

## 600Vdc High Input Voltage, 3kW, Encapsulated Industrial Step-down DC-DC Regulator BUR 3K-P600 Series

- High input voltage
- Wide DC-input voltage range
- Full encapsulation
- Rugged field-proven topology
- Wide temperature range
- Full electronic protection
- N+1 redundancy available
- No galvanic isolation



This fully encapsulated, industrial quality step down DC-DC regulator uses field-proven technology to generate the required output power. The design is based on topology that has a proven track record in numerous heavy-duty applications. The unit steps a 400–800Vdc input voltage to 300Vdc, or similar voltage at very high efficiency. The use of the latest silicon carbide semiconductor technology contributes to 97-98% conversion efficiency, allowing low heat dissipation and high power density in the existing P600 enclosure size. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound to increase resistance to shock, vibration and humidity. Cooling is via base plate by conduction. The unit is designed for continuous operation at 70°C with installation on an appropriate size heat sinking surface. A compact, fan cooled version of this design is also available. Applications include generating a stable regulated output voltage from a wide range input voltage, stabilizing the voltage at the end of a long cable, or generating a stable suitable voltage for motor drive units.

### SPECIFICATIONS

<p><b>Input Voltage</b> 600Vdc nominal 400 - 800Vdc operating range Other input ranges on request</p>	<p><b>Output Voltage</b> 300Vdc/10A Output return is common with input return</p>	<p><b>Efficiency</b> 97% at full load depending on input/output configuration</p>	<p><b>Indicators</b> None</p>
<p><b>Input Protection</b> Inrush current limiting Varistor Reverse polarity protection by series diode Internal safety fuse Lower voltage than specified minimum input will not damage unit</p>	<p><b>Redundancy diode</b> Not installed Available as option</p>	<p><b>Operating Temperature</b> -40 to +70°C cold-plate temperature for full specification</p>	<p><b>Control Input</b> None on standard version Available as option</p>
<p><b>Isolation</b> 3000VDC input/output to chassis Input and output returns are common.</p>	<p><b>Line/Load Regulation</b> ±1% combined from zero load to full load</p>	<p><b>Temperature Drift</b> 0.03% per °C over operating temperature range</p>	<p><b>Alarm Outputs</b> None. Available as option</p>
<p><b>Standards</b> Designed to meet EN 60950-1 and corresponding standards</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>Cooling</b> Conduction cooling via base plate to customer chassis or heat-sink</p>	<p><b>Package/Dimensions (W x H x L)</b> P600: 155 x 68.5 x 270mm (6.1" x 2.7" x 10.6") Mounting holes are clear</p>
<p><b>EMI</b> EN55022 Class A with margins</p>	<p><b>Output Ripple / Noise</b> Better than 300mVrms or 900pp (20MHz BW)</p>	<p><b>Environmental Protection</b> The internal module is fully encapsulated with a thermally conductive silicon potting compound with UL94V-0 flammability rating.</p>	<p><b>Weight</b> 3.4kg (7.5 lbs.)</p>
<p><b>Switching Frequency</b> 55kHz ±3kHz</p>	<p><b>Output Overload Protection</b> Thermal shutdown with automatic reset in case of insufficient cooling Current Limit set to: 11A ± 0.8A</p>	<p><b>Shock/Vibration</b> IEC 61373 Cat 1 A&amp;B</p>	<p><b>Connections</b> Barrier-type terminal block</p>
	<p><b>Output Overvoltage Protection</b> Transorb clamp</p>	<p><b>Humidity</b> 5-95% non-condensing</p>	<p><b>RoHS Compliance</b> Compliant</p>
		<p><b>MTBF</b> 110,000 hours @45°C Demonstrated MTBF is significantly higher.</p>	<p><b>Warranty</b> Two years subject to application within good engineering practice</p>

**The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.**

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