



120W 3"×2" Green Open Frame Power Supply

**EPP-120S series**



User's Manual



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UL62368-1

BS EN/EN62368-1  
BS EN/EN60335-1



GB4943.1

IEC62368-1

TPTC004



## ■ Features

- 3"×2" 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

## ■ GTIN CODE

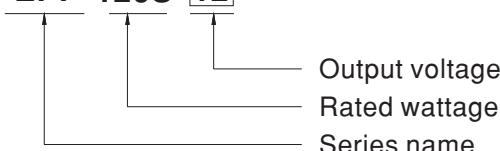
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## ■ 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 BS EN/EN62368-1, BS EN/EN60335-1, UL62368-1 and IEC62368-1. EPP-120S series serves as a high price-to-performance power supply solution for various industrial applications.

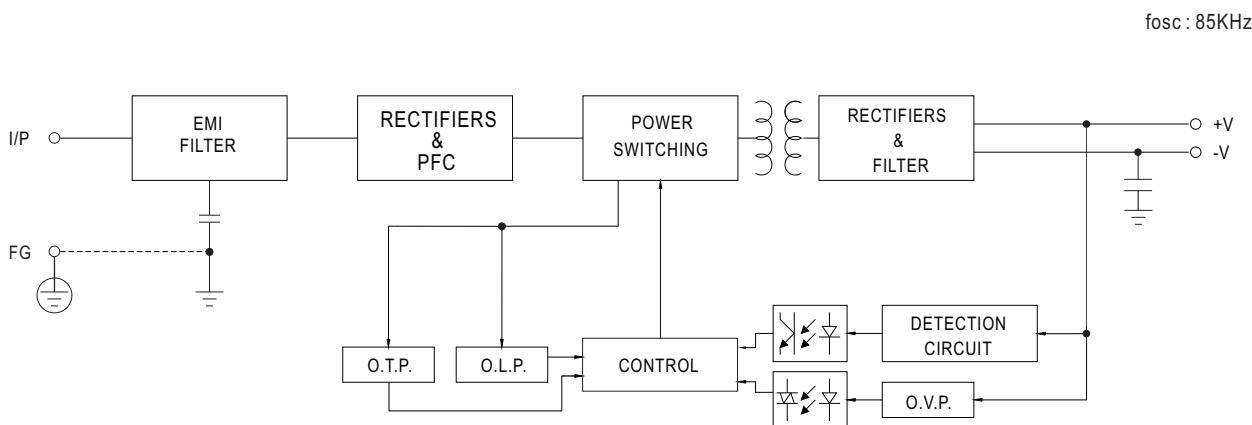
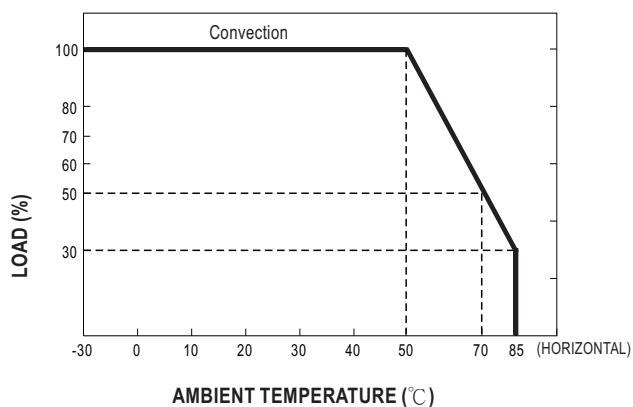
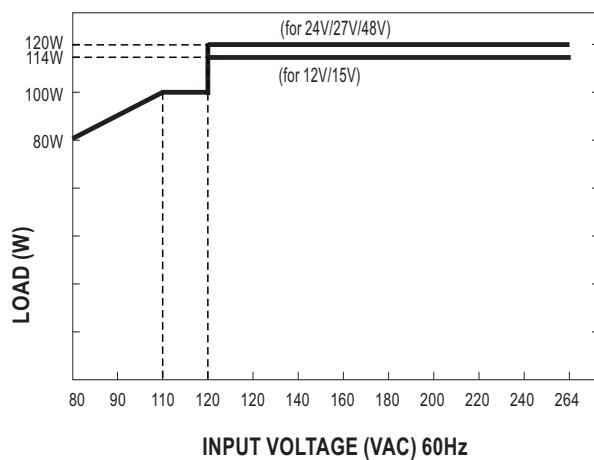
## ■ Model Encoding

