



SUNPOWER TECHNOLOGY CORP.  
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# SPP-160P-xx Series

**160W, Open Frame**  
**Active P.F.C Function**  
**Green mode function**



166 x 63 x 32 mm  
 6.5 x 2.87 x 1.26 inch

## Features:

- \* Universal AC input with active PFC circuit, P.F.>0.95
- \* High efficiency up 90%
- \* Over voltage protection
- \* Over load & short circuit protection
- \* Output voltage  $\pm 10\%$  adjustment
- \* 100% full load burn-in test
- \* UL, cUL, TUV ,CB, CE standard
- \* 2 years warranty

## Specification:

INPUT	<b>Voltage</b>	90V ~ 264VAC universal full range or 127V ~ 375VDC.						
	<b>Frequency</b>	47 ---- 63 Hz						
	<b>Current</b>	<2.1A @100V AC input, full load condition						
	<b>Inrush Current</b>	<40A@115V , <80A@230V AC input. Cold start at 25°C ambient						
	<b>Leakage Current</b>	<1.5mA@264V AC input						
	<b>Power Factor</b>	PF > 0.95						
OUTPUT	<b>MODEL No.</b>	<b>SPP-160P-12</b>	<b>SPP-160P-15</b>	<b>SPP-160P-19</b>	<b>SPP-160P-24</b>	<b>SPP-160P-27</b>	<b>SPP-160P-48</b>	
	<b>Voltage</b>	12V	15V	19V	24V	27V	48V	
	<b>Min Load</b>	0A	0A	0A	0A	0A	0A	
	<b>Max Load</b>	13A	10.7A	8.4A	6.7A	6A	3.4A	
	<b>Output Tolerance</b> ②	$\pm 3\%$	$\pm 3\%$	$\pm 3\%$	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$	
	<b>Ripple Noise MAX.</b> ③	120mV	150mV	150mV	240mV	240mV	240mV	
	<b>Efficiency (TYP.)</b>	87%	88%	88%	89%	89%	90%	
	<b>Output MAX.</b>	156W	161W	160W	161W	162W	163W	
PROTECTION	<b>Over Voltage</b>	13.8~16.8V	17.3~21V	21.9~26.6V	27.6~33.6V	31~37.8V	55.2~67.2V	
		Shutdown and latch off, recover after re-start up.						
	<b>Over Load &amp; Short Circuit</b>	When power supply over 105%~ 150 max load or short circuit acted, power supply will be shutdown and recover automatically after the fault is removed.						
ELEC. CHAR.	<b>Over Temperature</b>	Over 95°C $\pm$ 5°C Shutdown, recovers automatically after fault condition has been removed.						
	<b>Rise time</b>	<40mS						
	<b>Hold up time</b>	>20mS@230V, full load condition						
ENVIRONMENT	<b>Setup time</b>	<2.0S@100 ~ 240V AC						
	<b>Temperature</b> ④	Operating: -20 ~ 70°C ; De-rating: 45 ~ 70°C: 2.5%/°C ; Storage: -40 ~ +85°C						
	<b>Humidity</b>	Operating: 20% ~ 90% RH (non condensing) ; Storage: 10% ~ 95% RH (non condensing)						
SAFETY	<b>Withstand voltage</b>	I/P-O/P:3KVAC, I/P-PE:1.5KVAC, O/P-PE:0.5KVAC, 1minute						
	<b>Isolation resistance</b>	I/P-O/P, I/P-FG, O/P-FG > 100M $\Omega$ /500VDC at 25°C/ 70% RH						
	<b>Safety standard</b>	UL 60950-1 2 <sup>nd</sup> , CSA C22.2 No. 60950-1- 07 1 <sup>st</sup> , TUV EN 60950-1:2006, IEC 60950-1:2005, standard						
EMC	<b>EMI</b>	EN 55022 CLASS B · FCC CFR 47 PART 15 CLASS B · CNS 13438 CLASS B.						
		Compliance to EN61000-3-2 CLASS D, EN61000-3-3						
	<b>EMS</b>	EN 55024 : EN 61000-4-2,3,4,5,6,8,11						
OTHERS	<b>Cooling</b>	Natural Cooling.						
	<b>M.T.B.F.</b>	310K hours						
	<b>Dimension</b>	166 x 63 x 32 mm (L*W*H)						
	<b>Packing</b>	N.W.:0.8 Kg / 1pc; 15pcs / 1.44 CUFT / 1 CTN						

