



## ■ Features

- Universal AC input / Full range
- 3 pole AC inlet IEC320-C14
- Medical safety approved (2 x MOPP between primary to secondary)
- Suitable for BF application with appropriate system consideration
- Low leakage current <100uA
- No load power consumption<0.15W
- Energy efficiency level VI
- Comply with EISA 2007/DoE, NRCAN, AU/NZ MEPS, EU ErP and meet CoC Version 5
- Built-in active PFC function
- High efficiency up to 91%
- Fanless design with -30~+70°C working temperature
- Class I power (with earth pin)
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Fully enclosed plastic case
- LED indicator for power on
- 100% full load burn-in test
- Optional lock type DC plug
- 3 years warranty

## ■ Applications

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

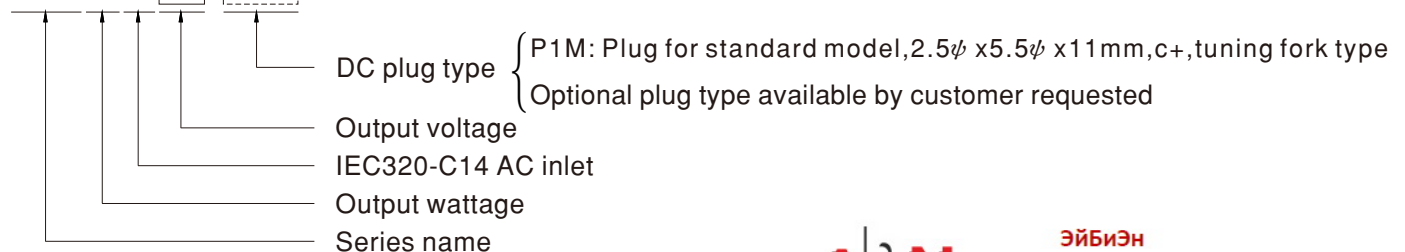
## ■ Description

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 (<100uA), 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**

