



(NGE90I)



(NGE90E)



(NGE90U)

User's Manual


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

IEC60335-1

BS EN/EN60335-1



■ 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 separately, please refer to : https://www.meanwell.com/upload/pdf/DC_plug.pdf)
- 3 years warranty

■ 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

DC plug type {

- P1J :Plug for standard model, 2.1 φ × 5.5 φ × 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 : 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

■ 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>

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					
	RATED CURRENT	6.25A	5.5A	5A	3.75A	1.875A					
	CURRENT RANGE	0 ~ 6.25A	0 ~ 5.5A	0 ~ 5A	0 ~ 3.75A	0 ~ 1.875A					
	RATED POWER	75W	82.5W	90W	90W	90.2W					
	RIPPLE & NOISE (max.) Note.3	120mVp-p	150mVp-p	180mVp-p	240mVp-p	240mVp-p					
	VOLTAGE TOLERANCE Note.4	±4.0%	±4.0%	±4.0%	±3.0%	±3.0%					
	LINE REGULATION Note.5	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%					
	LOAD REGULATION Note.6	±4.0%	±4.0%	±4.0%	±3.0%	±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.									
		12.6 ~ 16.2	15.8 ~ 20.3	19.8 ~ 24.3	26.4 ~ 32.4	52.8 ~ 64.8	60.5 ~ 74.2				
	OVER VOLTAGE	Protection type : Shut down O/P voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")									
	WORKING HUMIDITY	20% ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH non-condensing									
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 45°C)									
VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes									
SAFETY & EMC (Note. 8)		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/-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°C / 70% RH									
SAFETY & EMC (Note. 8)	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					
	EMC IMMUNITY	Harmonic current	BS EN/EN61000-3-2			Class A					
		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					
OTHERS	PACKING	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					
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°C 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.	NGE90Ixx-P1J (Universal Version)							NGE90Exx-P1J (EU Version)	NGE90Uxx-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	             <small>R33100 RoHS</small>							   	    

■ AC Plugs Accessory (Sold Separately)

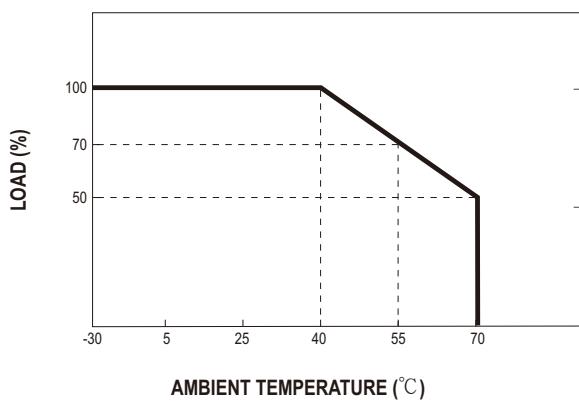
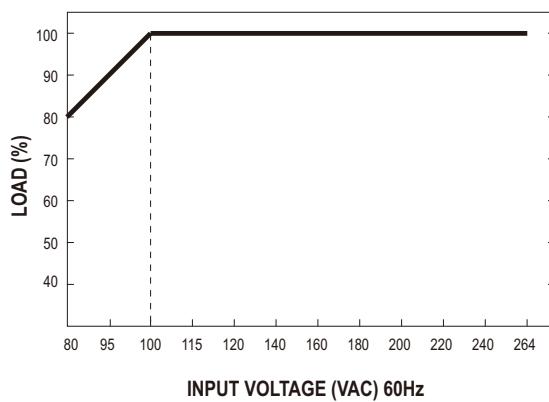
MW's order NO.	Per Unit	Per Bag	Per Carton	
		Q'Ty	Q'Ty	G.W.
AC PLUG-EU4		30 pcs	300 pcs (10 bags)	5.4Kg
AC PLUG-US4		30 pcs	300 pcs (10 bags)	4.7Kg
AC PLUG-UK4		30 pcs	300 pcs (10 bags)	7.1Kg
AC PLUG-AU4		30 pcs	300 pcs (10 bags)	5.2Kg
AC PLUG-CN4		30 pcs	300 pcs (10 bags)	4.8Kg
AC PLUG-KR4		30 pcs	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. 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

