

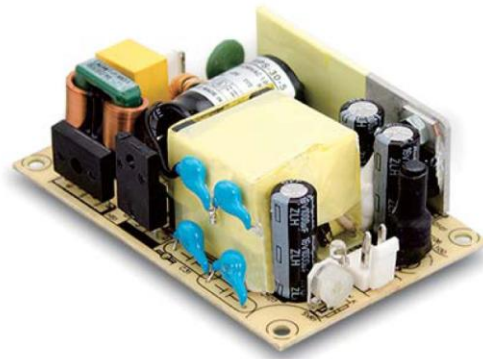


E-Star Power Development Co., Ltd. (E-STAR)

1F, No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City
22069, Taiwan (R.O.C.)

Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

30W Open Frame Medical power supply < RPS-30



■ Features

- 3"×2" miniature size
- Universal AC input / Full range
- Class II (without FG) installations
- Medical safety approved
(2 x MOPP between primary to secondary)
- Suitable for BF application with appropriate system consideration
- Low leakage current <100μA
- No load power consumption<0.1W
- High efficiency up to 91%
- For 1U applications
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- -30~70°C wide range of operating temperature
- Operating altitude up to 4000 meters(Note 7.)
- LED indicator for power on
- 3 years warranty

■ Applications

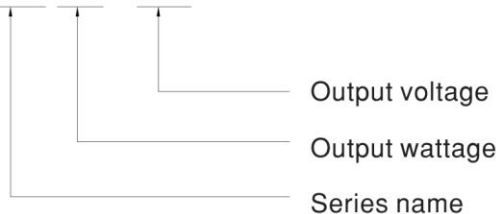
- Oral irrigator
- Hemodialysis machine
- Medical monitors
- Sleep apnea devices

■ Description

RPS-30 is a 30W highly reliable green PCB type medical power supply with a high power density on the 3" by 2" footprint. It accepts 80~264VAC input and offers various output voltages between 3.3V and 48V. The working efficiency is up to 91% and the extremely low no load power consumption is down below 0.1W. RPS-30 is able to be used for Class II (no FG) system design. The extremely low leakage current is less than 100μA. In addition, it conforms to international medical regulations (2*MOPP) and EMC EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment.

■ Model Encoding

RPS- 30 - 3.3





30W Open Frame Medical power supply < RPS-30

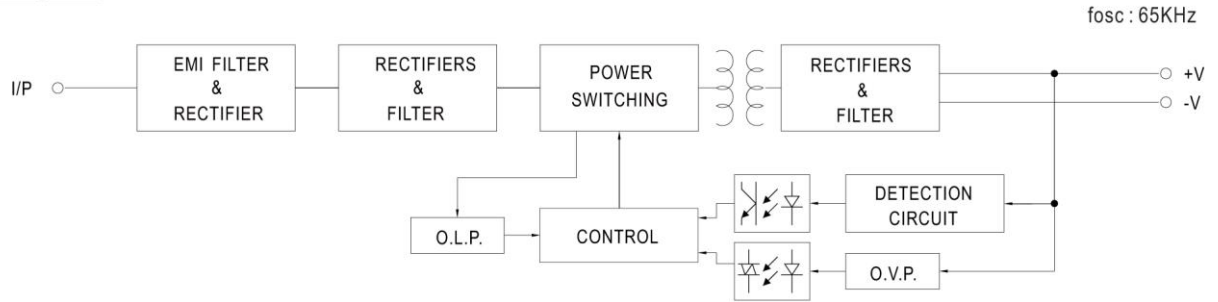
SPECIFICATION

ORDER NO.	RPS-30-3.3	RPS-30-5	RPS-30-7.5	RPS-30-12	RPS-30-15	RPS-30-24	RPS-30-48	
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	48V
	RATED CURRENT	6A	6A	4A	2.5A	2A	1.25A	0.625A
	CURRENT RANGE	0 ~ 6.6A	0 ~ 6.6A	0 ~ 4.4A	0 ~ 2.75A	0 ~ 2.2A	0 ~ 1.375A	0 ~ 0.687A
	RATED POWER	19.8W	30W	30W	30W	30W	30W	30W
	PEAK LOAD(10sec.) <small>Note.2</small>	21.8W	33W	33W	33W	33W	33W	33W
	RIPPLE & NOISE (max.) <small>Note.3</small>	80mVp-p	80mVp-p	80mVp-p	120mVp-p	150mVp-p	240mVp-p	300mVp-p
	VOLTAGE ADJ.RANGE	3.1~3.6V	4.7~5.5V	7.12~8.3V	11.4~13.2V	13.5~16.5V	22.8~27.6V	45.6~52.8V
	VOLTAGE TOLERANCE	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	200ms, 30ms / 230VAC 200ms, 30ms / 115VAC at full load						
	HOLD UP TIME (Typ.)	50ms / 230VAC 12ms / 115VAC at full load						
INPUT	VOLTAGE RANGE <small>Note.5</small>	80 ~ 264VAC						
	FREQUENCY RANGE	47 ~ 63Hz						
	EFFICIENCY (Typ.)	80%	82%	84%	88%	89%	89.5%	91%
	AC CURRENT (Typ.)	1A / 115VAC 0.5A / 230VAC						
	INRUSH CURRENT (Typ.)	COLD STAR 30A/115VAC 60A/230VAC						
	LEAKAGE CURRENT(max.)	Touch current < 100 μ A/264VAC						
PROTECTION	OVERLOAD	115 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	3.8~5V	5.7~6.8V	8.62~11.3V	13.8~16.2V	17.25~20.3V	28.4~32.4V	55.2~64.8V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70 $^{\circ}$ C (Refer to "Derating Curve")						
	WORKING HUMIDITY	20% ~ 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +85 $^{\circ}$ C, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03% / $^{\circ}$ C (0 ~ 50 $^{\circ}$ 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, EN60601-1-1 approved						
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP						
	WITHSTAND VOLTAGE	I/P-O/P: 4KVAC						
	ISOLATION RESISTANCE	I/P-O/P: 100M Ohms / 500VDC / 25 $^{\circ}$ C / 70% RH						
	EMC EMISSION	Compliance to EN55011(CISPR11) class B, EN61000-3-2,3						
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN60601-1-2 medical level, criteria A						
	MTBF	628.7Khrs min. MIL-HDBK-217(25 $^{\circ}$ C)						
	DIMENSION	76.2*50.8*24mm or 3" * 2" * 0.945" inch (L*W*H)						
	PACKING	0.09Kg; 120pcs/11.8Kg/0.97CUFT						
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25$^{\circ}$C of ambient temperature. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Derating may be needed under low input voltages. Please check the derating curve for more details. Touch current was measured from primary input to DC output. The ambient temperature derating of 5$^{\circ}$C/1000m is needed for operating altitude greater than 2000m (6500ft). The power supply is considered a component which will be installed into a final equipment. 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." 							

