

DCCrail500 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

DCCrail500 Series (isolated)

Description

The DCCrail500 series fully encapsulated single output DC/DC converter uses field-proven topology to generate 500W output power.

It is conduction cooled via a base plate and is rated for full operation in the specified temperature range.

The unit is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration and humidity.

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

The unit is intended for railway applications and meets the requirements of EN50155 for electronic equipment used on rolling stock.

The DCCrail500 series is manufactured at our plant under strict quality control. Customized versions are also available.

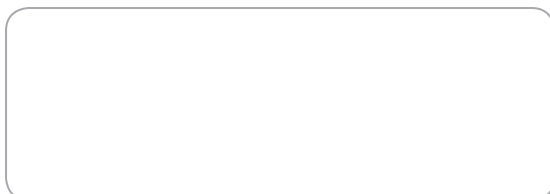
Features

- Compact case
- Rugged construction
- Complete encapsulation
- Conduction cooling
- Single output
- 500W output power
- Compliance to EN 50155
- 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	24V (17 – 34Vdc) 48V (29 – 67Vdc) 72V (43 – 111Vdc) 96V (58 – 135Vdc) 110V (66 – 154Vdc) 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/40A, 24V/20A, 36V/13A, 48V/10A or 110V/4.5A Consult factory for other voltages Outputs are floating; either terminal can be grounded
Switching Frequency	55kHz \pm 3kHz
Redundancy Diode	None, (Optional available)
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 short-circuit protection (not hiccup) 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 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	150,000 hours @ 45°C Demonstrated MTBF is significantly higher
Indicators	None (Optional 'ON' LED available)
Control Input	None, (Enable or inhibit input as option)
Alarm Output	None, (Optional Form C Contact available)
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
Humidity	5–95% non-condensing Contact factory for higher rating
Operating Temperature	-40°C to +70°C cold plate temperature for full specifications
Temperature Drift	0.03% per °C over operating temperature range
Cooling	Conduction cooling via base plate to customer cold plate
Connections	Barrier type terminal block with 3/8" spacing and brass studs.
Dimensions	P500: 138 x 65 x 257mm including terminal block and flanges. Mounting holes are clear
Weight	2.5 Kg
Standards	Meets EN60950 and EN50155
RoHS Compliance	Fully compliant
Warranty	2 years

Available from:



RIPEnergy®

The power conversion company

RIPEnergy AG
Wägitalstrasse 24
CH-8854 Siebnen
Switzerland

Ph +41-(0)43-818 53 85
Fax +41-(0)43-818 53 87
www.ripenergy.ch