

# N1000 and N1200 SERIES

Single, dual, triple and quad output



[ 2 YEAR WARRANTY ]  
**CE** (LVD)

- **Active harmonic correction to EN61000-3-2**
- **90VAC to 264VAC universal input**
- **Flexible output voltage configuration**
- **Two output power ratings**
- **Forced current sharing, all outputs**
- **DC OK (including LED)**
- **UL, CSA and TÜV safety approvals**
- **Industry standard 5 x 8 x 11 inch footprint**

The N1000 and N1200 series are a range of systems-orientated, one to four output power supplies which provide 1000W or 1200W of continuous power at line voltages from 90VAC to 264VAC. Both series are harmonically corrected and carry world wide safety approvals. Fully enclosed, fan cooled and in the industry standard 5 x 8 x 11 inch form, the N series is an ideal choice when the economy and predictable performance of a centralized system power supply are desired. A unique dual converter architecture isolates the 5VDC logic output and the peripheral voltages. Maximum flexibility is provided as power budgets shift and change during the design cycle or as system upgrades are implemented. This overcomes a major shortfall of many system power supplies which use a single converter. To meet redundancy requirements, each output rail is isolated, individually regulated and features forced current share. System interface signals include AC and DC Good, current monitor (V1), overvoltage, OCP, over-temperature protection, remote enable, margin check and inhibit as standard. By combining robust performance and broad range, the N Series sets the standard for centralized system power supplies.

## SPECIFICATION All specifications are typical at nominal input, full load at 25°C unless otherwise stated

OUTPUT SPECIFICATIONS <sup>(2)</sup>		
Voltage adjustability	Accessible at front panel	±10%
Remote sense	Open/reverse sense lead protection Compensates for voltage drop of up to 0.5V to the load	
Regulation, line or load	All outputs, NL-FL at nominal line or all line variations at FL	±0.2%; 10mV min.
Cross regulation	0.2% max. or 10mV between outputs	
Overshoot/undershoot	None at turn on/off	
Transient response	Main output 25% step load change at 1A/μs	≤2.0% max. dev., ≤200μs recovery to 1.0%
Temperature coefficient	±0.02%/°C	
Ripple and noise	0Hz to 20MHz	50mV pk-pk or 1%
Overvoltage protection	Reset by cycling AC	115 to 130% of nominal
Overload protection	105-115% full load	
Short circuit protection	All outputs	Auto recovery
Thermal protection	Auto shutdown, AC reset	
Current sharing	±5.0%	50% to 100% load
Current monitor (V1)	5VDC at full load	±0.5V
INPUT SPECIFICATIONS		
Input voltage range	90 to 264VAC	
Input frequency range	47Hz to 63Hz	
Input surge current	Meets IEEE std. 587.1980; 3KV ring wave	
Input current	120VAC, 1000W	12A
Power factor	115/230VAC, 1kW load	0.995 min.
Power up time	Full load	1.0s max.

EMC CHARACTERISTICS		
Radiated emissions	EN55022/11, FCC part 15	Level A
Conducted emissions	EN55022/11, FCC part 15	Level A
Harmonic distortion	EN61000-3-2	Conforms
Electrostatic discharge	EN61000-4-2	Level 3
RF field susceptibility	EN61000-4-3	Level 3
Electrical fast transients/bursts	EN61000-4-4	Level 3
Surge susceptibility	EN61000-4-5	Level 3
GENERAL SPECIFICATIONS		
Hold-up time	90VAC, 1KW load	24ms min.
Efficiency	230VAC, full load	73%
Isolation voltage	Input/output Input/chassis Output/output	3000VAC 1500VAC 500VAC
Switching frequency	100kHz	
Approvals and standards	EN60950, UL1950, CSA C22.2 No. 950	
Weight	6.9kg (15lbs)	
Size	5 x 8 x 11 inches 127 x 203.2 x 279.4 mm	
MTBF	per MIL-HDBK-217E	100,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient Non-operating	0°C to +50°C -15°C to +85°C
Cooling	60CFM	Internal DC ball bearing fan
Relative humidity	Non-condensing	0% to 95% RH
Altitude	Operating Non-operating	6,000 feet max. 55,000 feet max.
Vibration	5Hz to 500Hz	2.4G rms peak

