

RSP-1500 Series

1500W Single Output Power Supply



| Dimension | | | | |
|-----------|---|-----|---|---------------|
| L | * | W | * | H |
| 278 | * | 127 | * | 83.5(2U) mm |
| 10.9 | * | 5 | * | 3.29(2U) inch |



■ Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 91%
- Forced air cooling by built-in DC fan
- Output voltage programmable
- Active current sharing up to 6000W (3+1)
- Built-in remote ON-OFF control / remote sense / auxiliary power / power OK signal
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Optional conformal coating
- 5 years warranty

■ Applications

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

■ GTIN CODE

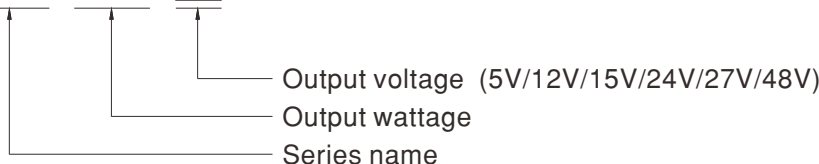
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

RSP-1500 is a 1.5KW single output enclosed type AC/DC power supply. This series operates for 90~264VAC input voltage and offers the models with the DC output mostly demanded from the industry. Each model is cooled by the built-in fan working for the temperature up to 70°C. Moreover, RSP-1500 provides vast design flexibility by equipping various built-in functions such as the output programming, active current sharing, remote ON-OFF control, auxiliary power, etc.

