



120W 3"×2" Reliable Green Medical Power Supply

RPS-120S series



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<http://www.100y.com.tw>



ANSI/AAMI ES60601-1



EN60601-1



IEC60601-1



■ Features

- 3"×2" compact size
- 120W convention, 150W peak (10sec.)
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- Suitable for BF application with appropriate system consideration
- EMI for both Class I & Class II configuration
- -30~+85°C wide range operating temperature
- No load power consumption<0.3W
- Extremely low leakage current
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Operating altitude up to 4000 meters (Note.6)
- 3 years warranty

■ Applications

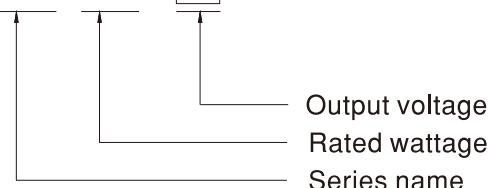
- Oral irrigator
- Hemodialysis machine
- Medical monitors
- Sleep apnea devices
- Pumps machine

■ Description

RPS-120S is a 120W highly reliable green PCB type medical power supply with a high power density on a 3" by 2" footprint. It accepts 80~264VAC input and offers various models with the output voltages between 12V and 48V. The working efficiency is up to 94% and the extremely low no load power consumption is down below 0.3W. RPS-120S is able to be used for both Class I (with FG) & Class II (no FG) system design. The extremely low leakage current is less than 150 μ A. In addition, it conforms to the international medical regulations (2*MOPP) and EMC EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment.

