



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
- -30~+70°C wide range working temperature
- Protections: Short circuit / Overload / Over voltage / Over temperature
- LED indicator for power on
- Lifetime > 130 K hours
- 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

■ Applications

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

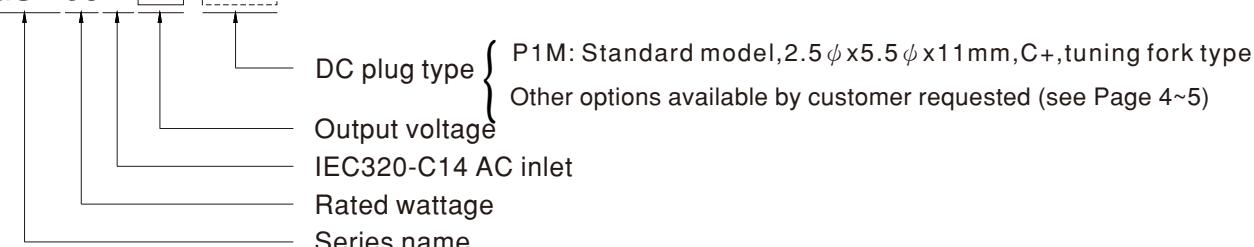
■ Description

GSM90A is a highly reliable, 90W desktop style single-output green medical adaptor series. This product is equipped with a 3-pin (with FG) standard IEC320-C14 power plug, adopting the input range from 80VAC to 264VAC. The entire series supplies different output voltages between 12VDC 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 (<100 μ A), 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, GSM90A 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. GSM90A is approved with the international medical safety certificates.

■ Model Encoding

GSM90 A [12] - P1M



SPECIFICATION

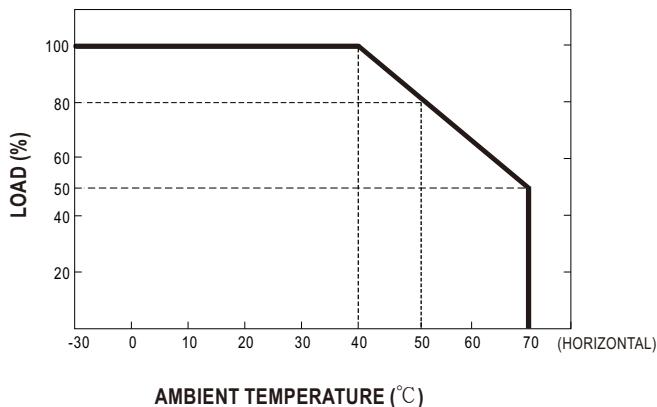
ORDER NO.	GSM90A12-P1M	GSM90A15-P1M	GSM90A19-P1M	GSM90A24-P1M	GSM90A48-P1M						
OUTPUT	SAFETY MODEL NO.	GSM90A12	GSM90A15	GSM90A19	GSM90A24						
	DC VOLTAGE Note.2	12V	15V	19V	24V						
	RATED CURRENT	6.67A	6A	4.74A	3.75A						
	CURRENT RANGE	0 ~ 6.67A	0 ~ 6A	0 ~ 4.74A	0 ~ 3.75A						
	RATED POWER (max.)	80W	90W	90W	90W						
	RIPLLE & NOISE (max.) Note.3	120mVp-p	120mVp-p	120mVp-p	180mVp-p						
	VOLTAGE TOLERANCE Note.4	±5.0%	±5.0%	±4.0%	±3.0%						
	LINE REGULATION Note.5	±1.0%	±1.0%	±1.0%	±1.0%						
	LOAD REGULATION	±5.0%	±5.0%	±4.0%	±3.0%						
INPUT	SETUP, RISE TIME Note.6	1000ms, 50ms / 230VAC	1000ms, 50ms / 115VAC at full load								
	HOLD UP TIME (Typ.)	40ms / 230VAC	25ms / 115VAC at full load								
PROTECTION	VOLTAGE RANGE Note.7	80 ~ 264VAC									
	FREQUENCY RANGE	47 ~ 63Hz									
	POWER FACTOR (Typ.)	PF>0.91 / 230VAC	PF>0.95 / 115VAC at full load								
	EFFICIENCY (Typ.)	88%	89%	89%	90%						
	AC CURRENT (Typ.)	1.3A / 115VAC	0.6A / 230VAC								
	INRUSH CURRENT (Typ.)	Cold start 30A/115VAC	60A / 230VAC								
ENVIRONMENT	LEAKAGE CURRENT(max.)	Earth leakage current < 115µA/264VAC , Touch current < 100µA/264VAC									
	OVERLOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed									
	OVER VOLTAGE	105 ~ 135% rated output voltage Protection type : Shut down o/p voltage, re-power on to recover									
SAFETY & EMC (Note 9)	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover									
	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")									
	WORKING HUMIDITY	20% ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing									
	TEMP. COEFFICIENT	±0.03% / °C (0~40°C)									
SAFETY & EMC (Note 9)	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes									
	OPERATING ALTITUDE Note.8	3000 meters									
	SAFETY STANDARDS	IEC60601-1, TUV BS EN/EN60601-1, ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22.2 No. 60601-1:14 - Edition 3, 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									
SAFETY & EMC (Note 9)	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 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							
SAFETY & EMC (Note 9)	EMC IMMUNITY	Voltage flicker	BS EN/EN61000-3-3	-----							
		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)							
CONNECTOR		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	387.5K hrs min. MIL-HDBK-217F(25°C)									
	DIMENSION	145*60*32mm (L*W*H)									
CONNECTOR	PACKING	0.45Kg; 30pcs/14.5Kg/0.9CUFT									
	PLUG	See page 4~5 ; Other type available by customer requested									
NOTE	CABLE	See page 4~5 ; Other type available by customer requested									
	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. 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. Please check the derating curve for more details. 8. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/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 http://www.meanwell.com)										
	※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx										



