

Features

- 4 x 2 x 1 Inches Form factor
- 225 Watts with Forced Air Cooling
- 7 Year Extended Warranty Option
- Efficiencies upto 94%
- -40 to 70 degree operating temperature*
- Dual fusing
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 3.37m Hours, Telcordia -SR332-issue 3 MTBF
- No Load Power < 0.5W
- Medical (BF) Safety Approvals
- Meets standard IEC60601-1-2 : 2014 (4th Edition)

Electrical Specifications

| | | |
|------------------------------------|--|----------------------|
| Input Voltage | 85-264 VAC/390 VDC, Universal (Derate from 100% at 100V AC to 95% at 85V AC) | |
| Input Frequency | 47-63 Hz | |
| Input Current | 115 VAC: 2.2 A max. | 230 VAC: 1.1 A max. |
| No Load Power | less than 0.5W typical | |
| Inrush Current | 115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A | |
| Leakage Current | 300 uA Typical, (N.A. For Class II Option) | Touch current <100uA |
| Efficiency | 94%(48V), 93%(24V,30V), 92%(12V,15V) | |
| Hold-up Time | at 225W:10 ms ; 110W: 16 ms | |
| Power Factor | exceeds 0.95 with Full Load | |
| Output Power | 225W with 13 CFM, upto 120W Convection | |
| Line Regulation | +/-0.5% | |
| Load Regulation | +/-0.5% | |
| Transient Response | 25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=4% , recovery time < 5 ms | |
| Rise Time | 55ms typical | |
| Set Point Tolerance | +/-1% | |
| Output Voltage Adjustment | +/-3% (Ref. Note 9) | |
| Over Current Protection | >110% | |
| Over Voltage Protection | 110 to 140% | |
| Short Circuit Protection | Hiccup mode | |
| Switching Frequency | PFC – 70 to 130 KHz ,PWM – 50-80 KHz | |
| Operating Temperature ⁷ | - 40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation | |
| Storage Temperature | -40 to +85°C | |
| Relative Humidity | 5% to 95%, noncondensing | |
| Altitude | Operating: 16,000 ft.; Nonoperating: 40,000 ft. | |
| MTBF | 3.37m Hours, Telcordia -SR332-issue 3 | |
| Isolation Voltage | Input to Output – 4000 VAC medical applications. Input to GND - 1500 VAC (Not Applicable For Class II Option) Output to GND- 1500VAC for type BF , 500 VAC for type B (Not Applicable For Class II Option) | |
| Cooling | 225W with 13 CFM forced air cooling ⁶ (refer Mechanical Drawing) upto 120W with natural convection cooling ⁶ (refer Derating Curve) | |

| Model Number | Description | Voltage | Max. Load (Convection) (112.5W) 50°C | Max. Load (Convection) (120W) 40°C | Max. Load (13 CFM) (225W) | Min. Load | Ripple ¹ |
|---|----------------------|---------|--|--|---------------------------------|-----------|---------------------|
| LFMWLP225-1001 | with Screw Terminal | 12 V | 9.37A | 10.0A | 18.75A | 0.0 A | 1% |
| LFMWLP225-1301 | with Molex Connector | 12 V | 9.37A | 10.0A | 18.75A | 0.0 A | 1% |
| LFMWLP225-1002 | with Screw Terminal | 15 V | 7.5A | 8.0A | 15A | 0.0 A | 1% |
| LFMWLP225-1302 | with Molex Connector | 15 V | 7.5A | 8.0A | 15A | 0.0 A | 1% |
| LFMWLP225-1003 | with Screw Terminal | 24 V | 4.68A | 5.0A | 9.37A | 0.0 A | 1% |
| LFMWLP225-1303 | with Molex Connector | 24 V | 4.68A | 5.0A | 9.37A | 0.0 A | 1% |
| LFMWLP225-1004 | with Screw Terminal | 48 V | 2.34A | 2.5A | 4.68A | 0.0 A | 1% |
| LFMWLP225-1304 | with Molex Connector | 48 V | 2.34A | 2.5A | 4.68A | 0.0 A | 1% |
| LFMWLP225-1005 | with Screw Terminal | 30 V | 3.75A | 4.0A | 7.5A | 0.0 A | 1% |
| LFMWLP225-1305 | with Molex Connector | 30 V | 3.75A | 4.0A | 7.5A | 0.0 A | 1% |
| LFMWLP225-1006 | with Screw Terminal | 58 V | 1.94A | 2.07A | 3.88A | 0.0 A | 1% |
| LFMWLP225-1306 | with Molex Connector | 58 V | 1.94A | 2.07A | 3.88A | 0.0 A | 1% |
| LFWLP225-CK metal cover kit accessory | | | | | | | |
| To order the extended warranty product please add the suffix -EX to your required part number For Example - MWLP225-1001-EX (See Note 8) | | | | | | | |