## 1000 and 1200 Watt AC/DC high wattage power supplies with PFC

MAX. OUTPUT POWER <sup>(1)</sup>	OUTPUT V1 VOLTAGE/CURRENT	OUTPUT V2 VOLTAGE/CURRENT	OUTPUT V3 VOLTAGE/CURRENT	OUTPUT V4 VOLTAGE/CURRENT	MODEL NUMBER
1000W	3.3V @ 200A				N1000-96-9
1000W	5.0V @ 200A				N1000-96-1
1000W	5.0V @ 150A	12V @ 25A	12V @ 20A		N1000-96-122
1000W	5.0V @ 150A	12V @ 30A	5.0V @ 10A		N1000-96-121
1000W	5.0V @ 150A	12V @ 25A	12V @ 15A	5V @ 10A	N1000-96-1221
1000W	5.0V @ 150A	12V @ 25A	12V @ 10V	24V @ 5.0A	N1000-96-1224
1000W	5.0V @ 150A	5.0V @ 30A	12V @ 20V	12V @ 10A	N1000-96-1122
1000W	5.0V @ 150A	3.3V @ 30A	12V @ 20A	12V @ 10A	N1000-96-1922
1000W	5.0V @ 150A	24V @ 15A	12V @ 10A	12V @ 5.0A	N1000-96-1422
1200W	2.0V @ 240A				N1200-96-0
1200W	3.3V @ 240A				N1200-96-9
1200W	5.0V @ 240A				N1200-96-1
1200W	12V @ 100A				N1200-96-2
1200W	24V @ 50A				N1200-96-4
1200W	28V @ 43A				N1200-96-5
1200W	48V @ 25A				N1200-96-6
1200W	5.0V @ 200A	12V @ 40A			N1200-96-12
1200W	5.0V @ 200A	24V @ 20A			N1200-96-14
1200W	48V @ 25A	24V @ 20A			N1200-96-64
1200W	5.0V @ 175A	12V @ 30A	12V @ 20A		N1200-96-122
1200W	5.0V @ 175A	12V @ 35A	5V @ 20A		N1200-96-121
1200W	5.0V @ 175A	12V @ 30A	24V @ 15A		N1200-96-124
1200W	5.0V @ 175A	3.3V @ 40A	12V @ 20A		N1200-96-192
1200W	5.0V @ 175A	12V @ 30A	12V @ 20A	5V @ 10A	N1200-96-1221
1200W	5.0V @ 175A	12V @ 30A	12V @ 10A	24V @ 5A	N1200-96-1224
1200W	5.0V @ 175A	15V @ 30A	15V @ 10A	5V @ 10A	N1200-96-1331
1200W	5.0V @ 175A	5.0V @ 40A	12V @ 20A	12V @ 10A	N1200-96-1122
1200W	5.0V @ 175A	3.3V @ 40A	12V @ 20A	12V @ 10A	N1200-96-1922
1200W	5.0V @ 175A	24V @ 20A	12V @ 10A	12V @ 5A	N1200-96-1422
1200W	24V @ 42A	5.0V @ 40A	12V @ 20A	12V @ 10A	N1200-96-4122

