200W, Rugged DC/DC Converter for redundant operation in Railway and other Heavy Duty Applications
RWD 200 Series

- Rugged, field-proven design
- Built-in redundancy diode
- Complete encapsulation
- Very wide temperature range
- Full electronic protection
- Wide input ranges

The RWD 200 Series fully encapsulated, single output, DC/DC converter uses a field-proven design to generate 200W output power. A built-in output separation diode allows for redundant operation. It is a mature product with a track-record in numerous applications. This converter is entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure immunity to shock, vibration and humidity. It is conduction cooled via a base plate to a heatsinking surface. Low component count, large design headrooms, and the use of components with established reliability result in a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on rolling stock. The unit is also suitable for transportation, mining, oil rigs, military and other harsh environments. The RWD 200 is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

Standard Input Voltages
24Vdc (14.4 – 34V)
36Vdc (22 – 51V)
48Vdc (29 - 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
Meets EN 60950 and EN 50155

Immunity
Meets criteria of EN 50155 and EN 50121-3-2 including:
EN 61000-4-2 (ESD)
EN 61000-4-3 (RF Immunity)
EN 61000-4-4 (Fast Transients)
EN 50155 (Surge)
EN 61000-4-6 (Conducted Imm.)
EN 50155 (Voltage Variations)

EMI
EN 55022 Class B and
EN 50121-3-2 conducted and radiated

Switching Frequency
80kHz ±5kHz

Output Voltage/Current
12Vdc/16A or 24Vdc/8A.
Output is floating, either terminal can be grounded
Consult factory for other voltages.

Redundancy Diode
Internal redundancy diode for redundancy

Line/Load Regulation
+/- 1.5% combined from zero load to full load including redundancy diode

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 hiccup type short-circuit protection
Thermal shutdown with automatic recovery in case of insufficient cooling

Output Overvoltage Protection
Second regulator loop completely stable and independent of main regulator loop
Transzorb clamp

Efficiency
80 to 90% depending on input/output configuration

Operating Temperature Range
-40 to +70°C cold plate temperature for full specifications

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Conduction cooling via base plate to customer chassis or heat-sink

Environmental Protection
Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating.

Shock/Vibration
Designed to meet IEC 61373
Cat 1 A&B and Cat 2 as a min.

Humidity
5 – 95% non-condensing

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

Indicators
None.
Optional 'ON' LED available

Control Input
None

Alarm Output
None

Package/Dimensions (W x H x L)
P200L: 94 x 60 x 230 mm
3.7" x 2.36" x 9.05" including terminal block and flanges
Mounting holes are clear

Weight
1.3kg (2.9 lbs.)

Connections
5-pole barrier-type terminal block with 3/8" spacing.
Cover can be provided upon request

RoHS Compliance
Fully compliant

Warranty
Two years subject to application within good engineering practice.

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