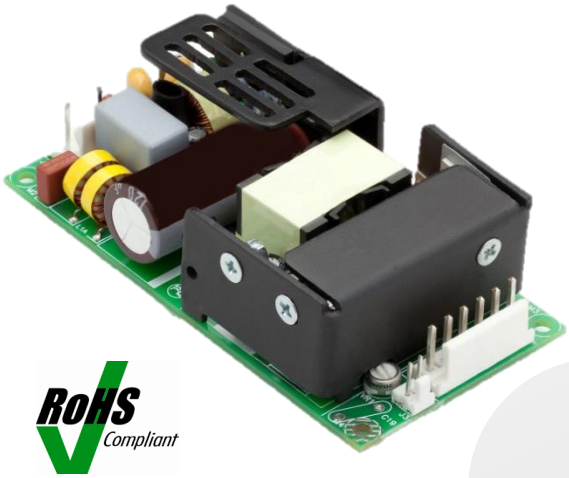
MBC40 SERIES MEDICAL 40W AC/DC



RoHS Compliant

FEATURES

- 40 W convection cooled
- -20 to 50 deg C full load operation
- 2 x MOPP
- 90-264 VAC input
- 2” x 4” x 1.2” (50.8mm x 101.6 mm x 30.5 mm)
- No minimum load required - single output models
- Conducted EMI EN 55022-B, FCC Part 15 Level B
- Medical Safety Agency Approvals
- No load power < 0.3 W

APPLICATIONS

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

TECHNICAL DATA:

Input

PARAMETER	DESCRIPTION/CONDITION	
Input Voltage Range	Universal Input	90 - 264 Vac
Input Frequency Range	47 to 400 Hz (3)	
Input Surge Current	230 Vac (cold start)	60 A max.
Safety Ground Leakage Current	264 Vac 50/60 Hz	250 µA max
Input Current:	120 Vac @ 40 W 230 Vac @ 40 W	0.85 A rms 0.45 A rms

Output

PARAMETER	DESCRIPTION/CONDITION	
Voltage Adjustment	V1	± 10%
Transient Response	Main output 50 to 100% load change, 50/60 Hz, 50% duty cycle, 0.1A / uSec	< 10%, recovery time < 5 mS
Over Voltage Protection	130% Typical (V1 only)	
Short Circuit Protection	130% Typical	
Remote Sense	V1	0.5 Vdc compensation
Efficiency	>85%	
Set Point Tolerance	V1: ± 0.5%, V2 & V3: ± 5%	
Rise Time	< 100 mSec	

Ordering Information

PRODUCT FAMILY	VOLTS (VDC)	OUTPUT CURRENT MAX (A)	MINIMUM LOAD (A) (4)	RIPPLE & NOISE	TOTAL REGULATION	OVP THRESHOLD
MBC40-1005G	5.1	8.0	0	1%	± 0.8%	130% Typical
MBC40-1012G	12	3.5	0	1%	± 0.8%	130% Typical
MBC40-1015G	15	2.7	0	1%	± 0.8%	130% Typical
MBC40-1024G	24	1.7	0	1%	± 0.8%	130% Typical
MBC40-1048G	48	0.83	0	1%	± 0.8%	130% Typical
MBC40-3000G	5.2	6.0	0.5	1%	± 0.8%	130% Typical
	12.5	2.0	0.1	1%	± 5.3%	
	-12.8	0.5	0.0	1%	± 5.3%	
MBC40-3001G	5.2	6.0	0.5	1%	± 0.8%	130% Typical
	24	1.0	0.1	1%	± 5.3%	
	-12.8	0.5	0.0	1%	± 5.3%	
MBC40-3002G	5.2	6.0	0.5	1%	± 0.8%	130% Typical
	14.6	1.5	0.1	1%	± 5.3%	
	-14.8	0.5	0.0	1%	± 5.3%	
MBC40-3003G	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%	

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. Safety Approved: 47 to 63 Hz.
4. Minimum load specified to meet cross regulation.
5. Specifications are for nominal input voltage, 25°C and max load unless otherwise stated.
6. Class 1 models have Earthing tab J4 Class 2 models (-2 suffix) have no Earthing tab.
7. Specifications subject to change without notice.
8. Warranty 2 years.

General Specifications

PARAMETER	DESCRIPTION/CONDITION	
Hold Up Time	6 mSec	120 Vac input
MTBF	>100 khrs	MIL-HDBK-217F
Switching Frequency	67 kHz Typical	
Isolation Voltage	Input to Output: Min 4242 Vdc	Input to Ground: Min 2120 Vdc
Weight	150 g (0.33 lbs)	

Environmental

PARAMETER	DESCRIPTION/CONDITION	
Operating Temperature	Operating	-20 to +70°C. See derating chart below.
	Storage	-40 to +85°C
Altitude	Operating 10,000 ft.	Non Operating 40,000 ft
Relative Humidity	95%	Non Condensing
Conducted Emissions	EN55022, FCC part 15 Level B	
Harmonic Current Correction	EN61000-3-2 Compliant Level 3	
Electromagnetic Susceptibility	EN61000-4-2 Level 3	2, 3, 4, 5 Level 3
Conducted Immunity	EN61000-4-6	

