

300W, Rugged DC/DC Converter with built-in RIA 12 Protection for Railway Applications BAR 65 Series



- Meets RIA 12 (surge withstanding)
- Field-proven rugged design
- For train and mobile applications
- Conduction/convection cooled
- Full electronic protection
- Wide input ranges

The BAR 65 Series rugged, single output DC/DC converter uses field proven topology to generate 300W output power. This design meets the requirements of EN50155 for electronic equipment used on railway rolling stock and has the input voltage surge withstand capability to meet RIA 12 (3.5V_n for 20msec). The series is rated for operation over a -25 to +70°C temperature range without derating. It is cooled by conduction via baseplate to a heatsinking surface and by natural convection. These models are fully ruggedized and conformal coated for immunity to shock, vibration, humidity, moisture, dust and insects. An optional redundancy diode allows parallel connection to achieve higher output power or N+1 redundancy. Other options include a Form C output fail alarm and remote shutdown. This chassis-mount design is optimized for low component count and high efficiency. The use of components with established reliability results in a demonstrated high MTBF. The BAR 65 is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

<p>Input Voltage 72Vdc (43 – 101V) 96Vdc (58 – 135V) 110Vdc (66 - 154V) Other inputs upon request</p> <p>Input Protection Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Limiter circuit for RIA 12 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 and EN50155</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 protection against the 3.5V_n, 20ms surge according to RIA 12.</p> <p>EMI EN55022 Class B and EN50121-3-2 conducted and radiated</p>	<p>Switching Frequency 55kHz +/- 3kHz</p> <p>Output Voltage/Current Any voltage from 12V to 110Vdc Outputs is floating; either terminal can be grounded Consult factory for other voltages</p> <p>Redundancy Diode Optional</p> <p>Line/Load Regulation +/- 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 2msec recovery time</p> <p>Output Ripple / Noise Better 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. Thermal shutdown with automatic Recovery in case of insufficient cooling</p> <p>Output Overvoltage Protection Double regulator loop. Second loop completely stable and independent of main regulator loop</p>	<p>Efficiency Min. 80% at full load</p> <p>Operating Temperature Range -25°C to +70°C cold plate temperature for full specification</p> <p>Temperature Drift 0.03% per °C over operating temperature range</p> <p>Cooling Conduction to customer heatsink or chassis and natural convection</p> <p>Environmental Protection Ruggedizing Conformal coating</p> <p>Shock/Vibration Designed to meet IEC 61373 Cat 1 A&B</p> <p>Humidity 5 – 95% non-condensing</p> <p>MTBF 150,000 hours @ 45 °C Demonstrated MTBF is significantly higher</p>	<p>Indicators Green “Output ON” LED visible through the cooling slots</p> <p>Control Input Optional</p> <p>Alarm Outputs Optional</p> <p>Package / Dimensions (W x H x L) F3: 132 x 62 x 300 mm (5.2" x 2.4" x 11.8") including terminal block and mounting flanges. Mounting holes are clear</p> <p>Weight 1.8 kg (3.9 lbs)</p> <p>Connections 12-pole barrier type terminal block with 3/8" spacing</p> <p>RoHS Compliance Fully compliant</p> <p>Warranty Two years subject to application within good engineering practice</p>
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Enhancements to these general specifications and customizing can be accommodated upon request. Specifications subject to change.

Designer and manufacturer of quality converters, inverters, UPS systems, complete rack mount systems and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BAPT-approved Facility.



ABOPULSE ELECTRONICS LTD
110 Walgreen Road
Ottawa, Ontario. K0A 1L0. CANADA
Tel: (613) 836-3511 Fax: (613) 836-7488
E-mail: absopulse@absopulse.com
www.absopulse.com