

# PR BX

POWERBOX **Medline 300**  
 OBP03 Series  
 300W  
 Single Output  
 AC/DC Medical Switch Mode Power Supply

## Features

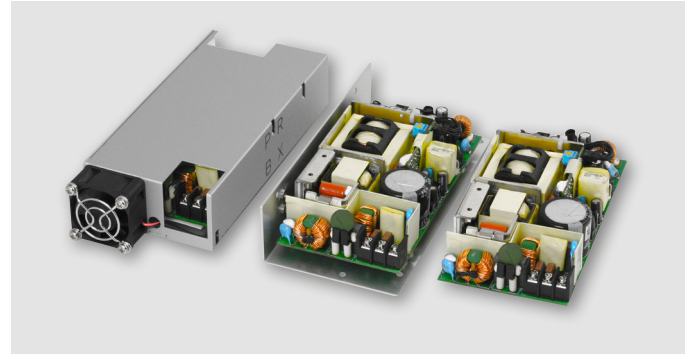
BF Class insulation
Operation up to 5000 meters
3 x 6 inch footprint with 1.5 inch low profile
100-240 VAC input with active PFC
Less than 220 $\mu$ A leakage current
Meet EN55011 /55022 and FCC Class B
Power factor 0.98 typical
100% burn-in at full load
Short-circuit protection (Latch)
Power Fail Detect (PFD) signal
Inhibit - TTL high to disable output
Compliant with RoHS requirements
High efficiency 92% typical
Power consumption in standby mode less than 1 W at standby power
5 V /100 mA

## Input

Voltage range	90-264VAC.
Frequency	47-63Hz.
Current	4.0A (rms) for 115VAC. 2.0A (rms) for 230VAC.
Leakage current	220 $\mu$ A max @ 264VAC, 63Hz.
Touch current	100 $\mu$ A max @ 264VAC, 63Hz.

## Output

Power	See table.
Voltage/current	See table.
Ripple and noise	1% peak to peak maximum.
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 conditions.
Temperature coefficient	$\pm 0.04\%/^{\circ}\text{C}$ max.
Transient response	Max excursion of 4% or better on all models, recovering to 1% of final value within 500 $\mu$ s after a 25% step load change.
Fan power	12V at 1.0A max (isolated).
Standby power	5 V at 2.0 A maximum or 12 V at 1.0 A 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.

## General

Switching frequency	100KHz typical.
Efficiency	87% minimum, 92% typical (200W).
Turn on delay time	3 s maximum at 100 VAC.
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	4,000VAC from input to output (2MOPP). 1,500VAC from input to ground (1MOPP). 1,500VDC from output to ground.
MTBF	250,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F.

## Interface Signals

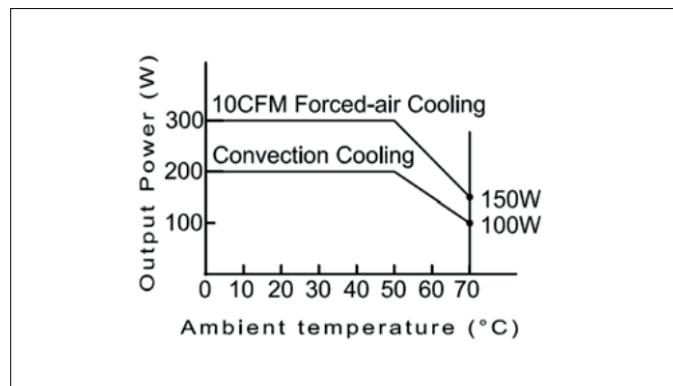
PFD	TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1ms prior to V1 output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after V1 is within regulation.
Inhibit	Requires an external TTL high level signal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

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**Standards**

Safety standards	TÜV EN 60601-1 (3.1 ed). UL ES 60601-1 CSA C22.2 No. 60601-1 File No. E242500.
EMC performance	IEC 60601-1-2:2014 (4th ed.).
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, ±15 kV air and ±8 kV contact
EN61000-4-3	Radiated immunity, 10 V/m
EN61000-4-4	Fast transient/burst, ±2 kV
EN61000-4-5	Surge, ±1 kV diff., ±2 kV com
EN61000-4-6	Conducted immunity, 10 Vrms
EN61000-4-8	Magnetic field immunity, 30 A/m
EN61000-4-11	Voltage dips: >95% reduction, 0.5 periods 60% reduction, 5 periods 30% reduction 25 periods Interruptions: >95% reduction, 250 periods

