

## NLP250 Series Single output

**Total Power:** 250W  
**Input Voltage:** 85 - 264VAC  
**# of Outputs:** Single



### Special Features

- Active PFC and EN61000-3-2 compliant
- 250 W on main channel with forced air
- Low profile fits 1U applications
- U-Channel for maximum thermal performance
- Optional cover (CJ suffix)
- 5 V standby output
- 12 V fan output
- Integrated ORing diode
- Active current sharing
- Integrated control and monitoring features
- Overcurrent, overvoltage and overtemperature protection
- Compliance to EN55022-B conducted noise standard
- RoHS compliant
- 2 year warranty

### Safety

VDE0805/EN60950-1  
IEC950/IEC60950-1  
File No. 1040100-3336-0210

UL/cUL 60950-1  
CSA-C22.2 60950-1  
File No. E135734

Certificate No. 40014041

CB Ref DE1-32468

## Electrical Specifications

### Input

Input voltage range	Universal input	85-264 Vac
Input frequency range		47-63 Hz
Input surge current	264 Vac (cold start)	40 A max.
Safety ground leakage current	264 Vac, 50 Hz	1 mA
Input current	120 Vac @ 250 W	2.78 A rms
	230 Vac @ 250 W	1.36 A rms
Input fuse	UL/IEC127	T6.3 AH, 250 Vac

### Output

Maximum power	200 LFM forced air 250 LFM with cover	250 watts
Total regulation (line and load)	Main output Auxiliary outputs	±2.0% ±5.0%
Turn-on delay	@ 120 Vac Input	2.0 s max.
Transient response	Main output 50-100% step at 0.5 A/μs	5.0% or 250 mV max. dev., 1 ms max. recovery to 1%
Temperature coefficient		±0.02%/°C
Overvoltage protection	Main output	115%, ±5%
Short circuit protection	Cyclic operation	Continuous
Minimum output current	Singles	0 A
Auxiliary outputs (See Note 8)	5 Vsb 12 V (fan)	5 V @ 1.0 A 12 V @ 0.3 A

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



### EMC Characteristics <sup>(5)</sup>

Conducted emissions	EN55022, FCC part 15	Level B
Harmonic current correction	EN61000-3-2	Compliant
ESD air	EN61000-4-2	Level 3
ESD contact	EN61000-4-2	Level 3
Radiated immunity	EN61000-4-3	Level 3
Fast transients	EN61000-4-4	Level 3
Surge	EN61000-4-5	Level 3
Conducted immunity	EN61000-4-6	Level 3

### General Specifications

Hold-up time	85 Vac @ 60 Hz	20 ms @ 250 W
Efficiency	115 Vac @ 250 W	84% typ.
	230 Vac @ 250 W	86% typ.
Isolation voltage	Input/output	3000 Vac
	Input/chassis	1500 Vac
Safety approvals (see note 6)	UL/cUL UL60950-1, VDE EN60950-1 CAN/CSA22.2 No. 60950-1	
Weight	650g (22oz)	
MTBF (@25° C)	Telcordia SR-332	317,000 hours min.
	MIL-HDBK-217F	158,000 hours min.

## Environmental Specifications

Thermal performance	Operating ambient, (See derating curve)	0° C to +70 °C
	Non-operating	-40 °C to +85 °C
	0 °C to 50 °C ambient, 200 LFM forced air	250 W
	250 LFM with cover	
	0 °C to 50 °C ambient, 0 °C to 40 °C with cover	175 W
	convection cooled	
Relative humidity	50 °C to 70 °C ambient, convection cooled	Derate linearly to 50% load
	Non-condensing	5-95% RH
Altitude	Operating	10,000 feet max.
	Non-operating	30,000 feet max.
Vibration (See Note 7)	5-500 Hz	2.4 G rms peak
Shock	per MIL-STD-810E	516.4 Part IV

