500W Single Output Switching Power Supply

- Built in PFC circuit (0.99)
- High efficiency, high reliability
- 100% full load burn-in test
- Cooling fan on/off automatically
- Built in remote control
- Short circuit/over load/over voltage/over temp. protected
- Universal AC input/full range
- Approvals: UL/TUV/CE/ISO-9001
- 2 years warranty

Input voltage........................................88 ～ 264VAC universal input
Input current/frequency..........................7A/115V, 3.5A/230V; 47-63Hz
Inrush current....................................15A/115V, 30A/230V
Output voltage......................................refer to below table (± 10% ADJ.)
Overload protection.............................105% ～ 135% output constant limiting
Over voltage protection .........................115% ～ 140% of output voltage
Setup, rise, hold up time .....................1.5s, 50ms, 20ms/230VAC
Withstand voltage...............................I/P-O/P:3KV, I/P-FG:1.5KV, 1min.
Working temp.....................................0 ～ 40°C @100%, -10°C @80%, 50°C @60%
Safety standard.................................UL 1950, TUV EN60950
EMC standard.....................................(EN55022), IEC1000-4-2～6,8,11, IEC1000-3-2
Connection.........................................15P/9.5mm pitch terminal block
Weight..............................................1.8kgs
Packing...........................................8PCS/0.9CUFT

<table>
<thead>
<tr>
<th>Stock No</th>
<th>Type No</th>
<th>Output</th>
<th>Tol.</th>
<th>R&amp;N</th>
<th>Effi.</th>
<th>P.P.</th>
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</thead>
<tbody>
<tr>
<td>10131</td>
<td>SP-500-12</td>
<td>12V, 40A</td>
<td>± 1%</td>
<td>240mV</td>
<td>84%</td>
<td>300</td>
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<tr>
<td>10132</td>
<td>SP-500-13.5</td>
<td>13.5V, 36A</td>
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<td>84%</td>
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<tr>
<td>10133</td>
<td>SP-500-15</td>
<td>15V, 32A</td>
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<td>83%</td>
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<tr>
<td>10134</td>
<td>SP-500-24</td>
<td>24V, 20A</td>
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<td>240mV</td>
<td>95.5%</td>
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<tr>
<td>Part No.</td>
<td>Model</td>
<td>Voltage, Current</td>
<td>Accuracy</td>
<td>Output Voltage</td>
<td>Efficiency</td>
<td>Capacity</td>
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<td>---------</td>
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<tr>
<td>10134</td>
<td>SP-500-24</td>
<td>24V, 20A</td>
<td>± 1%</td>
<td>240mV</td>
<td>85.5%</td>
<td>300</td>
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<tr>
<td>10135</td>
<td>SP-500-27</td>
<td>27V, 18A</td>
<td>± 1%</td>
<td>200mV</td>
<td>86.5%</td>
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<tr>
<td>10136</td>
<td>SP-500-48</td>
<td>48V, 10A</td>
<td>± 1%</td>
<td>300mV</td>
<td>87%</td>
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### MEAN WELL
SWITCHING POWER SUPPLY
ISO-9001 CERTIFIED MANUFACTURER

#### SP-500 SERIES

- Low Cost, High Reliability
- Compact Size, Light Weight
- Cooling Fan On/Off Automatically
- 100% Full Load Burn-In Test
- Built in Remote Control
- Built in EMI Filter, Low Ripple Noise
- Built in PFC Circuit
- Soft-Start Circuit, Limiting AC Surge Current
- Short Circuit, Overload, Over Voltage, Over Temp. Protected

