



120W Single Output Switching Power Supply

**EPS-120** series

User's Manual



## ■ Features

- 4"×2" miniature size
- Universal AC input / Full range
- EMI Class B for both Class I (with FG) and Class II (without FG) configuration
- No load power consumption < 0.3W
- High efficiency up to 91%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection for 84W and 120W with 10CFM forced air
- Built-in 12V/0.5A fan supply
- LED indicator for power on
- Operating altitude up to 5000 meters
- 3 years warranty

## ■ Applications

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

## ■ Description

EPS-120 is a 120W highly reliable green PCB type power supply with a high power density on the 4" by 2" footprint. It accepts 80~264VAC input and offers various output voltages between 12V and 48V. The working efficiency is up to 91% and the extremely low no load power consumption is down below 0.3W. EPS-120 is able to be used for both Class I (with FG) and Class II (no FG) system design. EPS-120 has the complete protection functions; it is complied with the international safety regulations such as TUV BS EN/EN62368-1, UL62368-1 and IEC62368-1. EPS-120 series serves as a high price-to-performance power supply solution for various industrial applications.

## ■ Model Encoding

**EPS - 120 - 12**

Output voltage  
Output wattage  
Series name



## SPECIFICATION

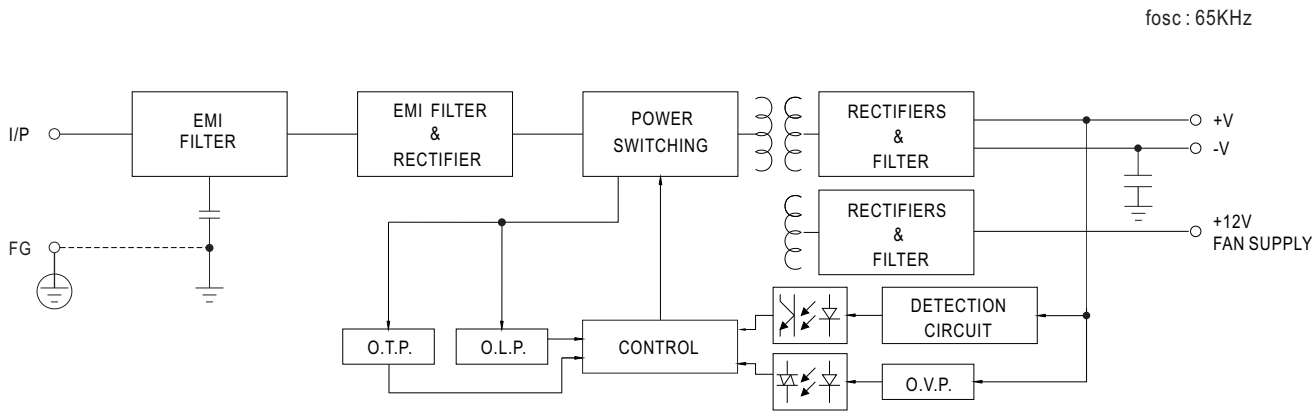
MODEL		EPS-120-12	EPS-120-15	EPS-120-24	EPS-120-27	EPS-120-48
OUTPUT	DC VOLTAGE	12V	15V	24V	27V	48V
	CURRENT	10CFM	10A	8A	5A	4.5A
		Convection	7.0A	5.6A	3.5A	3.15A
	RATED POWER	10CFM	120W	120W	120W	121.5W
		Convection	84W	84W	84W	85W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p	150mVp-p	200mVp-p
	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%	± 2.5%	± 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	500ms, 30ms/230VAC      500ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	50ms/230VAC      10ms/115VAC at full load				
	VOLTAGE RANGE Note.4	80 ~ 264VAC      113 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	88%	88.5%	90%	90%	91%
	AC CURRENT (Typ.)	2.1A/115VAC      1.2A/230VAC				
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC      60A/230VAC				
	LEAKAGE CURRENT	<0.75mA / 240VAC				
	OVERLOAD	115~150% 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
FUNCTION	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover				
	FAN SUPPLY	12V@0.5A for driving a fan ; tolerance -15% ~ +10%				
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				
	TEMP. COEFFICIENT	± 0.03%/°C (0 ~ 50°C)				
	OPERATING ALTITUDE Note.6	5000 meters				
SAFETY & EMC (Note 5)	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes				
	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, IEC62368-1, EAC TP TC 004 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG:100M Ohms / 500VDC / 25°C / 70% RH				
OTHERS	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020				
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55024, BS EN/EN61000-6-2, heavy industry level, criteria A, EAC TP TC 020				
	MTBF	653.5Khrs min.    MIL-HDBK-217F (25°C)				
NOTE	DIMENSION	101.6*50.8*29mm (L*W*H)				
	PACKING	0.15Kg; 72pcs/11.8Kg/0.82CUFT				
NOTE		<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>5. 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="http://www.meanwell.com">http://www.meanwell.com</a>)</p> <p>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).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p>				



