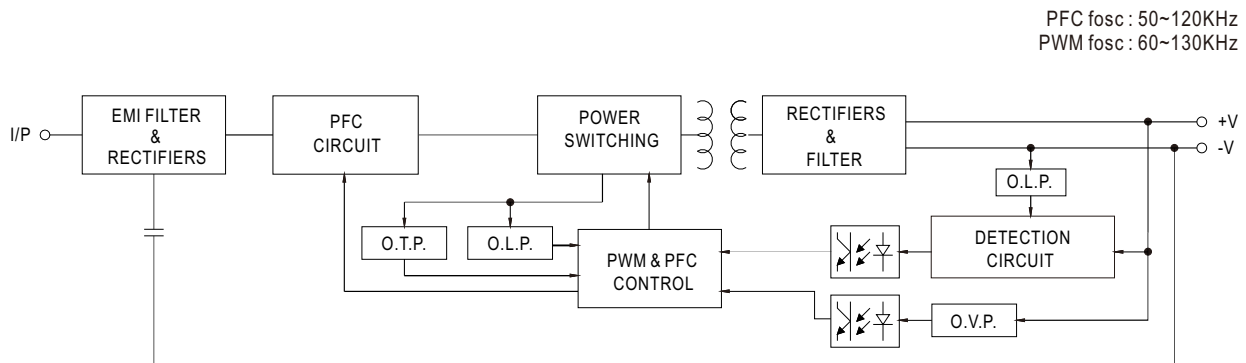




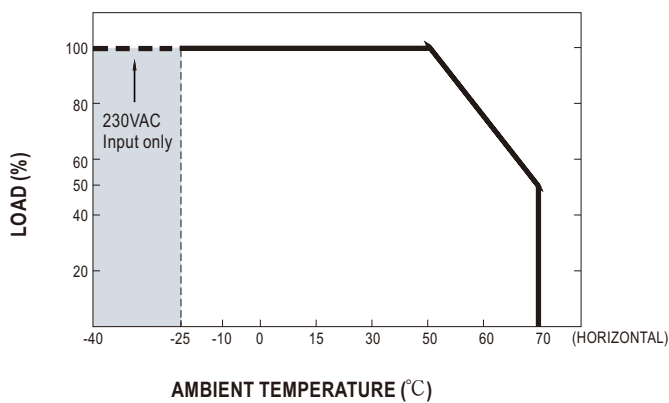
## SPECIFICATION

| MODEL            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OWA-90U-12                                    | OWA-90U-15                                                                                                                     | OWA-90U-20 | OWA-90U-24 | OWA-90U-30 | OWA-90U-36                             | OWA-90U-42 | OWA-90U-48 | OWA-90U-54 |          |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|----------------------------------------|------------|------------|------------|----------|
| OUTPUT           | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 12V                                           | 15V                                                                                                                            | 20V        | 24V        | 30V        | 36V                                    | 42V        | 48V        | 54V        |          |
|                  | CONSTANT CURRENT REGION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 7.2 ~ 12V                                     | 9 ~ 15V                                                                                                                        | 12 ~ 20V   | 14.4 ~ 24V | 18 ~ 30V   | 21.6 ~ 36V                             | 25.2 ~ 42V | 28.8 ~ 48V | 32.4 ~ 54V |          |
|                  | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7.5A                                          | 6A                                                                                                                             | 4.5A       | 3.75A      | 3A         | 2.5A                                   | 2.15A      | 1.88A      | 1.67A      |          |
|                  | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 90W                                           | 90W                                                                                                                            | 90W        | 90W        | 90W        | 90W                                    | 90.3W      | 90.24W     | 90.18W     |          |
|                  | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 150mVp-p                                      | 150mVp-p                                                                                                                       | 150mVp-p   | 150mVp-p   | 200mVp-p   | 200mVp-p                               | 250mVp-p   | 250mVp-p   | 350mVp-p   |          |
|                  | VOLTAGE TOLERANCE <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±4.0%                                         | ±4.0%                                                                                                                          | ±4.0%      | ±3.0%      | ±3.0%      | ±2.0%                                  | ±1.0%      | ±1.0%      | ±1.0%      |          |
|                  | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.5%                                         | ±0.5%                                                                                                                          | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%                                  | ±0.5%      | ±0.5%      | ±0.5%      |          |
|                  | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±1.5%                                         | ±1.0%                                                                                                                          | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%                                  | ±0.5%      | ±0.5%      | ±0.5%      |          |
|                  | SETUP, RISE TIME <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 500ms, 80ms at 95% load    115VAC / 230VAC    |                                                                                                                                |            |            |            |                                        |            |            |            |          |
|                  | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 16ms at full load    115VAC / 230VAC          |                                                                                                                                |            |            |            |                                        |            |            |            |          |
| INPUT            | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               | 90 ~ 264VAC    127 ~ 370VDC                                                                                                    |            |            |            |                                        |            |            |            |          |
|                  | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               | 47 ~ 63Hz                                                                                                                      |            |            |            |                                        |            |            |            |          |
|                  | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                               | PF>0.98/115VAC, PF>0.96/230VAC at full load                                                                                    |            |            |            |                                        |            |            |            |          |
|                  | TOTAL HARMONIC DISTORTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | THD< 20% when output loading≥60% at 115VAC/230VAC                                                                              |            |            |            |                                        |            |            |            |          |
