



(Cable connection)

(USB connection)

User's Manual



Video


ANSI/AAMI ES60601-1
ES60601-1-11

BS EN/EN60601-1
BS EN/EN60601-1-11


TPTC004



(except for GEM12I05-USB)

Features

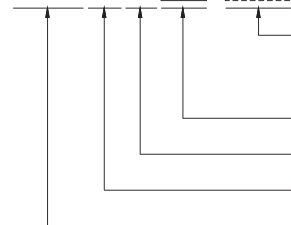
- Interchangeable AC plugs (plug kit sold separately)
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1/ES60601-1-11, BS EN/EN60601-1/BS EN/EN60601-1-11
- Extremely low leakage current
- No load power consumption < 0.075W (< 0.1W for 18V/48V)
- **Energy efficiency Level VI**
- -20~+70°C wide range working temperature
- Class II power (no earth pin)
- Protections: Short circuit / Overload / Over voltage
- Fully enclosed plastic case
- 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

GEM12I is a highly reliable, 12W wall-mounted style single-output green medical adaptor series, which is compact and convenient for carry. This product is equipped with an interchangeable AC plug (4 types, including European type, USA type, U.K. type and Australian type) that makes it very suitable for businessmen to use in the major countries around the globe. GEM12I 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 medical electrical devices. The circuitry design meets the international medical standards (2*MOPP), having an ultra low leakage current (<100μA), fitting the medical devices in direct electrical contact with the patients.

With the working efficiency up to 87% and the extremely low no-load power consumption below 0.075W, GEM12I is compliant with the latest USA energy regulation EISA 2007/DoE (Level VI) and EU ErP. 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 international safety regulations; moreover, it adopts the 94V-0 flame retardant plastic case that it can effectively prevent users from electric hazard.

Model Encoding

GEM12 I 05 - P1J


- DC plug type { P1J: Plug for standard model, 2.1ψ × 5.5ψ × 11mm, C+ tuning fork type
USB: USB(type A) for 5V model only
Other option available by customer requested (See page 4~5)

- Output voltage
Interchangeable AC plug
Rated wattage
Series name

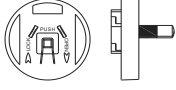
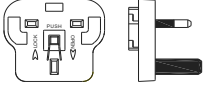
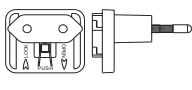
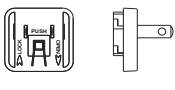
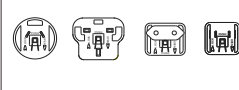
Applications

- Blood glucose meter
- Blood pressure meter
- Nebulizer
- Inhaler
- Portable medical device
- Sleep apnea devices

GTIN CODE

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

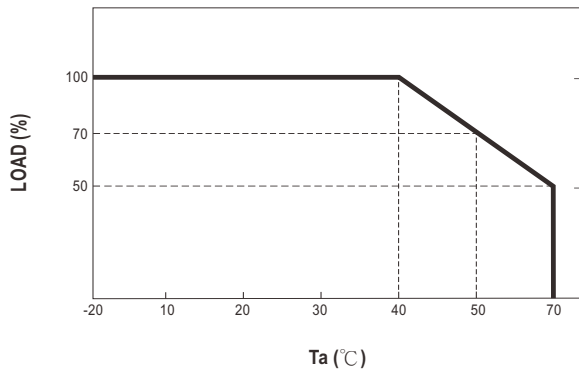
Interchangeable AC plug Specifically for GEM06/12/18/30/40/60I

TYPE					
	Australian type	U.K type	European type	US type	Mix four type
ORDER NO.	AC plug-AU2	AC plug-UK2	AC plug-EU2	AC plug-US2	AC plug-MIX2

