



User's Manual

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

Features

- 3 pole AC inlet IEC320-C14, Class I power unit
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/BS EN/EN60601-1
- Extremely low leakage current
- No load power consumption < 0.15W
- Energy efficiency level VI and meet CoC Version 5 (Except 5~9V for Level V)
- -30~+70°C wide range working temperature
- Protections: Short circuit / Overload / Over voltage
- LED indicator for power on
- Lifetime > 90 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>

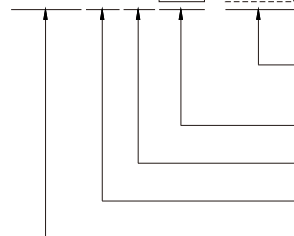
Description

GSM40A is a highly reliable, 40W single-output green medical adaptor series. This product is a class I power unit (with FG), equipped with a standard IEC320-C14 AC inlet and adopting the input range from 80VAC to 264VAC. The entire series supplies different models with output voltages between 5VDC and 48VDC that 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 efficiency up to 91% and the extremely low no-load power consumption below 0.15W, GSM40A 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. GSM40A is certified for the international medical safety regulations.

Model Encoding

GSM40A 05 - P1J



DC plug type { P1J: Standard model, 2.1 φ x 5.5 φ x 11 mm, C+, tuning fork type
Other options available by customer requested (see Page 4~5)

Output voltage
IEC320-C14 AC inlet
Rated wattage
Series name



SPECIFICATION

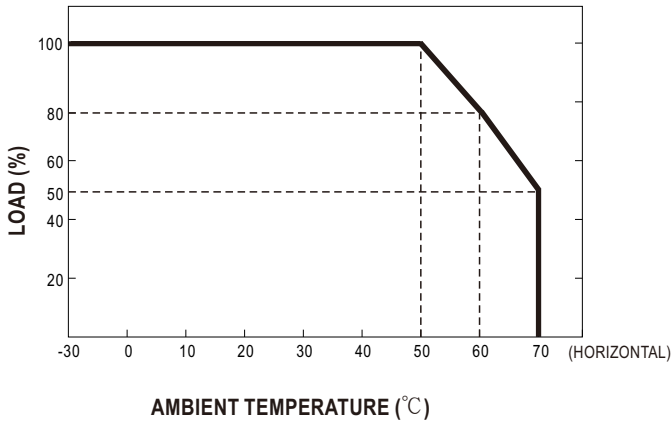
ORDER NO.	GSM40A05-P1J	GSM40A07-P1J	GSM40A09-P1J	GSM40A12-P1J	GSM40A15-P1J	GSM40A18-P1J	GSM40A24-P1J	GSM40A48-P1J			
OUTPUT	SAFETY MODEL NO.	GSM40A05	GSM40A07	GSM40A09	GSM40A12	GSM40A15	GSM40A18	GSM40A24	GSM40A48		
	DC VOLTAGE Note.2	5V	7.5V	9V	12V	15V	18V	24V	48V		
	RATED CURRENT	5A	5.34A	4.45A	3.34A	2.67A	2.22A	1.67A	0.84A		
	CURRENT RANGE	0.1 ~ 5A	0.1 ~ 5.34A	0.1 ~ 4.45A	0.1 ~ 3.34A	0.1 ~ 2.67A	0.1 ~ 2.22A	0.1 ~ 1.67A	0.1 ~ 0.84A		
	RATED POWER (max.)	25W	40W	40W	40W	40W	40W	40W	40W		
	RIPPLE & NOISE (max.) Note.3	80mVp-p	80mVp-p	100mVp-p	100mVp-p	100mVp-p	120mVp-p	150mVp-p	150mVp-p		
	VOLTAGE TOLERANCE Note.4	±5.0%	±5.0%	±5.0%	±3.0%	±3.0%	±3.0%	±2.5%	±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%	±2.5%	±2.5%		
	SETUP, RISE TIME Note.6	1000ms, 30ms / 230VAC 1500ms, 30ms / 115VAC at full load									
HOLD UP TIME (Typ.)	50ms / 230VAC 24ms / 115VAC at full load										
INPUT	VOLTAGE RANGE Note.7	80 ~ 264VAC									
	FREQUENCY RANGE	47 ~ 63Hz									
	EFFICIENCY (Typ.)	81%	85.5%	86%	88%	88.5%	89.5%	90%	91%		
	AC CURRENT (Typ.)	1A / 115VAC 0.5A / 230VAC									
	INRUSH CURRENT (Typ.)	Cold start 30A/115VAC 60A / 230VAC									
LEAKAGE CURRENT(max.)	Earth leakage current < 100 μ A/264VAC , Touch current < 100 μ A/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									
ENVIRONMENT	WORKING TEMP.	-30 ~ +70 $^{\circ}$ C (Refer to "Derating Curve")									
	WORKING HUMIDITY	20% ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-40 ~ +85 $^{\circ}$ C, 10 ~ 95% RH non-condensing									
	TEMP. COEFFICIENT	±0.03% / $^{\circ}$ C (0~50 $^{\circ}$ C)									
	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, TUV BS EN/EN 60601-1:2006+A1+A12+A2, ANSI/AAMI ES60601-1:2005+A2, CAN/CSA C22.2 No. 60601-1:2014+A2, EAC TP TC 004 approved									
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP									
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:SHORT									
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25 $^{\circ}$ C / 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 , 2KV/Line-FG			
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	3613.2K hrs min. Telcordia SR-332 (Bellcore) ; 740.7K hrs min. MIL-HDBK-217F (25 $^{\circ}$ C)									
	DIMENSION	125*50*31.5mm (L*W*H)									
	PACKING	0.25Kg; 40pcs/ 12Kg/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	<p>1. All parameters are specified at 230VAC input, rated load, 25$^{\circ}$C 70% RH ambient.</p> <p>2. DC voltage: The output voltage set at point measure by plug terminal & 50% load.</p> <p>3. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1 μF & 47 μF 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. 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.</p> <p>7. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>8. The ambient temperature derating of 3.5$^{\circ}$C/1000m with fanless models and of 5$^{\circ}$C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>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)</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p>										