|                  | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 115VAC                                        | 88%                                                                                                                            | 89%        | 89%        | 89%        | 89%                                    | 89.5%      | 89.5%      | 89.5%      | 89.5%    |
|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 230VAC                                        | 89%                                                                                                                            | 90%        | 90%        | 90%        | 90%                                    | 91%        | 91%        | 91%        | 91%      |
|                  | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               | 0.95A / 115VAC    0.5A / 230VAC                                                                                                |            |            |            |                                        |            |            |            |          |
|                  | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               | COLD START 30A (twidth=550μs measured at 50% Ipeak) at 115VAC<br>COLD START 60A (twidth=550μs measured at 50% Ipeak) at 230VAC |            |            |            |                                        |            |            |            |          |
|                  | MAX. NO. of PSUs on 16A CIRCUIT BREAKER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                               | 3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC                                            |            |            |            |                                        |            |            |            |          |
| LEAKAGE CURRENT  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <0.125mA / 120VAC    <0.25mA / 240VAC         |                                                                                                                                |            |            |            |                                        |            |            |            |          |
| PROTECTION       | OVER CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               | 95 ~ 108%                                                                                                                      |            |            |            |                                        |            |            |            |          |
|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               | 15 ~ 17V                                                                                                                       | 17.5 ~ 21V | 23 ~ 27V   | 28 ~ 34V   | 34 ~ 40V                               | 41 ~ 46V   | 46 ~ 54V   | 54 ~ 60V   | 59 ~ 66V |
|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               | Protection type : Shut down o/p voltage, re-power on to recover                                                                |            |            |            |                                        |            |            |            |          |
| OVER TEMPERATURE |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Shut down o/p voltage, re-power on to recover |                                                                                                                                |            |            |            |                                        |            |            |            |          |
| ENVIRONMENT      | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               | -40 ~ +70℃ (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, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                        |            |            |            |                                        |            |            |            |          |
| SAFETY & EMC     | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               | UI8750 listed, CSA C22.2 No. 250.13-12(except for 42V, 48V, 54V); IP67(for main body ) 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 FCC Part15                                                                                                       |            |            |            |                                        |            |            |            |          |
| OTHERS           | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                               | 3044.3K hrs min. Telcordia SR-332 (Bellcore)                                                                                   |            |            |            | 292.9K hrs min.    MIL-HDBK-217F (25℃) |            |            |            |          |
|                  | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | 171*63*37.5mm                                                                                                                  |            |            |            |                                        |            |            |            |          |
|                  | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                               | 0.83Kg; 16pcs/14.3Kg/1.01CUFT                                                                                                  |            |            |            |                                        |            |            |            |          |
| NOTE             | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.<br>5. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).<br>⊗ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                               |                                                                                                                                |            |            |            |                                        |            |            |            |          |

