Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Rated input fuse	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
					Material	Single sided	Double sided	Series operation	Parallel operation
SNDPG750	Active filter	130	250V 12A	SCR	FR-4		Yes	No	No

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1 Terminal Connection

Fig.1.1 Terminal connection (top view)

Table 1.1 Terminal connection and functions

No.	Terminal connection	Function
①	FG	FG
②	AC(N)	AC Input
③	AC(L)	
④	+VOUT	+DC output
⑤	-VOUT	-DC output
⑥	ENA	Enable signal
⑦	+RC	Remote ON/OFF (+RC) Optional
⑧	-RC	Remote ON/OFF (-RC) Optional

Table 1.2 Pin configuration and functions of CN1

Pin No.	Function
1	ENA : Enable signal
2	-V : -DC OUTPUT (-VOUT)
3	NC : No connection
4	+V : +DC OUTPUT (+VOUT)

Table 1.3 Pin configuration and functions of CN2 (optional)

Pin No.	Function
1	+RC : Remote ON/OFF (+RC)
2	-RC : Remote ON/OFF(-RC)

Table 1.4 Mating connectors and terminals of CN1 and CN2

Connector		Mating connector	Terminal	Mfr.
CN1	B3P4-VH	VHR-4N	Chain:SVH-21T-P1.1 Loose:BVH-21T-P1.1	J.S.T.
CN2	B2B-XH-AM	XHP-2	Chain:SXH-001T-P0.6 Loose:BXH-001T-P0.6	

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2 Input Voltage Derating

■Fig.2.1 shows rated output for each input voltage section.
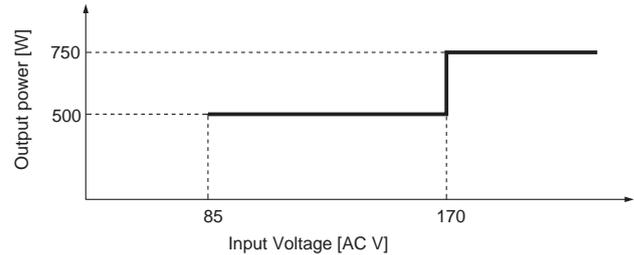
Fig.2.1 Input voltage derating curve (SNDPG750)

3 Standard Connection Method

3.1 Standard connection method

■To use SNDPG Series, connection shown in Fig.3.1. Through this connection, DC output voltage can be obtained from AC input voltage. AC input voltage and DC output voltage are not insulated.
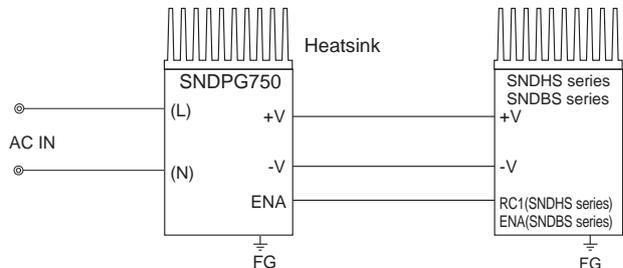
Fig.3.1 Standard connection method

■Confirm each specification and instruction manual about the SNDHS/ SNDBS series.

3.2 Connection of loaded circuit

■For connecting the SNDHS series (SNDHS50B / 100B / 250B) and SNDBS series, see Fig.3.1.
■Control load current so that it may flow only when the terminal ENA is at "H". At "L" when inrush current protection circuit is not released, excessive current may be applied to the circuit.
■For connection of loads except the SNDHS series and SNDBS series, please contact us.

3.3 Heatsink

■The power supply adopts the conduction cooling system.
Attach a heatsink to the aluminum base plate to cool the power supply for use.
Refer to 6.2 Derating.

4 Function

4.1 Overcurrent protection

■The overcurrent protection circuit is not built-in.

4.2 Overvoltage protection

■The overvoltage protection circuit is built-in. The AC input should be shut down if overvoltage protection is in operation.
When this function operates, the power factor corrector function does not operate, and output voltage becomes the full-wave rectified AC input voltage.

Remarks:
Please note that the unit's internal components may be damaged if excessive voltage (over rated voltage) is applied to output terminal of power supply. This could happen when the customer tests the overvoltage performance of the unit.

