

P R B X

POWERBOX **Medline 450**
OBQ05 Series
350-480W
Single Output
AC/DC Medical Switch Mode Power Supply

Features

Fulfills IEC60601-1-2:2014 (4th Ed. EMC)

EN61000-3-2 class A and D compliant

Power Factor 0.98 typical

Overvoltage protection

Short-circuit protection

Thermal protection

Power Fail Detect (PFD) Signal

100% burn-in at full rated load

Temperature controlled fan, on/off function

Remote sense

Remote inhibit – TTL high to disable output

Compliant with RoHS requirements

Input

Voltage	90-264VAC.
Frequency	47-63Hz.
Input current	7.1A (rms) for 115VAC. 3.5A (rms) for 230VAC.
Leakage current	240µA max @ 264VAC, 63Hz.

Output

Voltage/current	See table.
Max power	See table.
Ripple and noise	1% peak to peak maximum.
Overvoltage protection	Set at 115-140% of its nominal output voltage.
Overcurrent protection	Protected to short circuit conditions.
Temperature coefficient	±0.04% /°C maximum.
Transient response	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 µs after a 25% step load change.
Fan power	12V at 400mA for B version, 12V at 100mA for C version.

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 output is within regulation.
Inhibit	Requires an external TTL high level signal to inhibit outputs for standard models.

Environmental

Operating temperature	0°C to +70°C.
Storage temperature	–40°C to +85°C.
Humidity	5% to 95% non-condensing.
Derating	Derate from 100% at +50°C linearly to 50% at +70°C.



General

Switching frequency	60 KHz ±10 KHz.
Power factor	0.98 typical.
Efficiency	80% minimum on all models.
Hold-up time	12 ms minimum at 110 VAC.
Line regulation	±0.2% maximum at full load.
Inrush current	40 A @ 115 VAC or 80 A @ 230 VAC, at 25°C cold start.
Withstand voltage	5600 VDC from input to output (2 MOPP). 2100 VDC from input to ground (1 MOPP). 700 VDC from output to ground. (To verify AC strength, get correct test method to avoid power supply damage.)
MTBF	300,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F.

Standards

Safety standards	UL ES 60601-1, CSA C22.2 No. 60601-1 TÜV EN 60601-1.
EMC performance	IEC 60601-1-2:2014.
EN55011/EN55022	Class B conducted, Class A radiated.
FCC	Class B conducted, Class A radiated.
VCCI	Class B conducted, Class A radiated.
EN61000-3-2	Harmonic distortion, Class A&D.
EN61000-3-3	Line flicker.
EN61000-4-2	ESD, ±15 KV air and ±8 KV contact.
EN61000-4-3	Radiated immunity, 3V/m. Proximity test, 9V/m and 28V/m.
EN61000-4-4	Fast transient/burst, ±2KV.
EN61000-4-5	Surge, ±1KV diff., ±2KV com.
EN61000-4-6	Conducted immunity, 10Vrms.
EN61000-4-8	Magnetic field immunity, 30A/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.

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Article Number	Output ^{2) 3)}		I _{max}	Tol.	Max ³⁾ Power
	V _{nom}	I _{min}			
OBQ05031B	12 V	0 A	37.5 A	±2%	225 / 450 W
OBQ05037B	15 V	0 A	30.0 A	±2%	225 / 450 W
OBQ05046B	24 V	0 A	18.75 A	±2%	225 / 450 W
OBQ05050B	27 V	0 A	16.7 A	±2%	225 / 450 W
OBQ05055B	30 V	0 A	15.0 A	±2%	225 / 450 W
OBQ05063B	40 V	0 A	12.0 A	±2%	240 / 480 W
OBQ05070B	48 V	0 A	10.0 A	±2%	240 / 480 W
OBQ05078B	55 V	0 A	8.73 A	±2%	240 / 480 W

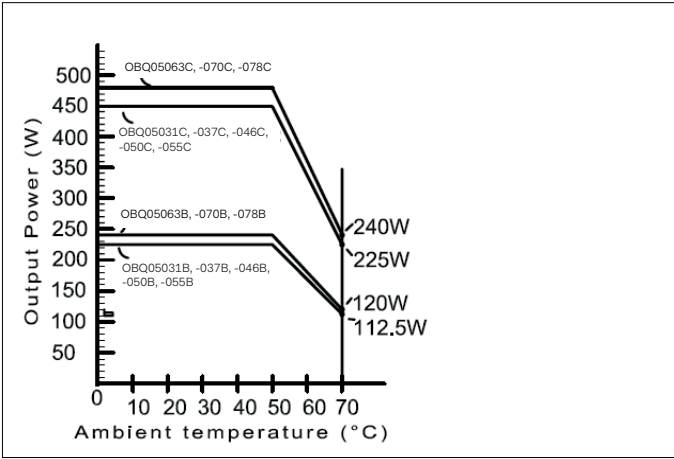
- Notes:**
1. Suffix "B" in model numbers denotes U-bracket form. Change "B" to "C" for enclosed form with cover and fan assembly, temperature controlled fan, e.g. OBQ05046C.

