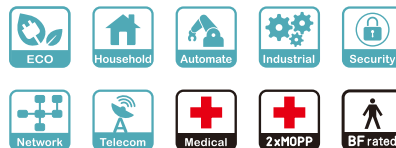




User's Manual



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°C~+70°C** 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>

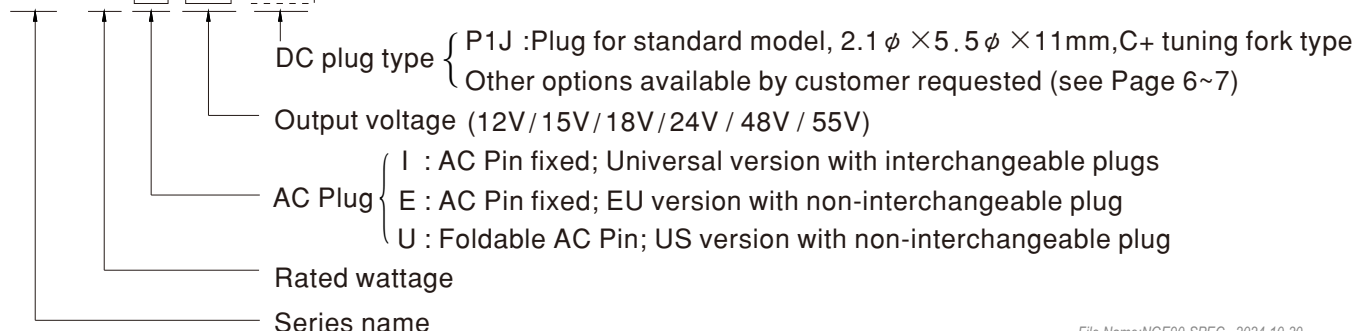
Description

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 7 types of interchangeable AC plug (European, USA,U.K. ,Australian, China, Korea and India 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, Korea KMEPS, 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



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 vltotage, 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% / °C (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. 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						
	EMC EMISSION			Parameter		Standard		Test Level / Note		
				Conducted emission		BS EN/EN55032(CISPR32)/EN55011, FCC Part15, CNS15936, GB/T 9254.1-2021, KC C9832		Class B		
				Radiated emission		BS EN/EN55032(CISPR32)/EN55011, FCC Part15, CNS15936, GB/T 9254.1-2021, KC C9832		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		
			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 μ F & 47 μ F 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							

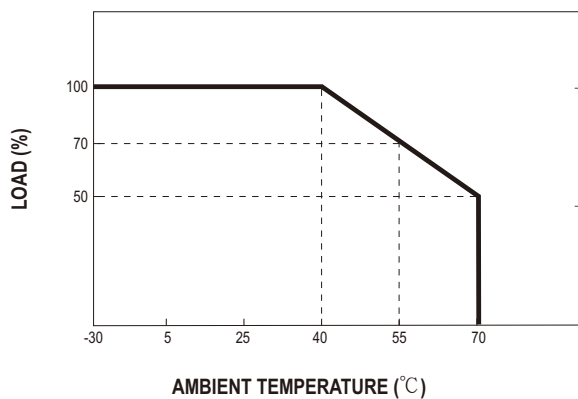
■ Interchangeable AC Plug Installation Steps (Convertible with I Type only)

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

Note:

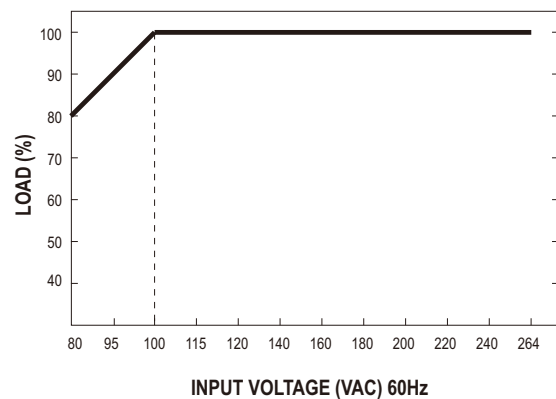
1. NGE90I main body unit and AC inlet plug should be ordered separately.
2. NGE90I needs to be used along with one of the AC inlet plug (EU,US,UK,AU,CN,KR,IN).

