

750Vdc Input, 2kW Rugged DC-DC Converter for Railway & other Heavy-duty Applications HVI-2KR-3U3 Series



- Field-proven rugged design
- For train and mobile applications
- Fan cooling
- Full electronic protection
- Wide input ranges (EN50155)
- N+1 redundancy available

This rugged, railway quality DC-DC converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. The converter is designed to meet EN50155 for electronic equipment used on railway rolling stock. It accepts an input voltage of 750Vdc (525V-975Vdc range), the traction voltage typically required for mass transit vehicles such as trams, metros and light rail, and mining locomotives. High quality built-in fans provide sufficient airflow for operation within the specified temperature range without de-rating. The fan draws air into the unit, which exhausts at the terminal side of the unit. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also ensures exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. It is manufactured at our plant under strict quality control.

SPECIFICATIONS

<p>Input Voltage 750Vdc nominal 525V-975Vdc operating range Other inputs on request</p> <p>Input Protection Inrush current limiting Varistors Reverse polarity protection Internal safety fuse Lower voltage than the specified minimum input will not damage the unit</p> <p>Isolation 3000Vdc input to chassis 3000Vdc input to output 5600Vdc type test 1000Vdc 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 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)</p> <p>EMI EN50121-3-2</p>	<p>Switching Frequency 55kHz \pm3kHz</p> <hr/> <p>Output Voltage/Current 24V, 36V, 48V or 110Vdc Output is floating; either terminal can be grounded Other outputs on request</p> <p>Redundancy Diode Installed internally for separation of the internal modules</p> <p>Line/Load Regulation \pm2% 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 Better than 0.2% rms or 1% pp (@ 20MHz BW)</p> <p>Output Overload Protection Rectangular current limiting with short-circuit protection (no hiccup) Thermal shutdown in case of insufficient airflow (self-resetting)</p> <p>Output Overvoltage Protection Second regulator loop, completely stable and independent of main regulator loop</p>	<p>Efficiency Typically 80% at full load</p> <p>Operating Temperature Range -25°C to +55°C for full specification Extended temperature ranges available</p> <p>Temperature Drift 0.03% per °C over operating temperature range</p> <p>Cooling Forced air by high quality built-in fans. Fans draw air into the unit</p> <p>Environmental Protection Ruggedizing Conformal coating</p> <p>Shock/Vibration IEC 61373 Cat 1 A&B</p> <p>Humidity 5 – 95% non-condensing</p> <p>MTBF 110,000 hours @45°C (fans excluded) Demonstrated MTBF is significantly higher.</p>	<p>Indicators Green “Output ON” LED visible through cooling slots</p> <p>Control Input None on standard version Available as option</p> <p>Alarm Outputs None. Available as option</p> <p>Package/Dimensions (W x H x L) 3U3: 187 x 132 x 407 mm (7.4 x 5.2 x 16”) including connectors, excluding flanges Can be chassis or 19” rack mounted</p> <p>Weight Approx. 6kg (13 lbs.)</p> <p>Connections Input: Terminal block Output: Terminal block or threaded studs</p> <p>RoHS Compliance 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 are subject to change.

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output UPS systems, and complete rack mount systems in 19” or 23” racks. Custom or standard. ABSOPULSE is a BABT-approved Facility.



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