Derating Curve



Model Number <sup>1,3</sup>	Output V1	Min Current	Max Current at Convection <sup>2</sup>	Max Current at 10CFM <sup>2</sup>	Peak Current	Tol	Ripple & Noise <sup>4</sup>	Max Power	Efficiency (typical)	
									@ 200W 115/230VAC	@ 300W 115/230VAC
OBP03031A	12 V	0 A	16.67 A	25.00 A	30.0 A	±2%	120 mV	200 /300 W	89 /91%	88 /90%
OBP03037A	15 V	0 A	13.34 A	20.00 A	24.0 A	±2%	150 mV	200 /300 W	89 /92%	88 /91%
OBP03043A	19 V	0 A	10.53 A	15.80 A	18.9 A	±2%	190 mV	200 /300 W	89 /91%	88 /90%
OBP03046A	24 V	0 A	8.34 A	12.50 A	14.5 A	±2%	240 mV	200 /300 W	89 /92%	88 /91%
OBP03055A	30 V	0 A	6.67 A	10.00 A	11.0 A	±2%	300 mV	200 /300 W	89 /92%	88 /91%
OBP03061A	36 V	0 A	5.56 A	8.34 A	9.6 A	±2%	360 mV	200 /300 W	89 /92%	88 /91%
OBP03070A	48 V	0 A	4.17 A	6.25 A	7.5 A	±2%	480 mV	200 /300 W	89 /92%	88 /91%

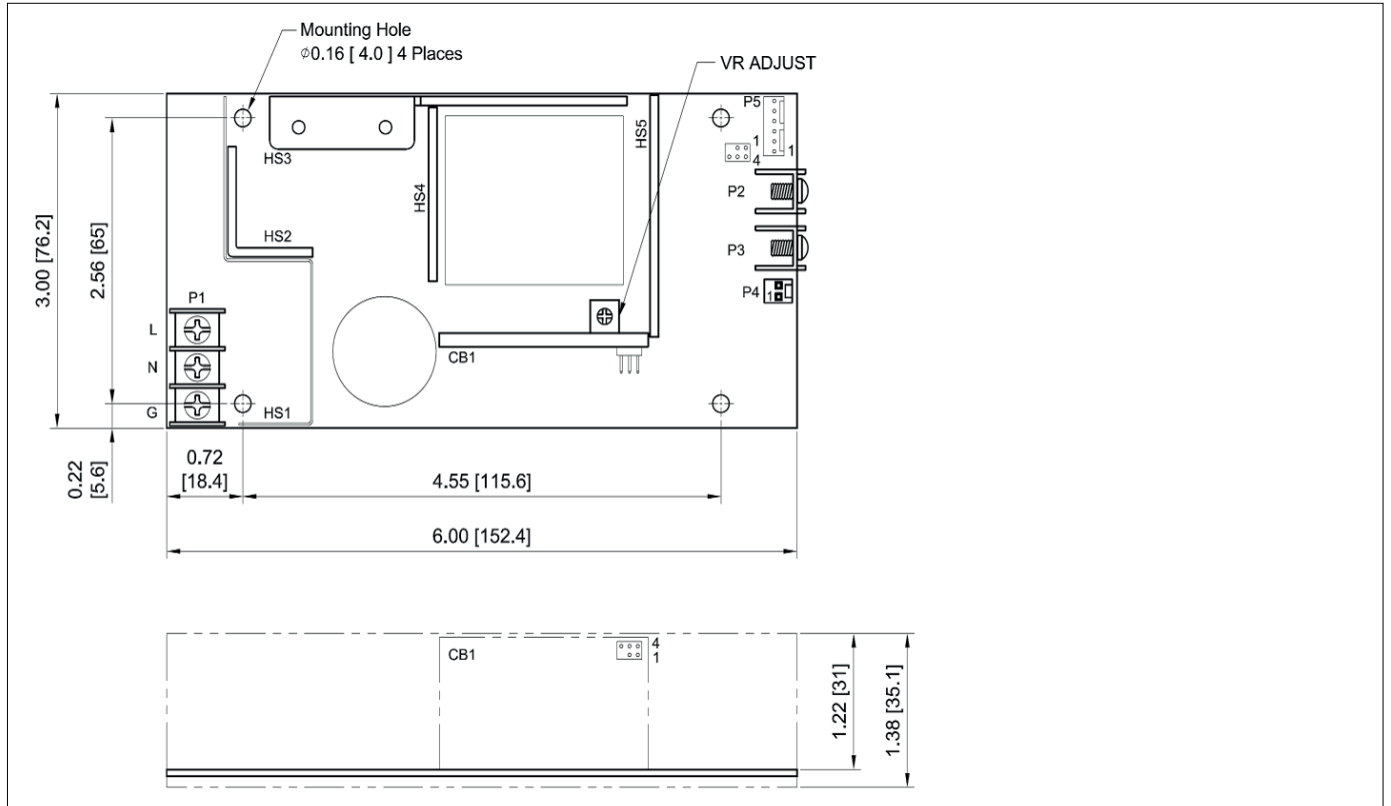
**Notes:**

- Suffix "A" in model numbers denotes PCB constructed form. Change suffix "A" to "B" for L-bracket form, e.g. OBP03046B. Change "B" to "C" for enclosed from with cover and fan assembly, e.g. OBP03046C.
- 200 W without moving air or 300 W with 10 CFM forced air provided by user for "A" and "B" version, 300 W for "C" version with cover and fan assembly.
- Standby power output 5 V at 2 A. Add suffix "-12" for standby power output 12 V at 1.0 A, e.g. OBP03031A-12

