

## 100VA, IP66-Rated, Rugged, Railway Quality DC-AC Sine Wave Inverter RSI 100-D1 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 sine 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/0.86Arms continuous; or  
230Vac @ 50Hz/0.43Arms 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

150,000 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)

D1: 220 x 120 x 80 mm  
8.7" x 4.7" x 3.1"  
D1 with baseplate:  
267 x 117 x 4 mm  
10.5" x 4.6" x 0.6"

#### Weight

Approx. 2.4 kg; 5.3 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)

9	8	7	6	5	4	3	2	1
-	+	GND	NOT USED	NOT USED	NOT USED	L2	L1	NOT USED
DC INPUT						AC OUTPUT		

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

*OEM of professional quality AC/DC power supplies and battery chargers, DC/DC converters, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard. ABSOPULSE is a BABT-approved Facility*



#### ABSOPULSE ELECTRONICS LTD

110 Walgreen Road, Ottawa, Ontario. K0A 1L0. CANADA

Tel: +1-613-836-3511 | Fax: +1-613-836-7488

E-mail: [absopulse@absopulse.com](mailto:absopulse@absopulse.com) | <http://www.absopulse.com>