90W Single Output Moistureproof Adaptor OWA-90U series

User's Manual



(for 42V,48V,54V) UL8750 (except for 42V, 48V,54V) UL8750 IP67 (for main body)

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 sperately, please refer to : 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℃ to +70℃.

Model Encoding

OWA - 90U - 12 - ☐

- DC plug type: Blank:Plug for 12V~54V,power DIN 4P with lock type; P1M:Plug for 20V~54V only,2.5Φx5.5Φx11mm,c+,tuning fork type; Optional plug type available per request
- Output voltage
- North American type of AC plug
- Output wattage
- Series name

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MEAN WELL

90W Single Output Moistureproof Adaptor

OWA-90U series

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.) 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								
	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 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.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
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.
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).

※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

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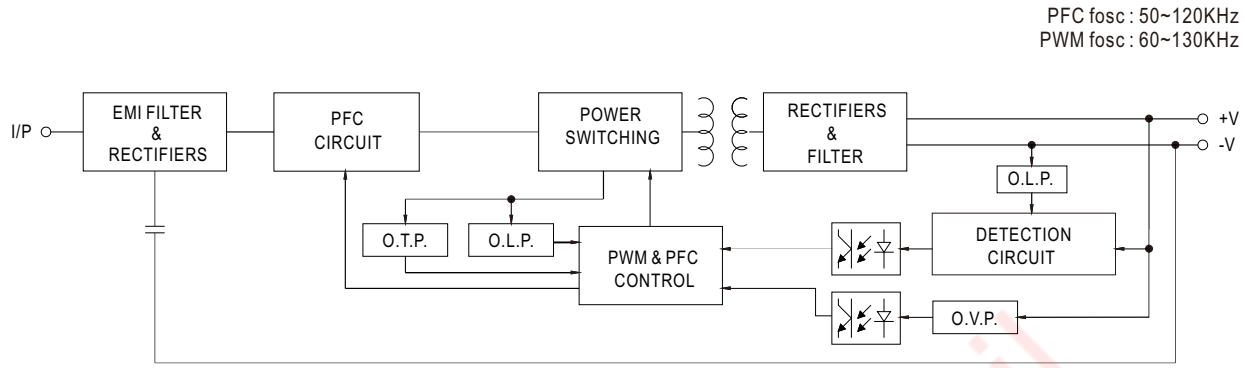
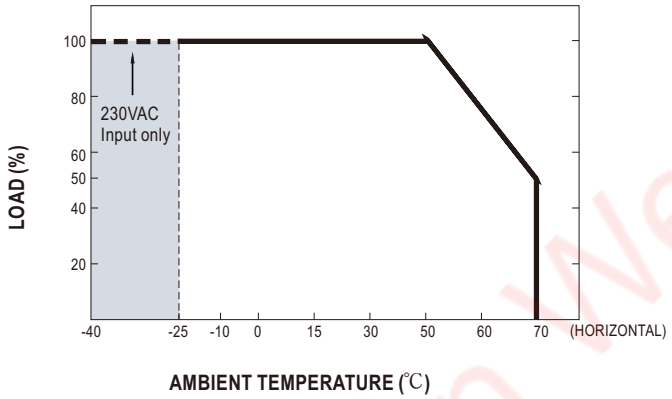
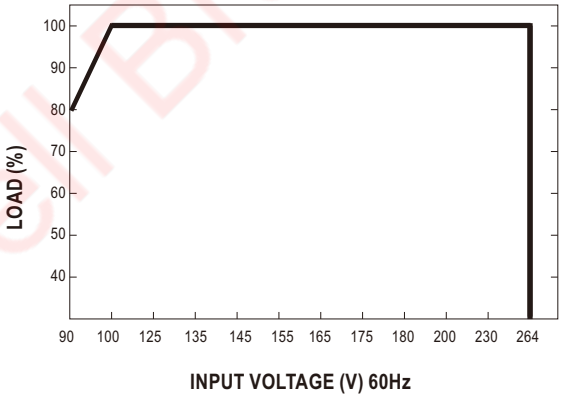
Block Diagram



