90W AC-DC Reliable Wall-mounted Interchangeable Type Green Adaptor NGE90 series

User's Manual



(NGE90I)



(NGE90E)



(NGE90U)

UL62368-1 | ANSI/AAMI ES60601-1 ES60601-1-11 | J62368-1 | R33100 RoHS | GB4943.1 | AS/NZS 62368-1 | TPTC004

IEC62368-1 IEC60601-1/-1-11 IEC61558-1/-2-16 IEC60335-1 | BS EN/EN62368-1 BS EN/EN60601-1/-1-11 BS EN/EN61558-1-2-16 BS EN/EN60335-1

Energy Verified Rendement Énergétique Vérifié

IP21

ECO | Household | Automate | Industrial | Security

Network | Telecom | Medical | 2xMOPP | BF rated

Features

- MEAN WELL Patent Application Number: 202330347779.4
- Interchangeable AC plugs (I-Type)
- Global certificates in multi-fields (ITE 62368-1, Medical 60601-1, Household 60335-1,Industrial 61558-1/-2-16)
- 80~264Vac Universal AC input
- Ultra slim(30mm)
- No load power consumption< 0.1W
- Energy efficiency Level Ⅵ
- Class Ⅱ power (no earth pin)
- Protections: Short circuit / Overload / Over voltage
- Extremely low leakage current <100uA
- -30℃~+70℃ wide range working temperature
- Various DC plug quick adapter accessory available (Plug kit sold sperately, please refer to : https://www.meanwell.com/upload/pdf/DC_plug.pdf)
- 3 years warranty

Applications

- Consumer electronic devices
- Telecommunication devices
- Office facilities
- Industrial equipments
- Power sourcing equipment of PoE
- Medical devices
- Household devices

GTIN CODE

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

Description

NGE90 is a highly reliable, 90W wall-mounted style single-output green adaptor series, which is compact and convenient for carry. This product is equipped with 5 types of interchangeable AC plug (European, USA,U.K. ,Australian and China type) that makes it very suitable for travel use.NGE90 is a Class Ⅱ power unit (no FG), accepting the input range from 80VAC to 264VAC that it can satisfy the demands for various types of electrical devices.

With the working efficiency up to 92% and the extremely low no-load power consumption below 0.1W, NGE90 is compliant with the latest USA energy regulation EISA 2007/DoE, Canada NRCan,Australia and New Zealand MEPS,EU ErP and CoC version 5. The supreme feature allows the adaptor to save the energy when it is under either the operating mode or the standby mode. The entire series is approved for ITE, medical, household and industrial appliance safety regulations; moreover, it adopts the 94V-0 flame retardant plastic case that it can effectively prevent users from electric hazard.

Model Encoding

NGE 90 I 12 -P1J

- DC plug type: P1J :Plug for standard model, 2.1φ×5.5φ×11mm,C+ tuning fork type; Other options available by customer requested (see Page 6~7)
- Output voltage (12V/15V/18V/24V/48V/55V)
- AC Plug (I:Interchangeable Type, E:EU Type, U:US Type)
- Rated wattage
- Series name

