

PR BX

POWERBOX **Medline 200**
 OBM08 Series
 200W
 Single Output
 AC/DC Medical Switch Mode Power Supply

Features

Fulfills IEC60601-1-2:2014 (EMC 4th edition)
 BF Class insulation
 Operation up to 5000 meters
 3 x 5 inch footprint with 1.5 inch low profile
 100-240 VAC input with active PFC
 Less than 220 μ A leakage current
 Meet EN55011 /55022 and FCC Class B
 Power Factor 0.98 typical
 Short-circuit protection
 Power Fail Detect (PFD) signal
 Inhibit - TTL high to disable output
 Compliant with RoHS requirements
 High Efficiency 92% typical

Input

Voltage range	90-264VAC.
Frequency	47-63Hz.
Current	2.5A (rms) for 115VAC. 1.25A (rms) for 230VAC.
Earth leakage current	220 μ A max. @ 264VAC, 63Hz.

Output

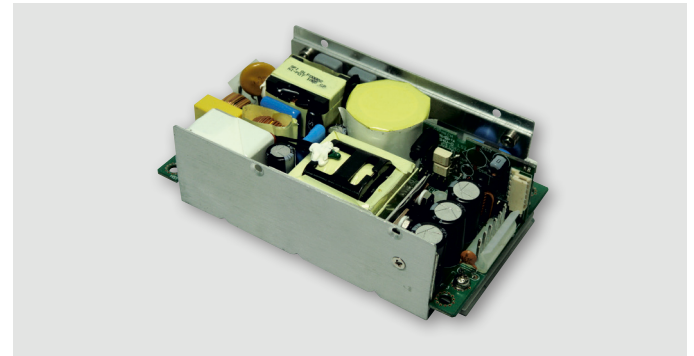
Power	200W max.
Voltage/current	See table.
Ripple and noise	1% peak to peak max.
Remote sense	Compensation for cable losses up to 0.5V.
Over voltage protection	Set at 112-140% of its nominal output voltage.
Over current protection	Output protected to short circuit condition.
Temperature coefficient	All output \pm 0.04%/°C max.
Transient response	Max excursion of 4% or better on all models, recovering to 1% of final value within 500 μ s after a 25% step load change.
Fan power	12V at 250mA max.

Environmental

Operating temperature	0°C to +70°C.
Storage temperature	-40°C to +85°C.
Relative humidity	5-95% non-condensing.
Derating	Derate from 100% at +50°C linearly to 50% at +70°C, applicable to convection and forced-air cooling conditions.
Operating altitude	Max 5000 m.

General

Switching frequency	100KHz.
Efficiency	87% min on all models.
Hold-up time	10ms min at 110VAC.
Line regulation	\pm 0.5% max at full load.



Inrush current	20A @ 115VAC, or 40A @ 230VAC, at 25°C cold start.
Withstand voltage	4000VAC from input to output (2MOPP). 1500VAC from input to ground (1MOPP). 1500 VAC from output to ground.
MTBF	300,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F.

Standards

Safety standards	UL 60601-1, CSA C22.2 No. 601.1, TÜV EN 60601-1.
EMC performance	
EN55011/EN55022	Class B conducted, class B radiated.
FCC	Class B conducted, class B radiated.
VCCI	Class B conducted, class B radiated.
EN61000-3-2	Harmonic distortion, class A and D.
EN61000-3-3	Line flicker.
EN61000-4-2	ESD, \pm 15 KV air and \pm 8 KV contact.
EN61000-4-3	Radiated immunity, 10V/m. Proximity test, 9V/m and 28V/m.
EN61000-4-4	Fast transient/burst, \pm 2 KV.
EN61000-4-5	Surge, \pm 1 KV diff., \pm 2 KV com.
EN61000-4-6	Conducted immunity, 10 Vrms (0.15 – 80 MHz). 10 Vrms ISM Bands + Amateurs.
EN61000-4-8	Magnetic field immunity, 30 A/m.
EN61000-4-11	Voltage dips: 100% drop, 0.5 periods. 100% dip, 1 period. 30% dip, 25/30 periods. Interruptions: 100% drop, 5 seconds

Interface Signals

PFD	TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to V1 output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after V1 is within regulation.
Inhibit	Requires an external TTL high level signal to inhibit outputs for standard models.

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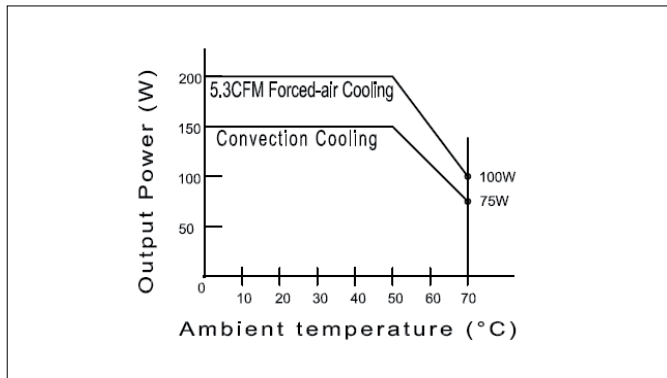
Model Number	Output Voltage	Min Current	Max Current At Convection	Max Current at 5.3 CFM ²⁾	Tol.	Ripple & Noise ³⁾	Max Output Power ²⁾	Eff. Typ @ 150W 115/230 VAC	Eff. Typ @ 200W 115/230 VAC
OBM08031B	12 V	0.1 A	12.50 A	16.67 A	±2%	120 mV	150 W /200 W	88 /91%	88 /90%
OBM08037B	15 V	0.1 A	10.00 A	13.34 A	±2%	150 mV	150 W /200 W	88 /91%	88 /91%
OBM08038B	18 V	0.1 A	8.34 A	11.12 A	±2%	180 mV	150 W /200 W	88 /91%	88 /91%
OBM08046B	24 V	0.1 A	6.25 A	8.34 A	±2%	240 mV	150 W /200 W	88 /91%	88 /91%
OBM08050B	28 V	0.1 A	5.36 A	7.15 A	±2%	280 mV	150 W /200 W	88 /91%	88 /91%
OBM08056B	32 V	0.1 A	4.69 A	6.25 A	±2%	320 mV	150 W /200 W	88 /91%	88 /91%
OBM08057B	36 V	0.1 A	4.17 A	5.56 A	±2%	360 mV	150 W /200 W	88 /91%	88 /91%
OBM08070B	48 V	0.1 A	3.13 A	4.17 A	±2%	480 mV	150 W /200 W	89 /92%	89 /92%

