


| UNIT CODE     | DESCRIPTION  |
|---------------|--|
| PS-RSP 500-24 | 500 Watt, 24 Volt, Single Output, 1U Low Profile, Power Supply with an Active PFC Function |

| SPECIFICATIONS            |                  |  |
|---------------------------|------------------|--|
| Input                     | Output           | Agency Approvals   |
| Full Range<br>85 ~ 264VAC | +24VDC @ 0 ~ 21A |  |

### Features at a Glance:

- Priced Economically
- Universal AC input for use worldwide
- Efficient (up to 90%)
- Active PFC function (PF>0.95)
- 40.5mm low profile 1U design
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in Remote ON/OFF Control
- Built-in Remote Sense Function
- LED indicator for Power ON
- Forced air cooling (by fan with speed control)
- Safety Standards: UL60950-1, TUV EN60950-1
- Certificates: UL, CUL, TUV, CB, and CE
- MBTF: 187.7K hours min. *MIL-HDBK-217F (25°C)*
- Case: 226A
- Weight: 2.86 lbs. (1.3 Kgs.)
- Dimensions: 9.0" L x 5.0" W x 1.6" H  
230L X 127W X 40.5H mm
- 3 year warranty



The PS-RSP 500 Series are economical, single output, general-purpose, 500 Watt, 1U low profile, enclosed type, switching power supplies with full range AC input and an active Power Factor Correction (PFC) function.

Other built-in functions include built-in Remote ON/OFF Control, Remote Sense, fan speed control, protection against short circuit, overload, over voltage and over temperature. All versions comply with UL, CUL, TUV, CB, and CE regulations that ensure user and environmental safety.

Wide -30 ~ +70°C (-22~158° F) operating temperature range.

The PS-RSP-500 Series is widely used and applications include general industrial control systems, mechanical and electrical equipment, instrumentation, LED displays, or any system that requires a low profile, economical power supply.

[Click for more information](#)

|          |     |           |
|----------|-----|-----------|
| Pricing: | 1+  | \$ 149.95 |
|          | 10+ | 137.50    |
|          | 25+ | 119.00    |

toll-free 1-866-665-5434 (603) 888-2467 power@electracool.com

## Specifications

### OUTPUT

|                                     |   |
|-------------------------------------|---|
| DC VOLTAGE                          | 24V   |
| RATED CURRENT                       | 21A   |
| CURRENT RANGE                       | 0 ~ 21A   |
| RATED POWER                         | 504W  |
| RIPPLE & NOISE (max.) <i>Note.2</i> | 150mVp-p  |
| VOLTAGE ADJ. RANGE                  | 20 ~ 26.4V  |
| VOLTAGE TOLERANCE <i>Note.3</i>     | ±1.0%   |
| LINE REGULATION                     | ±0.2%   |
| LOAD REGULATION                     | ±0.5%   |
| SETUP, RISE TIME                    | 1500ms, 50ms/230VAC    3000ms, 50ms/115VAC at full load |
| HOLD UP TIME (Typ.)                 | 18ms/230VAC    14ms/115VAC at full load                 |

### INPUT

|                             |   |
|-----------------------------|---|
| VOLTAGE RANGE <i>Note.4</i> | 85 ~ 264VAC    120 ~ 370VDC                   |
| FREQUENCY RANGE             | 47 ~ 63Hz                                     |
| POWER FACTOR (Typ.)         | PF>0.95/230VAC    PF>0.98/115VAC at full load |
| EFFICIENCY (Typ.)           | 89%   |
| AC CURRENT (Typ.)           | 5.3A/115VAC    2.65A/230VAC                   |
| INRUSH CURRENT (Typ.)       | 20A/115VAC    40A/230VAC                      |
| LEAKAGE CURRENT             | <2mA / 240VAC                                 |

### PROTECTION

|                  |  |
|------------------|--|
| OVERLOAD         | 105 ~ 130% rated output power.<br>Protection type: Hiccup mode, recovers automatically after fault is removed                            |
| OVER VOLTAGE     | 27.6 ~ 32.4V<br>Protection type: Shut down o/p voltage, re-power on to recover   |
| OVER TEMPERATURE | 80°C ± 5°C (TSW1) detected on heatsink of power transistor.<br>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    | RTH2 ≥ 50°C ± 10°C Fan on;    RTH2 ≤ 40°C ± 10°C Fan off   |