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SPECIFICATION

ORDER NO.		NGE90◯12-P1J	NGE90◯15-P1J	NGE90◯18-P1J	NGE90◯24-P1J	NGE90◯48-P1J	NGE90◯55-P1J
		◯ = I, U, E					
OUTPUT	DC VOLTAGE Note.2	12V	15V	18V	24V	48V	55V
	RATED CURRENT	6.25A	5.5A	5A	3.75A	1.875A	1.64A
	CURRENT RANGE	0 ~ 6.25A	0 ~ 5.5A	0 ~ 5A	0 ~ 3.75A	0 ~ 1.875A	0 ~ 1.64A
	RATED POWER	75W	82.5W	90W	90W	90W	90.2W
	RIPPLE & NOISE (max.) Note.3	120mVp-p	150mVp-p	180mVp-p	240mVp-p	240mVp-p	240mVp-p
	VOLTAGE TOLERANCE Note.4	±4.0%	±4.0%	±4.0%	±3.0%	±3.0%	±3.0%
	LINE REGULATION Note.5	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION Note.6	±4.0%	±4.0%	±4.0%	±3.0%	±2.0%	±2.0%
	SETUP, RISE, HOLD UP TIME	1000ms, 60ms, 30ms / 230VAC 1000ms, 60ms, 10ms / 115VAC at full load					
INPUT	VOLTAGE RANGE Note.7	80 ~ 264VAC 113 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	90%	91%	91.5%	92%	92%	92%
	AC CURRENT	1.8A / 115VAC 0.9A / 230VAC					
	INRUSH CURRENT (max.)	COLD START 50A / 115VAC 100A / 230VAC					
	LEAKAGE CURRENT (max.)	Touch current < 100uA (rms) @264VAC					
PROTECTION	OVERLOAD	105% ~ 160% rated output power					
		Protection type : 12~24V Hiccup mode, recovers automatically after fault condition is removed. 48~55V Shut down and latch off o/p voltage, re-power on to recover.					
	OVER VOLTAGE	12.6 ~ 16.2	15.8 ~ 20.3	19.8 ~ 24.3	26.4 ~ 32.4	52.8 ~ 64.8	60.5 ~ 74.2
		Protection type : Shout donw O/P vlotage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20% ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03% / ℃ (0 ~ 45℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC (Note. 8)	SAFETY STANDARDS	CB IEC62368-1, IEC60601-1/-1-11, IEC61558-1/-2-16, IEC60335-1; UL UL62368-1, CSA C22.2 NO. 62368-1, ANSI/AAMI ES60601-1/-1-11(3.2 Version), CAN/CSA-C22.2 NO.60601-1/-1-11; ANSI/AAMI ES60601-1-11, CAN/CSA-C22.2 NO.60601-1-11(for U Type only) DEKRA BS EN/EN62368-1, BS EN/EN60601-1/-1-11, BS EN/EN61558-1/-2-16, BS EN/EN60335-1; PSE J62368-1; BSMI CNS15598-1; RCM AS/NZS 61558-1/-2-16; EAC TPTC004; CCC GB4943.1 approved. (Please refer to next page for more details)					
	WITHSTAND VOLTAGE	I/P-O/P:4000VAC					
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	**Parameter**	**Standard**			**Test Level / Note**	
		Conducted emission	BS EN/EN55032(CISPR32)/EN55011 , FCC Part15 , CNS15936, GB/T 9254.1-2021			Class B	
		Radiated emission	BS EN/EN55032(CISPR32)/EN55011 , FCC Part15 , CNS15936, GB/T 9254.1-2021			Class B	
		Harmonic current	BS EN/EN61000-3-2			Class A	
	EMC IMMUNITY	**Parameter**	**Standard**			**Test Level /Note**	
		ESD	BS EN/EN61000-4-2			Level 3, 15KV air; Level 2, 8KV contact	
		RF field susceptibility	BS EN/EN61000-4-3			Level 2, 3V/m	
		EFT bursts	BS EN/EN61000-4-4			Level 3, 2KV	
		Surge susceptibility	BS EN/EN61000-4-5			Level 3, 1KV/L-N	
		Conducted susceptibility	BS EN/EN61000-4-6			Level 2, 3V	
		Magnetic field immunity	BS EN/EN61000-4-8			Level 1, 1A/m	
		Voltage dips , interruption	BS EN/EN61000-4-11			＞95% dip 0. 5 periods, 30% dip 25 periods, ＞95% interruptions 250 periods	
OTHERS	MTBF	605.3 Khrs min. MIL-HDBK-217F (25℃) 5120.6 Khrs min. Telcordia TR/SR-332(Bellcore) (25℃)					
	DIMENSION	62*30*85.5mm (L*W*H)					
	PACKING MAIN BODY	217g; 54pcs/ 13.2Kg / 0.93CUFT for NGE90Ixx/Uxx-P1J 231g; 42pcs/ 11.6Kg / 1.13CUFT for NGE90Exx-P1J					
	PACKING AC PLUGS	Refer to Page 3					
DC OUTPUT CONNECTOR	PLUG	See page 6~7 ; Other type available by customer requested					
	CABLE	See page 6~7 ; Other type available by customer requested					

