



**■ 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 and meet CoC Version 5
- 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**

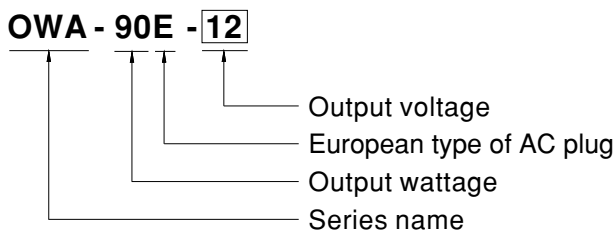
- Robotic lawn mower
- Household appliance
- Battery charging
- General electronic products in dusty or humid environment

**■ 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; 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°C to +70°C.

**■ Model Encoding**

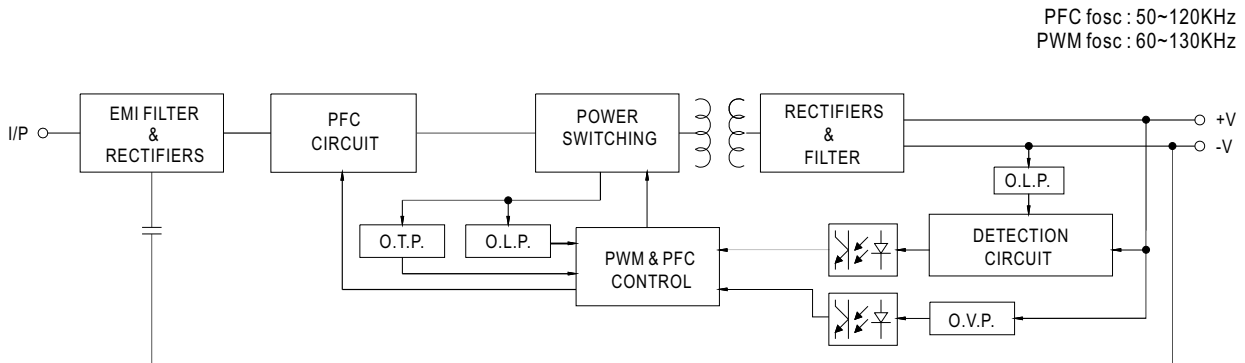




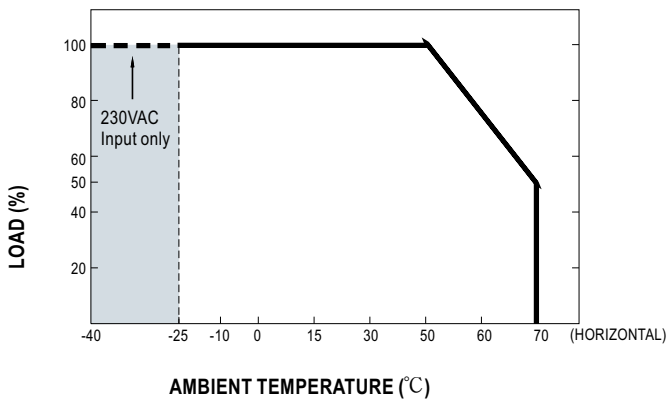
**SPECIFICATION**

| 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%<br>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°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, 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); IP67 approved                            |            |               |            |            |            |            |            |            |  |
|              | WITHSTAND VOLTAGE  | I/P-O/P:3.75KVAC  |            |               |            |            |            |            |            |            |  |
|              | ISOLATION RESISTANCE   | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH  |            |               |            |            |            |            |            |            |  |
|              | EMC EMISSION   | Compliance to EN55032 (CISPR32) Class B, EN55014-1, EN61000-3-2,-3  |            |               |            |            |            |            |            |            |  |
|              | EMC IMMUNITY   | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN55014-2, light industry level (surge L- N : 2KV), criteria A |            |               |            |            |            |            |            |            |  |
| OTHERS       | MTBF   | 292.8K hrs min. MIL-HDBK-217F (25°C)  |            |               |            |            |            |            |            |            |  |
|              | DIMENSION  | 171*63*37.5mm   |            |               |            |            |            |            |            |            |  |
|              | PACKING  | 0.92Kg; 16pcs/15.7Kg/1.01CUFT   |            |               |            |            |            |            |            |            |  |
| NOTE         | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>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.</p> |   |            |               |            |            |            |            |            |            |  |

