



### ■ Features

- Interchangeable AC plugs (plug kit sold separately)
- Ultra slim, compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1/ES60601-1-11, EN60601-1/EN60601-1-11
- Extremely Low leakage current
- No load power consumption < 0.15W
- **Energy efficiency Level VI** ( except 5~9V for Level V )
- -30~+70°C wide range working temperature
- Class II power (no earth pin)
- Protections: Short circuit / Overload / Over voltage
- Fully enclosed plastic case
- 3 years warranty

### ■ Applications

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

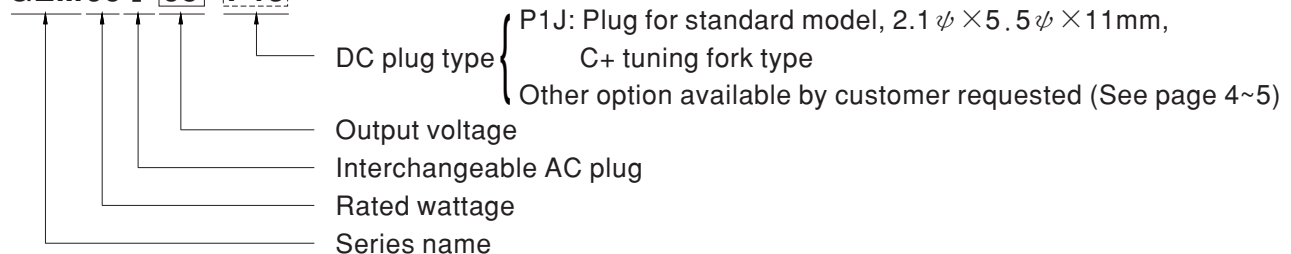
### ■ Description

GEM60I is a highly reliable, 60W 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. GEM60I 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 90% and the extremely low no-load power consumption below 0.15W, GEM60I is compliant with the latest USA energy regulation EISA 2007/DoE (Level VI) and EU ErP (5~9V for Level V). 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

**GEM60 I 05 -P1J**



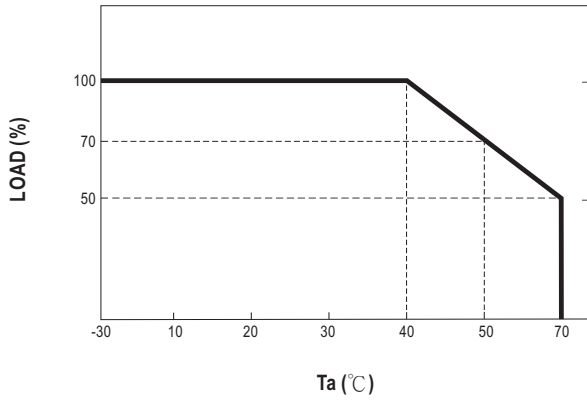
Interchangeable AC plug Specifically for GEM12I/18I/30I/40I/60I

