



■ 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
- Various DC plug quick adaptor accessories available. Contact TRC Electronics for details.
- 3 years warranty

■ Applications

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

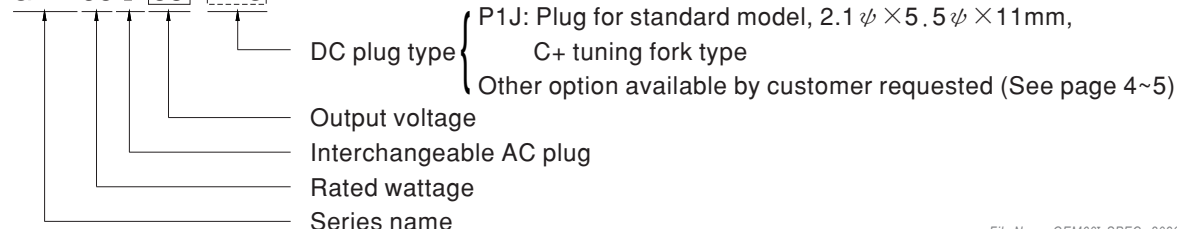
■ Description

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.

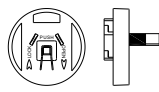
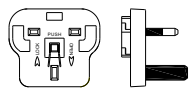
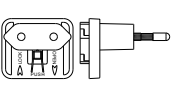
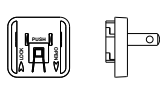
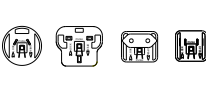
With the working efficiency up to 90% and the extremely low no-load power consumption below 0.15W, GEM60I is compliant with the latest USA energy regulation EISA 2007/DoE (Level VI) and EU ErP (5~9V for Level V). The supreme feature allows the adaptor to save the energy when it is under either the operating 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



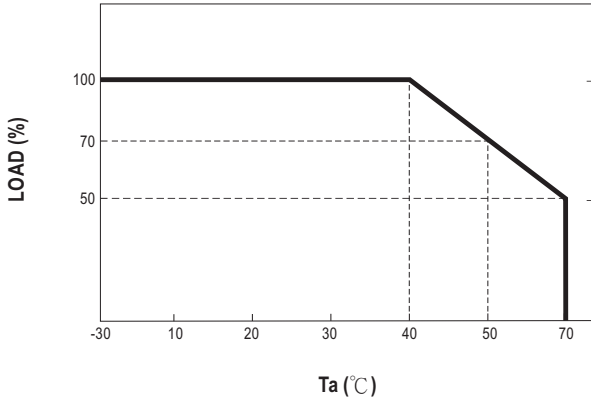
Interchangeable AC plug Specifically for GEM06/12/18/30/40/60I

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

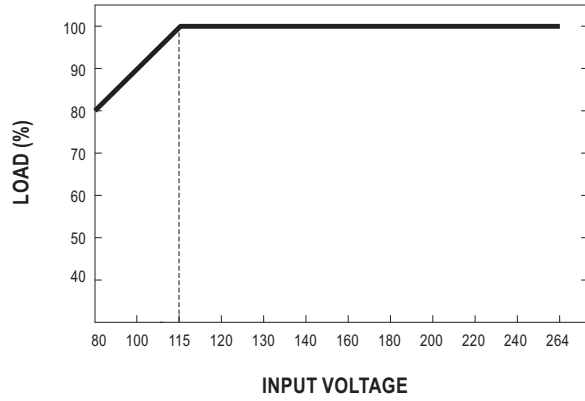
SPECIFICATION

ORDER NO.	GEM60I05-P1J	GEM60I07-P1J	GEM60I09-P1J	GEM60I12-P1J	GEM60I15-P1J	GEM60I18-P1J	GEM60I24-P1J	GEM60I48-P1J	
OUTPUT	SAFETY MODEL NO.	GEM60I05	GEM60I07	GEM60I09	GEM60I12	GEM60I15	GEM60I18	GEM60I24	GEM60I48
	DC VOLTAGE <small>Note.2</small>	5V	7.5V	9V	12V	15V	18V	24V	48V
	RATED CURRENT	6A	6A	5.5A	4.5A	4A	3.33A	2.5A	1.25A
	CURRENT RANGE	0 ~ 6A	0 ~ 6A	0 ~ 5.5A	0 ~ 4.5A	0 ~ 4A	0 ~ 3.33A	0 ~ 2.5A	0 ~ 1.25A
	RATED POWER (max.)	30W	45W	50W	54W	60W	60W	60W	60W
	RIPPLE & NOISE (max.) <small>Note.3</small>	100mVp-p	100mVp-p	100mVp-p	100mVp-p	120mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE TOLERANCE <small>Note.4</small>	±5.0%	±5.0%	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%
	LINE REGULATION <small>Note.5</small>	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
LOAD REGULATION <small>Note.6</small>	±5.0%	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±2.0%	±2.0%	
SETUP, RISE, HOLD UP TIME	500ms, 30ms, 10ms/230VAC 500ms, 30ms, 10ms/115VAC at full load								
INPUT	VOLTAGE RANGE <small>Note.7</small>	80 ~ 264VAC 113 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	80%	85%	87%	88%	88%	88%	88%	90%
	AC CURRENT	1.5A / 115VAC 0.8A / 230VAC							
	INRUSH CURRENT (max.)	Cold start 50A / 115VAC 100A / 230VAC							
LEAKAGE CURRENT(max.)	Touch current < 100µA/264VAC								
PROTECTION	OVERLOAD	105 ~ 160% 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.	-30 ~ +70°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20% ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-30 ~ +85°C, 10 ~ 95% RH non-condensing							
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 40°C)							
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes								
SAFETY & EMC <small>(Note. 8)</small>	SAFETY STANDARDS	TUV EN60601-1/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							
	ISOLATION LEVEL	Primary - Secondary: 2 x MOPP							
	WITHSTAND VOLTAGE	I/P-O/P:5656VDC							
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH							
	EMC EMISSION	Parameter	Standard		Test Level / Note				
		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				
	Voltage flicker	EN61000-3-3		-----					
	EMC IMMUNITY	Parameter	Standard		Test Level / Note				
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	LIFE	3 years : 100% load 40°C, 8hours / day							
	MTBF	400Khrs min. MIL-HDBK-217F(25°C)							
	DIMENSION	75.5*39.1*56.2mm (L*W*H)							
	PACKING	200g ; 60pcs / 13kg / CARTON							
CONNECTOR	PLUG	See page 4 - 5 ; other type available by customer requested							
	CABLE	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. 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."</p>								