2. Output can be adjusted within ±5% of its nominal voltage.

3. 450-480 watts for "C" version with cover and fan assembly, temperature controlled fan, 225-240 watts for "B" version without moving air (maximum current derated to 50%), or 450 watts with 40 CFM forced air provided by user.

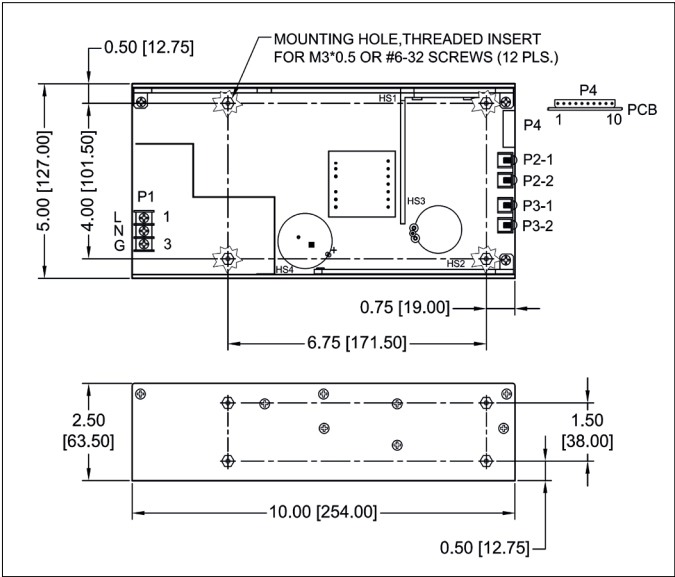
6. All models may be operated at no-load. At no-load, output voltage tolerance increases to ±10%.

Derating Curve



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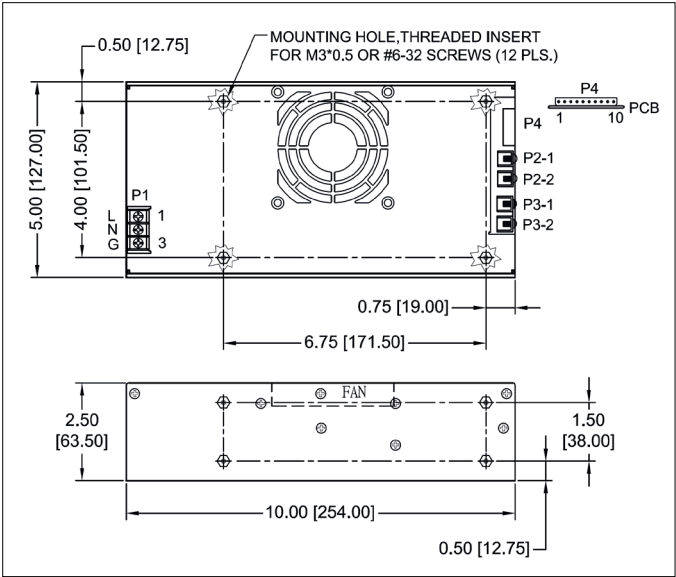
Mechanical U-Bracket



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. Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
5. P2, P2-1, P2-2, P3, P3-1 & P3-2: M3*0.5 screw connections

Mechanical Enclosed



6. Output connector P5 is Dinkle DT-35-B01W-04 with M3, nickel plated screws.
7. Weight: 1.8 Kgs. (3.96 lbs.) approx. for U-bracket form, 2.0 Kgs. (4.4 lbs.) approx. for enclosed form
8. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

Pin Connection

Connector		P1 (AC)			P2	P3	P5			
Model		1	2	3			1	2	3	4
OBQ05031B	OBQ05037B									
OBQ05046B	OBQ05050B	Live	Neutral	Ground	+V1	V1 Return	N.A.	N.A.	N.A.	N.A.
OBQ05055B	OBQ05063B									
OBQ05070B	OBQ05078B									

Connector		P4									
Model		1	2	3	4	5	6	7	8	9	10
OBQ05031B	OBQ05037B										
OBQ05046B	OBQ05050B	PFD	+V1 Sense	-V1 Sense	PFD	Inhibit +V	Inhibit -V	N.C.	N.C.	Fan Return	+12V Fan
OBQ05055B	OBQ05063B										
OBQ05070B	OBQ05078B										

Specifications are subject to change without notice.