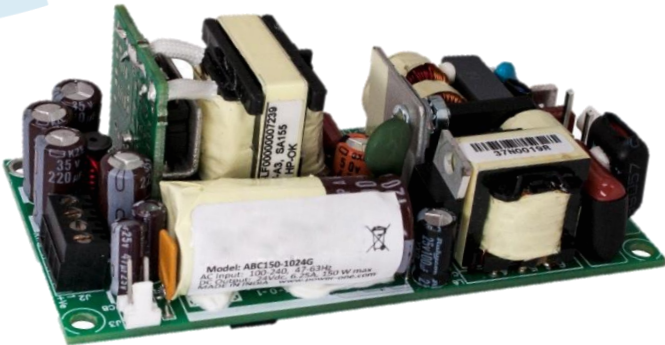


MBC150 Series AC-DC Open Frame Medical Power Supplies



Key Features & Benefits

- 110 W convection cooled
- 90-264 VAC input
- -20 to 50°C full load operation
- 2x MOPP Isolation
- 4.0 x 2.0 x 1.3 inch (101.6 x 50.8 x 33.6 mm)
- No minimum load required
- Fan output, 12 VDC @ 0.5 A standard
- IEC Protection Class Options:
 - Class I: Earthing Tab J4 (no suffix)
 - Class II: No Earthing Tab (-2 suffix)
- Conducted EMI EN 55022-B, FCC Part 15 Level B
- Medical Safety Agency Approvals
 - CE marked

The **MBC150 Series** of open-frame medical power supplies, with its wide universal 90-264 VAC input range, is available at 150 W of output power and a variety of single output voltages. The MBC series was designed to 3rd edition medical approvals and provides 2x MOPP (Means of Patient Protection) isolation for class 1 and class 2 installations.

These medical power supplies are ideal for monitoring, home health equipment as well as surgical devices.

Applications

- Dialysis
- Monitoring
- Pumps
- Surgical Devices
- Home Health
- Portable Devices

North America

+1-866.513.2839

Asia-Pacific

+86.755.29885888

Europe, Middle East

+353 61 225 977

MBC150 Series

Model Selection

MODEL	OUTPUT VOLTAGE (VDC)	MAX LOAD CONVECTION ¹	MAX LOAD 300 LFM ^{1,2}	MINIMUM LOAD (A)	RIPPLE & NOISE ⁴	CONNECTOR	TOTAL REGULATION
MBC150-1005G	5.0	16.0 A	16.0 A	0	1%	JST	± 2.5%
MBC150-1005G-2	5.0	16.0 A	16.0 A	0	1%	JST	± 2.5%
MBC150-1T05G	5.0	16.0 A	20.0 A	0	1%	Screw Terminal	± 2.5%
MBC150-1T05G-2	5.0	16.0 A	20.0 A	0	1%	Screw Terminal	± 2.5%
MBC150-1012G	12	8.33 A	12.5 A	0	1%	JST	± 2.5%
MBC150-1012G-2	12	8.33 A	12.5 A	0	1%	JST	± 2.5%
MBC150-1T12G	12	8.33 A	12.5 A	0	1%	Screw Terminal	± 2.5%
MBC150-1T12G-2	12	8.33 A	12.5 A	0	1%	Screw Terminal	± 2.5%
MBC150-1015G	15	6.67 A	10.0 A	0	1%	JST	± 2.5%
MBC150-1015G-2	15	6.67 A	10.0 A	0	1%	JST	± 2.5%
MBC150-1T15G	15	6.67 A	10.0 A	0	1%	Screw Terminal	± 2.5%
MBC150-1T15G-2	15	6.67 A	10.0 A	0	1%	Screw Terminal	± 2.5%
MBC150-1024G	24	4.17 A	6.25 A	0	1%	JST	± 2.5%
MBC150-1024G-2	24	4.17 A	6.25 A	0	1%	JST	± 2.5%
MBC150-1T24G	24	4.17 A	6.25 A	0	1%	Screw Terminal	± 2.5%
MBC150-1T24G-2	24	4.17 A	6.25 A	0	1%	Screw Terminal	± 2.5%
MBC150-1048G	48	2.08 A	3.13 A	0	1%	JST	± 2.5%
MBC150-1048G-2	48	2.08 A	3.13 A	0	1%	JST	± 2.5%
MBC150-1T48G	48	2.08 A	3.13 A	0	1%	Screw Terminal	± 2.5%
MBC150-1T48G-2	48	2.08 A	3.13 A	0	1%	Screw Terminal	± 2.5%
Vfan (all models)	12	0.5 A ³	0.5 A ³				20%

Warranty 2 years.

