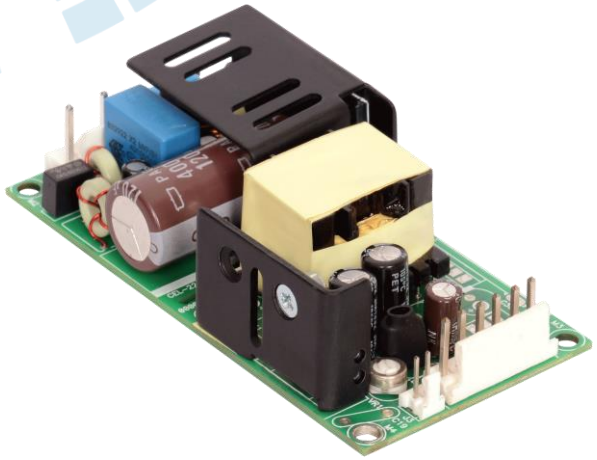
MBC60 Series
AC-DC Open Frame
Medical Power Supplies



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.

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

Applications

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

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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	5.4	0.0	1%	± 0.8%	130% Typical
MBC60-1015G	15	4.33	0.0	1%	± 0.8%	130% Typical
MBC60-1024G	24	2.7	0.0	1%	± 0.8%	130% Typical
MBC60-1048G	48	1.35	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	6.0	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 Current	120 VAC: 230 VAC:	1.5 A max. 0.75 A max.
No Load Power	Single output models Multi output models	< 0.3 W < 0.5 W
Inrush Current	120 VAC: 230 VAC:	30 A max. 60 A max.
Leakage Current	120 VAC: 230 VAC:	< 140 µA < 250 µA

[4] Safety Approved: 47 to 63 Hz.

Output Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Efficiency	Typical	85%
Hold Up Time	120 / 230 VAC	6 ms
Output Power		50 to 65 W
Line Regulation		+/-0.3%
Load Regulation	V1: V2 & V3:	+/-0.5% +/-5%
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: V2 & V3:	± 3% ± 5%
Voltage Adjustment	V1	± 10%
Remote Sense	V1	0.5 VDC compensation
Over Current Protection	Typical above rating	130%
Over Voltage Protection	Typical for V1 only	130%
Short Circuit Protection	Short term, auto recovery	

Other Specifications

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Isolation Voltage	Input to Output, 2M0PP Input to Ground, 1M0PP Output to Ground	Min. 5700 VDC 1500 VAC 500 VAC
Switching Frequency	Typical	67 kHz
Reliability	MTBF according to Telcordia -SR332-Issue 3	1.87 million hours
Operating Temperature	Refer to derating curve Start-up is guaranteed	-20 to 70°C -20 to 0°C
Storage Temperature		-40 to 85°C

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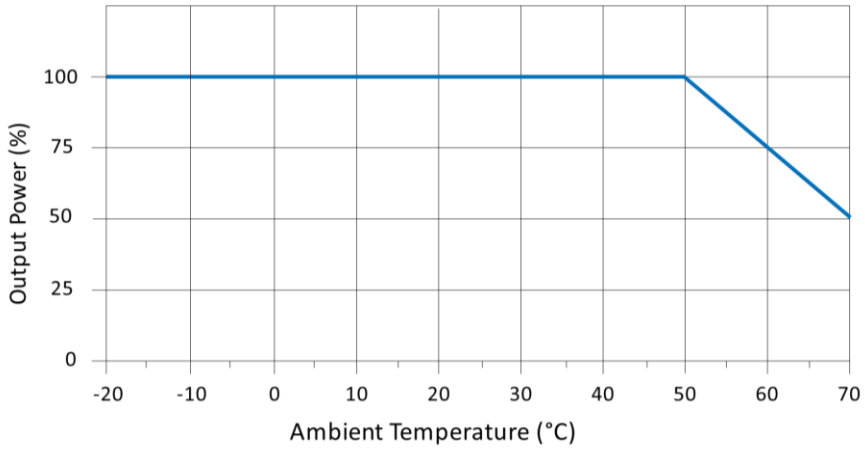
Environmental

