

DCCrail212 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

DCCrail212 Series (isolated)

Description

The DCCrail212 series fully encapsulated single output DC/DC converter uses field-proven topology to generate 200W output power.

It meets the requirements of EN 50155 for electronic equipment used on rolling stock.

This version also meets requirements for RIA 13 and RIA 20, and has a built in voltage limiter circuit to ensure input voltage surge withstand capability to meet RIA 12 (3.5Vn for 20msec).

The converter is conduction cooled via a base plate and is rated for operation over a -40 to +70°C temperature range without derating. It is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration, humidity, moisture, dust and insects.

The use of components with many years of established reliability and generous headroom results in a high demonstrated MTBF.

The unit is also suitable for operation in mining, oil rigs, military and other harsh environments.

The DCCrail212 series is manufactured at our plant under strict quality control. Customized versions are also available.

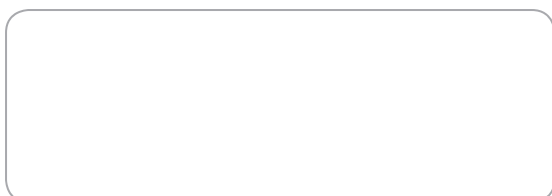
Features

- Compact case
- Rugged construction
- Complete encapsulation
- Conduction cooling
- Single output
- 200W output power
- Meets IEC950, EN50155, RIA 12, RIA 13, RIA 20
- Competitive price
- Full electronic protection
- Telecom quality
- Field-proven design
- 2 years parts and labour warranty

Specifications (Specifications Subject to Change Without Notice)

Input Voltage range	24Vdc (14.4 – 34V) 36Vdc (22 – 51V) 48Vdc (29 - 67V) 72Vdc (43 – 101V) 96Vdc (58 – 135V) 110Vdc (66 - 154V) Other inputs upon request
Input Protection	Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Lower voltage than specified input min. will not damage unit
Isolation	Input to chassis: 1500Vdc Input to output: 3000Vdc Output to chassis: 1500Vdc
Output Voltages	12V/16A, 24V/8A, 36V/5A, 48V/4A or 110V/1.8A Consult factory for other voltages Outputs are floating; either terminal can be grounded
Switching Frequency	80kHz ±5kHz
Redundancy Diode	None
Line / Load Regulation	+/- 1% 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 Thermal shutdown with automatic recovery in case of insufficient cooling
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 according to the following standards: 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) Built-in protection against the 3.5Vn, 20ms surge according to RIA 12
MTBF	150,000 hours @ 45°C Demonstrated MTBF is significantly higher
Indicators	None (Optional 'ON' LED available)
Control Input	None
Alarm Output	None
Environmental Protection	Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating
Shock/Vibration	Designed to meet IEC 61373 Cat 1 A&B and Cat 2 as a min.
Humidity	5 – 95% non-condensing Contact factory for higher rating
Operating Temperature	-40 to +70°C cold-plate temperature for full specification
Temperature Drift	0.03% per °C over operating temperature range
Cooling	Conduction cooling via base plate to customer chassis or heat-sink
Connections	5-pole barrier-type terminal block with 3/8" spacing. Cover can be provided upon request
Dimensions	23cm x 9.4cm x 6.0cm including terminal block and flanges Mounting holes are clear
Weight	1.3 Kg
Safety	Designed to meet IEC950, EN50155, RIA 12, RIA 13, RIA 20
RoHS Compliance	Fully compliant
Warranty	2 years

Available from:



RIPEnergy®

The power conversion company

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