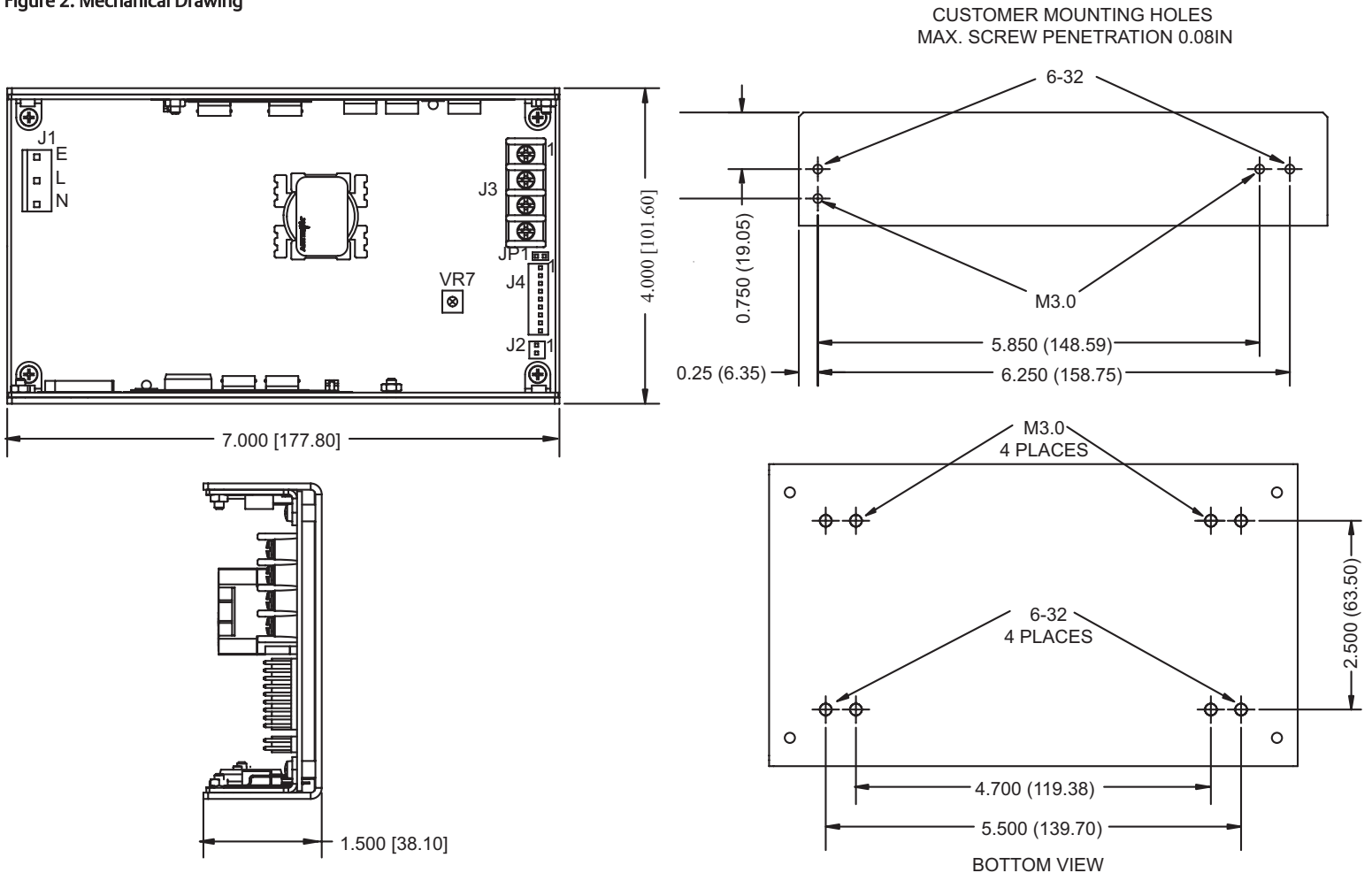
## Ordering Information

Output Voltage	Output Current			Ripple (3)	Total Regulation	Model Numbers (9,10)
	Min	Max (free air) (1,4)	Max (forced air) (2,4)			
12 V	0 A	14.6 A	21 A	120 mV	±2.0%	NLP250R-96S12J
24 V	0 A	7.3 A	10.5 A	240 mV	±2.0%	NLP250R-96S24J
48 V	0 A	3.65 A	5.25 A	480 mV	±2.0%	NLP250R-96S48J

