**SUNPOWER TECHNOLOGY CORP.**
16F.-1, No.150, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.).
TEL: 886-2-8226-3100 FAX: 886-2-8226-3111
http://www.sunpower.com.tw
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# SPE-500-xx Series

## 500W, Single Output
## Active P.F.C Function

230 x 127 x 40.6 mm
9.06 x 5.00 x 1.6 inch

## Features:

- Universal AC input with active PFC circuit, P.F.>0.95
- 1U low profile 40.6mm
- Altitude during operation up to 16404ft ( 5000m )
- Power ON with LED indicator
- Built in EMI filter, low ripple noise
- Over voltage、over load & short circuit protection
- Over temperature protection
- Output voltage ±10% adjustment
- Remote control ON/OFF
- 100% full load burn-in test
- UL, cUL, TUV, CB, CE approved
- 3 years warranty

## Specification:

| | | | | | | |
|---|---|---|---|---|---|---|
| INPUT | **Voltage** | 85V ~ 264VAC universal full range or 120V ~ 375VDC. | | | | |
| | **Frequency** | 47 ---- 63 Hz | | | | |
| | **Current** | 6.6A @100V AC input, full load condition | | | | |
| | **Inrush Current(TYP)** | 20A@115V , 40A@230V AC input. Cold start at 25℃ ambient | | | | |
| | **Leakage Current** | <1.5mA@264V AC input | | | | |
| | **Power Factor** | PF ＞ 0.95 | | | | |
| OUTPUT | **MODEL No.** | **SPE-500-05** | **SPE-500-12** | **SPE-500-24** | **SPE-500-36** | **SPE-500-48** |
| | **Voltage** | 5V | 12V | 24V | 36V | 48V |
| | **Min Load** | 0A | 0A | 0A | 0A | 0A |
| | **Max Load** | 90A | 41.7A | 21A | 14A | 10.5A |
| | **Output Tolerance** ② | ±2% | ±1% | ±1% | ±1% | ±1% |
| | **Ripple Noise MAX.** ③ | 150mV | 150mV | 150mV | 200mV | 200mV |
| | **Efficiency (TYP.)** | 84% | 88% | 89% | 90% | 90.5% |
| | **Output MAX.** | 450W | 500.4W | 504W | 504W | 504W |
| PROTECTION | **Over Voltage** | 5.75V~7.0V | 13.8V~16.8V | 27.6V~33.6V | 41.4V~50.4V | 55.2V~67.2V |
| | | Shutdown and latch off, recover after re-start up. | | | | |
| | **Over Load & Short Circuit** | When power supply over 105%~ 130% max load or short circuit acted, power supply will go into hiccup mode and recover automatically after the fault is removed. | | | | |
| | **Over Temperature** | Shutdown o/p voltage, recovers automatically after temperature goes down | | | | |
| ELEC. CHAR. | **Rise time** | <20mS | | | | |
| | **Hold up time** | >18mS@230V, full load condition | | | | |
| | **Setup time** | <3.0S@100 ～ 240V AC | | | | |
| | **Remote Sensing** | (RS+, RS-). | | | | |
| | **Remote Control** | RC+/RC-:0~0.8V= Power On; 4~10V= Power Off. | | | | |
| ENVIRONMENT | **Temperature** ④ | Operating: -30 ~ +70℃ ; De-rating: 50 ~ 70℃: 2.5%/℃ ; Storage: -40 ~ +85℃ | | | | |
| | **Humidity** | Operating: 20% ~ 90% RH (non condensing) ; Storage: 10% ~ 95% RH (non condensing) | | | | |
| SAFETY | **Withstand voltage** | I/P-O/P:3KVAC, I/P-FG:1.8KVAC, O/P-FG:0.5KVAC, 1minute | | | | |
| | **Isolation resistance** | I/P-O/P, I/P-FG, O/P-FG ＞100MΩ/500VDC at 25℃/ 70% RH | | | | |
| | **Safety standard** | UL 60950-1 2nd,CAN/CSA C22.2 No. 60950-1- 07 2nd,UL 62368-1 2nd (edition dated 2014-12-01) , IEC60950-1:2005+A1+A2, IEC 62368-1:2014 (2nd .Edition),TUV EN 62368-1:2014+A11 approved | | | | |
| EMC | **EMI** | EN 55032 CLASS B, FCC 47 CFR PART 15 CLASS B | | | | |
| | | Compliance to EN61000-3-2 CLASS D, EN61000-3-3 | | | | |
| | **EMS** | EN 55024：EN 61000-4-2,3,4,5,6,8,11 | | | | |
| OTHERS | **Cooling** | Forced airflow cooling with DC fan | | | | |
| | **M.T.B.F.** | 138.7 K hours | | | | |
| | **Dimension** | 230 x 127 x 40.6 ㎜ (L*W*H) | | | | |
| | **Packing** | N.W.:1.11Kg / 1pc; 15pcs / 1.32 CUFT / 1 CTN | | | | |