| Connectors | | |
|-----------------|-----------|------------|
| J1 | Pin 1 | AC LINE |
| | Pin 2 | NOT FITTED |
| | Pin 3 | AC NEUTRAL |
| J2 Option 1 & 2 | Pin 1,2,3 | V1 +VE |
| | Pin 4,5,6 | V1 -VE |
| J3 | Pin 1 | FAN +VE |
| | Pin 2 | FAN -VE |

Notes

- Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Electrolytic capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.
- Class II version available, Add "-II" suffix at the end of the Model Number.
- Combined output power of main output, fan supply shall not exceed max. Power rating.
- Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-15 % and Ripple and noise is less than 10 %.
With V1 fully loaded, Vfan need to have min load of 20mA to be within regulation band.
- Specifications are for nominal input voltage, 25°C unless otherwise stated.
- 225W with 13CFM forced air cooling and 120W with natural convection cooling at 100 to 264VAC.
- Output ripple can be more than 10% of the output voltage.
- The extended warranty period is 7 years from the date of manufacture and will continue for 6 months thereafter to allow for transport and stock holding prior to end customer receipt. The extended warranty is a "return to base" warranty and does not imply a guarantee of 7 year operation. The standard EOS warranty T&C's apply for the extended warranty period. Refer to your local EOS representative for further details.
- Adjustment potentiometer is located on the SMT side of the PCB.
- 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 Mating: 09-50-3031; Pins: 08-50-0106 |
| DC Output Connector (J2) Option 1 (Screw Terminal) | Molex: 39357 Series or equivalent |
| DC Output Connector (J2) (Molex Connector) | Molex: 26-60-4060 Mating: 09-50-3061; Pins: 08-50-0106 |
| Aux (Fan) Output(J3) | AMP :640456-2 Mating: 640440-2 |
| Dimensions | 4 x 2 x 1 inches (101.60 x 50.8x 25.4 mm) |
| Weight | 200 gm approx |

EMC

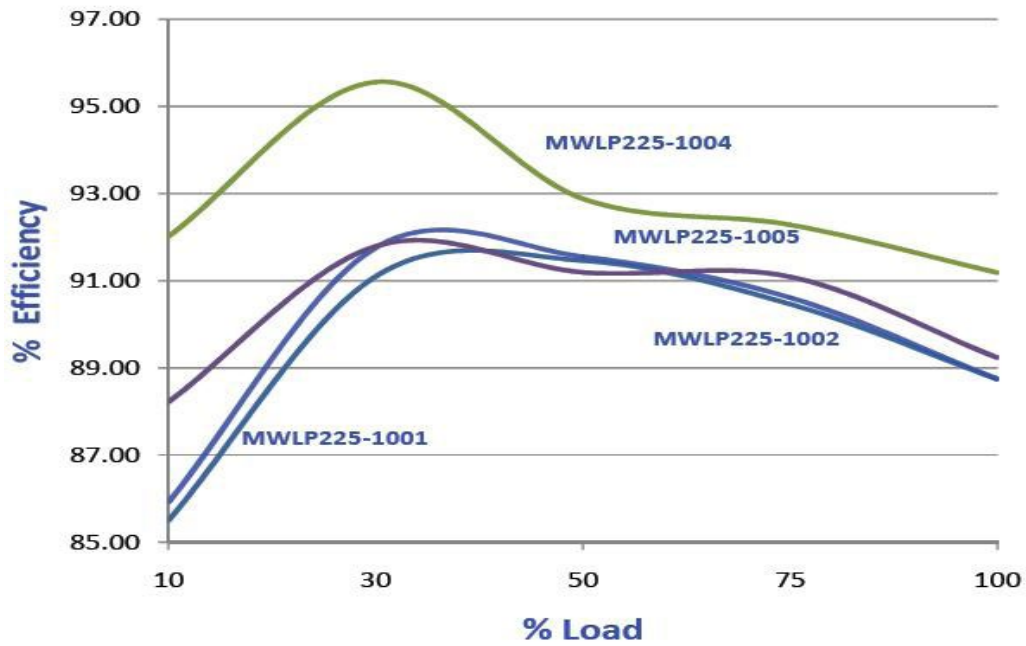
| Parameter | Conditions/Description | Criteria |
|------------------------------------|------------------------------------|---|
| Conducted Emissions | EN 55011-B,CISPR22-B, FCC PART15-B | Pass |
| Radiated Emissions | EN 55011 A | Pass Level B with external core (King core K5B RC 25x12x15-M in input cable) |
| 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 4, 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 4, Criterion A |
| Voltage dips, interruptions | EN 61000-4-11 | Criterion B |