■ Model Encoding / Order Information

RSP - 1500 - 48



File Name:RSP-1500-SPEC 2024-09-04

RSP-1500 Series

1500W Single Output Power Supply



SPECIFICATION

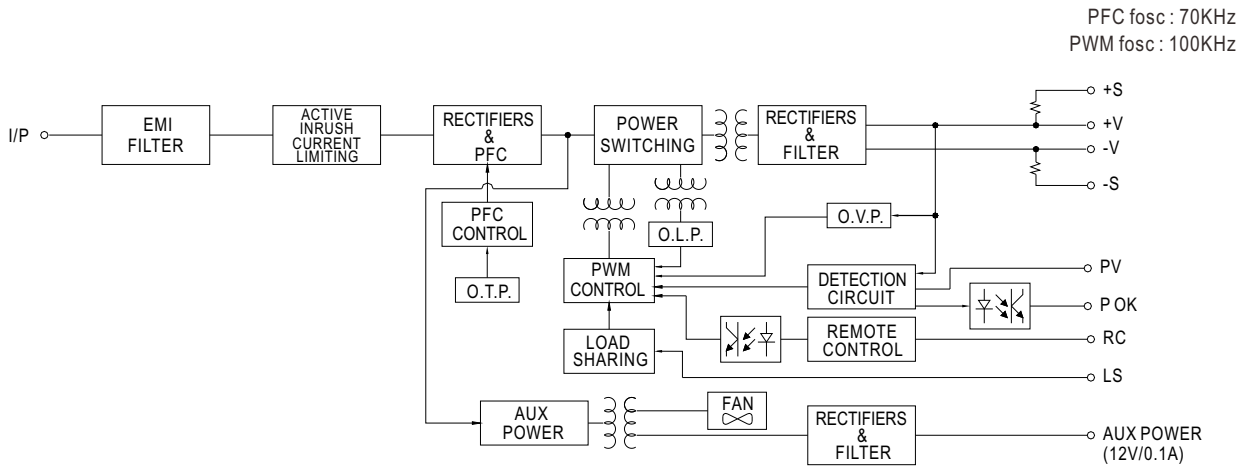
| MODEL | | RSP-1500-5 | RSP-1500-12 | RSP-1500-15 | RSP-1500-24 | RSP-1500-27 | RSP-1500-48 | |
|--------------------------------|--|---|--|--------------------------|--|-------------------|--|--|
| OUTPUT | DC VOLTAGE | 5V | 12V | 15V | 24V | 27V | 48V | |
| | RATED CURRENT | 240A | 125A | 100A | 63A | 56A | 32A | |
| | CURRENT RANGE | 0 ~ 240A | 0 ~ 125A | 0 ~ 100A | 0 ~ 63A | 0 ~ 56A | 0 ~ 32A | |
| | RATED POWER | 1200W | 1500W | 1500W | 1512W | 1512W | 1536W | |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | |
| | VOLTAGE ADJ. RANGE | 4.5 ~ 5.5V | 10 ~ 13.5V | 13.5 ~ 16.5V | 20 ~ 26.4V | 24 ~ 30V | 43 ~ 56V | |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±2.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | SETUP, RISE TIME | 1500ms, 100ms at full load | | | | | | |
| INPUT | HOLD UP TIME (Typ.) | 10ms at full load | | 14ms at full load | | 16ms at full load | | |
| | VOLTAGE RANGE | 90 ~ 264VAC 127 ~ 370VDC | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | |
| | POWER FACTOR (Typ.) | 0.95/230VAC | | 0.98/115VAC at full load | | | | |
| | EFFICIENCY (Typ.) | 80% | 87% | 87% | 90% | 90% | 91% | |
| | AC CURRENT (Typ.) | 17A/115VAC 8A/230VAC | | | | | | |
| | INRUSH CURRENT (Typ.) | 30A/115VAC 60A/230VAC | | | | | | |
| | LEAKAGE CURRENT | <2.0mA / 240VAC | | | | | | |
| PROTECTION | OVERLOAD Note.4 | 105 ~ 135% rated output power Protection type : Constant current limiting unit will shut down o/p voltage after 5sec. Re-power on to recover | | | | | | |
| | OVER VOLTAGE | 5.75 ~ 6.75V | 13.8 ~ 16.8V | 17 ~ 20.5V | 27.6 ~ 32.4V | 31 ~ 36.5V | 57.6 ~ 67.2V | |
| | OVER TEMPERATURE | Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | |
| FUNCTION | OUTPUT VOLTAGE PROGRAMMABLE(PV) | Adjustment of output voltage is allowable to 70 ~ 100% of nominal output voltage. Please refer to the Function Manual. | | | | | | |
| | CURRENT SHARING | Up to 6000W or (3+1) units. Please refer to the Function Manual. | | | | | | |
| | AUXILIARY POWER | 12V@0.1A(Only for Remote ON-OFF control) | | | | | | |
| | REMOTE ON-OFF CONTROL | Please see the Function Manual. | | | | | | |