■ Derating Curve


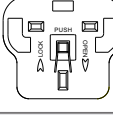
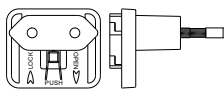
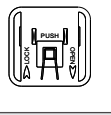


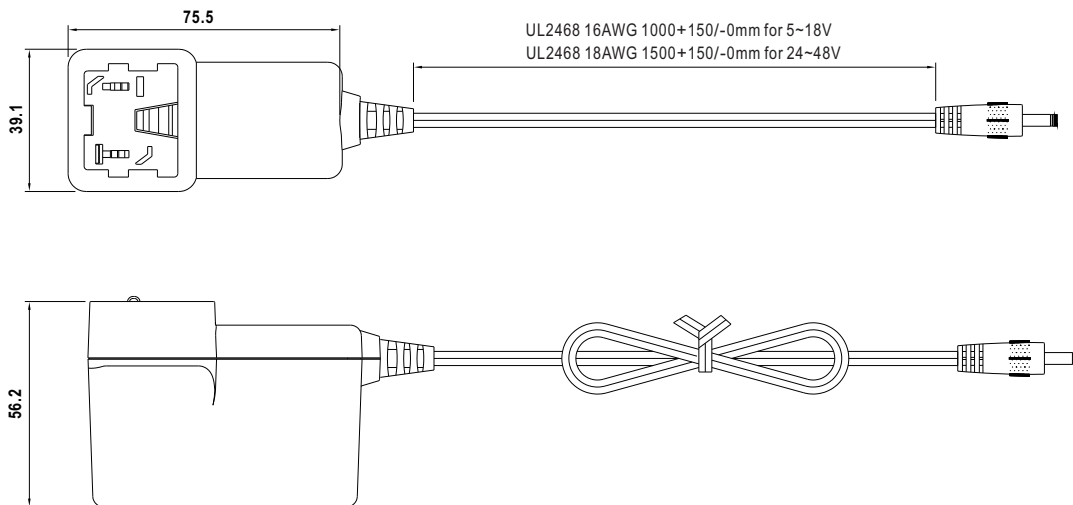
■ Static Characteristics



■ Mechanical Specification

Unit:mm

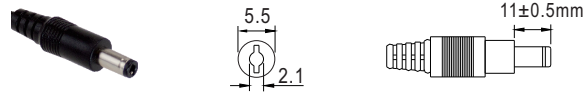


TYPE	Australian type	U.K type	European type	US type
				



■ DC output plug

◎ Standard plug: P1J

Unit:mm

P1J	Pin Assignment
	 Outside  Inside

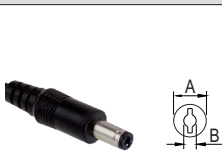
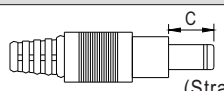
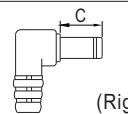


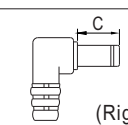

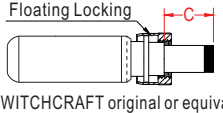

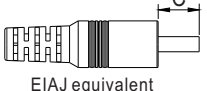
◎ DC plug changeable through:





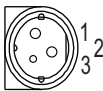
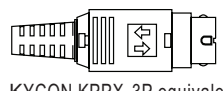

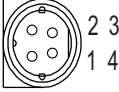
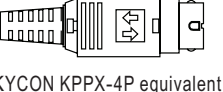

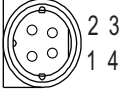
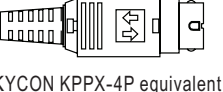
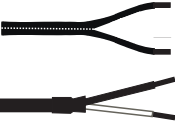
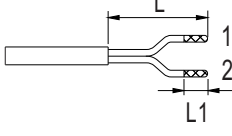
- (1) Customization of the standard part with an optional DC plug according to the table (MOQ applicable)
- (2) Quick adapter accessory (sold separately without MOQ)

Please refer to below table : 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		
	 (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
	 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	
   <p>EIAJ equivalent</p>	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.)		
   <p>KYCON KPPX-3P equivalent</p>	R6B	PIN No.	Output			
		1	+Vo			
		2	-Vo			
   <p>KYCON KPPX-4P equivalent</p>	R7B	Pin Assignment				
		PIN No.	Output			
		1	+Vo			
		2	-Vo			
   <p>KYCON KPPX-4P equivalent</p>	R7B	3	-Vo			
		4	+Vo			
		Pin Assignment				
		PIN No.	Output			
Stripped and tinned leads	Type No.	Pin Assignment		None		
		1 (Ribbed or White)	+Vo			
  <p>Length of Land L1 by request (MW's standard length, L: <u>25</u> mm, L1: <u>10</u> mm)</p>	by customer	2 (Letter or Black)	-Vo			