

300W, Rugged DC/DC Converter for Railway and other Heavy-Duty Applications BAP 65R-F3 Series

- Field-proven rugged design
- For train and mobile applications
- Conduction/convection cooled
- Full electronic protection
- Wide input range (EN50155)
- N+1 redundancy available



This rugged, railway quality DC/DC converter uses field proven topology to generate the required output power. It is a mature design with a track record in numerous applications. Cooling is by conduction via baseplate to a heat-sinking surface and by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. 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 unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control. Customized versions are also available.

SPECIFICATIONS

<p>Input Voltage 36Vdc (22 – 51V) 48Vdc (29 - 67V) 72Vdc (43 – 101V) 96Vdc (58 – 135V) 110Vdc (66 - 154V) Other inputs upon request</p> <p>Input Protection Inrush current limiting Reverse polarity protection Varistor Internal safety fuse Lower voltage than specified minimum input will not damage 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 EN50155</p> <p>Immunity Meets criteria as requested in EN50155 and EN50121-3-2 according to: EN61000-4-2 (ESD) EN61000-4-3 (RF Immunity) EN61000-4-4 (Fast Transient) EN50155 (Surge) EN61000-4-6 (Conducted immunity) EN50155 (Voltage variation)</p>	<p>EMI EN50121-3-2</p> <p>Switching Frequency 55kHz \pm3kHz</p> <p>Output Voltage Any single DC output up to 130Vdc</p> <p>Redundancy diode Not included. Available as option</p> <p>Line/Load Regulation \pm1% from no 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 Better than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHZ BW)</p> <p>Overload Protection Current limiting with short circuit protection Self-resetting thermostat for thermal protection</p> <p>Output Overvoltage Protection Double regulator loop</p>	<p>Efficiency 80 - 90% depending on input/output configuration</p> <p>Operating Temperature -25 to +55°C cold-plate temperature for full specification Extended temperature ranges available</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 Heavy ruggedizing Conformal coating</p> <p>Shock/Vibration 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 Output ON green LED visible through the cooling slot</p> <p>Control Input Optional</p> <p>Alarm Outputs Optional</p> <p>Package/Dimensions (W x H x L) F3: 132mm x 64mm x 300mm (5.2" x 2.5" 11.8") including terminal block and mounting flanges Mounting holes are clear</p> <p>Weight 2 kg (4.4 lb)</p> <p>Connections 12-pole barrier type terminal block with 3/8" spacing</p> <p>RoHS Compliance Compliant</p> <p>Warranty Two years subject to application within good engineering practice</p>
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