



# MEAN WELL OWA-90E-12 Single Output Moistureproof Adaptor Owner's Manual

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**MEAN WELL OWA-90E-12 Single Output Moistureproof Adaptor**



## Product Information

### Specifications

Model	DC Voltage	Rated Current	Rated Power	Ripple & Noise (max.)	Line Regulation	Load Regulation	Setup, Rise Time	Hold Up Time (Typ.)	Voltage Range	Frequency Range	Power Factor (Typ.)	Input Efficiency (Typ.)	AC Current (Typ.)	Inrush Current (Typ.)	Leakage Current
OWA-90E-12	12V	7.5A	90W	150mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/115VAC, PF>0.96/230VAC at full load	89%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twidth =550s measured at 50% lpeak) at 230VAC	N/A
OWA-90E-15	15V	6A	90W	150mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/115VAC, PF>0.96/230VAC at full load	90%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twidth =550s measured at 50% lpeak) at 230VAC	N/A

OWA-90E-20	20V	4.5A	90W	150mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/ 115VAC, PF>0.96/ 230VAC at full load	90%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twiddle=550s measured at 50% lpeak) at 230VAC	N/A
OWA-90E-24	24V	3.75A	90W	150mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/ 115VAC, PF>0.96/ 230VAC at full load	90%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twiddle=550s measured at 50% lpeak) at 230VAC	N/A
OWA-90E-30	30V	3A	90W	200mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/ 115VAC, PF>0.96/ 230VAC at full load	90%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twiddle=550s measured at 50% lpeak) at 230VAC	N/A
OWA-90E-36	36V	2.5A	90W	200mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/ 115VAC, PF>0.96/ 230VAC at full load	91%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twiddle=550s measured at 50% lpeak) at 230VAC	N/A
OWA-90E-42	42V	2.15A	90.3W	250mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/ 115VAC, PF>0.96/ 230VAC at full load	91%	0.95A / 115VAC 0.5A / 230VAC	COLD START 60A(twiddle=550s measured at 50% lpeak) at 230VAC	N/A
OWA-90E-48	48V	1.88A	90.24W	250mV p-p	N/A	N/A	500ms, 80ms at 95% load 115VAC / 230VAC	16ms at full load 115VAC / 230VAC	90 ~ 264V AC 127 ~ 370V DC	47 ~ 63 Hz	PF>0.98/ 115VAC, PF>0.96/ 230VAC at full load				

## 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

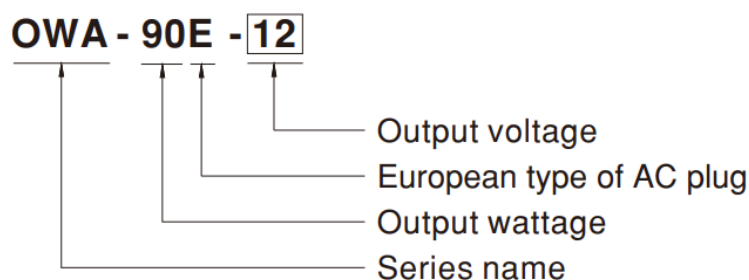
## GTIN CODE

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, 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