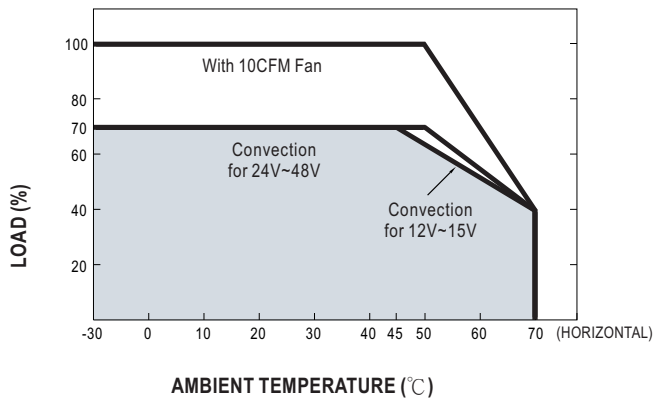
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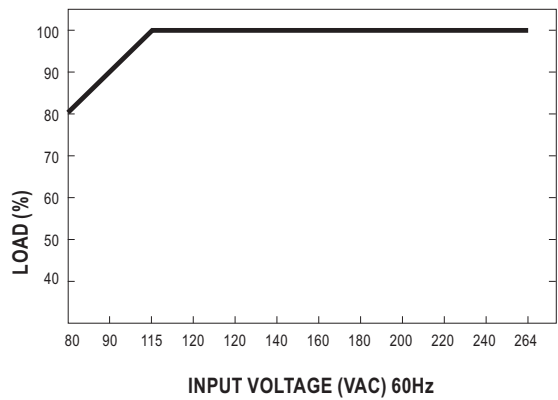
■ Block Diagram



■ Derating Curve

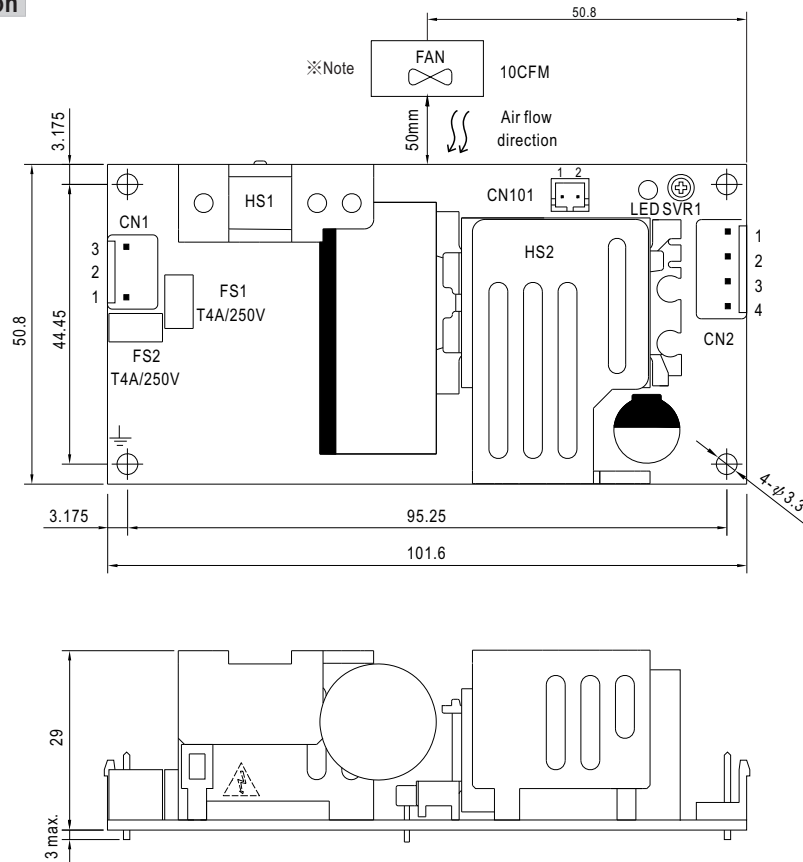


■ Output Derating VS Input Voltage



## Mechanical Specification

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		

⏏ : Grounding required



- 1.HS1,HS2 cannot be shorted.
- 2.HS1 must have safety isolation distance with system case.

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		

FAN Connector(CN101) : JST B2B-PH-K-S or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	DC COM	JST PHR-2 or equivalent	JST SPH-002T-P0.5S or equivalent
2	+12V		

※Note : 1. The FAN SUPPLY is designed to serve as the source of the additive external fan for the cooling of the power supply, enabling the full load delivery and assuring the best life span of the product. Please do not use this FAN SUPPLY to drive other devices.

2.The PCB type(Blank type)model delivers EMI Class B for both conducted emission and radiated emission for the power supply, when configured into either Class I (with FG) or Class II (without FG) system.

## Installation Manual

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