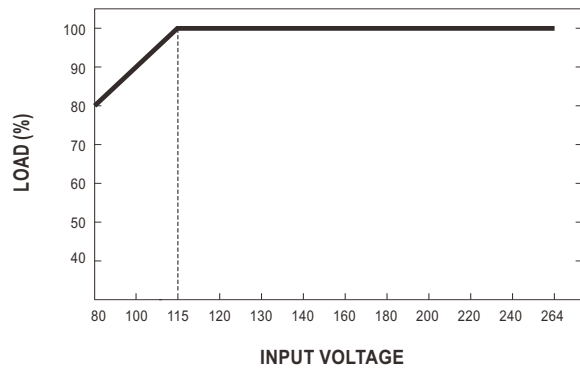
SPECIFICATION

ORDER NO.		GEM12I05- <div><input type="checkbox"/>=P1J USB</div>	GEM12I07-P1J	GEM12I09-P1J	GEM12I12-P1J	GEM12I15-P1J	GEM12I18-P1J	GEM12I24-P1J	GEM12I48-P1J
OUTPUT	SAFETY MODEL NO.	GEM12I05	GEM12I07	GEM12I09	GEM12I12	GEM12I15	GEM12I18	GEM12I24	GEM12I48
	DC VOLTAGE <div>Note.2</div>	5V	7.5V	9V	12V	15V	18V	24V	48V
	RATED CURRENT	2.4A	1.6A	1.33A	1A	0.8A	0.66A	0.5A	0.25A
	CURRENT RANGE	0 ~ 2.4A	0 ~ 1.6A	0 ~ 1.33A	0 ~ 1A	0 ~ 0.8A	0 ~ 0.66A	0 ~ 0.5A	0 ~ 0.25A
	RATED POWER (max.)	12W	12W	12W	12W	12W	12W	12W	12W
	RIPPLE & NOISE (max.) <div>Note.3</div>	60mVp-p	60mVp-p	60mVp-p	80mVp-p	80mVp-p	80mVp-p	80mVp-p	100mVp-p
	VOLTAGE TOLERANCE <div>Note.4</div>	± 5.0%	± 5.0%	± 4.0%	± 3.0%	± 3.0%	± 3.0%	± 2.0%	± 2.0%
	LINE REGULATION <div>Note.5</div>	± 1.0%	± 1.0%	± 1.0%	± 1.0%	± 1.0%	± 1.0%	± 1.0%	± 1.0%
	LOAD REGULATION <div>Note.6</div>	± 5.0%	± 5.0%	± 4.0%	± 3.0%	± 3.0%	± 3.0%	± 2.0%	± 2.0%
SETUP, RISE, HOLD UP TIME		500ms, 30ms, 16ms/230VAC 500ms, 30ms, 16ms/115VAC at full load							
INPUT	VOLTAGE RANGE <div>Note.7</div>	80 ~ 264VAC 113 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	80%	82%	82%	82.5%	84%	85%	85%	87%
	AC CURRENT	0.4A / 115VAC 0.2A / 230VAC							
	INRUSH CURRENT (max.)	Cold start 30A / 115VAC 60A / 230VAC							
	LEAKAGE CURRENT(max.)	Touch current < 100μA/264VAC							
PROTECTION	OVERLOAD	110 ~ 200% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	110 ~ 140% rated output voltage Protection type : Clamp by zener diode, output short							
ENVIRONMENT	WORKING TEMP.	-20 ~ +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 ~ 40℃)							
SAFETY & EMC (Note. 8)	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
	SAFETY STANDARDS	TUV BS EN/EN60601-1/BS EN/EN60601-1-11,ANSI/ AAMI ES60601-1/ES60601-1-11(3.1 version), CAN/CSA-C22 NO. 60601-1 3 rd edition, EAC TP TC 004 approved, GEM12I05-USB without BS EN/EN60601-1-11 , ANSI/ AAMIII ES60601-1-11							
	ISOLATION LEVEL	Primary - Secondary: 2 x MOPP							
	WITHSTAND VOLTAGE	I/P-O/P:5656VDC							
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH							
	EMC EMISSION	Parameter	Standard				Test Level / Note		
		Conducted emission	BS EN/EN55011 (CISPR11),FCC PART 15 / CISPR22				Class B		
		Radiated emission	BS EN/EN55011 (CISPR11),FCC PART 15 / CISPR22				Class B		
		Harmonic current	BS EN/EN61000-3-2				Class A		
		Voltage flicker	BS EN/EN61000-3-3				-----		
	EMC IMMUNITY	BS EN/EN60601-1-2, BS EN/EN61204-3							
		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 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz)		
		EFT bursts	BS EN/EN61000-4-4				Level 3, 2KV		
		Surge susceptibility	BS EN/EN61000-4-5				Level 3, 1KV/Line-Line		
		Conducted susceptibility	BS EN/EN61000-4-6				Level 2, 3V		
Magnetic field immunity		BS EN/EN61000-4-8				Level 4, 30A/m			
Voltage dip, interruption		BS EN/EN61000-4-11				>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods			
OTHERS		LIFE	3 years : 100% load 40℃, 12hours / day						
	MTBF	400Khrs min. MIL-HDBK-217F(25℃)							
	DIMENSION	73.9*39*48.5mm (L*W*H)							
	PACKING	115g ; 72pcs / 9.3kg / CARTON for cable connection; 78.5g ; 150pcs / 12.8kg / CARTON for USB connection							
CONNECTOR	PLUG	See page 4~5 ; other type available by customer requested							
	CABLE	See page 4~5 ; 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 0.1μf & 47μf 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 10% 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 http://www.meanwell.com) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx								