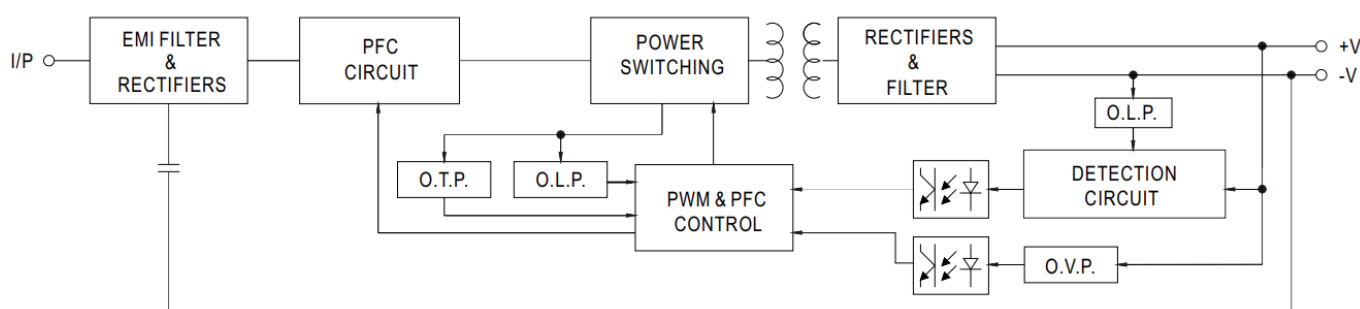
MODEL		OWA-90E-12	OWA-90E-15	OWA-90E-20	OWA-90E-24	OWA-90E-30	OWA-90E-36	OWA-90E-42	OWA-90E-48	OWA-90E-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT	7.5A	6A	4.5A	3.75A	3A	2.5A	2.15A	1.88A	1.67A
	RATED POWER	90W	90W	90W	90W	90W	90W	90.3W	90.24W	90.18W
	RIPPLE & NOISE (max.) Note.2	150mV p-p	150mV p-p	150mV p-p	150mV p-p	200mV p-p	200mV p-p	250mV p-p	250mV p-p	350mV p-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°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); EAC T P TC 004,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;EAC T P 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) 217F (25°C)			292.9K hrs min.			MIL-HDBK-		
	DIMENSION	171*63*37.5mm								

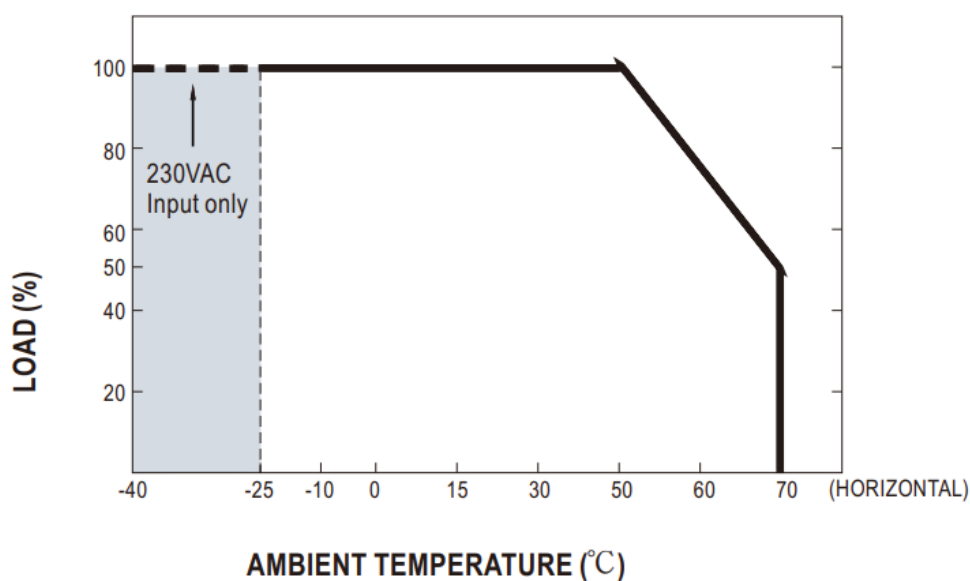
	<b>PACKING</b>	0.92Kg; 16pcs/15.7Kg/1.01CUFT
<b>NOTE</b>	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf &amp; 47µf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Length of set un time is measured at cold first start Turning ON/OFF the power supply may lead to increase of the set un time</p> <p>※ Product Liability Disclaimer For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p>	