NOTE

① All measurements which not mentioned are based on 230VAC input, **output Max** at ambient 25℃ / 70%RH
② Output tolerance included set up voltage, line regulation and load regulation.
③ Ripple & noise are measured at 100～254VAC input with 10～50℃ 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.
⑥ The ambient temperature should be de-rating by 5℃/1000m, when operating altitude higher than 2000m (6500 ft)

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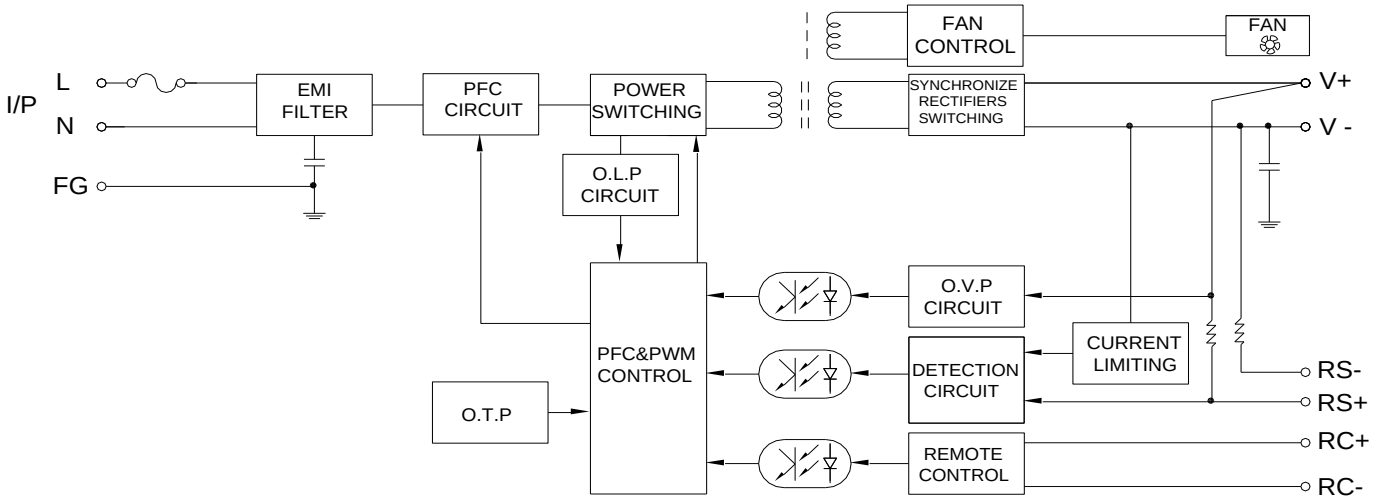
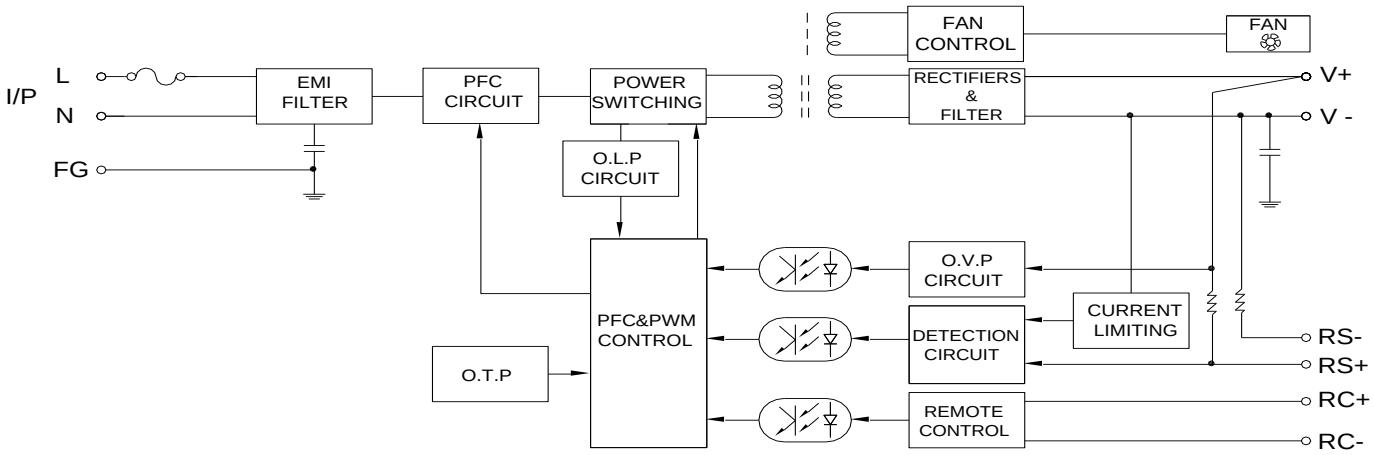
# SPE-500-xx Series

