

### ■ Features

- Universal AC input / Full range
- High efficiency up to 91%
- No load power consumption <0.15W
- Comply with EU ErP and CoC Version 5
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Class II power unit, no FG
- Fully isolated plastic case
- Fanless design, cooling by free air convection
- 5 years warranty

### ■ Applications

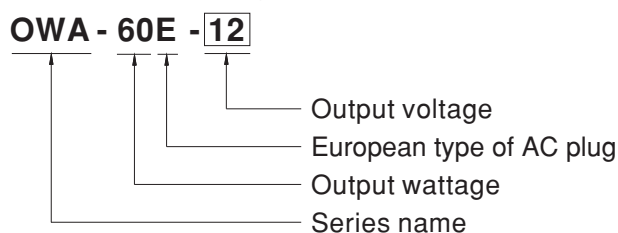
- Robotic lawn mower
- Household appliance
- Battery charging
- General electronic products in dusty or humid environment

### ■ Description

OWA-60E is a 60W AC/DC, class II (no FG) 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 power body of OWA-60E achieves 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-60E 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-60E adopts the universal input range from 90VAC to 264VAC. With the working efficiency up to 91%, OWA-60E is cooled by free air convection; the working temperature ranges from -35°C to +70°C.

### ■ Model Encoding

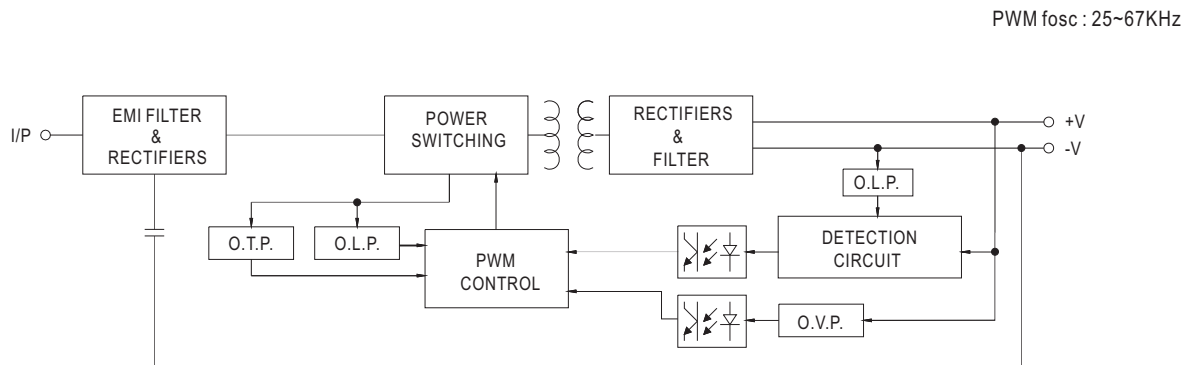




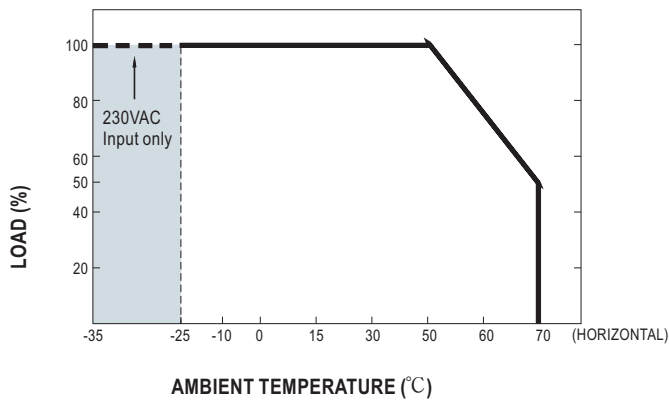
**SPECIFICATION**

MODEL		OWA-60E-12	OWA-60E-15	OWA-60E-20	OWA-60E-24	OWA-60E-30	OWA-60E-36	OWA-60E-42	OWA-60E-48	OWA-60E-54	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V	
	RATED CURRENT	5A	4A	3A	2.5A	2A	1.67A	1.5A	1.25A	1.12A	
	RATED POWER	60W	60W	60W	60W	60W	60.12W	63W	60W	60.48W	
	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	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	LOAD REGULATION	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	SETUP, RISE TIME Note.4	500ms, 80ms/230VAC 1000ms, 80ms/115VAC at 95% load									
	HOLD UP TIME (Typ.)	10ms at full load 115VAC / 230VAC									
INPUT	VOLTAGE RANGE	90 ~ 264VAC		127 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz									
	EFFICIENCY (Typ.)	88%	89%	89%	90%	90%	90%	90%	91%	91%	
	AC CURRENT (Typ.)	1.2A / 115VAC		0.7A / 230VAC							
	INRUSH CURRENT (Typ.)	COLD START 65A(twidth=750μs 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	14 ~ 16V	17.5 ~ 23V	23 ~ 27V	28 ~ 34V	34 ~ 40V	41 ~ 50V	46 ~ 54V	53 ~ 62V	58 ~ 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.	-35 ~ +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-60E-48,54); IP67 approved for power body									
	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 EN55022 (CISPR22) Class B, EN55014-1, EN61000-3-2 class A,EN61000-3-3									
	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	130*53*35mm									
	PACKING	0.41Kg; 16pcs/6.8Kg/0.85CUFT									
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>										

