

250 – 300W Encapsulated DC/DC Converter for Railway and other Heavy Duty Applications

RWY 259 Series

- ♦ Rugged, field-proven design
- ♦ Complete encapsulation
- ♦ Full electronic protection
- ♦ -40oC to +70oC temperature ranges
- ♦ Wide input ranges (EN 50155)



This fully encapsulated, rugged, railway quality DC/DC converter uses field-proven technology to generate between 250 – 300W, depending on the input/output combination required. It is a mature design with a track record in numerous applications. The unit 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 heat-sinking surface. Low component count, large design headroom, 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. It is manufactured at our plant under strict quality control.

SPECIFICATIONS

Standard Input Voltages

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
 Reverse polarity protection
 Surge protection
 Internal safety fuse
 Lower voltage than specified minimum input will not damage unit

Isolation

1500Vdc input to chassis
 3000Vdc input to output
 1500Vdc output to chassis

Standards

Meets EN60950 and EN50155

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)

EMI

EN55022 Class B and EN50121-3-2 conducted and radiated

Switching Frequency

55kHz +/- 3kHz

Standard Output Voltages

12V, 24V, 36, 48V or 72Vdc are standard.
 Output is floating; either terminal can be grounded
 Other outputs upon request

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 1msec recovery time

Output Ripple/Noise

Less than 1% peak-to-peak or 0.2% RMS of the output voltage (20MHz BW)

Output Overload Protection

Rectangular current limiting with short-circuit protection (no hiccup)

Output Overvoltage Protection

Second regulator loop completely stable and independent of main regulator loop

Efficiency

80 to 90% depending on input/output configuration

Operating Temperature Range

-40 to +70oC cold plate temperature for full specifications

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction via base plate to customer chassis or heat-sink

Environmental Protection

Full encapsulation with thermally conductive silicon potting compound with UL94V-0 flammability rating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing
 Contact factory for higher rating

MTBF

150,000 hours @ 45 oC
 Demonstrated MTBF is significantly higher

Indicators

None.

Control Input

None

Alarm Output

None

Package/Dimensions (W x H x L)

P59: 108 x 70 x 191mm (4.3" x 2.8" x 7.5") including terminal block and flanges
 Mounting holes are clear

Weight

1.5 Kg (3.2 lb)

Connections

9-pole barrier type terminal block, 3/8" spacing.

RoHS Compliance

Fully compliant

Warranty

Two years subject to application within good engineering practice

Enhancements to these general specifications and customizing can be accommodated upon request. Specifications are subject to change.



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