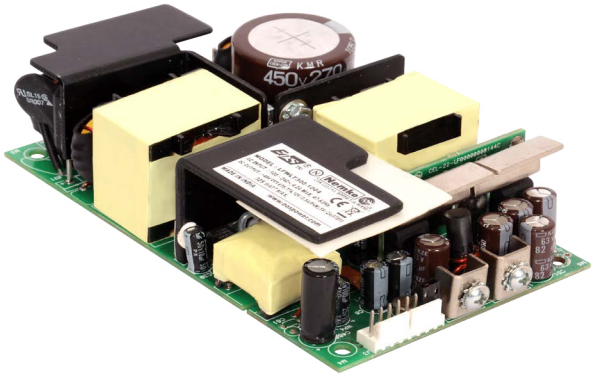
# 300 Watt Industrial



## Features

- 3 x 5 x 1.5 inches
- Wide range AC input
- EMI Class B
- CE marked to LVD
- Class 1 & Class 2 options

## Electrical Specifications

| | | |
|---|---|---|
| Input Voltage | 90–264 VAC/120–390 VDC, Universal | |
| Input Frequency | 47–63 Hz | |
| Input Current | 120 VAC: 3.2 A max. | 230 VAC: 1.65 A max. |
| No Load Power | 0.8 W | |
| Inrush Current | 120 VAC: 35 A max. | 230 VAC: 65 A max. |
| Leakage Current | 120 VAC: < 150 µA | 230 VAC: < 300 µA |
| Efficiency | 120 VAC: 88% typical | 230 VAC: 92% typical |
| Hold-up Time | 120 VAC: 10 ms | 230 VAC: 10 ms |
| Power Factor | 120 VAC: 0.98 | 230 VAC: 0.95 |
| Output Power | 200 to 325 W | |
| Line Regulation | +/–0.5% | |
| Load Regulation | +/–2% | |
| Transient Response | < 10%, 50% to 100% load change, 50 Hz, 50% duty cycle, 0.1 A/µs, recovery time < 5 ms | |
| Rise Time | < 100 ms | |
| Set Point Tolerance | +/–1% | |
| Output Adjustability | +/–3% | |
| Over Current Protection | 110 to 150% | |
| Over Voltage Protection | 110 to 150%, autorecovery | |
| Short Circuit Protection | Short term, autorecovery | |
| Over Temperature Protection | 110°C primary heat sink, autorecovery | |
| Switching Frequency | PFC converter: Fixed, 80 kHz typical Resonant converter: Variable, 35–250 kHz; 90 kHz typical | |
| Operating Temperature | –20 to +70°C, refer derating curve; –20 to 0°C, start-up is guaranteed | |
| Storage Temperature | –40 to +85°C | |
| Relative Humidity | 95% Rh, noncondensing | |
| Altitude | Operating: 10,000 ft.; Nonoperating: 40,000 ft. | |
| MTBF | 1.77m Hours, Telcordia -SR332-issue 3 | |
| Isolation Voltage | Input to Output 4000 VAC/VDC | |
| Cooling | Convection: 140W max (5V model)<br>200W max (12V, 15V, 24V, 30V and 48V models)<br>With 300LFM : 200W max (5V model)<br>300W max (12V and 15V models)<br>325W max (24V, 30V and 48V models)<br>Refer de-rating curves to determine output power over the entire operating temperature range | |

| Model Number | Voltage | Max. Load (Convection) | Max. Load (300 LFM) | Min. Load | Ripple[2] |
|---|---|---|---|---|---|
| LFWLT300–1000 | 5 V | 28.0 A | 40.0 A | 0.0 A | 2% |
| LFWLT300–1001 | 12 V | 16.67 A | 25.0 A | 0.0 A | 2% |
| LFWLT300–1002 | 15 V | 13.33 A | 20.0 A | 0.0 A | 2% |
| LFWLT300–1003 | 24 V | 8.33 A | 13.54 A | 0.0 A | 2% |
| LFWLT300–1004 | 48 V | 4.17 A | 6.77 A | 0.0 A | 2% |
| LFWLT300–1005 | 30 V | 6.67 A | 10.83 A | 0.0 A | 2% |
| LFWLT300–CK metal cover kit accessory | | | | | |

| Connectors | | |
|---|---|---|
| J1 | Pin 1 | AC LINE |
| | Pin 2 | AC NEUTRAL |
| Spade Connector (J4) (Class 1 product only) | | EARTH |
| J2 | Pin 1 | RTN |
| | Pin 2 | V1 |
| J3 | Pin 1 | REMOTE ON/OFF |
| | Pin 2 | RTN |
| | Pin 3 | VFAN (+12 V/0.5 A) |
| | Pin 4 | –VE REMOTE SENSE |
| | Pin 5 | VSTBY (+5 V/2 A, +/-5%) |
| | Pin 6 | +VE REMOTE SENSE |
| | Pin 7 | RTN |
| | Pin 8 | POWER GOOD |

