





750 Watt, 15 Volt, Single Output Power Supply With PFC, Voltage & Current Trim Functions

| UNIT CODE | DESCRIPTION |
|---------------|---|
| PS-RSP 750-15 | 750 Watt 15 Volt, Single Output Power Supply with PFC plus Voltage & Current Trim Functions |

| SPECIFICATIONS | | |
|--------------------------|------------------|--|
| Input | Output | Agency Approvals |
| Universal 90 ~ 264VAC | +15VDC @ 0 ~ 50A |     |

Features at a Glance:

- Universal AC Input for Worldwide Use
- AC Input Active Surge Current Limiting
- Output Voltage & Current can be Independantly Trimmed between 40-110% via 2-5.5VDC External control signal
- Active PFC (PF>0.97) complys with EN61000-3-2
- Built-in: 12V/0.1A Auxiliary output (remote control); Remote ON-OFF control; Remote sense function
- Protections: Short circuit / Overload / Over voltage / Over temperature and Fan Alarm
- Forced air cooling by DC fan with speed control
- DC OK alarm signal output (TTL signal)
- Working Temp. Range: -30°C~+70°C (-22~158°F)
- Safety Standards: UL60950-1, TUV EN60950-1
- EMC: EN61204-3, heavy Industry level, criteria A
- See following pages for complete EMC details
- Certificates: UL, CUL, TUV, CB and CE
- MBTF: 120.8K hours min. *MIL-HDBK-217F (25°C)*
- Case: 212A
- Weight: 3.61 lbs. (1.64 Kgs)
- Dimensions: 9.8" L x 5.0" W x 1.6" H
250L x 127W x 41H mm
- 3 year warranty



The PS-RSP 750 Series are 750 Watt, 1U (40mm) low profile, enclosed type, switching power supplies with universal AC input, active PFC (PF>0.97) and both voltage and current trim functions.

Standard features: Voltage & Current output trim range 40%~110% so are ideal in charging systems or burn-in equipment that may require wide ranging adjustments of output voltage and/or output current; High power density of 9.4 W/in³; Short circuit, Overload, Over Voltage and Over Temperature protection. Circuits include built-in 12V/0.1A auxiliary output for remote control; Remote ON-OFF control and Remote sense; 100% output from -30~+50°C (derated operation up to +70°C).

Ideal for industrial and military use. Typical applications include general industrial control systems, telecom, data storage, instrumentation, factory automation, laser-carving machines, IC testing equipment, battery charging or any application where space is limited and moderate efficiency is required.

[Click for more information](#)

| | | |
|----------|-----|-----------|
| Pricing: | 1+ | \$ 319.95 |
| | 10+ | 289.50 |
| | 25+ | 265.40 |

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

Specifications

OUTPUT

| | |
|-------------------------------------|-------------------------------------|
| DC VOLTAGE | 15V |
| RATED CURRENT | 50A |
| CURRENT RANGE | 0 ~ 50A |
| RATED POWER | 750W |
| RIPPLE & NOISE (max.) <i>Note.2</i> | 150mVp-p |
| VOLTAGE ADJ. RANGE | 13.5 ~ 16.5V |
| VOLTAGE TOLERANCE <i>Note.3</i> | ±1.0% |
| LINE REGULATION | ±0.5% |
| LOAD REGULATION | ±0.5% |
| SETUP, RISE TIME | 1000ms, 50ms at full load |
| HOLD UP TIME (Typ.) | 16m/230VAC 16ms/115VAC at full load |

INPUT

| | | |
|-----------------------------|-----------------|-----------------------------|
| VOLTAGE RANGE <i>Note.4</i> | 90 ~ 264VAC | 127 ~ 370VDC |
| FREQUENCY RANGE | 47 ~ 63Hz | |
| POWER FACTOR (Typ.) | PF 0.97/230VAC | PF 0.98/115VAC at full load |
| EFFICIENCY (Typ.) | 87% | |
| AC CURRENT (Typ.) | 5A: 5.6A/115VAC | 2.8A/230VAC |
| INRUSH CURRENT (Typ.) | 25A/115VAC | 40A/230VAC |
| LEAKAGE CURRENT | <2mA / 240VAC | |