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

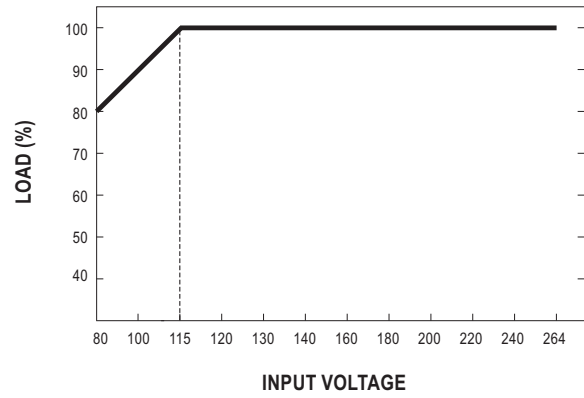
**SPECIFICATION**

ORDER NO.	GEM60I05-P1J	GEM60I07-P1J	GEM60I09-P1J	GEM60I12-P1J	GEM60I15-P1J	GEM60I18-P1J	GEM60I24-P1J	GEM60I48-P1J	
OUTPUT	<b>SAFETY MODEL NO.</b>	GEM60I05	GEM60I07	GEM60I09	GEM60I12	GEM60I15	GEM60I18	GEM60I24	GEM60I48
	<b>DC VOLTAGE</b> Note.2	5V	7.5V	9V	12V	15V	18V	24V	48V
	<b>RATED CURRENT</b>	6A	6A	5.5A	4.5A	4A	3.33A	2.5A	1.25A
	<b>CURRENT RANGE</b>	0 ~ 6A	0 ~ 6A	0 ~ 5.5A	0 ~ 4.5A	0 ~ 4A	0 ~ 3.33A	0 ~ 2.5A	0 ~ 1.25A
	<b>RATED POWER (max.)</b>	30W	45W	49.5W	54W	60W	60W	60W	60W
	<b>RIPPLE &amp; NOISE (max.)</b> Note.3	100mVp-p	100mVp-p	100mVp-p	100mVp-p	120mVp-p	120mVp-p	120mVp-p	150mVp-p
	<b>VOLTAGE TOLERANCE</b> Note.4	±5.0%	±5.0%	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%
	<b>LINE REGULATION</b> Note.5	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	<b>LOAD REGULATION</b> Note.6	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%
	<b>SETUP, RISE, HOLD UP TIME</b>	500ms, 30ms, 10ms/230VAC      500ms, 30ms, 10ms/115VAC at full load							
INPUT	<b>VOLTAGE RANGE</b> Note.7	80 ~ 264VAC		113 ~ 370VDC					
	<b>FREQUENCY RANGE</b>	47 ~ 63Hz							
	<b>EFFICIENCY (Typ.)</b>	80%	85%	87%	88%	88%	88%	88%	90%
	<b>AC CURRENT</b>	1.5A / 115VAC		0.8A / 230VAC					
	<b>INRUSH CURRENT (max.)</b>	Cold start 50A / 115VAC		100A / 230VAC					
PROTECTION	<b>LEAKAGE CURRENT(max.)</b>	Touch current < 100µA/264VAC							
	<b>OVERLOAD</b>	105 ~ 160% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	<b>OVER VOLTAGE</b>	110 ~ 140% rated output voltage Protection type : Clamp by zener diode, output short							
ENVIRONMENT	<b>WORKING TEMP.</b>	-30 ~ +70°C (Refer to "Derating Curve")							
	<b>WORKING HUMIDITY</b>	20% ~ 90% RH non-condensing							
	<b>STORAGE TEMP., HUMIDITY</b>	-30 ~ +85°C, 10 ~ 95% RH non-condensing							
	<b>TEMP. COEFFICIENT</b>	±0.03% / °C (0 ~ 40°C)							
	<b>VIBRATION</b>	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
SAFETY & EMC (Note. 8)	<b>SAFETY STANDARDS</b>	TUV EN60601-1/EN60601-1-11,ANSI/ AAMI ES60601-1/ES60601-1-11(3.1 version), CAN/CSA-C22 3 <sup>rd</sup> edition, EAC TP TC 004 approved							
	<b>ISOLATION LEVEL</b>	Primary - Secondary: 2 x MOPP							
	<b>WITHSTAND VOLTAGE</b>	I/P-O/P:5656VDC							
	<b>ISOLATION RESISTANCE</b>	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH							
	<b>EMC EMISSION</b>	<b>Parameter</b>	<b>Standard</b>		<b>Test Level / Note</b>				
		Conducted emission	EN55011 (CISPR11),FCC PART 18		Class B				
		Radiated emission	EN55011 (CISPR11),FCC PART 18		Class B				
		Harmonic current	EN61000-3-2		Class A				
	<b>EMC IMMUNITY</b>	Voltage flicker	EN61000-3-3		-----				
		<b>Parameter</b>	<b>Standard</b>		<b>Test Level / Note</b>				
ESD		EN61000-4-2		Level 4, 15KV air ; Level 4, 8KV contact					
RF field susceptibility		EN61000-4-3		Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~6GHz)					
EFT bursts		EN61000-4-4		Level 3, 2KV Line-Line,1KV ineterconnect Lines at 100KHz rate					
Surge susceptibility		EN61000-4-5		Level 3, 2KV/Line-Line					
Conducted susceptibility		EN61000-4-6		Level 2, 3V					
Magnetic field immunity		EN61000-4-8		Level 4, 30A/m					
Voltage dip, interruption	EN61000-4-11		>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods						
OTHERS	<b>LIFE</b>	3 years : 100% load 40°C, 8hours / day							
	<b>MTBF</b>	400Khrs min. MIL-HDBK-217F(25°C)							
	<b>DIMENSION</b>	75.5*39.1*56.2mm (L*W*H)							
	<b>PACKING</b>	200g ; 60pcs / 13kg / CARTON							
CONNECTOR	<b>PLUG</b>	See page 4-5 ; other type available by customer requested							
	<b>CABLE</b>	See page 4-5 ; other type available by customer requested							
NOTE	<p>1.All parameters are specified at 230VAC input, rated load, 25°C 70% RH ambient.</p> <p>2.DC voltage: The output voltage set at point measure by plug terminal &amp; 50% load.</p> <p>3.Ripple &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf &amp; 47µf capacitor.</p> <p>4.Tolerance: includes set up tolerance, line regulation, load regulation.</p> <p>5.Line regulation is measured from low line to high line at rated load.</p> <p>6.Load regulation is measured from 10% to 100% rated load.</p> <p>7.Derating may be needed under low input voltage. Please check the derating curve for more details.</p> <p>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 <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</p>								

