



# RAID System (110V/220V Selectable)

## (Hot Swap) 400W SNP-R400



### Description:

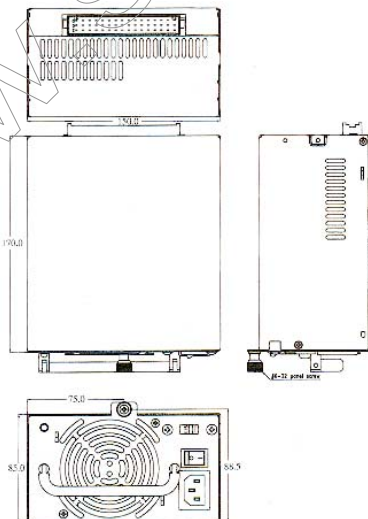
The redundancy family with output power from 80W to 450W, meets the needs of Disk Array, RAID system, and Sub-system applications.

SNP-R400 features hot swap capability and redundant operation that is useful for ATX file server and Data system.

### General Specifications:

Input voltage .....	90VAC to 130VAC	Over current protection .....	latch off
	180VAC to 260VAC, selectable	Redundancy .....	built in isolation diodes
Input frequency .....	47Hz to 63Hz	Power good .....	normally high
Input current .....	12A at 115VAC, 6A at 230VAC	Remote ON/OFF .....	available
Inrush current .....	less 30A at 115VAC	Operating temperature .....	0°C to 40°C
	cold start, 25°C		derating 1.5% / °C from 30 °C
Outputs .....	see output table	Cooling .....	forced air convection
Efficiency .....	68% typical	Storage temperature .....	- 40°C to +75°C
Holdup time .....	> 16ms	EMI .....	FCC 20780 "B", EN55022 "B"
	at rated load and 115VAC	Safety .....	UL 1950
Over voltage protection .....	latch off		CSA 22.2 No.234-M90
Short circuit protection .....	latch off		EN60950

### Mechanical Specifications:



#### Notes:

- Dimensions shown in mm (inch) as left. Tolerance specified is ±0.8mm.
- Size:  
150 x 170 x 85 (mm)
- Connectors  
AC inlet : meet IEC 320  
Main connector : Din 41612 F48 male connector
- Pin assignment
 

2,4 dbz	--	+12V
6~10 dbz	--	+5V
12~24 dbz	--	GND
26,28 dbz	--	+3.3V
30z	--	-5V
30b	--	P.G.
30d	--	+5Vsb
32z	--	-12V
32d	--	Power ON/OFF



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(Hot Swap) **400W**  
**SNP-R400**

## Output Specifications:

MODEL NO.	OUTPUT RAIL	LOAD			VOLTAGE ACCURACY	RIPPLE NOISE	LINE REG.	LOAD REG.
		MIN.	RATED	MAX.				
SNP-R400	+5V	5A	25A	40A	+5.0V~+5.2V	50mVpp	±1%	±5%
	+12V	1A	16A	20A	+11.4V~+12.6V	120mVpp	±1%	±5%
	-12V	0.1A	1A	1.2A	-11.3V~-12.6V	120mVpp	±1%	±5%
	-5V	0.1A	1A	1.2A	-4.65V~-5.25V	120mVpp	±1%	±5%
	+3.3V	1A	20A	25A	+3.15V~+3.45V	50mVpp	±1%	±6%
	+5Vsb		0.75A		+4.8V~+5.2V	120mVpp	±1%	±10%

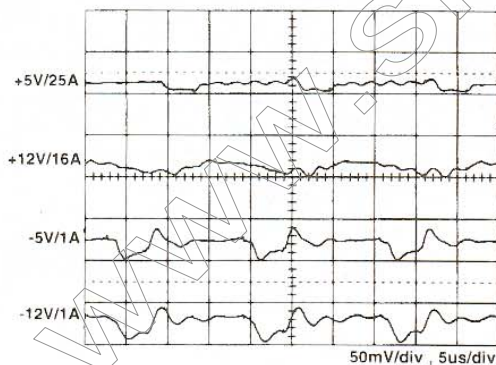
\* 5Vsb for DC ON/OFF remote control.  
\* 200W for +5V and +3.3V combined output.

