

P R B X

POWERBOX Industrial Line 200
OBN34 Series
150-200W
Single and Multiple Output
AC/DC Switch Mode Power Supply



Features

Meet EN55022 and FCC Class B
Power Factor 0.98 typical
Short-circuit protection
Power Fail Detect (PFD) signal
100% burn-in at full rated load
Optional cover-and-fan assembly
Remote inhibit - TTL high to disable output
Compliant with RoHS requirements

Input

Voltage range	90-264VAC.
Frequency	47-63Hz.
Current	3.20A (rms) for 115VAC. 1.60A (rms) for 230VAC.
Leakage current	220µA max @ 264VAC, 63Hz.

Output

Power	See table.
Voltage/current	See table.
Ripple and noise	1% peak to peak maximum.
Over voltage protection	Provided on output #1 only; set at 112-132% of its nominal output voltage.
Over current protection	All outputs protected to short circuit conditions.
Temperature coefficient	±0.04%/°C max.
Transient response	Max excursion of 4% or better on all models, recovering to 1% of final value within 500µs after a 25% step load change.
Fan power	12 V at 200 mA maximum, except 24 V at 200 mA maximum for OBN34210B and OBN342A5B, and 5 V at 380 mA maximum for OBN34403B.

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.
Cooling	10.8 CFM forced air provided on "C" version; 25 CFM forced air to be provided for "B" version by user.

General

Switching frequency	88-112KHz typical.
Efficiency	70% minimum on all models.
Hold-up time	20ms min at 110VAC.
Line regulation	±0.5% max at full load.
Inrush current	20A @ 115VAC, or 40A @ 230VAC, at 25°C cold start.
Withstand voltage	3,000VAC from input to output. 1,500VAC from input to ground. 500VAC from output to ground.
MTBF	350,000 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 +5 V output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after +5 V is within regulation.
Inhibit	Requires an external TTL high level signal to inhibit outputs for standard models.

Standards

Safety standards	UL60950-1 File No E208620, TUV EN60950-1.
EMC performance	
EN55022	Class B conducted, Class B radiated.
EN61000-3-2	Harmonic distortion Class A and D.
EN61000-3-3	Line flicker.
EN55024	
EN61000-4-2	ESD, ±8KV air and ±4KV contact.
EN61000-4-3	Radiated immunity, 3V/m.
EN61000-4-4	Fast transient/burst, ±1KV.
EN61000-4-5	Surge, ±1KV diff., ±2KV com.
EN61000-4-6	Conducted immunity, 3Vrms.
EN6100-4-8	Magnetic field immunity, 1A/m.
EN61000-4-11	Voltage dips, 30% reduction for 500ms, 60% reduction for 100ms, >95% reduction for 10ms.

