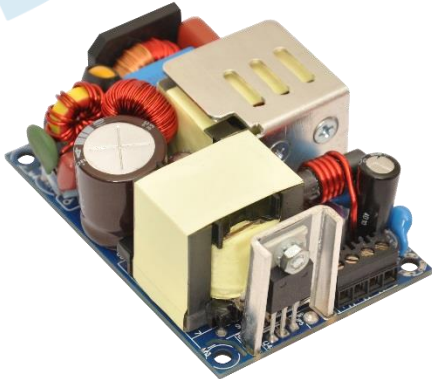


# MBC120 Series Low Profile Medical Open Frame Power Supplies



## Key Features & Benefits

- 3 x 2 Footprint
- 120 Watts with Forced Air Cooling
- Approval to EN60601 3<sup>rd</sup> Edition
- Efficiencies up to 93%
- -40 To 70 Degree Operating Temperature
- Dual Fusing
- Thermal Shut-Down Feature
- >3.00 Million Hours, Telcordia -SR332-Issue 3
- Standby Power < 0.3W
- Class II Option Available
- RoHS Compliant
- CE Marked

The MBC120 Series of open frame medical power supplies feature a wide universal AC input range of 85 V – 264 VAC, offering 120 W of output power in a compact footprint, with a variety of isolated single output voltages.

The MBC series was designed to 3rd edition medical approvals and provides 2x MOPP (Means of Patient Protection) isolation for Class I and Class II installations.

These power supplies are ideal for medical, telecom, Datacom, industrial equipment and other applications.

## Applications

- Diagnostic
- Drug Pump
- Dialysis
- Home Health Care
- Monitoring
- Portable Equipment

### North America

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### Asia-Pacific

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### Europe, Middle East

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# MBC120 Series

## Model Selection

MODEL NUMBER <sup>2</sup>	DESCRIPTION	VOLTAGE	MAX. LOAD (CONVECTION)	MAX. LOAD (200 LFM)	MIN. LOAD	RIPPLE & NOISE <sup>1</sup>
MBC120-1T12L	Screw Terminal	12 V	8.33 A	10.0 A	0.0 A	1%
MBC120-1012L	Molex Header					
MBC120-1T15L	Screw Terminal	15 V	6.66 A	8.0 A	0.0 A	1%
MBC120-1015L	Molex Header					
MBC120-1T24L	Screw Terminal	24 V	4.16 A	5.0 A	0.0 A	1%
MBC120-1024L	Molex Header					
MBC120-1T30L	Screw Terminal	30 V	3.33 A	4.0 A	0.0 A	1%
MBC120-1030L	Molex Header					
MBC120-1T48L	Screw Terminal	48 V	2.08 A	2.5 A	0.0 A	1%
MBC120-1048L	Molex Header					
MBC120-1T58L	Screw Terminal	58 V	1.72 A	2.07 A	0.0 A	1%
MBC120-1058L	Molex Header					
COVER-120-XBC	metal cover kit accessory					

<sup>1</sup> 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.

<sup>2</sup> For Class II Option (without input Earth pin) add suffix: -2 (e.g.: MBC120-1012L-2).

# MBC120 Series

## TECHNICAL PARAMETERS

Specifications are for nominal input voltage, 25°C unless otherwise stated.

### Input Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input Voltage	Universal (see derating under output power)	85-264 VAC / 390 VDC <sup>3</sup>
Input Frequency		47-63 Hz
Input Current	115 VAC: 230 VAC:	1.2 A max. 0.65 A max.
No Load Power	Typical	< 0.3 W
Inrush Current	115 VAC: 230 VAC: 264 VAC:	25 A 45 A 75 A
Leakage Current	Typical (N.A. For Class II Option) Touch current	300 uA <100 uA
Power Factor	@ Full Load	> 0.95
Switching Frequency	Typical	60 KHz

<sup>3</sup> Functional, not approved.

