



Railway Power Series

xHB200W-110S SERIES

200 WATT 4:1 INPUT DC-DC CONVERTERS



FEATURES

- * 200W Isolated Output
- * Efficiency to 91%
- * Low No Load Power Consumption
- * Fixed Switching Frequency
- * 4:1 Input Range
- * Regulated Outputs
- * Input Under-Voltage Protection
- * Over Temperature Protection
- * Over Voltage/Current Protection
- * Remote On/Off
- * Half-Brick Size Meet Industrial Standard
- * UL60950-1 2nd (Basic Insulation) Approval
- * Meet EN50155 with External Circuits
- * Shock & Vibration Meet EN50155 (EN61373)
- * Fire & Smoke Meet EN45545-2
- * 5000m Operating Altitude



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF. (2)	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
xHB200W-110S05	43-160 VDC	5 VDC	0 mA	40 A	10 mA	2043 mA	89	40000uF
xHB200W-110S12	43-160 VDC	12 VDC	0 mA	16.7 A	10 mA	2002 mA	91	16700uF
xHB200W-110S24	43-160 VDC	24 VDC	0 mA	8.3 A	10 mA	2034 mA	89	8300uF
xHB200W-110S28	43-160 VDC	28 VDC	0 mA	7.14 A	10 mA	2042 mA	89	7140uF
xHB200W-110S48	43-160 VDC	48 VDC	0 mA	4.2 A	10 mA	2014 mA	91	3000uF

NOTE:

1. Nominal Input Voltage 110 VDC.
2. Measure at Nominal Input Voltage.
3. An external input capacitor 220uF for all models are Recommended to Reduce Input Ripple Voltage.

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS:

Input Voltage Range 110V 43-160V
 Input Surge Voltage (100ms max.) 110V 200Vdc max.
 Under Voltage Lockout 110V_{in} Power Up 42V
 110V_{in} Power Down 39V
 Positive Logic Remote On/Off (note 4&5)
 Input Filter (note6) Pi Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy ±1.0% max.
 Transient Response: 75%~100% Step Load Change
 Error Band ±5% V_{out} Nominal, Recover Time <250µs
 External Trim Adj. Range ±10%
 Ripple & Noise, 20MHz BW (note3)
 5V 60mV RMS, 120mV pk-pk max.
 12V 80mV RMS, 150mV pk-pk max.
 24V 120mV RMS, 240mV pk-pk max.
 28V 140mV RMS, 280mV pk-pk max.
 48V 220mV RMS, 480mV pk-pk max.
 Temperature Coefficient ±0.02%/°C max.
 Short Circuit Protection Continuous
 Line Regulation (note1) ±0.2% max.
 Load Regulation (note2) ±0.2% max.
 Over Voltage Protection Trip Range, % V_o nom. 115 - 140%
 Current Limit 110%-160% Nominal Output
 Start up time 35ms typ.

GENERAL SPECIFICATIONS:

Efficiency See Table
 Isolation Voltage Input/Output, Input/Case 3000VDC min.
 Output/Case 500VAC min.
 Isolation Resistance 10⁸ ohm min.
 Isolation Capacitance 3000pF typ.
 Switching Frequency 300KHz typ.
 Operating Case Temperature -40°C to 100°C
 Storage Temperature -55°C to +125°C
 Thermal Shutdown Case Temp. 110°C typ.
 Humidity 95% RH max. Non condensing.
 MTBF... MIL-HDBK-217F, GB,25°C, Full Load 48V...900Khrs typ.
 Others 600Khrs typ.
 Safety UL60950-1 2nd (Basic Insulation).
 EMC (note7) EN50155 (EN50121-3-2) with External Filter.
 Shock/Vibration EN50155(EN61373).
 Environmental EN50155(EN60068-2-1, 2, 30).
 Fire & Smoke Meet EN45545-2
 Dimensions 2.28×2.40×0.50 inches (57.9x61.0×12.7 mm)
 Case Material Aluminum Baseplate with Plastic Case.
 Weight 114g

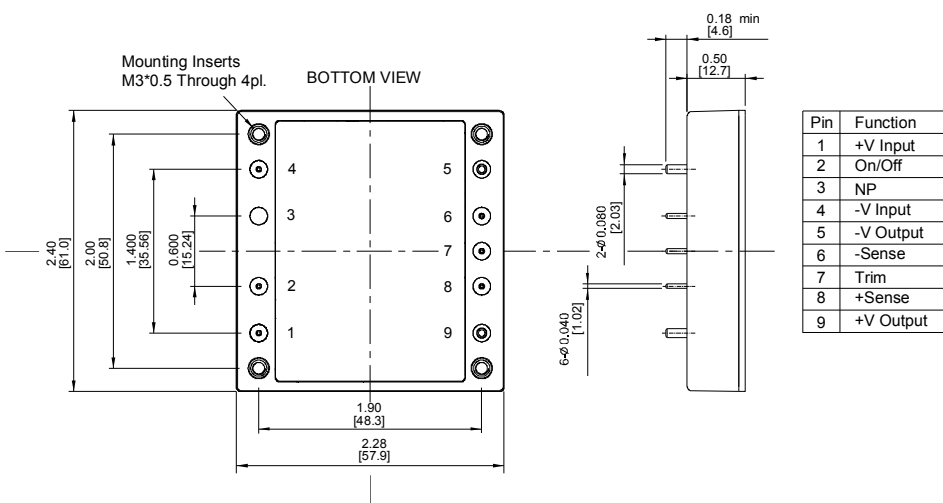
NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF aluminum solid capacitor and 1uF ceramic capacitor across output. (5V: 47uF polymer tantalum capacitor and 1uF ceramic capacitor across output).
4. Logic compatibility open collector ref to -Input
 Module on >3.5Vdc to 160Vdc or open circuit
 Module off 0 to <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 160Vdc or open circuit
6. An external input capacitor 220uF for all models are recommended to reduce input ripple voltage.
7. For information about EN50155 and RIA12, refer to application note.
8. Suffix "-C" to the model number with clear mounting insert. (3.2mm DIA).

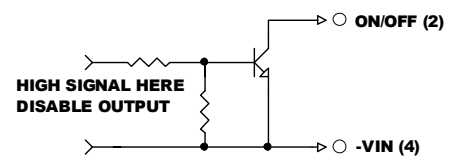
CASE HB

All Dimensions In Inches(mm)

Tolerance: Inches: X.XX = ±0.02, X.XXX = ±0.010 / Millimeters: X.X = ±0.5, X.XX = ±0.25



Remote On/Off Control



External Output Trim

