



- DC Input Active Surge Current Limiting
- Wide 4:1~2:1 DC Input Range
- Protections: Short circuit / Overload / Over voltage / Over Temperature/ Input Polarity(by fuse)
- 2000VAC I/O Isolation
- Forced Air Cooling by Built-In DC Fan with Fan Speed Control Function
- Output OK Signal
- Built-In Remote ON-OFF Control
- Built-In Remote Sense Function

CB **CE**

Model Number	Output Volts	Output Amps	Min Load	DC Volt Adjust	Efficiency	Over Voltage Protection
SINGLE OUTPUT						
SD500L-12	12 Volts(DC)	40 Amps	0~40Amps	11~15Volt(DC)	86%	16~19Volts(DC)
SD500L-24	24 Volts(DC)	21 Amps	0~21Amps	23~30Volt(DC)	88%	30.8~35.2Volts(DC)
SD500L-48	48 Volts(DC)	10.5 Amps	0~10.5Amps	46~60Volt(DC)	89%	62~68Volts(DC)
SD500H-12	12 Volts(DC)	40 Amps	0~40Amps	11~15Volt(DC)	87%	16~19Volts(DC)
SD500H-24	24 Volts(DC)	21 Amps	0~21Amps	23~30Volt(DC)	89%	30.8~35.2Volts(DC)
SD500H-48	48 Volts(DC)	10.5 Amps	0~10.5Amps	46~60Volt(DC)	90%	62~68Volts(DC)

500W Single Output DC-DC Converter

SD500 series

INPUT SPECIFICATIONS

Input Voltage Range (Note 3)	SD500L-xx: 19~72Volts(DC)
	SD500H-xx: 72~144Volts(DC)
Inrush Current, typ:	60Amps (DC)
Input Current FL, typ:	
SD500L-xx:	24.2Amps/ 19 Volts(DC)
	24.8Amps/ 24 Volts(DC)
	12Amps/ 48 Volts(DC)
SD500H-xx:	8Amps/ 72 Volts(DC)
	6Amps/ 96 Volts(DC)
Input Current NL, typ:	
SD500L-xx:	0.2Amps/ 48 Volts(DC)
SD500H-xx	0.1Amps/ 96 Volts(DC)
Min Load	See Selection Chart

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
Line Regulation	±0.5%
Load Regulation	±0.5%
Voltage Tolerance (Note 2)	±1.0%
Ripple/Noise (Note 1)	150mVpk-pk max.
Setup, Rise Time	500ms, 50m @ FL
Over Voltage Protection	See Selection Chart
	Shut down o/p voltage, re-power
Over Current Protection	105 ~ 125% rated output power
	Constant current limiting, shutdown o/p voltage, re-power
Over Temperature	
	80°C±5°C TSW1 detect on heatsink of power transistor
	80°C±5(L-48V,H-24V,H-48V), 85°C±5(L-24V)
	90°C±5(L-12V), 95°C±5 (H-12V)
	TSW2 : detect on heatsink of o/p diode. Shutdown o/p voltage auto recov after cool down
DC Volt Adjust	See Selection Chart

GENERAL SPECIFICATIONS

Safety	IEC60950-1 CB approved by TUV
Insulation Resistance	≥ 100MΩ / 500Volts(DC) / 25°C / 70% RH
EMI	Compliance to EN55022B (CISPR22B)
Remote Control	Please refer to function manual
Output OK Signal	Open collector signal low when PSU turns on, max. sink current : 10 mAmps
Efficiency	See Selection Chart
Isolation	2000VAC Input - Output
	1500VAC Input - Ground
	500VAC Output - Ground
EMS (Note 4)	Compliance to EN61000-4-2, 3, 4, 6, 8
	ENV50204, light Industry Level, Criteria A

ENVIRONMENTAL SPECIFICATIONS

Oper. Temperature	-20°C to +60°C (See Derate Curve)
Relative Humidity	20~90% RH non cond
Storage Temperature	-40°C to +85°C, 10~95% RH
Temperature Coefficient	±0.02% / °C (0-50°C)
MTBF	196.3 Khrs min, MIL-HDBK-217F(25°C)
Vibration	10~500Hz, 2G10min./1cycle, period for 60min. each along X, Y, Z axes

PHYSICAL SPECIFICATIONS

Size (Millimeters / Inches)	215 x 115 x 50 / 8.46" x 4.53" x 1.97"
Weight	20.46 oz (580g)