| | REMOTE SENSE | Compensate voltage drop on the load wiring up to 0.3V. Please refer to the Function Manual. | | | | | | |
| | ALARM SIGNAL OUTPUT | Power OK signal. Please see the Function Manual. | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +70°C (Refer to "Derating Curve") | | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH non-condensing | | | | | | |
| | TEMP. COEFFICIENT | ±0.05%/°C (0 ~ 50°C) | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes | | | | | | |
| SAFETY & EMC (Note 5) | SAFETY STANDARDS | UL62368-1, CAN/CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, BSMI CNS15598-1, AS/NZS62368.1, EAC TP TC 004 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 | Parameter | Standard | | | | Test Level / Note | |
| | | Conducted | BS EN/EN55032 (CISPR32), BSMI CNS15936 | | | | Class B/Class A (only for BSMI) | |
| | | Radiated | BS EN/EN55032 (CISPR32), BSMI CNS15936 | | | | Class A | |
| | | Harmonic Current | BS EN/EN61000-3-2 | | | | ----- | |
| | EMC IMMUNITY | Voltage Flicker | BS EN/EN61000-3-3 | | | | ----- | |
| | | BS EN/EN55035, BS EN/EN61000-6-2 | | | | | | |
| | | Parameter | Standard | | | | Test Level / Note | |
| | | ESD | BS EN/EN61000-4-2 | | | | Level 3, 8KV air ; Level 2, 4KV contact | |
| | | Radiated | BS EN/EN61000-4-3 | | | | Level 3 | |
| | | EFT / Burst | BS EN/EN61000-4-4 | | | | Level 2 | |
| | | Surge | BS EN/EN61000-4-5 | | | | Level 3, 2KV/Line-Earth ; Level 2, 1KV/Line-Line | |
| Conducted | | BS EN/EN61000-4-6 | | | | Level 3 | | |
| Magnetic Field | BS EN/EN61000-4-8 | | | | Level 4 | | | |
| Voltage Dips and Interruptions | BS EN/EN61000-4-11 | | | | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods | | | |
| OTHERS | MTBF | 814.4K hrs min. Telcordia SR-332 (Bellcore) ; 90.4K hrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION | 278*127*83.5mm (L*W*H) | | | | | | |
| | PACKING | 3.0Kg; 4pcs/13Kg/1.19CUFT | | | | | | |
| 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 & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 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. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 720mm*360mm metal plate with 1mm of thickness. 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 https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf)</p> <p>6. 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 https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | | |

