



500W Single Output with PFC Function

RSP-500 series



| Dimension |     |          |      |
|-----------|-----|----------|------|
| L         | W   | H        |      |
| 230       | 127 | 40.5(1U) | mm   |
| 9.06      | 5   | 1.59(1U) | inch |



### Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 90.5%
- Forced air cooling by built-in DC fan (Note.5)
- Built-in remote ON-OFF control / remote sense / DC OK signal
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 3 years warranty

### Applications

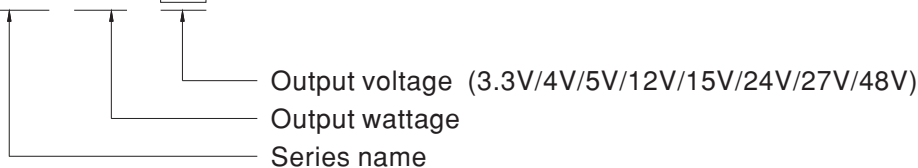
- Factory control or automation apparatus
- Test and measurement instrument
- Laser related machine
- Burn-in facility
- RF application

### Description

RSP-500 is a 500W single output enclosed type AC/DC power supply. This series operates for 85~264VAC input voltage and offers the models with the DC output mostly demanded from the industry. Each model is cooled by the built-in fan with fan speed control, working for the temperature up to 70°C. Moreover, RSP-500 provides vast design flexibility by equipping various built-in functions such as remote ON-OFF control, remote sense, DC OK signal, etc.

### Model Encoding / Order Information

RSP - 500 - 24



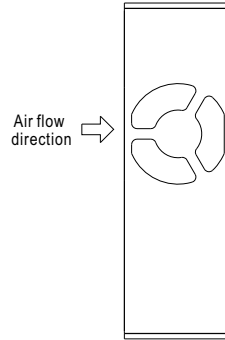
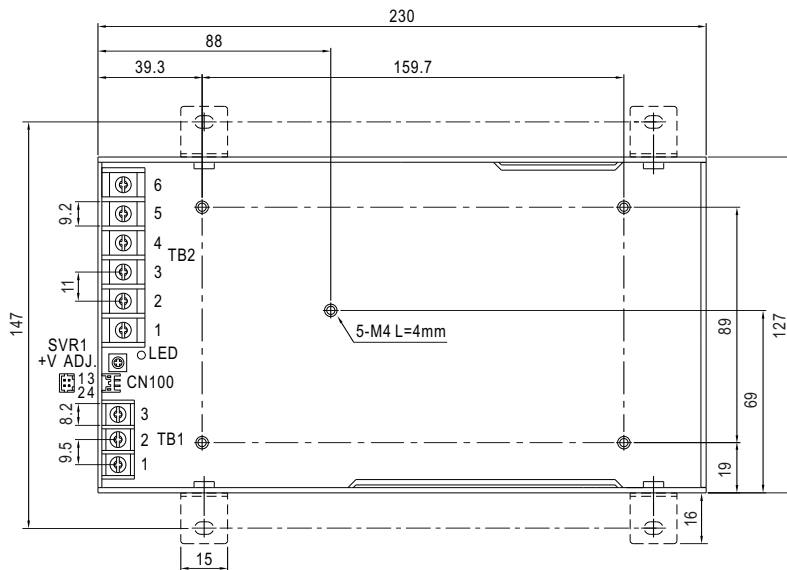


