

P R B X

POWERBOX Industrial Line PHB150U Series 150W 8:1 Single Output DC/DC Converter

Features

- 150W 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
- UL60950-1 2nd approval

Input

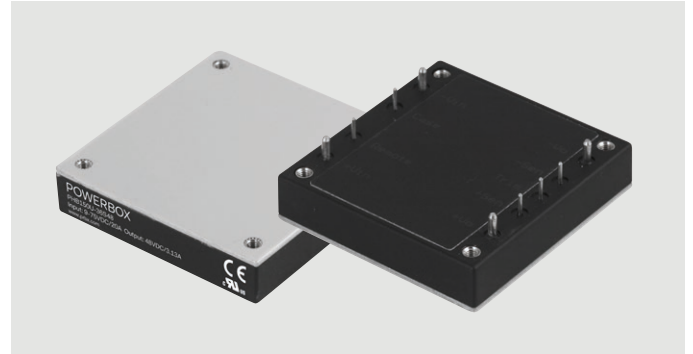
Operating voltage range	36V: 9-75V	
Input surge voltage	100VDC max. (100ms max.)	
Under voltage lockout	Power up	9.5V
	Power down	8.0V
Postive logic remote	ON/OFF 4&5)	
Input filter	LC type	

Output

Voltage accuracy	±1.5% max.	
Transient response	<500µsec	
External trim adj. range ⁶	±10%	
Ripple and noise	12V & 15V:	60mV rms, 120mV pk-pk max
20MHz BW	24V & 28V:	100mV rms, 280mV pk-pk max
	48V:	200mV rms, 480mV pk-pk max
Temperature coefficient	±0.03%/°C max.	
Short circuit protection	Continuous	
Line regulation ¹	±0.2% max.	
Load regulation ²	±0.2% max.	
Over voltage protection	115-140%	
Current limit	105-200% nominal output	
Start up time	110ms typ	

Environmental

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



General

Efficiency	See table	
Isolation voltage	Input/output	1500VDC min.
	Input/case, output/case	1500VDC min.
Isolation resistance	10 ⁷ ohms, min.	
Isolation capacitance	12V/15V	3500pF typ.
	24V/28V/48V	2500pF typ.
Switching frequency	200KHz typ.	
MTBF	800khrs typ, MIL-STD-217F, GB, 25°C	
Dimensions	57.9 x 61.0 x 12.7 mm	
Case material	Aluminum baseplate with plastic case UL 94-V0	
Weight	109 g typ.	

Standards

Safety standards	UL60950-1 approval
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Note:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10µF tantalum (for 48Vout with 10µF aluminum) and 1µF 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 0 to < 1.2VDC, Module OFF >3.5Vdc to 75Vdc or open circuit.
6. The input external capacitor recommend to parallel with 330µF ESR<0.7Ω to reduce the input ripple voltage.

POWERBOX Industrial Line

PHB150U Series

150W 8:1 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)	(1)	(3)	
PHB150U-36S12	9-75VDC	12VDC	0mA	12.5A	60mA	4.66A	89.5%	89.5%	89.5%	5000µF
PHB150U-36S15	9-75VDC	15VDC	0mA	10A	60mA	4.63A	90%	90%	90%	5000µF
PHB150U-36S24	9-75VDC	24VDC	0mA	6.25A	60mA	4.66A	88.5%	89.5%	89%	2000µF ⁽⁴⁾
PHB150U-36S28	9-75VDC	28VDC	0mA	5.35A	60mA	4.63A	90%	90%	89.5%	1500µF ⁽⁴⁾
PHB150U-36S48	9-75VDC	48VDC	0mA	3.13A	60mA	4.63A	90.5%	90.5%	89.5%	1000µF ⁽⁴⁾

Notes:

1. Nominal Input Voltage 36 VDC
2. Measured at 24Vin
3. Measured at 48Vin
4. The output terminal of 24, 28, 48Vout models required a minimum capacitor 100uF to maintain specified regulation.

Mechanical

CASE HB

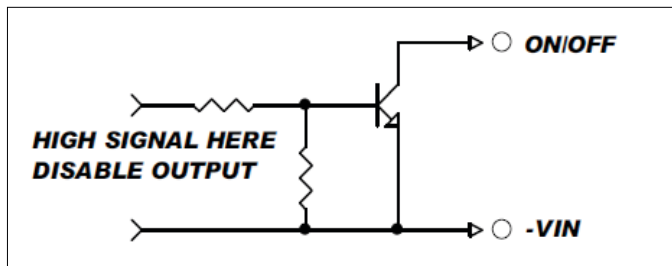
All Dimensions In Inches(mm)
 Tolerances Inches: X.XX= ±0.02, X.XXX= ±0.010
 Millimeters: X.X= ±0.5, X.XX=±0.25

Mounting Inserts
M3*0.5 Through 4pl.

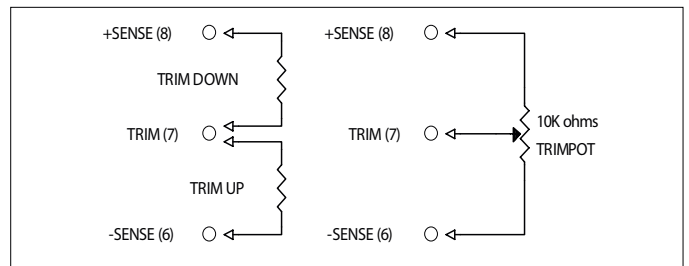
BOTTOM VIEW

Pin	Function
1	+V Input
2	ON/OFF
3	CASE
4	-V Input
5	-V Output
6	-Sense
7	Trim
8	+Sense
9	+V Output

Remote On/Off Control



External Output Trimming



Specifications are subject to change without notice.