### Output Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power	With 200 LFM: Convection:	120 W Up to 100 W
Efficiency	48 V, 58 V: 24 V, 30 V: 12 V, 15 V:	93% 91% 90%
Hold-up Time	Typical	>10 ms
Line Regulation		+/-0.5%
Load Regulation		+/-1%
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50 Hz = 4%	recovery time < 5 ms
Voltage Adjustment		+/-3%
Rise Time	Typical	55 ms
Set Point Tolerance		+/-1%
Over Current Protection		> 110%
Over Voltage Protection	Latch type (AC recycling required)	110 to 140%
Short Circuit Protection	Hiccup mode	

### Environmental Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Startup guaranteed, derate linearly above 50°C to 70°C as per Fig 1.	-40 to +70°C -40 to 0°C
Storage Temperature		-40 to +85°C
Cooling	Forced: with 300 LFM (Refer to Mech. Drawing) Convection: for input 100-264 VAC (derate linearly to 80W @ 85VAC)	120 W 100 W
Relative Humidity	Noncondensing	5% to 95%
Altitude	Operating: Nonoperating:	16,000 ft 40,000 ft.
Reliability	MTBF according to Telcordia -SR332-Issue 3	3.00 million hours

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# MBC120 Series

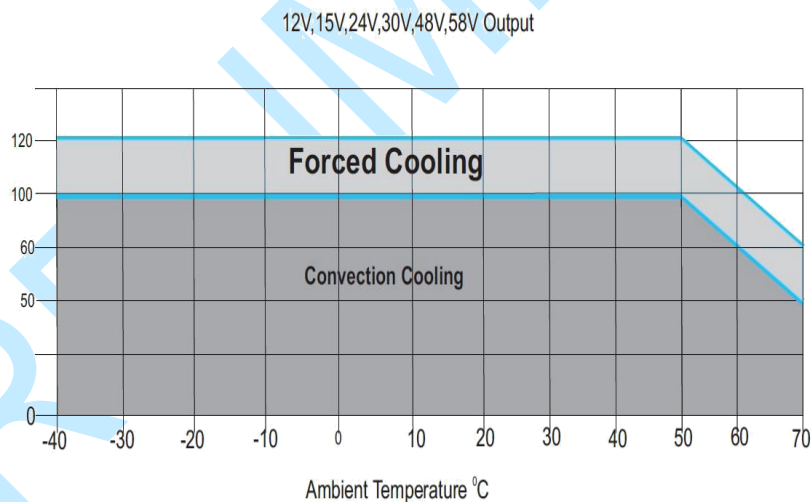
## EMC Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
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	Radiated:	Level A
	Radiated with external core: (King core K5B RC 25x12x15-M in input cable with 5 Turns)	Level B
Surge Susceptibility	EN61000-4-5:	Level-3
Harmonic Current	EN61000-3-2:	Class D

## Safety Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output: (For medical applications)	4000 VAC
	Input to GND: (Not Applicable For Class II Option)	1500 VAC
	Output to GND: for type BF for type B (N/A For Class II Option)	1500 VAC 500 VAC
Safety Standard(s)	Approved to the latest edition of the following standards: CSA/UL60601-1, EN60601-1 and IEC60601-1.	
Agency Approvals	Nemko, UL, C-UL	
CE mark	Complies with LVD Directive	

Figure 1 – Derating Curve



## Connector & Pin Description

CONNECTOR	PIN	DESCRIPTION / CONDITION	MANUFACTURER / PN
AC Input Connector	J1	Pin 1	AC Line
		Pin 2	Not Fitted
		Pin 3	AC Neutral
DC Output Connector	J2	Pin 1, 2	V1 +VE
		Pin 3, 4	V1 - VE

Options for connectors:

- AC Input Connector: Screw Terminal (Option 1) or Molex Header (Option 2)
- DC Output Connector: Screw Terminal (Option 1) or Molex Header (Option 2)

