

# 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

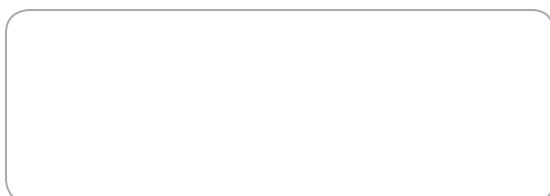
# Specifications ( Specifications Subject to Change Without Notice)

<b>Input Voltage range</b>	24V (17 – 34Vdc) 48V (29 – 67Vdc) 72V (43 – 111Vdc) 96V (58 – 135Vdc) 110V (66 – 154Vdc) Other inputs upon request
<b>Input Protection</b>	Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Lower voltage than specified input min. will not damage unit
<b>Isolation</b>	Input to chassis: 1500Vdc Input to output: 3000Vdc Output to chassis: 1500Vdc
<b>Output Voltages</b>	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
<b>Switching Frequency</b>	55kHz ±3kHz
<b>Redundancy Diode</b>	None, (Optional available)
<b>Line / Load Regulation</b>	+/- 1% combined from zero load to full load on each output
<b>Dynamic Response</b>	Max 5% voltage deviation for 10% to 50% load step, with better than 1ms recovery time
<b>Output Overvoltage Protection</b>	Second regulator loop completely stable and independent of main regulator loop
<b>Overload Protection</b>	Rectangular current limiting with short-circuit protection (not hiccup) Thermal shutdown with automatic recovery in case of insufficient cooling
<b>Efficiency</b>	80 to 90% depending on input/output configuration
<b>EMI</b>	EN50121-3-2
<b>Output Ripple/Noise</b>	Less than 1% peak-to-peak or 0.2% RMS of the output voltage (20MHZ BW)
<b>Immunity</b>	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)
<b>MTBF</b>	150,000 hours @ 45°C Demonstrated MTBF is significantly higher
<b>Indicators</b>	None (Optional 'ON' LED available)
<b>Control Input</b>	None, (Enable or inhibit input as option)
<b>Alarm Output</b>	None, (Optional Form C Contact available)
<b>Environmental Protection</b>	Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating Meets environmental criteria as requested in MIL-810 C, D
<b>Shock/Vibration</b>	Designed to meet IEC 61373 Cat 1 A&B
<b>Humidity</b>	5–95% non-condensing Contact factory for higher rating
<b>Operating Temperature</b>	-40°C to +70°C cold plate temperature for full specifications
<b>Temperature Drift</b>	0.03% per °C over operating temperature range
<b>Cooling</b>	Conduction cooling via base plate to customer cold plate
<b>Connections</b>	Barrier type terminal block with 3/8" spacing and brass studs.
<b>Dimensions</b>	P500: 138 x 65 x 257mm including terminal block and flanges. Mounting holes are clear
<b>Weight</b>	2.6 Kg
<b>Standards</b>	Meets EN60950-1 and EN50155
<b>RoHS Compliance</b>	Fully compliant
<b>Warranty</b>	2 years

## Terminal Block Pin-out

OUTPUT				Spares for Options			GND	INPUT	
+	+	-	-	NOT USED	NOT USED	NOT USED		-	+
1	2	3	4	5	6	7	8	9	10

Available from:



## RIPEnergy

The power conversion company

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