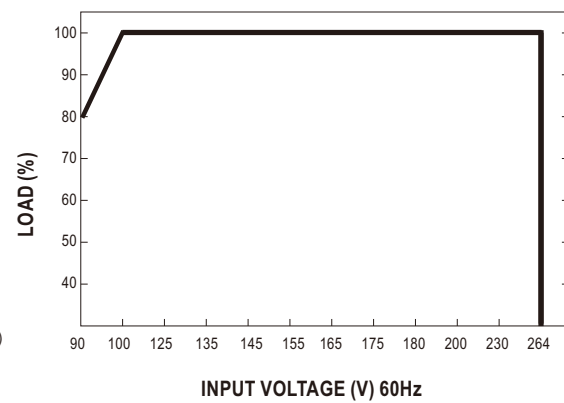
## Block Diagram



## Derating Curve

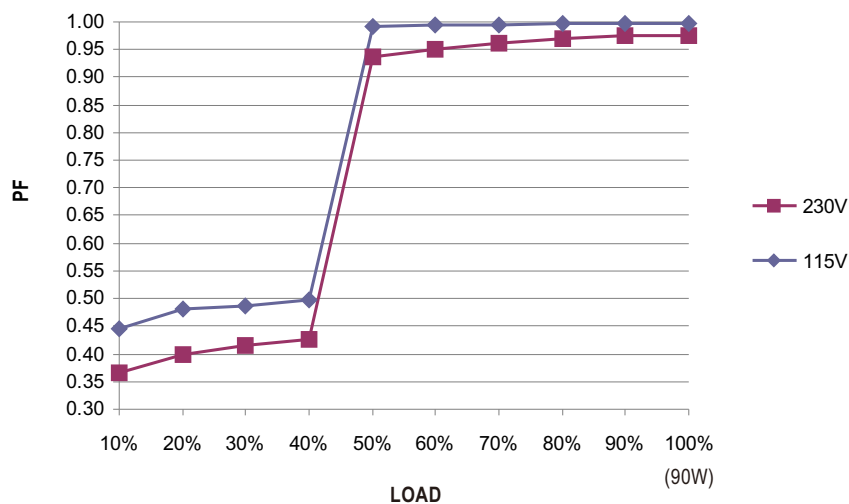


## Static Characteristics



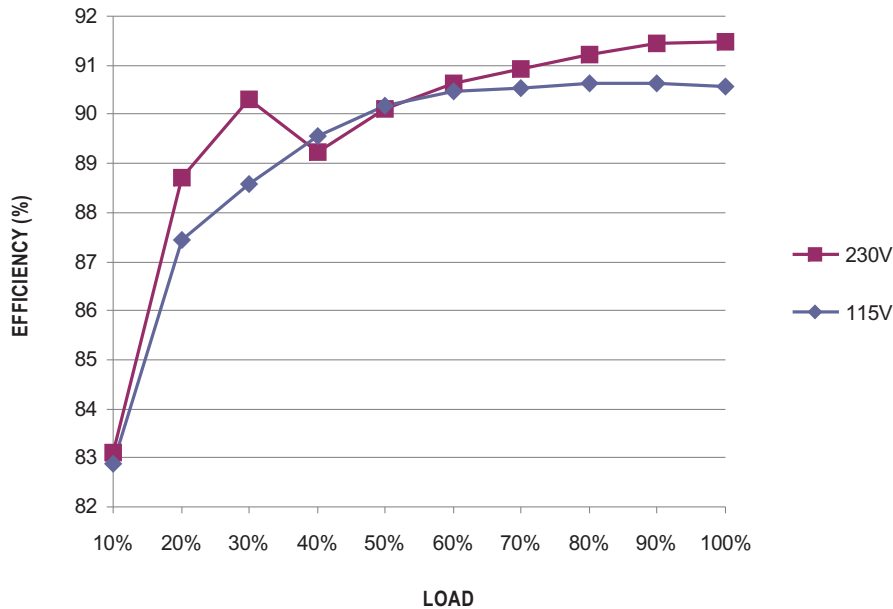
## Power Factor Characteristic

### Constant Current Mode



### ■ EFFICIENCY vs LOAD (48V Model)

OWA-90U series possess superior working efficiency that up to 91% can be reached in field applications.