SPECIFICATION

| MODEL                 | RSP-500-3.3  | RSP-500-4   | RSP-500-5  | RSP-500-12                     | RSP-500-15   | RSP-500-24   | RSP-500-27   | RSP-500-48   |            |
|-----------------------|--|---|------------|--------------------------------|--------------|--------------|--------------|--------------|------------|
| OUTPUT                | DC VOLTAGE   | 3.3V  | 4V         | 5V                             | 12V          | 15V          | 24V          | 27V          | 48V        |
|                       | RATED CURRENT  | 90A   | 90A        | 90A                            | 41.7A        | 33.4A        | 21A          | 18.6A        | 10.5A      |
|                       | CURRENT RANGE  | 0 ~ 90A   | 0 ~ 90A    | 0 ~ 90A                        | 0 ~ 41.7A    | 0 ~ 33.4A    | 0 ~ 21A      | 0 ~ 18.6A    | 0 ~ 10.5A  |
|                       | RATED POWER  | 297W  | 360W       | 450W                           | 500.4W       | 501W         | 504W         | 502.2W       | 504W       |
|                       | RIPPLE & NOISE (max.) Note.2   | 120mVp-p  | 120mVp-p   | 150mVp-p                       | 150mVp-p     | 150mVp-p     | 150mVp-p     | 150mVp-p     | 150mVp-p   |
|                       | VOLTAGE ADJ. RANGE   | 2.8 ~ 3.6V  | 3.6 ~ 4.3V | 4.5 ~ 5.5V                     | 10 ~ 13.2V   | 13.5 ~ 18V   | 20 ~ 26.4V   | 26 ~ 30V     | 41 ~ 56V   |
|                       | VOLTAGE TOLERANCE Note.3   | ±2.0%   | ±2.0%      | ±2.0%                          | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%      |
|                       | LINE REGULATION  | ±0.5%   | ±0.5%      | ±0.5%                          | ±0.3%        | ±0.3%        | ±0.2%        | ±0.2%        | ±0.2%      |
|                       | LOAD REGULATION  | ±1.0%   | ±1.0%      | ±1.0%                          | ±0.5%        | ±0.5%        | ±0.5%        | ±0.5%        | ±0.5%      |
|                       | SETUP, RISE TIME   | 1500ms, 80ms/230VAC      3000ms, 80ms/115VAC at full load   |            |                                |              |              |              |              |            |
| HOLD UP TIME (Typ.)   | 18ms/230VAC      14ms/115VAC at full load  |   |            |                                |              |              |              |              |            |
| INPUT                 | VOLTAGE RANGE Note.4   | 85 ~ 264VAC      120 ~ 370VDC   |            |                                |              |              |              |              |            |
|                       | FREQUENCY RANGE  | 47 ~ 63Hz   |            |                                |              |              |              |              |            |
|                       | POWER FACTOR (Typ.)  | PF>0.95/230VAC      PF>0.98/115VAC at full load   |            |                                |              |              |              |              |            |
|                       | EFFICIENCY (Typ.)  | 81%   | 83%        | 84%                            | 88%          | 88%          | 89%          | 89.5%        | 90.5%      |
|                       | AC CURRENT (Typ.)  | 4.2A/115VAC      2.1 A/230VAC   |            | 5.3A/115VAC      2.65 A/230VAC |              |              |              |              |            |
|                       | INRUSH CURRENT (Typ.)  | 20A/115VAC      40A/230VAC  |            |                                |              |              |              |              |            |
|                       | LEAKAGE CURRENT  | <2mA / 240VAC   |            |                                |              |              |              |              |            |
| PROTECTION            | OVERLOAD   | 105 ~ 130% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed |            |                                |              |              |              |              |            |
|                       | OVER VOLTAGE   | 3.8 ~ 4.5V  | 4.5 ~ 5.3V | 5.75 ~ 6.75V                   | 13.8 ~ 16.2V | 18.8 ~ 21.8V | 27.6 ~ 32.4V | 32.9 ~ 38.3V | 58.4 ~ 68V |
|                       | OVER TEMPERATURE   | Shut down o/p voltage, recovers automatically after temperature goes down   |            |                                |              |              |              |              |            |
| FUNCTION              | REMOTE CONTROL   | POWER ON: open or 0~0.8VDC between RC+(Pin 4)&RC-(Pin3) on CN100<br>POWER OFF: 4~10VDC between RC+(Pin 4)&RC-(Pin3) on CN100          |            |                                |              |              |              |              |            |
|                       | REMOTE SENSE   | Compensate voltage drop on the load wiring up to 0.3V   |            |                                |              |              |              |              |            |
|                       | FAN CONTROL (Typ.)   | RTH2≥50°C±10°C Fan on ; RTH2≤40°C±10°C Fan off (Fan always on for 3.3~5V, Fan ON/OFF control for 12~48V)                              |            |                                |              |              |              |              |            |
| ENVIRONMENT           | WORKING TEMP.  | -30 ~ +70°C (Refer to "Derating Curve")   |            |                                |              |              |              |              |            |
|                       | WORKING HUMIDITY   | 20 ~ 90% RH non-condensing  |            |                                |              |              |              |              |            |
|                       | STORAGE TEMP., HUMIDITY  | -40 ~ +85°C, 10 ~ 95% RH  |            |                                |              |              |              |              |            |
|                       | TEMP. COEFFICIENT  | ±0.03%/°C (0 ~ 50°C)  |            |                                |              |              |              |              |            |
|                       | 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, AS/NZS 62368.1, EAC TP TC 004 , CCC GB4943.1 , BSMI CNS14336-1approved                                |            |                                |              |              |              |              |            |
|                       | 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°C / 70% RH  |            |                                |              |              |              |              |            |
|                       | EMC EMISSION   | Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020, GB/T 9254, CNS13438 Class B                       |            |                                |              |              |              |              |            |
|                       | EMC IMMUNITY   | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55024, BS EN/EN61000-6-2, criteria A, EAC TP TC 020                             |            |                                |              |              |              |              |            |
| OTHERS                | MTBF   | 187.7K hrs min.    MIL-HDBK-217F (25°C )  |            |                                |              |              |              |              |            |
|                       | DIMENSION  | 230*127*40.5mm (L*W*H)  |            |                                |              |              |              |              |            |
|                       | PACKING  | 1.3Kg; 9pcs/12.7Kg/0.7CUFT  |            |                                |              |              |              |              |            |
| NOTE                  | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>5. Fan always on for 3.3~5V, Fan ON/OFF control for 12~48V.</p> <p>6. 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</p> <p>7. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |   |            |                                |              |              |              |              |            |

