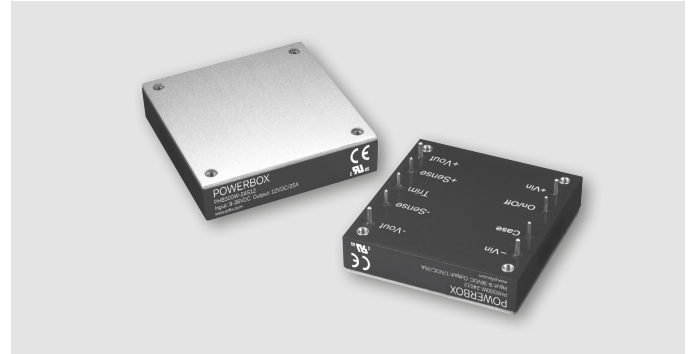


P R B X

POWERBOX Industrial Line PHB300W Series 300W Single Output DC/DC Converter



Features

300W isolated output
Efficiency to 90%
Fixed switching frequency
Input under-voltage protection
Over temperature protection
Over voltage/current protection
Remote on/off
Industry standard half-brick package
Fully isolated 1500VDC
CE mark meets 204/108/EC

Input

Voltage range	24V	9-36V
	48V	18-75
Input surge voltage (100ms max)	24V	50VDC max
	48V	100VDC max
Under voltage lockout	24Vin Power up	8.8VDC
	24Vin Power down	8.0VDC typical
	48Vin Power up	17V
	48Vin Power down	16V
Remote on/off ^{4 & 5}	Positive logic.	
Input filter	Pi type.	

Output

Voltage accuracy	±1.5% max.	
Transient response	<500usec (25% step load change).	
External trim adj. range ⁶	±10%.	
Ripple and noise	5.0V	40mV RMS, 100mV pk-pk max
	20MHz BW	60mV RMS, 120mV pk-pk max
	24V & 28V	100mV RMS, 280mV pk-pk max
	48V	200mV RMS, 480mV pk-pk max
Temperature coefficient	±0.03%/°C.	
Short circuit protection	Continuous.	
Line regulation ¹	±0.2% max.	
Load regulation ²	±0.2% max.	
Overvoltage protection	115-140%, % Vo nom.	
Current limit	120-150% nominal output.	
Start up time	120ms typ.	

Environmental

Operating temperature	-40°C to +100°C.
Storage temperature	-55°C to +105°C.
Thermal shutdown	Case temperature 110°C typ.
Humidity	95% RH max, non-condensing.

General

Efficiency	See table.
Isolation voltage	1500VDC min input/output.
	1500VDC min input/case, output/case.
Isolation resistance	10 ⁷ ohm min.
Isolation capacitance	2000pF typ.
Switching frequency	24Vin, 250kHz typ. 48Vin, 220kHz typ.
MTBF	MIL-STD-217F, GB 25°C, full load. T.B.D.
Case material	Aluminum baseplate with plastic case.
Dimension	57.9 x 61.0 x 12.7 mm.
Weight	114g.

Standards

Safety standards	UL60950-1 approval.
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Note:

1. Measured from high line to low line.
2. LMeasured from full load to zero load.
3. Output ripple and noise measured with 10uF tantalum capacitor and 1uF ceramic capacitor across output.
4. Logic compatibility
Open collector ref to -Input
Module ON >3.5VDC to 75VDC or open circuit
Module OFF <1.2VDC
5. Suffix "N" to the model number with Negative Logic Remote ON/OFF
Module ON <1.2VDC
Module OFF >3.5VDC to 75VDC or open circuit
6. Trim-up, connect a resistor between the trim pin and +Sense
Trim-down, connect a resistor between the trim pin and -Sense
7. The input terminal recommend to parallel with 470uF for 24Vin, 220uF for 48Vin models ESR<0.7Ω to reduce the input ripple voltage.
8. Suffix "C" to the model number with clear mounting insert (3.2mm DIA).