4.3 Thermal protection

■Thermal protection circuit is built-in and it operates about 115℃. If this function comes into effect, shut down the output, eliminate all possible causes of overheating, and drop the temperature to normal level. To prevent the unit from overheating, avoid using the unit in a dusty, poorly ventilated environment.
When this function operates, the power factor corrector function does not operate, and output voltage becomes the full-wave rectified AC input voltage and ENA output changes into "L".

4.4 Enable signal (ENA)

■Use ENA to control starting of the loaded power supply.
■When inrush current protection circuit is released, ENA outputs "Hight" .
■If load current flows without releasing of the circuit, the resistor may be burnt.

Table 4.1 Specification of ENA

No.	Item	ENA
1	Function	Output possible "H"
		Output prohibited "L"
2	Base pin	-VOUT
3	Level voltage "H"	10V typ (at no load)
4	Level voltage "L"	0V typ
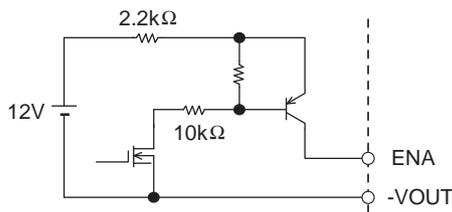
Fig.4.1 Internal circuit of ENA

4.5 Isolation

■For a receiving inspection, such as Hi-Pot test, gradually increase (decrease) the voltage for a start (shut down). Avoid using Hi-Pot tester with the timer because it may generate voltage a few times higher than the applied voltage, at ON/OFF of a timer.

5 Series and Parallel Operation

5.1 Series operation

■As input and output are not insulated, series operation is impossible.

5.2 Parallel operation

■Parallel operation is not possible.

6 Implementation · Mounting Method

6.1 Mounting method

■The unit can be mounted in any direction. When two or more power supplies are used side by side, position them with proper intervals to allow enough air ventilation. Aluminum base plate temperature (Point A) around each power supply should not exceed the temperature range shown in derating curve.
■In case of metal chassis, keep the distance between d1 for to insulate between lead of component and metal chassis. If it is less than d1, insert the insulation sheet between power supply and metal chassis.

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d1=4mm [0.16 inches] min.
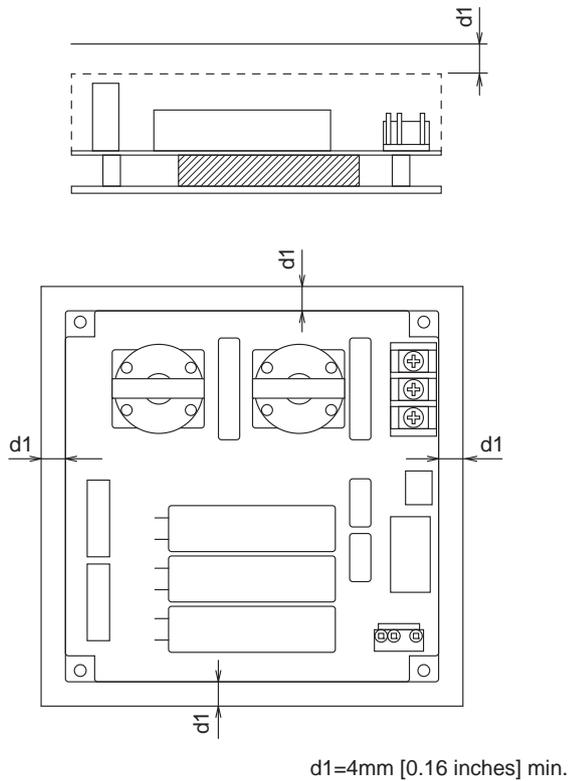
Fig.6.1 Mounting method

6.2 Derating

■Use with the conduction cooling (e.g. heat radiation by conduction from the aluminum base plate to the attached heat sink).
Fig.6.2 shows the derating curve based on the aluminum base plate temperature.

■Please measure the temperature on the aluminum base plate edge side (Point A).
Please consider the ventilation to keep the component temperature on the PCB (Point B) less than the temperature of Fig.6.3.