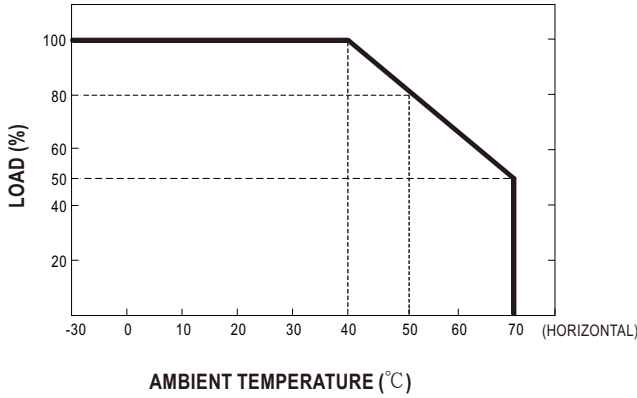




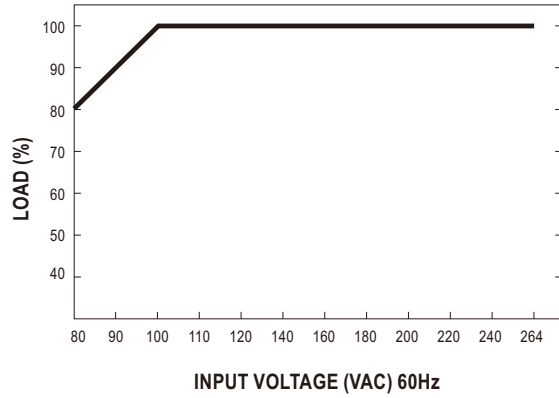
**SPECIFICATION**

ORDER NO.	GSM90A12-P1M	GSM90A15-P1M	GSM90A19-P1M	GSM90A24-P1M	GSM90A48-P1M	
OUTPUT	SAFETY MODEL NO.	GSM90A12	GSM90A15	GSM90A19	GSM90A24	GSM90A48
	DC VOLTAGE <span style="float:right">Note.2</span>	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.) <span style="float:right">Note.3</span>	120mVp-p	150mVp-p	180mVp-p	200mVp-p	240mVp-p
	VOLTAGE TOLERANCE <span style="float:right">Note.4</span>	± 5.0%	± 5.0%	± 4.0%	± 3.0%	± 2.5%
	LINE REGULATION <span style="float:right">Note.5</span>	± 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 <span style="float:right">Note.6</span>	1000ms, 50ms / 230VAC      1000ms, 50ms / 115VAC at full load				
HOLD UP TIME (Typ.)	20ms / 230VAC      20ms / 115VAC at full load					
INPUT	VOLTAGE RANGE <span style="float:right">Note.7</span>	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.)	30A / 115VAC      65A / 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°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20% ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH				
	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 (Note. 8)	SAFETY STANDARDS	ANSI/AAMI ES60601-1, TUV EN60601-1 approved				
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP				
	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°C / 70% RH				
	EMC EMISSION	Compliance to EN55011 (CISPR11) Class B, EN61000-3-2,-3, FCC PART 15 class B				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN60601-1-2, EN61204-3 medical level, criteria A				
OTHERS	MTBF	405.6K hrs min. MIL-HDBK-217F(25°C)				
	DIMENSION	145*60*32mm (L*W*H)				
	PACKING	0.45Kg; 30pcs/14.5Kg/1CUFT				
CONNECTOR	PLUG	See page 3 ; Other type available by customer requested				
	CABLE	See page 3 ; Other type available by customer requested				
NOTE	<ol style="list-style-type: none"> <li>All parameters are specified at 230VAC input, rated load, 25°C 70% RH ambient.</li> <li>DC voltage: The output voltage set at point measure by plug terminal &amp; 50% load.</li> <li>Ripple &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf &amp; 47uf capacitor.</li> <li>Tolerance: includes set up tolerance, line regulation, load regulation.</li> <li>Line regulation is measured from low line to high line at rated load.</li> <li>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.</li> <li>Derating may be needed under low input voltages. Pleas check the derating curve for more details.</li> <li>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.</li> </ol>					

■ Derating Curve

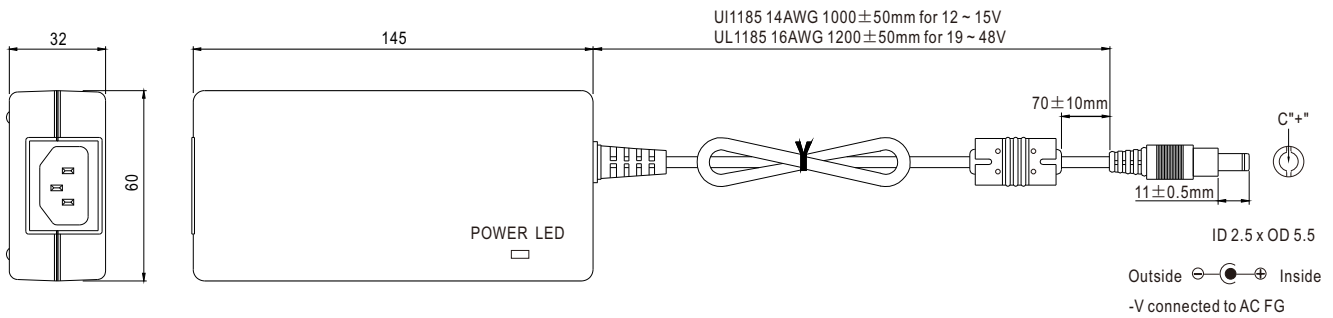


■ Static Characteristics



■ Mechanical Specification

Case No. GS90A Unit:mm



■ Plug Assignment

Standard plug: P1M

P1M	
P/N	OUTPUT
CENTER	+

Optional lock type plug: P2S  
SWITCHCRAFT S761K plug equivalent

■ Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>