



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 > 80 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](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>

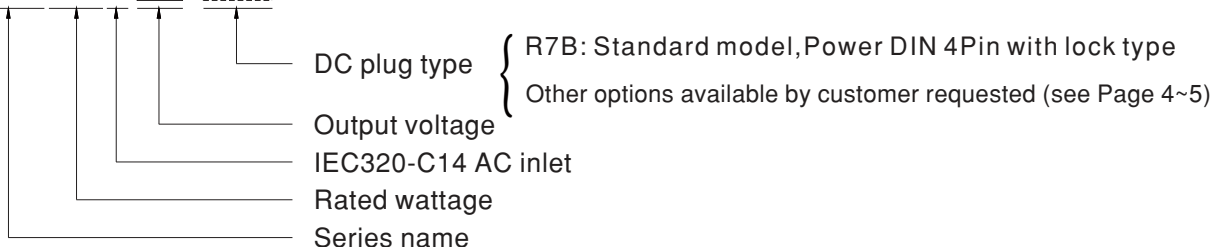
## ■ Description

GSM220A is a highly reliable, 220W 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 94.5% and the extremely low no-load power consumption below 0.15W, GSM220A 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. GSM220A is approved with the international medical safety certificates.

## ■ Model Encoding

**GSM220A 12 - R7B**



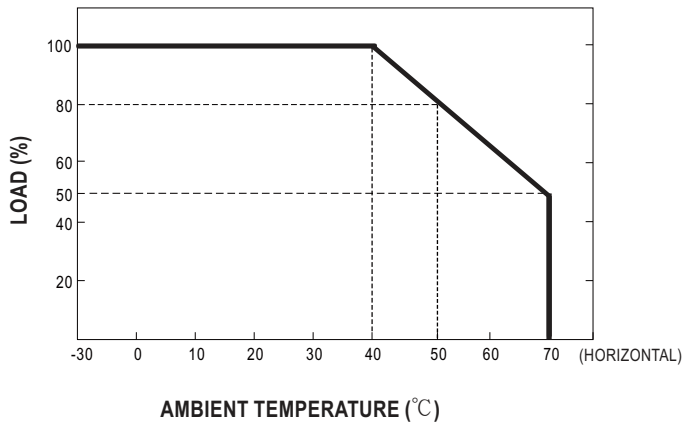
## SPECIFICATION

ORDER NO.	GSM220A12-R7B	GSM220A15-R7B	GSM220A20-R7B	GSM220A24-R7B	GSM220A48-R7B		
OUTPUT	SAFETY MODEL NO.	GSM220A12	GSM220A15	GSM220A20	GSM220A24	GSM220A48	
	DC VOLTAGE <span style="float:right">Note.2</span>	12V	15V	20V	24V	48V	
	RATED CURRENT	15A	13.4A	11A	9.2A	4.6A	
	CURRENT RANGE	0 ~ 15A	0 ~ 13.4A	0 ~ 11A	0 ~ 9.2A	0 ~ 4.6A	
	RATED POWER (max.)	180W	201W	220W	221W	221W	
	RIPPLE & NOISE (max.) <span style="float:right">Note.3</span>	80mVp-p	80mVp-p	120mVp-p	120mVp-p	150mVp-p	
	VOLTAGE TOLERANCE <span style="float:right">Note.4</span>	±5.0%	±5.0%	±4.0%	±3.0%	±2.0%	
	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%	±2.0%	
	SETUP, RISE TIME <span style="float:right">Note.6</span>	2000ms, 50ms / 230VAC      2000ms, 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>0.98 / 115VAC at full load					
	EFFICIENCY (Typ.)	90%	90%	92%	93.5%	94.5%	
	AC CURRENT (Typ.)	4A / 115VAC      2A / 230VAC					
	INRUSH CURRENT (max.)	Cold start 90A / 115VAC      110A / 230VAC					
	LEAKAGE CURRENT(max.)	Earth leakage current < 115 $\mu$ A/264VAC , Touch current <100 $\mu$ A/264VAC					
PROTECTION	OVERLOAD	105 ~ 135% 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, recovers automatically after temperature goes down					
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 non-condensing					
	TEMP. COEFFICIENT	±0.03% / °C (0~40°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
	OPERATING ALTITUDE <span style="float:right">Note.8</span>	3000 meters					
SAFETY & EMC (Note. 10)	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 <span style="float:right">Note.9</span>	I/P-O/P:4KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC					
	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	
		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	2028.6K hrs min.    Telcordia SR-332 (Bellcore) ; 210.8K hrs min.    MIL-HDBK-217F (25°C)					
	DIMENSION	210*85*46mm (L*W*H)					
	PACKING	1.1Kg; 12pcs/14.2Kg/0.87CUFT					
CONNECTOR	PLUG	See page 4~5 ; Other type available by customer requested					
	CABLE	See page 4~5 ; Other type available by customer requested					

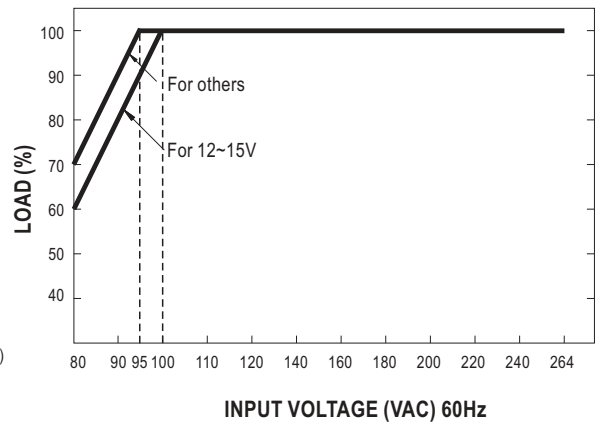
## NOTE

- All parameters are specified at 230VAC input, rated load, 25°C 70% RH ambient.
  - DC voltage: The output voltage set at point measure by plug terminal & 50% load.
  - Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1 $\mu$ f & 47 $\mu$ f capacitor.
  - Tolerance: includes set up tolerance, line regulation, load regulation.
  - Line regulation is measured from low line to high line at rated load.
  - 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.
  - Derating may be needed under low input voltages. Please check the derating curve for more details.
  - 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).
  - Optional for 1.5KVAC with BF rated.
  - 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>