■It is necessary to note the thermal fatigue life by power cycle.
Please reduce the temperature fluctuation range as much as possible when the up and down of the temperature are frequently generated.
Contact us for more information on cooling methods.
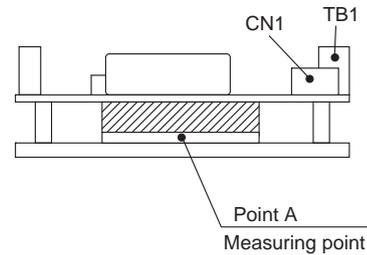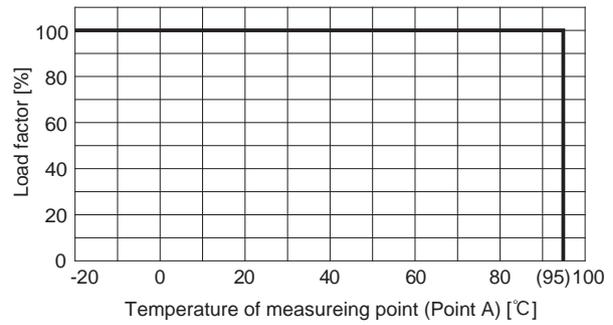
Fig.6.2 Derating curve (Point A)
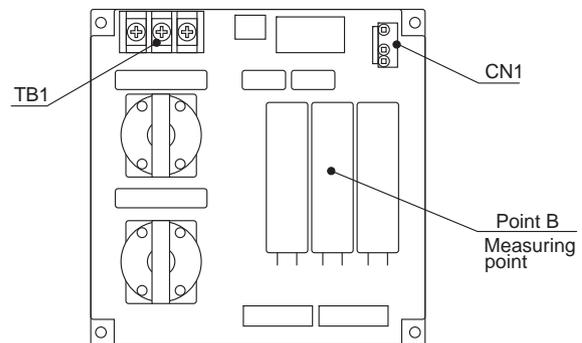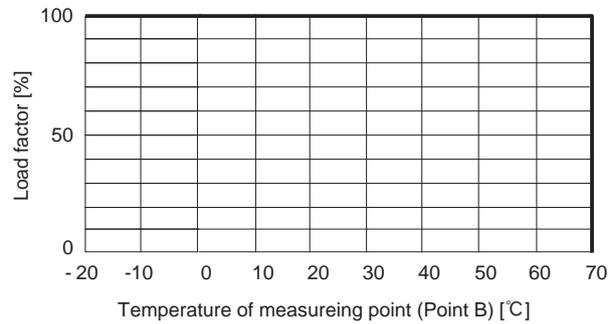
Fig.6.3 Derating curve (Point B)

7 Optional and Others

7.1 Outline of option

● -C

・ Option -C units have coated internal PCB for better moisture resistance.

● -R

・ You can control enable signal (ENA) ON/OFF remotely in Option -R units. To do so, connect an external DC power supply and apply a voltage to a remote ON/OFF connector, which is available as option.

Built-in Resistor Ri [Ω]	Voltage between +RC and -RC [V]		Input Current [mA]
	ENA ON	ENA OFF	
1200	3.5 - 12	0 - 0.5	10max
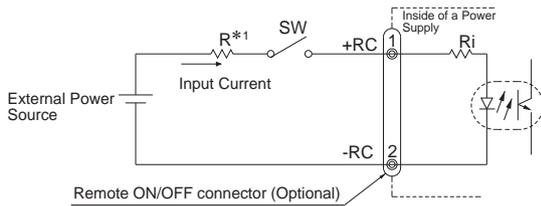
Fig.7.1 Example of using a remote ON/OFF circuit

・ Dedicated harnesses are available for your purchase. Please see Optional Parts for details.

＊1 If the output of an external power supply is within the range of 3.5 - 12V, you do not need a current limiting resistor R. If the output exceeds 12V, however, please connect the current limiting resistor R.

To calculate a current limiting resistance value, please use the following equation.

$$R[\Omega]=\frac{Vcc-(1.1+Ri \times 0.005)}{0.005}$$

＊ Please wire carefully. If you wire wrongly, the internal components of a unit may be damaged.

■ Remote ON/OFF circuits (+RC and -RC) are isolated from input, output and FG.

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