

# Single Output Switching Power Supply with FPC function 500W series



## Features:

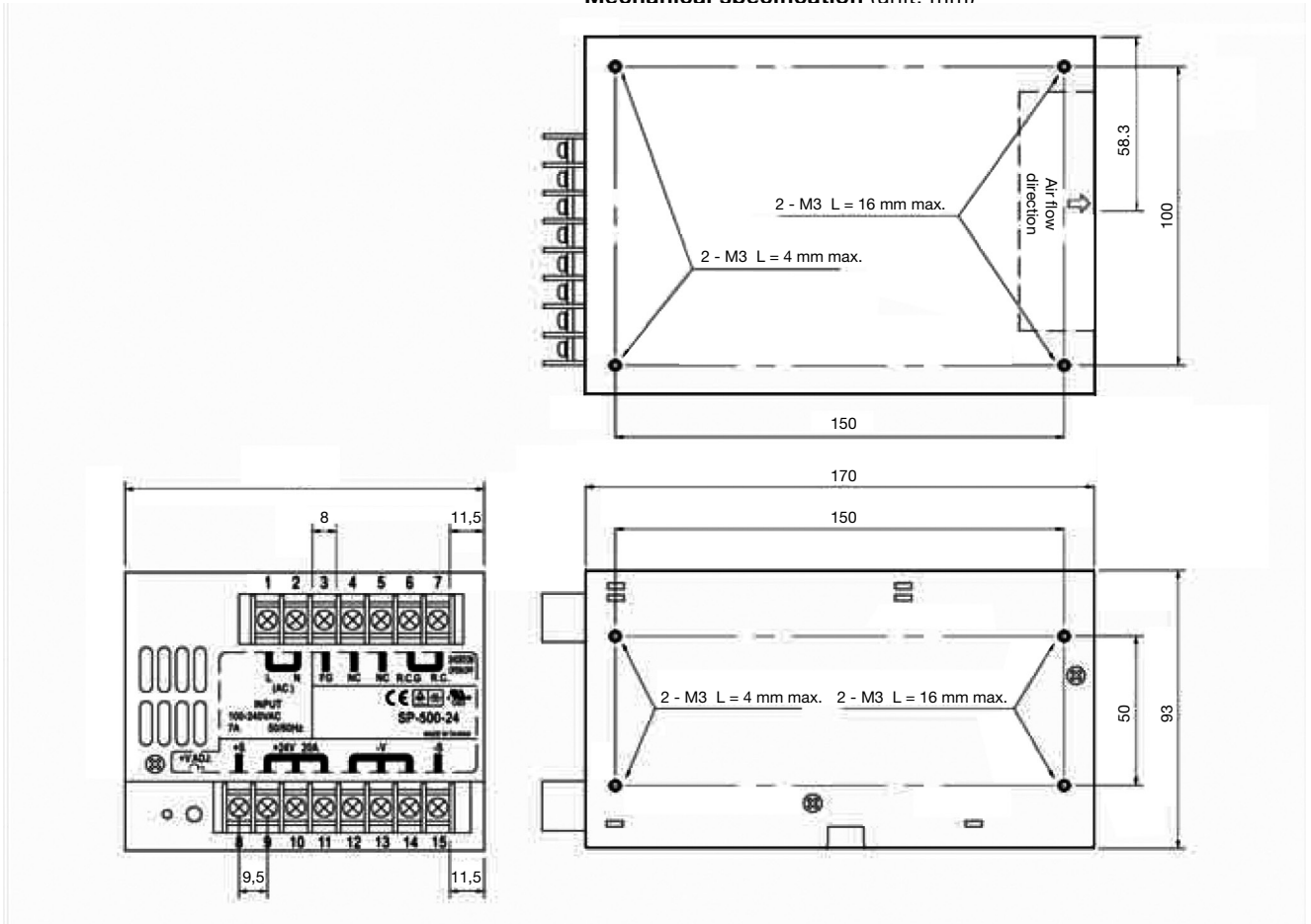
- 1 Universal AC input / Full range
- 2 Built-in active PFC function, PF >0.95
- 3 Protections: Short circuit / Over load / Over voltage / Over temperature
- 4 Forced air cooling by built-in DC fan
- 5 Built-in cooling Fan ON-OFF control
- 6 Built-in remote ON-OFF control
- 7 Built-in remote sense function
- 8 Fixed switching frequency at 110 KHz
- 9 3 years warranty