PROTECTION

| | |
|------------------|---|
| OVERLOAD | 105 ~ 125% rated output power. Protection type: Constant current limiting, recovers automatically after fault is removed |
| OVER VOLTAGE | 17 ~ 20.5V Protection type: Shut down o/p voltage, re-power on to recover |
| OVER TEMPERATURE | 85°C ± 5°C (TSW2) detected on heatsink of O/P diode; 80°C ± 5°C (TSW1) detected on heatsink of power transistor. Shut down o/p voltage, recovers automatically after temperature goes down. |

FUNCTION

| | |
|-----------------------------------|---|
| AUXILIARY POWER(AUX) | 12V @ 0.1A ; tolerance : 10% |
| REMOTE ON/OFF CNTRL <i>Note.6</i> | Power on : short between on/off(pin13) & 12V-AUX(pin14) on CN50 Power off : open between on/off(pin13) & 12-AUX(pin14) on CN50 |
| DC OK SIGNAL | The TTL signal out, PSU turn on = 0 ~ 1V ; PSU turn off = 3.3 ~ 5.6V |
| OUTPUT VOLTAGE TRIM <i>Note.6</i> | Adjustment of output voltage is between 40 ~ 110% by 2 ~ 5.5VDC external control signal |
| OUTPUT CURRENT TRIM | Adjustment of output current is possible between 40 ~ 110% by 2 ~ 5.5VDC external control signal |

ENVIROMENT

| | |
|-------------------------|--|
| WORKING TEMP. | -30°C ~ +70°C (Refer to the following "Derating Curve") |
| 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), 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 |

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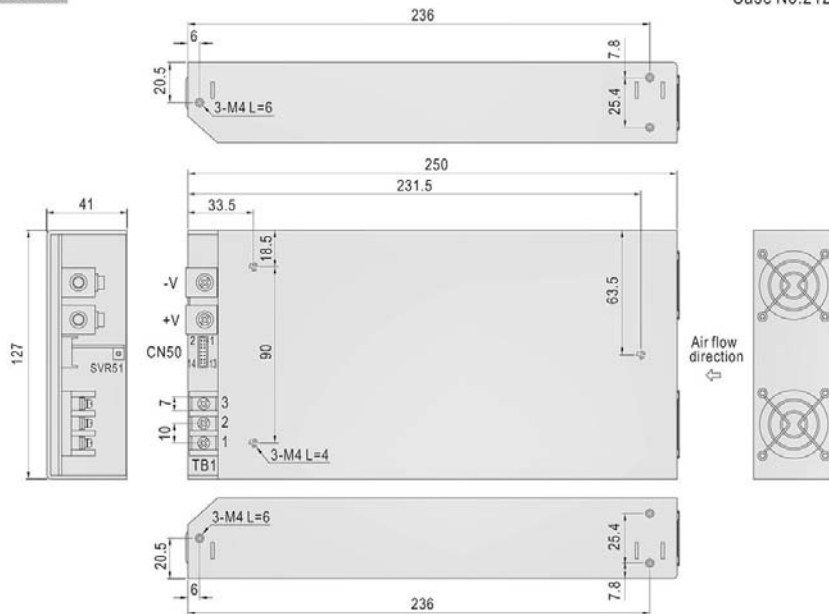
OTHER

| | | |
|------------|-----------------------------|-----------------------|
| MTBF | 120.8K hrs min. | MIL-HDBK-217F (25 °C) |
| DIMENSIONS | 250x127x41mm (L*W*H) | |
| PACKING | 1.64Kg; 6pcs/10.8Kg/1.1CUFT | |

- 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 following Derating Curve.
 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."
 6. The power supply unit will have no output if the shorting connector (accessory comes along with the PSU) is not assembled. It contains three shorting wires : one is from ON/OFF (pin13) to 12V-AUX (pin14), two is from PV(pin5) to PS (pin6) and the other is from PC (pin7) to PO (pin8).