Case No.226A Unit:mm

■ Mechanical Specification



AC Input Terminal  
Pin No. Assignment (TB1)

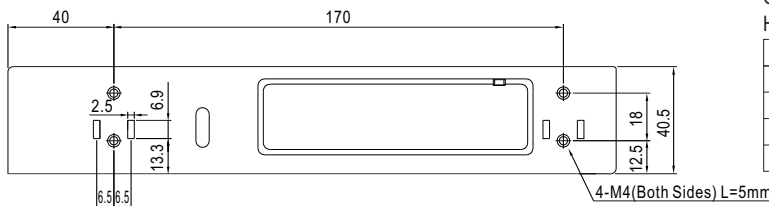
| Pin No. | Assignment |
|---------|------------|
| 1       | AC/L       |
| 2       | AC/N       |
| 3       | FG $\pm$   |

DC Output Terminal  
Pin No. Assignment (TB2)

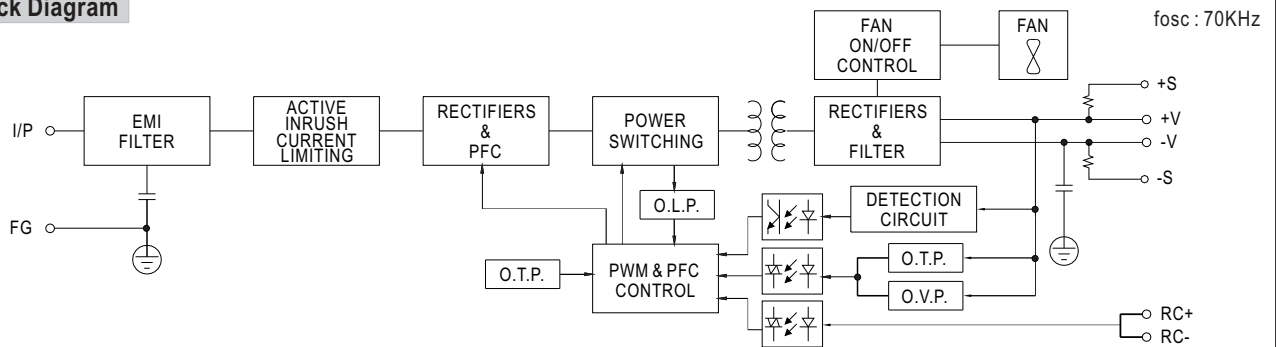
| Pin No. | Assignment   |
|---------|--------------|
| 1-3     | DC OUTPUT -V |
| 4-6     | DC OUTPUT +V |

