

200W, Encapsulated DC/DC Converter with Convection Cooling by Heatsink Assembly Fins for Railway and other Heavy Duty Applications RWY 200-P200-HSA Series



- Rugged, field-proven design
- Full encapsulation
- Convection cooling via heatsink assembly
- Wide temperature range
- Full electronic protection
- EN50155 input ranges

This fully encapsulated, railway quality power converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound which provides protection from moisture and other contaminants, as well as immunity to shock and vibration. Convection cooling is achieved by installing the unit on a heatsink assembly block attached to the under-surface of the unit. The heatsink assembly also allows for mounting on uneven and thermally non-conductive surfaces. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control. DIN rail mount and customized versions are also available.

SPECIFICATIONS

Standard Input Voltages

24Vdc (14.4 – 34V)
36Vdc (22 – 51V)
48Vdc (28 – 67V)
72Vdc (43 – 101V)
96Vdc (58 – 135V)
110Vdc (66 – 154V)
Other inputs upon request

Input Protection

Inrush current limiting
Varistor
Reverse polarity protection
Internal safety fuse
Lower voltage than specified minimum input will not damage unit

Isolation

1500Vdc input to chassis
3000Vdc input to output
1500Vdc output to chassis

Standards

Designed to meet EN60950-1 and EN50155

Immunity

Meets criteria of EN50155 and EN50121-3-2 according to the following standards:
EN61000-4-2 (ESD)
EN61000-4-3 (RF Immunity)
EN61000-4-4 (Fast Transients)
EN50155 (Surge)
EN61000-4-6 (Conducted Imm.)
EN50155 (Voltage Variations)

EMI

EN50121-3-2

Switching Frequency

80kHz \pm 5kHz

Output Voltage/Current

12V, 24V, 48V or 110Vdc
Output is floating, either terminal can be grounded
Other outputs upon request

Redundancy Diode

None

Line/Load Regulation

\pm 1% combined from zero load to full load

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise

Less than 1% peak-to-peak or 0.2% RMS of the output voltage (20MHz BW)

Output Overload Protection

Rectangular current limiting with short-circuit protection (cycling type)
Thermal shutdown with automatic recovery in case of insufficient cooling

Output Overvoltage Protection

Second regulator loop completely stable and independent of main regulator loop

Efficiency

80 to 90% depending on input/output configuration

Operating Temperature Range

-40 to +55°C for full specification

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Convection by integrated chassis with heatsink fins

Environmental Protection

Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating.
Meets environmental criteria as requested in MIL-810 C, D

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing
Contact factory for higher rating

MTBF

150,000 hours @ 45 °C
Demonstrated MTBF is significantly higher

Indicators

None
Optional 'ON' LED adapter available

Control Input

None

Alarm Output

None

Package/Dimensions (W x H x L)

Module P200: 69 x 58 x 211mm
(2.7" x 2.3" x 8.3")
The case has clear iridite finish according to MIL-DTL-5541F Type II, Class 1A
The module is installed on P200 HSA-4x10 heatsink assembly
Overall dimensions:
3.9" x 4.2" x 10.6"

Weight

1.5kg (3.3 lbs)

Connections

Barrier-type terminal block with 3/8" spacing, 5-poles

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice.

OUTPUT		GND	INPUT	
+	-	⊥	+	-
1	2	3	4	5

Enhancements to these general specifications and customizing can be accommodated upon request. Specifications are subject to change.

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility.



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