

**Professionally approved products.**

## **Datasheet**

# **RS 720W Isolated DC-DC Converter, Vin 72 → 144 V dc, Vout 12V dc, I/O isolation 2000V ac**

**RS Stock number 678-3675**



### **■ Features :**

- 1U low profile 41mm
- High power density 10.7w/inch<sup>3</sup>
- 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

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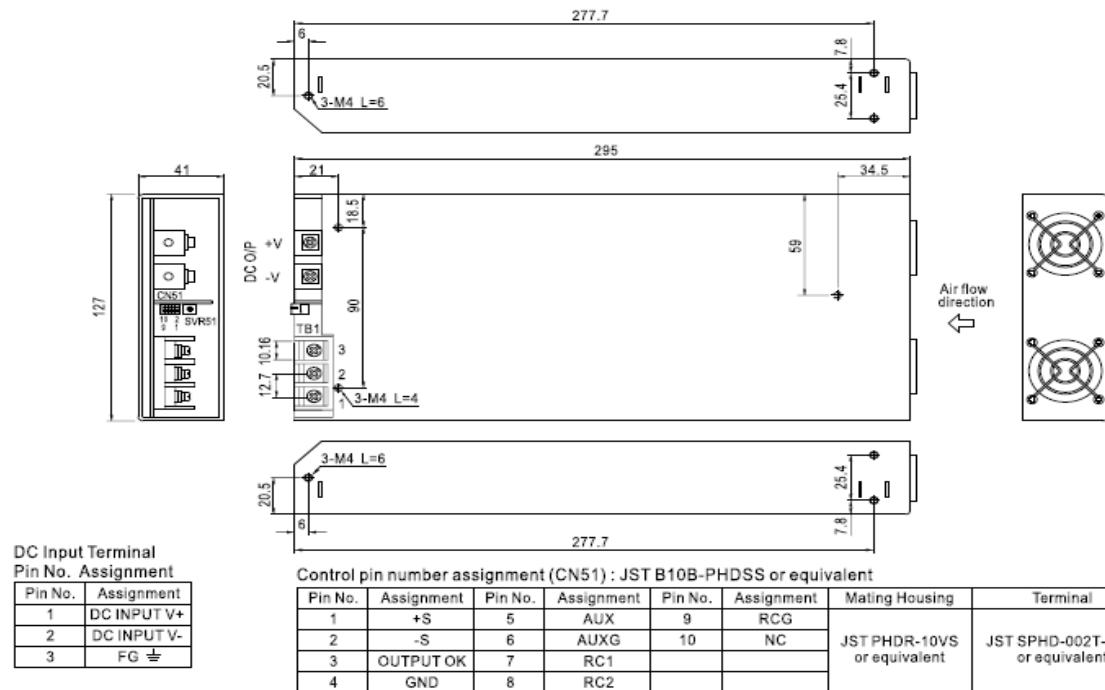
MODEL	SD-1000L-12	SD-1000L-24	SD-1000L-48	SD-1000H-12	SD-1000H-24	SD-1000H-48
OUTPUT	DC VOLTAGE	12V	24V	48V	12V	24V
	RATED CURRENT	60A	40A	21A	60A	40A
	CURRENT RANGE	0 ~ 60A	0 ~ 40A	0 ~ 21A	0 ~ 60A	0 ~ 40A
	RATED POWER	720W	960W	1008W	720W	960W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	11 ~ 15V	23 ~ 30V	46 ~ 60V	11 ~ 15V	23 ~ 30V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
INPUT	SETUP, RISE TIME	500ms, 50ms at full load				
	VOLTAGE RANGE Note.5	19 ~ 72VDC			72 ~ 144VDC	
	EFFICIENCY (Typ.)	84%	88%	90%	85%	89%
	DC CURRENT (Typ.)	23.5A/48VDC			11.6A/96VDC	
PROTECTION	INRUSH CURRENT (Typ.)	----			100A/96VDC	
	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
	OVER TEMPERATURE	65°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, re-power on to recover				
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)				
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; ENV50204, light industry level, criteria A				
OTHERS	MTBF	32K hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	295*127*41mm (L*W*H)				
	PACKING	1.94Kg; 6pcs/12.6Kg/0.99CUFT				
NOTE	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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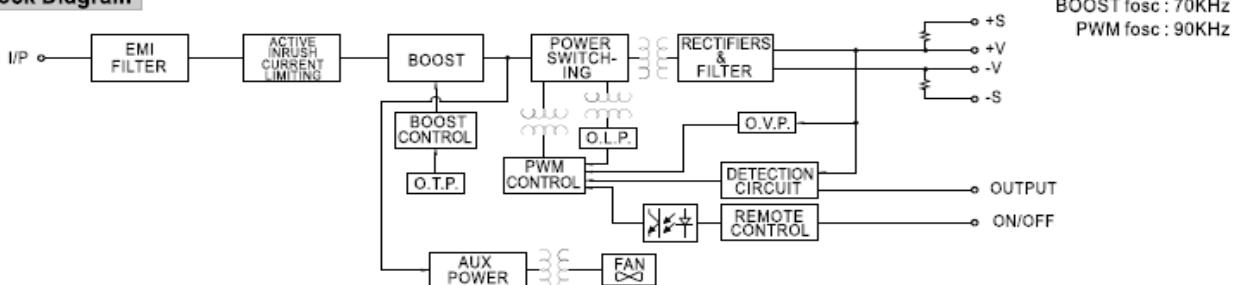
## Datasheet

