MWLP120 Medical



Features

- 3" x 2" foot print
- Height 1" above PCB
- 120 Watts with Forced Air Cooling
- Approval to EN60601 3rd Edition, Dual fusing
- Efficiencies upto 93%
- -40 to 70°C operating temperature, Thermal Shut-Down (85°C operational available on request)
- Suitable for BF applications
- Means of Protection : 2xMOPP
- >3.00m Hours, Telcordia -SR332-issue 3
- No Load Power < 0.3W
- Class II option available
- Meets standard IEC60601-1-2 : 2014 (4th Edition)

Electrical Specifications

Input Voltage	85-264 VAC/390 VDC[5], Universal (see derating under output power)
Input Frequency	47–63 Hz
Input Current	115 VAC: 1.2 A max. 230 VAC: 0.65 A max.
No Load Power	less than 0.3W 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	93%(48V,58V), 91%(24V,30V), 90%(12V,15V)
Hold-up Time	>10 ms typical
Power Factor	exceeds 0.95 with Full Load, Active PFC
Output Power	Forced cooling : 120W with 300LFM (refer mechnical drawing) Convection cooling : 100W (for input 100-264 VAC) (de-rate linearly to 80W @ 85VAC)
Output Voltage Adjustability	+/-3%
Line Regulation	+/-0.5%
Load Regulation	+/-1%
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%
Over Current Protection	Typ 110%
Over Voltage Protection	110 to 140%, Latch type (AC recycling required)
Short Circuit Protection	Hiccup mode
Switching Frequency	60 KHz typical
Operating Temperature[4]	- 40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation (85°C operational available on request)
Storage Temperature	–40 to +85°C
Relative Humidity	5% to 95%, noncondensing
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.
MTBF	>3.00m 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)
Protection Level	Primary to Secondary: 2 MOPP, Primary to Earth: 1 MOPP, Secondary to Earth: 1 MOPP

Please read our datasheet & drawing disclaimer here.

Model Number	Description	Voltage	Max. Load (Convection)	Max. Load (300 LFM)	Min. Load	Ripple[1]
LFMWLP120-1001	with Screw Terminal	12 V	8.33A	10.0A	0.0 A	1%
LFMWLP120-1001-II	with Screw Terminal	12 V	8.33A	10.0A	0.0 A	1%
LFMWLP120-1301	with Molex Header	12 V	8.33A	10.0A	0.0 A	1%
LFMWLP120-1301-II	with Molex Header	12 V	8.33A	10.0A	0.0 A	1%
LFMWLP120-1002	with Screw Terminal	15 V	6.66A	8.0A	0.0 A	1%
LFMWLP120-1002-II	with Screw Terminal	15 V	6.66A	8.0A	0.0 A	1%
LFMWLP120-1302	with Molex Header	15 V	6.66A	8.0A	0.0 A	1%
LFMWLP120-1302-II	with Molex Header	15 V	6.66A	8.0A	0.0 A	1%
LFMWLP120-1003	with Screw Terminal	24 V	4.16A	5.0A	0.0 A	1%
LFMWLP120-1003-II	with Screw Terminal	24 V	4.16A	5.0A	0.0 A	1%
LFMWLP120-1303	with Molex Header	24 V	4.16A	5.0A	0.0 A	1%
LFMWLP120-1303-II	with Molex Header	24 V	4.16A	5.0A	0.0 A	1%
LFMWLP120-1004	with Screw Terminal	48 V	2.08A	2.5A	0.0 A	1%
LFMWLP120-1004-II	with Screw Terminal	48 V	2.08A	2.5A	0.0 A	1%
LFMWLP120-1304	with Molex Header	48 V	2.08A	2.5A	0.0 A	1%
LFMWLP120-1304-II	with Molex Header	48 V	2.08A	2.5A	0.0 A	1%
LFMWLP120-1005	with Screw Terminal	30 V	3.33A	4.0A	0.0 A	1%
LFMWLP120-1005-II	with Screw Terminal	30 V	3.33A	4.0A	0.0 A	1%
LFMWLP120-1305	with Molex Header	30 V	3.33A	4.0A	0.0 A	1%
LFMWLP120-1305-II	with Molex Header	30 V	3.33A	4.0A	0.0 A	1%
LFMWLP120-1006	with Screw Terminal	58 V	1.72A	2.07A	0.0 A	1%
LFMWLP120-1006-II	with Screw Terminal	58 V	1.72A	2.07A	0.0 A	1%
LFMWLP120-1306	with Molex Header	58 V	1.72A	2.07A	0.0 A	1%
LFMWLP120-1306-II	with Molex Header	58 V	1.72A	2.07A	0.0 A	1%
LFWLP120-CK metal cover kit accessory						