## Specifications:

model		SP-500-12	SP-500-13.5	SP-500-15	SP-500-24	SP-500-27	SP-500-48
output	DC Voltage	12 V	13.5 V	15 V	24 V	27 V	48 V
	Rated Current	40 A	36 A	32 A	20 A	18 A	10 A
	Current Range	0 - 40 A	0 - 36 A	0 - 32 A	0 - 20 A	0 - 18 A	0 - 10 A
	Rated Power	480 W	486 W	480 W	480 W	486 W	480 W
	Ripple & Noise (note 2)	240mVp-p	240mVp-p	240mVp-p	240mVp-p	200mVp-p	300mVp-p
	Voltage Adj. Range	10 - 13.2 V	12 - 15 V	13.5 - 18 V	20 - 26.4 V	24 - 30 V	41 - 56 V
	Voltage Tolerance (note 3)	± 1.0 %	± 1.0 %	± 1.0 %	± 1.0 %	± 1.0 %	± 1.0 %
	Line Regulation	± 0.5 %	± 0.5 %	± 0.5 %	± 0.5 %	± 0.5 %	± 0.5 %
	Load Regulation	± 1.0 %	± 0.5 %	± 0.5 %	± 0.5 %	± 0.5 %	± 0.5 %
Setup, Rise, Hold Time	1500 ms, 50 ms, 20 ms at full load						
Input	Voltage Range (note 5)	88 - 264 VAC / 124 - 370 VDC					
	Frequency Range	47 - 63 Hz					
	Power Factor	PF >0.95 / 230 VAC - PF >0.95 / 115 VAC at full load					
	Efficiency (typ.)	84 %	84 %	83 %	85.5 %	86.5 %	87 %
	AC Current	7 A / 115 VAC - 3.5 A / 230 VAC					
	Inrush Current (max.)	18 A / 115 VAC - 38 A / 230 VAC					
	Leakage Current	< 3.5 mA / 240 VAC					
Protection	Over Load	105 - 135 % rated output power / Protection type: Fold back current Limiting, recovers automatically after fault condition is removed					
	Over Voltage	13.8 - 16.2 V	15.5 - 18.2 V	18 - 21 V	27.6 - 32.4 V	31 - 36.5 V	57.6 - 67.2 V
	Fan Control, O.T.P.	Protection type: Hiccup mode, recovers automatically after fault condition is removed RTH1 or RTH2 ≥50°C Fan On, ≤45°C Fan Off, ≥70°C output shutdown					
Environment	Working temp.	-10 - +50°C (Refer to output load derating curve)					
	Working Humidity	20 - 90% RH non-condensing					
	Storage Temp., Humidity	-20 - +85°C, 10 - 95% RH					
	Temp. Coefficient	0.03% / °C (0 - 50 °C)					
	Vibration	10 - 500 Hz, 2G 10 min / 1 cycle period for 60 min. each along X, Y, Z axes					
Safety & EMC (note 4)	Safety Standards	UL60950-1, TUV EN60950-1 approved					
	Withstand Voltage	I/P - O/P: 3 KVAC I/P - FG: 1.5 KVAC O/P - FG: 0.5 KVAC					
	Isolation Resistance	I/P - O/P, I/P - FP, O/P - FG: 100M Ohms/500 VDC					
	Harmonic Current	Compliance to EN55022 (CISPR22) Class B					
	EMS Immunity	Compliance to EN61000-3-2, -3					
	MTBF	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, Light Industry level, criteria A					
Others	MTBF	133.4 K hrs min. MIL - HDBK - 217 F (25°C)					
	Dimension	170 x 120 x 93 mm (L x W x H)					
	Packing	1.9 Kg; 8 pcs / 15.5 KG / 1.09 CUFT					
Note	<p>1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C of ambient temperature</p> <p>2. Ripple &amp; noise are measured at 20 MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uf &amp; 47 uf parallel capacitor.</p> <p>3. Tolerance: includes set-up tolerance, line regulation and load regulation.</p> <p>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.</p> <p>5. Derating may be needed under low input voltages. Please check the derating curve for more details.</p>						

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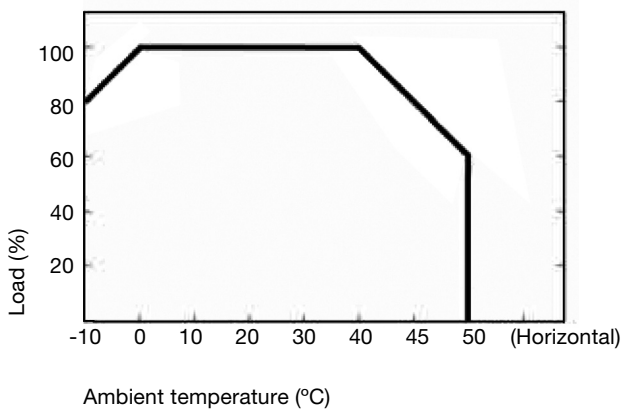
Mechanical specification (unit: mm)



Block diagram (fosc: 60 KHz)

Terminal Pin No. Assignment		Terminal Pin No. Assignment		Terminal Pin No. Assignment		Terminal Pin No. Assignment	
Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4, 5	AC/L	8	+S	15	-S
2	AC/N	6	AC/N	9 -11	DC Output + V		
3	FG	7	FG	12 - 14	DC Output - V		

Derating curve



Static characteristics