### International Safety Standard Approvals

**TÜV** VDE0805/EN60950/IEC950 File No. R917062  
Certificate No. R9172062

**UL** UL1950 File No. E135734

**CSA** CSA C22.2 No. 950 Bulletin No. 1402C

# 1000 and 1200 Watt AC/DC high wattage power supplies with PFC

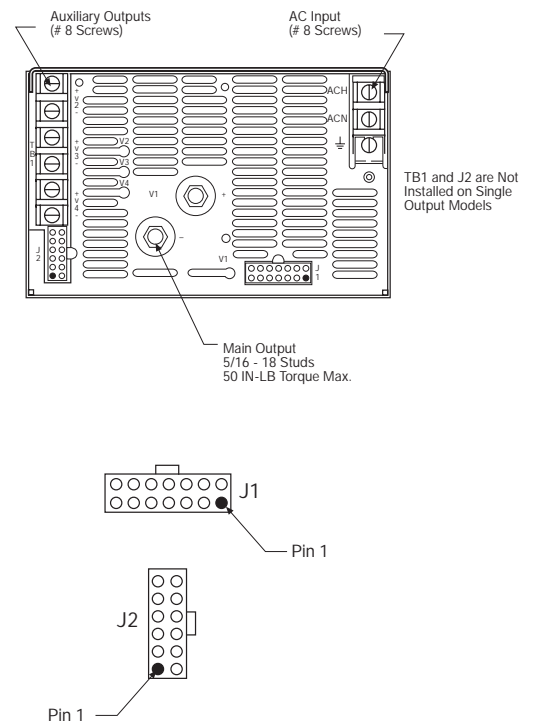
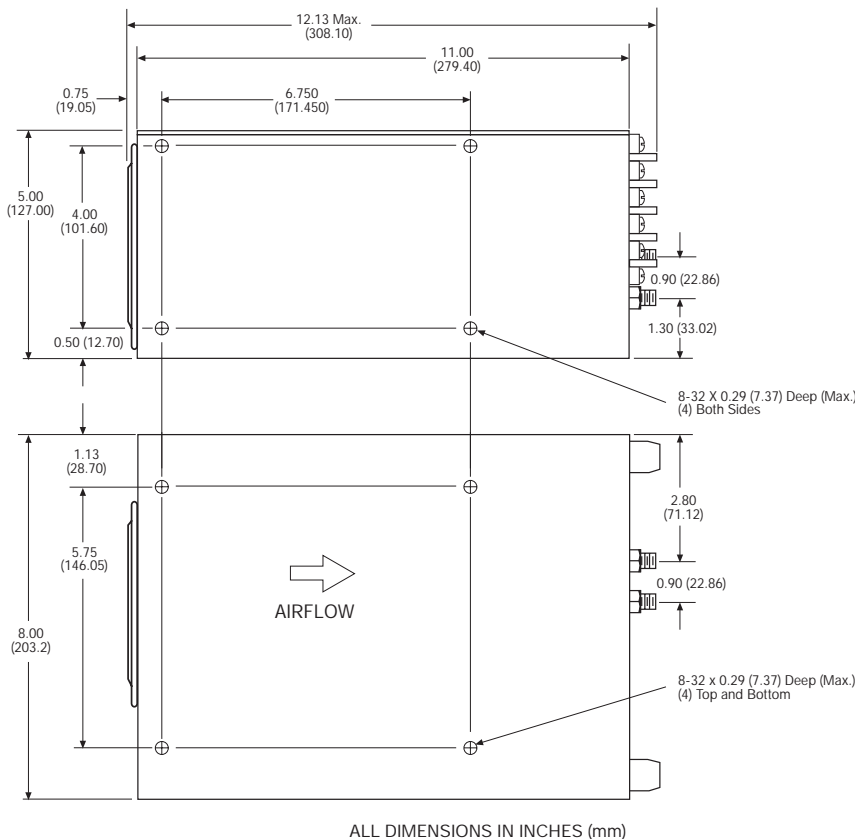
OUTPUT PIN CONNECTIONS		
PIN NO.	J1	J2
1	+ Sense (V1) <sup>(4)</sup>	+ Sense (V2)
2	Current Monitor (V1) <sup>(5)</sup>	- Sense (V2)
3	Inhibit <sup>(5)</sup>	Current Share (V2)
4	- Sense (V1) <sup>(4)</sup>	+ Sense (V4)
5	No Connection	- Sense (V4)
6	No Connection	Current Share (V4)
7	Current Share <sup>(5)</sup>	Remote Adj. (V2) <sup>(6)</sup>
8	Remote Adj. (V1) <sup>(6)</sup>	Remote Adj. (V3) <sup>(6)</sup>
9	AC Good <sup>(5)</sup>	Remote Adj. (V4) <sup>(6)</sup>
10	Chassis Ground	Current Share (V3)
11	Logic Ground	- Sense (V3)
12	Margin <sup>(7)</sup>	+ Sense (V3)
13	No Connection	N/A
14	DC OK <sup>(5,8)</sup>	N/A