RSP-1500 Series

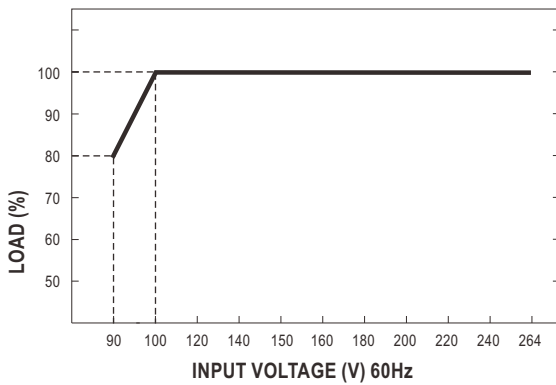
1500W Single Output Power Supply



Block Diagram

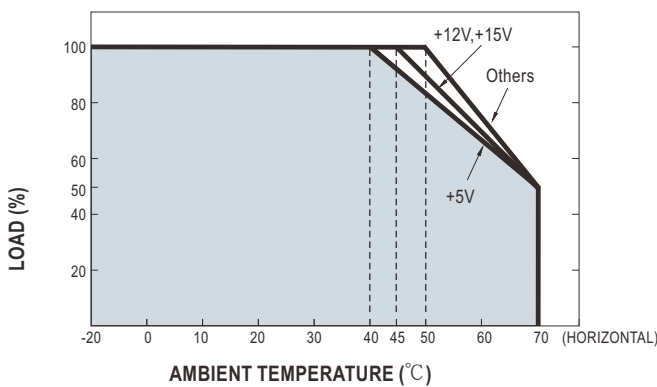


Static Characteristics

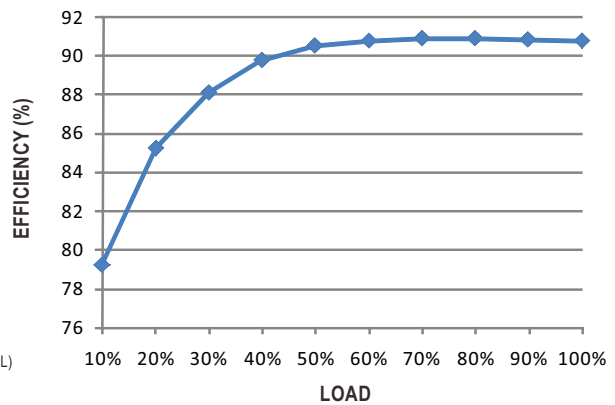


| INPUT \ MODEL | 5V | 12V | 15V |
|---------------|------------------|------------------|------------------|
| 100~264VAC | 1200W 240A | 1500W 125A | 1500W 100A |
| 90VAC | 960W 192A | 1200W 100A | 1200W 80A |
| INPUT \ MODEL | 24V | 27V | 48V |
| 100~264VAC | 1512W 63A | 1512W 56A | 1536W 32A |
| 90VAC | 1209.6W 50.4A | 1209.6W 44.8A | 1228.8W 25.6A |

