45W AC-DC Reliable Wall-mounted Interchangeable Type Green Adaptor NGE45 series

User's Manual

(NGE45I)

(NGE45E)

(NGE45U)

UL62368-1 | ANSI/AAMI ES60601-1 ES60601-1-11 | J62368-1 | R33100 RoHS | GB4943.1 | AS/NZS 62368.1 AS/NZS 61558.1/.2.16 | TPTC004 | KC62368-1 | IS13252

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< 0.075W
- Energy efficiency Level Ⅵ
- Class Ⅱ power (no earth pin)
- Protections: Short circuit / Overload / Over voltage
- Pass LPS
- 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
- Medical devices
- Household devices

GTIN CODE

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

Description

NGE45 is a highly reliable, 45W wall-mounted style single-output green adaptor series, which is compact and convenient for carry. This product is equipped with 7 types of interchangeable AC plug (European, USA,U.K. ,Australian, China, Korea and India type) that makes it very suitable for travel use. NGE45 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 91% and the extremely low no-load power consumption below 0.075W, NGE45 is compliant with the latest USA energy regulation EISA 2007/DoE, Canada NRCan,Australia and New Zealand MEPS, Korea KMEPS, EU ErP and CoC version5. 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 45 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 (5V/9V/12V/15V/18V/24V/48V)
- AC Plug: I : AC Pin fixed; Universal version with interchangeable plugs; E : AC Pin fixed; EU version with non-interchangeable plug; U : Foldable AC Pin; US version with non-interchangeable plug
- Rated wattage
- Series name

SPECIFICATION	NGE45○05-P1J	NGE45○09-P1J	NGE45○12-P1J	NGE45○15-P1J	NGE45○18-P1J	NGE45○24-P1J	NGE45○48-P1J
	○ = I, U, E						
OUTPUT							
DC VOLTAGE Note.2	5V	9V	12V	15V	18V	24V	48V
RATED CURRENT	5.63A	4.5A	3.75A	3A	2.5A	1.88A	0.94A
CURRENT RANGE	0 ~ 5.63A	0 ~ 4.5A	0 ~ 3.75A	0 ~ 3A	0 ~ 2.5A	0 ~ 1.88A	0 ~ 0.94A
RATED POWER	28.1W	40.5W	45W	45W	45W	45.1W	45.1W
RIPPLE & NOISE (max.) Note.3	100mVp-p	100mVp-p	120mVp-p	150mVp-p	180mVp-p	240mVp-p	240mVp-p
VOLTAGE TOLERANCE Note.4	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
LINE REGULATION Note.5	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
LOAD REGULATION Note.6	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
SETUP, RISE, HOLD UP TIME	1500ms, 50ms, 30ms / 230Vac 3000ms, 50ms, 10ms / 115Vac at full load						
INPUT							
VOLTAGE RANGE Note.7	80 ~ 264Vac 113 ~ 370Vdc						
FREQUENCY RANGE	47 ~ 63Hz						
EFFICIENCY (Typ.)	84%	89%	90%	90%	90%	90%	91%
AC CURRENT	1A / 115Vac 0.6A / 230Vac						
INRUSH CURRENT (max.)	COLD START 35A / 115Vac 70A / 230Vac						
LEAKAGE CURRENT (max.)	Touch current < 100uA (rms) @264Vac						
PROTECTION							
OVERLOAD	110% ~ 150% rated output power						
	Protection type : 5~24V Hiccup mode, recovers automatically after fault condition is removed. 48V Shut down and latch off o/p voltage, re-power on to recover.						
OVER VOLTAGE	110% ~ 140% rated output voltage						
	Protection type : Clamp by zener diode						
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 62368.1, AS/NZS 61558.1/.2.16; EAC TPTC004; CCC GB4943.1 approved. KC KC62368-1; BIS IS13252(part1):2010/IEC60950-1:2005. (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						

	Parameter	Standard	Test Level / Note
EMC EMISSION	Conducted emission	BS EN/EN55032(CISPR32)/EN55011 , FCC Part15 , CNS15936, GB/T 9254.1-2021, KS C 9832	Class B
	Radiated emission	BS EN/EN55032(CISPR32)/EN55011 , FCC Part15 , CNS15936, GB/T 9254.1-2021, KS C 9832	Class B
	Harmonic current	BS EN/EN61000-3-2	Class A
EMC IMMUNITY	BS EN/EN55035(CISPR35), BS EN/EN60601-1-2(IEC60601-1-2),KS C 9835		
	Parameter	**Standard**	**Test Level /Note**
	ESD	BS EN/EN61000-4-2	Level 4, 15KV air; Level 4,8KV 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 2, 3A/m
	Voltage dips , interruption	BS EN/EN61000-4-11	＞95% dip 0. 5 periods, 30% dip 25 periods, ＞95% interruptions 250 periods