## Block Diagram：PS49-1、PS50-1

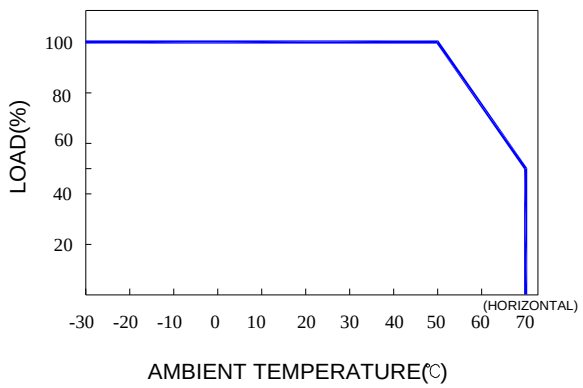
SPE-500-05～12




SPE-500-24～48

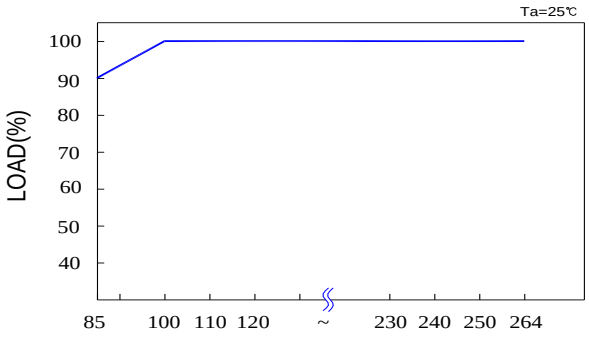



## De-rating Curve：




AMBIENT TEMPERATURE(℃)

## Output De-rating Vs Input Voltage：




INPUT VOLTAGE (VAC) 60Hz

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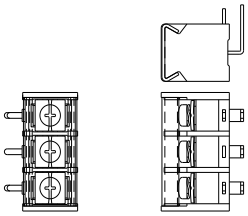
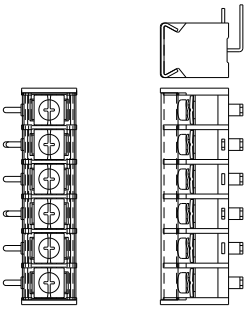
## Dimension: (Unit: mm)