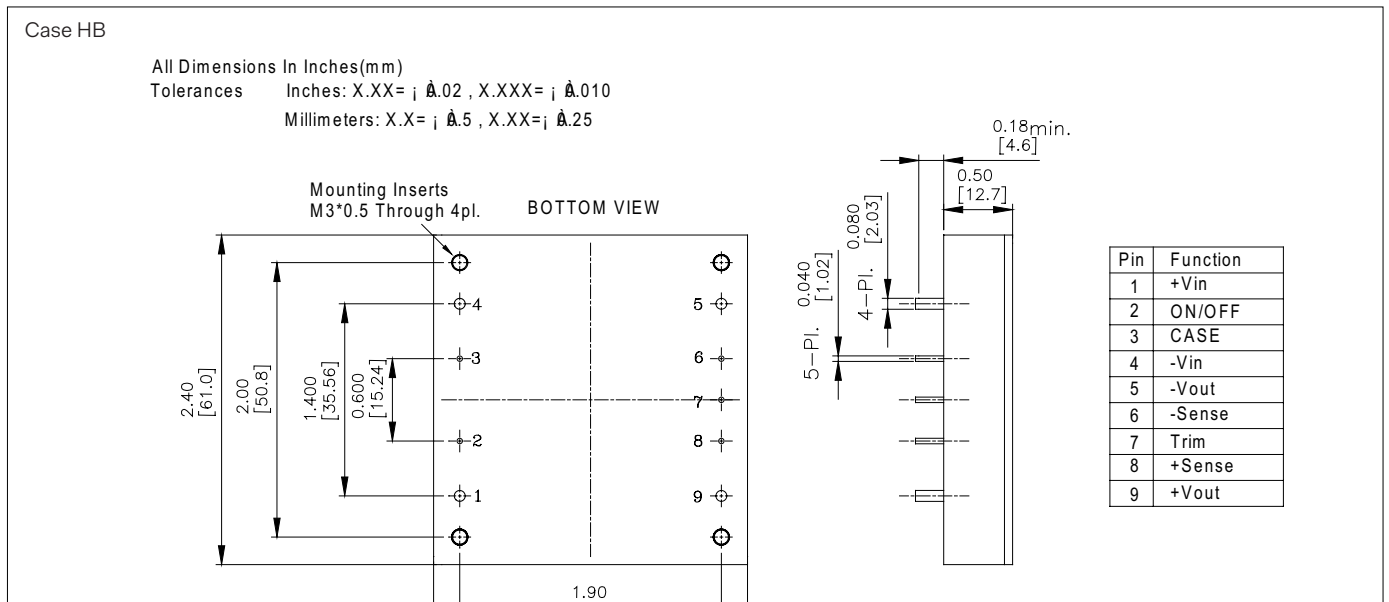
POWERBOX Industrial Line
PHB300W Series
300W Single Output
DC/DC Converter

Model Number	Input Voltage	Output Voltage	Output Current		Input Current		Efficiency		Capacitive Load Max
			Min	Max	No Load	Full Load	2)	3)	
PHB300W-24S05	9-36 VDC	5.0 VDC	0 mA	60 A	200 mA	13.04 A	88%	89%	10000uF
PHB300W-24S12	9-36 VDC	12 VDC	0 mA	25 A	200 mA	14.04 A	89%	89%	10000uF
PHB300W-24S24	9-36 VDC	24 VDC	0 mA	12.5 A	120 mA	13.89 A	89%	90%	4700mF
PHB300W-24S28	9-36 VDC	28 VDC	0 mA	10.7 A	120 mA	13.89 A	89%	90%	4700mF
PHB300W-24S48	9-36 VDC	48 VDC	0 mA	6.25 A	120 mA	14.04 A	89%	89%	2200mF ⁴⁾
PHB300W-48S05	18-75 VDC	5.0 VDC	0 mA	60 A	100 mA	6.94 A	89%	90%	10000uF
PHB300W-48S12	18-75 VDC	12 VDC	0 mA	25 A	100 mA	6.94 A	90.5%	90%	10000uF
PHB300W-48S24	18-75 VDC	24 VDC	0 mA	12.5 A	80 mA	6.98 A	90%	89.5%	4700mF
PHB300W-48S28	18-75 VDC	28 VDC	0 mA	10.7 A	80 mA	6.94 A	91%	90%	4700mF
PHB300W-48S48	18-75 VDC	48 VDC	0 mA	6.25 A	80 mA	7.02 A	90%	89%	2200mF ⁴⁾

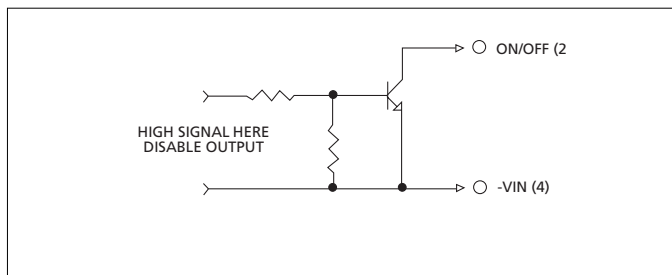
Notes:

- Nominal input voltage 24, 48VDC.
- Measure at 12VDC for 24Sxx and 24VDC for 48Sxx models.
- Measure at nominal input voltage.
- The output terminal of 48Vout models required a minimum capacitor 220uF to maintain specific regulation.
- Output peak power 350W <3 seconds with maximum duty cycle of 10%, average output power not to exceed 300W.

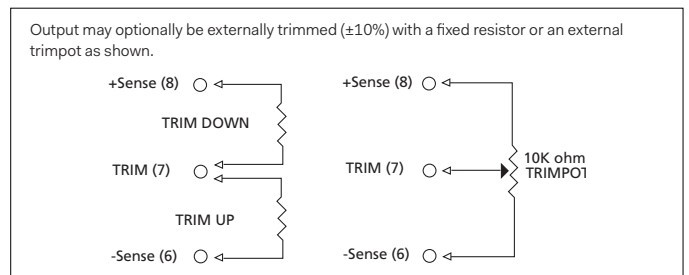
Mechanical



Remote On/Off Control



External Output Trimming



Specifications are subject to change without notice.