Mechanical Specification

Case No.212A Unit:mm



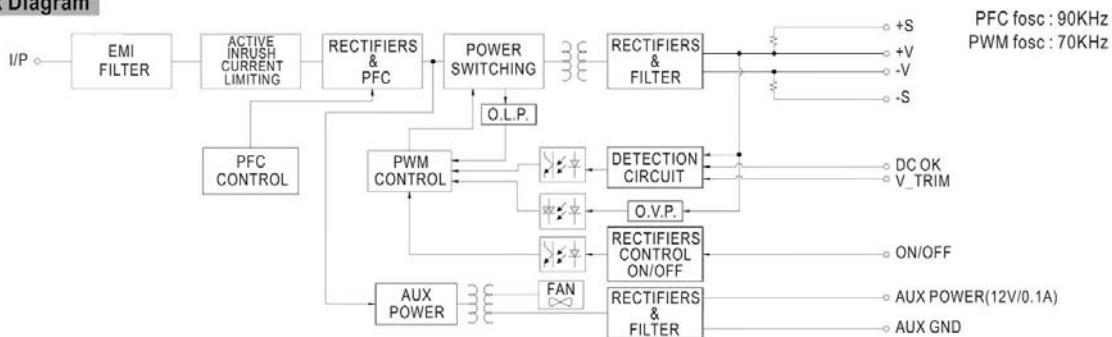
AC Input Terminal

| Pin No. | Assignment |
|---------|------------|
| 1 | AC/N |
| 2 | AC/L |
| 3 | FG ⚡ |

Control Pin No. Assignment (CN50) : HRS DF11-14DP-2DS or equivalent

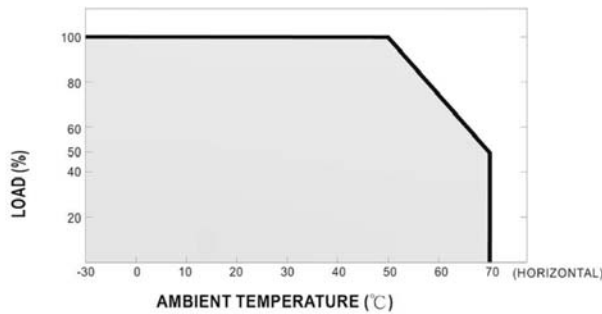
| Pin No. | Assignment | Pin No. | Assignment | Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|---------|------------|---------|------------|-----------------------------|-----------------------------|
| 1 | +S | 6 | PS | 12 | G-AUX | HRS DF11-14DS or equivalent | HRS DF11-14SC or equivalent |
| 2 | +VS | 7 | PC | 13 | ON/OFF | | |
| 3 | -S | 8 | PO | 14 | 12V-AUX | | |
| 4 | -VS | 9 | DC-OK | | | | |
| 5 | PV | 10,11 | GND | | | | |

Block Diagram

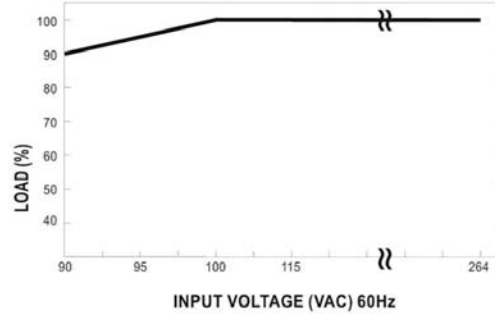


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Derating Curve



Static Characteristics



Function Description of CN50

| Pin No. | Function | Description |
|---------|----------|---|
| 1 | +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 0.5V. |
| 2 | +VS | +V Signal. The +VS should be connected to the +S to reduce the noise when "output voltage TRIM" function is in use. |
| 3 | -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 0.5V. |
| 4 | -VS | -V Signal. The -VS should be connected to the -S to reduce the noise when "output voltage TRIM" function is in use. |
| 5 | PV | Connect to external DC voltage source for output voltage trimming, referenced to pin 10,11 (GND). Output voltage can be trimmed between 40 ~ 110% of the rated output voltage. |
| 6 | PS | Short connecting between PV (pin5) and PS (pin6) if "output voltage TRIM" function is not used. |
| 7 | PC | Connect to external DC voltage source for output current trimming, referenced output current can be trimmed between 40 ~ 110% of the rated output current. Please refer to function manual for details. |
| 8 | PO | Short connecting between PC (pin7) and PO (pin8) if output current trim function is not used. |
| 9 | DC_OK | Open collector signal, referenced to pin10,11(GND). Low when PSU turns on. The maximum sink current is 10mA and the maximum external voltage is 5.6V. |
| 10,11 | GND | These pins connect to the negative terminal (-V). Return for DC_OK Signal output. |
| 12 | G-AUX | Auxiliary voltage output ground. The signal return is isolated from the output terminals (+V & -V). |
| 13 | ON/OFF | Turns the output on and off by electrical or dry contact between pin 13 (ON/OFF) and pin 14 (12V-AUX). Short: Power ON, Open: Power OFF. |
| 14 | 12V-AUX | Auxiliary voltage output, 10.8~13.2V, referenced to pin 12(G-AUX). The maximum load current is 0.1A. This output is not controlled by the "remote ON/OFF control". |

Function Manual

1. "Remote ON/OFF" and "Output voltage trim" and "Output current trim" functions are not used.