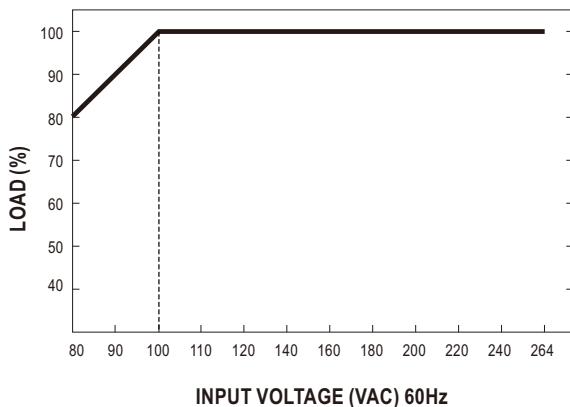
90W AC-DC Reliable Green Medical Adaptor

GSM90A series

■ Derating Curve

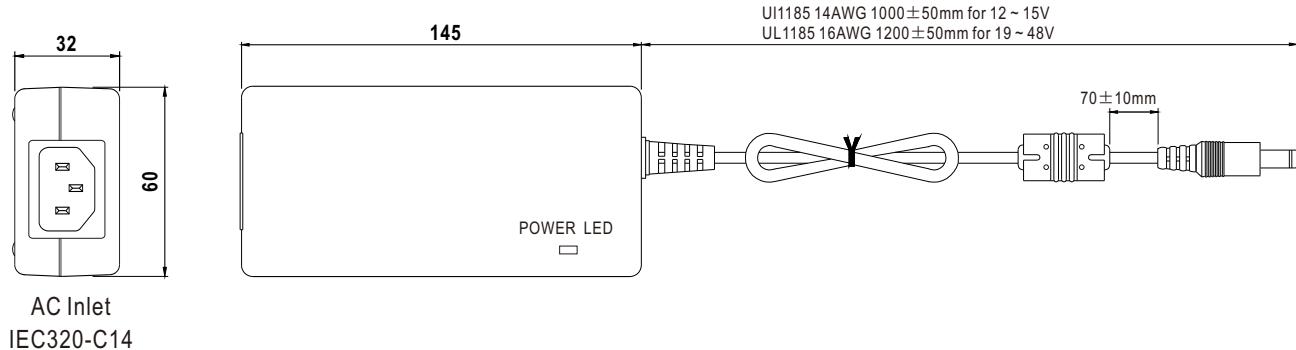


■ Static Characteristics



■ Mechanical Specification

Case No. GS90A Unit:mm



■ DC output plug

◎ Standard plug: P1M

P1M	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)

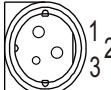
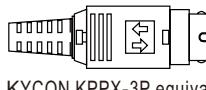
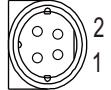
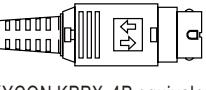
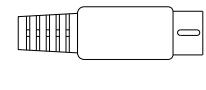
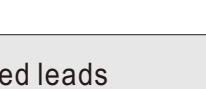
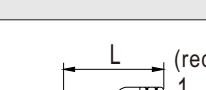
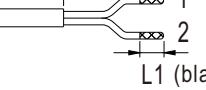
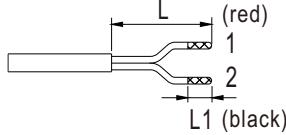
Please refer to below table and online selection guide : https://www.meanwell.com/upload/pdf/DC_plug.pdf

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	5.5	2.1	9.5	Available (Current rating: 7.5A max.)
	P1L	5.5	2.5	9.5	
	P1J	5.5	2.1	11.0	
	P1JR	5.5	2.1	11.0	
	P1IR	5.5	2.1	9.5	
	P1LR	5.5	2.5	9.5	
	P1MR	5.5	2.5	11.0	
	Type No.	A	B	C	None
		OD	ID	L	
	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	
	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	
	Type No.	A	B	C	None
		OD	ID	L	
	P2S(S761K)	5.53	2.03	12.06	
	P2K(761K)	5.53	2.54	12.06	
	P2C(S760K)	5.53	2.03	9.52	
	Type No.	A	B	C	None
		OD	ID	L	
	P3A	2.35	0.7	11.0	
	P3B	4.0	1.7	11.0	
	P3C	4.75	1.7	11.0	
	Type No.	A	B	C	None
		OD	ID	L	
	P4A	5.5	3.4	11.0	
	P4B	6.5	4.4	11.0	
	P4C	7.4	5.1	11.0	

Min. DIN 3 Pin with Lock (male)	Type No.	Pin Assignment		Quick Adapter Accessory
		PIN No.	Output	
	R6B	1	+Vo	None
		2	-Vo	
		3	+Vo	
Min. DIN 4 Pin with Lock (male)	Type No.	Pin Assignment		Available (Current rating: 7.5A max.)
	R7B	PIN No.	Output	
		1	+Vo	
		2	-Vo	
		3	-Vo	
	R7BF	PIN No.	Output	None
		1	+Vo	
		2	-Vo	
		3	-Vo	
	R1B	PIN No.	Output	None
		1	-Vo	
		2	-Vo	
		3	+Vo	
		4	-Vo	
		5	+Vo	
Stripped and tinned leads	Type No.	Pin Assignment		None
	by customer	PIN No.	Output	
		1	+Vo	
Length of Land L1 by request (MW's standard length, L: <u>25</u> mm, L1: <u>5</u> mm)		2	-Vo	

■ Installation Manual

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