

600Vdc Input, 500W, IP66-Rated, Encapsulated Industrial DC-DC Converter HVI 500P-D3 Series (IP66)

- High input voltage
- Wide DC-input voltage range
- Packaged in waterproof IP66 enclosure
- Internal module fully encapsulated
- Rugged field-proven design
- Wide temperature range
- Full electronic protection
- N+1 redundancy available



This series of rugged, industrial quality, high input voltage DC/DC converters utilize KHR 301 topology to generate the required output power. This technology enables a significantly more compact construction than previous high input voltage designs at this output power level. The converters accept a nominal input voltage of 600Vdc, with a 400V to 800V input range. To ensure high reliability and long operating life, all critical components on the primary side are designed and tested for corona inception levels, which are significantly higher than the operating voltages. The units are packaged in waterproof, rugged, die cast aluminum IP66 enclosures. The input and output are via sealed cable glands, circular connectors or custom connections. The internal converter unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound for immunity to high levels of shock and vibration. Cooling is by conduction and convection via the walls of the IP66 enclosure. 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 a number of 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. Full electronic protection, low component count, large design headroom, and the use of components with established reliability result in a high MTBF. The series is manufactured at our plant under strict quality control.

SPECIFICATIONS

<p>Input Voltage 600Vdc nominal 400 - 800Vdc operating range Other input ranges on request</p> <p>Input Protection Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Lower voltage than specified minimum input will not damage unit</p> <p>Isolation 3000VDC input to chassis 4300VDC input to output, 5600 type test 1000VDC output to chassis</p> <p>Standards Designed to meet EN 60950-1 and related standards</p> <p>EMI EN55022 Class A with margins</p> <p>Switching Frequency 55kHz ±3kHz</p>	<p>Output Voltage 24V, 36V, 48V or 110Vdc Output is floating; either terminal can be grounded Other outputs on request</p> <p>Redundancy diode Not installed Available as option</p> <p>Line/Load Regulation Better than ±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 Better than 0.2% rms or 1% pp of the output voltage (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 80 - 90% at full load depending on input/output configuration</p> <p>Operating Temperature -40 to +70°C cold-plate temperature for full specification</p> <p>Temperature Drift 0.03% per °C over operating temperature range</p> <p>Cooling Cooling is by conduction and convection via the walls of the IP66 enclosure.</p> <p>Environmental Protection IP66 enclosure The internal module is fully encapsulated with a thermally conductive silicon potting compound with UL94V-0 flammability rating.</p> <p>Shock/Vibration IEC 61373 Cat 1 A&B</p> <p>Humidity 5-100% condensing</p> <p>MTBF 150,000 hours @45° C Demonstrated MTBF is significantly higher.</p>	<p>Indicators None</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) D3: 360 x 160 x 90 mm (14.2" x 6.3" x 3.5") D3 with baseplate: 406 x 160 x 94 mm (16" x 6.3" x 3.7")</p> <p>Weight Approx. 5.8 kg (12.8 lb)</p> <p>Connections Internal barrier-type terminal block accessible via sealed cable glands. Optional connectors instead of cable glands</p> <p>RoHS Compliance Fully compliant</p> <p>Warranty Two years subject to application within good engineering practice</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 professional quality AC/DC power supplies and battery chargers, DC/DC converters, 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.