NOTE

1.All parameters are specified at 230VAC input, rated load, 25℃ 70% RH ambient.
2.DC voltage: The output voltage set at point measure by plug terminal & 50% load.
3.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1 μF & 47 μF capacitor.
4.Tolerance: includes set up tolerance, line regulation, load regulation.
5.Line regulation is measured from low line to high line at rated load.
6.Load regulation is measured from 0% to 100% rated load
7.Derating may be needed under low input voltage. Please check the derating curve for more details.
8.The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.” (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9.Design meet US DoE Level VII (from Docket number EERE-2020-BT-STD-0006).
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

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■ Interchangeable AC Plug Specifically for NGE12/18/30/45/65/90 (I-Type)

Order NO.	NGE90Ixx-P1J 					NGE90Exx-P1J 	NGE90Uxx-P1J 
AC plug	Interchangeable Type					Non-Interchangeable Type	
	EU 	US 	UK 	AU 	CN 		
Certificate	CB DEKRA, PS, cULus, CCC, R33100 RoHS, cULus, EAC, CE, UKCA, FC					CB DEKRA, EAC, CE	CB, cULus, cULus, R33100 RoHS, PS, FC

■ AC Plugs Accessory (Sold Seperately)

MW's order NO.	Per Unit	Per Bag	Per Carton	
		Q'Ty	Q'Ty	G.W.
AC PLUG-EU4		30 pcs	300 pcs (10 bags)	5.6Kg
AC PLUG-US4		30 pcs	300 pcs (10 bags)	5.3Kg
AC PLUG-UK4		30 pcs	300 pcs (10 bags)	7.1Kg
AC PLUG-AU4		30 pcs	300 pcs (10 bags)	5.3Kg
AC PLUG-CN4		30 pcs	300 pcs (10 bags)	5.3Kg
AC PLUG-MIX4	 (Per Set)	30 pcs (5 Types*6 mixed bags)	300 pcs (5 Types*6 mixed bags) (10 bags)	5.78Kg

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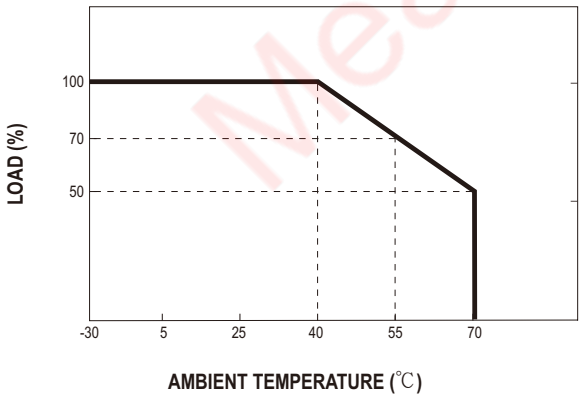
■ Interchangeable AC Plug Installation Steps (Convertible with I Type only)

Step1	Step2
	
Slide in AC converter along the guided rail between the metal prongs until it is locked in (with a “click” sound).	Check if the new plug type is stable and correct before use.