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2	Pin 1,2	-VE
	Pin 3,4	+VE

Notes

1. 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.
2. Class II version available, Add "-II" suffix at the end of the Model Number.
3. Specifications are for nominal input voltage, 25°C unless otherwise stated.
4. Output ripple can be more than 10% of the output voltage.
5. Functional, not approved.
6. When used in Cover Kit, de-rate output power to 70 % under all operating conditions

Innovations in Power

Mechanical Specifications

AC Input Connector (J1) Option 1	Molex: 39357-0003 Tyco-2-1776112-3	(J1) Option 2	Molex: 1722861103 (Mating conn: Molex 1722561003) (Mating conn: Molex 1722561103) (Mating conn: Molex 1722563103)
DC Output Connector (J2) Option 1	Molex: 39357-0004 Tyco-2-1776112-4	(J2) Option 2	Molex: 1722861104 (Mating conn: Molex 1722561004) (Mating conn: Molex 1722561104) (Mating conn: Molex 1722563104)
Dimensions	3 x 2 x 1.18 inches (76.2 x 50.8 x 30.1mm)		
Weight	200gm Max.		

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

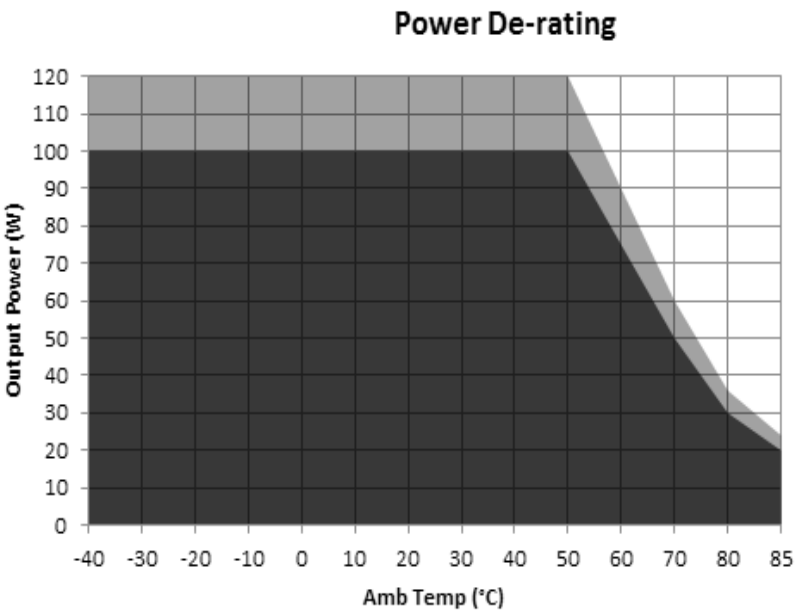
Safety

CE Mark	Complies with LVD Directive
Approval Agency	Nemko, UL, C-UL
Safety Standard(s)	IEC/EN 60601-1 Edition 3.0 + AM1, ANSI/AAMI ES60601-1 and CAN/CSA -C22.2 No. 60601-1
Safety File Number(s)	Class-I : UL: Certificate No. 20151106-E173812, CB: Certificate No. NO89047, , NEMKO: Certificate No. P15220391 Class-II : UL: Certificate No. 20151106-E173812, CB: Certificate No. NO89061, NEMKO: Certificate No. P15220387

Environmental

RoHS Version	LFMWLP120 series meet RoHS compliance as per european RoHS directive (Directive 2011 / 65 / EU)