■ Derating Curve



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

■ Static Characteristics

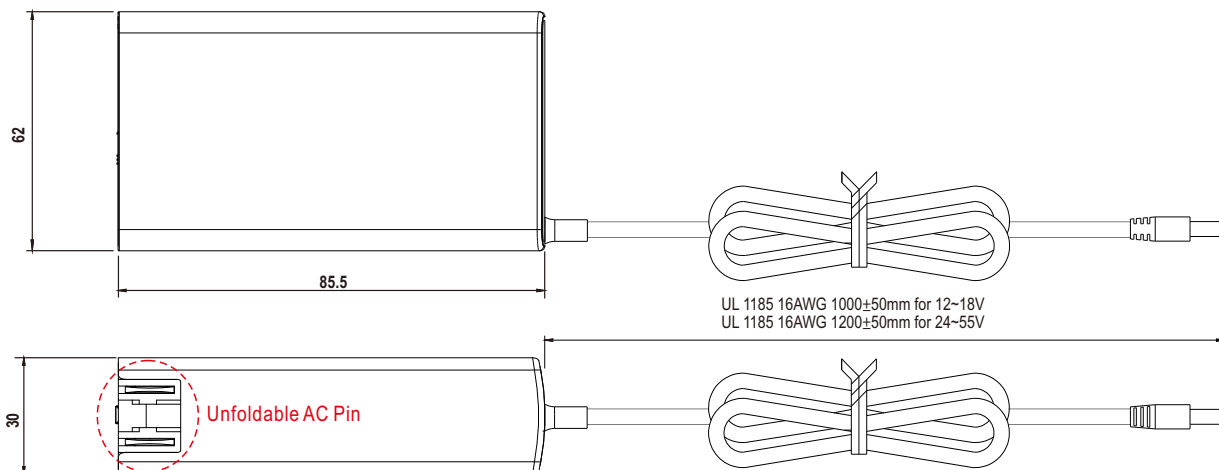


■ Mechanical Specification

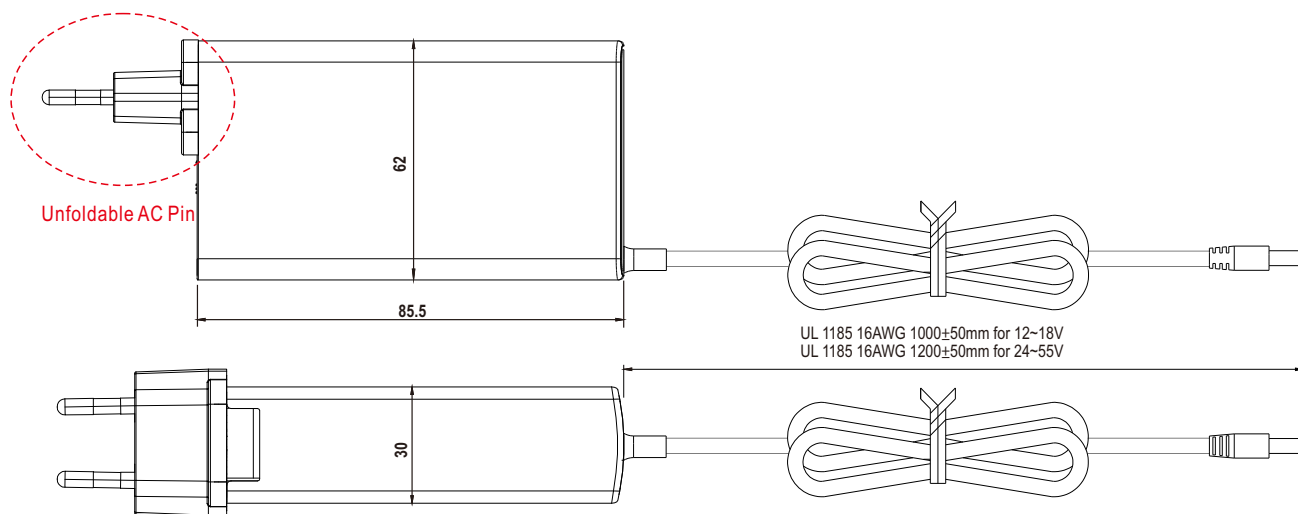
(Unit: mm , tolerance ± 1 mm)