■ Model Encoding

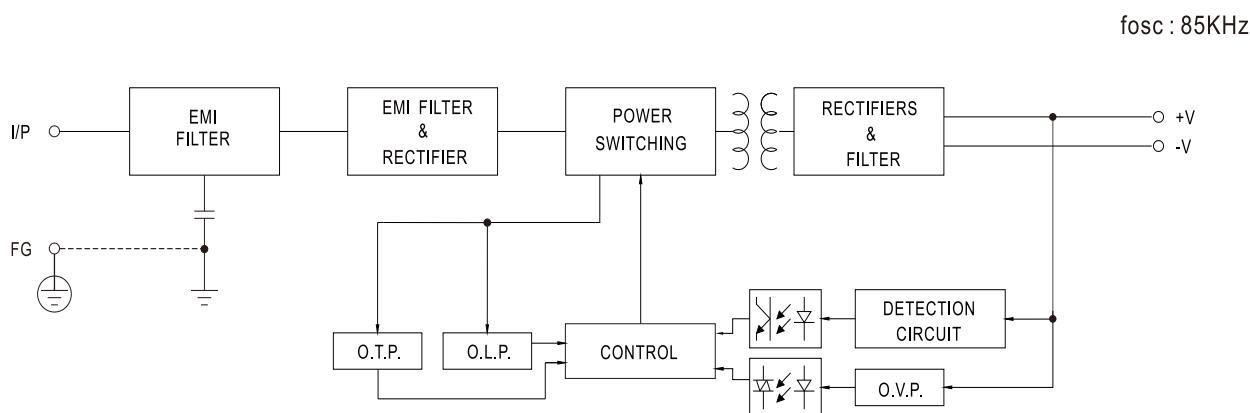
RPS -120S - 12



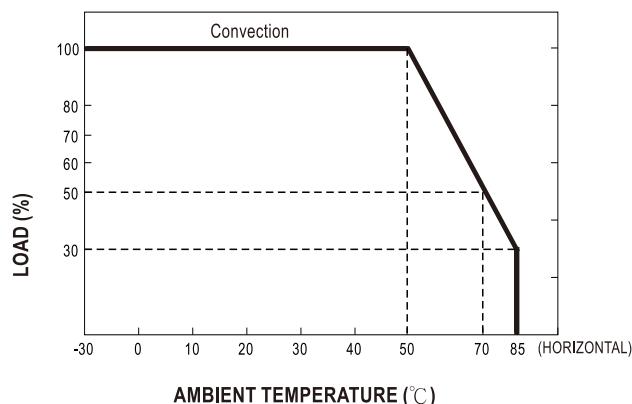
SPECIFICATION

MODEL	RPS-120S-12		RPS-120S-15		RPS-120S-24	RPS-120S-27	RPS-120S-48				
OUTPUT	DC VOLTAGE	12V	15V	24V	27V	48V					
	CURRENT	Peak(10 sec.)	11.8A	9.5A	6.25A	5.55A	3.125A				
		Convection	9.5A	7.6A	5A	4.44A	2.5A				
	RATED POWER	Peak(10 sec.)	141.6W	142.5W	150W	149.8W	150W				
		Convection	114W	114W	120W	119.9W	120W				
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	150mVp-p	150mVp-p	200mVp-p					
	VOLTAGE ADJ. RANGE	11.4~12.6V	14.3~15.8V	22.8~25.2V	25.6~28.4V	45.6~50.4V					
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%					
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%					
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%					
INPUT	SETUP, RISE TIME	600ms, 30ms/230VAC	600ms, 30ms/115VAC at full load								
	HOLD UP TIME (Typ.)	15ms/230VAC	15ms/115VAC at full load								
	VOLTAGE RANGE Note.4	80 ~ 264VAC	113 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz									
	POWER FACTOR	PF>0.94/230VAC	PF>0.98/115VAC at full load								
	EFFICIENCY (Typ.)	91%	92%	93%	94%	93.5%					
	AC CURRENT (Typ.)	2.3A/115VAC	1.1A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START	30A/115VAC	60A/230VAC							
	LEAKAGE CURRENT(max.) Note.5	Earth leakage current < 150μA/264VAC , touch current < 80μA/264VAC									
	OVERLOAD	130~160% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed									
PROTECTION	OVER VOLTAGE	13.2 ~ 15.6V	16.5 ~ 19.5V	26.4 ~ 31.2V	29.7 ~ 35V	52.8 ~ 62.4V					
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover									
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ENVIRONMENT	WORKING TEMP.	-30 ~ +85°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 ~ 50°C)									
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes									
	OPERATING ALTITUDE Note.6	4000 meters									
SAFETY & EMC (Note 7)	SAFETY STANDARDS	IEC60601-1, TUV EN60601-1, EAC TP TC 004, UL ANSI / AAMI ES60601-1 (3.1 version), CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved; Design refer to EN60335-1 (By request)									
	ISOLATION RESISTANCE	Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP, Secondary-Earth:1xMOPP									
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC									
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25°C / 70% RH									
	EMC EMISSION	Parameter	Standard	Test Level / Note							
		Conducted emission	EN55011 (CISPR11)	Class B							
		Radiated emission	EN55011 (CISPR11)	Class I : Class B , Class II : Class A							
		Harmonic current	EN61000-3-2	Class A							
	EMC IMMUNITY	Voltage flicker	EN61000-3-3	-----							
		EN60601-1-2									
		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(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz)							
		EFT bursts	EN61000-4-4	Level 3, 2kV							
		Surge susceptibility	EN61000-4-5	Level 4, 4kV/Line-FG; 2kV/Line-Line							
		Conducted susceptibility	EN61000-4-6	Level 3, 10V							
		Magnetic field immunity	EN61000-4-8	Level 4, 30A/m							
		Voltage dip, interruption	EN61000-4-11	95% dip 1 periods, 30% dip 25 periods, 95% interruptions 250 periods							
OTHERS	MTBF	468Khrs min. MIL-HDBK-217F (25°C)									
	DIMENSION (L*W*H)	76.2*50.8*28mm or 3" * 2" * 1.1" inch									
	PACKING	0.13Kg; 100pcs/14Kg/1.13CUFT									
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Derating may be needed under low input voltages. Please check the derating curve for more details. 5. Touch current was measured from primary input to DC output. 6. 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). 7. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets 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)										

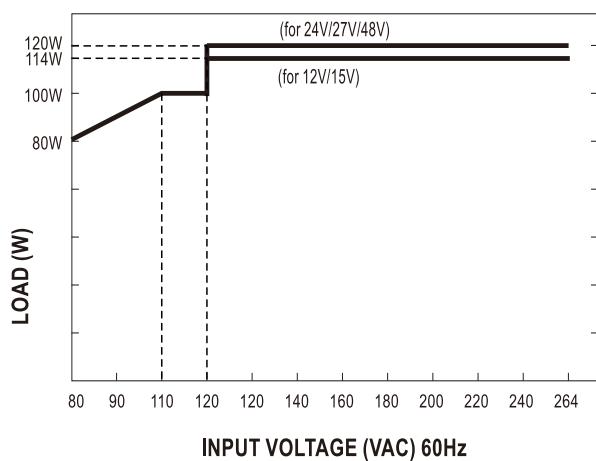
■ Block Diagram



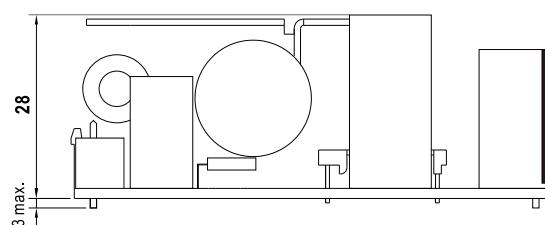
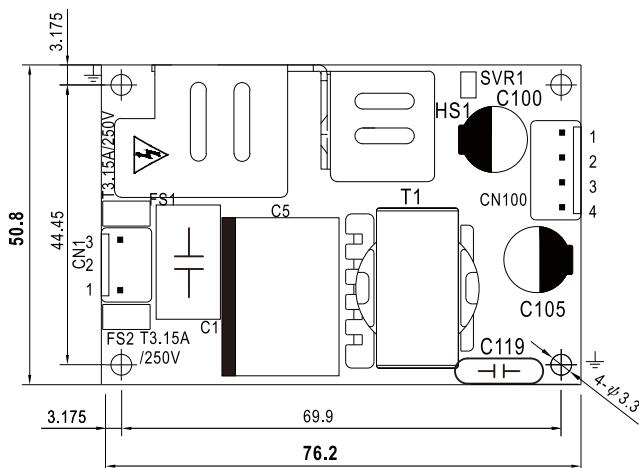
■ Derating Curve



■ Output Derating VS Input Voltage



■ Mechanical Specification



AC Input Connector (CN1) : JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	AC/N		

DC Output Connector (CN2) : JST B4P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2	+V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3,4	-V		

⚠ 1. HS1 must have safety isolation distance with system case.

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※Note :

1. RPS-120S model delivers EMI Class B for both conducted emission and radiated emission for the power supply, when configured into Class I (with FG) system.
2. RPS-120S model delivers EMI Class B conducted emission and Class A radiated emission with King Core K5B RC (12*15*7) in output cable for the power supply when configured into Class II (no FG) system.

■ Installation Manual

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