

NLP250 Medical 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 control and monitoring features
- Compliance to EN55022-B conducted noise standard
- RoHS compliant
- 2 year warranty

Safety

VDE0750/EN60950
IEC950/IEC60601-1
File No. 1040100-3336-0210

UL60601-1
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	150 μ A
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 In live and neutral

Output

Maximum power	200 LFM forced air 250 LFM with cover	250 watts
Total regulation (line and load)	Main output Auxiliary outputs	\pm 2.0% \pm 5.0%
Turn-on delay	@ 120 Vac Input	2.0 s max.
Transient response	Main output 50-100% step at 0.5 A/ μ s	5.0% or 250 mV max. dev., 1 ms max. recovery to 1%
Temperature coefficient		\pm 0.02%/ $^{\circ}$ C
Overvoltage protection	Main output	115%, \pm 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 $^{\circ}$ C unless otherwise stated



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
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	4000 Vac
	Input/chassis	2000 Vac
Safety approvals (see note 6)	UL/cUL UL60601-1, VDE EN60601-1 CAN/CSA22.2 No. 601-1	
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%	NLP250N-99S12J
24 V	0 A	7.3 A	10.5 A	240 mV	±2.0%	NLP250N-99S24J

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 μ F tantalum capacitor and a 0.1 μ 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

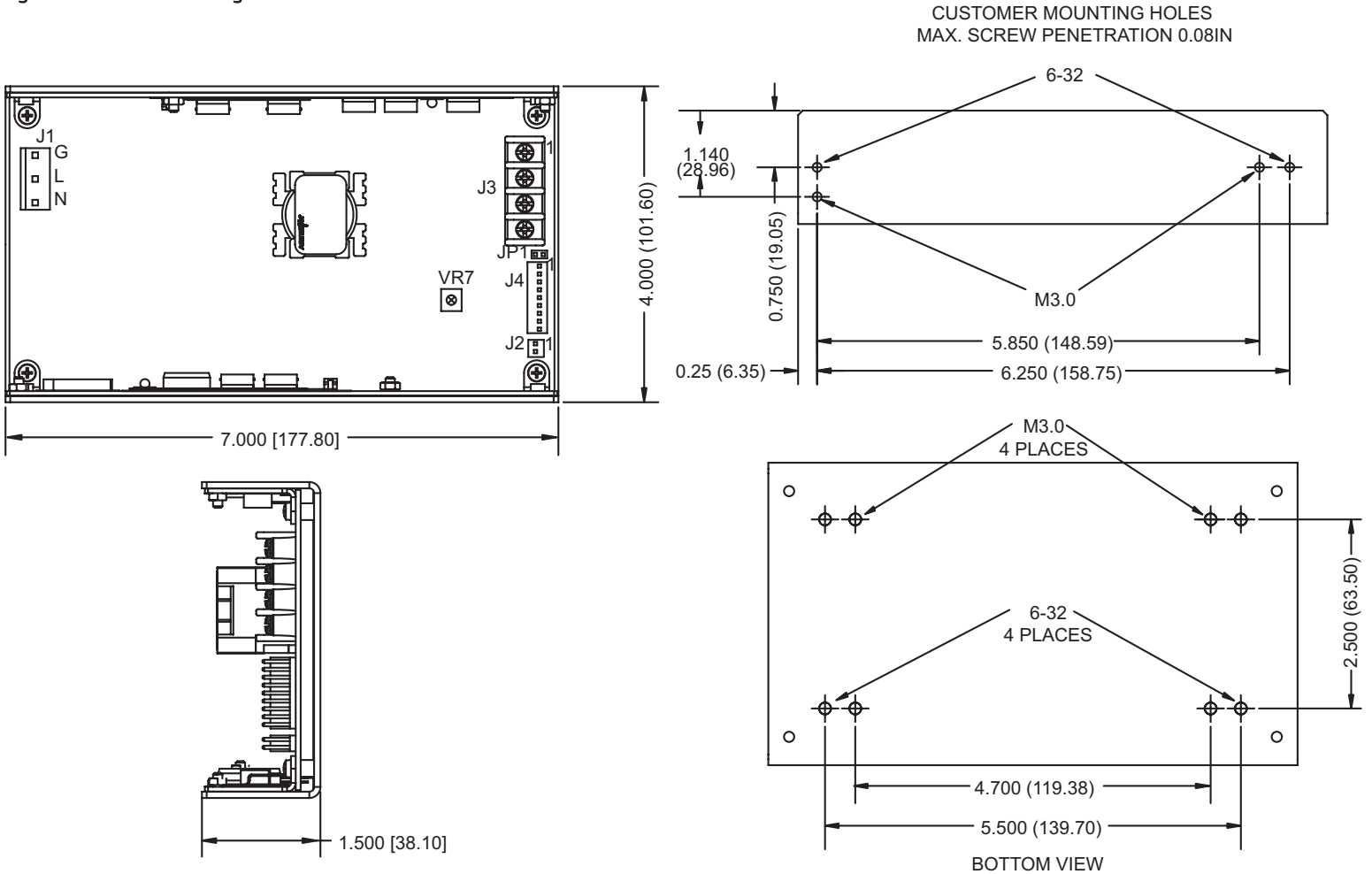


Figure 1: Derating Curve Output Power (Watts)

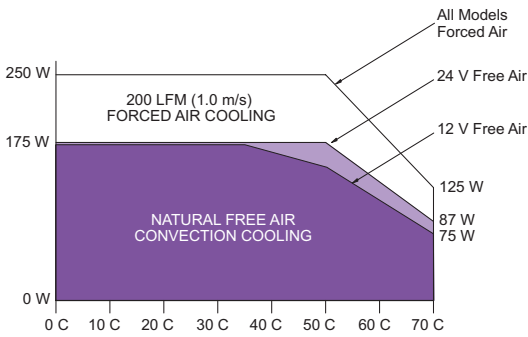
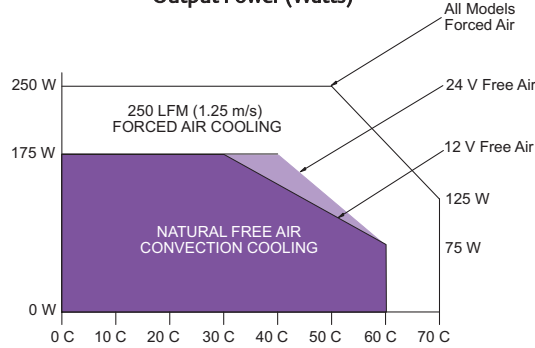


Figure 1b: Derating Curve With Cover Output Power (Watts)



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 08-50-01113 (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

Americas

5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 760 930 4600
Facsimile: +1 760 930 0698

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

Asia (HK)

16th - 17th Floors, Lu Plaza
2 Wing Yip Street, Kwun Tong
Kowloon, Hong Kong
Telephone: +852 2176 3333
Facsimile: +852 2176 3888

For global contact, visit:

www.powerconversion.com
technicalsupport@powerconversion.com

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

Emerson Network Power.
The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- **Embedded Power**
- Inbound Power
- Integrated Cabinet Solutions
- Outside Plant
- Precision Cooling
- Site Monitoring and Services

EmersonNetworkPower.com

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co. ©2007 Emerson Electric Co.