

DCCrail280 Series DC/DC Voltage Converter



Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

Applications

- Railway / Transportation
- Mining
- Oil Rigs
- Military Applications
- Marine / Automotive / RV
- Electric Utilities and Substations
- Telecom Power Plants
- Manufacturing Locations
- Steel Mills
- Industrial Controls
- OEM Applications

DC/DC Converters

DCCrail280 Series (isolated)

Description

The DCCrail280 series single output, push-pull converter provides a maximum output of 280W. It is the single output version of the DCCrail282 design.

This high-density unit is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration, humidity, moisture, dust and insects.

The converter is conduction cooled via a base plate and designed for operation within a wide temperature range without de-rating.

The use of components with many years of established reliability and generous headroom contribute to a the demonstrated MTBF exceeding 1,000,000 hours at typical operating temperatures.

The unit is intended for transportation, mining, oil rigs, military and other harsh environments.

This design meets the requirements of EN50155 for electronic equipment used on rolling stock.

Features

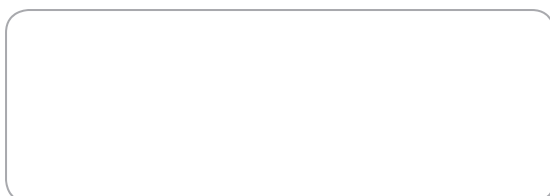
- Compact case
- Rugged construction
- Complete encapsulation
- Conduction cooling
- Single output
- 280W output power
- Meets EN50155 and EN60950
- Competitive price
- Full electronic protection
- Telecom quality
- Field-proven design
- 2 years parts and labour warranty

Specifications (Specifications Subject to Change Without Notice)

Specifications

Input Voltage range	36V (22 – 55Vdc) 48V (28 – 74Vdc) 72V (42 – 110Vdc) 110V (57 – 168Vdc) Other inputs upon request
Input Protection	Inrush current limiting Reverse polarity protection Varistor Internal safety fuse Lower voltage than specified input min. will not damage unit
Isolation	According to EN50155. Typically: Input to chassis: 1500Vdc Input to output: 3000Vdc Output to chassis: 1500Vdc
Output Voltages	12V/23A or 24V/11A Consult factory for other voltages Outputs are floating; either terminal can be grounded
Switching Frequency	80kHz \pm 5kHz
Redundancy Diode	None
Line / Load Regulation	+/- 1.5% combined from zero load to full load on each output
Dynamic Response	Max 5% voltage deviation for 10% to 50% load step, with better than 1ms recovery time
Output Overvoltage Protection	Second regulator loop completely stable and independent of main regulator loop
Overload Protection	Rectangular current limiting with hiccup type short-circuit protection
Efficiency	80 to 90% depending on input/output configuration
EMI	EN55022 Class B and EN50121-3-2 conducted and radiated
Output Ripple/Noise	Less than 1% peak-to-peak or 0.2% RMS of the output voltage (20MHZ BW)
Immunity	Meets criteria of EN50155 and EN50121-3-2 including EN 61000-4-2 (ESD), EN61000-4-3 (RF Immunity), EN61000-4-4 (Fast Transients), EN50155 (Surge), EN61000-4-6 (Conducted Imm.), EN50155 (Voltage Variations)
MTBF	200,000 hours @ 45°C Demonstrated MTBF exceeds 1,000,000 hours at typical operating temperatures
Indicators	None (Optional 'ON' LED available)
Environmental Protection	Full encapsulation, meets IP67-3 excluded input-output terminals
Operating Temperature	-40 to +70°C cooling surface temperature for full specifications
Temperature Drift	0.03% per °C over operating temperature range
Cooling	Conduction cooling via base plate to customer chassis or heat-sink
Connections	9-pole barrier-type terminal block with 3/8" spacing. Cover provided
Dimensions	11.2cm x 20.1cm x 6.1cm including terminal block and flanges.
Weight	1.3 Kg
Safety	Meets EN60950 and EN50155
Warranty	2 years

Available from:



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The power conversion company

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