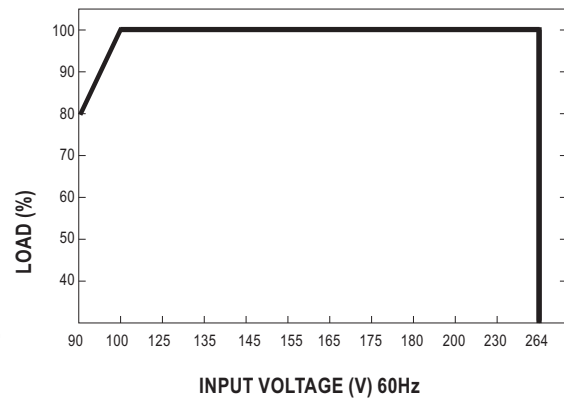
■ Block Diagram



■ Derating Curve

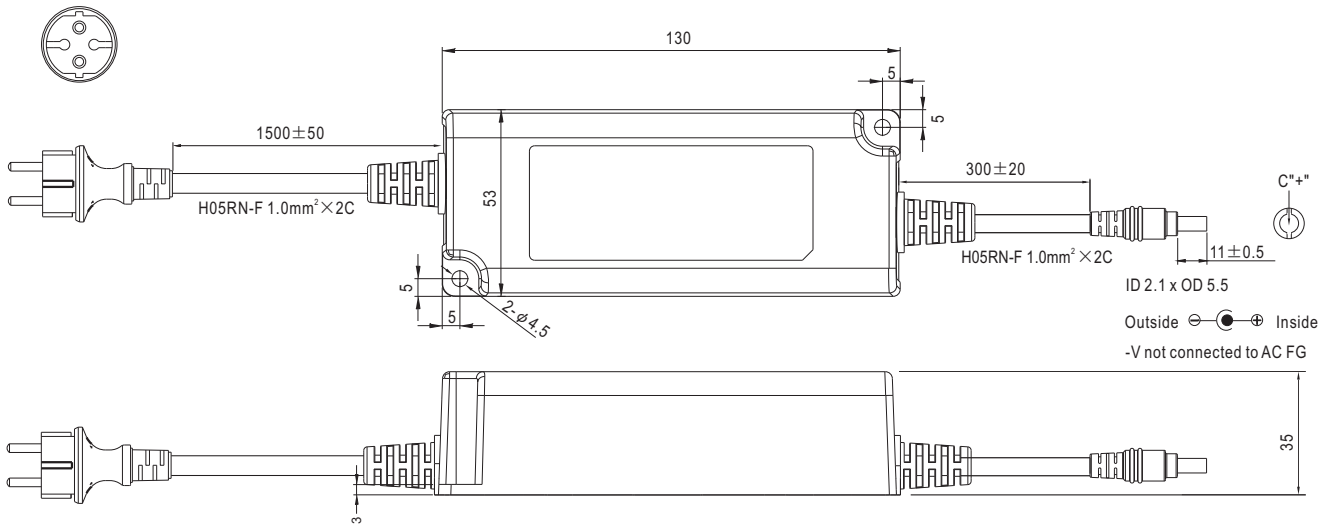


■ Static Characteristics



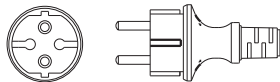
**Mechanical Specification**

CASE NO.: OWA-60 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	2.1φ x 5.5φ x 11 mm, center +, tuning fork type		CENTER	+V
For optional model	Lumberg 3611 03, or equivalent		1	+V
			2	floate
			3	-V
For optional model	XLR 3P, NEUTRIK NC3MX, or equivalent		1	+V
			2,3	-V
For optional model	XLR 4P, NEUTRIK NC4MX, or equivalent		1,2	+V
			3,4	-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 details, please contact MEAN WELL.

