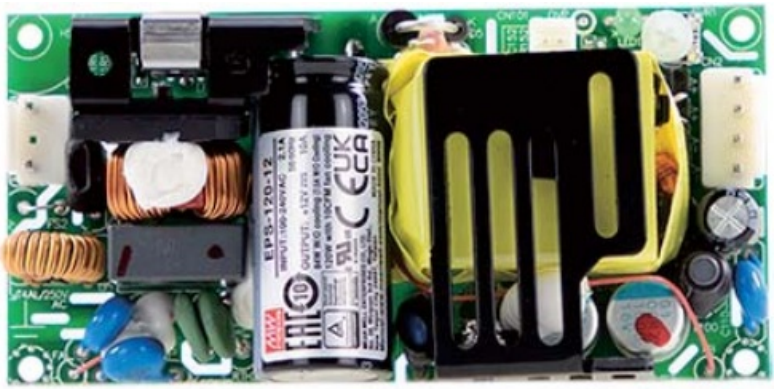
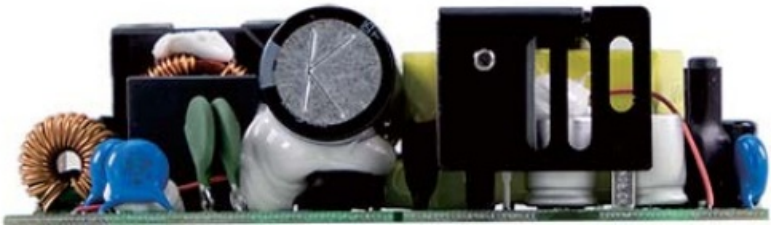
MEAN WELL EPS-120 Series 120W Single Output Switching Power Supply User Guide

Contents

MEAN WELL EPS-120 Series 120W Single Output Switching Power Supply





Frequently Asked Questions

Q: How do I know if the power supply is compatible with my device?

A: Check the voltage and current requirements of your device. Ensure that the output specifications of the power supply match your device's requirements.

Q: What should I do if the power supply overheats?

A: Disconnect the power supply immediately and allow it to cool down. Check for any obstructions to airflow and ensure proper ventilation around the power supply.

Q: Is it safe to leave the power supply plugged in when not in use?

A: It is recommended to unplug the power supply when not in use to prevent any potential electrical hazards or energy wastage.

Features

- 4″x2″ 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, equipment or apparatus

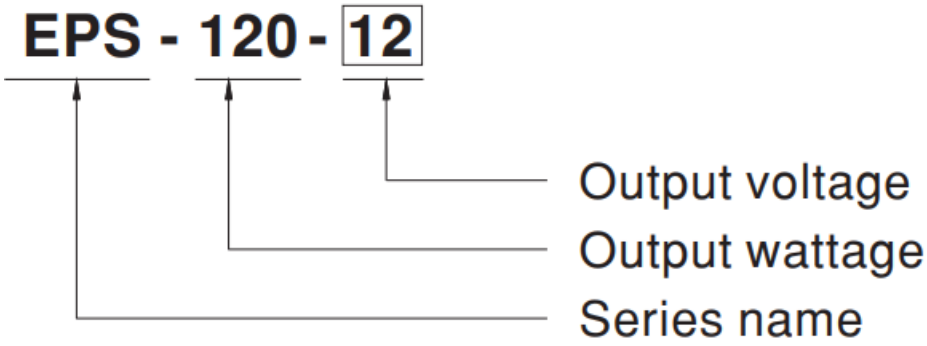
GTIN CODE

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

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 ClassII (no FG) system design. EPS-120 has complete protection functions; it has complied with 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



