

MBC60 Series AC-DC Open Frame Medical Power Supplies



Key Features & Benefits

- 60 W convection cooled
- 90-264 VAC input
- -20 to 50°C full load operation
- 2 x MOPP
- 4.0 x 2.0 x 1.2 inch (101.6 x 50.8 x 30.48 mm)
- No minimum load required - single output models
- No load power < 0.3 W
- 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 **MBC60 Series** of open-frame medical power supplies, with its wide universal 90-264 VAC input range, is available at 60 W of output power and a variety of single and multiple 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
Ultrasound

North America

+1-866.513.2839

Asia-Pacific

+86.755.29885888

Europe, Middle East

+353 61 225 977

MBC60 Series

Model Selection

MODEL	OUTPUT VOLTAGE (VDC) ¹	OUTPUT CURRENT MAX (A)	MINIMUM LOAD (A) ³	RIPPLE & NOISE ²	TOTAL REGULATION	OVP THRESHOLD
MBC60-1005G	5.1	10.0	0.0	1%	± 0.8%	130% Typical
MBC60-1012G	12	5.0	0.0	1%	± 0.8%	130% Typical
MBC60-1015G	15	4.0	0.0	1%	± 0.8%	130% Typical
MBC60-1024G	24	2.5	0.0	1%	± 0.8%	130% Typical
MBC60-1048G	48	1.25	0.0	1%	± 0.8%	130% Typical
MBC60-3000G	5.2	8.0	0.5	1%	± 0.8%	130% Typical
	12.5	3.0	0.1	1%	± 5.3%	
	-12.8	0.5	0.0	1%	± 5.3%	
MBC60-3001G	5.2	8.0	0.5	1%	± 0.8%	130% Typical
	24.0	1.5	0.1	1%	± 5.3%	
	-12.8	0.5	0.0	1%	± 5.3%	
MBC60-3002G	5.2	8.0	0.5	1%	± 0.8%	130% Typical
	14.6	2.5	0.1	1%	± 5.3%	
	-14.8	0.5	0.0	1%	± 5.3%	
MBC60-3003G	3.3	8.0	1.0	1.5%	± 0.8%	130% Typical
	5.2	3.0	0.1	1%	± 5.3%	
	-12.8	0.5	0.0	1%	± 5.3%	

Warranty 2 years.

NOTES:

- ¹ Maximum outputs for each output. Max power rating should not be exceeded.
- ² 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.
- ³ Minimum load specified to meet cross regulation.

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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 Input	90 - 264 VAC
Input Frequency ⁴		47 to 400 Hz
Input Surge Current	264 VAC (cold start)	40 A max.
Safety Ground Leakage Current	264 VAC, 50/60 Hz	250 µA max.
Input Current	120 Vac @ Full load	1.5 A
	230 Vac @ Full load	0.75 A

⁴ Safety Approved: 47 to 63 Hz.

Output Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Voltage Adjustment	V1	± 10%
Efficiency		>85%
Hold Up Time	120 VAC input	6 ms
Remote Sense	V1	0.5 VDC compensation
Transient Response	Main output 50 to 100% load change, 50/60 Hz, 50% duty cycle, 0.1A / us	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Tolerance	V1:	± 3%
	V2 & V3:	± 5%
Over Voltage Protection	Typical	130%
Short Circuit Protection	Typical	130%

Other Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Isolation Voltage	Input to Output:	4242 VDC
	Input to Ground:	2120 VDC
Switching Frequency	Typical	67 kHz
Reliability	MTBF according to MIL-HDBK-217F	>100 kh
Operating Temperature	Full Load	-20 to 50°C
	Derate linearly to 50% at 70° C	50 to 70°C
Storage Temperature		-40 to 70° C

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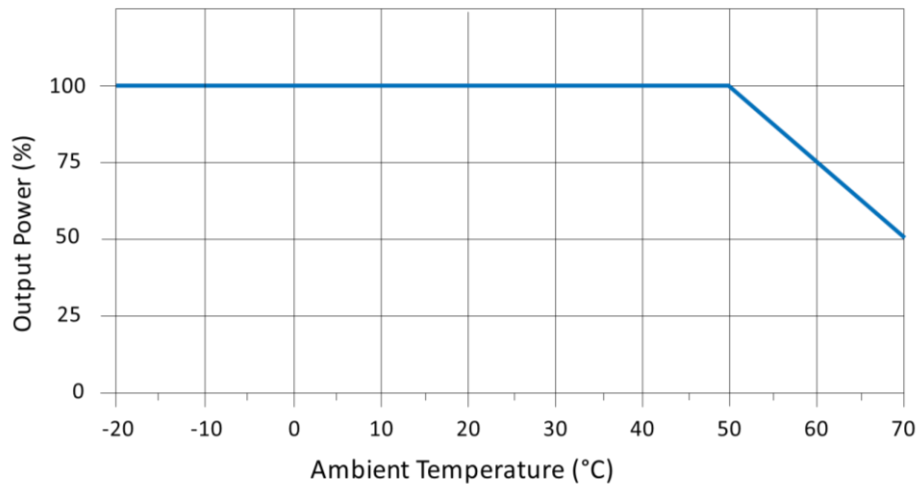
Environmental

