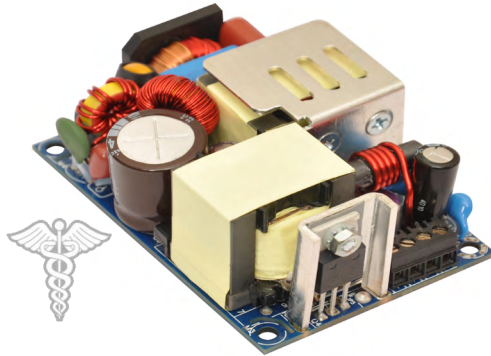




**MLP120 Medical**



Features

- 3" x 2" foot print
- Height 1" above PCB
- 120 Watts with Forced Air Cooling
- Approval to EN60601 3<sup>rd</sup> Edition
- Efficiencies upto 93%
- -40 to 70 degree operating temperature
- Dual fusing
- Thermal Shut-Down feature
- >3.00m Hours, Telcordia -SR332-issue 3
- Standby Power < 0.3W
- Class II option available

Electrical Specifications

Input Voltage	85-264 VAC/390 VDC <sup>5</sup> , 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	
Output Power	Forced cooling : 120W with 300LFM (refer mechanical 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	>110%	
Over Voltage Protection	110 to 140%, Latch type (AC recycling required)	
Short Circuit Protection	Hiccup mode	
Switching Frequency	60 KHz typical	
Operating Temperature*	-40 to +70°C	
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)	

Model Number	Description	Voltage	Max. Load (Convection)	Max. Load (300 LFM)	Min. Load	Ripple <sup>1</sup>
MLP120-1001	with Screw Terminal	12 V	8.33A	10.0A	0.0 A	1%
MLP120-1001-II	with Screw Terminal	12 V	8.33A	10.0A	0.0 A	1%
MLP120-1301	with Molex Header	12 V	8.33A	10.0A	0.0 A	1%
MLP120-1301-II	with Molex Header	12 V	8.33A	10.0A	0.0 A	1%
MLP120-1002	with Screw Terminal	15 V	6.66A	8.0A	0.0 A	1%
MLP120-1002-II	with Screw Terminal	15 V	6.66A	8.0A	0.0 A	1%
MLP120-1302	with Molex Header	15 V	6.66A	8.0A	0.0 A	1%
MLP120-1302-II	with Molex Header	15 V	6.66A	8.0A	0.0 A	1%
MLP120-1003	with Screw Terminal	24 V	4.16A	5.0A	0.0 A	1%
MLP120-1003-II	with Screw Terminal	24 V	4.16A	5.0A	0.0 A	1%
MLP120-1303	with Molex Header	24 V	4.16A	5.0A	0.0 A	1%
MLP120-1303-II	with Molex Header	24 V	4.16A	5.0A	0.0 A	1%
MLP120-1004	with Screw Terminal	48 V	2.08A	2.5A	0.0 A	1%
MLP120-1004-II	with Screw Terminal	48 V	2.08A	2.5A	0.0 A	1%
MLP120-1304	with Molex Header	48 V	2.08A	2.5A	0.0 A	1%
MLP120-1304-II	with Molex Header	48 V	2.08A	2.5A	0.0 A	1%
MLP120-1005	with Screw Terminal	30 V	3.33A	4.0A	0.0 A	1%
MLP120-1005-II	with Screw Terminal	30 V	3.33A	4.0A	0.0 A	1%
MLP120-1305	with Molex Header	30 V	3.33A	4.0A	0.0 A	1%
MLP120-1305-II	with Molex Header	30 V	3.33A	4.0A	0.0 A	1%
MLP120-1006	with Screw Terminal	58 V	1.72A	2.07A	0.0 A	1%
MLP120-1006-II	with Screw Terminal	58 V	1.72A	2.07A	0.0 A	1%
MLP120-1306	with Molex Header	58 V	1.72A	2.07A	0.0 A	1%
MLP120-1306-II	with Molex Header	58 V	1.72A	2.07A	0.0 A	1%
LP120-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  $\mu$ F (Tantalum capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.
2. Class II means without input Earth connection.
3. Specifications are for nominal input voltage, 25°C unless otherwise stated.
4. -40 to 0°C startup is guaranteed with spec deviation in output ripple and voltage regulation.
5. Functional, not approved.

### Mechanical Specifications

AC Input Connector (J1) Option 1	Molex: 39357-0003 Tyco-2-1776112-3	Option 2	Molex: 1722861103 (Mating conn: Molex 1722561003)
DC Output Connector (J2) Option 1	Molex: 39357-0004 Tyco-2-1776112-4	Option 2	Molex: 1722861104 (Mating conn: Molex 1722561004)
Dimensions	3 x 2 x 1.18 inches (76.2 x 50.8 x 30.1mm)		
Weight	150gm approx		

### EMC

CE Mark	Complies with LVD Directive
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B
Static Discharge	EN61000-4-2, Level-3
RF Field Susceptibility	EN61000-4-3, Level-3
Fast Transients/Bursts	EN61000-4-4, Level-3
Radiated Emissions	Level A radiated, Level B radiated with external core (King core K5B RC 25x12x15-M in input cable with 5 Turns)
Surge Susceptibility	EN61000-4-5, Level-3
Harmonic Current	EN61000-3-2, Class D