Note:

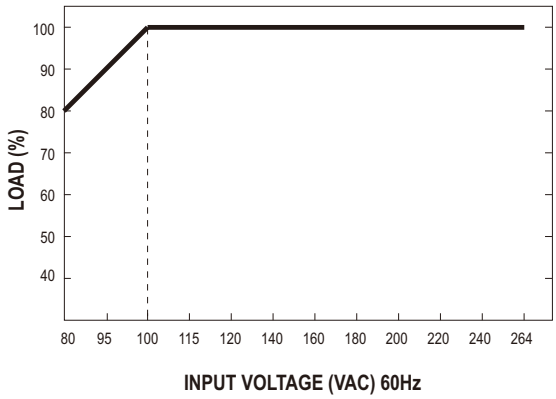
1. NGE90I main body unit and AC inlet plug should be ordered separately.
2. NGE90I needs to be used along with one of the AC inlet plug (EU,US,UK,AU,CN).

■ Derating Curve



Note: 48V/55V: -20℃@80Vac, load reduced to 60%;
-30℃@80Vac, load reduced to 35%.

■ Static Characteristics



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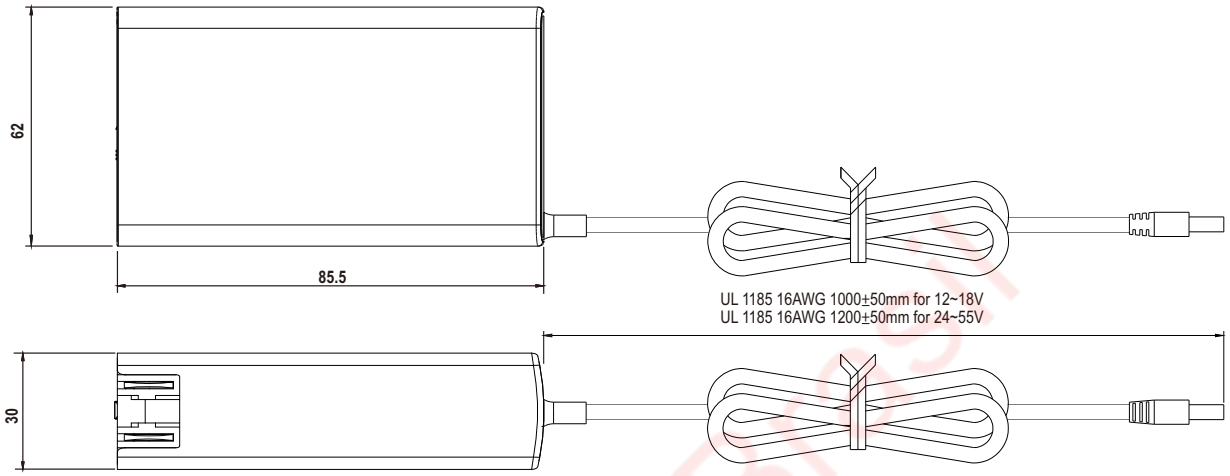
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■ Mechanical Specification