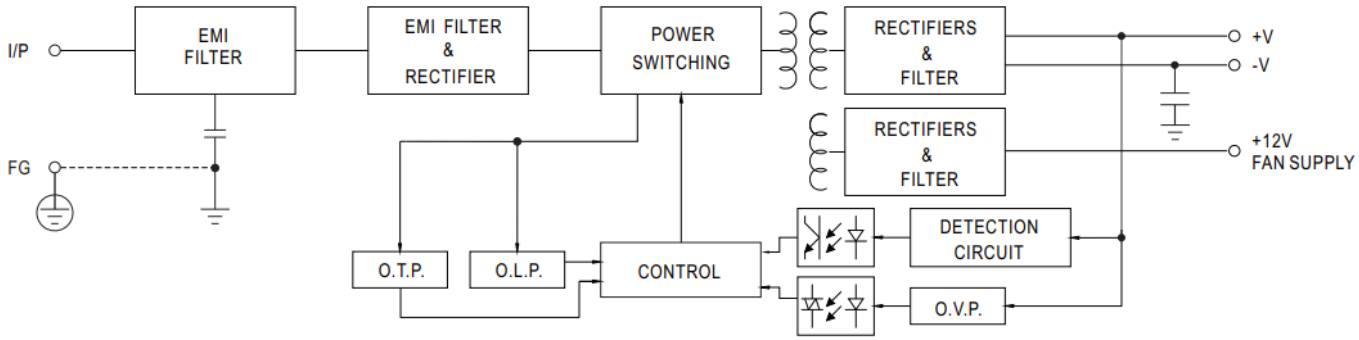
SPECIFICATION

MODEL			EPS-120-12	EPS-120-15	EPS-120-24	EPS-120-27	EPS-120-48
	DC VOLTAGE		12V	15V	24V	27V	48V
	CURRENT	10CFM	10A	8A	5A	4.5A	2.5A
		Convection	7.0A	5.6A	3.5A	3.15A	1.75A

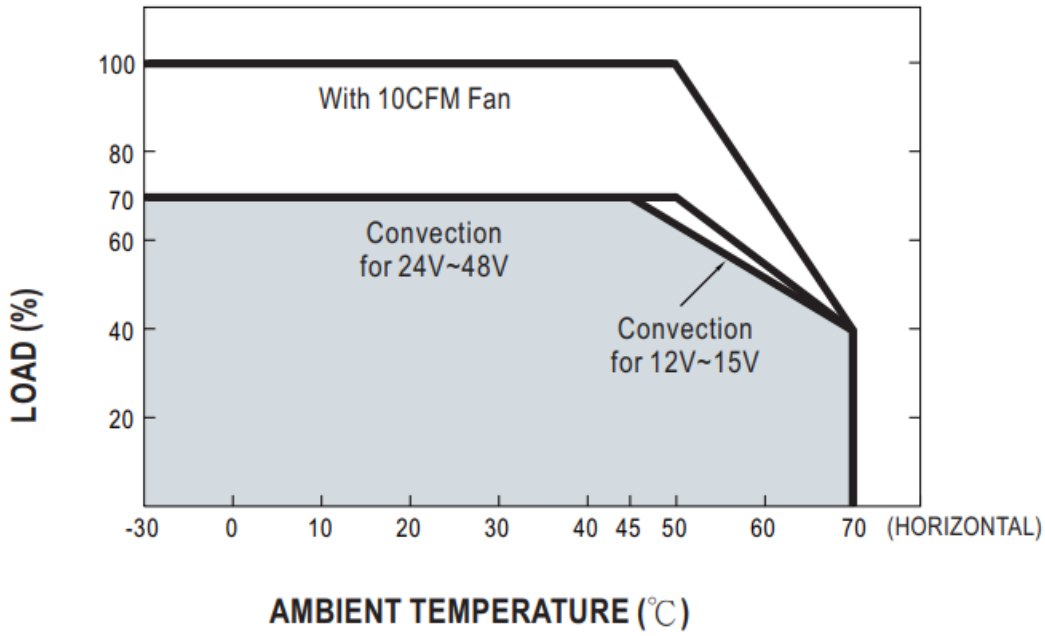
OUTPUT	RATED POWER	10CFM	120W	120W	120W	121.5W	120W
		Convection	84W	84W	84W	85W	84W
	RIPPLE & NOISE (max.) Note.2		120mVp-p	120mVp-p	150mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE		11.4~12.6V	14.3~15.8V	22.8~25.2V	25.6 ~ 28.4V	45.6 ~50.4V
	VOLTAGE TOLERANCE Note.3		±2.0%	±2.5%	±1.0%	±1.0%	±1.0%
	LINE REGULATION		±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION		±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME		500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)		50ms/230VAC 10ms/115VAC at full load				
INPUT	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				
	INRUSH CURRENT (Typ.)		COLD START 30A/115VAC 60A/230VAC				
	LEAKAGE CURRENT		<0.75mA / 240VAC				
PROTECTION	OVERLOAD		115~150% rated output power				
			Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVERVOLTAGE		13.2 ~ 15.6V	16.5 ~ 19.5V	26.4 ~ 31.2V	29.7 ~ 35V	52.8 ~ 62.4V
			Protection type : Shut down o/p voltage, re-power on to recover				
	OVER TEMPERATURE		Protection type : Shut down o/p voltage, re-power on to recover				
FUNCTION	FAN SUPPLY		12V@0.5A for driving a fan ; tolerance -15% ~ +10% at main output 40% rated current (10CFM)				
	WORKING TEMP.		-30 ~ +70°C (Refer to “Derating Curve”)				