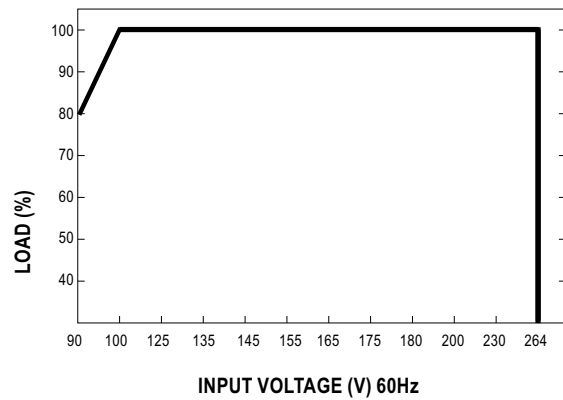
■ Block Diagram



■ Derating Curve

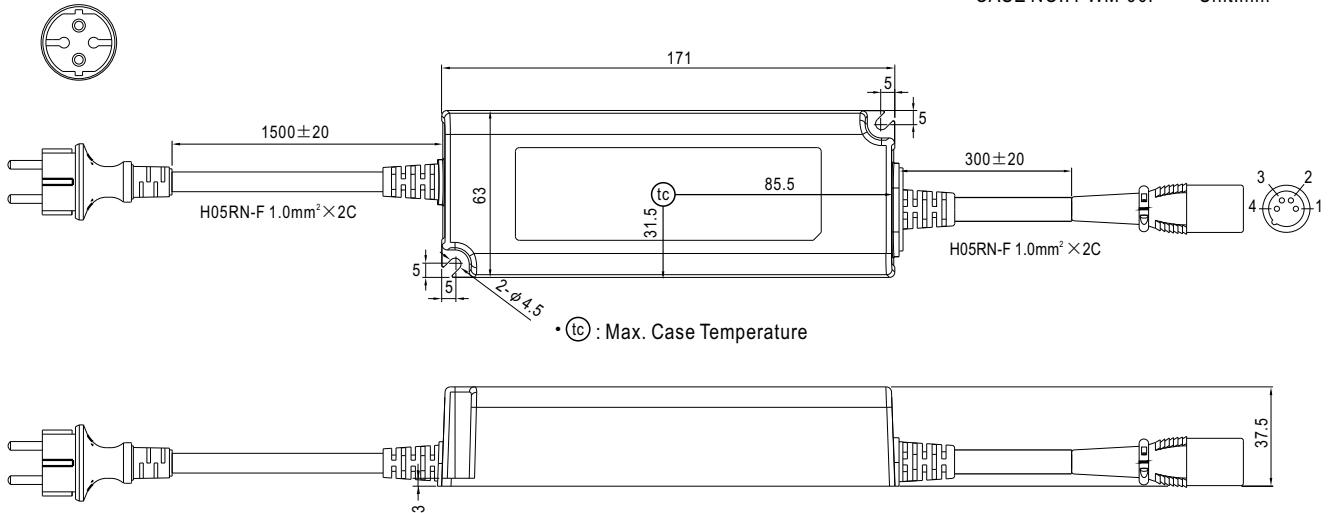


■ Static Characteristics



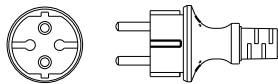
**Mechanical Specification**

CASE NO.: PWM-90P Unit:mm



**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      | float |
|                    |   |              |         | 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 |              |         | CENTER | +V    |

Outside ⊖ ⊕ Inside

※ For details, please contact MEAN WELL.

**Installation Manual**

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