OTHERS		
MTBF		749.9 Khrs min. MIL-HDBK-217F (25℃) 6361.6 Khrs min. Telcordia TR/SR-332(Bellcore) (25℃)
DIMENSION		62*30*65mm (L*W*H)
PACKING	MAIN BODY	196g; 60pcs/ 13.4Kg / 0.94CUFT for NGE45Ixx/Uxx-P1J 211g; 45pcs/ 11.4Kg / 1.06CUFT for NGE45Exx-P1J
	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

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

Order NO.	NGE45Ixx-P1J (Universal Version)							NGE45Exx-P1J (EU Version)	NGE45Uxx-P1J (US Version)
AC plug	Interchangeable Type (Unfoldable; AC Pin fixed)							Non-Interchangeable Type	
	EU	US	UK	AU	CN	KR	IN	Unfoldable AC Pin	Foldable AC Pin
Certificate	CB DEKRA c UL us c UL us CCC c UL us EAC KC CE UKCA FC R33100 RoHS							CB DEKRA EAC CE	CB c UL us c UL us FC R33100 RoHS

■ 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)	5.4Kg
AC PLUG-US4		30 pcs	300 pcs (10 bags)	4.7Kg
AC PLUG-UK4		30 pcs	300 pcs (10 bags)	7.1Kg
AC PLUG-AU4		30 pcs	300 pcs (10 bags)	5.2Kg
AC PLUG-CN4		30 pcs	300 pcs (10 bags)	4.8Kg
AC PLUG-KR4		30 pcs	300 pcs (10 bags)	6.3Kg
AC PLUG-IN4		30 pcs	300 pcs (10 bags)	7.7Kg
AC PLUG-MIX4	(Per Set)	30 pcs (5 Types*6 mixed bags)	300 pcs (5 Types*6 mixed bags) (10 bags)	5.45Kg
AC PLUG-MIX5	(Per Set)	35 pcs (7 Types*5 mixed bags)	315 pcs (7 Types*5 mixed bags) (9 bags)	6.13Kg

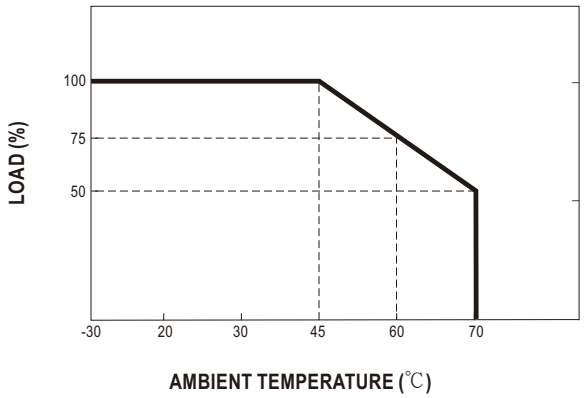
■ Interchangeable AC Plug Installation Steps (Convertible with I Type only)

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.

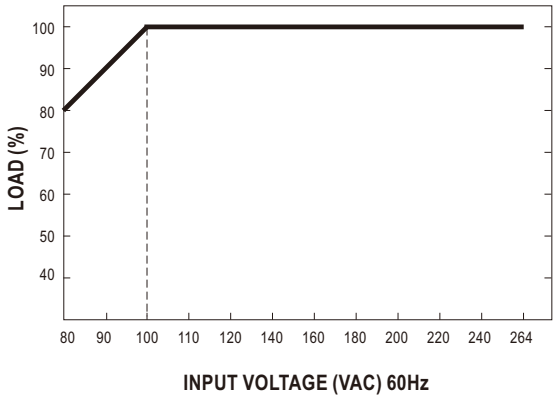
Note:

1. NGE45I main body unit and AC inlet plug should be ordered separately.
2. NGE45I needs to be used along with one of the AC inlet plug (EU,US,UK,AU,CN,KR,IN).