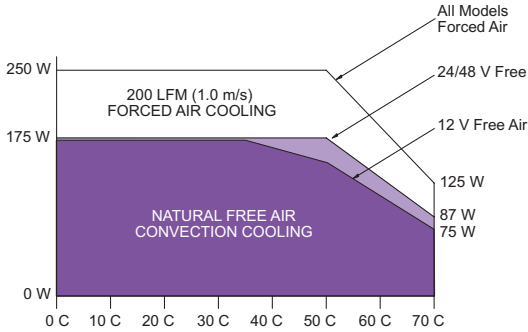
### Notes

- Free air convection. Maximum continuous output power not to exceed 175 W. Refer to Figure 1 for the derating curve.
- 200 LFM (250 LFM with cover) forced air cooling from the longer side. Maximum continuous output power not to exceed 250 W.
- Figure is peak-to-peak for room temperature rating. Output noise measurements are made across a 20 MHz bandwidth using a 6 inch twisted pair, terminated with a 10  $\mu$ F tantalum capacitor and a 0.1  $\mu$ F ceramic capacitor.
- CAUTION: Allow a minimum of 1 second after disconnecting line power when making thermal measurements. For optimum reliability no part of the heatsink should exceed 115 °C and no semi-conductor case temperature should exceed 120 °C.
- No external filtering required during conducted emissions testing but some applications may require additional filtering to achieve system compliance. Compliance with radiated EMI specifications may require mounting in a suitable enclosure.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- Three orthogonal axes, random vibration 10 minutes for each axes, 2.4 G
- 5 V sb (standby) output is available whenever AC is present, regardless of remote ON/OFF signal status. 12 V (fan) present when main output is present.
- The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. 'CJ' suffix indicates covered RoHS version.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

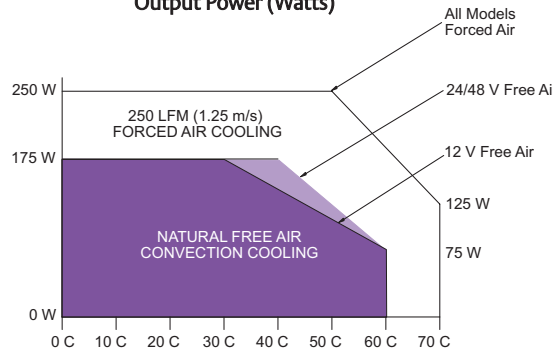
Figure 2: Mechanical Drawing



**Figure 1: Derating Curve Output Power (Watts)**



**Figure 1b: Derating Curve With Cover Output Power (Watts)**



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**Connector and Mating Connector Types**

Connector	Type	Mating Connector Type
J1	Molex 09-65-2058 (5273 series) void pins 2 and 4 or equivalent	Molex 09-52-4054 (5239 series) or equivalent with Molex 08-52-0072 (2478 series) or equivalent crimp terminals
J2	Molex 22-23-2021 (6373 series) or equivalent	Molex 22-01-3027 (2695 series) or equivalent with Molex 08-50-01113 (2759 series) or equivalent crimp terminals
J3	Molex terminal block 387007504 or equivalent	Terminal block contains #6-32 screw with clamp washer suitable for wire size 12-22 awg (0.5-2.5 mm <sup>2</sup> ). Max Torque tp 1.36 Nm (12 in.lb)
J4	Molex 22-23-2091 (6373 series) or equivalent	Molex 22-01-3097 (2695 series) or equivalent with Molex 08-50-0113 (2759 series) or equivalent crimp terminals

**J1 PIN CONNECTIONS**

Pin 1	Ground/Earth
Pin 2	Live
Pin 3	Neutral

**J2 PIN CONNECTIONS**

Pin 1	+12 V	Fan Voltage
Pin 2	SGND	Return

**J3 PIN CONNECTIONS**

Pin 1	Vo	+Main Output
Pin 2	Vo	+Main Output
Pin 3	RTN	Main Return
Pin 4	RTN	Main Return

**J4 PIN CONNECTIONS**

Pin 1	+S	+Vo Remote Sense
Pin 2	-S	-Vo Remote Sense
Pin 3	LS	Load Share Signal
Pin 4	PS OFF	Remote ON/OFF signal NO
Pin 5	PS ON	Remote ON/OFF signal NC
Pin 6	SGND	Signal Common
Pin 7	PW OK	Power Good
Pin 8	5 Vsb	Stand-by Voltage
Pin 9	DC OK	DC Power Good Signal