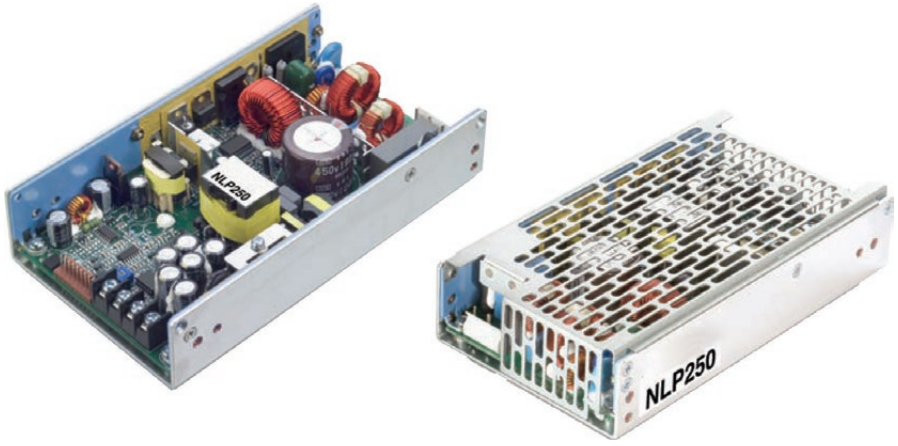
POWER

NLP250 Series

Single Output

Data Sheet

Total Power: 250 W
Input Voltage: 85 - 264 Vac
# 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
- Two year warranty

SAFETY

- VDE 0805/EN60950-1
  IEC 950/IEC60950-1
  File No. 1177400-3336-0759
- UL/cUL 60950-1
  CSA-C22.2 60950-1
  File No. E186249
- 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 230 Vac @ 250 W	2.78 A rms 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
Adjustment range	Main output	± 5%
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 @ 0.3A

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

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EMBEDDED TECHNOLOGIES

EMC Characteristics [5]		
Conducted emissions	EN55022, FCC part 15	Level B
Harmonic current correction	EN61000-3-2	Compliant
Voltage flicker	EN61000-3-3	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 @ 50 Hz	20 ms @ 250 W
Efficiency	115 Vac @ 250 W 230 Vac @ 250 W	84% typ. 86% typ.
Isolation voltage	Input/output Input/chassis	3000 Vac 1500 Vac
Safety approvals (see note 6)	UL/cUL UL60950-1, VDE EN60950-1, CAN/CSA22.2 No. 60950-1	
Weight		650g (22 oz)
MTBF (@25 ºC):	Telcordia SR-332 MIL-HDBK-217F	317,000 hours min. 158,000 hours min.

Environmental Specifications		
Thermal performance	Operating ambient,	0 °C to +70 °C
	(See derating curve)	
	Non-operating	-40 °C to +85 °C
	0 °C to 50 °C ambient,	250 W
	200 LFM forced air 250 LFM with cover	
	0 °C to 50 °C ambient, 0 °C to 40 °C with cover	175 W
	Convection cooled	
	50 °C to 70 °C ambient,	Derate linearly
	Convection cooled	to 50% load
Relative humidity	Non-condensing	5 - 95% RH
Altitude	Operating	10,000 feet max.
	Non-operating	30,000 feet max.
Vibration (See Note 7)	5-500 Hz	2.5 G rms peak
Shock	5-500 Hz	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

1 Free air convection. Maximum continuous output power not to exceed 175W. Refer to Figure 1 for the derating curve.

2 200 LFM (250 LFM with cover) forced air cooling from the longer side. Maximum continuous output power not to exceed 250 W.

3 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 µF tantalum capacitor and a 0.1 µF ceramic capacitor.

4 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.

5 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.

6 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.