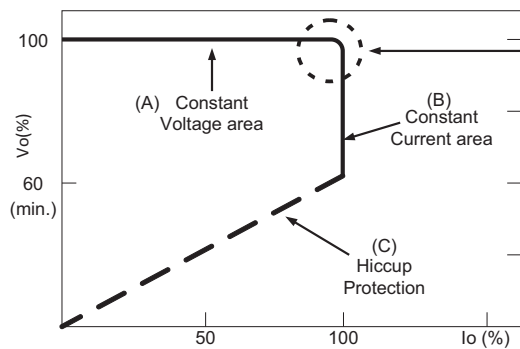


### ■ DRIVING METHODS OF LED MODULE

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

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

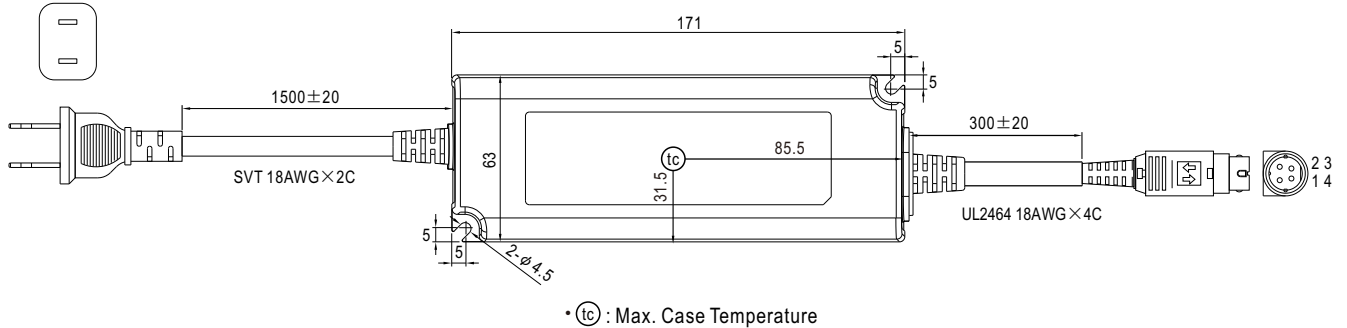
Should there be any compatibility issues, please contact MEAN WELL.

## Mechanical Specification

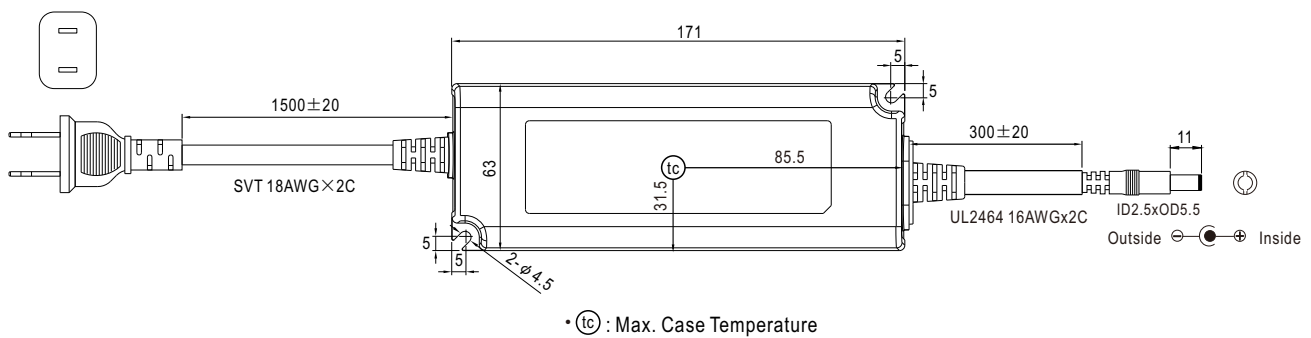
Case No. PWM-90P

Unit:mm

Blank Type:(OWA-90U-\_)

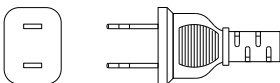


P1M Type:(OWA-90U-\_P1M)



## Input Plug Type

All models : NEMA 1-15p male plug



## Output Plug Assignment

Plug for all standard models(12V~54V) :  
power DIN 4 pins with lock type,  
KYCON KPPX-4P, or equivalent

| PIN NO. | OUTPUT |
|---------|--------|
| 1,4     | +V     |
| 2,3     | -V     |

Plug for 20V~54V only :

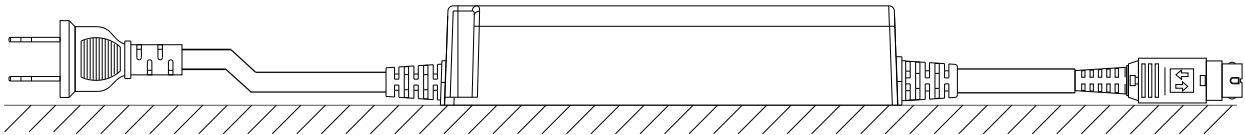
| PIN NO. | OUTPUT |
|---------|--------|
| CENTER  | +V     |



90W Single Output Moistureproof Adaptor

**OWA-90U** series

#### ■ Recommend Mounting Direction



#### ■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>