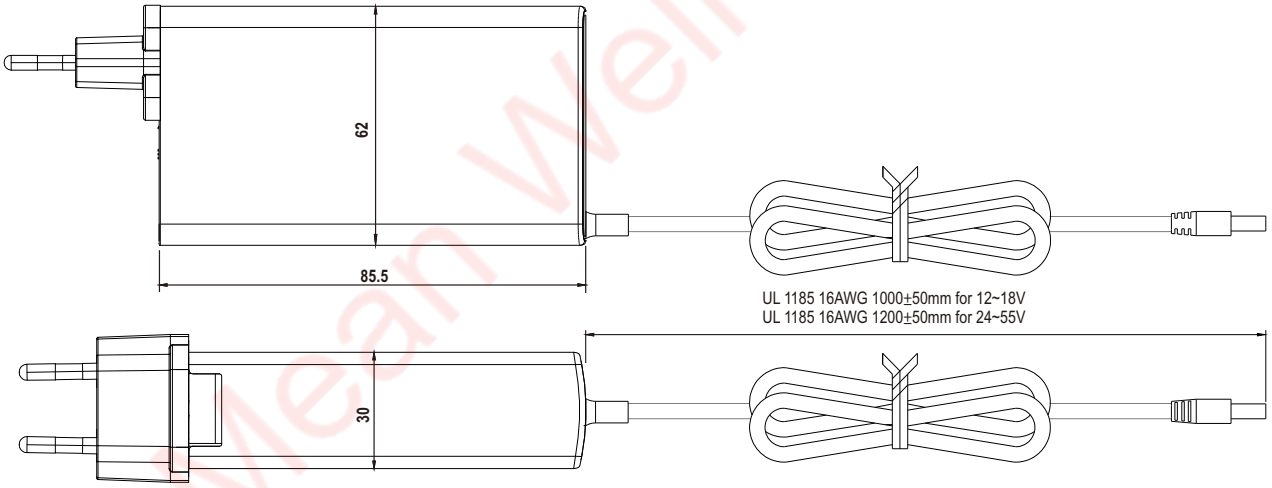
※ Cable connection

Unit:mm

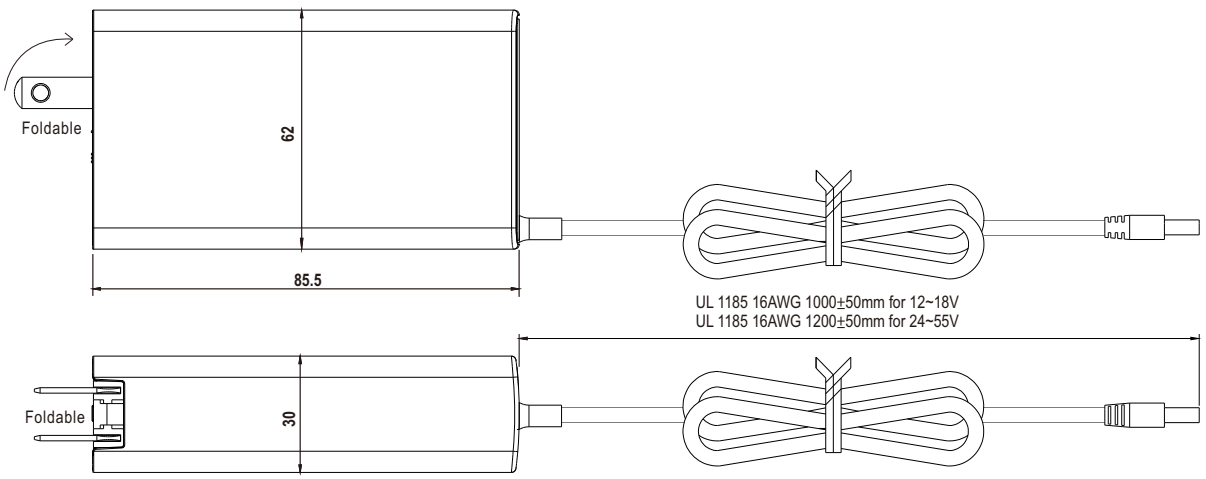
NGE90Ixx-P1J:



NGE90Exx-P1J:



NGE90Uxx-P1J:



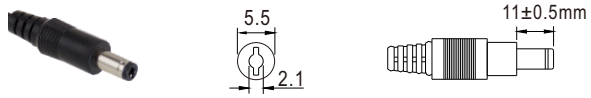
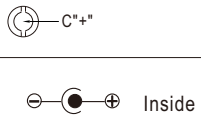
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■ DC Output Plug

◎ Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	

◎ DC plug changeable through:

(1) Customization of the standard part with an optional DC plug according to the table (MOQ applicable)

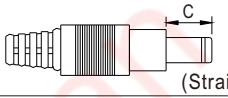
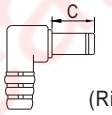
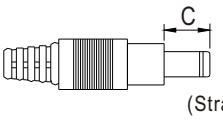
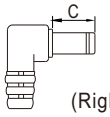
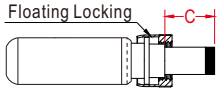
(2) Quick adapter accessory (sold separately without MOQ)

Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

Example quick adapter accessory:

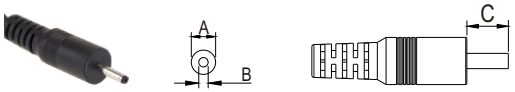


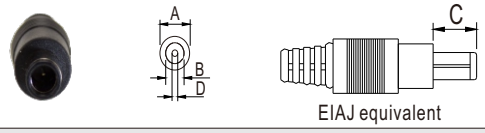
◎ Optional DC plug: (Available in customized cable or quick adapter)

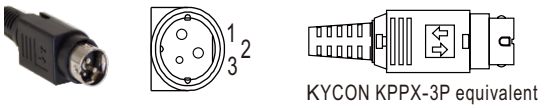
Tuning Fork Style		Type No.	A OD	B ID	C L	Quick Adapter Accessory
	 (Straight)	P1I	5.5	2.1	9.5	Available (Current rating: 7.5A max.)
		P1L	5.5	2.5	9.5	
		P1M	5.5	2.5	11.0	
	 (Right-angled)	P1IR	5.5	2.1	9.5	
		P1JR	5.5	2.1	11.0	
		P1LR	5.5	2.5	9.5	
		P1MR	5.5	2.5	11.0	
Barrel Style		Type No.	A OD	B ID	C L	
	 (Straight)	P2I	5.5	2.1	9.5	None
		P2J	5.5	2.1	11.0	
		P2L	5.5	2.5	9.5	
		P2M	5.5	2.5	11.0	
	 (Right-angled)	P2IR	5.5	2.1	9.5	
		P2JR	5.5	2.1	11.0	
		P2LR	5.5	2.5	9.5	
		P2MR	5.5	2.5	11.0	
Lock Style		Type No.	A OD	B ID	C L	
	 SWITCHCRAFT original or equivalent	P2S(S761K)	5.53	2.03	12.06	None
		P2K(761K)	5.53	2.54	12.06	
		P2C(S760K)	5.53	2.03	9.52	
		P2D(760K)	5.53	2.54	9.52	

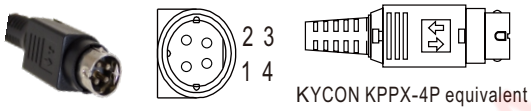
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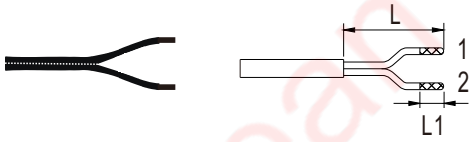
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Min. Pin Style	Type No.	A OD	B ID	C L	Quick Adapter Accessory
	P3A	2.35	0.7	11.0	Available (Current rating: 5A max.)
	P3B	4.0	1.7	11.0	
	P3C	4.75	1.7	11.0	

Center Pin Style	Type No.	A OD	B ID	C L	D Center Pin	
	P4A	5.5	3.4	11.0	1.0	Available (Current rating: 7.5A max.)
	P4B	6.5	4.4	11.0	1.4	
	P4C	7.4	5.1	11.0	0.6	

Min. DIN 3 Pin with Lock (male)	Type No.	Pin Assignment PIN No.	Pin Assignment Output	
	R6B	1	+Vo	Available (Current rating: 7.5A max.)
		2	-Vo	
		3	+Vo	

Min. DIN 4 Pin with Lock (male)	Type No.	Pin Assignment PIN No.	Pin Assignment Output	
	R7B	1	+Vo	Available (Current rating: 7.5A max.)
		2	-Vo	
		3	-Vo	
		4	+Vo	

Stripped and tinned leads	Type No.	Pin Assignment PIN No.	Pin Assignment Output	
 Length of Land L1 by request (MW's standard length, L: 25 mm, L1: 10 mm)	by customer	1 (Ribbed)	+Vo	None
		2 (Letter)	-Vo	

■ Installation Manual

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

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