### Mechanical Specification

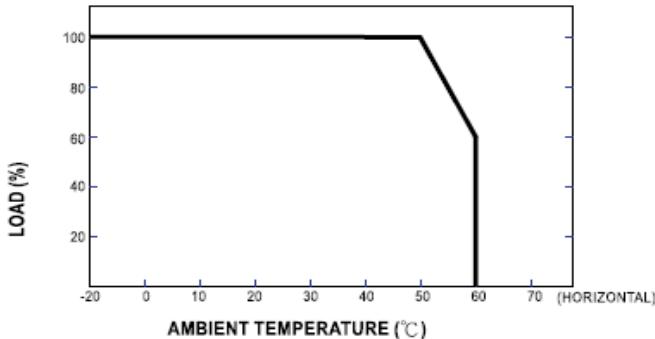
Case No. 952B Unit:mm



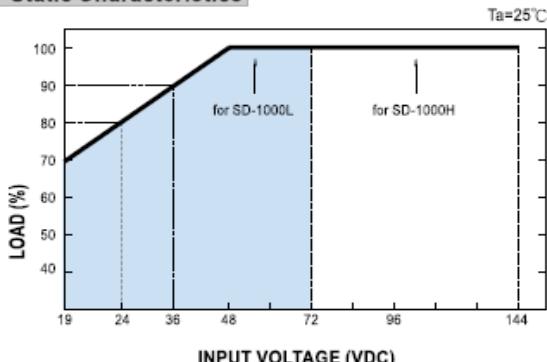
### Block Diagram



### Derating Curve



### Static Characteristics



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### 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

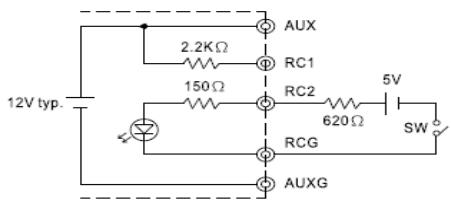
- (1) Remote ON/OFF control becomes available by applying voltage in CN51
- (2) Table 1.1 shows the specification of Remote ON/OFF function
- (3) Fig.1.2 shows the example to connect Remote ON/OFF control function