Case No. NGE65

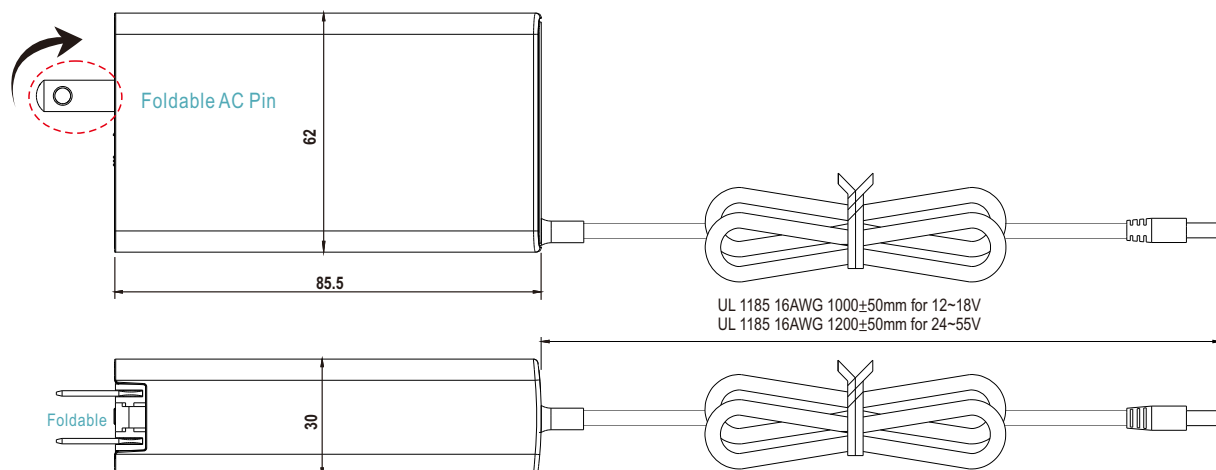
NGE90Ixx-P1J (Universal Version - AC Pin fixed; With interchangeable plugs) :



NGE90Exx-P1J (EU Version - AC Pin fixed; With non-interchangeable plug) :



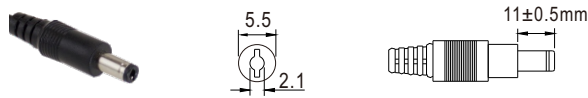


NGE90Uxx-P1J (US Version - Foldable AC Pin; With non-interchangeable plug) :



DC Output Plug

Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	
	Outside  Inside

DC plug changeable through:


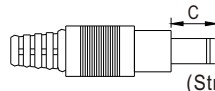
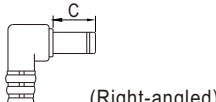

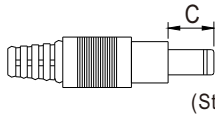
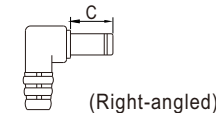

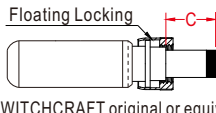
- Customization of the standard part with an optional DC plug according to the table (MOQ applicable)
- Quick adapter accessory (sold separately without MOQ)



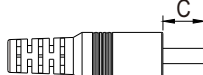


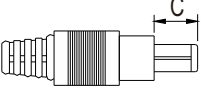

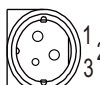
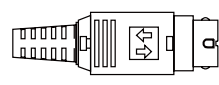


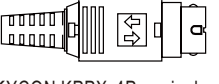

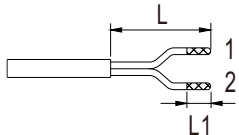
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

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	None
	 (Straight)	P2I	5.5	2.1	9.5	
		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	None
	 SWITCHCRAFT original or equivalent	P2S(S761K)	5.53	2.03	12.06	
		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: <u>25</u> mm, L1: <u>10</u> mm)	by customer	1 (Ribbed)	+Vo	None		
		2 (Letter)	-Vo			

■ Installation Manual

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