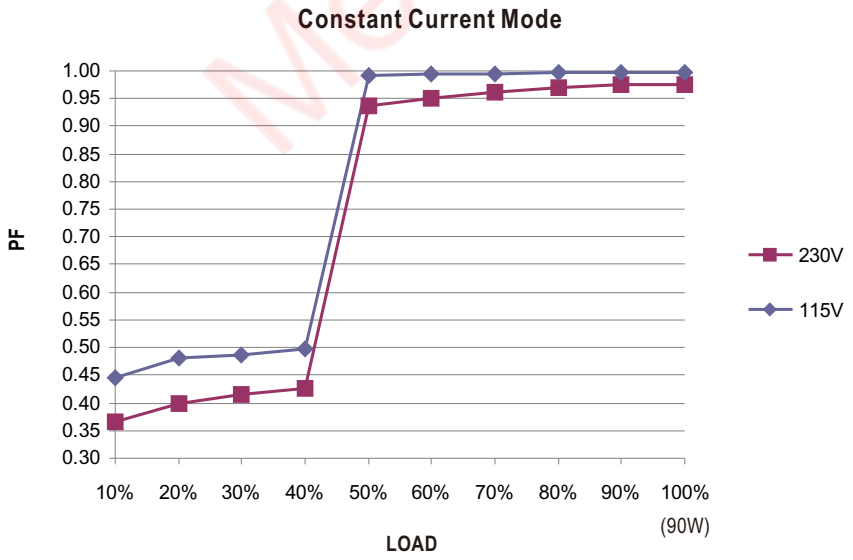
Derating Curve



Static Characteristics



Power Factor Characteristic



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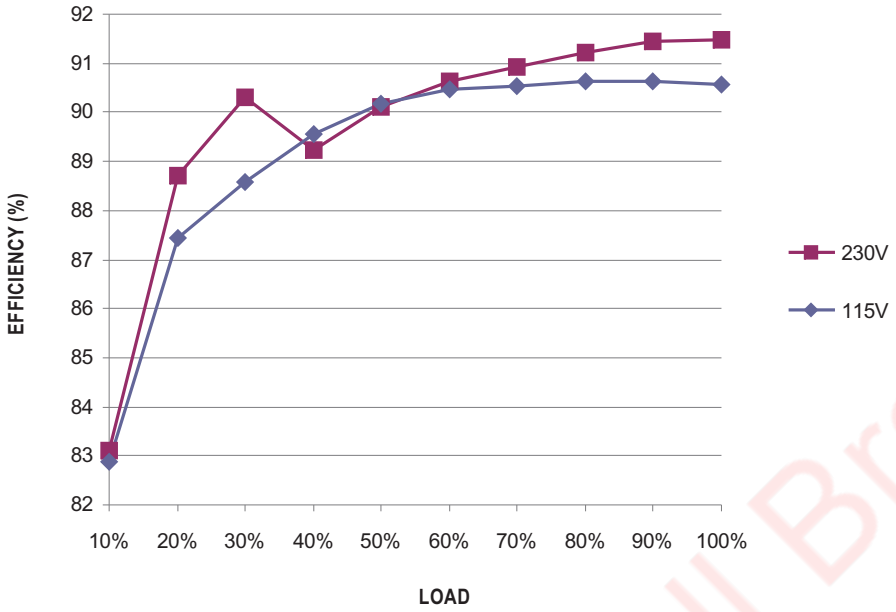
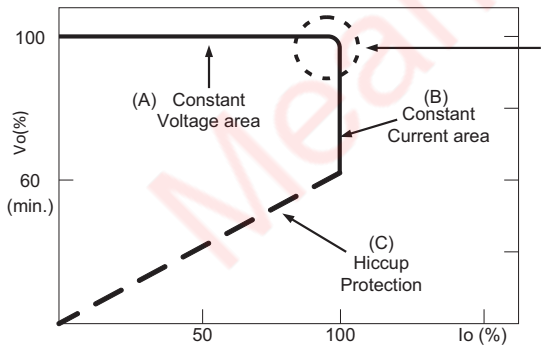
■ EFFICIENCY vs LOAD (48V Model)

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.