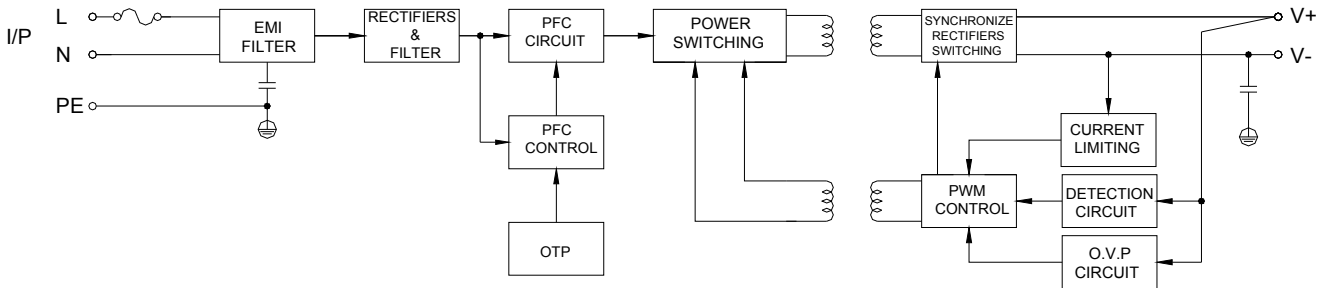
- NOTE
- ① All measurements which not mentioned are based on 230VAC input, **output Max** at ambient 25°C / 70%RH
  - ② Output tolerance included set up voltage, line regulation and load regulation.
  - ③ Ripple & noise are measured at 100~254VAC input with 0~50°C condition and 20MHz of bandwidth by using a 10" ~ 15" twisted pair-wire terminated with a 0.1uF & a 47uF parallel capacitor.
  - ④ The operating temperature shall follow the de-rating curve in spec  
The output load may be requested for decreasing as de-rating curve in spec when low input voltage is under 100VAC..
  - ⑤ The power supply is considered a component of end-equipment. The end-equipment must be re-confirmed whether comply with EMC directives.



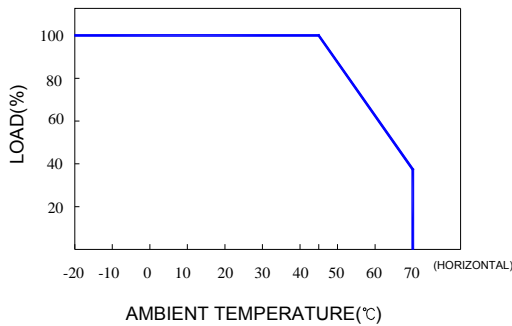
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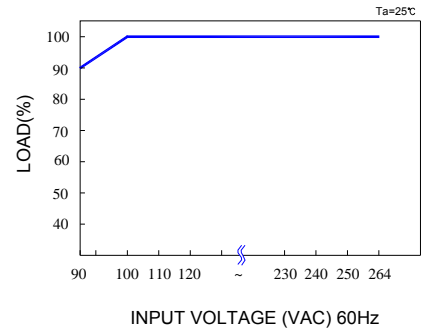
## Block Diagram : PS10



## De-rating Curve :

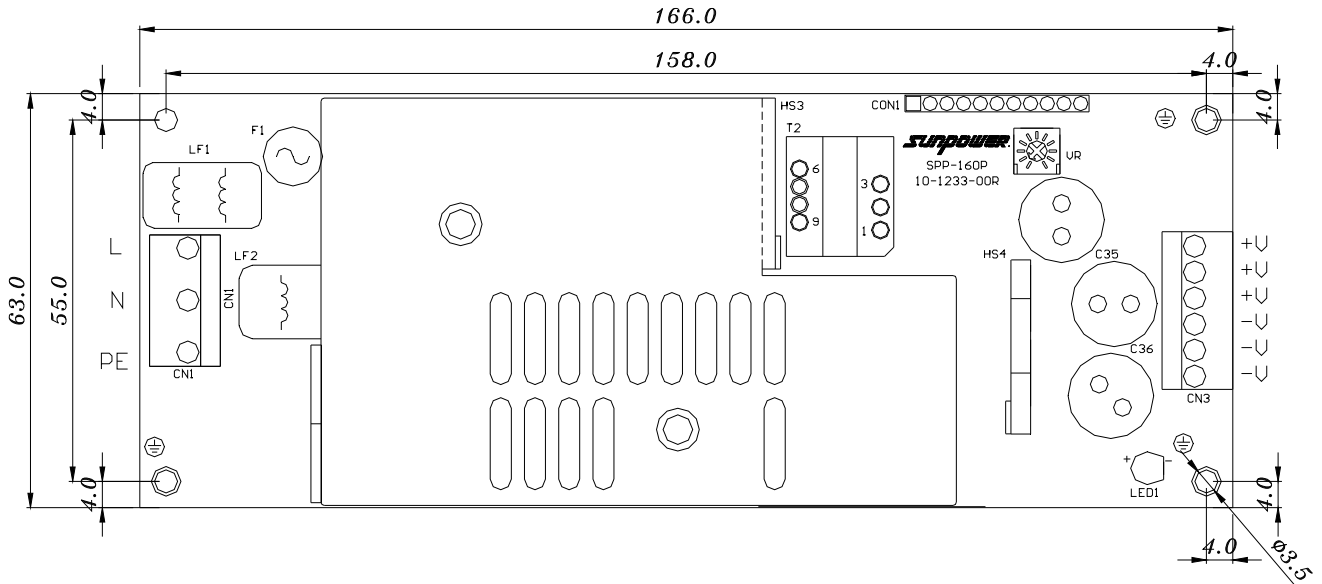


## Output De-rating Vs Input Voltage :



## Dimension:

(Unit: mm)



### NOTES:

I/P: CN1, 5P P=3.96mm( Pin 2,4 CUT)

O/P: CN3, 6P P=3.96mm