### Mechanical notes

- A AC connector is 3 position terminal block (#8 screws included), mating to #8 ring tongue terminal.
- B DC output is 5/16-18 studs mating to 5/16 terminal lugs.
- C J1 signal connector is Molex 39-30-1140 or equivalent. Mating connector is Molex 39-01-2140 or equivalent.
- D J2 signal connector is Molex 39-01-1120 or equivalent. Mating connector is 39-01-2120 or equivalent.
- E Signal connector contacts are Molex 39-00-0039 or equivalent.
- F Auxiliary DC output(s) are 6 position terminal block (#8 screws included) mating to #8 ring tongue terminal.
- G TB1 and J2 are not installed on single output models.

### Notes

- 1 1000W or 1200W max. power. 500/600W max. power (V2 thru V4). All outputs isolated.
- 2 Specifications refer to all outputs except as noted (V1).
- 3 Signal referenced to V1 output neg. sense trim.
- 4 Use 20AWG or larger twisted pair.
- 5 Reference to Logic Ground (Pin J1-11).
- 6 See Figure 4.
- 7 See Figure 3.
- 8 See Figure 5.



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FIG. 1

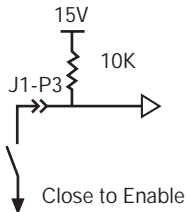


FIG. 2 (Ref. FIG 5)

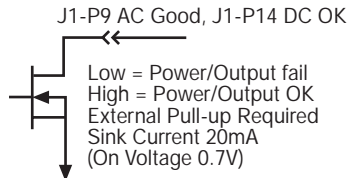


FIG. 5

AC Power Fail Signal/DC OK Timing

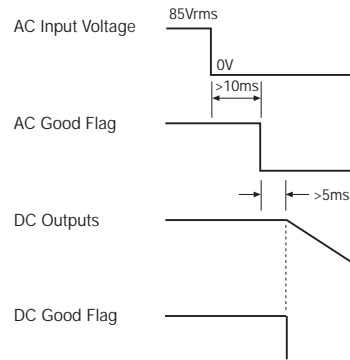


FIG. 3

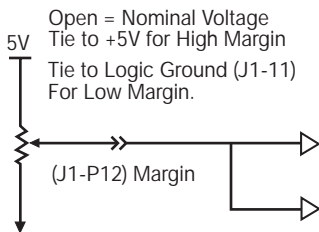
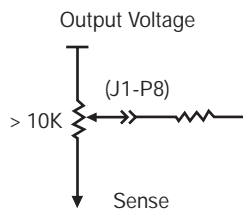


FIG. 4



STANDARD CONTROL SIGNALS	
Remote enable	See Figure 1
DC OK (See Figures 2 and 5)	Signal remains "Hi" as long as output is $\pm 5.0\%$ of nominal.
AC power fail signal (See Figure 5)	Signal "Hi" when AC $> 85\text{VAC}$ and "Lo" when $< 75\text{VAC}$ .
Margin Hi/Lo (V1) (See Figure 3)	Allows $\pm 5.0\%$ change in output for system margin checking.
Remote Adjust (See Figure 4)	The outputs may be remotely adjusted linearly $\pm 10\%$ .
Current Monitor	Analog signal indicates load current in single or parallel operation. $5 \pm 0.5\text{VDC}$ represents FL, resistive load $10^3\text{k}\Omega$ .