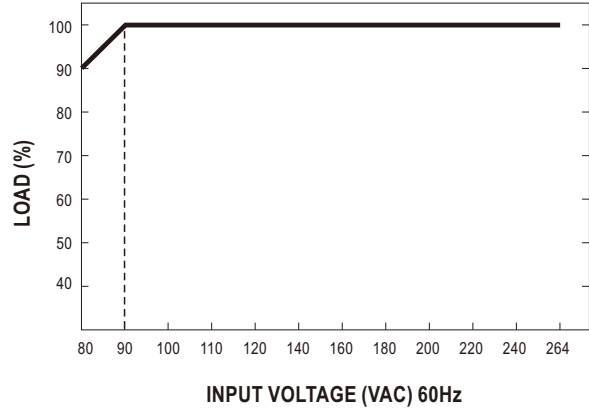
40W AC-DC Reliable Green Medical Adaptor

GSM40A series

■ Derating Curve



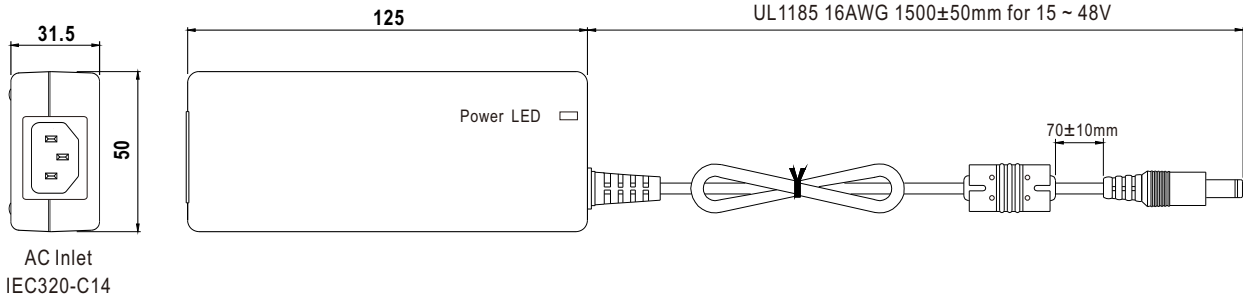
■ Static Characteristics



■ Mechanical Specification

(Unit: mm, tolerance ± 1mm)

Case No. GS60A



■ DC output plug

◎ Standard plug: P1J

P1J	Pin Assignment
	Outside ⊖ ⊕ Inside -V connected to AC FG(standard) -V not connected to AC FG(optional)

◎ 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)


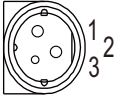
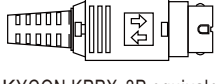

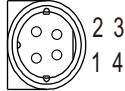
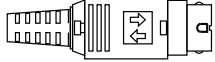


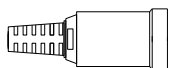




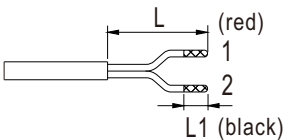
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

Example quick adapter accessory:



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

Tuning Fork Style		Type No.	A	B	C	Quick Adapter Accessory	
			OD	ID	L		
		P1I (Straight)	5.5	2.1	9.5	Available (Current rating: 7.5A max.)	
		P1L (Straight)	5.5	2.5	9.5		
		P1M (Straight)	5.5	2.5	11.0		
		P1IR (Right-angled)	5.5	2.1	9.5		
		P1JR (Right-angled)	5.5	2.1	11.0		
		P1LR (Right-angled)	5.5	2.5	9.5		
		P1MR (Right-angled)	5.5	2.5	11.0		
Barrel Style		Type No.	A	B	C		
			OD	ID	L		
		P2I (Straight)	5.5	2.1	9.5	None	
		P2J (Straight)	5.5	2.1	11.0		
		P2L (Straight)	5.5	2.5	9.5		
		P2M (Straight)	5.5	2.5	11.0		
		P2IR (Right-angled)	5.5	2.1	9.5		
		P2JR (Right-angled)	5.5	2.1	11.0		
		P2LR (Right-angled)	5.5	2.5	9.5		
		P2MR (Right-angled)	5.5	2.5	11.0		
Lock Style		Type No.	A	B	C		
			OD	ID	L		
		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	B	C		
			OD	ID	L		
		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	D	
			OD	ID	L	Center Pin	
		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		Available (Current rating: 7.5A max.)
   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
   KYCON KPJX-CM-4S equivalent	R7BF	1	+Vo	
		2	-Vo	
		3	-Vo	
		4	+Vo	
DIN 5 Pin (male)	Type No.	Pin Assignment		Available (Current rating: 7.5A max.)
  	R1B	1	-Vo	
		2	-Vo	
		3	+Vo	
		4	-Vo	
		5	+Vo	
Stripped and tinned leads	Type No.	Pin Assignment		None
  Length of Land L1 by request (MW's standard length, L: <u>25</u> mm, L1: <u>5</u> mm) (NOTE: The wire color is for reference only, please refer to the actual product)	by customer	1	+Vo	
		2	-Vo	

■ Installation Manual

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