## Notes

1. Peak current rating on main output is 120% of max., lasting < 30 s with a maximum 10% duty cycle.
2. Ripple is peak to peak with 20 MHz bandwidth and 10 µF (Electrolytic capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.
3. Class II version available. Add "-2" suffix at the end of the Model Number to Order. Enquire with EOS Sales Rep before Order.
4. Combined output power of main output, fan supply and standby supply shall not exceed max. power rating.
5. Standby output voltage tolerance including set point accuracy, line and load regulation is +/–10%. Ripple and noise is less than 5%.
6. Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/–30% and needs min. 1% load on main output to be within regulation band. Ripple and noise is less than 10%.
7. Class 2 product meets Class A limit line for conducted emission.
8. Specifications are for nominal input voltage, 25°C unless otherwise stated.
9. PSU is supplied with J3 housing, pin–1 and pin–2 shorted to enable main output without remote on/off feature.
10. Derate output power linearly to 80% from 90 VAC to 80 VAC input.
11. Power good signal cannot be used as a current source. Internal pull up resistor from PG signal to 5V is 10K. It is recommended to use external transistor if intended to source current.
12. The de-rating curves are valid for input voltages of 115VAC to 264VAC. Below 115VAC to 90VAC the convection rating is 180 Watts maximum.
13. When used in Cover Kit, de-rate output power to 70 % under all operating conditions.

| Mechanical Specifications | |
|---|---|
| AC Input Connector (J1) | Molex: 26–60–4030<br>Mating: 09–50–3031; Pins: 08–50–0106 |
| EARTH (J4) | Molex: 19705–4301<br>Mating: 190030001 |
| DC Output Connector (J2) | 6-32 inches Screw Pan HD<br>Mating: Designed to accept Ring Tongue Terminal AMP : 8-31886-1,<br>wherein one 16 AWG(max) wire can be crimped.<br>Note : One Ring Tongue Terminal with 16 AWG is recommended for current upto 11A only.<br>Use multiple tongue terminals with wire for more current. |
| Signal Connector (J3) | Molex: 22–23–2081<br>Mating: 22–01–2087; Pins: 08–50–0113 |
| Dimensions | 3.0 x 5.0 x 1.5 inches<br>(76.2 x 127.0 x 38.0 mm) |
| Weight | 450 g |

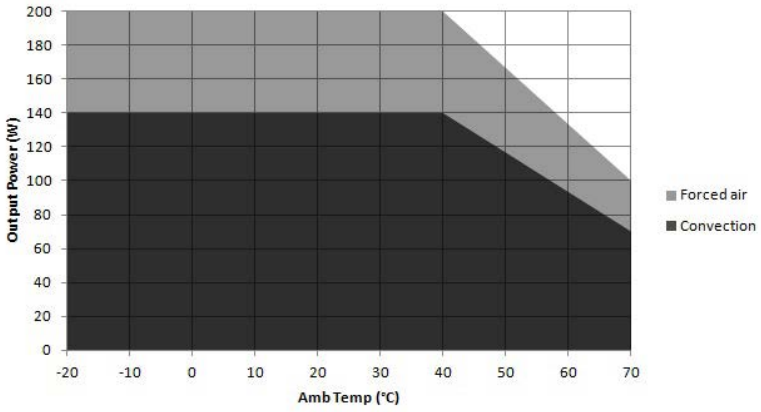
| EMC | | |
|---|---|---|
| Parameter | Conditions/Description | Criteria |
| Conducted Emissions | EN55032-B, CISPR22-B, FCC PART15-B | Pass |
| Radiated Emissions | EN 55032 B | Pass |
| Input Current Harmonics | EN 61000-3-2 | Class D |
| Voltage Fluctuation and Flicker | EN 61000-3-3 | Pass |
| ESD Immunity | EN 61000-4-2 | Level 3, Criterion A |
| Radiated Field Immunity | EN 61000-4-3 | Level 3, Criterion A |
| Electrical Fast Transient Immunity | EN 61000-4-4 | Level 3, Criterion A |
| Surge Immunity | EN 61000-4-5 | Level 3, Criterion A |
| Conducted Immunity | EN 61000-4-6 | Level 3, Criterion A |
| Magnetic Field Immunity | EN 61000-4-8 | Level 3, Criterion A |
| Voltage dips, interruptions | EN 61000-4-11 | Criterion A & B |

| Safety | |
|---|---|
| CE Mark | Complies with LVD Directive |
| Approval Agency | Nemko, Nemko–CCL, INC. |
| Safety Standard(s) | EN60950–1, IEC60950–1 (ed.2), UL 60950 (ed.2), CSA C22.2 |
| Safety File Number(s) | Nemko: P16220733, NA 201210176, CB: NO90659 |

| Signal | |
|---|---|
| Power Good Signal | TTL signal goes high after main output is within regulation band, delay is 0.1 to 0.3 s (see note 11) |
| Remote Sense | Compensates for 200 mV drop |
| Remote on/off | To turn on PSU short remote pin to ground |