Derating Curve

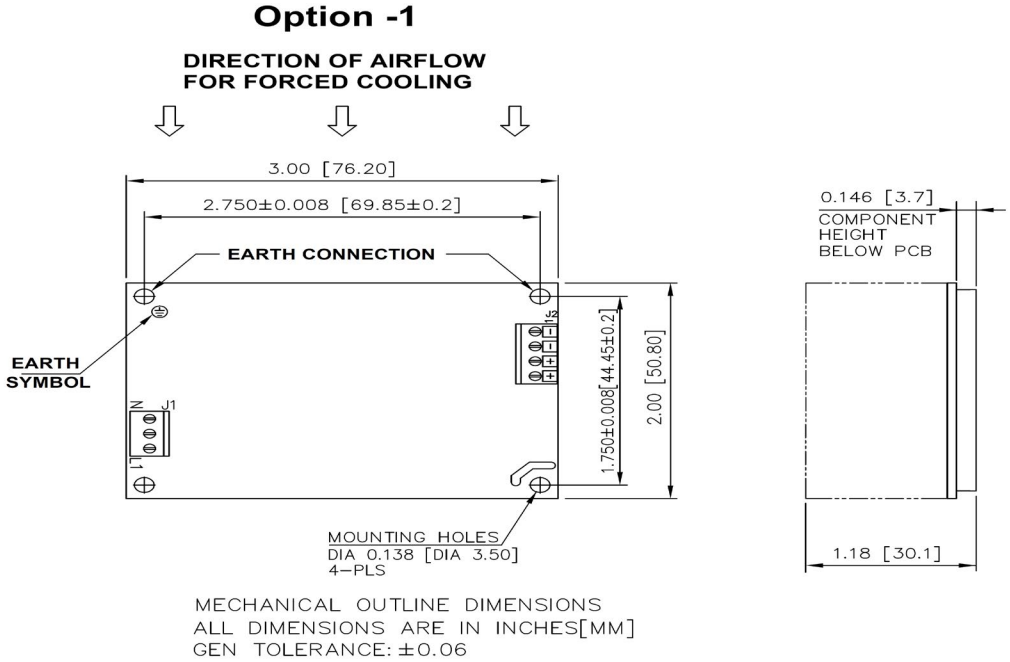


Convection load: 100W up to 50 °C
De-rate above 50 °C @ 2.5% per °C
De-rate between 70 °C to 85°C @ 4% per °C

Forced air cooled load : 120W up to 50°C
De-rate above 50 °C @ 2.5% per °C
De-rate between 70 °C to 85°C @ 4% per °C

Screw Terminal

Mechanical Drawing



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE: ±0.06

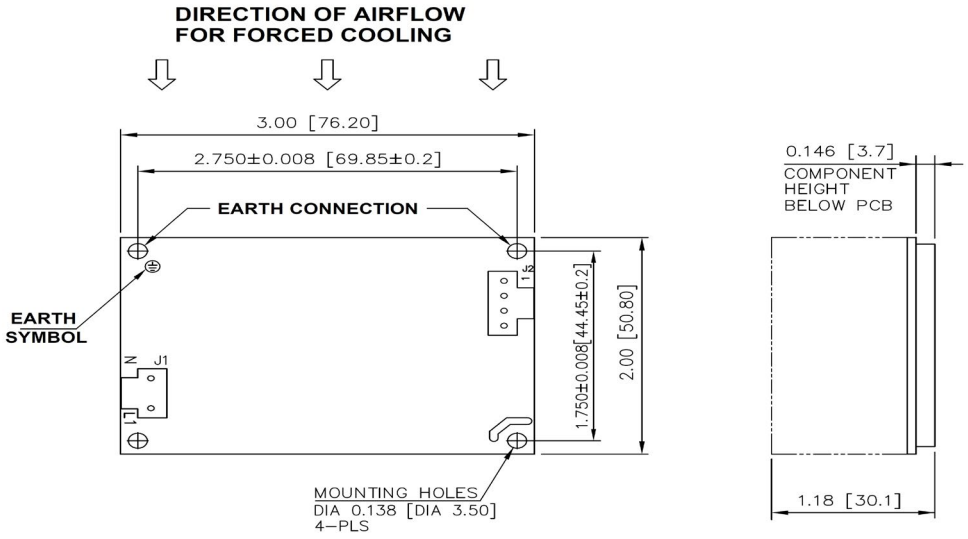
Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following
1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.

Innovations in Power

Tyco Header

Mechanical Drawing

Option -2



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE: ±0.06

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.
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