# 90W Single Output Moistureproof Adaptor OWA-90E series

User's Manual



IP67

EN60335-1
EN61558-1,-2-16

## Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 91%
- No load power consumption<0.15W
- Energy efficiency Level VI
- Comply with EU ErP
- Meet CoC Version 5(Except for 12V)
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Class Ⅱ power unit, no FG
- Fanless design, cooling by free air convection
- 5 years warranty

## Applications

- Robotic lawn mower
- Household appliance
- Battery charging
- General electronic products in dusty or humid environment

## GTIN CODE

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

## Description

OWA-90E is a 90W AC/DC, class II (without earth pin) external power supply series pinpointing the moistureproof feature. The fully-potted silicone inside the plastic enclosure enhances the heat dissipation; it also benefits that the OWA-90E is approved for IP67 level so that this series specializes the application in which the damp, humidity or dust resistance is needed for the external power supply. OWA-90E follows the latest energy efficiency demand, and is compliant with EU ErP and meets Code of Conduct(CoC) Version 5(Except for 12V); the no load power consumption is less than 0.15W. It is certified with EN 61558-2-16; moreover, the compliance to EN 60335-1 for selected models can greatly simplify the system design such as household appliances.

OWA-90E adopts the universal input range from 90VAC to 264VAC, and incorporates a built-in PFC function. With the working efficiency up to 91%, OWA-90E is cooled by free air convection; the working temperature ranges from -40℃ to +70℃.

## Model Encoding

OWA - 90E - 12

- 12 — Output voltage
- E — European type of AC plug
- 90 — Output wattage
- OWA — Series name

MEAN WELL

90W Single Output Moistureproof Adaptor

# OWA-90E series

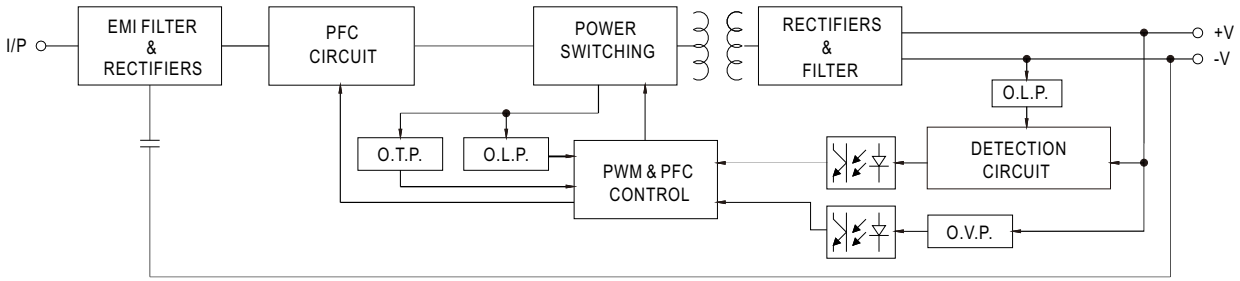
## SPECIFICATION

| MODEL | | OWA-90E-12 | OWA-90E-15 | OWA-90E-20 | OWA-90E-24 | OWA-90E-30 | OWA-90E-36 | OWA-90E-42 | OWA-90E-48 | OWA-90E-54 |
|---|---|---|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 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.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 250mVp-p | 250mVp-p | 350mVp-p |
| | VOLTAGE TOLERANCE Note.3 | ±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 Note.4 | 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 | | | | | | | | |
| | EFFICIENCY (Typ.) | 89% | 90% | 90% | 90% | 90% | 91% | 91% | 91% | 91% |
| | AC CURRENT (Typ.) | 0.95A / 115VAC 0.5A / 230VAC | | | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 60A(twidth=550μs measured at 50% Ipeak) at 230VAC | | | | | | | | |
| | LEAKAGE CURRENT | <0.25mA / 240VAC | | | | | | | | |
| PROTECTION | OVERLOAD | 105 ~ 115% | | | | | | | | |
| | | Protection type : Hiccup mode, 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 | EN61558-1,-2-16 listed; EN60335-1 listed(except for OWA-90E-42,48,54); EAC TP TC 004,IP67 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 EN55032 (CISPR32) Class B, EN55014-1,EN61000-3-2,-3;EAC TP TC 020 | | | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55035, EN55014-2, light industry level (surge L- N : 2KV), EAC TP TC 020 | | | | | | | | |
| OTHERS | MTBF | 3044.3K hrs min. Telcordia SR-332 (Bellcore) 292.9K hrs min. MIL-HDBK-217F (25℃) | | | | | | | | |
| | DIMENSION | 171*63*37.5mm | | | | | | | | |
| | PACKING | 0.92Kg; 16pcs/15.7Kg/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>※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | | | | | | | | |