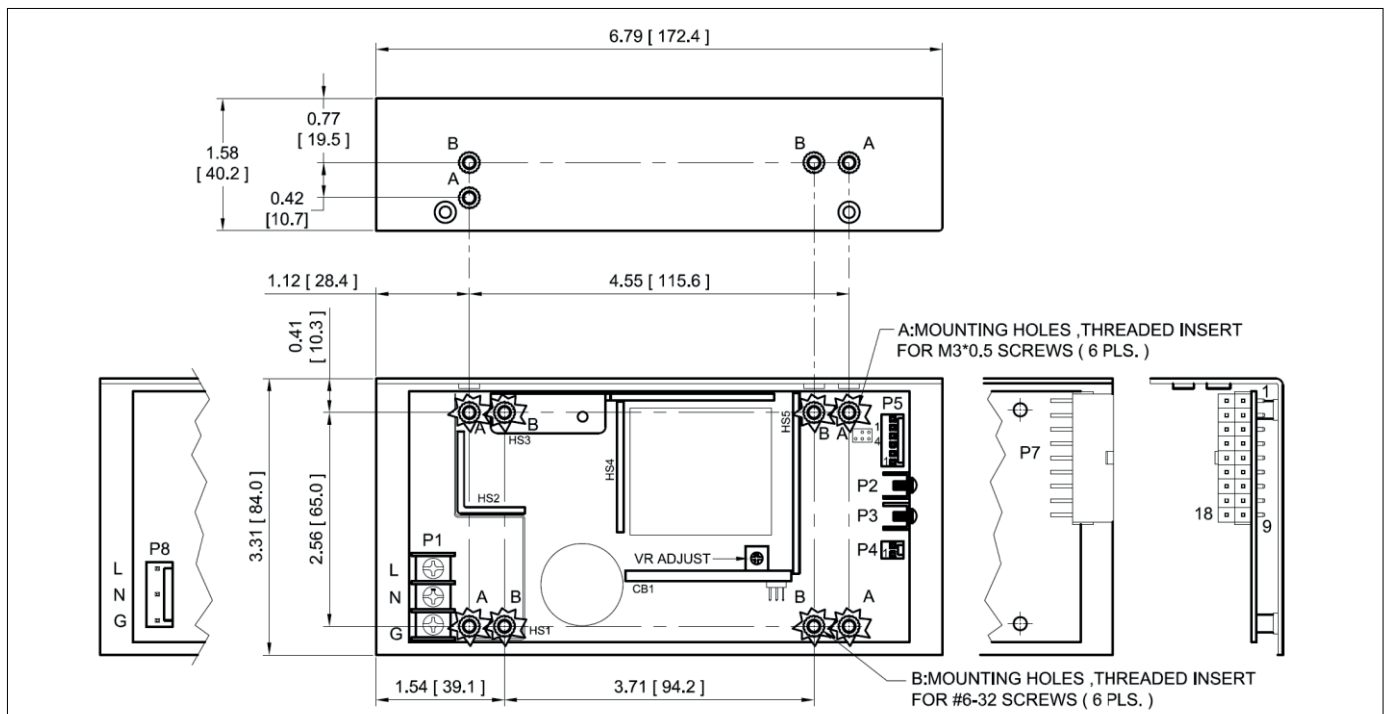
- Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 µF tantalum capacitor in parallel with a 0.1 µF ceramic capacitor across the output.
- Peak output current with 10% duty cycle maximum for less than 15 seconds, average power not to exceed maximum power rating.
- Option available for fixed installations, fuse in Neutral removed, contact Powerbox for details.