### Derating Curve



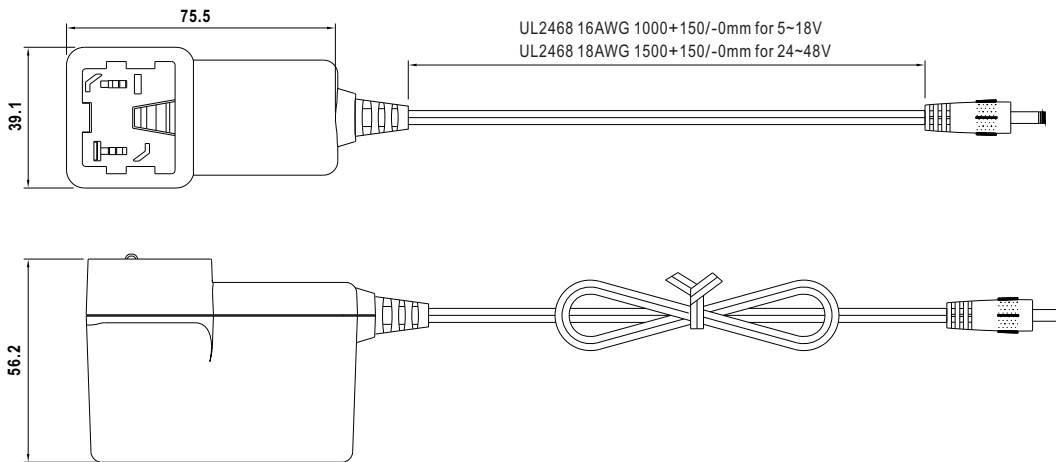
### Static Characteristics



### Mechanical Specification

Unit:mm

TYPE				
	Australian type	U.K type	European type	US type





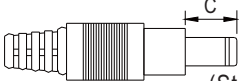
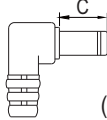

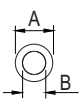
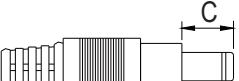
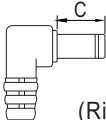


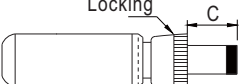


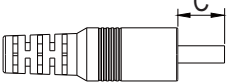


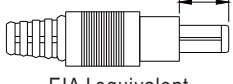

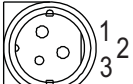
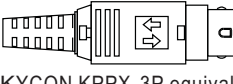
### Plug Assignment

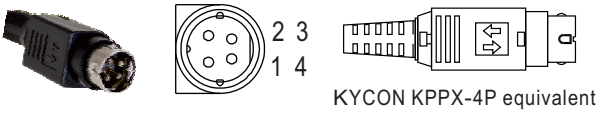

Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	Outside  Inside

◎ Optional DC plug:

Tuning Fork Style		Type No.	A	B	C	
			OD	ID	L	
 	 (Straight)	P1I	5.5	2.1	9.5	
		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	
		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	
   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	B	C	
			OD	ID	L	
   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
			OD	ID	L	Center Pin
   EIAJ equivalent	P4A	5.5	3.4	11.0	1.0	
		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			
			2	-Vo		
			3	+Vo		

Min. DIN 4 Pin with Lock (male)	Type No.	Pin Assignment	
		PIN No.	Output
 <p>KYCON KPPX-4P equivalent</p>	R7B	1	+Vo
		2	-Vo
		3	-Vo
		4	+Vo
Stripped and tinned leads	Type No.	Pin Assignment	
		PIN No.	Output
 <p>Length of Land L1 by request (MW's standard length, L: <u>25</u> mm, L1: <u>10</u> mm)</p>	by customer	1 (Ribbed or White)	+Vo
		2 (Letter or Black)	-Vo

■ **Installation Manual**

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