## Notes:

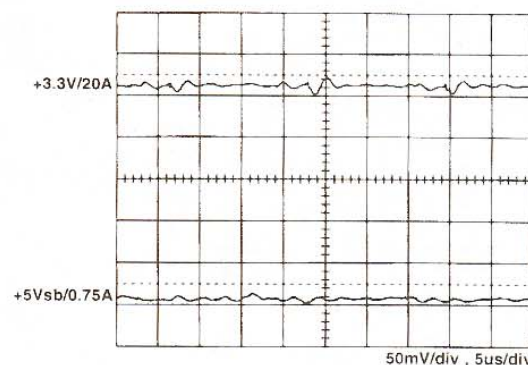
1. The max. load should be kept within 400W.
2. At factory, all outputs in 60% rated load condition, each output is checked to be within the accuracy range while the main output is setting to within the specified accuracy range at rated load.
3. Line regulation is defined by changing  $\pm 10\%$  of input voltage from nominal line at rated load.
4. Load regulation is defined by changing  $\pm 40\%$  of measured output load from 60% rated load at another output set to 60% rated load.
5. Ripple & noise is measured by using 15MHz bandwidth limited oscilloscope and terminated each output with a  $0.47\mu\text{F}$  capacitor at rated load and nominal line.
6. Hold up time is measured from the end of the last charging pulse to the time which the +5V output drop down to 4.75V at rated load and nominal line.
7. Efficiency is measured at rated load and nominal line.

## Performance :

### 1. Switching frequency ripple

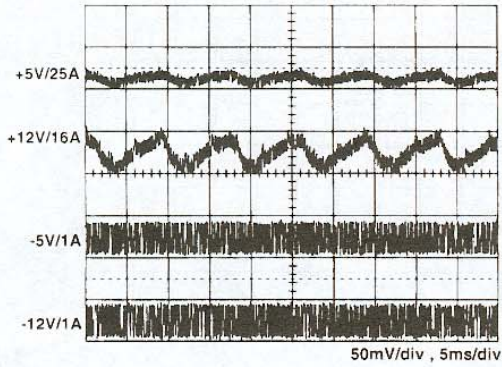


### 2. Switching frequency ripple

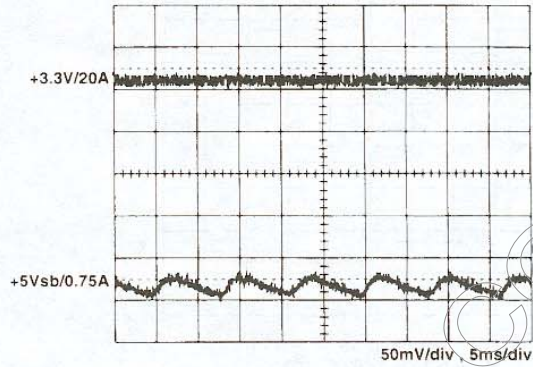


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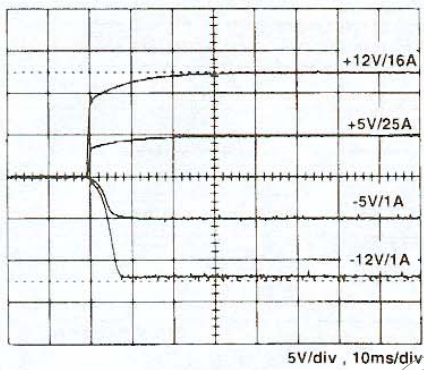
3. Line frequency ripple