## Derating Curve

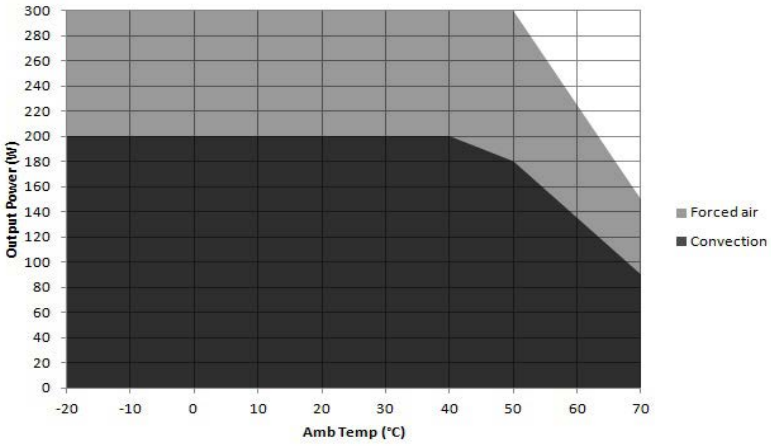
**Power de-rating : 5V**




Convection load: 140W up to 40 °C
De-rate above 40 °C @ 1.67% per °C

Forced air cooled load : 200W up to 40°C
De-rate above 40 °C @ 1.67% per °C

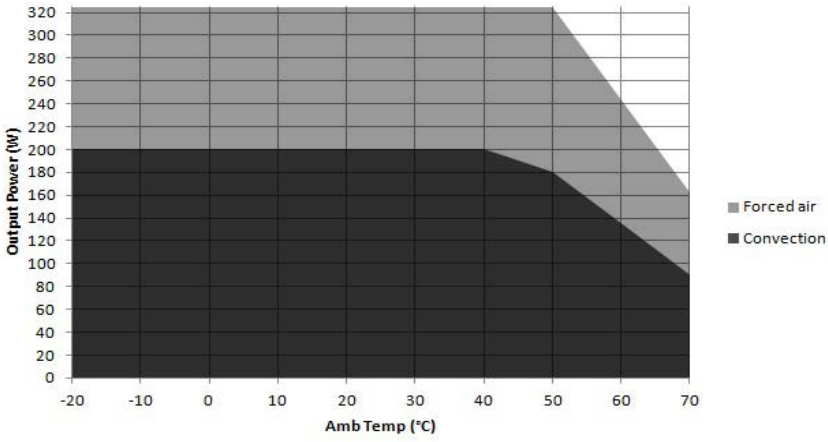
**Power de-rating : 12V, 15V**




Convection load: 200W up to 40 °C
De-rate between 40-50 °C @ 1% per °C
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load : 300W up to 50°C
De-rate above 50 °C @ 2.5% per °C

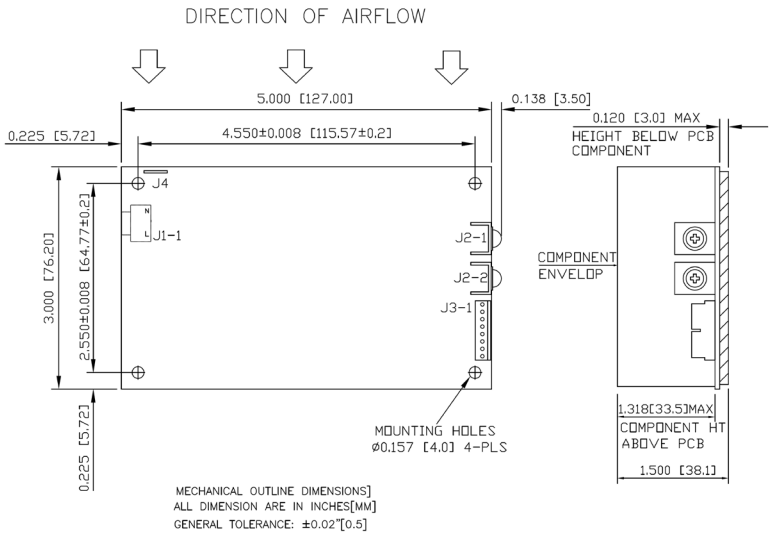
**Power de-rating : 24V, 30V, 48V**




Convection load: 200W up to 40 °C
De-rate between 40-50 °C @ 1% per °C
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load : 325W up to 50°C
De-rate above 50 °C @ 2.5% per °C

## Mechanical Drawing




Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following

1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.