NOTE

1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
2. Tolerance : includes set up tolerance, line regulation and load regulation.
3. Derating may be needed under low input voltages. Please check the derating curve for more details.
4. The Power Supply is considered a component which will be installed into final equipment, The final equipment must be re-confirmed that it still passes EMC directives

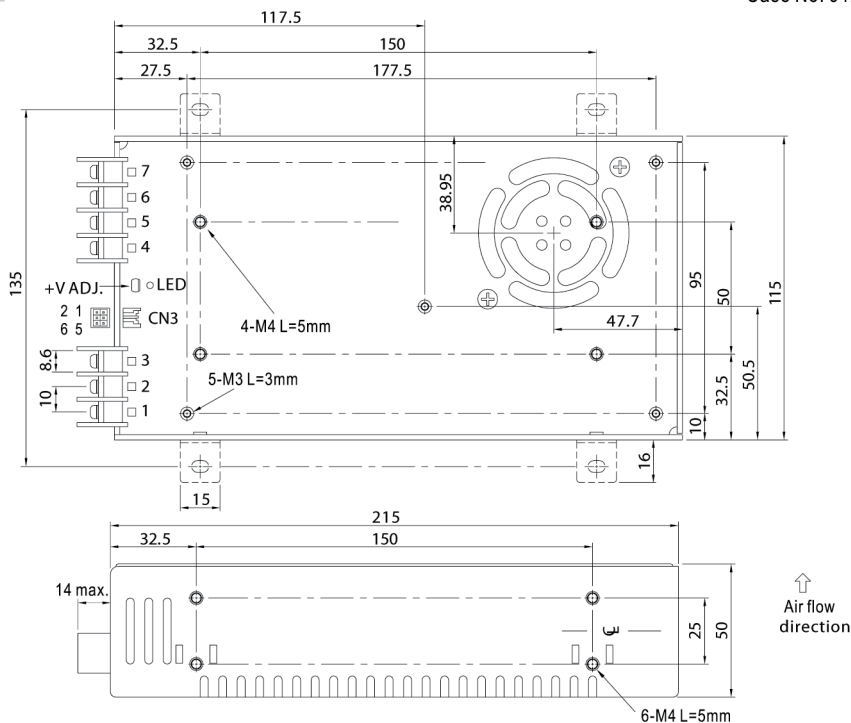
All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

500W Single Output DC-DC Converter

SD500 series

Mechanical Specification

Case No. 912A Unit:mm



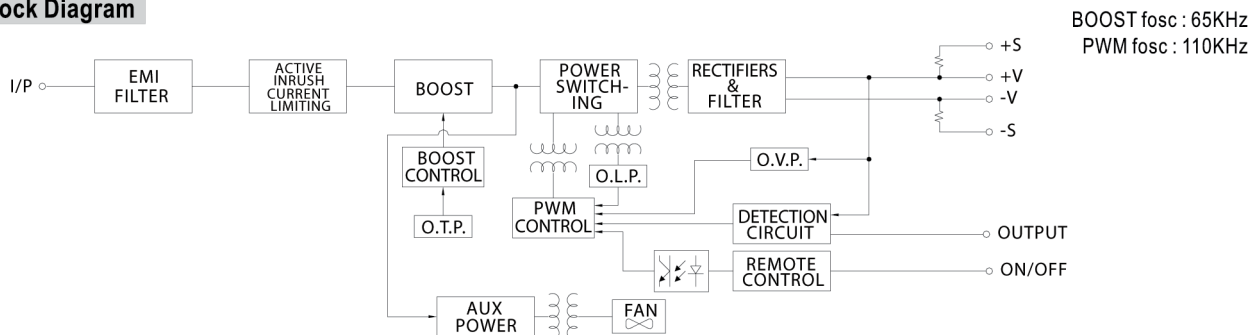
DC Input Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4,5	-V
2	DC INPUT V-	6,7	+V
3	FG $\perp$		

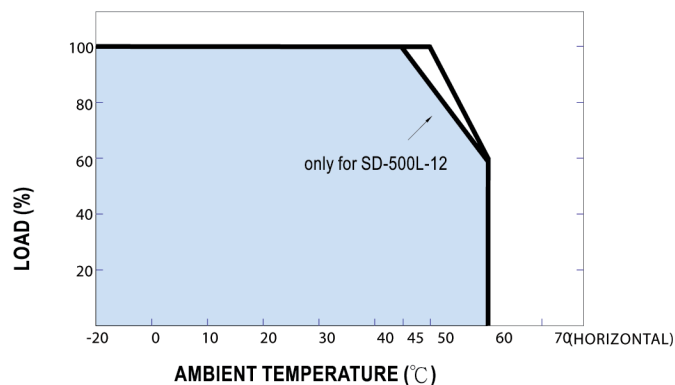
Control Pin No. Assignment (CN3) : JST B6B-PHDSS or equivalent

Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	+S	4	GND	Hirose HRS DF11-6DS or equivalent	JST SPHD-002T-P0.5 or equivalent
2	-S	5	RC		
3	OUTPUT OK	6	RCG		

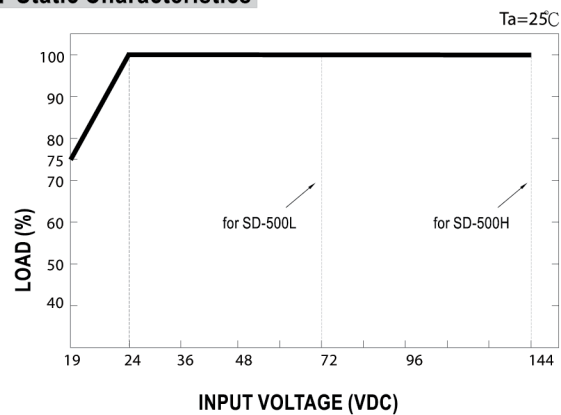
Block Diagram



■ Derating Curve



■ Static Characteristics



■ Function Description of CN3

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, reference 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	RC	Remote ON/OFF
6	RCG	Remote ON/OFF ground

■ Function Manual

1.Remote ON/OFF

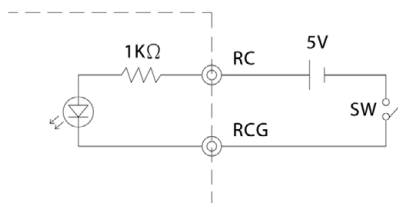
- (1) Remote ON/OFF control becomes available by applying voltage in CN3
- (2) Table 1.1 shows the specification of Remote ON/OFF function
- (3) Fig.1.2 shows the example to connect Remote ON/OFF control function

Table 1.1 Specification of Remote ON/OFF

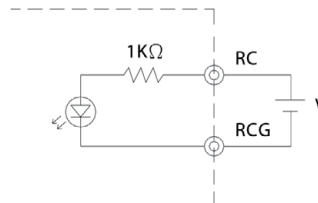
Connection Method	Fig. 1.2(A)	Fig. 1.2(B)
Output on	SW Open	$V=0\sim0.8V_{dc}$
Output off	SW Close	$V=4\sim10V_{dc}$

Fig.1.2 Examples of connecting remote ON/OFF

(A) Using external voltage source



(B) Using external voltage source



2.Output OK signal

"Output OK" is an open collector signal.

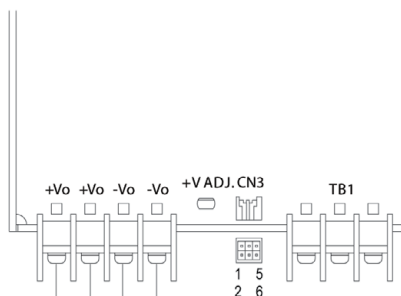
It indicates the output status of the PSU. It can operate in two ways : One is sinking current from external signal ; the other is sending out a voltage signal.

2-1 Sink current :

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

2-2 Voltage signal :

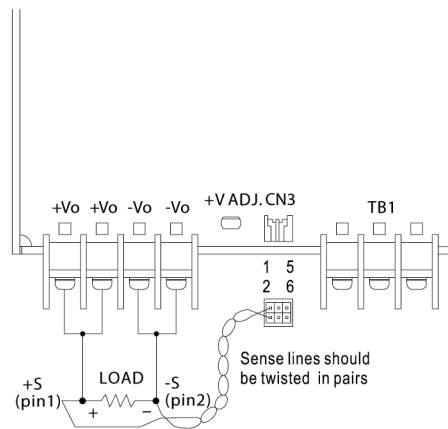
Between O/P OK(pin3) and GND(pin4)	Output Status
0 ~ 0.5V	ON
12 ~ 13V	OFF



1	CN3	5
+S	O/P OK	RC
-S	GND	RCG
2		6

3. Remote Sense

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



1	CN3	5
+S	O/P OK	RC
-S	GND	RCG
2		6