Derating Curve



Efficiency vs Load (48V Model)

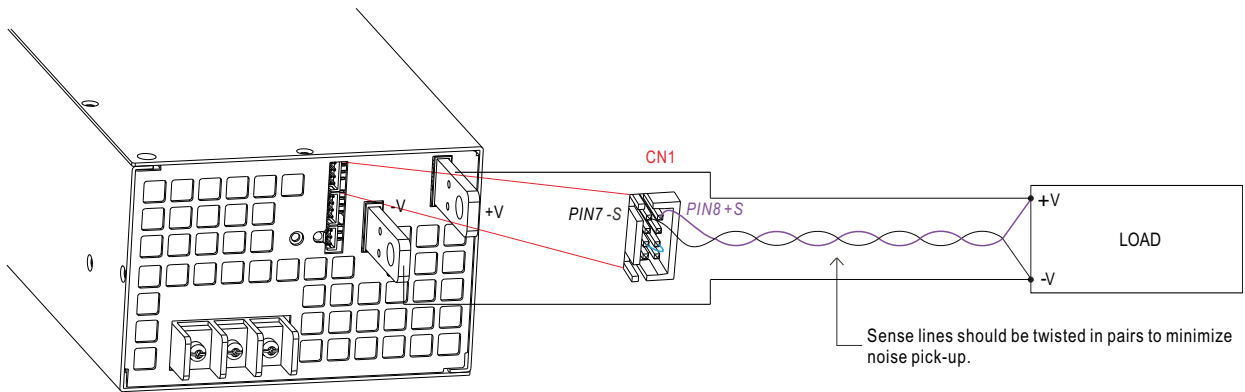


© The curve above is measured at 230VAC.

Function Manual

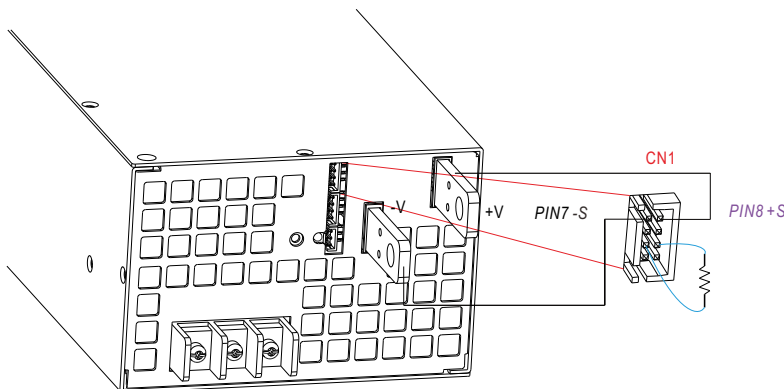
1. Remote Sense

※ The Remote Sense compensates voltage drop on the load wiring up to 0.3V



2. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

※ In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed to 70~100%(Typ.) of the nominal voltage by applying EXTERNAL RESISTANCE



◎ Connect an external resistor with a 0.25W rating or above between TRIM(pin4) & -S(pin3 or pin5 or pin7) on CN1 or CN2, and +S & +V, -S & -V also need to be connected.