Safety

PARAMETER	DESCRIPTION/CONDITION
EN / UL / CSA	60601-1 3rd Edition

Figure 1 Output Power Vs. Temperature

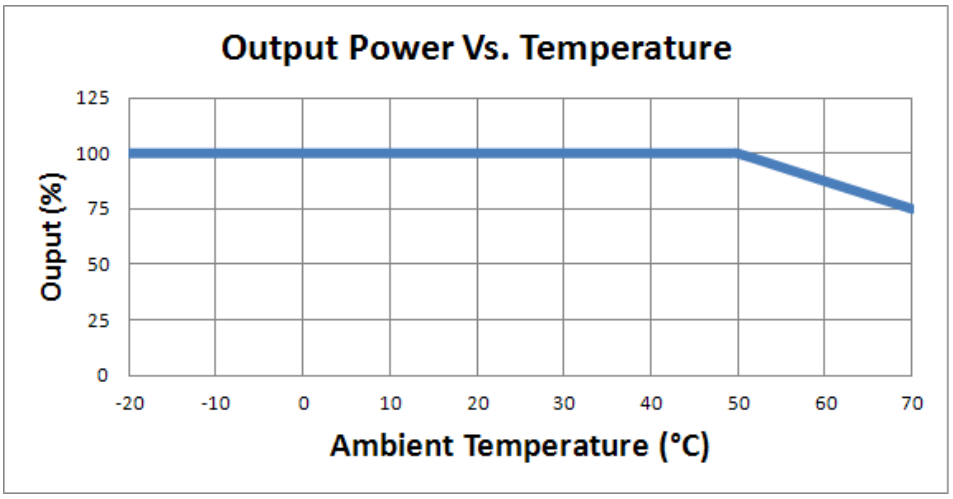
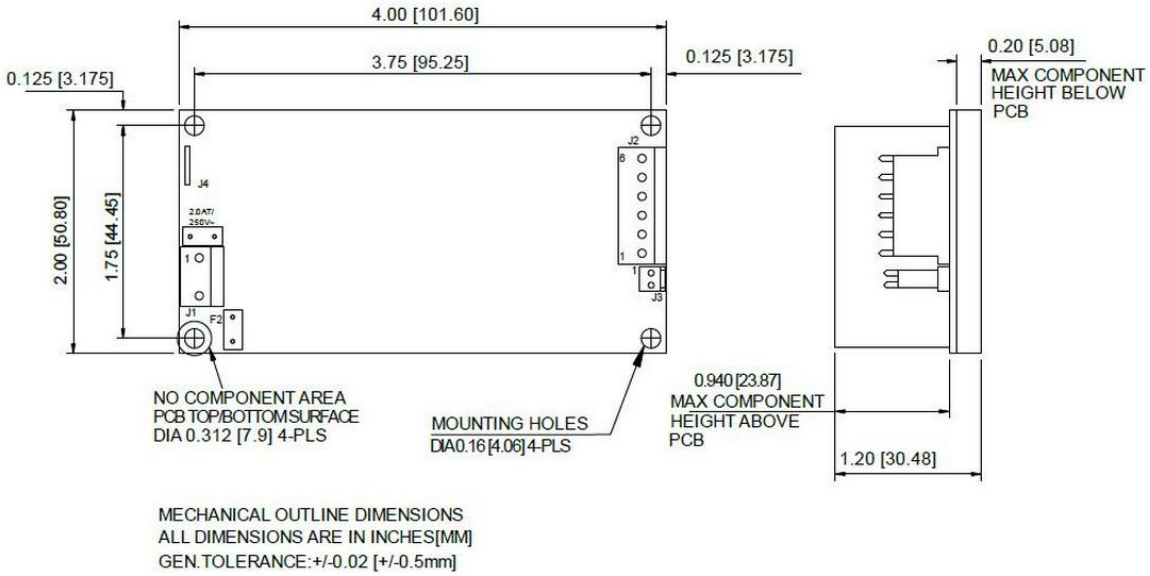


Figure 2 Dimension Drawing (Top and Side View)



Mechanical

INPUT = J1	EARTHING TAB = J4	DC OUTPUT = J2		REMOTE SENSE= J3
Pin 1: AC Neutral Pin 2: Removed Pin 3: AC Line	Molex: 19705-4301	Pin 1 = V1 Pin 2 = V1 Pin 3 = RTN	Pin 4 = RTN Pin 5 = V3 Pin 6 = V2	Pin 1 = +V1 Sense Pin 2 = -V1 Sense
Mating Connector: Molex: 09-50-3031 Pins: 08-50-0106	Mating Connector: Molex: 190030001	Mating Connector: Tyco: 647402-6; Pins: 3-647409		Mating Connector: Molex: 22-01-2021