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Mechanical PCB Constructed Form

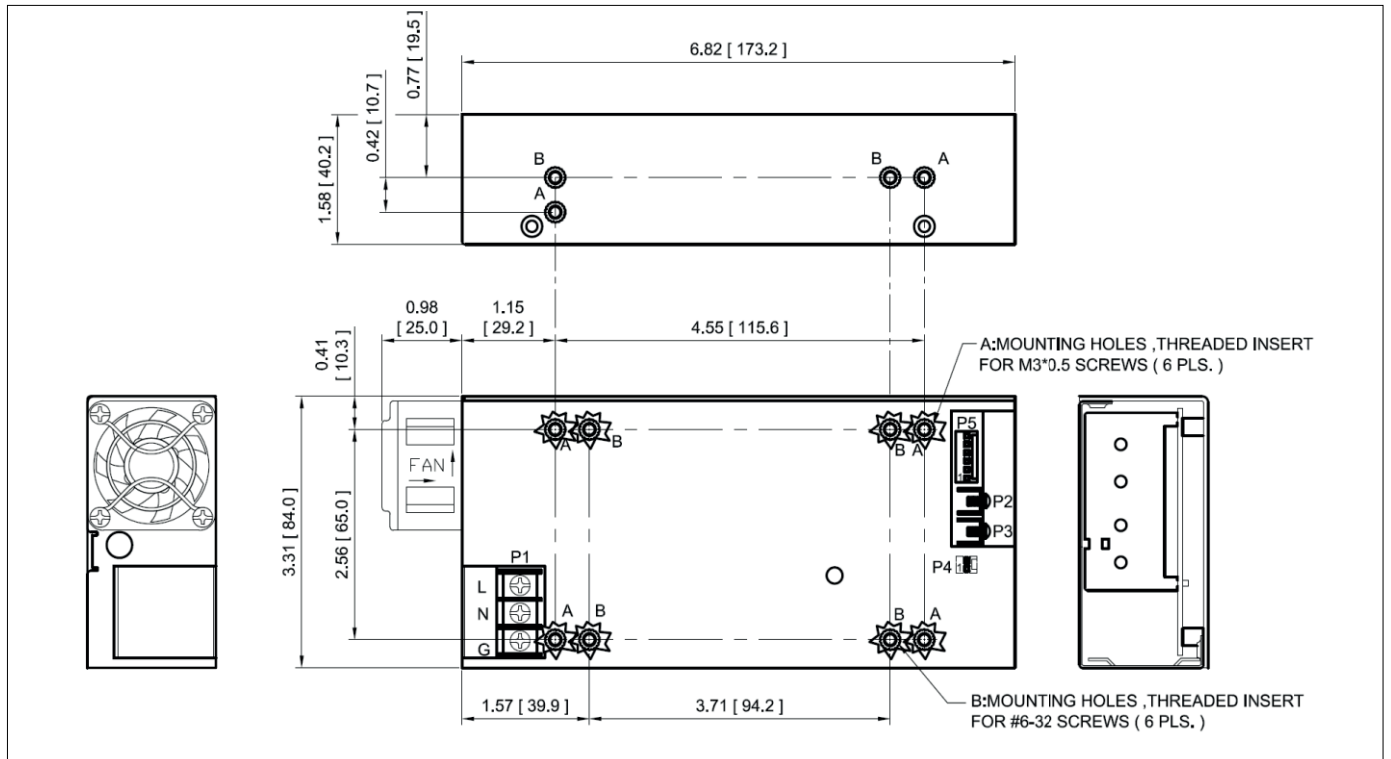


Mechanical L-bracket Form



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Mechanical Enclosed Form



Notes:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W-03 with M3, nickel-plated screws.
4. Output connector P2 and P3: M3 x 0.5 screw connections
5. Fan connector P4: Molex header 22-04-1021 or equivalent, mating with Molex housing 22-01-1022 or equivalent.
6. Connectors P5: Molex header 22-04-1061 or equivalent, mating with Molex housing 22-01-1062 or equivalent.
7. Option output connector P7: Molex header 39-30-1180 or equivalent, mating with Molex housing 39-01-2185 or equivalent. Contact PRBX for details.
8. Option input connector P8: Molex header 26-60-4050 or equivalent, mating with Molex housing 09-50-8050 or equivalent. Contact PRBX for details.
9. Weight: 510 grams (1.12 lbs.) approx. for PCB form, 612 grams (1.35 lbs.) approx. for L-bracket form, 744 grams (1.64 lbs.) approx. for enclosed form.
10. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

Pin Connection

Connector	P1, P8			P2		P3		P4	
Pin No	1	2	3					1	2
Polarity	Live	Neutral	Ground	+V1		Common Return		+12V Fan (isolated)	Fan Return (isolated)

Connector	P5					
Pin No	1	2	3	4	5	6
Polarity	-Sense	+Sense	PFD	Inhibit	+5V/+12V Standby	Common Return

Connector	P7								
Pin No	1	2	3	4	5	6	7	8	9
Polarity	+5V/+12V Standby	Inhibit	+V1	+V1	+V1	+V1	+V1	+V1	Fan Return
Pin No	10	11	12	13	14	15	16	17	18
Polarity	Standby Return	PFD	Common Return	Common Return	Common Return	Common Return	Common Return	Common Return	+12V Fan

Specifications are subject to change without notice.