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**120W Open Frame type Single output power supply > EPP-120S**



**■ Features**

- 3"x2" Compact Size
- 120W convection, 150W peak (10sec.)
- EMI for both Class I & Class II configuration
- -30~+85°C wide range operating temperature
- No load power consumption<0.3W
- High efficiency up to 94%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Operating altitude up to 5000 meters (Note.5)
- 3 years warranty

**■ Applications**

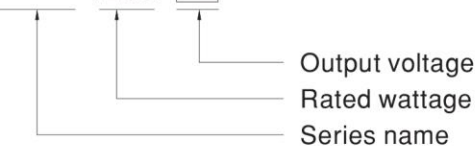
- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

**■ Description**

EPP-120S is a 120W highly reliable green PCB type power supply with a high power density on the 3" by 2" footprint. It accepts 80~264VAC input and offers various 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. EPP-120S is able to be used for both Class I (with FG) and Class II (no FG) system design. EPP-120S has the complete protection functions; it is complied with the international safety regulations such as TUV EN62368-1, EN60335-1, UL62368-1 and IEC62368-1. EPP-120S series serves as a high price-to-performance power supply solution for various industrial applications.

**■ Model Encoding**

EPP-120S-12



File Name:EPP-120S-SPEC 2020-10-20



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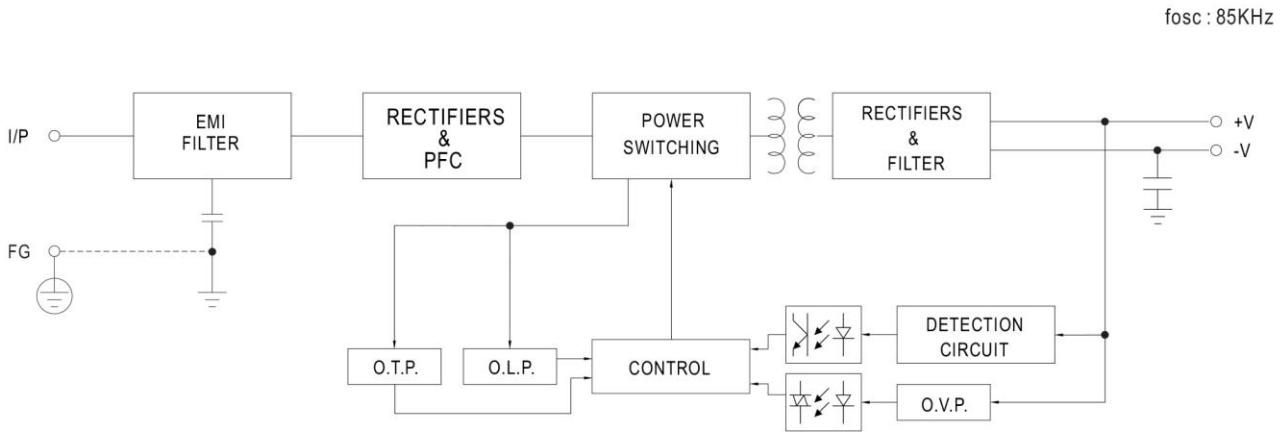
**SPECIFICATION**

MODEL		EPP-120S-12	EPP-120S-15	EPP-120S-24	EPP-120S-27	EPP-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%	± 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%	
SETUP, RISE TIME	600ms, 30ms/230VAC      600ms, 30ms/115VAC at full load						
HOLD UP TIME (Typ.)	15ms/230VAC      15ms/115VAC at full load						
INPUT	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	<0.75mA / 240VAC					
PROTECTION	OVERLOAD	130~160% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	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, recovers automatically after temperature goes down					
ENVIRONMENT	WORKING TEMP.	-30 ~ +85°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP.	-40 ~ +85°C					
	TEMP. COEFFICIENT	± 0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
	OPERATING ALTITUDE (Note.5)	5000 meters					
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL62368-1, TUV EN62368-1, EN60335-1, IEC62368-1, EAC TP TC 004 approved					
	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	EN55032 (CISPR32)			Class B	
		Radiated emission	EN55032 (CISPR32)			Class I : Class B, Class II : Class A	
		Harmonic current	EN61000-3-2			Class A	
	EMC IMMUNITY	Voltage flicker	EN61000-3-3			-----	
		EN61000-6-2					
		Parameter	Standard			Test Level / Note	
		ESD	EN61000-4-2			Level 3, 8KV air ; Level 3, 4KV 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 0.5 periods, 30% dip 25 periods, 95% interruptions 250 periods			
OTHERS	MTBF	470Khrs min.      MIL-HDBK-217F (25°C)					
	DIMENSION	76.2*50.8*28mm (L*W*H) 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 0.1uf & 47uf 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. 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). 6. 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."						

