



1000W Single Output DC-DC Converter

SD-1000 series



■ Features :

- 1U low profile 41mm
- High power density 10.7w/inch³
- 2000VAC I/O Isolation
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Output OK signal
- Built-in remote ON-OFF control
- Built-in remote sense function
- Forced air cooling by built-in DC fan with fan speed control
- 12V, 0.25A auxiliary output
- 3 years warranty



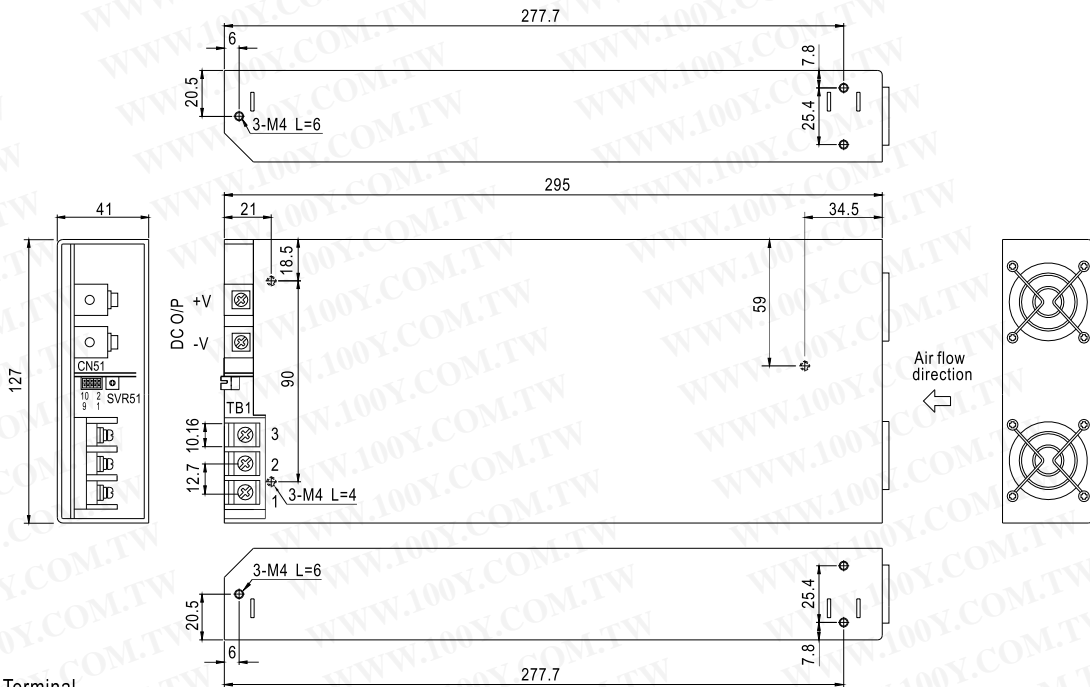
SPECIFICATION

| MODEL | SD-1000L-12 | SD-1000L-24 | SD-1000L-48 | SD-1000H-12 | SD-1000H-24 | SD-1000H-48 | |
|-----------------------|------------------------------|---|--------------|-------------|-------------|--------------|----------|
| OUTPUT | DC VOLTAGE | 12V | 24V | 48V | 12V | 24V | 48V |
| | RATED CURRENT | 60A | 40A | 21A | 60A | 40A | 21A |
| | CURRENT RANGE | 0 ~ 60A | 0 ~ 40A | 0 ~ 21A | 0 ~ 60A | 0 ~ 40A | 0 ~ 21A |
| | RATED POWER | 720W | 960W | 1008W | 720W | 960W | 1008W |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p |
| | VOLTAGE ADJ. RANGE | 11 ~ 15V | 23 ~ 30V | 46 ~ 60V | 11 ~ 15V | 23 ~ 30V | 46 ~ 60V |
| | VOLTAGE TOLERANCE Note.3 | ±1.0% | ±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 | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| SETUP, RISE TIME | 500ms, 50ms at full load | | | | | | |
| INPUT | VOLTAGE RANGE Note.5 | 19 ~ 72VDC | | | 72 ~ 144VDC | | |
| | EFFICIENCY (Typ.) | 84% | 88% | 90% | 85% | 89% | 92% |
| | DC CURRENT (Typ.) | 23.5A/48VDC | | | 11.6A/96VDC | | |
| | INRUSH CURRENT (Typ.) | ----- | | | 100A/96VDC | | |
| PROTECTION | OVERLOAD | 105 ~ 125% rated output power Protection type : Constant current limiting, unit will shut down o/p voltage after about 5sec. Re-power on to recover | | | | | |
| | OVER VOLTAGE | 16 ~ 19V | 30.8 ~ 35.2V | 62 ~ 68V | 16 ~ 19V | 30.8 ~ 35.2V | 62 ~ 68V |