### Specification

<table>
<thead>
<tr>
<th>Model</th>
<th>SP-500-12</th>
<th>SP-500-13.5</th>
<th>SP-500-15</th>
<th>SP-500-24</th>
<th>SP-500-27</th>
<th>SP-500-48</th>
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<tbody>
<tr>
<td>DC Output Voltage</td>
<td>12V</td>
<td>13.5V</td>
<td>15V</td>
<td>24V</td>
<td>27V</td>
<td>48V</td>
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<tr>
<td>Output V. Tolerance</td>
<td>±1%</td>
<td>±1%</td>
<td>±1%</td>
<td>±1%</td>
<td>±1%</td>
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<tr>
<td>Output Rated Current</td>
<td>40A</td>
<td>36A</td>
<td>32A</td>
<td>20A</td>
<td>18A</td>
<td>10A</td>
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<tr>
<td>Output Current Range</td>
<td>0-40A</td>
<td>0-36A</td>
<td>0-32A</td>
<td>0-20A</td>
<td>0-18A</td>
<td>0-10A</td>
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<tr>
<td>Ripple &amp; Noise</td>
<td>240mVp-p</td>
<td>240mVp-p</td>
<td>240mVp-p</td>
<td>240mVp-p</td>
<td>200mVp-p</td>
<td>300mVp-p</td>
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<tr>
<td>Line Regulation</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
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<tr>
<td>Load Regulation</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
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<tr>
<td>DC Output Power</td>
<td>480W</td>
<td>486W</td>
<td>480W</td>
<td>480W</td>
<td>486W</td>
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<tr>
<td>Efficiency</td>
<td>84%</td>
<td>84%</td>
<td>83%</td>
<td>85.5%</td>
<td>86.5%</td>
<td>87%</td>
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<tr>
<td>DC Voltage Adj.</td>
<td>10-13.2V</td>
<td>12-15V</td>
<td>13.5-18V</td>
<td>20-26.4V</td>
<td>24-30V</td>
<td>41-56V</td>
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<tr>
<td>Input Voltage Range</td>
<td>88~264VAC</td>
<td>47<del>63Hz; 124</del>370VDC</td>
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<tr>
<td>AC Current</td>
<td>7A/115V</td>
<td>3.5A/230V</td>
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<tr>
<td>Power Factor</td>
<td>0.95/100~240VAC</td>
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<tr>
<td>Inrush Current</td>
<td>18A/115V</td>
<td>36A/230V</td>
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<tr>
<td>Leakage Current</td>
<td>&lt;3.5mA/240VAC</td>
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<tr>
<td>Overload Protection</td>
<td>105%~135% TYPE:FOLDBACK CURRENT LIMITING RESET:AUTO RECOVERY</td>
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<tr>
<td>Over Voltage Protection</td>
<td>13.8~16.2V</td>
<td>15.5~18.2V</td>
<td>18~21V</td>
<td>27.6~32.4V</td>
<td>31~36.5V</td>
<td>57.6~67.2V</td>
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<tr>
<td>Fan Control, O.T.P.</td>
<td>RTH1 or RTH2&gt;=50°C FAN ON, &lt;=45°C FAN OFF, &gt;=70°C OUTPUT SHUTDOWN</td>
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<tr>
<td>Temp. Coefficient</td>
<td>±0.03% / °C (0~50°C)</td>
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<tr>
<td>Setup, Rise, Hold Up Time</td>
<td>1.5s, 50ms, 20ms</td>
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<tr>
<td>Vibration</td>
<td>10~500Hz, 2G 10min./1cycle, PERIOD FOR 60min. EACH AXES</td>
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<tr>
<td>Withstand Voltage</td>
<td>I/P-O/P;3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC</td>
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<tr>
<td>Isolation Resistance</td>
<td>I/P-O/P, I/P-FG, O/P-FG:500VDC / 100M Ohms</td>
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<tr>
<td>Working Temp., Humidity</td>
<td>-10°C~+50°C(REFER TO OUTPUT DERATING CURVE), 20%~90% RH</td>
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<tr>
<td>Storage Temp., Humidity</td>
<td>-20°C~+85°C, 10%~95% RH</td>
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<tr>
<td>Dimension</td>
<td>185<em>20</em>93mm CASE:910</td>
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<tr>
<td>Weight</td>
<td>1.8Kgs</td>
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<td>Safety Standards</td>
<td>UL1950, TUV EN60950 APPROVED</td>
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<td>EMC Standards</td>
<td>CISPR22 (EN55022), IEC1000-4-2,3,4,5,6,8,11 IEC1000-3-2 VERIFICATION</td>
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</tbody>
</table>