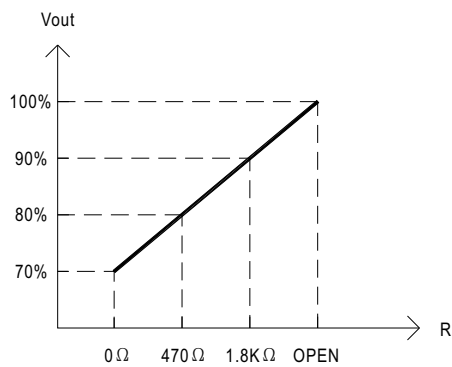
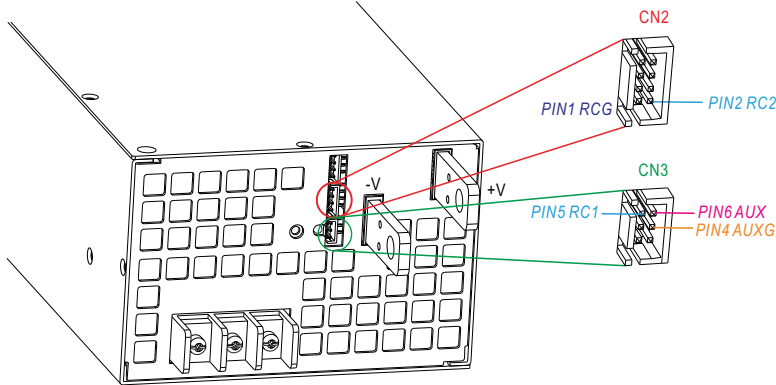


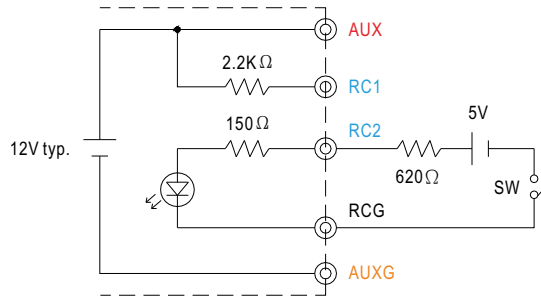
Fig. 2.2 External Resistance (Typical)

3. Remote ON-OFF

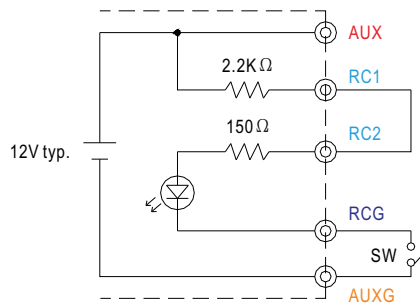
※ Remote ON-OFF is activated by the configuration with respect to CN1, CN2 and CN3 as shown in the following diagram.



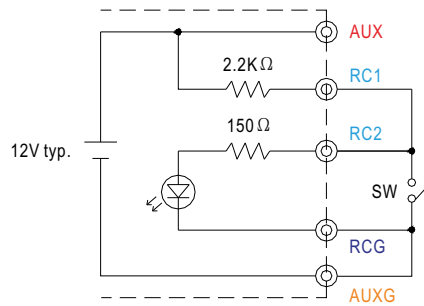
Example 3.2(A): Using external voltage source



Example 3.2(B): Using internal 12V auxiliary output



Example 3.2(C): Using internal 12V auxiliary output

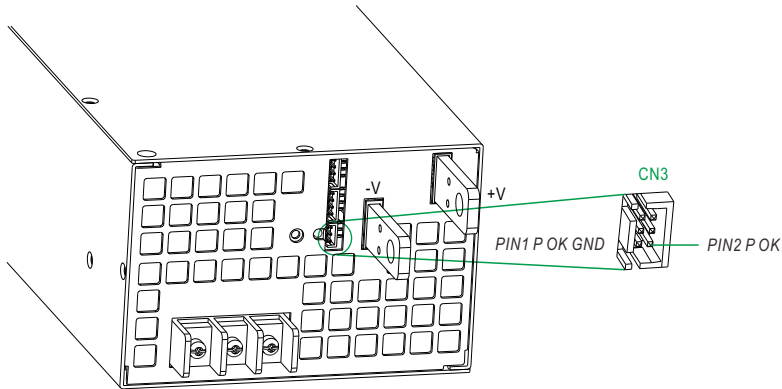


© Connection Method

| | Fig. 3.2(A) | Fig. 3.2(B) | Fig. 3.2(C) |
|----------|-------------|-------------|-------------|
| SW Logic | Output on | SW Open | SW Open |
| | Output off | SW Close | SW Close |