| | OVER TEMPERATURE | 85°C ±5°C (TSW2) detect on heatsink of O/P diode; 75°C ±5°C (TSW1) detect on heatsink of power transistor Protection type : Shut down o/p voltage, recovers automatically after temperature goes down | | | | | |
| FUNCTION | REMOTE ON/OFF CONTROL | Please refer to function manual | | | | | |
| | OUTPUT OK SIGNAL | Open collector signal low when PSU turns on, maximum, sink current :10mA | | | | | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +60°C (Refer to output load derating curve) | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH | | | | | |
| | TEMP. COEFFICIENT | ±0.02%/°C (0 ~ 50°C) | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes | | | | | |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS | IEC60950-1 CB approved by TUV | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:2KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC 25°C 70%RH | | | | | |
| | EMI CONDUCTION & RADIATION | Compliance to EN55022 (CISPR22) | | | | | |
| OTHERS | EMS IMMUNITY | Compliance to EN61000-4-2,3,4,6,8; ENV50204, light industry level, criteria A | | | | | |
| | MTBF | 32K hrs min. MIL-HDBK-217F (25°C) | | | | | |
| | DIMENSION | 295*127*41mm (L*W*H) | | | | | |
| NOTE | PACKING | 1.94Kg; 6pcs/12.6Kg/0.99CUFT | | | | | |
| | | 1. All parameters NOT specially mentioned are measured at 48, 96VDC input, rated load and 25°C of ambient temperature. 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. 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. 5. Derating may be needed under low input voltages. Please check the derating curve for more details. | | | | | |

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■ Mechanical Specification

Case No. 952B Unit:mm



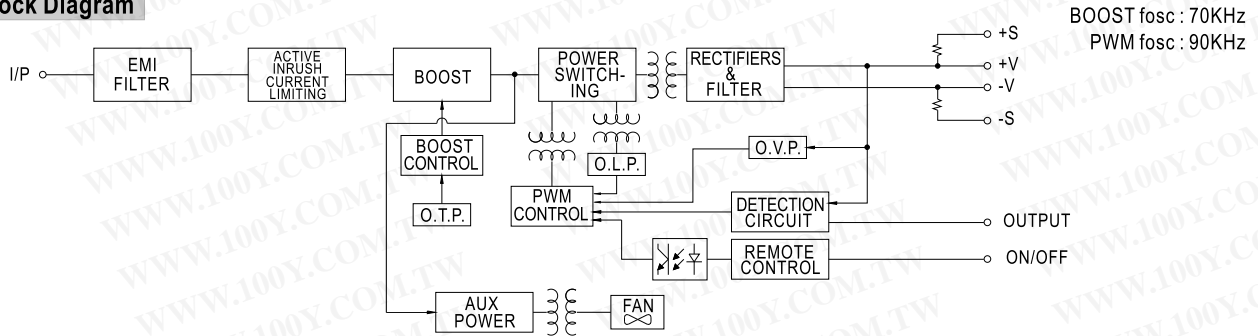
DC Input Terminal
Pin No. Assignment

| Pin No. | Assignment |
|---------|-------------|
| 1 | DC INPUT V+ |
| 2 | DC INPUT V- |
| 3 | FG \perp |