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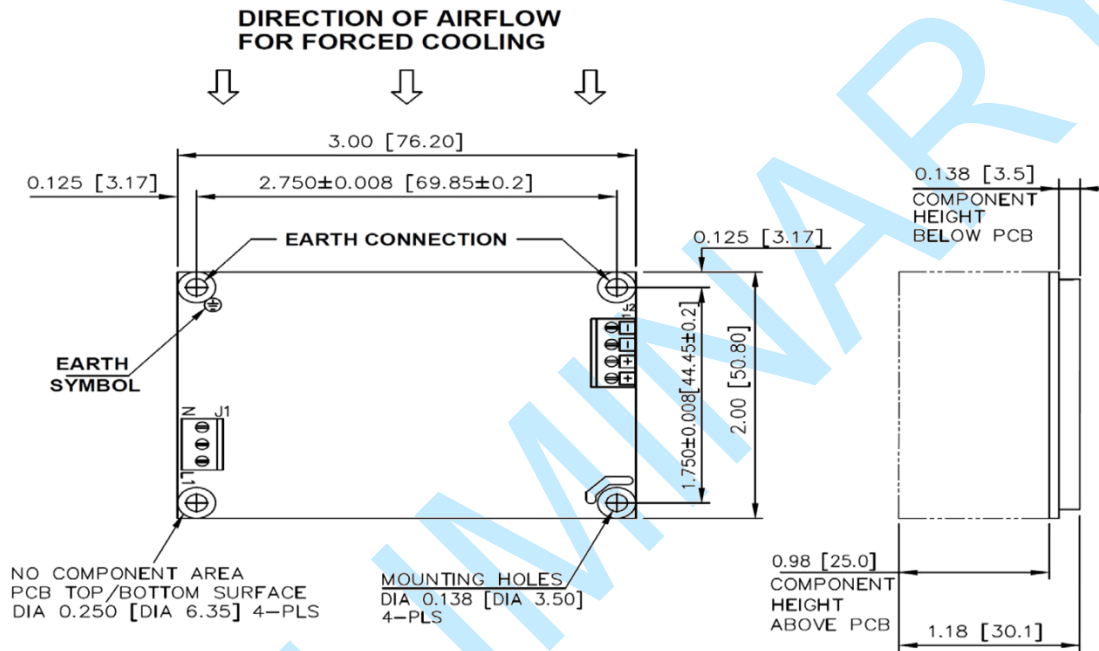
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# MBC120 Series

## Mechanical Specifications

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g
Dimensions	76.2 x 50.8 x 30.1 mm (3 x 2 x 1.18 inch)

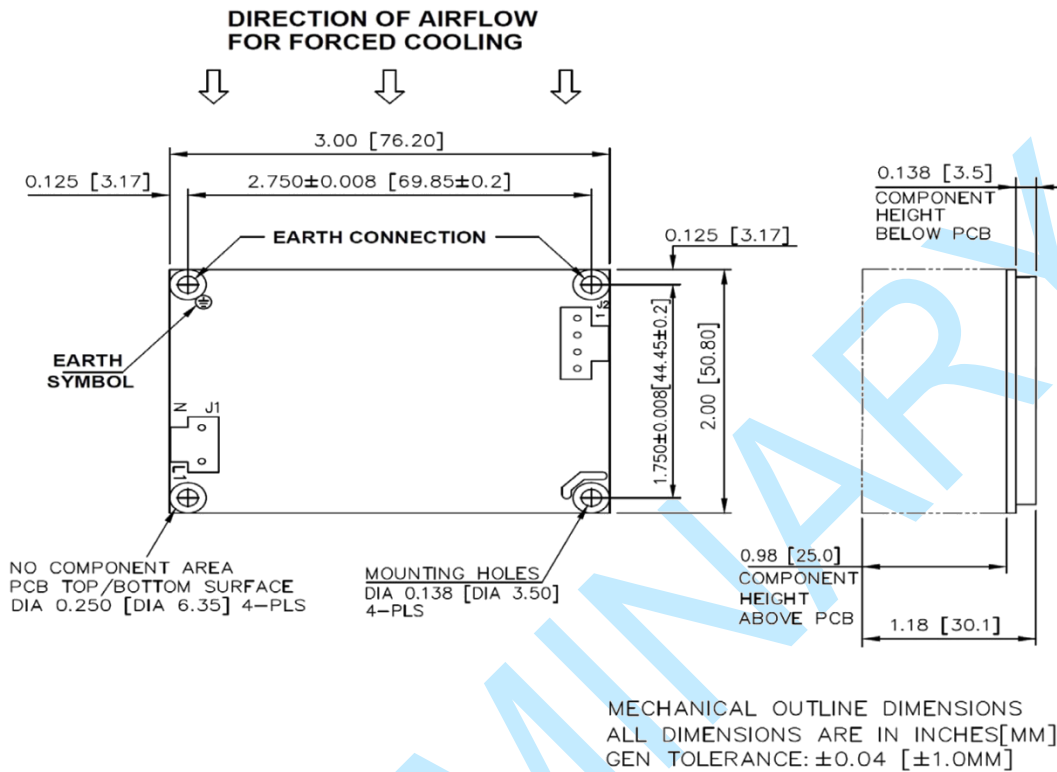
Figure 2 - Mechanical Drawing - Screw Terminal (Option 1)



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

# MBC120 Series

Figure 3 - Mechanical Drawing - Molex Header (Option 2)



For more information on these products consult: [tech.support@psbel.com](mailto:tech.support@psbel.com)

**NUCLEAR AND MEDICAL APPLICATIONS** - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.