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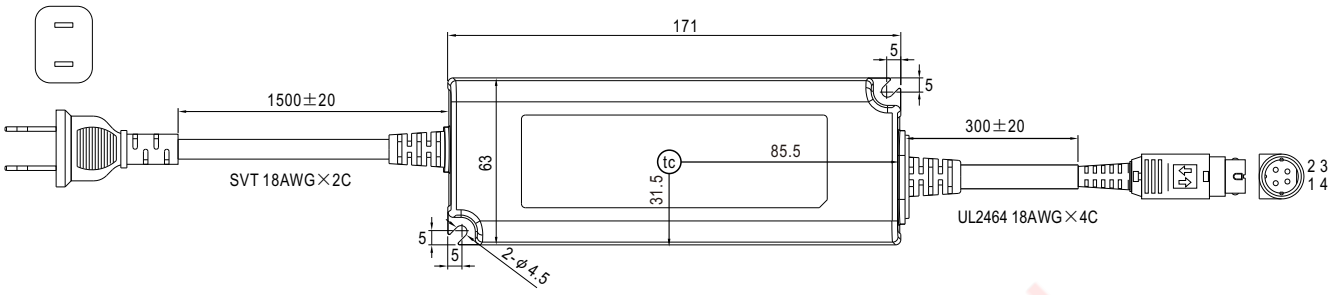
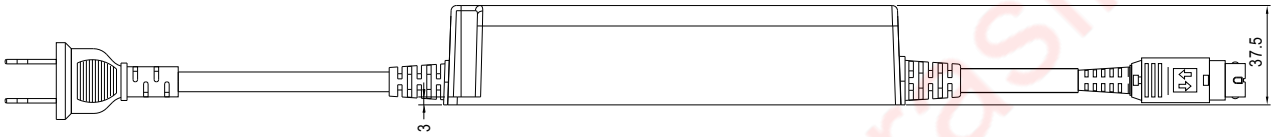
■ Mechanical Specification

Case No. PWM-90P Unit:mm

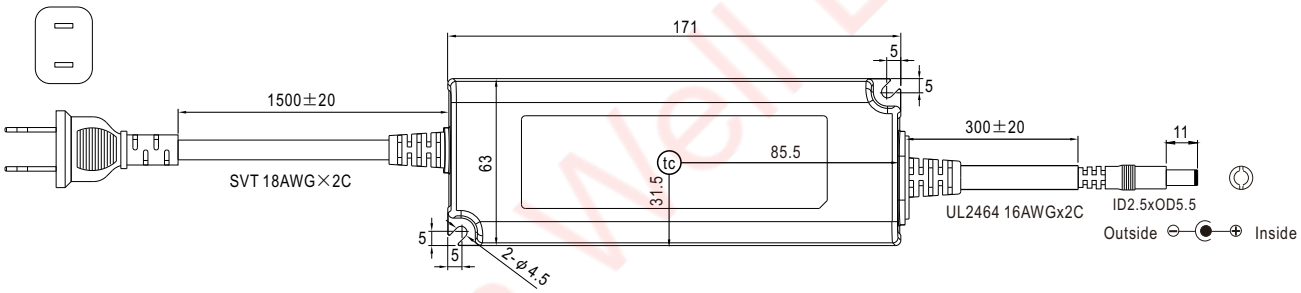
Blank Type:(OWA-90U-_)



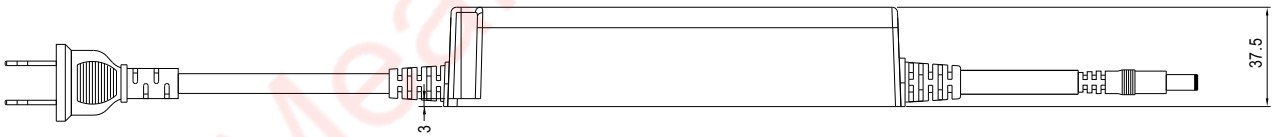
• tc : Max. Case Temperature



P1M Type:(OWA-90U-_-P1M)

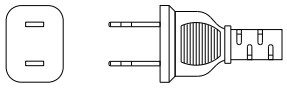


• tc : Max. Case Temperature



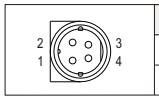
■ Input Plug Type

All models : NEMA 1-15p male plug



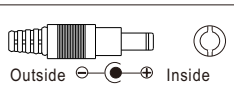
■ Output Plug Assignment

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

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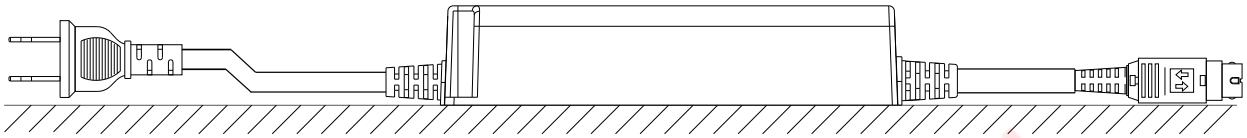
■ Recommend Mounting Direction



■ Installation Manual

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

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