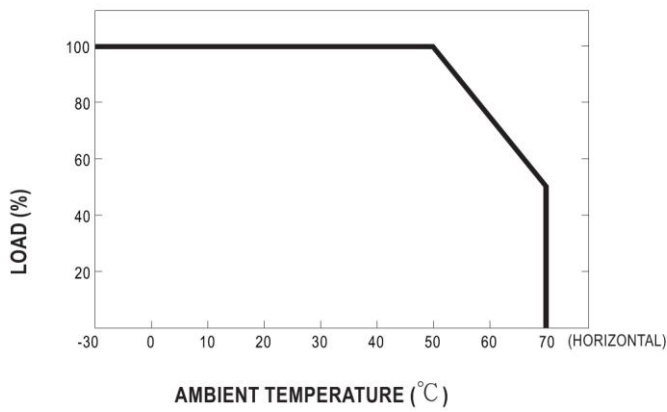


30W Open Frame Medical power supply < RPS-30

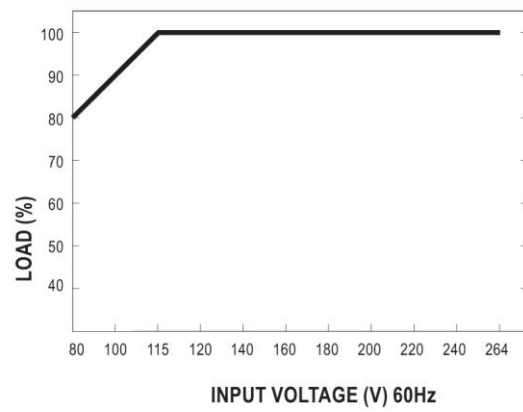
Block Diagram



Derating Curve



Static Characteristics

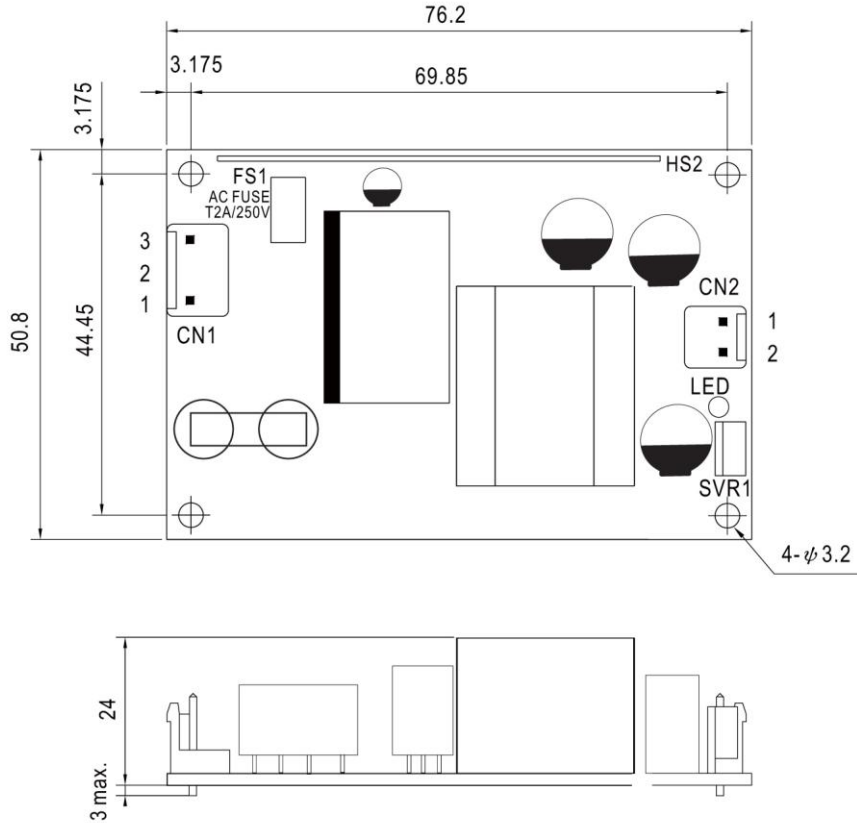




30W Open Frame Medical power supply < RPS-30

■ Mechanical Specification

Case No. Unit:mm



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

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

DC Output Connector (CN2) : JST B2P-VH or equivalent

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