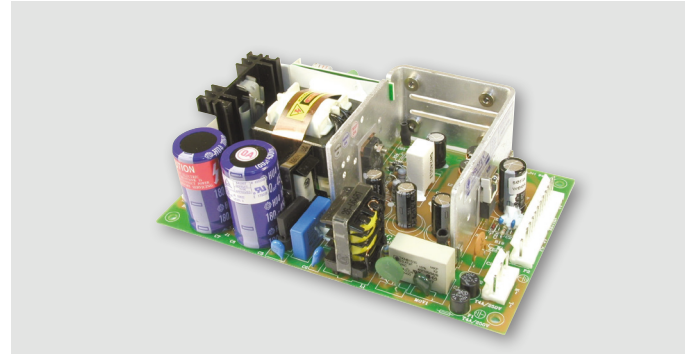


PR BX

POWERBOX **Medline 110**
 OBL04 Series
 72-110W
 Multiple Output
 AC/DC Medical Switch Mode Power Supply



Features

Fulfills IEC60601-1-2:2014 (EMC 4th ed)
Low safety ground leakage current
Meet EN55011 and FCC Class B
Small size, light weight
100% burn-in
Wide input range 85-264 VAC
Input surge current protection
Overvoltage protection
Overcurrent protection
Compliant with RoHS requirements

Input

Voltage	85-264VAC.
Frequency	47-63Hz.
Input current	3.20A (rms) @ 115VAC. 1.80A (rms) @ 230VAC.
Leakage current	220uA max @ 264VAC, 63Hz.
Inrush current	20A @ 115VAC or 40A @ 230VAC at 25°C and cold start.

Output

Max power	See table.
Voltage/current	See table.
Ripple and noise	1% p-p max.
Overvoltage protection	Provided on output #1 only; set at 112-132% of its nominal output voltage.
Overcurrent protection	All outputs protected to short circuit conditions.
Temperature coefficient	0.04%/°C all outputs.
Transient response	Max excursion of 4% or better on all models, recovering to 1% of final value within 500us after a 25% step load change.

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 +5V output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after +5V is within regulation.
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Environmental

Operating temperature	0°C to +70°C.
Storage temperature	-40°C to +85°C.
Relative humidity	5% to 95% non-condensing.
Derating	Derate from 100% at +50°C linearly to 50% at +70°C.
Cooling	72-110 watts continuous output power at 25 CFM forced air cooling or 60-80 watts at convection cooling.

General

Switching frequency	20-250KHz, varied with load and line.
Efficiency	70% minimum on single output model with Vo 12V, 65% minimum on the others.
Hold-up time	12 ms minimum at 110 VAC.
Line regulation	±0.5% maximum at full load.
Inrush current	15 A @ 115 VAC or 30 A @ 230 VAC, at 25 cold start.
Withstand voltage	4000 VAC from input to output. 1500 VAC from input to ground. 500 VAC from output to ground.
MTBF	400,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F.
Dimensions	See drawing.
Weight	640g.

Standards

Safety standards	A and B versions meet the safety requirements of UL, CSA and IEC for non-patient contact medical equipment.
EMC Performance	IEC60601-1-2:2014.
EN55011	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.
EN61000-3-3	Line flicker.
EN61000-4-2	ESD, ±15 KV air and ±8 KV contact.
EN61000-4-3	Radiated immunity, 10V/m. (80- 2700 MHz) Proximity test, 9V/m and 28V/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 (0.15 – 80 MHz, ISM Bands and Amateur bands).
EN61000-4-8	Magnetic field immunity, 30 A/m.
EN61000-4-11	Ändra till: Voltage dips: 100% drop, 0.5 periods. 100% dip, 1 period. 30% dip, 25/30 periods. Interruptions: 100% drop, 5 seconds.