**EPP-120S-12**

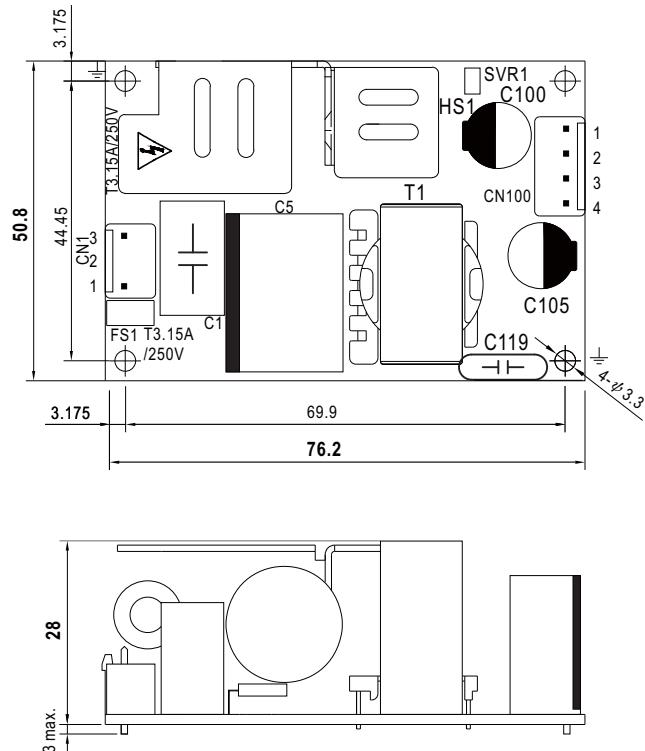


## SPECIFICATION

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			
		Convection	9.5A	7.6A	5A	4.44A			
	RATED POWER	Peak(10 sec.)	141.6W	142.5W	150W	149.8W			
		Convection	114W	114W	120W	119.9W			
	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%			
INPUT	SETUP, RISE TIME	600ms, 30ms/230VAC	600ms, 30ms/115VAC at full load						
	HOLD UP TIME (Typ.)	15ms/230VAC	15ms/115VAC at full load						
PROTECTION	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						
PROTECTION	LEAKAGE CURRENT	<0.75mA / 240VAC							
	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, re-power on to recover							
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 BS EN/EN62368-1, BS EN/EN60335-1, IEC62368-1, CCC GB4943.1, 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	GB9254.1 Class B,GB17625 Class A							
		Parameter	Standard	Test Level / Note					
		Conducted emission	BS EN/EN55032 (CISPR32)	Class B					
		Radiated emission	BS EN/EN55032 (CISPR32)	Class I : Class B , Class II: Class A					
		Harmonic current	BS EN/EN61000-3-2	Class A					
	EMC IMMUNITY	Voltage flicker	BS EN/EN61000-3-3	-----					
		BS EN/EN55035, BS EN/EN61000-6-2							
		Parameter	Standard	Test Level / Note					
		ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 3, 4KV 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 4, 4KV/Line-FG; 2KV/Line-Line					
		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	95% dip 0.5 periods, 30% dip 25 periods, 95% interruptions 250 periods					
OTHERS	MTBF	4071.1K hrs min. Telcordia SR-332 (Bellcore) ; 470.2K hrs 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 0.1 μF & 47 μF 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." (as available on <a href="https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf</a> ) ※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>								

**Block Diagram**

**Derating Curve**

**Output Derating VS Input Voltage**


## ■ Mechanical Specification

 (Unit: mm, tolerance  $\pm 1\text{mm}$ )


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 (CN100) : 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.

## ■ Installation Manual

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

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