■ Static Characteristics


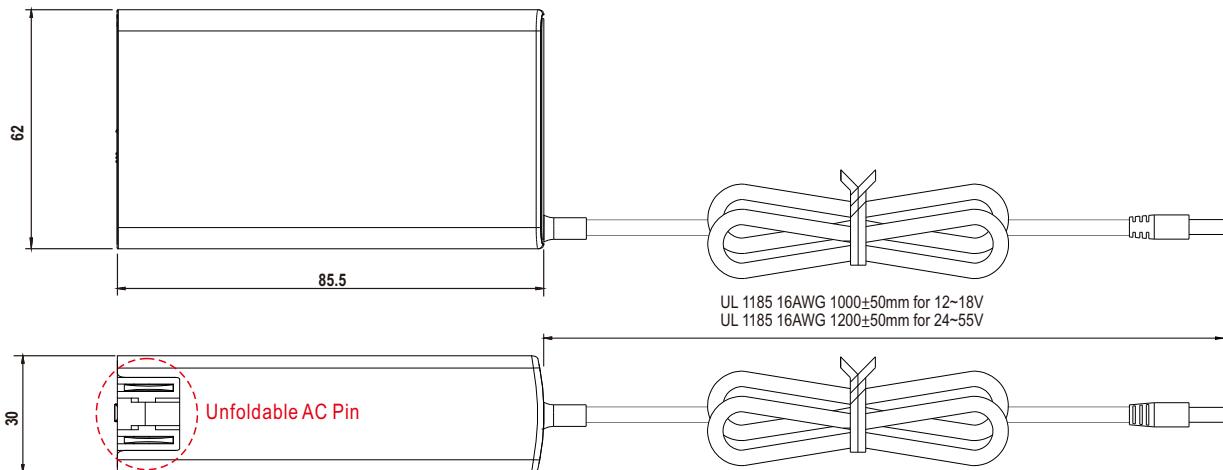
Note: 48V/55V: -20°C@80Vac, load reduced to 60%;
 -30°C@80Vac, load reduced to 35%.

■ Mechanical Specification

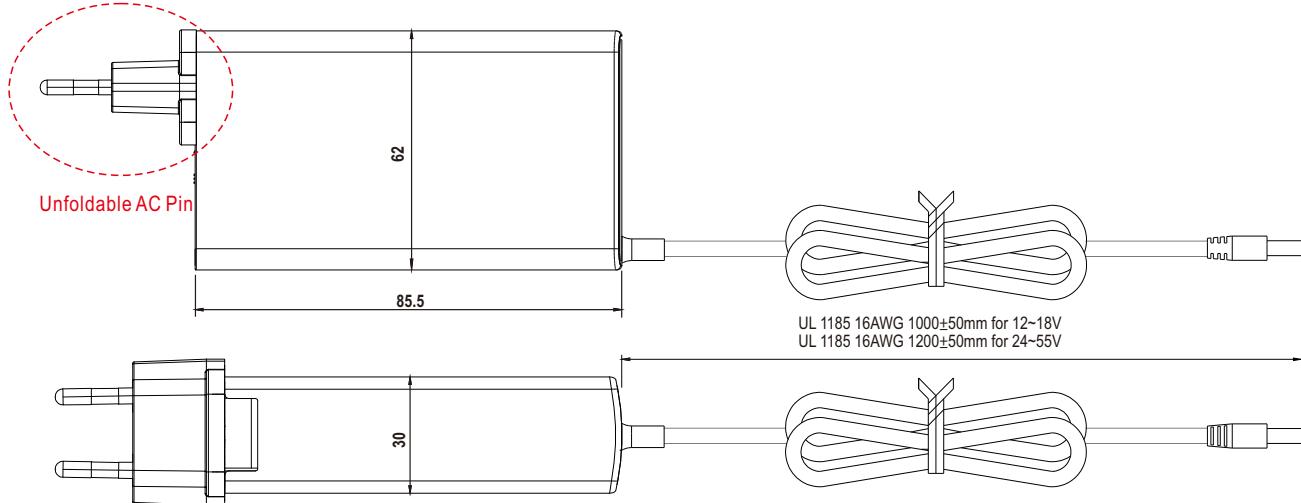
(Unit: mm, tolerance $\pm 1\text{mm}$)

