200VA, IP66-Rated, Rugged, Railway Quality DC-AC Sine Wave Inverter
RSI 200-D3 Series (IP66)

- Packaged in waterproof IP66 enclosure
- EN50155 input ranges
- For train and mobile applications
- Internal module ruggedized and conformal coated
- Rugged, field-proven design
- Full electronic protection

This railway quality DC-AC inverter utilizes field proven, microprocessor controlled high frequency PWM technology to generate the required output power, with pure sign wave output voltage. The units are packaged in waterproof, robust die cast aluminum IP66 enclosures. The input and output are via sealed cable glands, circular connectors or custom connections. The internal module is ruggedized and conformal coated for increased immunity to high levels of shock and vibration. Cooling is by internal conduction to the walls of the IP66 enclosure with additional convection via the outside surface. If installed on a heat-sinking surface, cooling is further enhanced and the converters achieve higher output power. The high frequency conversion enables a compact construction, low weight and high efficiency. The input and output are filtered for low noise. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control. Customized versions are available. An industrial version suitable for other transportation, mining, marine, oilrigs, military and other harsh environments is also available.

SPECIFICATIONS

Input Voltage
24Vdc (17-34V)
48Vdc (33 – 67V)
72Vdc (50 – 101V)
96Vdc (67 – 135V)
110Vdc (77 – 154V)
Consult factory for other input voltages and ranges

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

Standards
Designed to meet
C22.2 No. 107.1 - 01, UL 458, EN60950-1 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
EN50121-3-2

Output Voltage
115Vac @60Hz or 400Hz/1.73Arms continuous; or
230Vac @ 50Hz/0.86Arms continuous
Isolated floating output
Consult factory for other output requirements

Output Wave Form
Sinusoidal

Total Harmonic Distortion
Less than 5% at full load

Line/Load Regulation
± 3% from no load to full load.

Load Crest Factor
2 at 90% load

Output Noise
High frequency ripple is less than 500mVrms (20MHz BW)

Output Overload Protection
Current limiting with short circuit protection
Thermal shutdown with automatic recovery in case of insufficient cooling

Output Overvoltage Protection
140Vac (for 115Vac output) or 280Vac (for 230Vac output) by internal supply voltage limiting

Efficiency
Typically 80% at full load
Dependent on input/output combination

Operating Temperature
-25 to +55°C temperature for full specification
Contact factory for extended temperature range

Temperature Drift
0.05% per °C over operating temperature range

Cooling
Conduction to customer heat-sink or chassis and by additional natural convection via the surface of the IP66 enclosure

Environmental Protection
IP66 enclosure
Internal module: Ruggedized and conformal coated
Potting of the internal module is also available

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5-100% condensing

MTBF
140,000 hours at 45 °C
Demonstrated MTBF is significantly higher

Indicators
None

Control Input
None

Alarm Output
Not installed
Optional output Fail Alarm

Package/Dimensions (L x W x H)
D3 with baseplate:
406 x 160 x 90 mm
(16.1" x 6.3" x 3.5")
Without baseplate:
360 x 160 x 90 mm
14.1" x 6.3" x 3.5"

Weight
4.6 kg (10 lb)

Connections
Internal barrier-type terminal block accessible via sealed cable glands.
Optional connectors instead of cable glands

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

Terminal Block Pin-out (Internal)

12	11	10	9	8	7	6	5	4	3	2	1
+	+	–	–	GND ⏚	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	L2 ~	L1 ~
INPUT								OUTPUT			

The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.

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