MEAN WELL EPP-300 series 300W Single Output with PFC Function User Manual

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Contents

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 93%
- Withstand 300VAC surge input for 5 seconds
- **Protections:** Short circuit / Overload / Over voltage / Over temperature
- Built-in 12V/0.5A auxiliary output
- 5″x3″ compact size
- Free air convection for 200W and 300W with 20.5 CFM forced air
- With power good and fail signal output
- Built-in remote sense function
- No load power consumption under 0.5W by PS-ON control
- Standby 5V@1A with fan, @ 0.6A without fan
- Operating altitude up to 5000 meters
- 3 years warranty

SPECIFICATION

MODEL		EPP-300-12	EPP-300-15	EPP-300-24	EPP-300-27	EPP-300-48
	DC VOLTAGE	12V	15V	24V	27V	48V
	RATED CURRENT (20.5CFM)	25A	20A	12.5A	11.12A	6.25A
	CURRENT RANGE (convection)	0 ~ 16.67A	0 ~ 13.33A	0 ~ 8.33A	0 ~ 7.4A	0 ~ 4.17A
	CURRENT RANGE (20.5CFM)	0 ~ 25A	0 ~ 20A	0 ~ 12.5A	0 ~ 11.12A	0 ~ 6.25A

OUTPUT	**RATED POWER (convection)**	200W	200W	199.9W	199.8W	200.2W
	RATED POWER (20.5CFM)	300W	300W	300W	300.24W	300W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p	200mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	Main output:11.4 ~ 12.6V	Main output:14.25 ~ 15.75V	Main output:22.8 ~ 25.2V	Main output:25.65 ~ 28.35V	Main output:45.6 ~ 50.4V
	VOLTAGE TOLERANCE Note.3	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%
	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	2500ms, 30ms/230VAC 3000ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	13ms/230VAC/115VAC at full load				

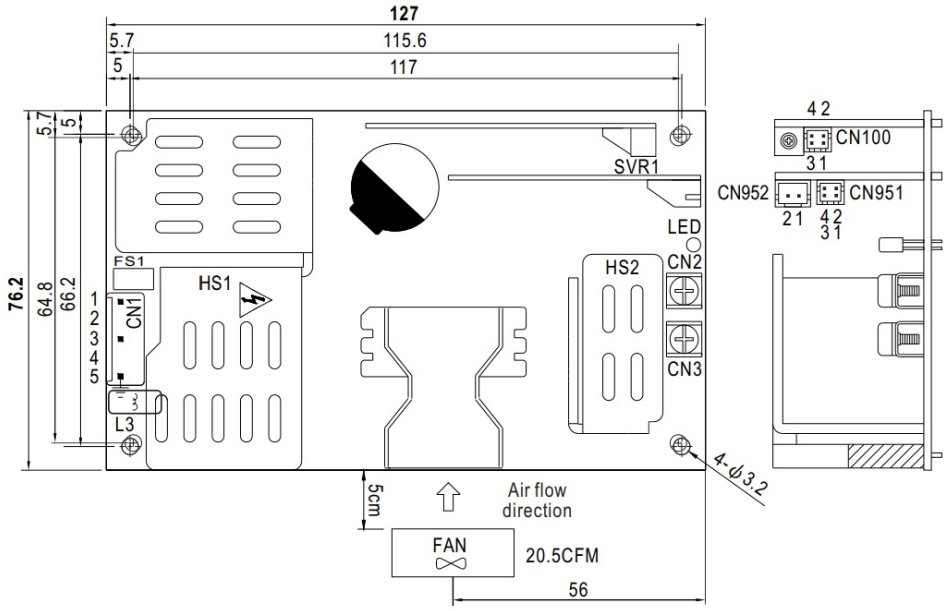
INPUT	**VOLTAGE RANGE Note. 5**	90 ~ 264VAC 127 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.98/115VAC at full load				
	EFFICIENCY (Typ.)	90%	90%	92.5%	93%	93%
	AC CURRENT (Typ.)	3.5A/115VAC 1.8A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 40A/115VAC 80A/230VAC				
	LEAKAGE CURRENT	<2mA/240VAC				
	OVERLOAD	105 ~ 135% rated output power				
		Protection type: Hiccup mode, recovers automatically after fault condition is removed				

