

## 500VA Sine Wave Inverter for Railway Applications RSI 500-FT Series

- Field-proven rugged design
- Conduction/convection cooled - no fan
- Low profile, compact size
- Sinusoidal wave shape
- Full electronic protection



This rugged DC/AC inverter uses field proven, microprocessor controlled high frequency PWM technology to generate the required output power with pure sine wave output voltage. It is a mature design with a track record in numerous applications. The DC/DC input stage boosts the input voltage to a higher DC voltage, which feeds the DC/AC inverter to generate the required AC output. The high frequency conversion enables a compact construction, low weight and high efficiency. The unit has full electronic protection. The input and output are filtered for low noise. Cooling is via baseplate to a cold plate surface and by additional natural convection. The use of components with established reliability results in high MTBF. The unit 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 available.

### SPECIFICATIONS

#### Input Voltage

24Vdc (14.4 – 34V)  
36Vdc (22 – 51V)  
48Vdc (28 – 67V)  
72Vdc (43 – 101V)  
96Vdc (58 – 135V)  
110Vdc (66 – 154V)  
Consult factory for other inputs

#### 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

#### Standards

Designed to meet  
C22.2 No. 107.1 - 01, UL 458,  
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

#### Output Voltage

115Vac @ 60Hz or  
400Hz/4.4A rms continuous;  
or 230Vac @ 50Hz/2.2A rms  
continuous.  
Output neutral is connected to the  
chassis internally.  
Isolated floating output optional  
Consult factory for other output  
requirements

#### Output Wave Form

Sinusoidal

#### Total Harmonic Distortion

Less than 5% at full load

#### Line Regulation

Maximum 0.5%

#### Load Regulation

Maximum  $\pm 6\%$  from no load  
to full load.  
A  $\pm 2\%$  load regulation option is  
available.

#### Load Crest Factor

Maximum 3.0 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 +70°C cold-plate  
temperature

#### Temperature Drift

0.05% per °C over operating  
temperature range

#### Cooling

Conduction to customer heatsink  
or chassis and natural convection

#### Environmental Protection

Ruggedizing  
Conformal coating

#### Shock/Vibration

Designed to meet IEC 61373  
Cat 1 A&B and Cat 2 as a min.

#### Humidity

5 - 95% non-condensing

#### MTBF

150,000 hours at 45 °C  
Demonstrated MTBF is  
significantly higher

#### Indicators

None

#### Control Input

None  
Optional remote shut down

#### Alarm Output

None on standard version  
Optional output Fail Alarm (Form C)

#### Dimensions

F 21: 254 x 66 x 361 mm  
(10" x 2.6" x 14.2") including  
terminals and mounting flanges

#### Weight

4.2 kg (9 lb)

#### Connections

Compression-type terminals  
for input and output

#### 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 subject to change.

*Designer and manufacturer of quality converters, inverters, UPS systems, complete rack mount systems  
and DC-input fluorescent lamp inverters since 1982. Custom or standard. Absopulse is a BABT-approved Facility*



#### ABSOPULSE ELECTRONICS LTD

110 Walgreen Road  
Ottawa, Ontario. K0A 1L0. CANADA  
Tel: (613) 836-3511 Fax: (613) 836-7488  
E-mail: [absopulse@absopulse.com](mailto:absopulse@absopulse.com)  
<http://www.absopulse.com>