Input Terminal :

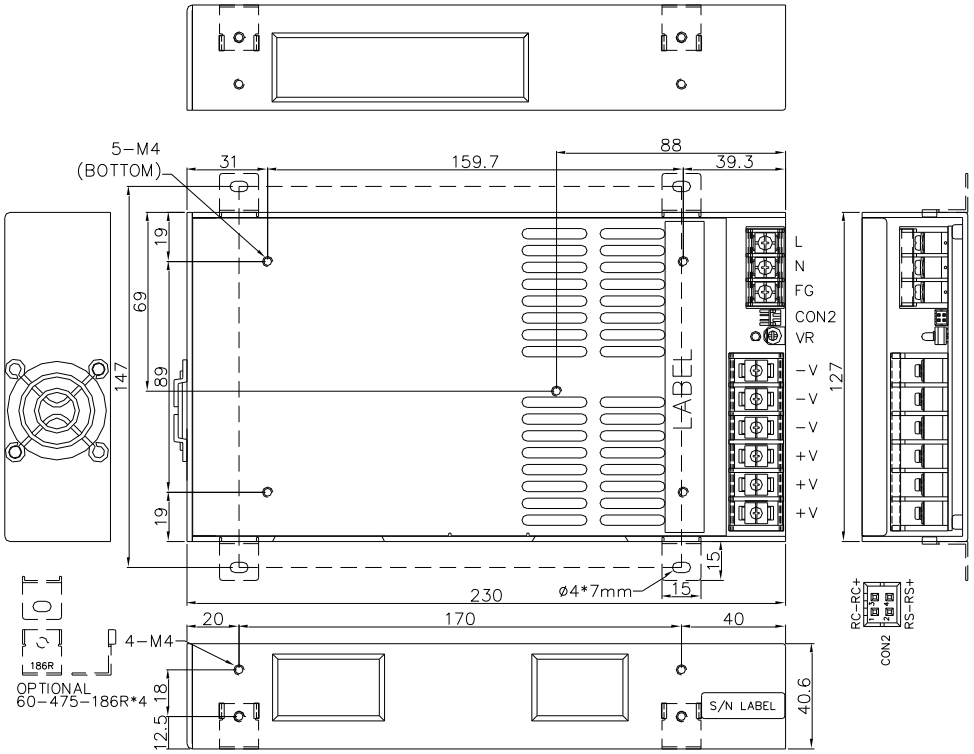


90 deg. terminal optional
with plastic cover
(has MOQ required)

Output Terminal :



90 deg. terminal optional
with plastic cover
(has MOQ required)




NOTES:

TERMINAL BLOCK: 3P, PITCH 9.5mm WITH PC COVER.

| MODEL No. | 1 | 2 | 3 |
|---|---|---|---|
| SPE-500-xx | L | N | FG |

TERMINAL BLOCK: 6P, PITCH 11 mm WITH PC COVER.

| MODEL No. | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| SPE-500-xx | -V | -V | -V | +V | +V | +V |

Connector Pin No. Assignment (CON):

HRS DF11-04DP-2DS or equivalent

| Pin No | Assignment | Mating Housing | Terminal |
|---|---|---|---|
| 1 | RC- | HRS DF11-4DS or equivalent | HRS DF11-**SC or equivalent |
| 2 | RS- | | |
| 3 | RC+ | | |
| 4 | RS+ | | |

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# SPE-500-xx Series

## Remote sense & Remote control ON/OFF:

❶ Remote control ON/OFF becomes available by applying voltage in CON

❷ Table A shows the specification of remote control ON/OFF function

❸ Fig 1 slows the example to connect remote control ON/OFF function

Table Ａ： Specification of remote control ON/OFF

| Connection Method | | Fig 1 | Between RC+ and RC- |
|---|---|---|---|
| SW Logic | Power ON | SW Open | 0~0.8V |
| | Power OFF | SW Close | 4~10V |

Fig 1 Examples of connecting remote control ON/OFF