60W AC-DC Reliable Green Medical Adaptor GSM60B series

User's Manual

Video

(Ⅴ for 5~9V)

BS EN/EN60601-1/-1-11 ANSI/AAMI ES60601-1/-1-11 IEC60601-1/-1-11 TPTC004

Features

- 2 pole AC inlet IEC320-C8, Class Ⅱ power unit
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1/-1-11 and IEC/BS EN/EN60601-1/-1-11
- Extremely low leakage current
- No load power consumption<0.1W
- Energy efficiency level VI and meet CoC Version 5 (Except 5~9V for Level V)
- -30~+70℃ wide range working temperature
- Protections: Short circuit / Overload / Over voltage / Over temperature
- LED indicator for power on
- Lifetime > 95 K hours
- 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

- Mobile clinical workstation
- Oral irrigator
- Portable hemodialysis machine
- Breath Machine
- Medical computer monitor

GTIN CODE

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

Description

GSM60B is a highly reliable, 60W desktop style single-output green medical adaptor series. This product is equipped with a 2-pin (no FG) standard IEC320-C8 power plug, adopting the input range from 80VAC to 264VAC. The entire series supplies different output voltages between 5VDC and 48VDC that can satisfy the demands for various kinds of medical electrical devices. The circuitry design meets the international medical standards (2*MOPP), having an ultra low leakage current (<50μA), fitting the medical devices in direct electrical contact with the patients.

With the efficiency up to 91.5% and the extremely low no-load power consumption below 0.1W, GSM60B is compliant with USA EISA 2007/DoE, Canada NRCan, Australia and New Zealand MEPS, EU ErP,and meet Code of Conduct (CoC) Version 5. The supreme feature allows the adaptor to save the energy when it is either under the operating mode or the standby mode. The entire series utilizes the 94V-0 flame retardant plastic case, providing the double insulation that effectively prevents electrical shock. GSM60B is approved with the international medical safety certificates.

Model Encoding

GSM60B 05 - P1J

- P1J → DC plug type: P1J: Standard model,2.1φx5.5φx11mm,C+,tuning fork type; Other options available by customer requested (see Page 4~5)
- 05 → Output voltage
- B → IEC320-C8 AC inlet
- 60 → Rated wattage
- GSM → Series name

SPECIFICATION

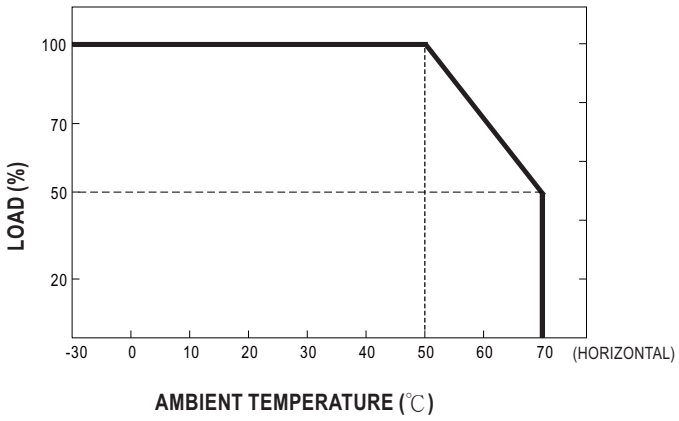
ORDER NO.		GSM60B05-P1J	GSM60B07-P1J	GSM60B09-P1J	GSM60B12-P1J	GSM60B15-P1J	GSM60B18-P1J	GSM60B24-P1J	GSM60B48-P1J
OUTPUT	SAFETY MODEL NO.	GSM60B05	GSM60B07	GSM60B09	GSM60B12	GSM60B15	GSM60B18	GSM60B24	GSM60B48
	DC VOLTAGE Note.2	5V	7.5V	9V	12V	15V	18V	24V	48V
	RATED CURRENT	6A	6A	6A	5A	4A	3.33A	2.5A	1.25A
	CURRENT RANGE	0 ~ 6A	0 ~ 6A	0 ~ 6A	0 ~ 5A	0 ~ 4A	0 ~ 3.33A	0 ~ 2.5A	0 ~ 1.25A
	RATED POWER (max.)	30W	45W	54W	60W	60W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.3	80mVp-p	80mVp-p	100mVp-p	100mVp-p	100mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE TOLERANCE Note.4	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±3.0%	±2.5%
	LINE REGULATION Note.5	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±3.0%	±2.5%
	SETUP, RISE TIME Note.6	1000ms, 30ms / 230VAC 1500ms, 30ms / 115VAC at full load							
	HOLD UP TIME (Typ.)	50ms / 230VAC 16ms / 115VAC at full load							
INPUT	VOLTAGE RANGE Note.7	80 ~ 264VAC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	81.5%	86%	87.5%	88%	88.5%	89%	90%	91.5%
	AC CURRENT (Typ.)	1.4A / 115VAC 1A / 230VAC							
	INRUSH CURRENT (Typ.)	Cold start 30A / 115VAC 60A / 230VAC							
	LEAKAGE CURRENT(max.)	Touch current < 50μA/264VAC							
PROTECTION	OVERLOAD	105 ~ 160% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.2 ~ 7,0V	7.8 ~ 10.2V	9.4 ~ 12.2V	12.6 ~ 16.2V	15.7 ~ 20.3V	18.9 ~ 24.3V	25.2 ~ 32.4V	50.4 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20% ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing							
	TEMP. COEFFICIENT	±0.03% / ℃ (0 ~ 40℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
	OPERATING ALTITUDE Note.8	3000 meters							
SAFETY & EMC (Note. 9)	SAFETY STANDARDS	IEC 60601-1:2005+A1+A2; IEC 60601-1-11:2015+A1,TUV BS EN/ EN 60601-1:2006+A1+A12+A2; BS EN/ EN 60601-1-11:2015+A1 ANSI/AAMI ES60601-1:2005+A2; ANSI/AAMI HA60601-1-11+A1,CAN/CSA C22.2 No. 60601-1:2014+A2; CSA C22.2 NO. 60601-1-11:2015+A1,PSE J60950-1(48V only); EAC TP TC 004; KC K60950-1(48V only) approved							
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP							
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC							
	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, CAN ICES-3(B)/NMB-3(B)				Class B		
		Radiated emission	BS EN/EN55011 (CISPR11), FCC PART 15 / CISPR22, CAN ICES-3(B)/NMB-3(B)				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 3, 10V		
		Magnetic field immunity	BS EN/EN61000-4-8				Level 4, 30A/m		
		Voltage dip, interruption	BS EN/EN61000-4-11				100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods		
OTHERS	MTBF	3491.2K hrs min. Telcordia SR-332 (Bellcore) ; 694.3K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	125*50*31.5mm (L*W*H)							
	PACKING	0.32Kg; 40pcs/13.8Kg/1.04CUFT							
CONNECTOR	PLUG	See page 4~5; Other type available by customer requested							
	CABLE	See page 4~5; Other type available by customer requested							