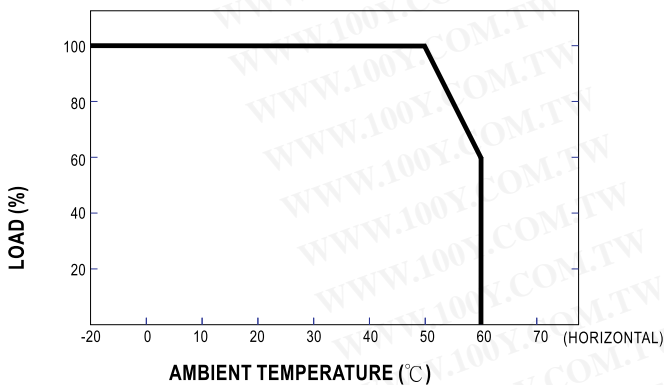
Control pin number assignment (CN51) : JST B10B-PHDSS or equivalent

| Pin No. | Assignment | Pin No. | Assignment | Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|---------|------------|---------|------------|--------------------------------|-------------------------------------|
| 1 | +S | 5 | AUX | 9 | RCG | JST PHDR-10VS or equivalent | JST SPHD-002T-P0.5 or equivalent |
| 2 | -S | 6 | AUXG | 10 | NC | | |
| 3 | OUTPUT OK | 7 | RC1 | | | | |
| 4 | GND | 8 | RC2 | | | | |

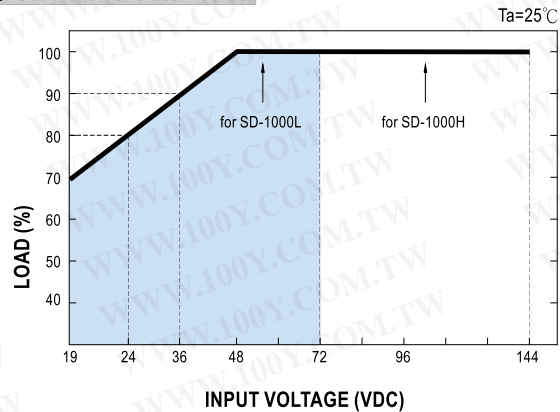
■ Block Diagram



■ Derating Curve



■ Static Characteristics



■ **Function Description of CN51**

| 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 | -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. |
| 3 | O/P OK | Open collector signal, referenced to pin4(GND). Low when PSU turns on. The maximum sink current is 10mA and the maximum external voltage is 13V. |
| 4 | GND | These pins connect to the negative terminal (-V). |
| 5 | AUX | Auxiliary voltage output, 10.8~13.2V referenced to pin6(AUXG).The maximum load current is 0.25A. |
| 6 | AUXG | Auxiliary voltage output ground. The signal return is isolated from the output terminals(+V & -V). |
| 7 | RC1 | Remote ON/OFF |
| 8 | RC2 | Remote ON/OFF |
| 9 | RCG | Remote ON/OFF ground |
| 10 | NC | No connection |

■ **Function Manual**

1.Remote ON/OFF

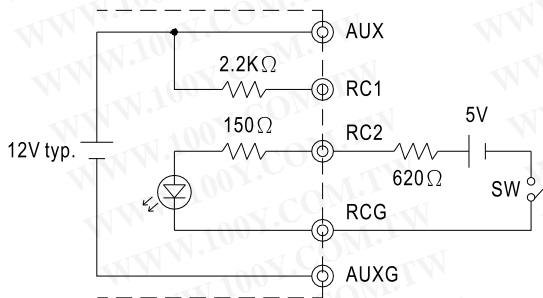
- (1) Remote ON/OFF control becomes available by applying voltage in CN51
- (2) Table 1.1 shows the specification of Remote ON/OFF function
- (3) Fig.1.2 shows the example to connect Remote ON/OFF control function