ENVIRONMENT	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
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC (Note 5)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, IEC62368-1, CCC GB4943.1, 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
	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, GB 9254.1 Class B,GB17625 Class A, EAC TP TC 020
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, BS EN/EN61000-6-2, heavy industry level, criteria A, EAC TP TC 020
OTHERS	MTBF	3746.9K hrs min. Telcordia SR-332 (Bellcore) ; 491.2K hrs min. MIL-HDBK-217F (25°C)
	DIMENSION	101.6*50.8*29mm (L*W*H)
	PACKING	0.15Kg; 72pcs/11.8Kg/0.82CUFT
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. 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 **https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf**) 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). ※ Product Liability Disclaimer For detailed information, please refer to **https://www.meanwell.com/serviceDisclaimer**.aspx	

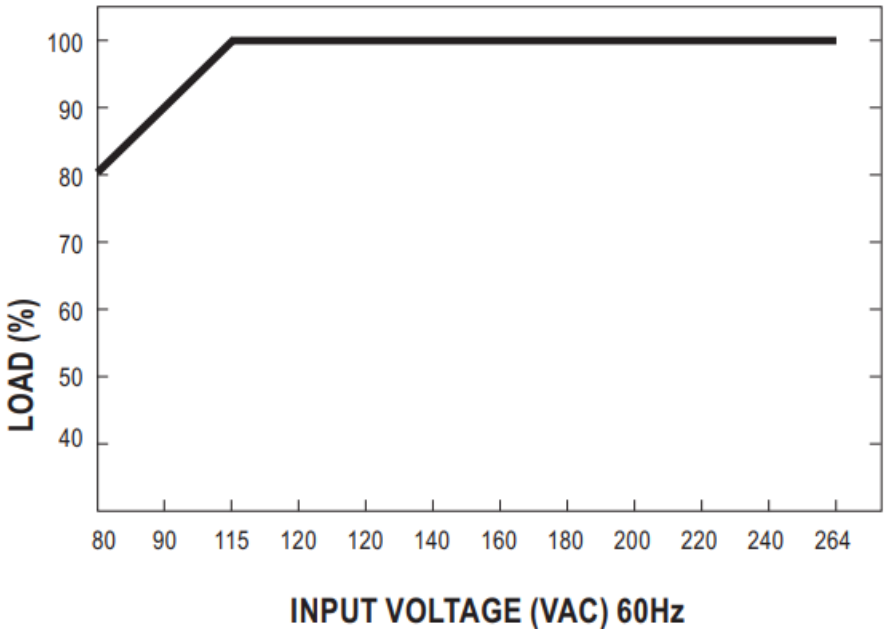
Block Diagram



Derating Curve

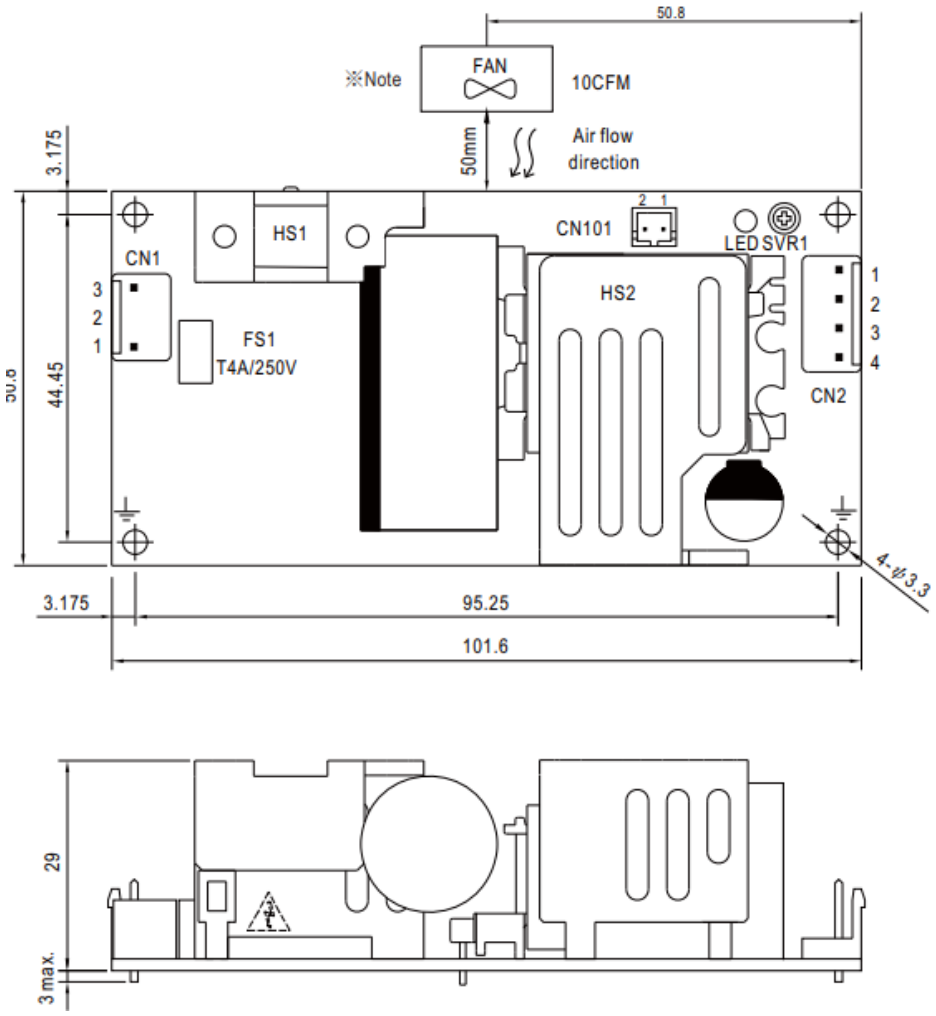


Output Derating VS Input Voltage



Mechanical Specification

(Unit: mm , tolerance ± 1mm)



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	+12V	JST PHR-2 or equivalent	JST SPH-002T-P0.5S or equivalent
2	DC COM		

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
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 ClassI(with FG) life span of the product. Please do not use this FAN SUPPLY to drive other devices.
   or ClassII(without FG) system.

Installation Manual

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

User's Manual

Documents / Resources

	MEAN WELL EPS-120 Series 120W Single Output Switching Power Supply [pdf] User Guide EPS-120 Series 120W Single Output Switching Power Supply, EPS-120 Series, 120W Single Output Switching Power Supply, Output Switching Power Supply, Switching Power Supply, Power Supply, Supply

References

- TÜV Rheinland - Home | US | TÜV Rheinland
- User Manual