**Installation Manual**

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>



**■ 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**

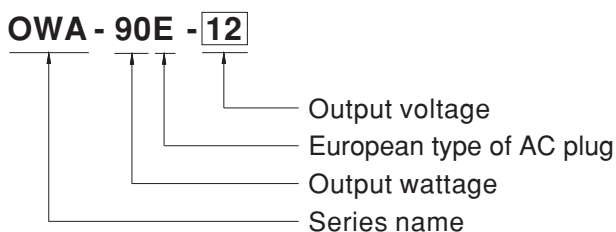
- Robotic lawn mower
- Household appliance
- Battery charging
- General electronic products in dusty or humid environment

**■ 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**

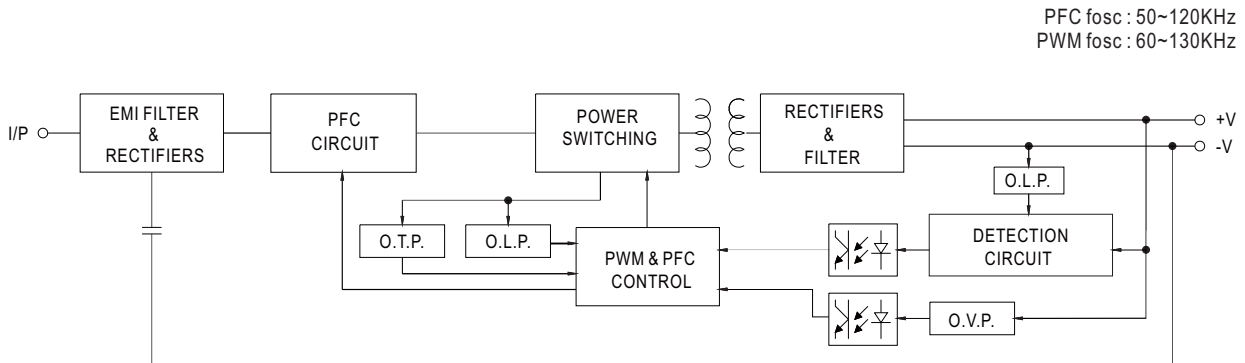




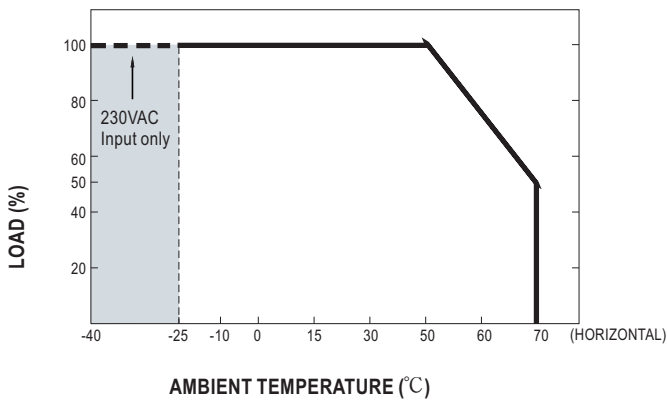
**SPECIFICATION**

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% 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 EN55022 (CISPR22) 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>										

