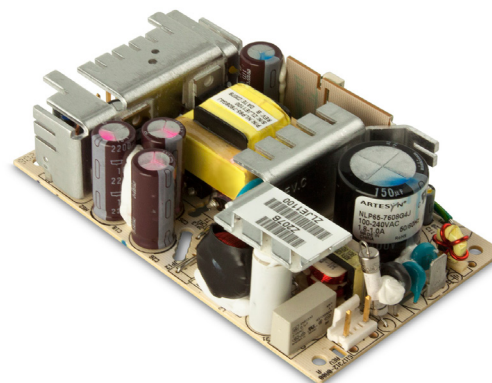


NLP65 Medical Series

Single, Dual and Triple output

Total Power: 65 W
Input Voltage: 85 - 264 VAC
of Outputs: Single, Dual, Triple



Special Features

- 85 VAC to 264 VAC universal input range
- Harmonic current correction as standard
- Maximum component height 1.26 inches
- UL, CSA and VDE safety approvals
- Overvoltage and short circuit protection
- 5 x 3 x 1.26 inch (127.0 x 76.2 x 32mm) footprint
- Available RoHS compliant
- 2 year warranty

Safety

- UL60601-1/CAN/CSA-C22.2 No. 60601-1-M90
- VDE License No. 121949 under IEC60601-1

Electrical Specifications

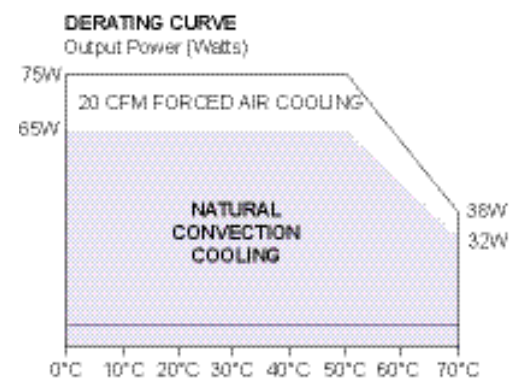
Input		
Input voltage range:	Universal input (see Note 2)	85 - 264 Vac
Input frequency range:		47 - 63 Hz
Input current: (cold start)	120 Vac 230 Vac	17 A max. 32 A max
Safety ground leakage current:	264 Vac, 60 Hz	95 μ A
Input current:	120 Vac 230 Vac	1.05 A rms 0.51 A rms
Input fuse:		250 Vac F 5 A
Output		
Output power:	Natural convection	65 W max.
Total regulation: (line and load)		See table
Rise time:	At turn-on	1.0 s, max
Transient response:	Main output 25% step at 0.1 A/ μ s	5.0% max. dev., 1ms recovery to 1.0%
Temperature coefficient:		$\pm 0.02\%/^{\circ}\text{C}$
Overvoltage protection:	Main outputs	125%, $\pm 10\%$
Short circuit protection:	Cyclic operation	Yes

EMC Characteristics		
Conducted emissions:	EN55022, FCC part 15	Level A
Radiated emissions:	EN55022, FCC part 15	Level A
ESD air:	EN61000-4-2, level 3	Perf. criteria 1
ESD contact:	EN61000-4-2, level 4	Perf. criteria 1
Surge:	EN61000-4-5, level 3	Perf. criteria 1
Fast transients:	EN61000-4-4, level 3	Perf. criteria 1
Radiated immunity:	EN61000-4-3, level 3	Perf. criteria 2
Conducted immunity:	EN61000-4-6, level 3	Perf. criteria 2
General Specifications		
Hold-up time:	120 Vac, 60 Hz	16 ms @ 65 W
Efficiency:	120 Vac, 65 W	72% typical
Isolation voltage:	Input/output Input/chassis	4000 Vac 1500 Vac
Switching frequency:	Fixed	100 kHz, \pm 5 kHz
Approvals and standards:	EN60601-1, IEC60601-1	
Weight:	283 g (10 oz)	
MTBF demonstrated:	MIL-HDBK-217F	150,000 hours

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

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, convection cooled	65 W
	50 °C - 70 °C ambient, convection cooled	Derate to 50% load
	Peak (0 °C to 50 °C, 60 s)	See table
Relative humidity:	Non-condensing	5 to 95% RH
Altitude:	Operating	10,000 feet max.
	Non-operating	30,000 feet max.
Vibration (See Note 5):	5 - 500 Hz	2.4 G rms approx.
Shock	per MIL-STD-810E	516.4 Part IV

