

250W, IP66-Rated, Rugged Railway Quality DC-DC Converter with built in RIA12 Protection BAR 250R-D3 Series (IP66)

- Packaged in waterproof IP66 enclosure
- RIA12 withstand capacity
- EN50155 input ranges
- For train and mobile applications
- Internal boards ruggedized and conformal coated
- Rugged, field-proven design
- Full electronic protection
- N+1 redundancy available



This series of rugged, railway quality DC-DC converters utilize field proven BAP 65 topology to generate the required output power. The converters meet the requirements of EN50155 for electronic equipment used on railway rolling stock. With input voltage surge withstand capability of $3.5V_N$ for 20msec, it meets the requirements of RIA12. The units are enclosed in robust, waterproof, die cast aluminum D3 size IP66 packages. The input and output are via sealed cable glands, circular connectors or custom connections. The internal boards are ruggedized and conformal coated for immunity to high levels of shock and vibration. Cooling is by internal conduction to the walls of the IP66 enclosure and by baseplate to an external chassis or cabinet wall, with additional convection via the outside surface. If installed on a heat-sinking surface, cooling is further enhanced and the converters achieve higher output power. An optional built-in redundancy diode allows for parallel and N+1 operation. Other options include a Form C output fail alarm and remote shutdown. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to high MTBF. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

<p>Input Voltage 24Vdc (14.4 – 34V) derated to 200W 36Vdc (22 – 51V) 48Vdc (29 - 67V) 72Vdc (43 – 101V) 96Vdc (58 – 135V) 110Vdc (66 - 154V) RIA12 surges (3.5Vn for 20msec). Other input voltages upon request</p> <p>Input Protection Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Withstand $3.5 \times V_N$ surges Low input voltages of less than the specified minimum will not damage the unit</p> <p>Isolation 1500VDC input to chassis 3000VDC input to output 1500VDC output to chassis</p> <p>Standards Designed to meet EN60950-1 and related standards</p> <p>Immunity Meets EN50155, EN50121-3-2 and RIA12 according to: 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 Immunity) EN 50155 (Voltage Variations) Built-in surge protection: $3.5V_N$ 20ms (meets RIA 12)</p>	<p>EMI EN50121-3-2</p> <hr/> <p>Output Voltage 12Vdc, 24Vdc, 48Vdc or 110Vdc 250W continuous output power Output is floating; either terminal can be grounded Other outputs on request</p> <p>Redundancy Diode None Installed on request</p> <p>Line/Load Regulation $\pm 1\%$ combined from zero load to full load</p> <p>Dynamic Response Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time</p> <p>Output Ripple / Noise Less than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHz BW)</p> <p>Output Overload Protection Rectangular current limiting with short circuit protection</p> <p>Output Overvoltage Protection Double regulator loop completely stable and independent of main loop</p>	<p>Efficiency Input/output voltage dependent. Typically 85% at full load</p> <p>Operating Temperature Range -25 °C to 55 °C for full specification Extended temperature ranges available on request</p> <p>Temperature Drift 0.03% per °C over operating temperature range</p> <p>Cooling Conduction to customer heat-sink or chassis and by additional natural convection via the surface of the IP66 enclosure</p> <p>Environmental Protection IP66 enclosure Internal module: Ruggedized and conformal coated</p> <p>Shock/Vibration IEC 61373 Cat 1 A&B</p> <p>Humidity 5-100% condensing</p> <p>MTBF 150,000 at 45°C Demonstrated MTBF is significantly higher</p>	<p>Indicators None</p> <p>Control Input None Optional</p> <p>Alarm Output Not installed Optional output Fail Alarm</p> <p>Package/Dimensions (W x H x D) D3 enclosure: 160 x 90 x 360 mm 6.3" x 3.5" x 14.2" Overall dimensions including mounting flanges/baseplate: 160 x 94 x 406 mm 6.3" x 3.7" x 16"</p> <p>Weight Approx. 4.6 kg (10 lb)</p> <p>Connections Internal barrier-type terminal block accessible via sealed cable glands. Optional connectors instead of cable glands</p> <p>RoHS Compliance Compliant</p> <p>Warranty Two years subject to application within good engineering practice</p>
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ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change.

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility



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