

NLP65-M

Single, Dual and Triple output

Data Sheet

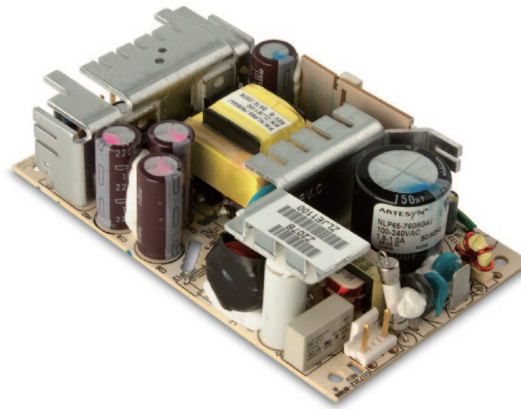
Total Power: 65 W
Input Voltage: 85-264 VAC
of Outputs: Single, Dual, Triple

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 years warranty

SAFETY

- UL60601-1/CAN/CSA-C22.2 No. 60601-1-M90
- VDE License No. 121949 under | EN60601-1/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 |

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

EMC Charateristics

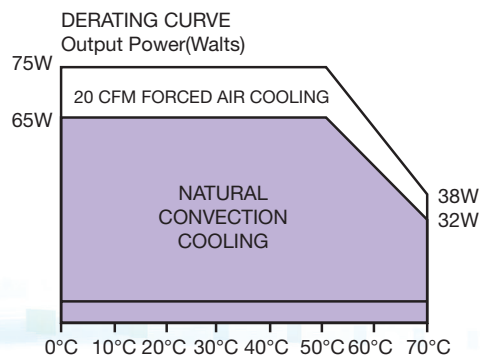
| | | |
|----------------------|----------------------|------------------|
| Conducted emissions: | EN55022, FCC part 15 | Level A |
| Radiated emissions: | EN55022, FCC part 15 | Level A |
| ESD air: | EN61000-4-2, level 3 | Perf. criteria 1 |
| ESD contact: | EN61000-4-2, level 4 | Perf. criteria 1 |
| 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, ± 5 kHz |
| Approvals and standards: | EN60601-1, IEC60601-1 | |
| Weight: | 283 g (10 oz) | |
| MTBF demonstrated: | MIL-HDBK-217F | 150,000 hours |

Environmental Specifications

| | | |
|-------------------------|---|--------------------|
| Thermal performance: | Operating (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 |



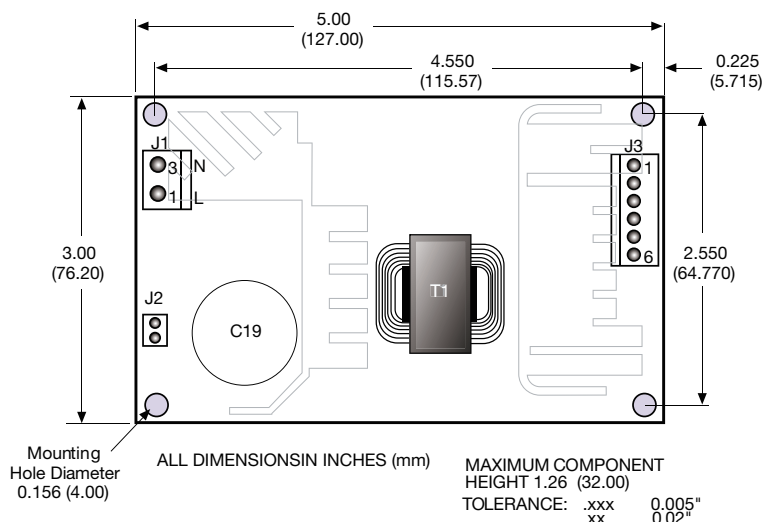
Ordering Information

| 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 max.
For multiple output units: $0.25 \leq I(A)/I(B) \leq 5$, for $I(A) \geq 0.2 \text{ A}$ I(A) 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 Artesyn Embedded Technologies representative or use the on-line model number search tool at <http://www.artesyn.com/power> to find a suitable alternative.

Mechanical Drawings



Input Pin Connections

J1

| | |
|-------|------------|
| Pin 1 | AC Line |
| Pin 2 | No Pin |
| Pin 3 | AC Neutral |

J2

| | |
|-------|---------------|
| Pin 1 | Safety Ground |
|-------|---------------|

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) |

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. |

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NLP65-M Series-DS 06.26.14

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