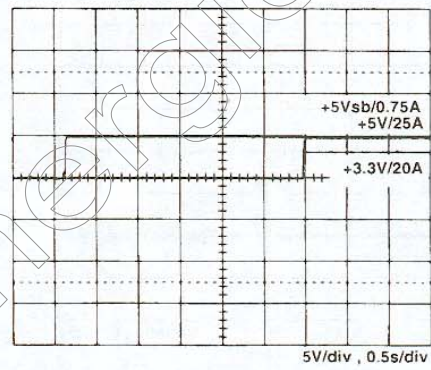
4. Line frequency ripple



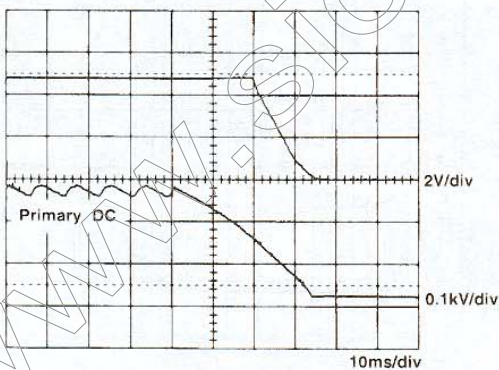
5. Output turn on wave form



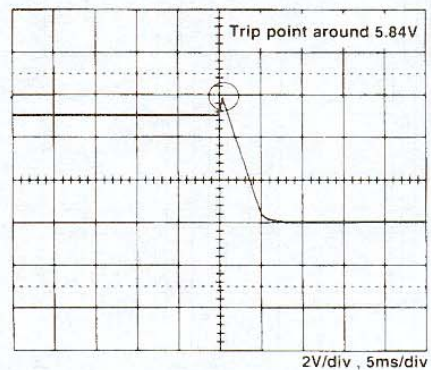
6. Output turn on wave form



7. Hold up time

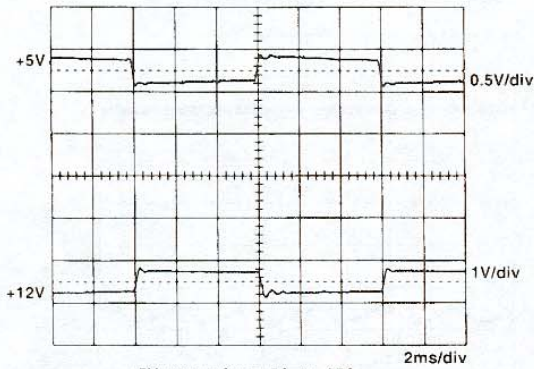


8. Over voltage protection



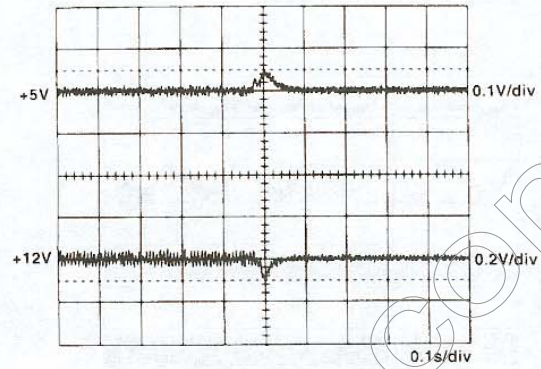


9. +5V step response

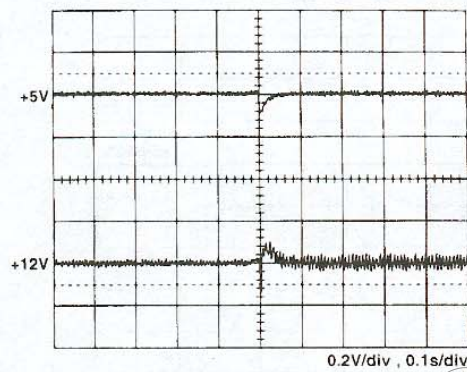


+5V steps from 5A to 25A  
other output at 60% load

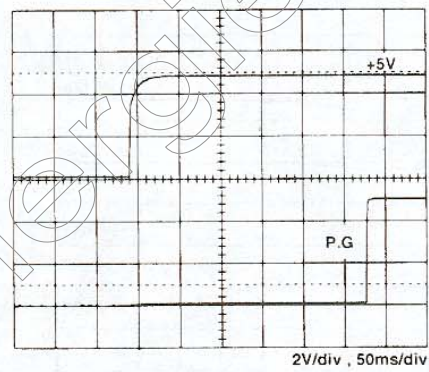
10. Power redundancy (1 --> 2)



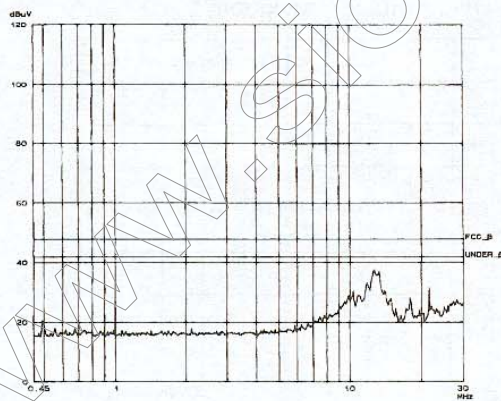
11. Power redundancy (2 --> 1)



12. Power good signal



13. FCC "B"



14. EN55022 class "B"