Case No.NGE65

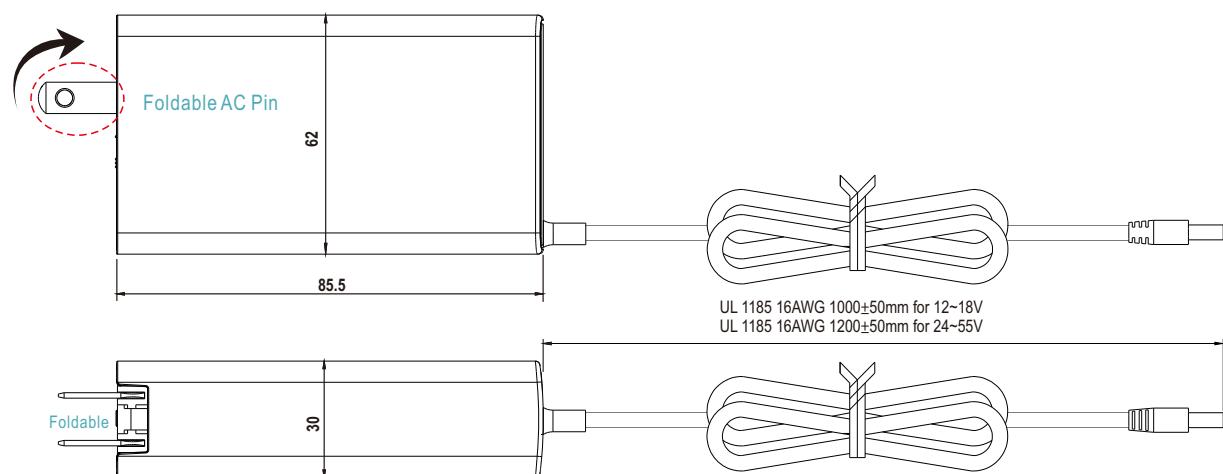
NGE90Ixx-P1J (Universal Version - AC Pin fixed; With interchangeable plugs) :



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



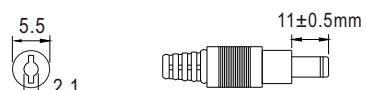
NGE90Uxx-P1J (US Version - Foldable AC Pin; With non-interchangeable plug) :



■ DC Output Plug

- ◎ Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	
	Outside  Inside

- ◎ DC plug changeable through:

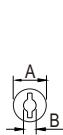
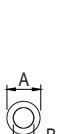
- Customization of the standard part with an optional DC plug according to the table (MOQ applicable)
- Quick adapter accessory (sold separately without MOQ)

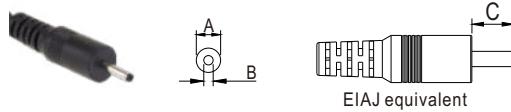
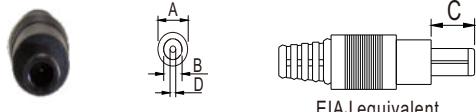
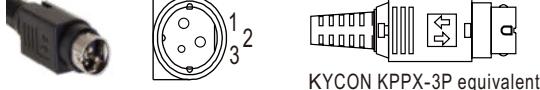
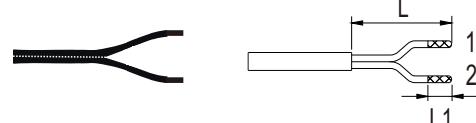
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

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
 	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	
	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
 	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	
	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
 	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	Available (Current rating: 7.5A max.)	
		OD	ID	L		
	P4A	5.5	3.4	11.0		
 EIAJ equivalent	P4B	6.5	4.4	11.0		
	P4C	7.4	5.1	11.0		
				0.6		
Min. DIN 3 Pin with Lock (male)	Type No.	Pin Assignment				Available (Current rating: 7.5A max.)
		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				Available (Current rating: 7.5A max.)
		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				None
		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>