Derating Curve


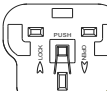
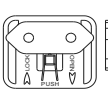
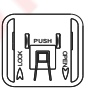


Static Characteristics

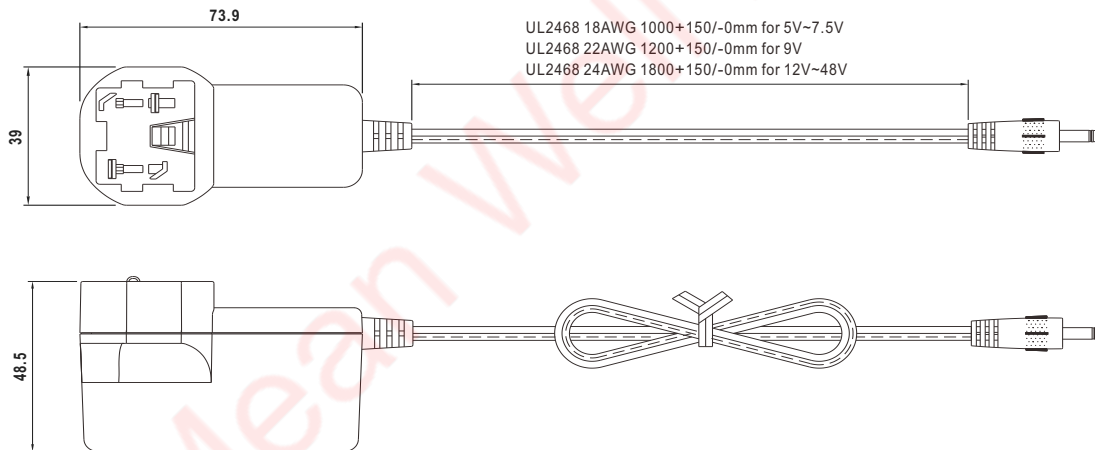


Mechanical Specification

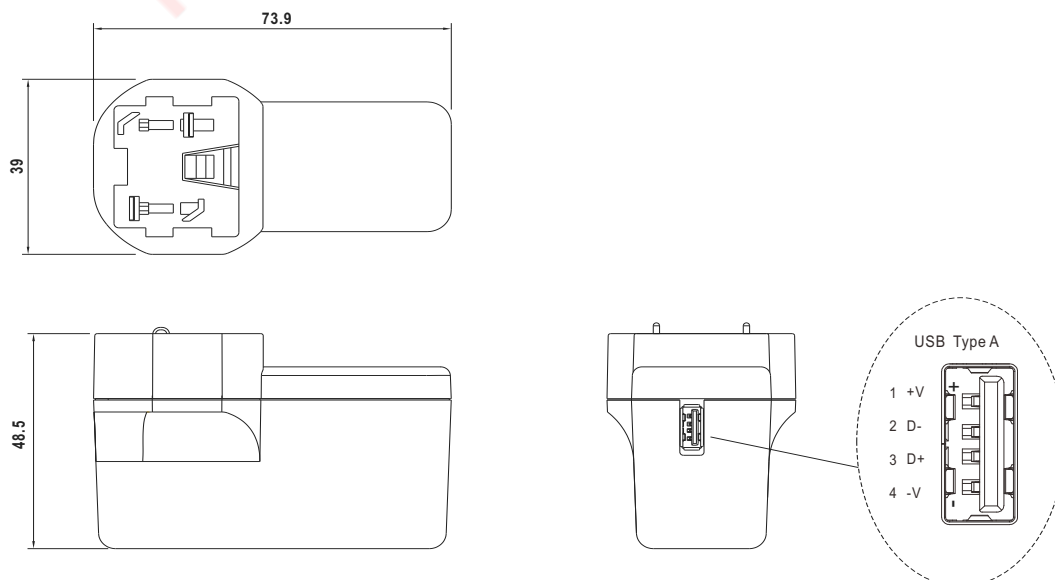
Unit:mm

TYPE				
	Australian type	U.K type	European type	US type

※Cable connection



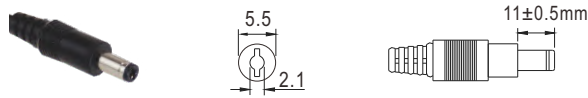


※USB connection



DC output plug

Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	
	Outside  Inside

DC plug changeable through:


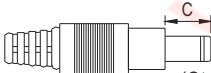
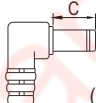


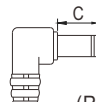

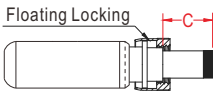

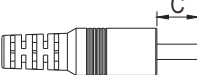
- Customization of the standard part with an optional DC plug according to the table (MOQ applicable)
- Quick adapter accessory (sold separately without MOQ)



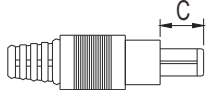

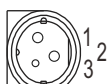
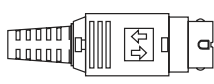


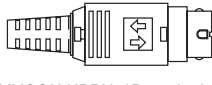


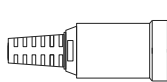

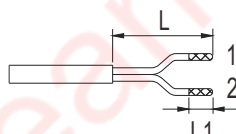
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

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
	 Floating Locking 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 OD	B ID	C L	Available (Current rating: 5A max.)
	 EIAJ equivalent	P3A	2.35	0.7	11.0	
		P3B	4.0	1.7	11.0	
		P3C	4.75	1.7	11.0	

Center Pin Style	Type No.	A	B	C	D	Quick Adapter Accessory
		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				Available (Current rating: 7.5A max.)
		PIN No.	Output			
   KYCON KPPX-3P equivalent	R6B	1	+Vo			
		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			
		2	-Vo			
		3	-Vo			
		4	+Vo			
Min. DIN 4 Pin with Lock (female)	Type No.	Pin Assignment				None
		PIN No.	Output			
   KYCON KPJX-CM-4S equivalent	R7BF	1	+Vo			
		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: 25 mm, L1: 10 mm)	by customer	1 (Ribbed)	+Vo			
		2 (Letter)	-Vo			

■ Installation Manual

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