PARAMETER	DESCRIPTION / CONDITION	CRITERION
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B	
Radiated Emissions	EN55022-B, CISPR22-B, FCC PART15-B	To be controlled in end system
Harmonic Current	EN61000-3-2	Class A
Static Discharge	EN61000-4-2	Level 3
RF Field Susceptibility	EN61000-4-3	Level-3
Fast Transients/Bursts	EN61000-4-4	Level-3
Surge Susceptibility	EN61000-4-5	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 Neutral Pin 2 AC Line	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1,2 V1 Pin 3,4 RTN Pin 5 V3 Pin 6 V2	Tyco: 640445-6 or equivalent Mating: 647402-6; Pins: 3-647409-1
Remote Sense	J3	Pin 1 +V1 Sense Pin 2 -V1 Sense	Molex: 22-23-2021 or equivalent Mating: 22-01-2021
Earthing Tab	J4		Molex: 19705-4301 Mating: 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 MBC60-1xxxG

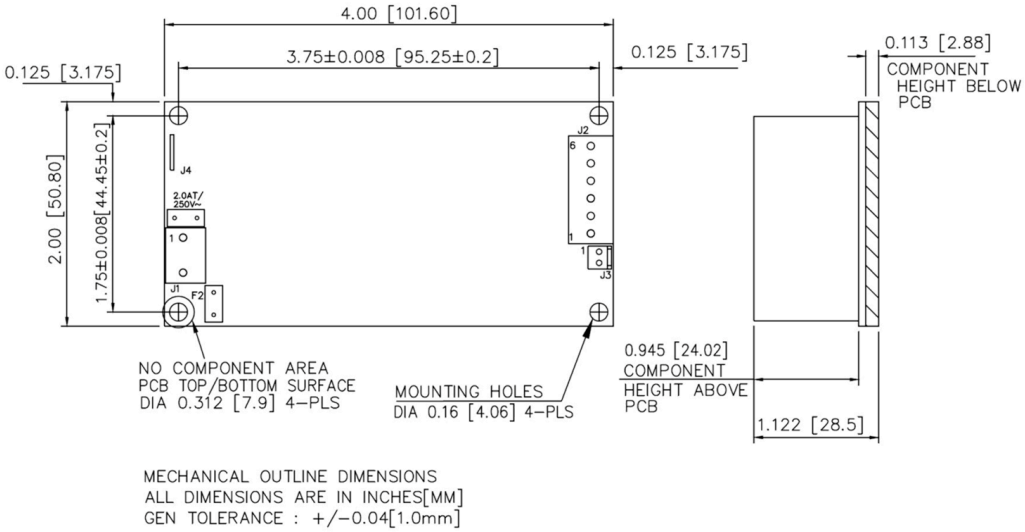
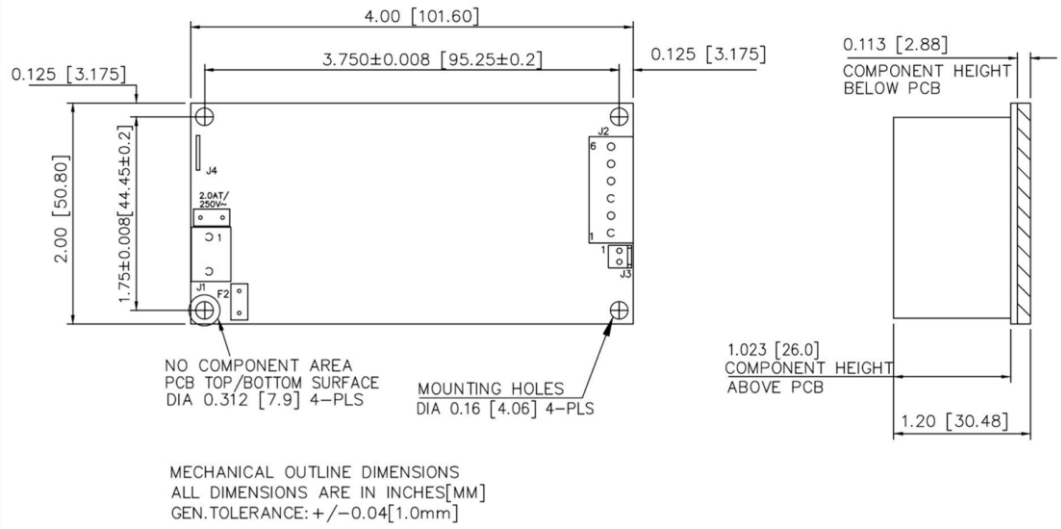


Figure 3 - Mechanical Drawing MBC60-3xxxG



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.

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