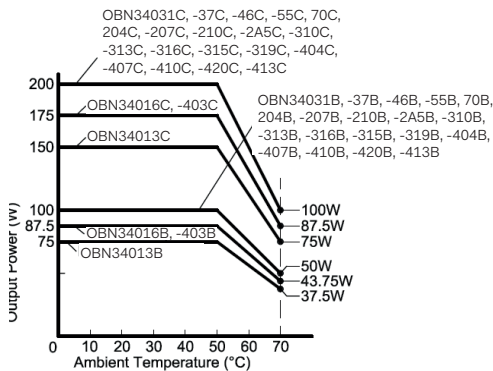
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Model Number ¹	Output #1 ⁴				Output #2 ^{2,4}				Output #3				Output #4 ³				Max Output Power ⁴
	V1	Imin	Imax	Tol	V2	Imin	Imax	Tol	V3	Imin	Imax	Tol	V4	Imin	Imax	Tol	
OBN34013B	5.1 V	3.0 A	35.0 A	±2%	(N/A)				(N/A)				(N/A)				87.5 W / 175 W
OBN34016B	3.3 V	3.0 A	46.0 A	±3%	(N/A)				(N/A)				(N/A)				75 W / 150 W
OBN34031B	12 V	1.2 A	16.7 A	±2%	(N/A)				(N/A)				(N/A)				100 W / 200 W
OBN34037B	15 V	1.0 A	13.4 A	±2%	(N/A)				(N/A)				(N/A)				100 W / 200 W
OBN34046B	24 V	0.6 A	8.4 A	±2%	(N/A)				(N/A)				(N/A)				100 W / 200 W
OBN34055B	30 V	0.5 A	6.7 A	±2%	(N/A)				(N/A)				(N/A)				100 W / 200 W
OBN34070B	48 V	0.5 A	4.2 A	±2%	(N/A)				(N/A)				(N/A)				100 W / 200 W
OBN34204B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	(N/A)				(N/A)				100 W / 200 W
OBN34207B	+5.1 V	3.0 A	30.0 A	±2%	+15 V	0 A	6 A	±4%	(N/A)				(N/A)				100 W / 200 W
OBN34210B	+5.1 V	3.0 A	30.0 A	±2%	+24 V	0 A	4 A	±4%	(N/A)				(N/A)				100 W / 200 W
OBN342A5B	+12 V	1.0 A	8.7 A	±2%	+24 V	0 A	4 A	±4%	(N/A)				(N/A)				100 W / 200 W
OBN34310B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	-5 V	0 A	6 A	±4%	(N/A)				100 W / 200 W
OBN34313B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	-12 V	0 A	4 A	±4%	(N/A)				100 W / 200 W
OBN34316B	+5.1 V	3.0 A	30.0 A	±2%	+15 V	0 A	6 A	±4%	-15 V	0 A	4 A	±4%	(N/A)				100 W / 200 W
OBN34315B	+5.1 V	3.0 A	30.0 A	±2%	+15 V	0 A	6 A	±4%	-12 V	0 A	4 A	±4%	(N/A)				100 W / 200 W
OBN34319B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	24 V	0 A	4 A	±4%	(N/A)				100 W / 200 W
OBN34404B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	-12 V	0 A	4 A	±4%	5 V	0 A	6 A	±4%	100 W / 200 W
OBN34407B	+5.1 V	3.0 A	30.0 A	±2%	+15 V	0 A	6 A	±4%	-15 V	0 A	4 A	±4%	24 V	0 A	4 A	±4%	100 W / 200 W
OBN34410B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	-12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	100 W / 200 W
OBN34420B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	-15 V	0 A	4 A	±4%	15 V	0 A	4 A	±4%	100 W / 200 W
OBN34413B	+5.1 V	3.0 A	30.0 A	±2%	+12 V	0 A	8 A	±4%	-12 V	0 A	4 A	±4%	24 V	0 A	4 A	±4%	100 W / 200 W
OBN34403B	+3.3 V	3.0 A	30.0 A	±3%	+5.1 V	0 A	8 A	±4%	-12 V	0 A	4 A	±4%	12 V	0 A	4 A	±4%	87.5 W / 175 W

Notes:

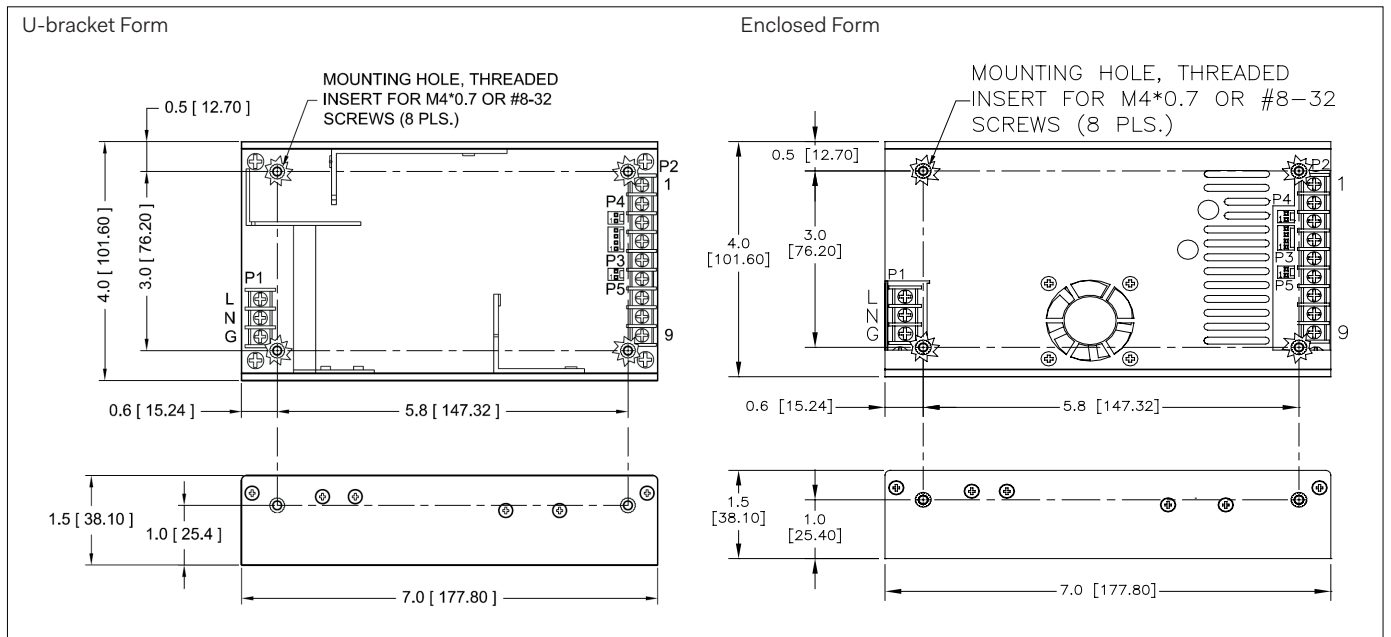
- Suffix "B" in model numbers denotes U-bracket form. Change "B" to "C" for enclosed form with cover-and-fan assembly, e.g. PU201-45C.
- Peak output current is 12 A on +12 V, 9 A on +15 V and 6 A on +24 V.
- Output #4 is floating. It can be connected externally for positive or negative output.
- 200 watts for "C" version with a cover-and-fan assembly, 100 watts for "B" version without moving air (maximum current of output #1 & #2 derated to 50%), or 200 watts with 25 CFM forced air provided by user.
- When the remote Sense facility is not used, +Sense must be connected to +V, and -Sense to return, on P2 connector.
- 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.