NOTES:

- ¹ Combined power from main output and Vfan should not exceed total power rating.
- ² Fan output tolerance is ± 20%.
- ³ Peak current for fan output is 1A.
- ⁴ Ripple is 2% up to 20% load and less than 1% above 20% load. Output noise measurement is made with a 20 MHz bandwidth using a 6" twisted pair, terminated with a 10 uF tantalum capacitor in parallel with a 0.1 uF ceramic capacitor.

MBC150 Series

TECHNICAL PARAMETERS

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

Input Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Input Voltage	Universal	90-264 VAC / 120-390 VDC
Input Frequency		47 to 63 Hz
Input Surge Current	230 VAC (cold start)	65 A max.
Safety Ground Leakage Current	264 VAC, 50/60 Hz	250 μ A max
Input Current	120 VAC @ Full load	1.7 A rms
	230 VAC @ Full load	0.85 A rms

Output Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Voltage Adjustment	V1	$\pm 3 \%$
Efficiency	Typical	$>86 \%$
Hold Up Time	120 VAC	6 ms
	230 VAC	10 ms
Transient Response	Main output 50 to 100% load change, 50 Hz, 50% duty cycle, 0.1A / μ Sec	$< 10\%$, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Accuracy	Main output	$\pm 1\%$
Over Voltage Protection	V1	110 to 150 % rated max.
Over Current Protection	Rated output current	110% Typical
Short Circuit Protection	Automatic recovery	

Other Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Isolation Voltage	Input to Output:	4242 VDC
	Input to Ground:	2120 VDC
Switching Frequency	PFC converter (variable)	35 - 250 kHz, 90 kHz typical
	Resonant converter (variable)	35 - 250 kHz, 90 kHz typical
Reliability	MTBF according to Bellcore TR-332	>200 kh
Operating Temperature	See derating graphs, Figure 1	-20 to 70°C
Storage Temperature		-40 to 70° C

MBC150 Series

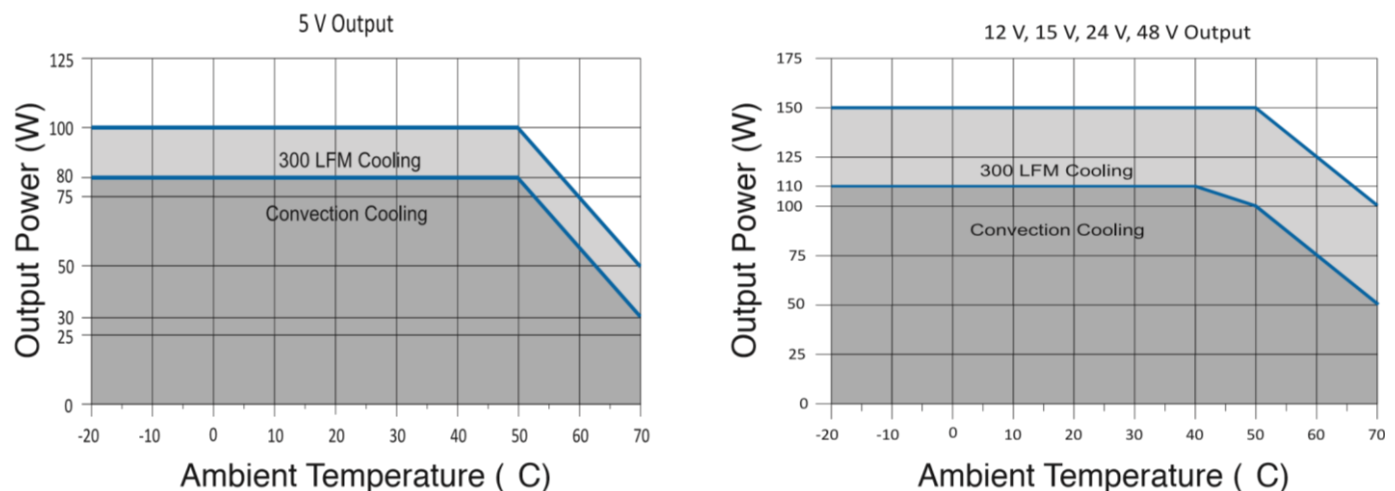
Environmental

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Conducted Emissions	EN55022, FCC part 15 Level B	
Radiated Emissions	EN55022, FCC part 15 Level B	To be controlled in end system
Harmonic Current	EN61000-3-2	Class D
Electromagnetic Susceptibility	EN61000-4-2	2, 3, 4, 5 Level 3
Humidity	Non Condensing	95%
Altitude	Operating: Non-Operating:	10,000 ft. 40,000 ft.