Safety

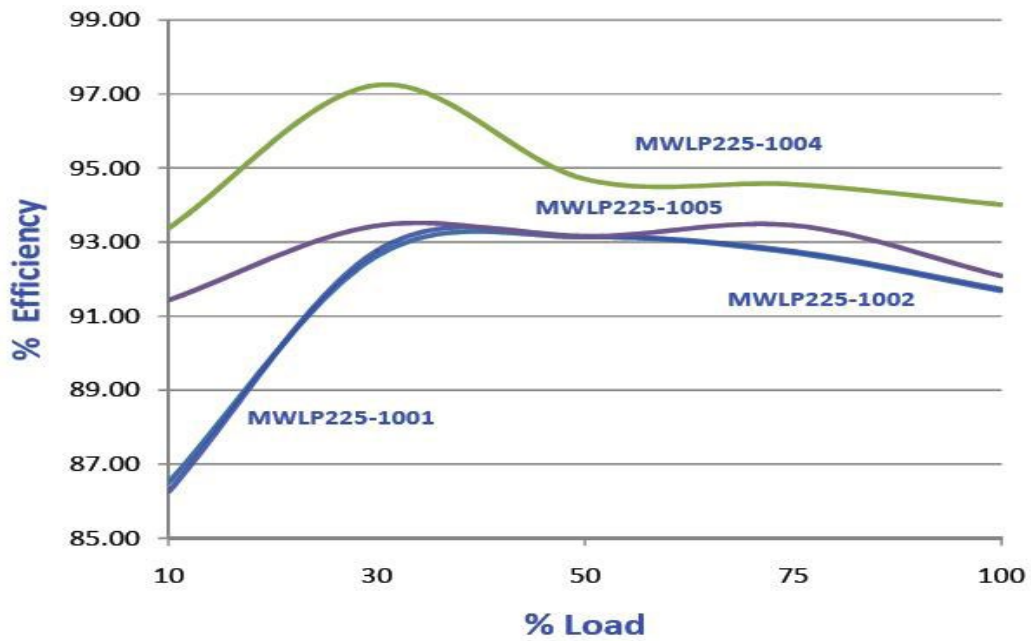
| | |
|-----------------------|---|
| CE Mark | Complies with LVD Directive |
| Approval Agency | Nemko, UL, C-UL |
| Safety Standard(s) | EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1 |
| Safety File Number(s) | Class-I : UL: Certificate Number 20141230-E173812, Nemko: Certificate No. P14219157, CB Certif. No.:N083948 Class-II : UL: Certificate Number 20141230-E173812, NEMKO: Certificate No. P14219181, CB Certif. No. N084076 |

Efficiency Graph

MWLP225-100X efficiency graph at 115V AC



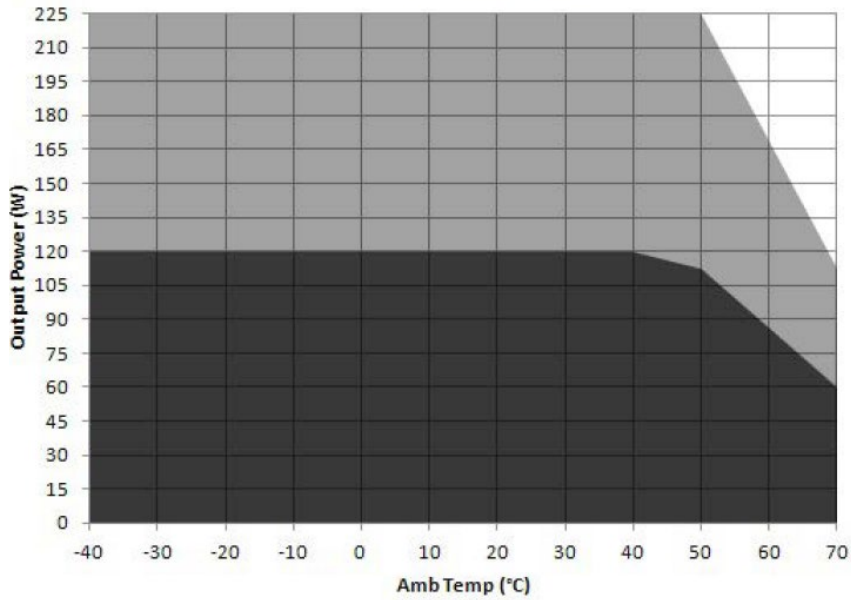
MWLP225-100X efficiency graph at 230V AC