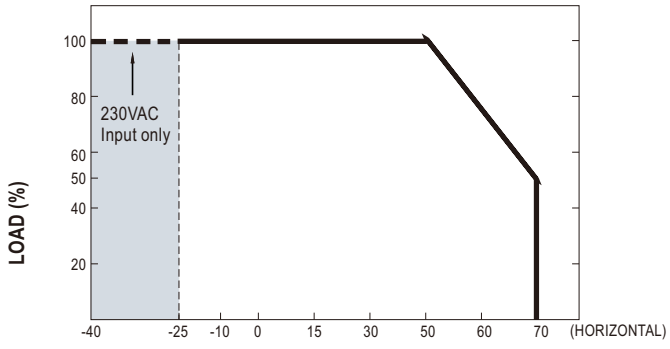
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

## ■ Block Diagram

PFC fosc : 50~120KHz
PWM fosc : 60~130KHz

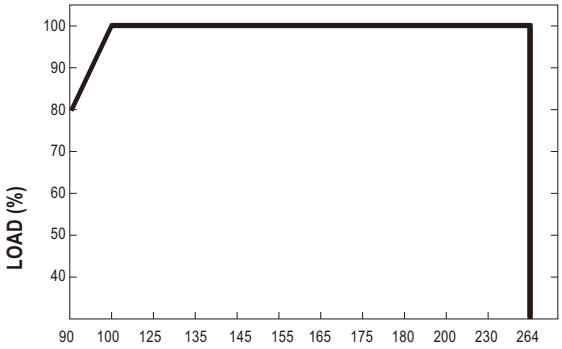



## ■ Derating Curve




**AMBIENT TEMPERATURE (℃)**

## ■ Static Characteristics

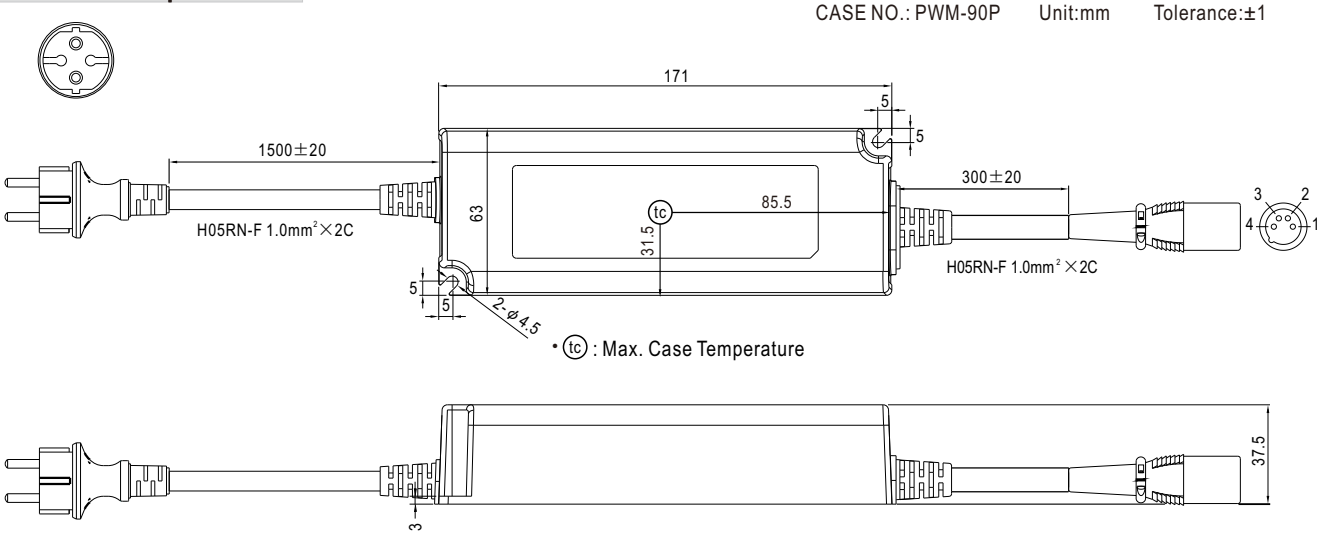



**INPUT VOLTAGE (V) 60Hz**

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

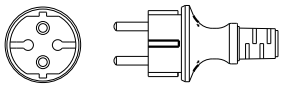
## ■ Mechanical Specification

CASE NO.: PWM-90P Unit:mm Tolerance:±1

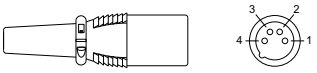
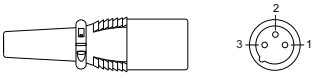
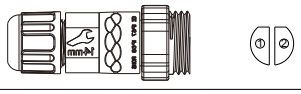
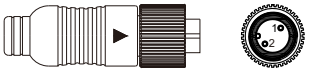
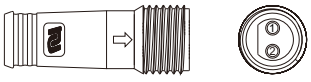
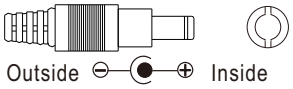



## ■ Input Plug Type

All standard models : CEE 7/7

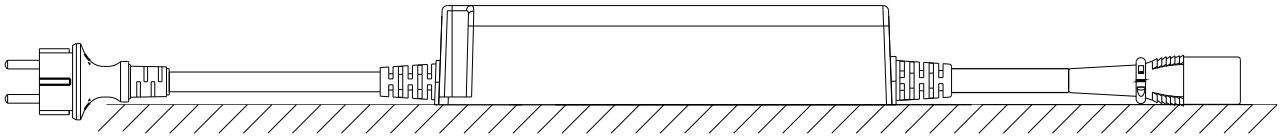


## ■ Output Plug Assignment

| Model Category | Plug Description | Plug Picture | PIN NO. | OUTPUT |
|---|---|---|---|---|
| For standard model | XLR 4P, NEUTRIK NC4MX, or equivalent |  | 1,2 | +V |
| | | | 3,4 | -V |
| For optional model | Lumberg 3611 03, or equivalent |  | 1 | +V |
| | | | 2 | floated |
| | | | 3 | -V |
| For optional model | XLR 3P,NEUTRIK NC3MX, or equivalent |  | 1 | +V |
| | | | 2,3 | -V |
| For optional model | CHOGORI 22002411-01 or equivalent |  | 1 | +V |
| | | | 2 | -V |
| For optional model | Unicable UT-D170F4-2P or equivalent |  | 1 | +V |
| | | | 2 | -V |
| For optional model | Unicable UT-D224-2P or equivalent |  | 1 | +V |
| | | | 2 | -V |
| For optional model | 2.1φ x 5.5φ x 11 mm, center +, tuning fork type |  Outside Inside | CENTER | +V |

※ For details, please contact MEAN WELL.

## ■ Recommend Mounting Direction



## ■ Installation Manual

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



LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000