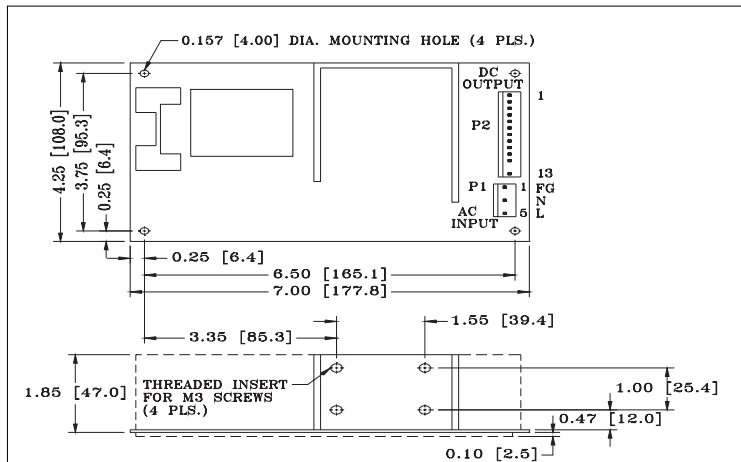
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Article Number	Output 1 ²⁾				Output 2				Output 3				Output 4 ³⁾				Max	
	V1	Imin	Imax	Tol.	V2	Imin	Imax	Ipeak ⁴⁾	Tol.	V3	Imin	Imax	Tol.	V4	Imin	Imax	Tol.	Power ³⁾
OBL04010A	3.3 V	0 A	22 A	±3%				(N/A)						(N/A)				60W / 72W
OBL04016A	5.0 V	0 A	22 A	±3%				(N/A)						(N/A)				80W / 110W
OBL04031A	12 V	0 A	9.0 A	±2%				(N/A)						(N/A)				80W / 110W
OBL04037A	15 V	0 A	7.5 A	±2%				(N/A)						(N/A)				80W / 110W
OBL04046A	24 V	0 A	4.5 A	±2%				(N/A)						(N/A)				80W / 110W
OBL04055A	30 V	0 A	3.6 A	±3%				(N/A)						(N/A)				80W / 110W
OBL04204A	+5.1 V	0 A	10 A	±3%	+12 V	0 A	5 A	9.0 A	±3%					(N/A)				80W / 110W
OBL04313A	+5.1 V	0 A	10 A	±3%	+12 V	0 A	5 A	9.0 A	±3%	-12 V	0 A	1 A	±4%					80W / 110W
OBL04316A	+5.1 V	0 A	10 A	±3%	+15 V	0 A	4 A	7.5 A	±3%	-15 V	0 A	1 A	±4%					80W / 110W
OBL04404A	+5.1 V	0 A	10 A	±3%	+12 V	0 A	5 A	9.0 A	±3%	-12 V	0 A	1 A	±4%	-5 V	0 A	1 A	±4%	80W / 110W
OBL04407A	+5.1 V	0 A	10 A	±3%	+15 V	0 A	4 A	7.5 A	±3%	-15 V	0 A	1 A	±4%	+24 V	0 A	1 A	±4%	80W / 110W
OBL04410A	+5.1 V	0 A	10 A	±3%	+12 V	0 A	5 A	9.0 A	±3%	-12 V	0 A	1 A	±4%	+12 V	0 A	1 A	±4%	80W / 110W
OBL04413A	+5.1 V	0 A	10 A	±3%	+12 V	0 A	5 A	9.0 A	±3%	-12 V	0 A	1 A	±4%	+24 V	0 A	1 A	±4%	80W / 110W
OBL04414A	+5.1 V	2 A	10 A	±3%	+12 V	0 A	5 A	9.0 A	±3%	-12 V	0 A	1 A	±4%	+24 V	1.5 A	3 A	±10%	80W / 110W
OBL04419A	+5.1 V	0 A	10 A	±3%	+24 V	0 A	3 A	5.0 A	±3%	-12 V	0 A	1 A	±4%	+12 V	0 A	1 A	±4%	80W / 110W
OBL04422A	+5.1 V	0 A	10 A	±3%	+15 V	0 A	4 A	7.5 A	±3%	-15 V	0 A	1 A	±4%	-5 V	0 A	1 A	±4%	80W / 110W

Notes:

- Safety agency approvals are for the above listed models in PCB format. To order a model with a metallic L-bracket or box, change suffix "A" to "B" for L-bracket format, to "C" for enclosed form with cover, e.g.OBL04046C.
- The output #1 of model OBL04414A needs a minimum current of 2A to support the other outputs at their maximum rated load.
- 110 watts maximum at 25 CFM forced air cooling or 80 watts maximum at convection cooling, except model OBL04010 which is rated at 60 watts maximum at convection cooling or 72 watts maximum at 25 CFM forced air cooling.
- Peak output current with 10% maximum duty cycle for less than 60 seconds. Total peak power must not exceed 130 watts.
- All models may be operated at no-load. At no-load, output voltage tolerance increases to ±10%.
- 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.
- Option available for fixed installations, fuse in Neutral removed, contact Powerbox for details.

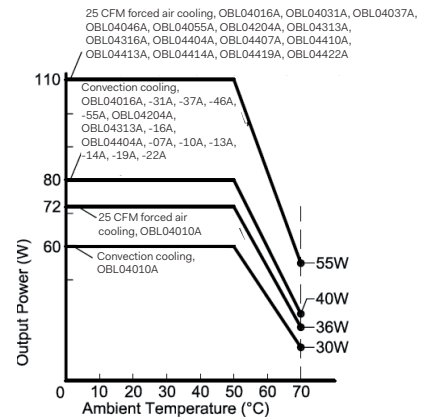
Mechanical



Notes:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Connector P1: Molex header 09-65-2058 or equivalent, mating with Molex housing 09-50-1051 or equivalent.