NOTE

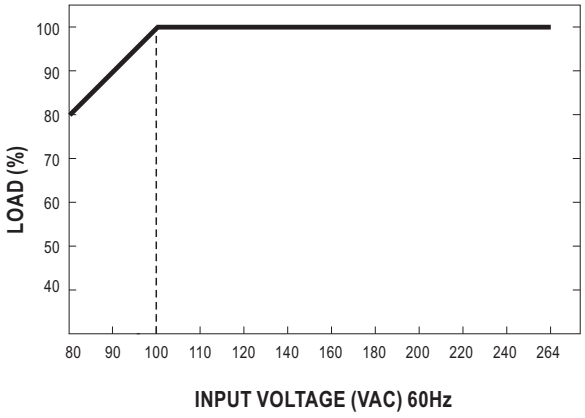
1. All parameters are specified at 230VAC input, rated load, 25℃ 70% RH ambient.
2. DC voltage: The output voltage set at point measure by plug terminal & 50% load.
3. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1 μF & 47 μF capacitor.
4. Tolerance: includes set up tolerance, line regulation, load regulation.
5. Line regulation is measured from low line to high line at rated load.
6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. Derating may be needed under low input voltages. Pleas check the derating curve for more details.
8. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
9. 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)

※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ Derating Curve

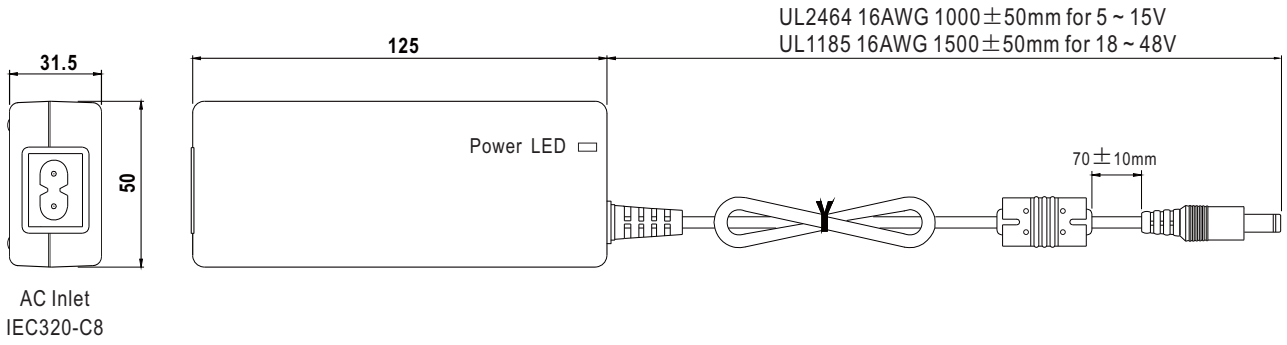


■ Static Characteristics



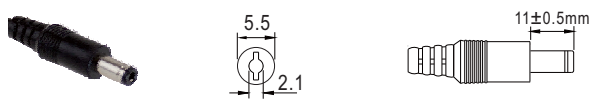
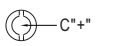
■ Mechanical Specification