■ Derating Curve



■ Static Characteristics



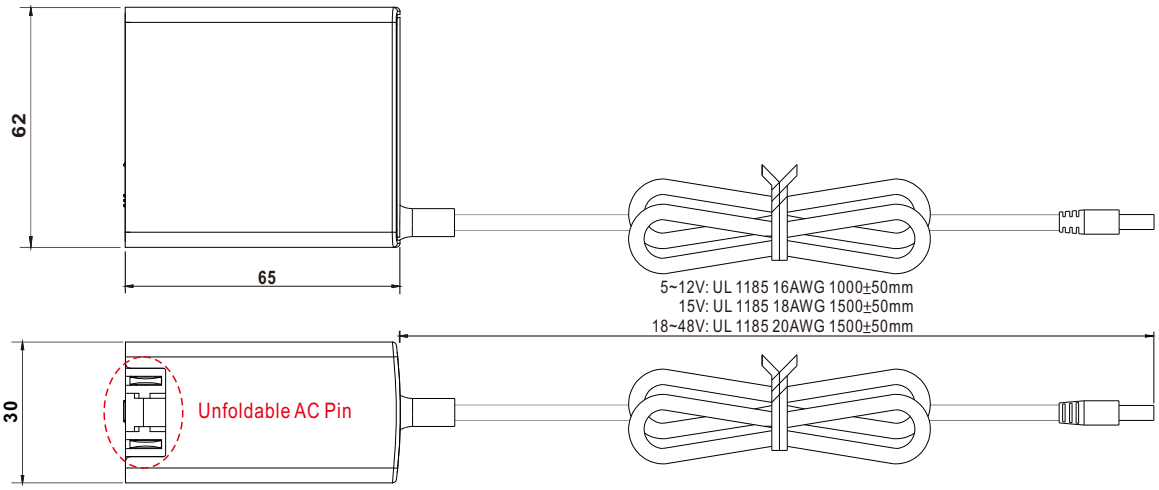
■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)

