

## 600Vdc Input, 5kW Rugged, Industrial Quality DC-DC Converters HVI 5K-3U7



- Rugged industrial quality
- Wide DC-input voltage range
- Field-proven design
- Full electronic protection
- Cooling by high quality built-in fans
- N+1 redundancy option

This rugged, industrial quality, high input voltage DC-DC power converter uses field proven technology to generate the required output power. The design is based on topology with a track record in numerous applications. The unit is built with two FID2000 and four KHI 1200 internal modules. A built-in redundancy diode allows for a number of 5kW converter units to be connected in parallel to achieve higher output power or N+1 redundancy. The output separation diode also makes the unit suitable for battery charging applications. The input and output are filtered for low noise. High quality built-in fans provide sufficient airflow for operation within the specified temperature range without de-rating. The fans draw air into the unit, and exhaust 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. The unit is manufactured at our plant under strict quality control.

### SPECIFICATIONS

<p><b>Input Voltage</b> 600Vdc nominal 400V-800Vdc operating range Other input range on request</p> <p><b>Input Protection</b> Inrush current limiting Varistors Reverse polarity protection Internal safety fuse Lower voltage than the specified minimum input will not damage the unit</p> <p><b>Isolation</b> 3000Vdc input-chassis 4300Vdc input-output 5600Vdc type test 1500Vdc output-chassis</p> <p><b>Standards</b> Designed to meet EN 60950-1 and related standards</p> <p><b>EMI</b> EN55032 Class A with margins</p> <p><b>Switching Frequency</b> 55kHz ±3kHz</p>	<p><b>Output Voltage</b> 24V, 48V, 110V or 125dc Other outputs on request Output is floating; either terminal can be grounded</p> <p><b>Output Separation Diode</b> Installed internally</p> <p><b>Line/Load Regulation</b> ±1% combined from zero load to full load including output separation diode</p> <p><b>Dynamic Response</b> Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time</p> <p><b>Output Ripple/Noise</b> Better than 0.2% Vrms or 1% Vpp of the output voltage (20MHz BW)</p> <p><b>Output Overload Protection</b> Rectangular current limiting with short-circuit protection (no hiccup) Thermal shutdown in case of insufficient airflow (self-resetting)</p> <p><b>Output Overvoltage Protection</b> Second regulator loop, completely stable and independent of main regulator loop</p>	<p><b>Efficiency</b> Min 85% at full load depending on input/output configuration</p> <p><b>Operating Temperature Range</b> 0°C to 50°C for full specification Wider range available as option</p> <p><b>Temperature Drift</b> 0.03% per °C over operating temperature range</p> <p><b>Cooling</b> Forced air by high quality built-in fans and conduction to customer heat sink or chassis. Fans draw air into the unit.</p> <p><b>Environmental Protection</b> Basic ruggedizing Conformal coating Heavy ruggedizing available as an option</p> <p><b>Shock/Vibration</b> IEC 61373 Cat 1 A&amp;B</p> <p><b>Humidity</b> 5 – 95% non-condensing</p> <p><b>MTBF</b> 85,000 hours @45 °C (fans excluded) Demonstrated MTBF is significantly higher.</p>	<p><b>Indicators</b> Green OUTPUT ON LED on each internal module visible through the rear perforation</p> <p><b>Control Input</b> None on standard version Available as option</p> <p><b>Alarm Outputs</b> None Available as option</p> <p><b>Package/Dimensions (H x W x D)</b> 3U7: 132 x 432 x 407 mm 5.2" x 17" x 16" including terminal block and mounting flanges Mounting holes are clear 19" rack-mounted version also available</p> <p><b>Weight</b> 14 kg, 31 lb</p> <p><b>Connections</b> Input: Terminal block HV assembly Output: Threaded studs, M6</p> <p><b>RoHS Compliance</b> Compliant</p> <p><b>Warranty</b> Two years subject to application within good engineering practice Contamination related failures and shipping costs excluded</p>
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**The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.**

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



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