Case No. GSM60B Unit:mm



■ DC output plug

◎ Standard plug: P1J

P1J	Pin Assignment
	 Outside  Inside

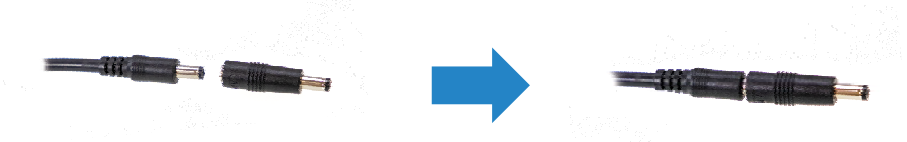
◎ DC plug changeable through:

(1) Customization of the standard part with an optional DC plug according to the table (MOQ applicable)

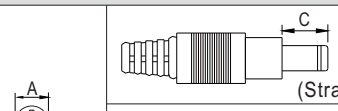
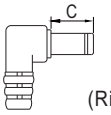
(2) Quick adapter accessory (sold separately without MOQ)

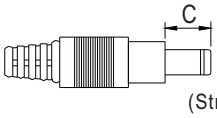
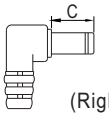
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

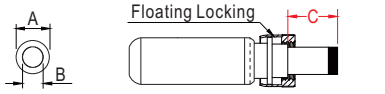
Example quick adapter accessory:



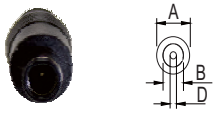
◎ Optional DC plug: (Available in customized cable or quick adapter)

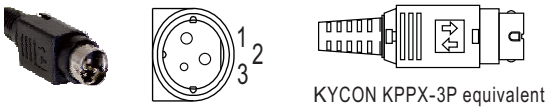
Tuning Fork Style	Type No.	A OD	B ID	C L	Quick Adapter Accessory
  (Straight)	P1I	5.5	2.1	9.5	Available (Current rating: 7.5A max.)
	P1L	5.5	2.5	9.5	
	P1M	5.5	2.5	11.0	
 (Right-angled)	P1IR	5.5	2.1	9.5	
	P1JR	5.5	2.1	11.0	
	P1LR	5.5	2.5	9.5	
	P1MR	5.5	2.5	11.0	

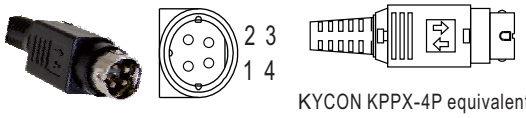
Barrel Style	Type No.	A OD	B ID	C L	
  (Straight)	P2I	5.5	2.1	9.5	None
	P2J	5.5	2.1	11.0	
	P2L	5.5	2.5	9.5	
	P2M	5.5	2.5	11.0	
 (Right-angled)	P2IR	5.5	2.1	9.5	
	P2JR	5.5	2.1	11.0	
	P2LR	5.5	2.5	9.5	
	P2MR	5.5	2.5	11.0	

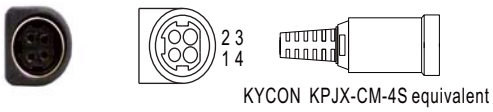
Lock Style	Type No.	A OD	B ID	C L	
  SWITCHCRAFT original or equivalent	P2S(S761K)	5.53	2.03	12.06	None
	P2K(761K)	5.53	2.54	12.06	
	P2C(S760K)	5.53	2.03	9.52	
	P2D(760K)	5.53	2.54	9.52	

Min. Pin Style	Type No.	A OD	B ID	C L	
 EIAJ equivalent	P3A	2.35	0.7	11.0	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 OD	B ID	C L	D 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		Quick Adapter Accessory
		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		Quick Adapter Accessory
		PIN No.	Output	
 KYCON KPPX-4P equivalent	R7B	1	+Vo	Available (Current rating: 7.5A max.)
		2	-Vo	
		3	-Vo	
		4	+Vo	

Min. DIN 4 Pin with Lock (female)	Type No.	Pin Assignment		Quick Adapter Accessory
		PIN No.	Output	
 KYCON KPJX-CM-4S equivalent	R7BF	1	+Vo	None
		2	-Vo	
		3	-Vo	
		4	+Vo	

DIN 5 Pin (male)	Type No.	Pin Assignment		Quick Adapter Accessory
		PIN No.	Output	
	R1B	1	-Vo	Available (Current rating: 7.5A max.)
		2	-Vo	
		3	+Vo	
		4	-Vo	
		5	+Vo	

Stripped and tinned leads	Type No.	Pin Assignment		Quick Adapter Accessory
		PIN No.	Output	
 Length of Land L1 by request (MW's standard length, L: 25 mm, L1: 5 mm) (NOTE: The wire color is for reference only, please refer to the actual product)	by customer	1	+Vo	None
		2	-Vo	

■ Installation Manual

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