90W AC-DC Reliable Green Medical Adaptor GSM90A series

Energy Verified
Rendement
Énergétique Vérifié

EN60601-1 ANSI/AAMI ES60601-1 IEC60601-1

Features

- 3 pole AC inlet IEC320-C14, Class I power unit
- Medical safety approved (2 x MOPP) accroding to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- Extremely low leakage current
- No load power consumption<0.15W
- Energy efficiency level VI and meet CoC Version 5
- -30~+70℃ wide range working temperature
- Protections: Short circuit / Overload / Over voltage / Over temperature
- LED indicator for power on
- Lifetime > 130 K hours
- 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 (<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, 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

GSM90A 12 -P1M

- DC plug type: P1M: Standard model,2.5φx5.5φx11mm,C+,tuning fork type; Other options available by customer requested (see Page 4~5)
- Output voltage
- IEC320-C14 AC inlet
- Rated wattage
- Series name

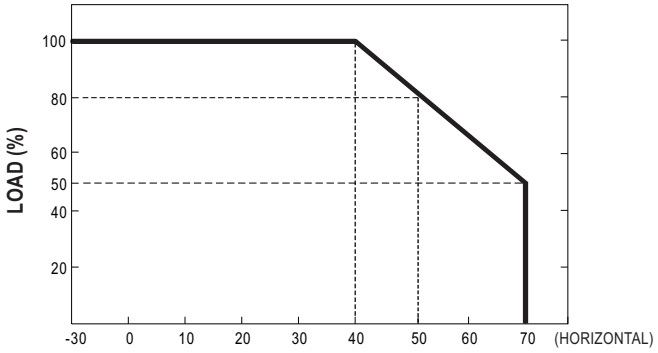
SPECIFICATION

ORDER NO.		GSM90A12-P1M	GSM90A15-P1M	GSM90A19-P1M	GSM90A24-P1M	GSM90A48-P1M
OUTPUT	SAFETY MODEL NO.	GSM90A12	GSM90A15	GSM90A19	GSM90A24	GSM90A48
	DC VOLTAGE Note.2	12V	15V	19V	24V	48V
	RATED CURRENT	6.67A	6A	4.74A	3.75A	1.87A
	CURRENT RANGE	0 ~ 6.67A	0 ~ 6A	0 ~ 4.74A	0 ~ 3.75A	0 ~ 1.87A
	RATED POWER (max.)	80W	90W	90W	90W	90W
	RIPPLE & NOISE (max.) Note.3	120mVp-p	120mVp-p	120mVp-p	180mVp-p	200mVp-p
	VOLTAGE TOLERANCE Note.4	±5.0%	±5.0%	±4.0%	±3.0%	±2.5%
	LINE REGULATION Note.5	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±5.0%	±5.0%	±4.0%	±3.0%	±2.5%
	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				
INPUT	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%	91%
	AC CURRENT (Typ.)	1.3A / 115VAC 0.6A / 230VAC				
	INRUSH CURRENT (Typ.)	Cold start 30A/115VAC 60A / 230VAC				
	LEAKAGE CURRENT(max.)	Earth leakage current < 100μA/264VAC , Touch current < 100μA/264VAC				
PROTECTION	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				
	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	IEC60601-1, TUV EN60601-1, ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 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:100M Ohms / 500VDC / 25℃/ 70% RH				
	EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**		
		Conducted emission	EN55011 (CISPR11)	Class B		
		Radiated emission	EN55011 (CISPR11)	Class B		
		Harmonic current	EN61000-3-2	Class A		
		Voltage flicker	EN61000-3-3	-----		
	EMC IMMUNITY	EN55024 , EN60601-1-2, EN61204-3				
		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		
		EFT bursts	EN61000-4-4	Level 3, 2KV		
		Surge susceptibility	EN61000-4-5	Level 3, 1KV/Line-Line , 2KV/Line-FG		
		Conducted susceptibility	EN61000-4-6	Level 3, 10V		
		Magnetic field immunity	EN61000-4-8	Level 4, 30A/m		
		Voltage dip, interruption	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℃)				
	DIMENSION	145*60*32mm (L*W*H)				
	PACKING	0.45Kg; 30pcs/14.5Kg/1CUFT				
CONNECTOR	PLUG	See page 4~5 ; Other type available by customer requested				
	CABLE	See page 4~5 ; Other type available by customer requested				

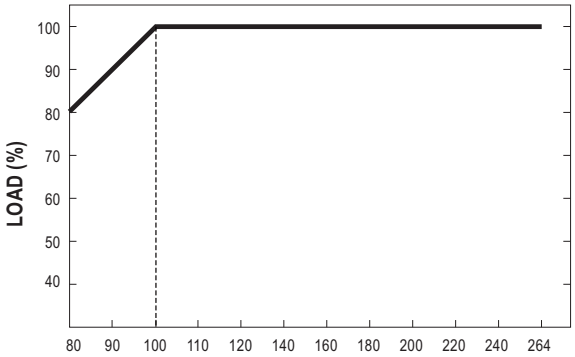
NOTE

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 0.1μf & 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. Pleas check the derating curve for more details.
8. The ambient temperature derating of 3.5℃/ 1000m is needed for operating altitude greater 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)

