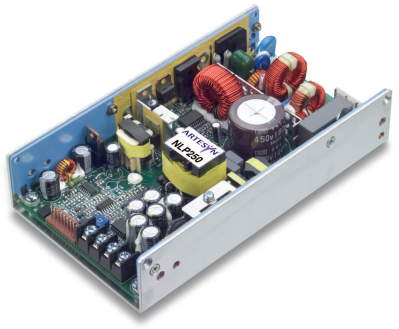
NLP250 Series

Single output

ARTESYN TECHNOLOGIES

NEW Product

- **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**
- **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**
- **Available RoHS compliant**



The NLP250 series offers up to 250 W in a U-Channel power supply. Its form-factor makes it suitable for use in low-profile applications, such as 1U rack equipment. The main output channel is compatible with systems that implement distributed power and point-of-load architectures. It can also be used to power electromechanical devices such as relays, motors and print-heads. An auxiliary output is also available for those systems that require "standby" operation. The features of this power supply make it suitable for use in Information Technology Equipment (ITE) and light industrial systems.

2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

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 outputs	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

INPUT SPECIFICATIONS

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

EMC CHARACTERISTICS (5)

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

EMC CHARACTERISTICS (continued) (8)

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 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 (22oz)
MTBF (@ 25 °C)	Telcordia SR-332 MIL-HDBK-217F	317,000 hours min. 158,000 hours min.

ENVIRONMENTAL SPECIFICATIONS (4)

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
	0 °C to 50 °C ambient, convection cooled	175 W
	50 °C to 70 °C ambient, convection cooled	Derate linearly to 50% load
Relative humidity	Non-condensing	5-95% RH
Altitude	Operating Non-operating	10,000 feet max. 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

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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT VOLTAGE	OUTPUT CURRENT MIN	OUTPUT CURRENT MAX (free air) (1,4)	OUTPUT CURRENT MAX (forced air) (2,4)	RIPPLE (3)	TOTAL REGULATION	MODEL NUMBERS (9,10)
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 175 W. Refer to Figure 1 for the derating curve.
2. 200 LFM 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 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.
9. The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
10. 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.

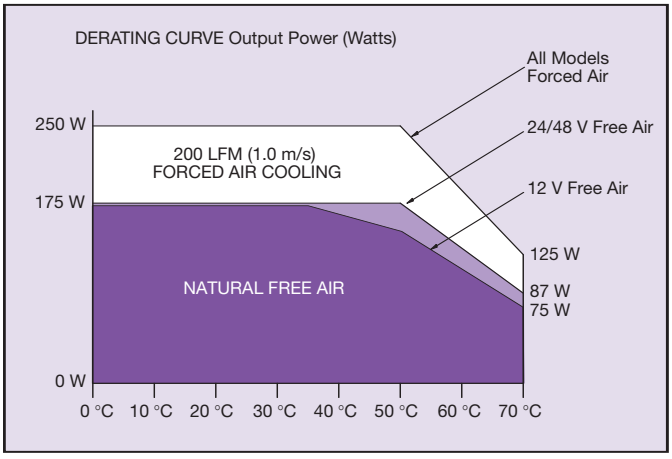

Figure 1: Derating Curve

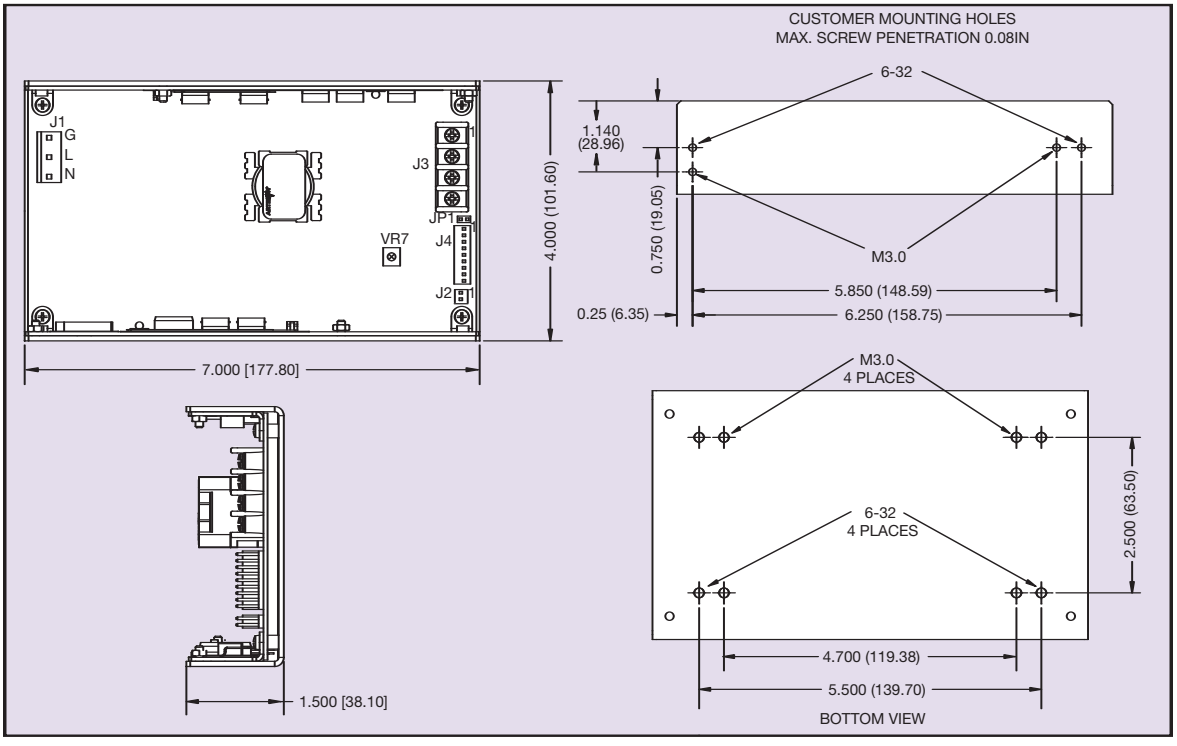

Figure 2: Mechanical Drawing

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NEW Product

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^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

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

International Safety Standard Approvals

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

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

(LVD) Certificate No. 40014041

IECEE CB Ref DE1-32468

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