Derating Curve

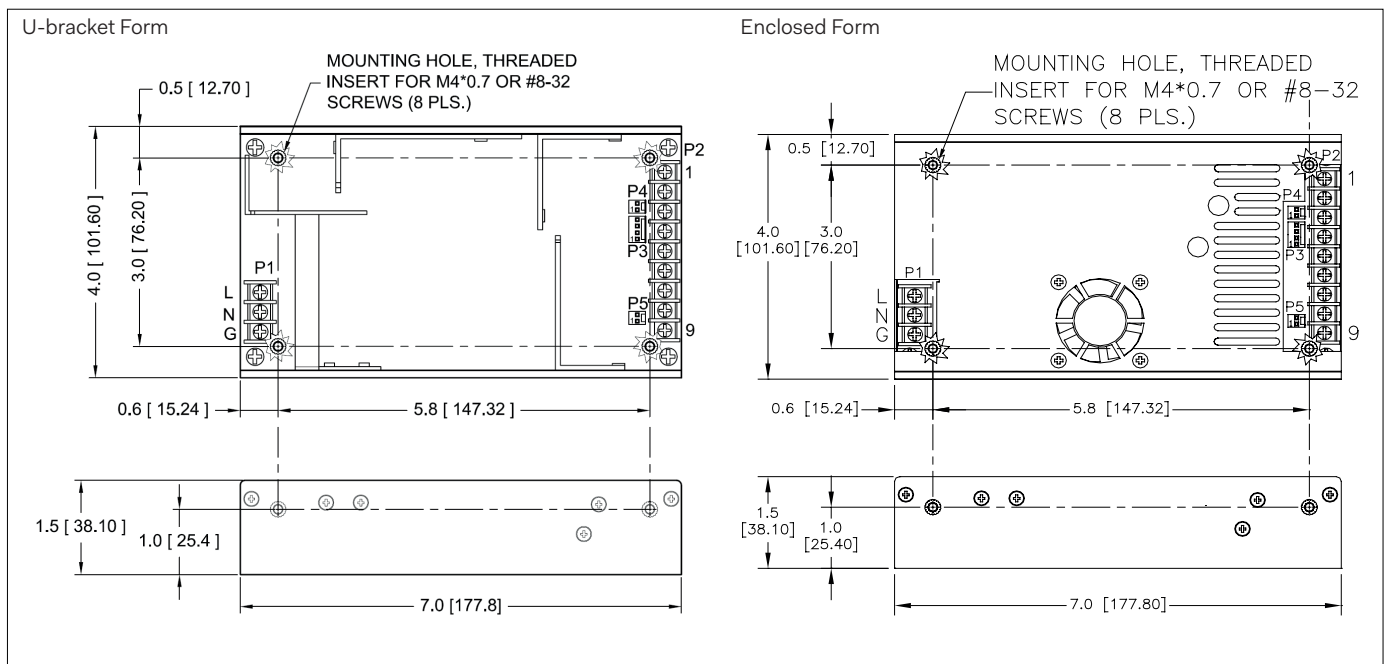


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Mechanical Single Output Models



Mechanical Multiple Output Models



Notes:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W-03. Output connector P2 is Dinkle DT-35-B01W-09. Screws are M3, nickel plated.
4. Connector P3 mates with Molex housing 22-01-1043 and Molex 40445 series crimp terminal.
5. Connectors P4 and P5 mate with Molex housing 22-01-1023 and Molex 40445 series crimp terminal.

6. P4 is for DC fan, 12 V/0.2 A rated, Pin 1 +V and Pin 2 -V; except 24 V/0.2 A rated for models OBN34210B and OBN342A5B, and 5 V/0.38 A rated for models OBN34403B).
7. Weight: 820 grams (1.8 lbs.) approx. for U-bracket form, 960 grams (2.1 lbs.) approx. for enclosed form.
8. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

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Pin Connection

Connector Model	Pin No	P2									P3				P5		
		1	2	3	4	5	6	7	8	9	1	2	3	4	1	2	
OBN34013B	OBN34046B																
OBN34016B	OBN34055B	-Sense	Com. Ret.	Com. Ret.	Com. Ret.	Com. Ret.	+V1	+V1	+V1	+Sense	Fan +V	Com. Ret.	Com. Ret.	PFD	Inhibit +V	Inhibit -V	
OBN34031B	OBN34070B																
OBN34037B																	
OBN34204B	OBN34210B	V1	V1	Com. Ret.	Com. Ret.	Com. Ret.	V2	N.C.	N.C.	N.C.	Fan +V	Com. Ret.	Com. Ret.	PFD	Inhibit +V	Inhibit -V	
OBN34207B	OBN342A5B																
OBN34310B	OBN34316B	V1	V1	Com. Ret.	Com. Ret.	Com. Ret.	V2	V3	N.C.	N.C.	Fan +V	Com. Ret.	Com. Ret.	PFD	Inhibit +V	Inhibit -V	
OBN34313B	OBN34315B																
OBN34319B		V1	V1	Com. Ret.	Com. Ret.	Com. Ret.	V2	N.C.	V3 Return	+V3	Fan +V	Com. Ret.	Com. Ret.	PFD	Inhibit +V	Inhibit -V	
OBN34404B	OBN34420B	V1	V1	Com. Ret.	Com. Ret.	Com. Ret.	V2	V3	V4 Return	+V4	Fan +V	Com. Ret.	Com. Ret.	PFD	Inhibit +V	Inhibit -V	
OBN34407B	OBN34413B																
OBN34410B	OBN34403B																

Specifications are subject to change without notice.