PROTECTION	**OVER VOLTAGE**	13.5 ~ 15V	16.2 ~ 18.5V	26 ~ 30V	29.5 ~ 33.5V	52 ~ 59.5V
		Protection type: Shut down o/p voltage, re-power on to recover				
	OVER TEMPERATURE	110°C±5°C (TSW1) detect on heatsink of power transistor				
		115±5°C (12V,15V),85±5°C (24V,27V,48V) (TSW2) detect on heatsink of output diode				
		Protection type: (TSW1)Shut down o/p voltage, recovers automatically after temperature goes down				
		Protection type: (TSW2)Shut down o/p voltage, re-power on to recover				
FUNCTION	**5V STANDBY**	5VSB : 5V@0.6A without fan, 1A with fan 20.5CFM ; tolerance ± 2%, ripple : 150mVp-p(max.)				
	AUXILIARY POWER (AUX)	12V@0.5A for driving a fan ; tolerance -15% ~ +10%				
	PS-ON INPUT SIGNAL	Power on: PS-ON = “Hi” or ” > 2 ~ 5V” ; Power off: PS-ON = “Low” or ” < 0 ~ 0.5V”				
	POWER GOOD / POWER FAIL	500ms>PG>10ms ; The TTL signal goes high with 10ms to 500ms delay after power set up ; The TTL signal goes low at least 1ms before Vo below 90% of rated value				

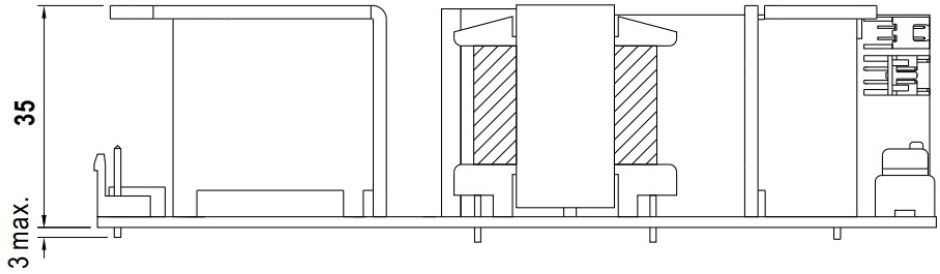
ENVIRONMENT	**WORKING TEMP.**	-30 ~ +70℃ (Refer to “Derating Curve”)
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃ , 10 ~ 95% RH
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)
	OPERATING ALTITUDE Note.7	5000 meters
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC (Note 4)	**SAFETY STANDARDS**	UL62368-1, TUV BS EN/EN62368-1, 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, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH

	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32),Conduction Class B,Radiation 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/EN60601-1-2, criteria A, EAC TP TC 020
OTHERS	**MTBF**	160Khrs min. MIL-HDBK-217F (25℃)
	DIMENSION	127*76.2*35mm (L*W*H)
	PACKING	0.37 Kg; 36pcs/14.3Kg/0.96CUFT;
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. 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. (as available on **http://www.meanwell.com**) 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. Heat Sink HS1,HS2 can not be shorted. 7. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/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**	

Mechanical Specification



Grounding required: The grounding of the system level unit has to connect with Pin No.5 on CN1 of EPP-300 so as to pass EMI



HS1,HS2 can not be shorted

Unit: mm
AC Input Connector (CN1): JST B5P-VH or equivalent

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

DC Output Connector (CN2,CN3)

Pin No.	Assignment	Output Terminals
CN2	-V	M3.5 Pan HD screw in 2 positions Torque to 8 lbs-in(90cNm)max.
CN3	+V	

Function Connector(CN100):HRS DF11-4DP-2DS or equivalent

Pin No.	Status	Mating Housing	Terminal
1	-S	HRS DF11-4DS or equivalent	HRS DF11 **SC or equivalent
2	+S		
3	DC COM		
4	PG		

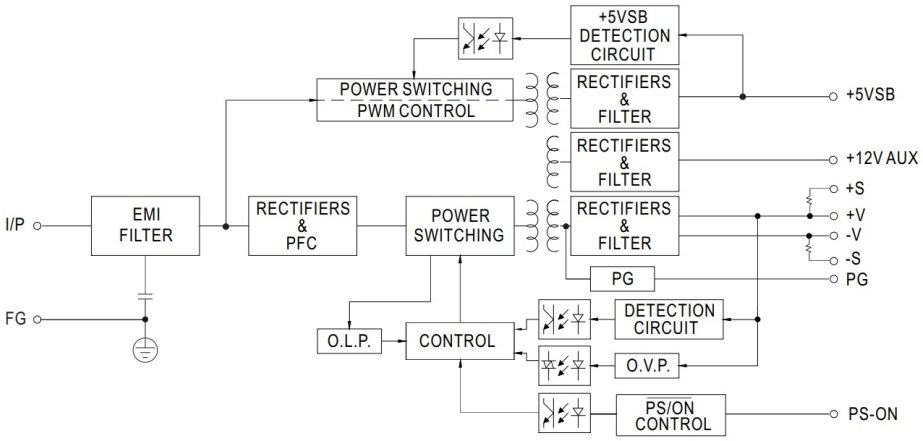
Function Connector(CN951): HRS DF11-4DP-2DS or equivalent