Output Power Derating Curve

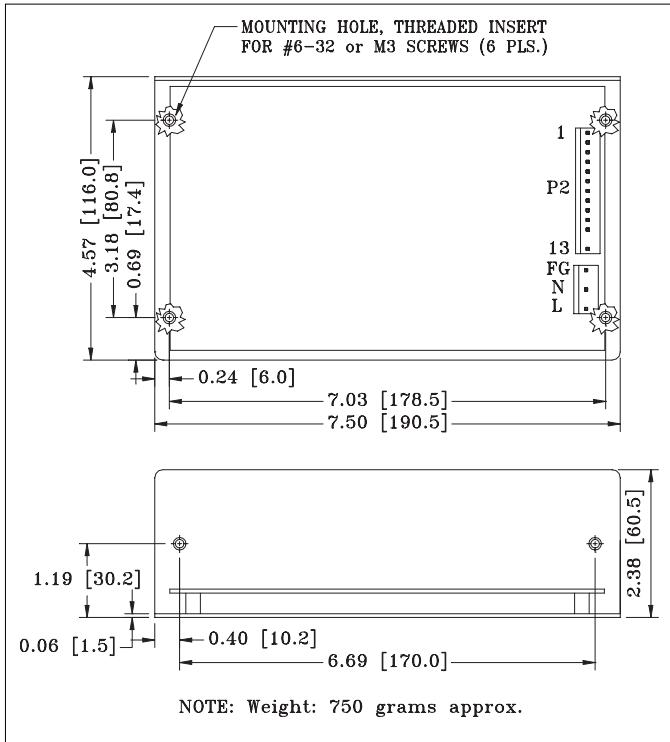


- Connector P2 mates with Molex 09-50-3131 or equivalent.
- The copper pad of the mounting hole near P1 is for system grounding through a metallic stand-off to system chassis.
- Weight 640 grams (1.408 lbs.)

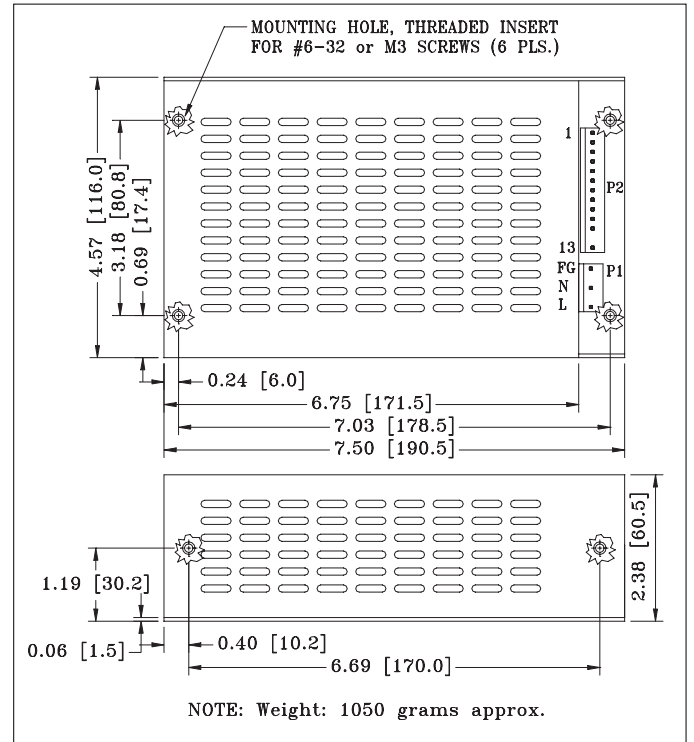
Model	Pin	1, 2, 3	4, 5	6, 7	8, 9	10	11	12	13
OBL04010A	OBL04016A								
OBL04031A	OBL04037A	+V1	V1 Return	V1 Return	+V1	PFD	N.C.	KEY	N.C.
OBL04046A	OBL04055A								
OBL04204A		V1	Common Return	Common Return	V2	PFD	N.C.	KEY	N.C.
OBL04313A	OBL04316A	V1	Common Return	Common Return	V2	PFD	V3	KEY	N.C.
OBL04404A	OBL04407A								
OBL04410A	OBL04413A	V1	Common Return	Common Return	V2	PFD	V3	KEY	V4
OBL04414A	OBL04419A								
OBL04422A									

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Mechanical B version



Mechanical C version



Specifications are subject to change without notice.