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
Electromagnetic Susceptibility	EN61000-4-2	2, 3, 4, 5 Level 3
Harmonic Current	EN61000-3-2	Class A
Humidity	Non Condensing	95%
Altitude	Operating:	10,000 ft.
	Non-Operating:	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

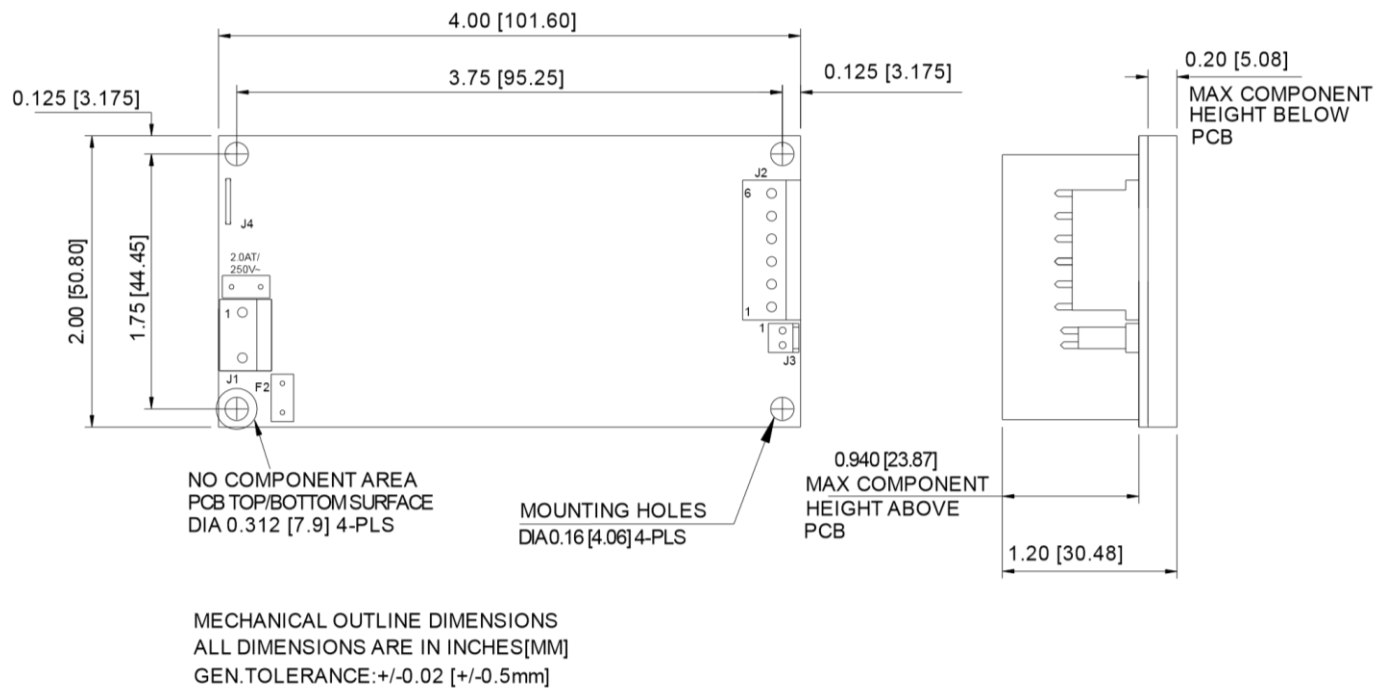
CONNECTOR	PIN	DESCRIPTION/CONDITION	MANUFACTURER / PN
AC Input Connector	J1	Pin 1 AC Neutral	Mating Connector: Molex: 09-50-3031 Pins: 08-50-0106
		Pin 2 AC Line	
DC Output Connector	J2	Pin 1,2 V1	Mating Connector: Tyco: 647402-6 Pins: 3-647409-1
		Pin 3,4 RTN	
		Pin 5 V3	
		Pin 6 V2	
Remote Sense	J3	Pin 1 +V1 Sense	Mating Connector: Molex: 22-01-2021
		Pin 2 -V1 Sense	
Earthing Tab	J4		Molex: 19705-4301
			Mating Connector: Molex: 190030001

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Mechanical

PARAMETER	DESCRIPTION/CONDITION
Weight	150 g (0.33 lbs.)
Dimensions	101.6 x 50.8 x 30.48 mm (4 x 2 x 1.2 inch)

Figure 2 - Mechanical Drawing (Top and Side View)



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.