Table 1.1 Specification of Remote ON/OFF

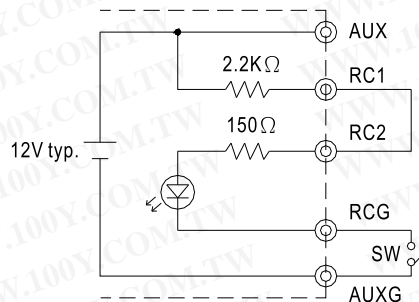
| Connection Method | Fig. 1.2(A) | Fig. 1.2(B) | Fig. 1.2(C) |
|-------------------|-------------|-------------|-------------|
| SW Logic | Output on | SW Open | SW Close |
| | Output off | SW Close | SW Open |

Fig.1.2 Examples of connecting remote ON/OFF

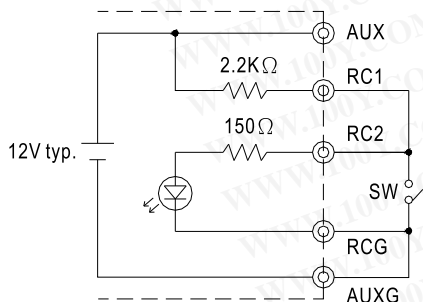
(A) Using external voltage source



(B) Using internal 12V auxiliary output



(C) Using internal 12V auxiliary output



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2. Output OK signal

"Output 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 signal ; the other is sending out a voltage signal.

2-1 Sink current :

The maximum sink current is 10mA and the maximum external voltage is 13V.

2-2 Voltage signal :

| Between O/P OK(pin3) and GND(pin4) | Output Status |
|------------------------------------|---------------|
| 0 ~ 0.5V | ON |
| 12 ~ 13V | OFF |

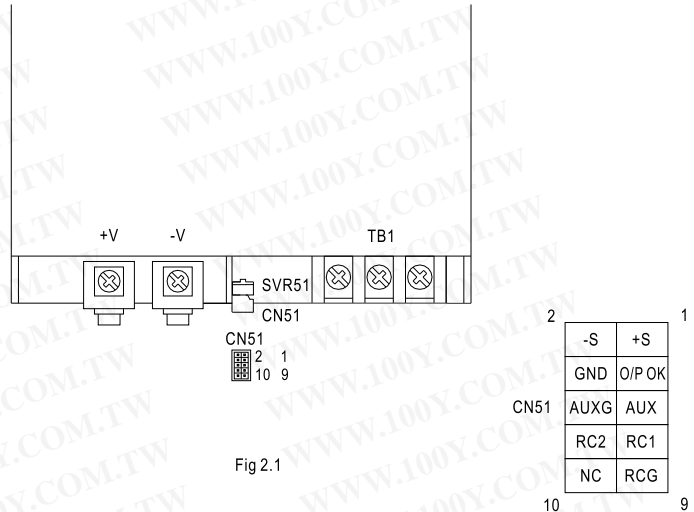


Fig 2.1

3. Remote Sense

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

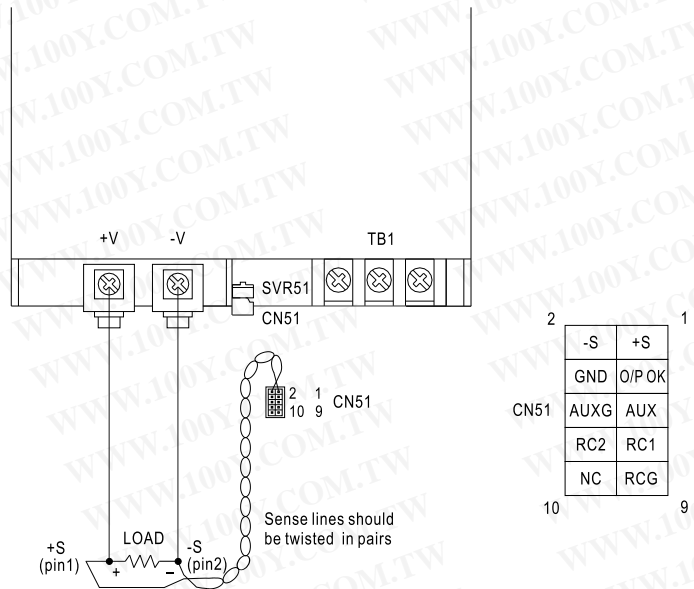


Fig 3.1

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