### Derating Curve

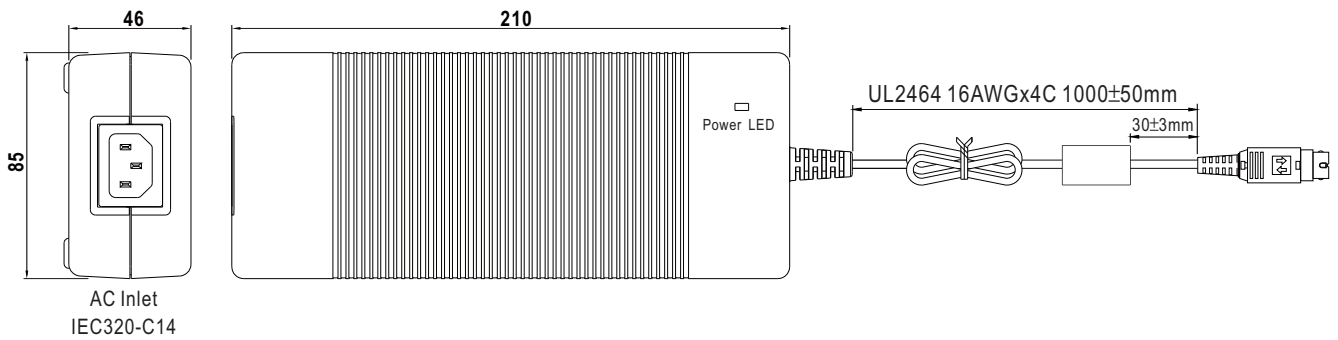


### Static Characteristics



### Mechanical Specification

Case No. 961A Unit:mm



### DC output plug

Standard plug: R7B

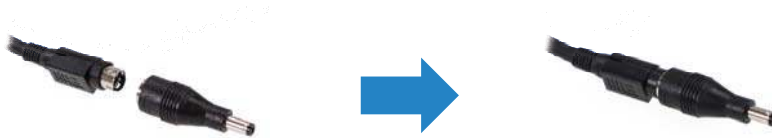
R7B		Pin Assignment											
	KYCON KPPX-4P equivalent	Outer shell connected to AC FG -V not connected to AC FG											
			<table border="1"> <thead> <tr> <th>PIN NO.</th> <th>OUTPUT</th> </tr> </thead> <tbody> <tr><td>1</td><td>+Vo</td></tr> <tr><td>2</td><td>-Vo</td></tr> <tr><td>3</td><td>-Vo</td></tr> <tr><td>4</td><td>+Vo</td></tr> </tbody> </table>	PIN NO.	OUTPUT	1	+Vo	2	-Vo	3	-Vo	4	+Vo
PIN NO.	OUTPUT												
1	+Vo												
2	-Vo												
3	-Vo												
4	+Vo												

⦿ 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)

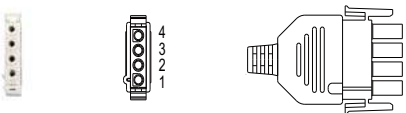
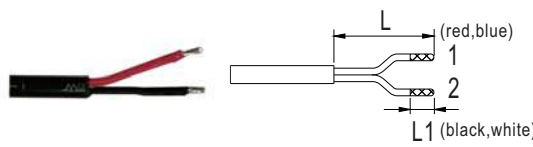
Please refer to below table and online selection guide : [https://www.meanwell.com/upload/pdf/DC\\_plug.pdf](https://www.meanwell.com/upload/pdf/DC_plug.pdf)

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	
<p>(Straight)</p>	P1J	5.5	2.1	11.0	Available for 48V (Current rating: 7.5A max.)
	P1M	5.5	2.5	11.0	
Min. DIN 4 Pin with Lock (female)	Type No.	Pin Assignment		None	
<p>KYCON KPJX-CM-4S equivalent</p>	R7BF	PIN No.	Output		
		1	+Vo		
		2	-Vo		
		3	-Vo		
4	+Vo				
DIN 5 Pin (male)	Type No.	Pin Assignment		None	
	R1B	PIN No.	Output		
		1	-Vo		
		2	-Vo		
		3	+Vo		
		4	-Vo		
5	+Vo				
NEUTRIK XLR NC4FX equivalent	Type No.	Pin Assignment		None	
	MIC4	PIN No.	Output		
		1	+Vo		
		2	+Vo		
		3	-Vo		
4	-Vo				
MOLEX 39-01-2060 (4.2mm) equivalent	Type No.	Pin Assignment		None	
<p>FG not connected to output connector</p>	C6P	PIN No.	Output		
		1	+Vo		
		2	+Vo		
		3	+Vo		
		4	-Vo		
		5	-Vo		
6	-Vo				

AMP 1-480702-0 (6.35mm) equivalent	Type No.	Pin Assignment		Quick Adapter Accessory
		PIN No.	Output	
 <p>FG not connected to output connector</p>	C4P	1	+Vo	None
		2	+Vo	
		3	-Vo	
		4	-Vo	
Stripped and tinned leads	Type No.	Pin Assignment		
		PIN No.	Output	
 <p>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)</p>	by customer	1	+Vo	None
		2	-Vo	

### ■ Installation Manual

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