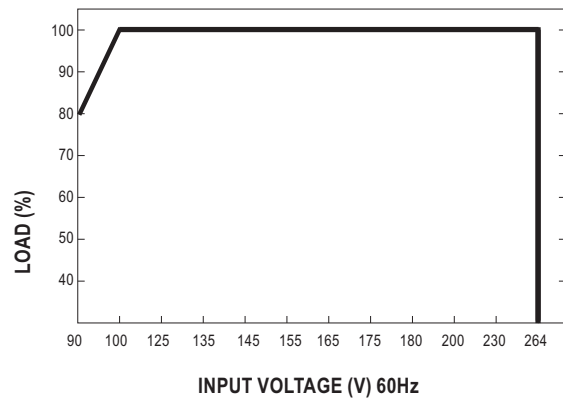
■ Block Diagram



■ Derating Curve

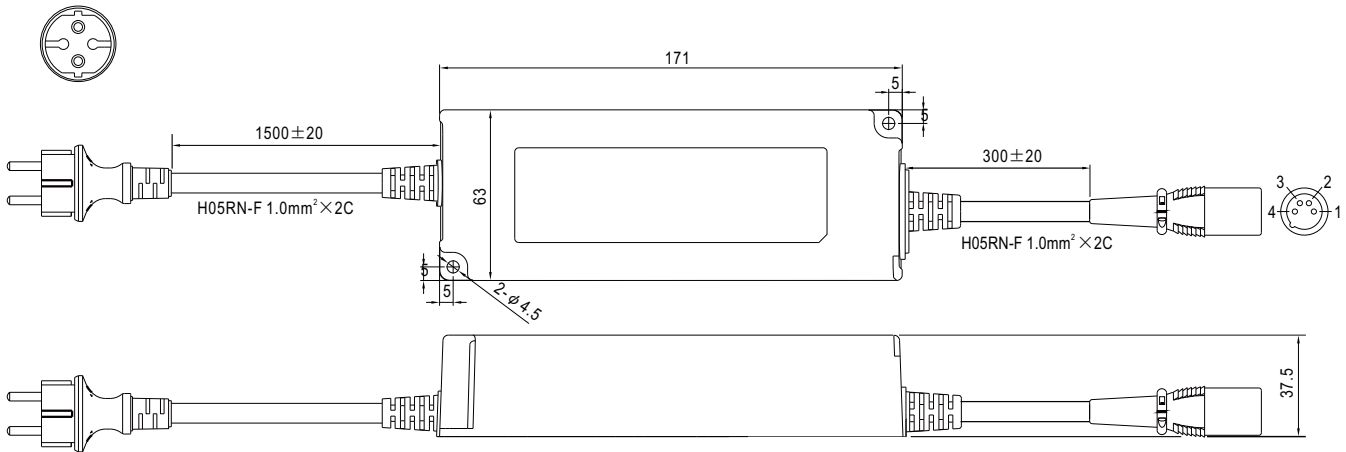


■ Static Characteristics



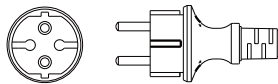
■ Mechanical Specification

Unit:mm

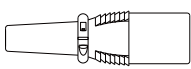

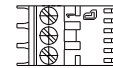

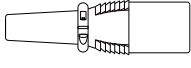







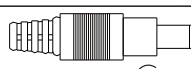



■ Input Plug Type

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	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.

■ Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>