### Safety

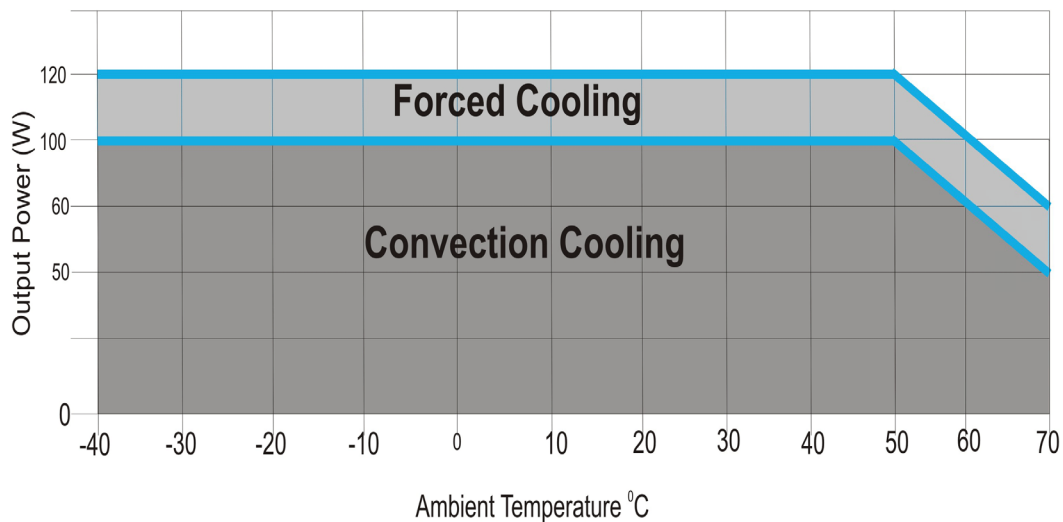
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1
Approval Agency	Nemko, UL, C-UL
Safety File Number(s)	(Pending)

### Environmental

RoHS Version	MLP120 series meet RoHS compliance as per european RoHS directive (Directive 2011 / 65 / EU)
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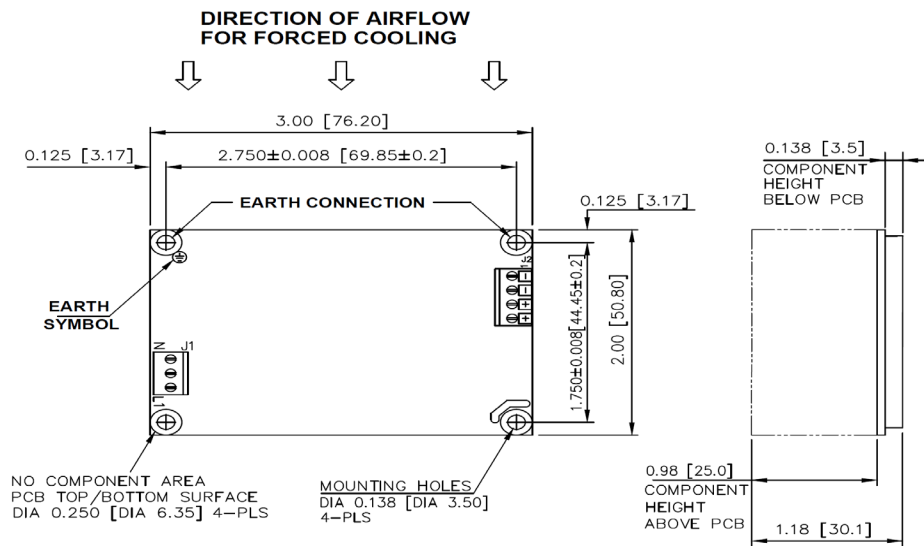
### Derating Curve

12V,15V,24V,30V,48V,58V Output



### Mechanical Drawing

#### Option -1

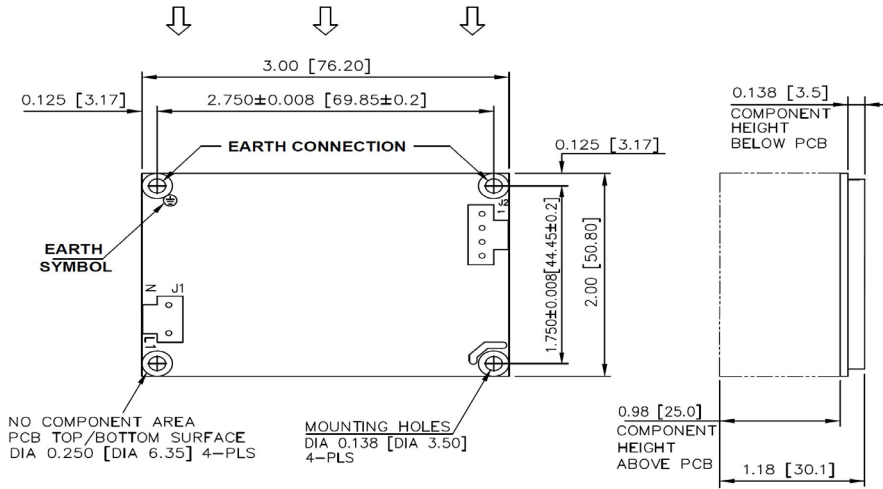


MECHANICAL OUTLINE DIMENSIONS  
ALL DIMENSIONS ARE IN INCHES[MM]  
GEN TOLERANCE: ±0.04 [±1.0MM]

Mechanical Drawing

Option -2

DIRECTION OF AIRFLOW  
FOR FORCED COOLING



MECHANICAL OUTLINE DIMENSIONS  
ALL DIMENSIONS ARE IN INCHES[MM]  
GEN TOLERANCE: ±0.04 [±1.0MM]



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