### ENVIROMENT

|                         |  |
|-------------------------|--|
| WORKING TEMP.           | -30°C ~ +70°C (Refer to the "Derating Curve" on last page)   |
| WORKING HUMIDITY        | 20 ~ 90% RH non-condensing                                   |
| STORAGE TEMP., HUMIDITY | -40°C ~ +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 5*)

|                      |   |
|----------------------|---|
| SAFETY STANDARDS     | UL60950-1, TUV EN60950-1 approved   |
| 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 EN55022 (CISPR22) Class B, EN61000-3-2,-3   |
| EMC IMMUNITY         | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024,EN61000-6-2, EN61204-3 heavy industry level, criteria A |

### OTHER

|            |  |
|------------|--|
| MTBF       | 206.5K hrs min.    MIL-HDBK-217F (25 °C) |
| DIMENSIONS | 215*115*30mm (L*W*H)                     |
| PACKING    | 0.9Kg; 15pcs/14.5Kg/0.78CUFT             |

NOTES follow on next page.

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**NOTES:** 1. All parameters NOT specifically mentioned are measured at 230VAC input, rated load and ambient temperature of 25°C.  
 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.  
 3. Tolerance: includes set up tolerance, line regulation and load regulation.  
 4. Derating will be required when operating under certain low input voltages. Please see the Derating Curves on last page.  
 5. The power supply is considered a component which will be installed into a final piece of equipment. That final equipment must be re-confirmed as still meeting EMC directives. For guidance on how to perform these EMC tests, please Google "EMI testing of component power supplies."

## Function Description of CN100

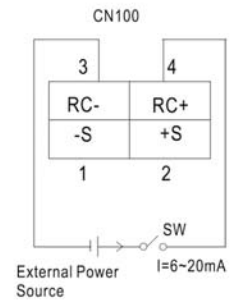
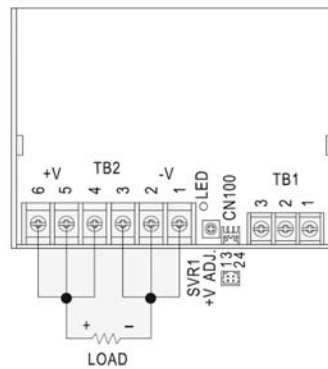
| Pin No. | Function | Description   |
|---------|----------|---|
| 1       | -S       | Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V. |
| 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

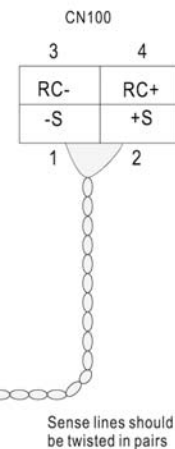
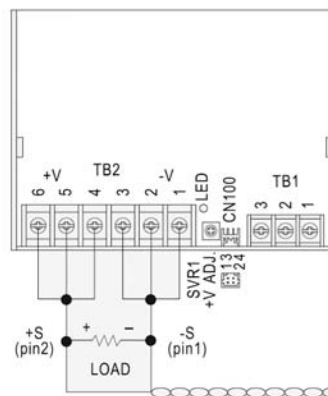
The PSU can be turned ON/OFF by using the "Remote Control" function.