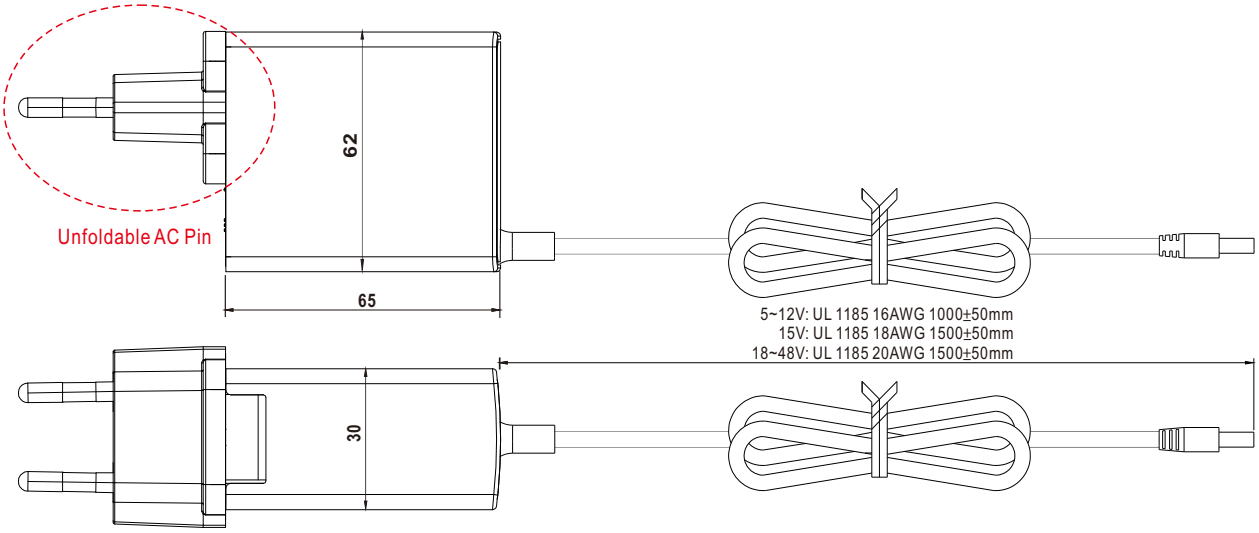
Case No.NGE65

※ Cable connection

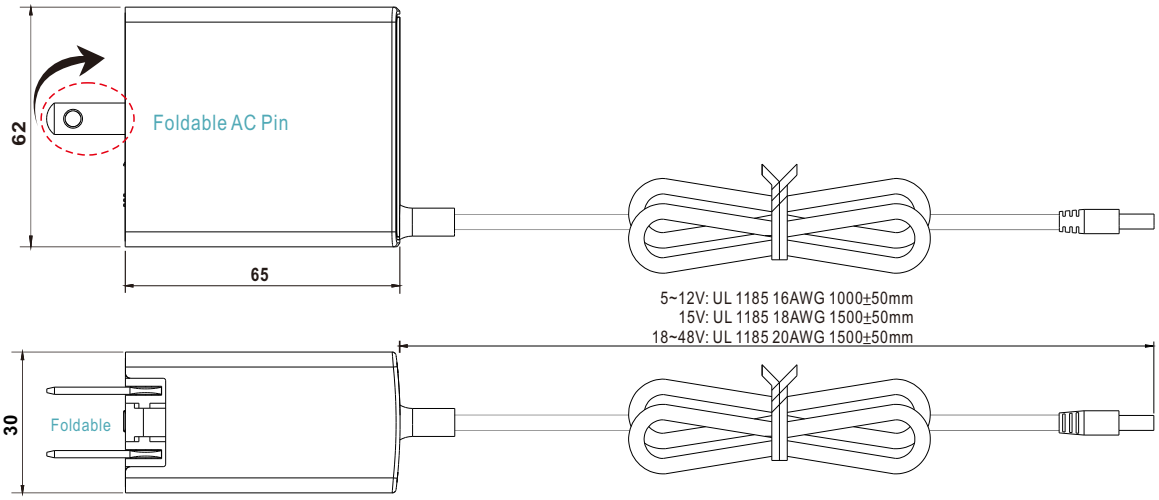
NGE45Ixx-P1J (Universal Version - AC Pin fixed; With interchangeable plugs) :



NGE45Exx-P1J (EU Version - AC Pin fixed; With non-interchangeable plug) :



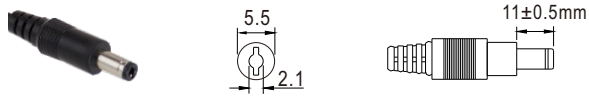
NGE45Uxx-P1J (US Version - Foldable AC Pin; With non-interchangeable plug) :



■ DC Output Plug

◎ Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	
	Outside Inside

◎ DC plug changeable through:

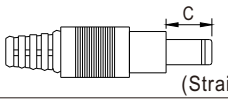
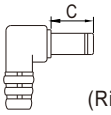
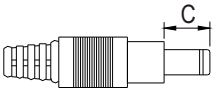
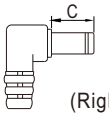
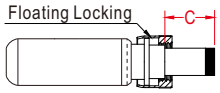
(1) Customization of the standard part with an optional DC plug according to the table (MOQ applicable)

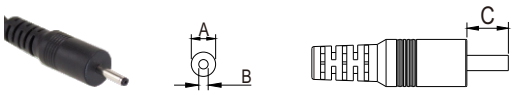
(2) Quick adapter accessory (sold separately without MOQ)

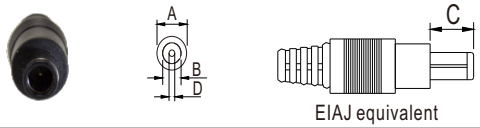
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

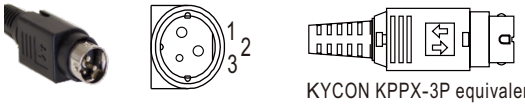
Example quick adapter accessory:

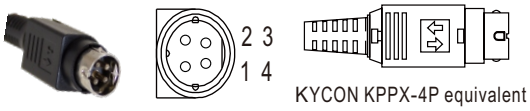
◎ Optional DC plug: (Available in customized cable or quick adapter)

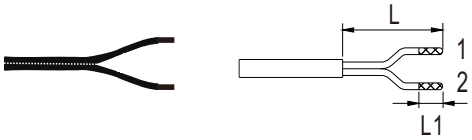
Tuning Fork Style		Type No.	A	B	C	Quick Adapter Accessory
			OD	ID	L	
	 (Straight)	P1I	5.5	2.1	9.5	Available (Current rating: 7.5A max.)
		P1L	5.5	2.5	9.5	
		P1M	5.5	2.5	11.0	
	 (Right-angled)	P1IR	5.5	2.1	9.5	
		P1JR	5.5	2.1	11.0	
		P1LR	5.5	2.5	9.5	
		P1MR	5.5	2.5	11.0	
Barrel Style		**Type No.**	**A**	**B**	**C**	
			OD	**ID**	**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**	**B**	**C**	
			OD	**ID**	**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	

Min. Pin Style	Type No.	A	B	C	Quick Adapter Accessory
		OD	ID	L	
 EIAJ equivalent	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	B	C	D	
		OD	ID	L	Center Pin	
 EIAJ equivalent	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.	Output	
 KYCON KPPX-3P equivalent	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.	Output	
 KYCON KPPX-4P equivalent	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.	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