## Block Diagram

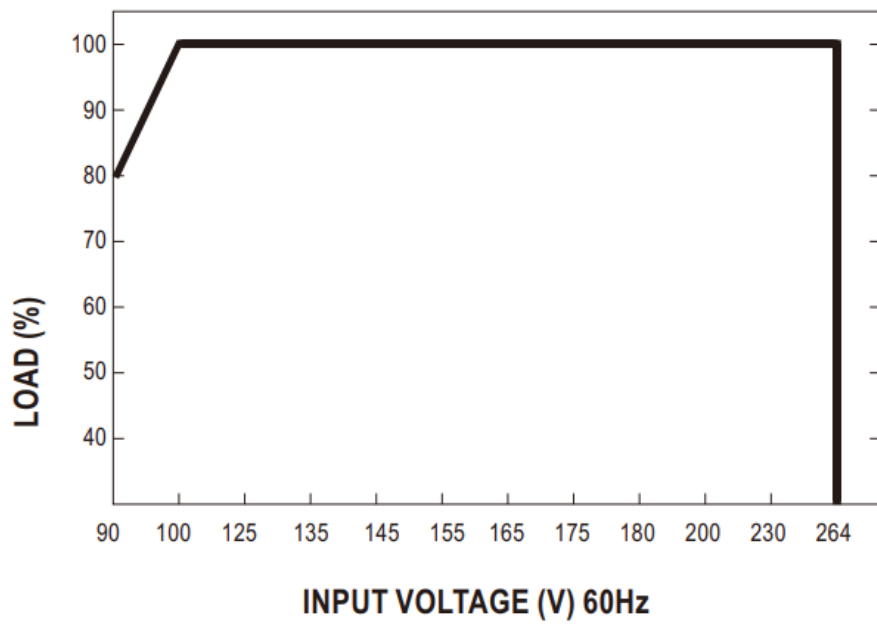
- PFC fosc : 50~120KHz
- PWM fosc : 60~130KHz



## Derating Curve

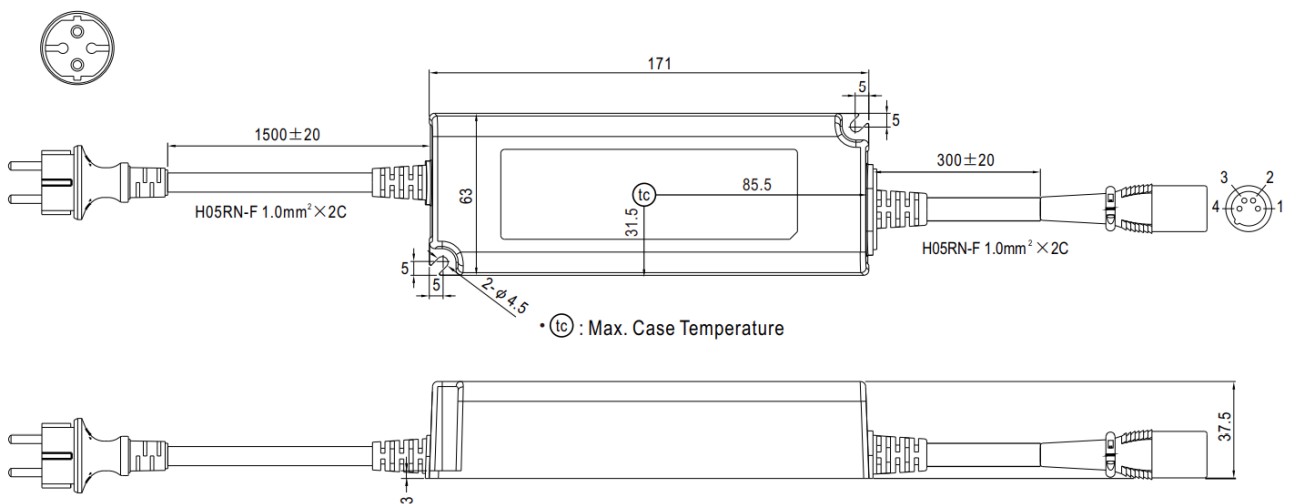


## Static Characteristics



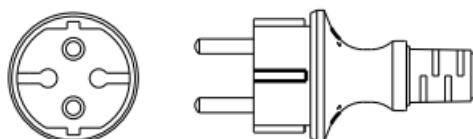
### Mechanical Specification

- **CASE NO.:** PWM-90P
- **Unit:** mm



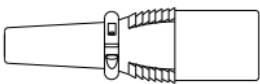

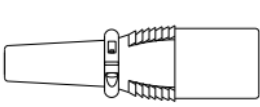


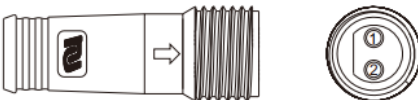
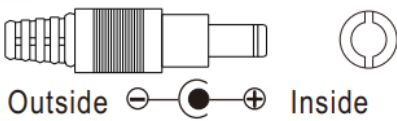
### Input Plug Type