7 Three orthogonal axes, random vibration 10 minutes for each axes, 2.4 G

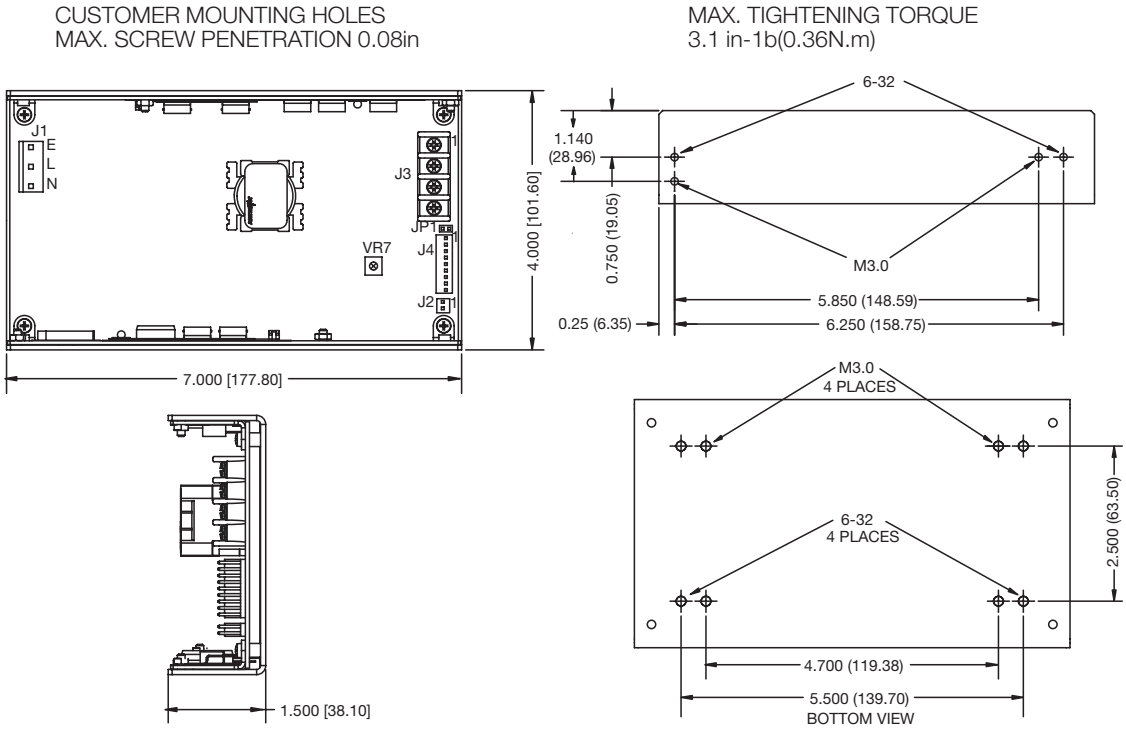
8 5 Vsb (standby) output is available whenever AC is present, regardless of remote ON/OFF signal status. 12 V (fan) present when main output is present.

9 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. "CJ" suffix indicates covered RoHS version.

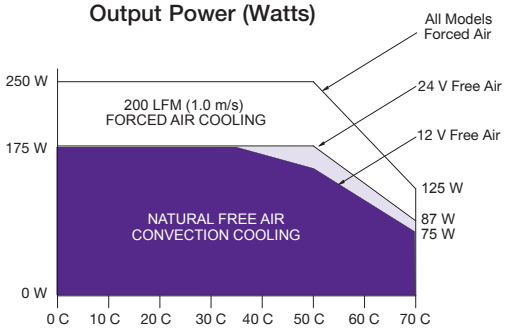
10 NOTICE: Some models do not support all options. Please contact your local Artesyn Embedded Technologies representative or use the on-line model number search tool at http://www.artesyn.com/power to find a suitable alternative.

11. This product is a Component Power Supply and is only for inclusion by professional installers within other equipment and must not be operated as a standalone product. EMC compliance to appropriate standards must be verified at the system level. This product is for sale to OEMs and System Integrators, including through Distribution Channels. It is not intended for sale to End Users.

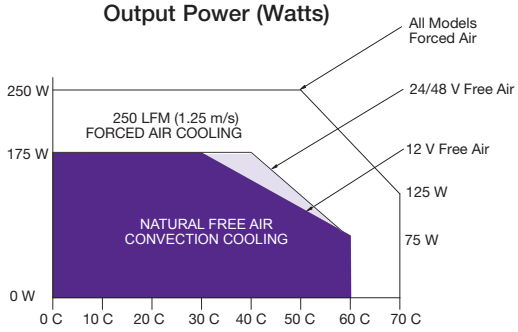
Mechanical Drawing



Derating Curve
Output Power (Watts)



Derating Curve With Cover
Output Power (Watts)



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 09-50-8051 or equivalent with Molex 08-52-0113 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^2). 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

Pin Connections

J1	
Pin 1	Ground/Earth
Pin 2	Live
Pin 3	Neutral

Pin Connections

J2		
Pin 1	+12 V	Fan Voltage
Pin 2	SGND	Return
J3		
Pin 1	Vo	+ Main Output
Pin 2	Vo	+ Main Output
Pin 3	RTN	Main Return
Pin 4	RTN	Main Return

Pin Connections Continued

J4		
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

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