4. Alarm Signal Output

※ Alarm signal is sent out through "P OK" & "P OK GND" and pins on CN3. Please acknowledge an external voltage source is required for this function.



| Function | Description | Output of alarm(P OK) |
|----------|--|--|
| P OK | The signal is "Low" when the power supply is above 65% of the rated output voltage, or say, Power OK | Low (0.5V max at 10mA) |
| | The signal turns to be "High" when the power supply is under 65% of the rated output voltage, or say, Power Fail | High or open (External applied voltage 10mA max.) |

Table 4.1 Explanation of alarm

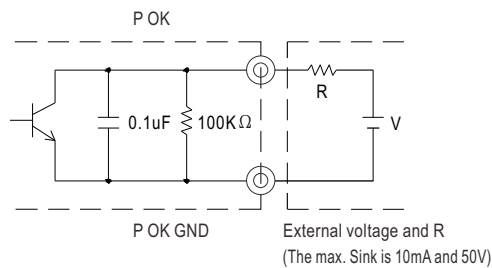


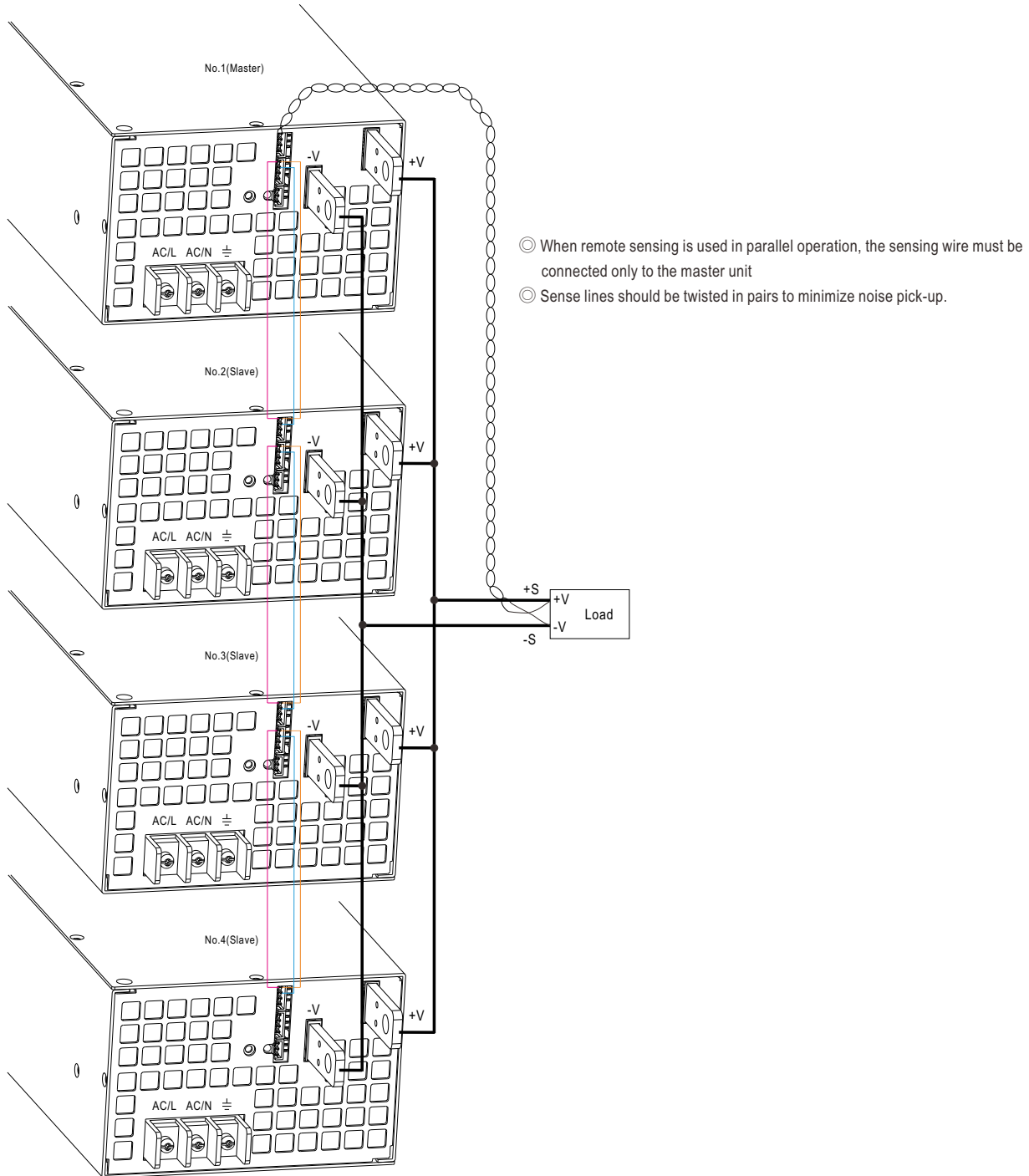
Fig. 4.1 Internal circuit of P OK (Open collector method)

