

## 500W, IP66-Rated, Rugged Industrial, DC-DC Power Converter BAP 319-D4 Series (IP66)



- Packaged in waterproof IP66 enclosure
- Internal module ruggedized and conformal coated
- Regulated and adjustable output
- Full electronic protection
- Field-proven design
- N+1 redundancy available

The rugged industrial quality DC-DC power converters utilize field proven topology to generate the required output power. They 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 boards are ruggedized and conformal coated for immunity to high levels of shock and vibration. Cooling is by internal conduction to the walls of the IP66 enclosure and by baseplate to an external chassis or cabinet wall, with additional convection via the outside surface. If installed on a heat-sinking surface, cooling is further enhanced and the converters achieve higher output power. Optional built-in redundancy diode allows for parallel and N+1 operation. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to high MTBF. The unit is manufactured at our plant under strict quality control. High temperature, opto-less versions of this design are also available.

### SPECIFICATIONS

<p><b>Input Voltage</b> 24Vdc (21-29V) 48Vdc (42-56V) 125Vd (105-145V) (12Vdc input with reduced power) Consult factory for other voltages</p> <p><b>Input Protection</b> Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Lower voltage than the specified minimum input will not damage the unit</p> <p><b>Isolation</b> According to input voltage minimum of: 1000VDC input to chassis, 1500VDC input to output, 500VDC output to chassis</p> <p><b>Standards</b> Designed to meet EN60950-1 and related standards</p> <p><b>EMI</b> EN 55022 Class A with margins</p> <p><b>Switching Frequency</b> 55kHz ±3kHz</p>	<p><b>Output Voltages</b> 12V, 24V, 48V or 125Vdc Total output power 500W continuous Output is floating; either terminal can be grounded Consult factory for other voltages</p> <p><b>Redundancy diode</b> Not installed Available as option</p> <p><b>Line/Load Regulation</b> ±1% combined from zero load to full load</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 1% of output voltage peak to peak or 0.2% Vrms (20MHz BW)</p> <p><b>Output Overload Protection</b> Rectangular current limiting with short-circuit protection (no hiccup). Thermal shutdown in case of insufficient cooling (self resetting)</p> <p><b>Output Overvoltage Protection</b> Double regulator loop completely stable and independent of main loop</p>	<p><b>Efficiency</b> Typically 80% at full load depending on input/output combination</p> <p><b>Operating Temperature Range</b> -25 °C to 55 °C for full specification Extended temperature ranges available on request</p> <p><b>Temperature Drift</b> 0.03% per °C over operating temperature range</p> <p><b>Cooling</b> Conduction to customer heat-sink or chassis and by additional natural convection via the surface of the IP66 enclosure</p> <p><b>Environmental Protection</b> IP66 enclosure Internal module: Ruggedized and conformal coated Potting of the internal module is also available</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> 150,000 hours at 45 °C Demonstrated MTBF is significantly higher</p>	<p><b>Indicators</b> None</p> <p><b>Control Input</b> None</p> <p><b>Alarm Output</b> None Available as option</p> <p><b>Package/Dimensions (L x W x H)</b> D4: 400 x 230 x 110 mm (15.7" x 9.1" x 4.3") excluding baseplate and connectors D4 with baseplate: 448 x 230 x 113 mm (17.6" x 9.1" x 4.55)</p> <p><b>Weight</b> 8 kg; 17.6 lb</p> <p><b>Connections</b> Internal barrier-type terminal block, 3/8" spacing accessible via sealed cable glands Optional connectors instead of cable glands</p> <p><b>RoHS Compliance</b> Compliant</p> <p><b>Warranty</b> Two years subject to application within good engineering practice</p>
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