Safety Approvals

PARAMETER	DESCRIPTION/CONDITION
Agency Approvals	Approved to the latest edition of the following standards: CSA/UL60601-1, EN60601-1 and IEC60601-1
CE mark	Complies with LVD Directive

Figure 1 - Output Power Vs. Temperature



Connector & Pin Description

CONNECTOR	PIN	DESCRIPTION / CONDITION	MANUFACTURER / PN
AC Input Connector	J1	Pin 1 AC Line Pin 2 AC Neutral	Mating Connector: Molex: 09-50-3031 Pins: 08-50-0106
DC Output Connector	J2	Pin 1,2 V1 Pin 3,4 RTN	Mating Connector: JST VHR-4M Pins: SVH-41T-P1.1; AWG #20 to #16
Fan	J3	Pin 1 +12 V / 0.5 A Pin 2 Fan return (isolated from DC output)	Mating Connector: Tyco: 640440-2
Earthing Tab	J4		Molex: 19705-4301 Mating Connector: Molex: 190030001

866.513.2839

tech.support@psbel.com

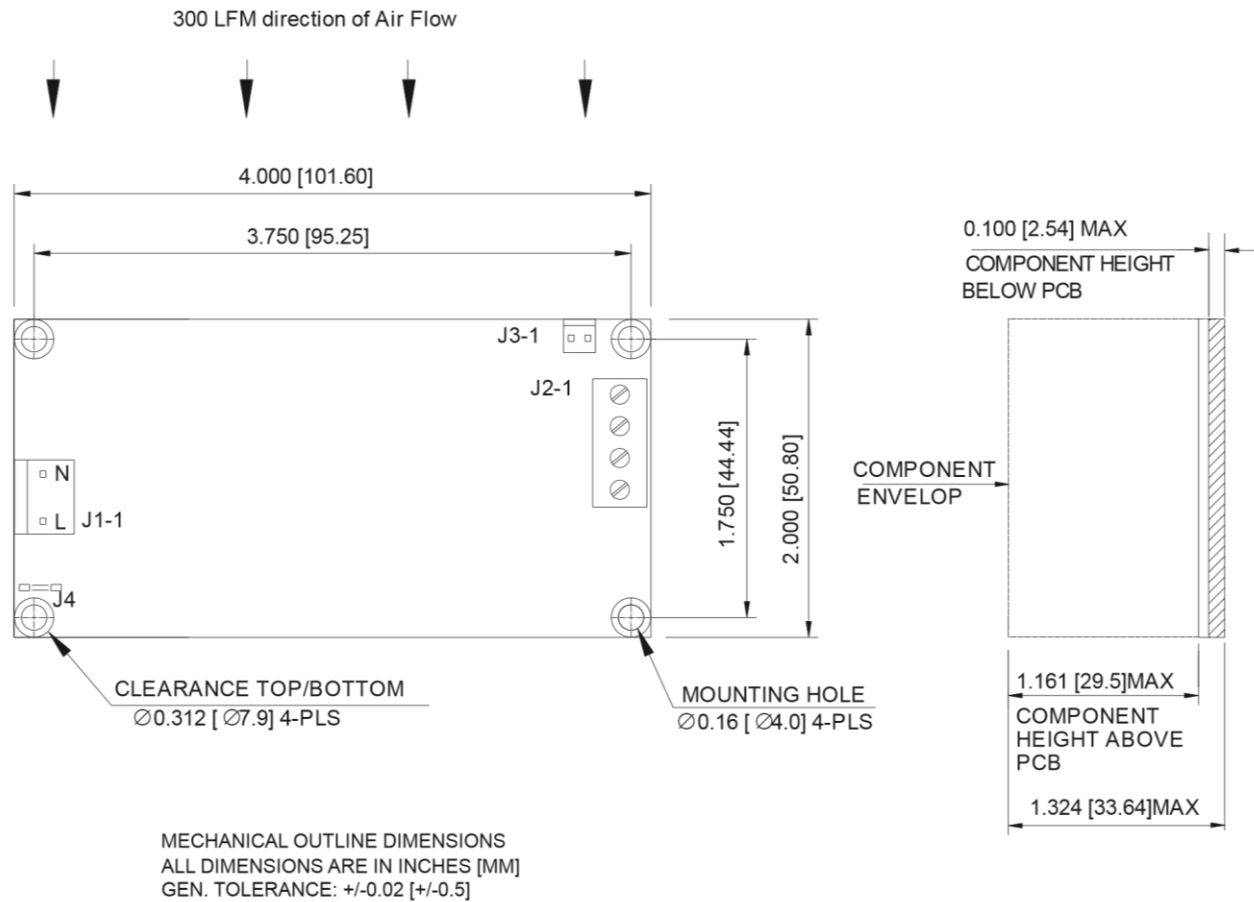
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MBC150 Series

Mechanical

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g (0.33 lbs.)
Dimensions	101.6 x 50.8 x 33.6 mm (4.0 x 2.0 x 1.3 inch)

Figure 2 - Mechanical Drawing (Top and Side View)



NOTE: Air flow over length of supply recommended (either direction) for forced air rating.

For more information on these products consult: 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.