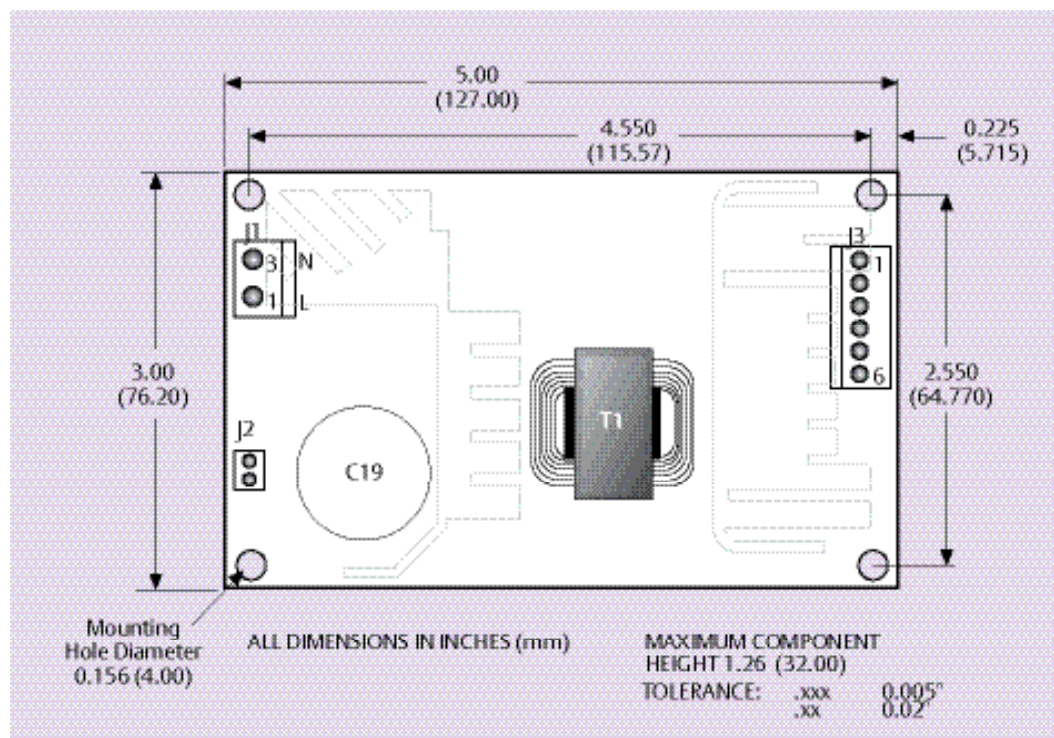


Ordering Information

Output Voltage	Output Current			Ripple ⁽⁴⁾	Total Regulation ⁽⁶⁾	Model Number ^(11, 12)
	Max ⁽¹⁾	Peak	Fan ⁽¹⁰⁾			
+5 V	7 A	9.1 A	8 A	50 mV	± 2.0%	NLP65-9908J
+12 V	2.5 A	3.3 A	3 A	150 mV	± 5.0%	
-12 V	0.5 A	0.81 A	1 A	120 mV	± 5.0%	
+5 V	7 A	9.1 A	8 A	50 mV	± 2.0%	NLP65-9920J
+24 V	2 A	2.6 A	2 A	240 mV	± 5.0%	
+5 V	7 A	9.1 A	8 A	50 mV	± 2.0%	NLP65-9929J
+12 V	2.5 A	3.3 A	3 A	150 mV	± 5.0%	
+12 V	5.4 A	7 A	6.5 A	120 mV	± 2.0%	NLP65-9912J
+15 V	4.4 A	5.7 A	5.3 A	150 mV	± 2.0%	NLP65-9915J
+24 V	2.7 A	3.5 A	3.5 A	240 mV	± 2.0%	NLP65-9924J

Notes

- 1 Natural convection cooling. Models NLP65-9929J, and NLP65-9908J must not exceed 62.5 Watts continuous output power with natural convection. Model NLP65-9920J not to exceed 65 Watts continuous output power with natural convection.
- 2 When the input voltage is less than 90 Vac the operating temperature range is 0 °C to +40 °C. The ripple and regulation specifications may not be met.
- 3 Peak output current lasting less than 60 seconds with duty cycle less than 5%. During peak loading, output voltage may exceed total regulation limits.
- 4 Figure is peak-to-peak for convection power rating. Output noise measurements are made across a 20 MHz bandwidth using a 6 inch twisted pair, terminated with a 10 µF electrolytic capacitor and a 0.1 µF ceramic capacitor.
- 5 Three orthogonal axes, random vibration 10 minutes for each axes, 2.4 G rms 5 Hz to 500 Hz.
- 6 To maintain stated regulation then:
For single output units: $I \geq 0.2 \text{ A } I \text{ max.}$
For multiple output units: $0.25 \leq I(A)/I(B) \leq 5$, for $I(A) \geq 0.2 \text{ A } I(A) \text{ max.}$
- 7 For optimum reliability, no part of the heatsink should exceed 120 °C, and no semiconductor case temperature should exceed 130 °C.
- 8 CAUTION: Allow a minimum of 1 second after disconnecting line power when making thermal measurements.
- 9 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 10 Maximum continuous output power for all multiple output models must not exceed 75 Watts with 20 CFM forced air cooling at 50 °C.
- 11 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant.
- 12 NOTICE: Some models do not support all options. Please contact your local Emerson Network Power representative or use the on-line model number search tool at <http://www.Emerson.com/EmbeddedPower> to find a suitable alternative.



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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.

Pin Connections	
J1	
Pin 1	AC Line
Pin 2	No Pin
Pin 3	AC Neutral
J2	
Pin 1	Safety Ground

Input and Output Connectors		Mating Connectors
AC (J1)	Molex 26-60-4030 type or equivalent	Molex 09-50-3031 or equivalent with Molex 08-52-0113 or equivalent crimp terminals
DC (J3)	Molex 26-60-4060 or equivalent	Molex 09-50-3061 with Molex 2478 phosphor bronze crimp terminals or equivalent.

Output Pin Connections			
J3	SINGLE	DUAL	TRIPLE
Pin 1	No Connection	V (B)	V (B)
Pin 2	V (A)	V (A)	V (A)
Pin 3	V (A)	V (A)	V (A)
Pin 4	Return	Return	Return
Pin 5	Return	Return	Return
Pin 6	No Connection	No Pin	V (C)

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