5. Current Sharing with Remote Sense

RSP-1500 has the built-in active current sharing function and can be connected in parallel, up to 4 units, to provide higher output power as exhibited below :

- ※ The power supplies should be paralleled using short and large diameter wiring and then connected to the load.
- ※ Difference of output voltages among parallel units should be less than 0.2V.
- ※ The total output current must not exceed the value determined by the following equation:

$$\text{Maximum output current at parallel operation} = (\text{Rated current per unit}) \times (\text{Number of unit}) \times 0.9$$



- ⊙ When remote sensing is used in parallel operation, the sensing wire must be connected only to the master unit
- ⊙ Sense lines should be twisted in pairs to minimize noise pick-up.

⊙ +S, -S and CS are connected mutually in parallel.

RSP-1500 Series

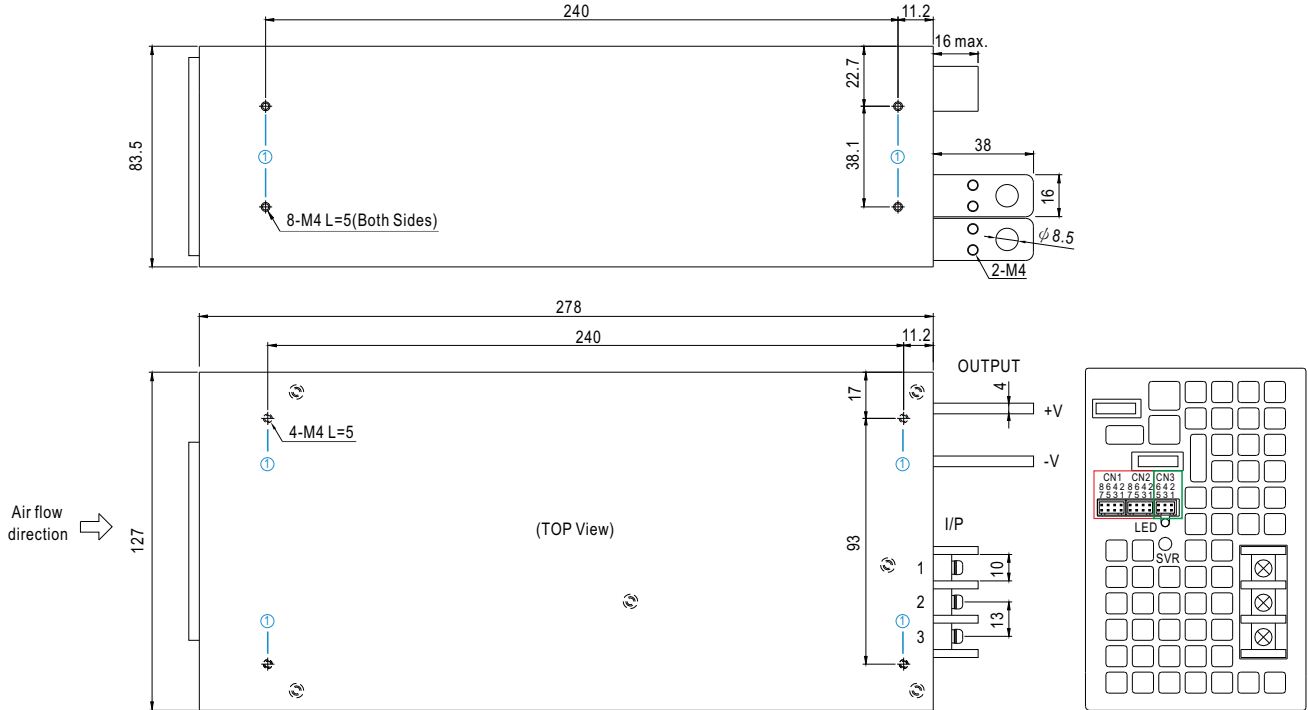
1500W Single Output Power Supply



Mechanical Specification

(Unit: mm, tolerance $\pm 0.5\text{mm}$)

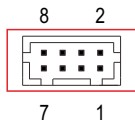
Case No.943A



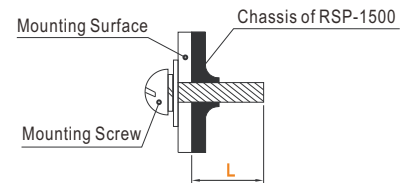
※ Mounting Instruction

| Hole No. | Recommended Screw Size | MAX. Penetration Depth L | Recommended mounting torque |
|----------|------------------------|--------------------------|-----------------------------|
| ① | M4 | 5mm | 7~10Kgf-cm |

※ Control Pin No. Assignment (CN1,CN2) : HRS DF11-8DP-2DS or equivalent



| | |
|----------------|--------------------------------|
| Mating Housing | HRS DF11-8DS or equivalent |
| Terminal | HRS DF11-**-**SC or equivalent |

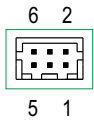


◎ CN1 and CN2 are connected internally.

| Pin No. | Function | Description |
|---------|-------------------|---|
| 1 | RCG | Remote ON-OFF Ground |
| 2 | RC2 | Remote ON-OFF |
| 3,5,7 | -S | Negative sensing for remote sense |
| 4 | TRIM | Connection for output voltage programming |
| 6 | LS(Current Share) | Current Share |
| 8 | +S | Positive sensing for remote sense |

File Name:RSP-1500-SPEC 2024-09-04

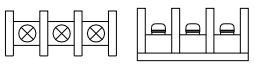
※Control Pin No. Assignment (CN3) : HRS DF11-6DP-2DS or equivalent



| | |
|----------------|------------------------------|
| Mating Housing | HRS DF11-6DS or equivalent |
| Terminal | HRS DF11-6**SC or equivalent |

| Pin No. | Function | Description |
|---------|----------|----------------------|
| 1 | P OK GND | Power OK Ground |
| 2 | P OK | Power OK Signal |
| 3 | RCG | Remote ON-OFF Ground |
| 4 | AUXG | Auxiliary Ground |
| 5 | RC1 | Remote ON-OFF |
| 6 | AUX | Auxiliary Output |

※AC Input Terminal Pin No. Assignment

| Pin No. | Assignment | Diagram | Maximum mounting torque |
|---------|------------|---|-------------------------|
| 1 | FG \perp |  | 18Kgf-cm |
| 2 | AC/N | | |
| 3 | AC/L | | |

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>