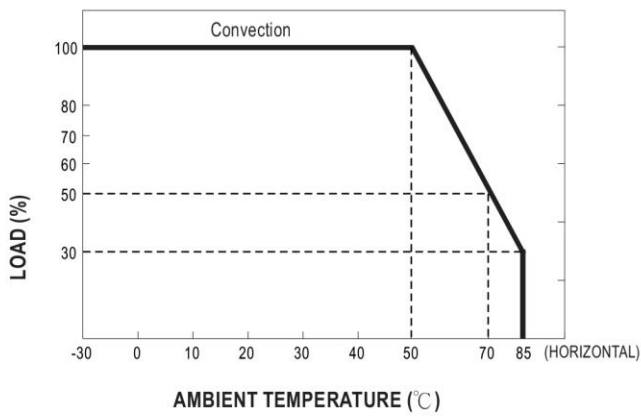


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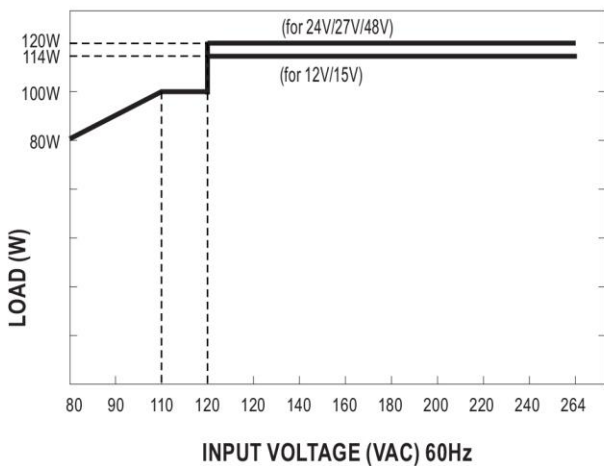
**Block Diagram**



**Derating Curve**



**Output Derating VS Input Voltage**

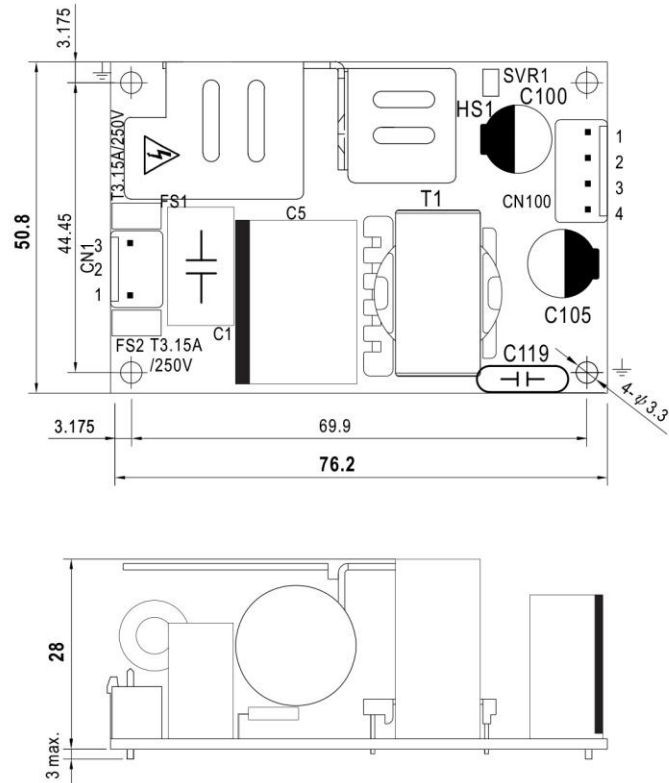




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**Mechanical Specification**

Unit:mm



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.

※Note :

- EPP-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.
- EPP-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.