Table 1.1 Specification of Remote ON/OFF

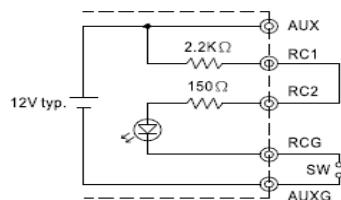
Connection Method	Fig. 1.2(A)	Fig. 1.2(B)	Fig. 1.2(C)
SW Logic	Output on SW Open	SW Open	SW Close
	Output off SW Close	SW Close	SW Open

Fig.1.2 Examples of connecting remote ON/OFF

(A) Using external voltage source



(B) Using internal 12V auxiliary output



### Function Manual

#### 1. Remote ON/OFF

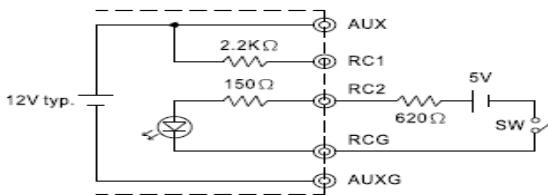
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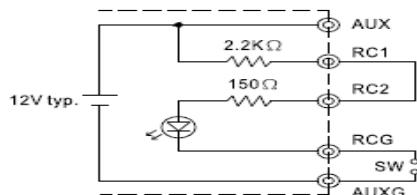
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Fig.1.2 Examples of connecting remote ON/OFF

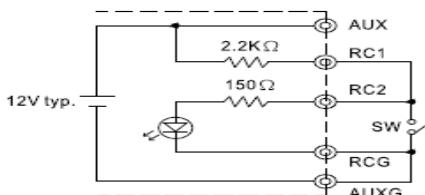
(A) Using external voltage source



(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

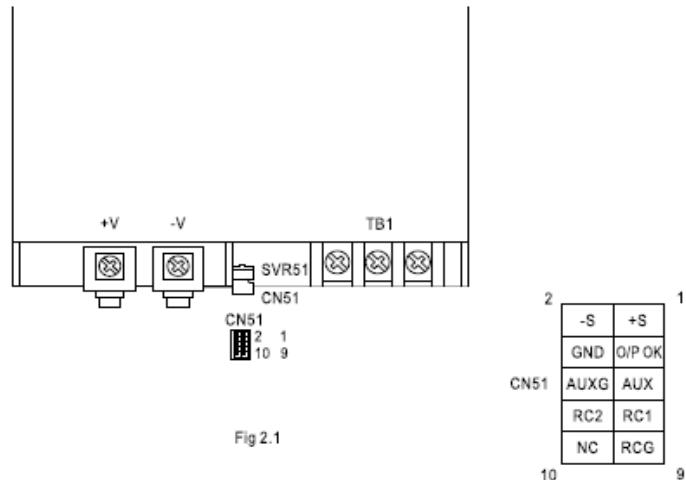


Fig 2.1

### 3. Remote Sense

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

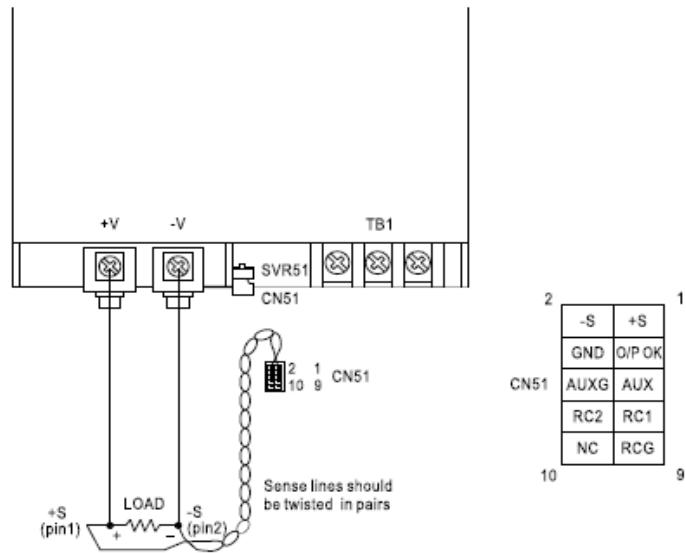


Fig 3.1