



## DCCrail500R-750/24FXT-T4351 RAILWAY DC/DC CONVERTER

### SERIES DCCrail500R

This rugged, railway quality power converter utilizes field-proven technology to generate the required output power.

It is a mature design with a track record in numerous applications.

Cooling is by conduction via base plate. Additional cooling is achieved by natural convection through the cooling slots. All heat generating components are installed on aluminum heat sink blocks which are thermally connected to the base plate. This also provides exceptional mechanical ruggedness.

Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF.

The converter meets the requirements of EN 50155 for electronic equipment used on railway rolling stock.

It is manufactured at our plant under strict quality control.

Customized versions are also available.



High frequency technology



Light weight, compact size



Full electronic protection



Extended temperature range



Conduction, Convection Cooling (no Fan)



Optional Output fail alarm Form C

### APPLICATIONS

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

### FEATURES

- Field-proven rugged design
- Wide temperature range
- Compact size
- Designed for rolling application according to EN50155
- Full electronic protection
- Wide input range
- 500W output power

# SPECIFICATIONS

Input Voltage	750Vdc nominal 525-975Vdc operating range Input Current: 1.2A max
Input Protection	Inrush current limiting Varistor Reverse polarity protection Internal safety fuse Lower voltage than the specified minimum input will not damage the unit
Isolation	3000Vdc input to chassis 5200Vdc input to output 1000Vdc output to chassis
Switching Frequency	55kHz ±3kHz
Output Voltage	24Vdc ± 0.3V/20A Output is floating, either terminal can be grounded Other outputs on request
Redundancy Diode	None Available as option
Load/Line Regulation	± 1% combined
Dynamic Response	Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time
Output Ripple Noise	Better than 60mVrms, 300mVpp (20MHz BW)
Efficiency	85% at full load
Output Overload Protection	Current limiting with short circuit protection (No hiccup) Self-resetting thermostat for thermal protection Current Limit: 22A ± 1.8A
Output Overvoltage Protection	Double regulator loop
Standards	Designed to meet EN60950-1, EN 62368-1, CE and EN50155
EMI	EN50121-3-2

Immunity	Meets criteria as requested in EN50155 and EN50121-3-2, according to the following standards: EN61000-4-2 (ESD) EN61000-4-3 (RF Immunity) EN61000-4-4 (Fast Transients) EN 50155 (Surge) EN 61000-4-6 (Conduction Immunity) EN50155 (Voltage Variations)
Operating Temperature	-20°C to +55°C for full specification with proper cooling
Humidity	5 - 95% non-condensing
Temperature Drift	0.03% per °C over operating temperature range
Cooling	Conduction via base plate and natural air convection
Environmental Protection	Heavy ruggedizing Conformal coating
Shock/Vibration	IEC 61373 Cat 1 A&B
Dimensions	FX: 153 x 67 x 357mm Mounting holes are clear
Weight	2.2 Kg
Connections	12-pole barrier-type terminal block, 3/8" spacing. Snap-on covers included
MTBF	130,000 hours at 45°C Demonstrated MTBF is significantly higher.
Indicators	Green "Output ON" LED visible through the cooling slots
Control Input	None
Alarm output	None Available as option
RoHS Compliance	Compliant
Warranty	2 years

### Terminal Block Pin-out

NOT USED			24VDC OUTPUT				GND	750VDC INPUT			
1	2	3	+	+	-	-	⏏	⊗	+	⊗	-
1	2	3	4	5	6	7	8	9	10	11	12