Connector Pin No. Assignment (CN100) :  
HRS DF11-04DP-2DS or equivalent

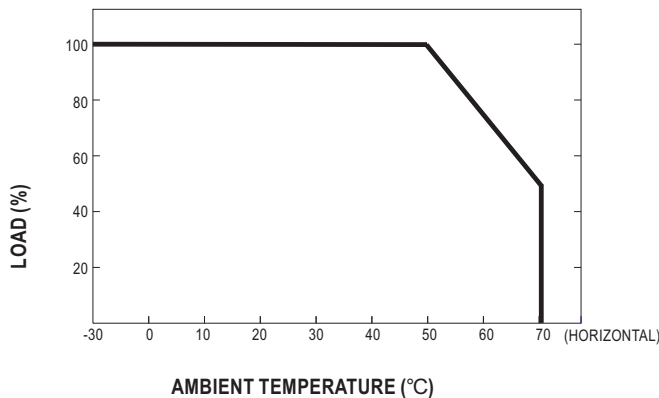
| Pin No. | Assignment | Mating Housing                | Terminal                       |
|---------|------------|-------------------------------|--------------------------------|
| 1       | -S         | HRS DF11-4DS<br>or equivalent | HRS DF11-**SC<br>or equivalent |
| 2       | +S         |                               |                                |
| 3       | RC-        |                               |                                |
| 4       | RC+        |                               |                                |



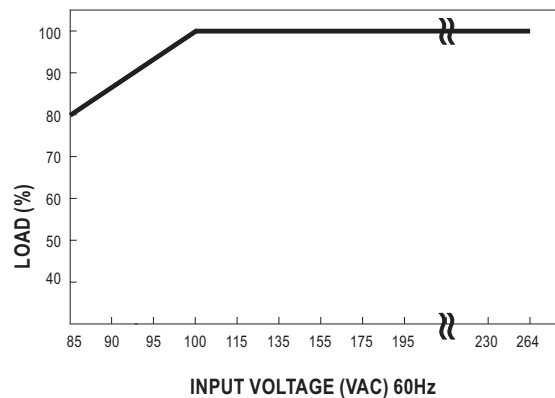
■ Block Diagram



■ Derating Curve



■ Static Characteristics



■ Function Description of CN100

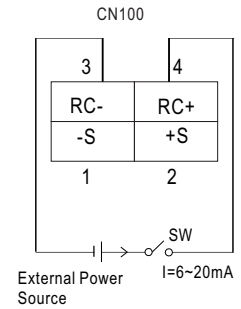
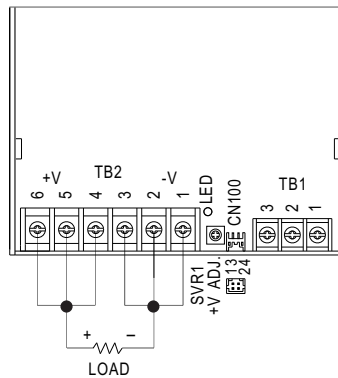
| Pin No. | Function | Description   |
|---------|----------|---|
| 1       | -S       | Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V. |
| 2       | +S       | Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V. |
| 3       | RC-      | Return for RC+ signal input.  |
| 4       | RC+      | Turns the output on and off by electrical or dry contact between pin 4 (RC+) and pin 3 (RC-). 0~0.8VDC or open: Power ON, 4~10VDC: Power OFF.   |

■ Function Manual

1. Remote Control

The PSU can be turned ON/OFF by using the "Remote Control" function.

| Between RC-(pin3) and RC+(pin4) on CN100 | PSU Status |
|--|------------|
| SW OFF (0 ~ 0.8VDC) or open              | ON         |
| SW ON (4 ~ 10V)                          | OFF        |



2. Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.3V

