

DCCrail30 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

DCCrail30 Series (isolated)

Description

The DCCrail30 Series fully encapsulated, rugged, single output DC/DC converter uses a field-proven design to generate up to 30W output power.

It is a mature product with a track-record in numerous of applications.

This converter is entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure immunity to shock, vibration and humidity.

It is conduction cooled via a base plate to a heatsinking surface.

Low component count, large design headrooms, and the use of components with established reliability result in a high MTBF.

The unit meets the requirements of EN50155 for electronic equipment used on rolling stock.

The DCCrail30 is manufactured at our plant under strict quality control.

Customized versions are also available.

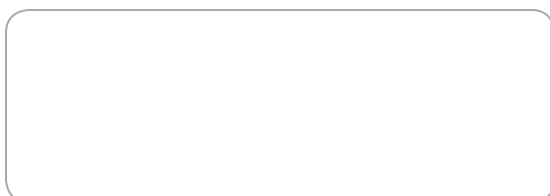
Features

- Field-proven rugged design
- Compact case
- Convection/conduction cooling
- Complete encapsulation
- 30W output power
- Compliance to EN50155
- Full electronic protection
- Wide input ranges
- 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)
Input Protection	Inrush current limiting Reverse polarity protection Varistor 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/2.5A, 24V/1.2A, 36V/0.8A, 48V/0.6A or 110V/0.27A Outputs is floating; either terminal can be grounded Consult factory for other voltages
Switching Frequency	130kHz +/-5kHz
Redundancy Diode	None
Line / Load Regulation	+/- 1% combined from zero load to full load
Dynamic Response	Max 5% voltage deviation for 10% to 50% load step, with better than 1ms recovery time
Output Overvoltage Protection	Transzorb installed across the output
Output 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 as requested in EN50155, EN50121-3-2 including EN 61000-4-2 (ESD) EN 61000-4-3 (RF Immunity) EN 61000-4-4 (Fast Transients) EN 50155 (Surge) EN 61000-4-6 (Conducted Immunity) EN 50155 (Voltage Variations)
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.
Operating Temperature	-40 to +70°C cold-plate temperature for full specification
Temperature Drift	0.03% per °C over operating temperature range
Humidity	5 – 95% non-condensing
Cooling	Conduction cooling via base plate to customer heat-sink or chassis
Connections	5-pole barrier-type terminal block with 3/8" spacing. Cover can be provided upon request
Dimensions	58 x 61 x 181 mm including terminal block and flanges Mounting holes are clear
Weight	0.8 Kg
Standards	Meets EN60950 and EN50155
RoHS Compliance	Fully compliant
Warranty	2 years

Available from:



RIPEnergy®

The power conversion company

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