Notes:

1. Suffix "BN1" in model numbers denotes U-bracket form. Change suffix "BN1" to "CN1" for enclosed form with cover and fan assembly, e.g. OBM080046C.
2. 150 W without moving air or 200 W with 5.3 CFM forced air provided by user for "B" version, 200 W for "C" version with cover and fan assembly. The adequacy of cooling air is judged by the measured core temperature of transformer T1 below 75°C at 25°C ambient, or below 100°C at 50°C ambient.

3. Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 µF tantalum capacitor in parallel with a 0.1 µF ceramic capacitor across the output.
4. All models may be operated at no-load without damage. At no load, output voltage fluctuates beyond 5% due to the burst-mode operation of the control IC in them for energy saving

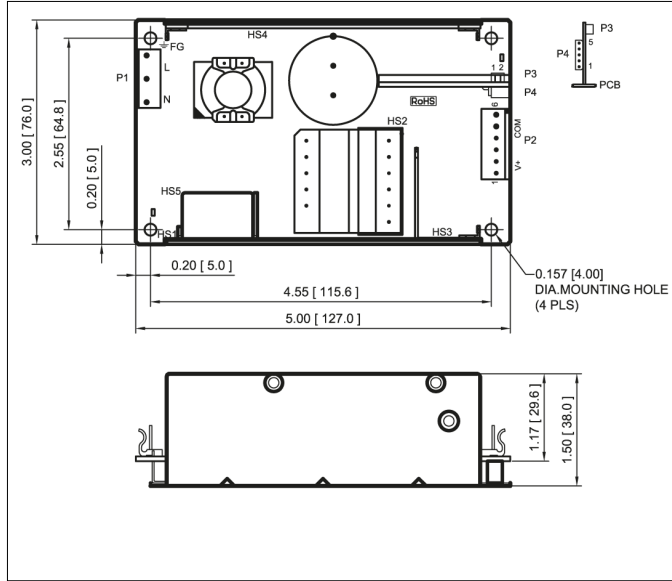
Derating Curve



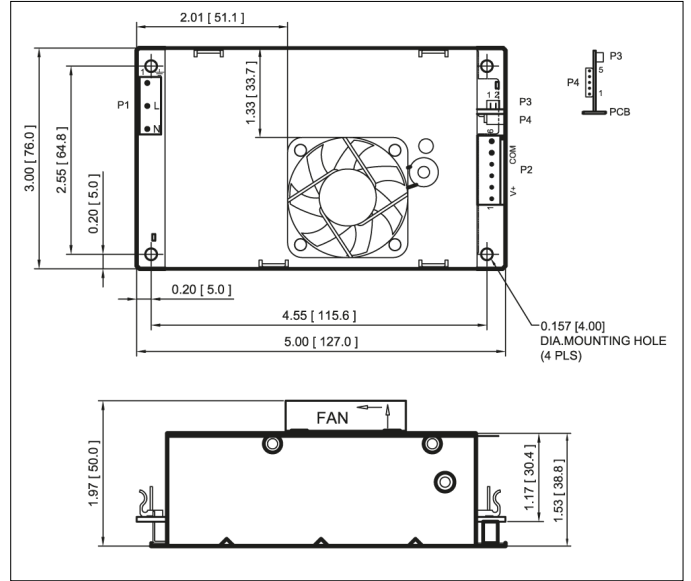
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Mechanical

U Bracket Form



Enclosed Form



Notes:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1: Molex header 09-65-2058 or equivalent, mating with Molex housing 09-50-1051 or equivalent.
4. Output connector P2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
5. Fan connector P3: Molex header 53048-0210 or equivalent, mating with Molex housing 51021-0200 or equivalent.

6. Connectors P4: Molex header 22-05-7055 or equivalent, mating with Molex housing 50-37-5053 or equivalent.
7. Weight: 390 grams (0.86 lbs.) approx. for U-bracket form, 440 grams (0.97 lbs.) for enclosed form
8. Fixing of units to end equipment is through standoffs and the four mounting holes in PCB.
9. Ground tab is 0.25 [6.35] x 0.032 [0.8] fast-on connector.

Pin Connection

Connector Model		P1	2	3	4	5	P2	1	2	3	4	5	6
OBM08031	OBM08050												
OBM08037	OBM08056	GROUND	Void	LIVE	Void	NEUTRAL	+V1	+V1	+V1		COMMON RETURN	COMMON RETURN	COMMON RETURN
OBM08039	OBM08057												
OBM08046	OBM08070												

Model		P3	2	P4	1	2	3	4	5
OBM08031	OBM08050								
OBM08037	OBM08056	+12V	COMMON RETURN	-SENSE	+SENSE	PFD	INHIBIT	COMMON RETURN	
OBM08039	OBM08057	FAN							
OBM08046	OBM08070								

Specifications are subject to change without notice.