■ Derating Curve

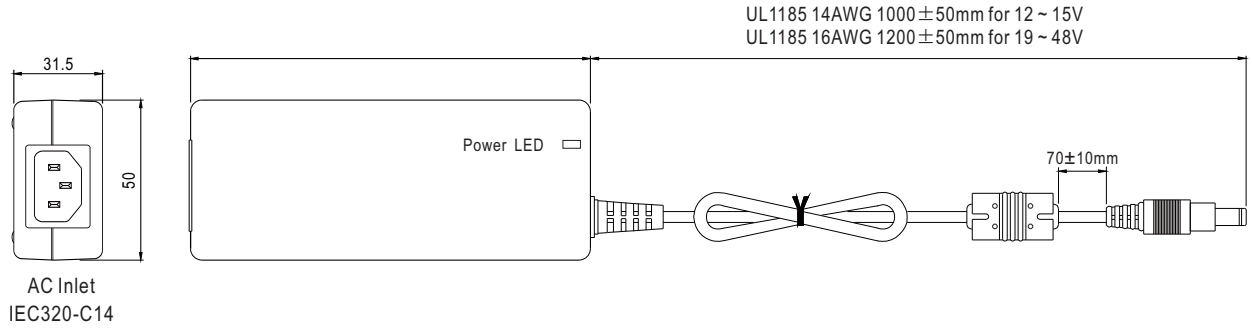


■ Static Characteristics



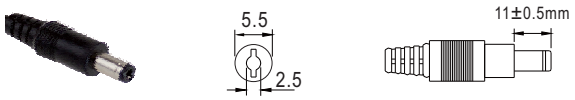
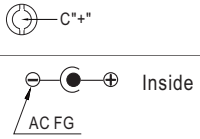
■ Mechanical Specification

Case No. GS90A Unit:mm

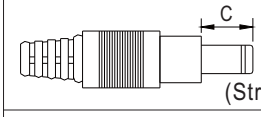
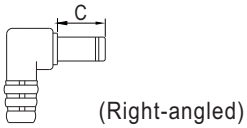


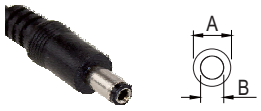
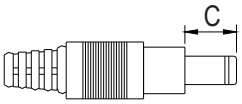
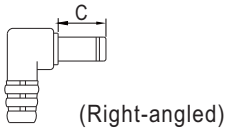
■ DC output plug

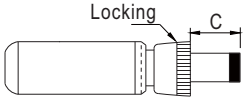
◎ Standard plug: P1M

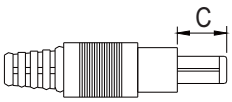
P1M	Pin Assignment
	

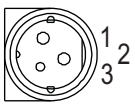
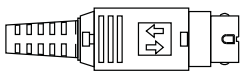
◎ Optional DC plug:

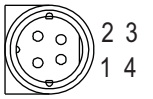
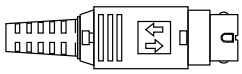
Tuning Fork Style	Type No.	A (OD)	B (ID)	C (L)
	P1I	5.5	2.1	9.5
	P1J	5.5	2.1	11.0
	P1L	5.5	2.5	9.5
	P1IR	5.5	2.1	9.5
	P1JR	5.5	2.1	11.0
	P1LR	5.5	2.5	9.5
	P1MR	5.5	2.5	11.0

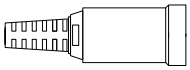
Barrel Style	Type No.	A (OD)	B (ID)	C (L)
	P2I	5.5	2.1	9.5
	P2J	5.5	2.1	11.0
	P2L	5.5	2.5	9.5
	P2M	5.5	2.5	11.0
	P2IR	5.5	2.1	9.5
	P2JR	5.5	2.1	11.0
	P2LR	5.5	2.5	9.5
	P2MR	5.5	2.5	11.0

Lock Style	Type No.	A (OD)	B (ID)	C (L)
	P2S(S761K)	5.53	2.03	12.06
 SWITCHCRAFT original or equivalent	P2K(761K)	5.53	2.54	12.06
	P2C(S760K)	5.53	2.03	9.52
	P2D(760K)	5.53	2.54	9.52

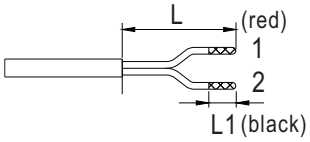
Center Pin Style	Type No.	A (OD)	B (ID)	C (L)	D (Center Pin)
  EIAJ equivalent	P4A	5.5	3.4	11.0	1.0
	P4B	6.5	4.4	11.0	1.4
	P4C	7.4	5.1	11.0	0.6

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
   KYCON KPPX-4P equivalent	R7B	1	+Vo
		2	-Vo
		3	-Vo
		4	+Vo

Min. DIN 4 Pin with Lock (female)	Type No.	Pin Assignment	
		PIN No.	Output
   KYCON KPJX-CM-4S equivalent	R7BF	1	+Vo
		2	-Vo
		3	-Vo
		4	+Vo

DIN 5 Pin (male)	Type No.	Pin Assignment	
		PIN No.	Output
  	R1B	1	-Vo
		2	-Vo
		3	+Vo
		4	-Vo
		5	+Vo

Stripped and tinned leads	Type No.	Pin Assignment	
		PIN No.	Output
  Length of Land L1 by request (MW's standard length, L: 25 mm, L1: 5 mm)	by customer	1	+Vo
		2	-Vo

■ Installation Manual

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