Innovations in Power

Derating Curve

Power de-rating



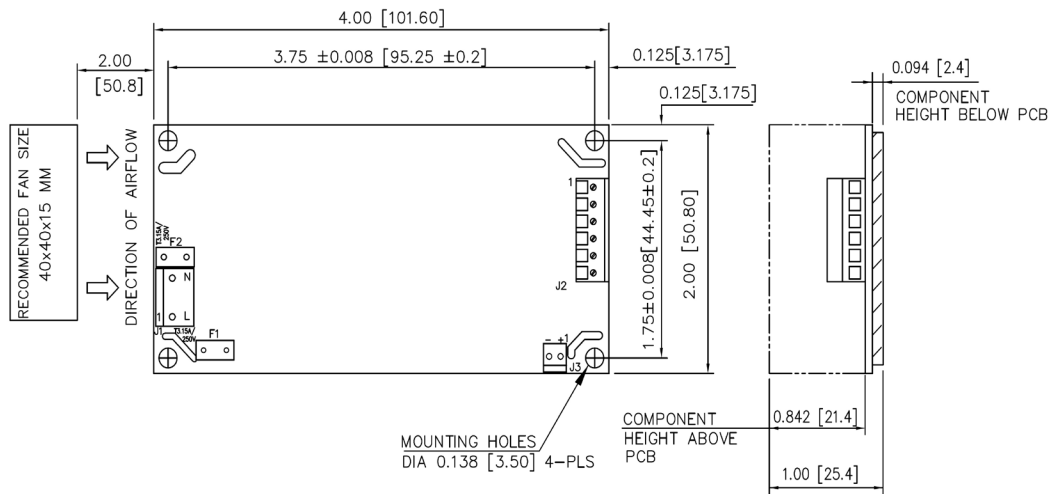
Convection load: 120W up to 40 °C
De-rate between 40-50 °C @ 0.625% per °C
De-rate above 50 °C @ 2.33% per °C

■ Forced air
■ Convection

Forced air cooled load : 225W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Mechanical Drawing

Option 1



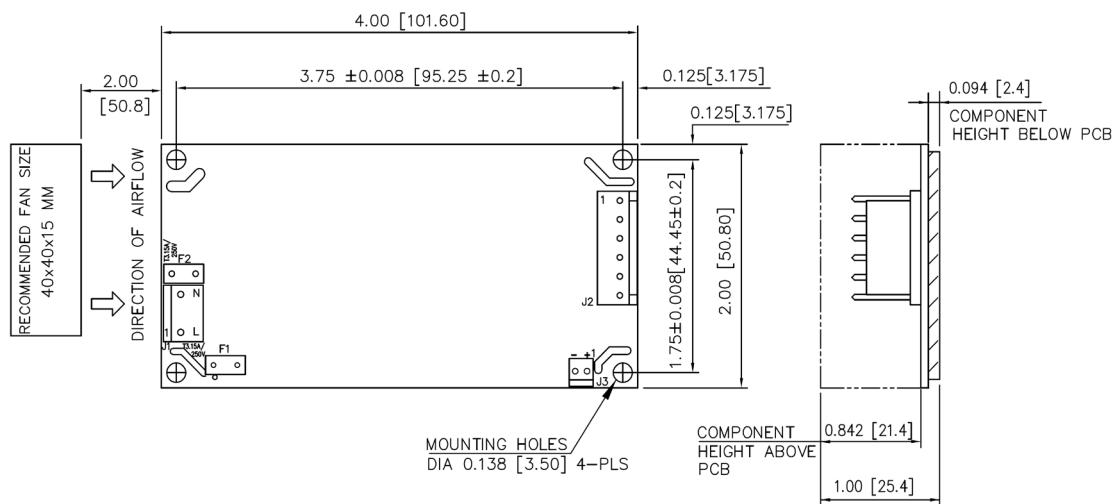
MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/-0.04 [+/-1.0MM]

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.

Mechanical Drawing

Option 2



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/-0.04 [+/-1.0MM]

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.