Pin No.	Status	Mating Housing	Terminal
1	5VSB	HRS DF11-4DS or equivalent	HRS DF1**SC or equivalent
2,4	DC COM		
3	PS-ON		

FAN Connector(CN952): JST S2B-XH or equivalent

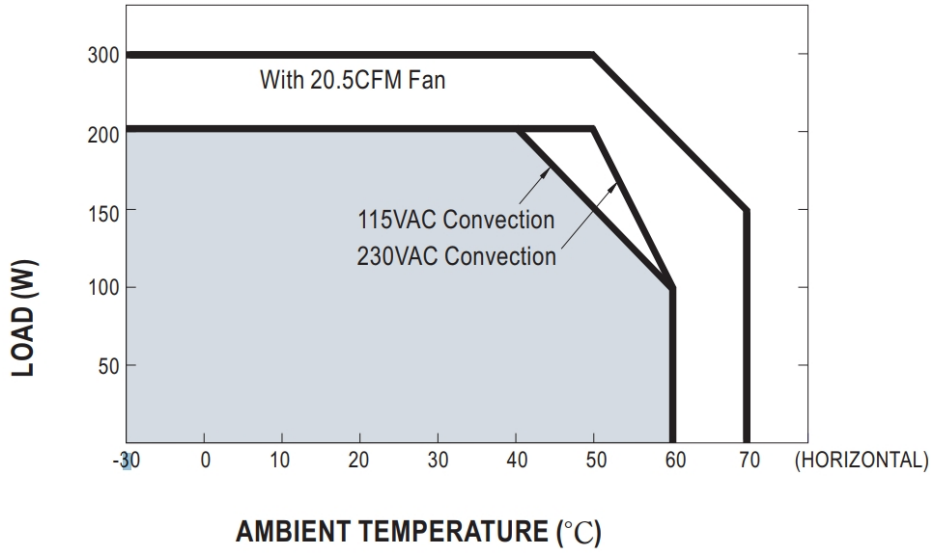
Pin No.	Assignment	Mating Housing	Terminal
1	DC COM	JST XHP or equivalent	JST SXH-001T-P0.6 or equivale nt
2	+12V		

Block Diagram

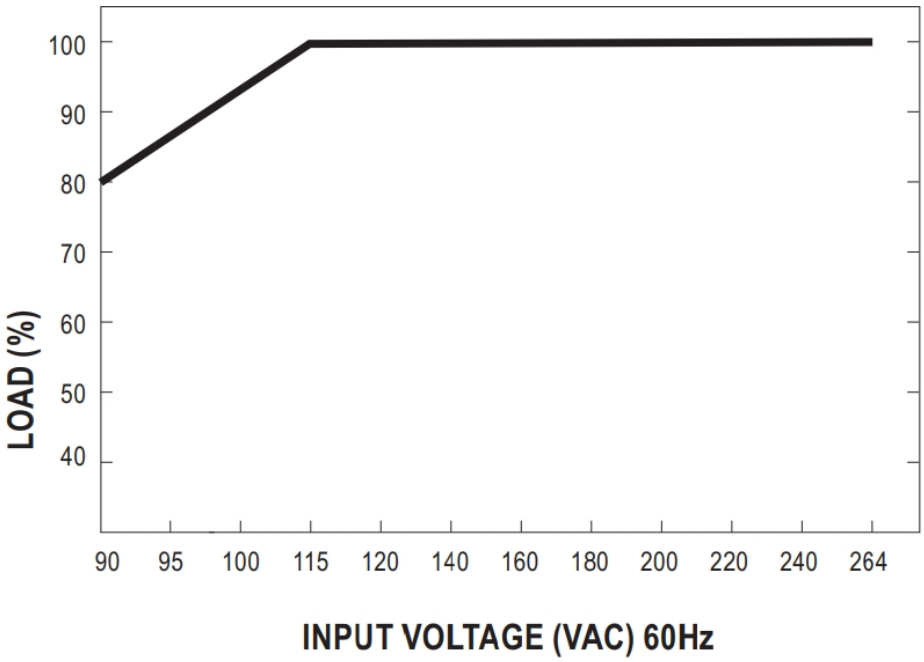


PFC fosc: 65KHz
PWM fosc: 70KHz

Derating Curve



Output Derating VS Input Voltage



Documents / Resources

	MEAN WELL EPP-300 series 300W Single Output with PFC Function [pdf] User Manual EPP-300 series, 300W Single Output with PFC Function, EPP-300 series 300W Single Output with PFC Function, Output with PFC Function, PFC Function, Function

References

- TÜV Rheinland - Home | US | TÜV Rheinland
- MEAN WELL Switching Power Supply Manufacturer
- Product Liability Disclaimer-MEAN WELL Switching Power Supply Manufacturer