- (1) The power supply unit will have no output if the shorting connector (accessory comes along with the PSU) is not assembled. It contains three shorting wires : one is from ON/OFF (pin13) to 12V-AUX (pin14), two is from PV(pin5) to PS (pin6) and the other is from PC (pin7) to PO (pin8).
- (2) Factory setting is shorted as Fig1.1

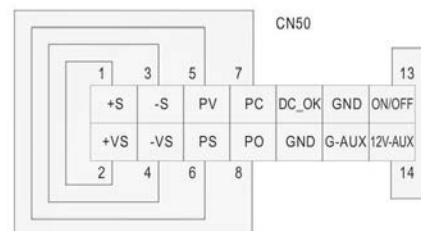
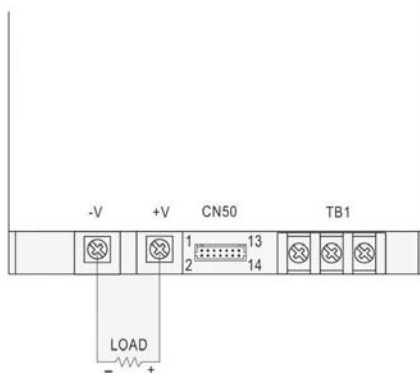


Fig 1.1 (Shorting connector)

2. Remote ON/OFF

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

| Between ON/OFF(pin13) and 12V-AUX(pin14) | Output Status |
|--|---------------|
| SW close (Short) | PSU ON |
| SW open (Open) | PSU OFF |

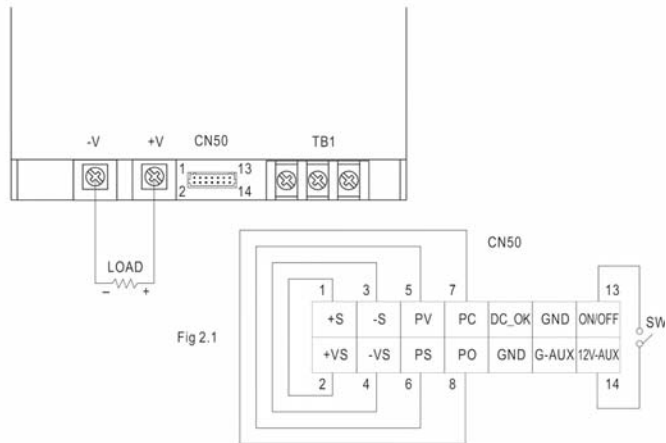


Fig 2.1

3. DC_OK signal

"DC_OK" is an open collector signal. It indicates the output status of the PSU. It can operate in two ways : One is sinking current from external TTL signal ; the other is sending out a TTL voltage signal.

3-1 Sink current :

The maximum sink current is 10mA and the maximum external voltage is 5.6V.

3-2 TTL voltage signal :

| Between DC- OK(pin9) and GND(pin10&11) | Output Status |
|--|---------------|
| 0 ~ 1V | PSU ON |
| 3.3 ~ 5.6V | PSU OFF |

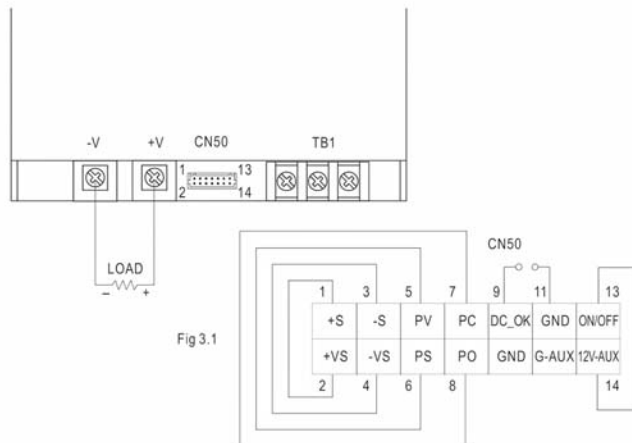


Fig 3.1

4. Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.5V.