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



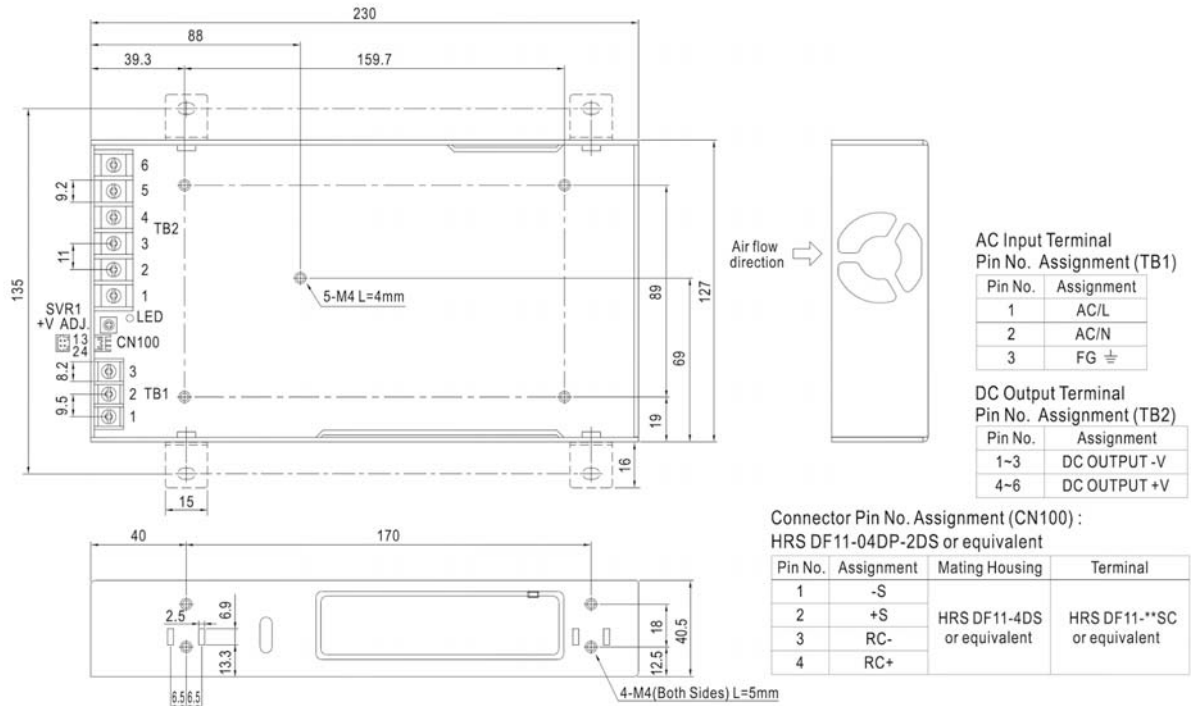
### 2. Remote Sense

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

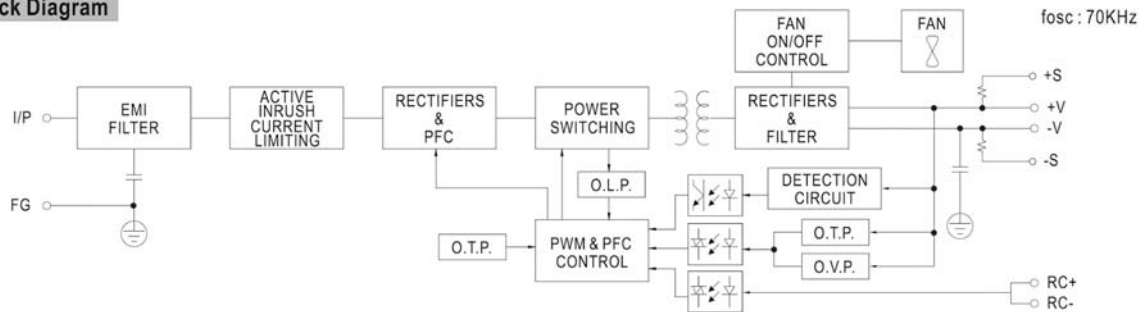


### Mechanical Specification

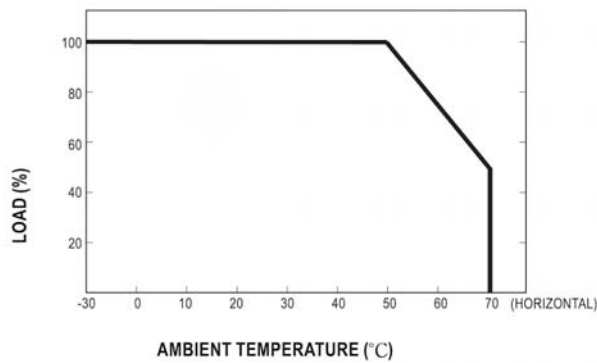
Case No.226A Unit:mm



### Block Diagram



### Derating Curve



### Static Characteristics