All standard models : CEE 7/7



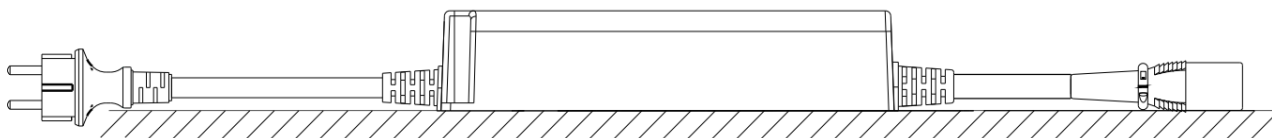
### Output Plug Assignment



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	 Outside ⊖ ⊕ Inside	CENTER	+V

※ For details, please contact MEAN WELL.

## Recommend Mounting Direction




## Installation Manual

### Recommend Mounting Direction

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

**File Name:** OWA-90E-SPEC 2023-09-19

Downloaded from [Arrow.com](http://Arrow.com).

 <p>OWA-90E-12</p> <p>■ Features</p> <ul style="list-style-type: none"> <li>High efficiency &gt; 85%</li> <li>Wide input voltage range: 100-240VAC</li> <li>Overload protection</li> <li>Over temperature protection</li> <li>Short circuit protection</li> <li>EMI/RFI filter</li> <li>High reliability</li> <li>RoHS compliant</li> </ul> <p>■ Specifications</p> <table border="1"> <tr> <td>Model</td> <td>OWA-90E-12</td> </tr> <tr> <td>Input Voltage</td> <td>100-240VAC</td> </tr> <tr> <td>Output Voltage</td> <td>12VDC</td> </tr> <tr> <td>Output Current</td> <td>9.0A</td> </tr> <tr> <td>Power</td> <td>108W</td> </tr> <tr> <td>Efficiency</td> <td>&gt; 85%</td> </tr> <tr> <td>Regulation</td> <td>&lt; 1%</td> </tr> <tr> <td>Load Regulation</td> <td>&lt; 1%</td> </tr> <tr> <td>Line Regulation</td> <td>&lt; 1%</td> </tr> <tr> <td>Temperature Coefficient</td> <td>&lt; 1%</td> </tr> <tr> <td>Operating Temperature</td> <td>-40°C ~ +85°C</td> </tr> <tr> <td>Storage Temperature</td> <td>-40°C ~ +125°C</td> </tr> <tr> <td>Humidity</td> <td>&lt; 90% RH</td> </tr> <tr> <td>MTBF</td> <td>&gt; 100,000 hours</td> </tr> </table>	Model	OWA-90E-12	Input Voltage	100-240VAC	Output Voltage	12VDC	Output Current	9.0A	Power	108W	Efficiency	> 85%	Regulation	< 1%	Load Regulation	< 1%	Line Regulation	< 1%	Temperature Coefficient	< 1%	Operating Temperature	-40°C ~ +85°C	Storage Temperature	-40°C ~ +125°C	Humidity	< 90% RH	MTBF	> 100,000 hours	<p><b><u><a href="#">MEAN WELL OWA-90E-12 Single Output Moistureproof Adaptor</a></u></b> [pdf] Owner's Manual OWA-90E-12 Single Output Moistureproof Adaptor, OWA-90E-12, Single Output Moistureproof Adaptor, Output Moistureproof Adaptor, Moistureproof Adaptor</p>
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## References

- [TÜV Rheinland - Home | US | TÜV Rheinland](#)
- [Installation Manual-MEAN WELL Switching Power Supply Manufacturer](#)
- [Product Liability Disclaimer-MEAN WELL Switching Power Supply Manufacturer](#)
- [User Manual](#)