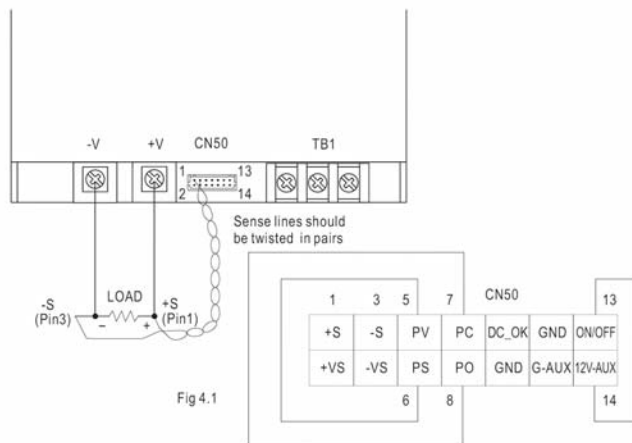
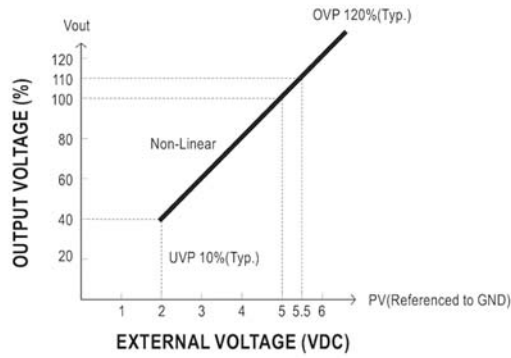


Fig 4.1

5. Output Voltage TRIM

Output voltage of RSP-750 can be trimmed between 40% ~ 110% of its rated value by the following methods :

- (1) Using an external DC source (2~5.5VDC) between "PV"(pin5) and "GND"(pin10,11) that is shown in Fig5.1



Note: External voltage < 0.5V Vo may be the UVP need to restart.

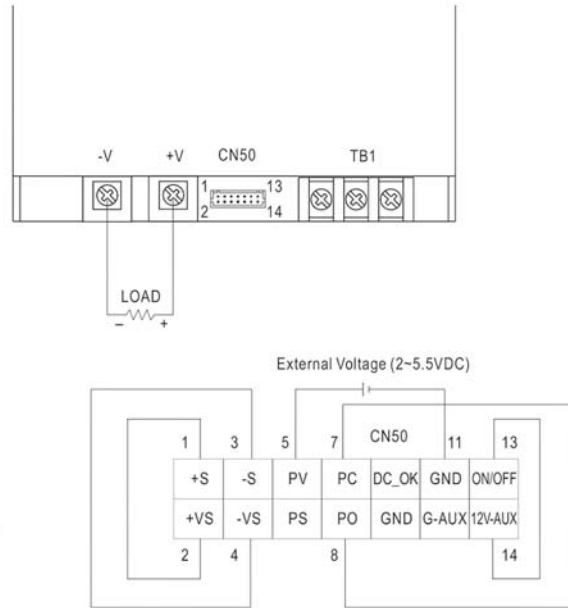


Fig 5.1

6. Output Current TRIM

Output current of RSP-750 can be trimmed between 40% ~ 110% of its rated value by the following methods :

- (1) Using external voltage source between "PC"(pin7) and "GND"(pin10,11) that is shown in Fig6.1

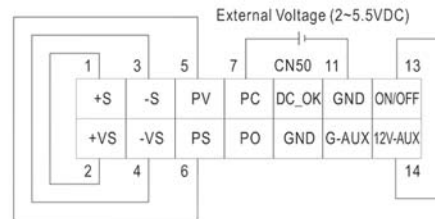
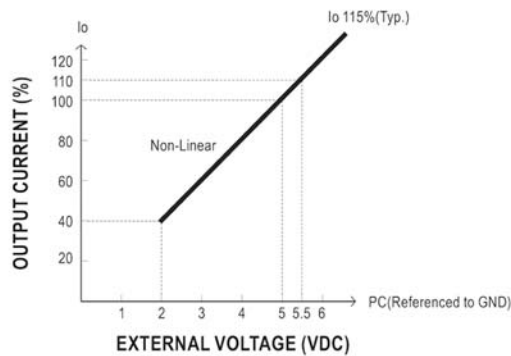


Fig 6.1