NOTE:
1. ALL PARAMETERS ARE SPECIFIED AT 230VAC INPUT, RATED LOAD, 25°C 70% RH AMBIENT.
2. TOLERANCE INCLUDES SETUP TOLERANCE, LINE REGULATION, LOAD REGULATION.
3. RIPPLE & NOISE ARE MEASURED AT 20MHz BY USING A 12" TWISTED PAIR TERMINATED WITH A 0.1uF & 47uF CAPACITOR.
4. LINE REGULATION IS MEASURED FROM LOW LINE TO HIGH LINE AT RATED LOAD.
5. LOAD REGULATION IS MEASURED FROM 0% TO 100% RATED LOAD.
6. C3,4,14,16,31,32,101,102 MUST BE REMOVED.
7. REFER TO OUTPUT DERATING CURVE VS INPUT VOLTAGE.
## Quality Engineering Test Report

**SERIES: SP-500**  
**500W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE:**  
- A.SP-500-12: 12V / 40 A  
- B.SP-500-13.5: 13.5V / 36 A  
- C.SP-500-15: 15V / 32 A  
- D.SP-500-24: 24V / 20 A  
- E.SP-500-27: 27V / 18 A  
- F.SP-500-48: 48V / 10 A

<table>
<thead>
<tr>
<th>NO</th>
<th>TEST ITEM</th>
<th>TEST CONDITION / SPECIFICATION</th>
<th>RESULT</th>
<th>VERDICT</th>
</tr>
</thead>
</table>
| 1  | AC INPUT VOLTAGE RANGE | I/P: TESTING  
O/P: FULL LOAD  
SPEC: 88~264VAC | D: 61VAC~267VAC | P |
| 2  | LINE REGULATION | I/P: 88~264VAC  
O/P: FULL LOAD  
SPEC: | A: ±0.3%  
B: ±0.3%  
C: ±0.3%  
D: ±0.2%  
E: ±0.2%  
F: ±0.2% | P |
| 3  | LOAD REGULATION | I/P: 230VAC  
O/P: MIN. TO FULL LOAD  
SPEC: | A: ±0.5%  
B: ±0.5%  
C: ±0.5%  
D: ±0.5%  
E: ±0.5%  
F: ±0.5% | P |
| 4  | OUTPUT VOLTAGE TOLERANCE | I/P: 88~264VAC  
O/P: 0% TO FULL LOAD  
SPEC: | A: ±1%  
B: ±1%  
C: ±1%  
D: ±1%  
E: ±1%  
F: ±1% | P |
| 5  | RIPPLE&NOISE | I/P: 230VAC  
O/P: FULL LOAD  
SPEC: | A: 240mV  
B: 240mV  
C: 240mV  
D: 240mV  
E: 200mV  
F: 300mV | P |
| 6  | AC INPUT CURRENT | I/P: 230VAC  
O/P: FULL LOAD  
SPEC: 3.5A | D: 2.4A | P |
| 7  | MAX. INRUSH CURRENT | I/P: 230VAC  
O/P: FULL LOAD  
SPEC: 30A | D: 27A | P |
| 8  | O/P VOLTAGE ADJ. RANGE | I/P: 230VAC  
O/P: MIN. LOAD  
SPEC: | A: 10~13.2V  
B: 12~15V  
C: 13.5~18V  
D: 20~26.4V  
E: 24~30V  
F: 41~56V | P |
| 9  | SET UP TIME | I/P: 230VAC  
O/P: FULL LOAD  
SPEC: 1.5S | D: 778mS | P |
| 10 | HOLD UP TIME | I/P: 230VAC  
O/P: FULL LOAD  
SPEC: 20mS | D: 41mS | P |
| 11 | EFFICIENCY | I/P: 230VAC  
O/P: FULL LOAD  
SPEC: | A: 84%  
B: 84%  
C: 83%  
D: 85.5%  
E: 86.5%  
F: 87% | P |