1000VA Railway Quality DC-AC Inverters with Sine Wave Output Voltage, Low-profile
RSI 1K-F31 Series

- Sinusoidal wave shape
- Field-proven rugged design
- Cooling by conduction and natural convection
- Low profile, compact size
- Full electronic protection

This rugged, railway quality DC-AC inverter series uses field-proven, microprocessor controlled high frequency PWM technology to generate the required output power with pure sign wave output voltage. The units meet the requirements of EN50155 for electronic equipment used on railway rolling stock. The design is based on a mature design topology 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 use of high frequency conversion enables a compact construction, low weight and high efficiency. The input and output are filtered for low noise. Cooling is by baseplate to a cold plate surface and by natural convection. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also ensures 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. All ABSOPULSE products are manufactured at our plant under strict quality control. Industrial quality versions of this design are also available.

SPECIFICATIONS

Input Voltage
24Vdc (17 – 34V)
36Vdc (25 – 51V)
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/output
Output neutral is connected to the chassis internally.

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/8.7Arms continuous at 60Hz or 400Hz; or
230Vac/4.3Arms continuous at 50Hz
Output neutral is connected to the chassis internally.
Isolated floating output available on request

Output Wave Form
Sinusoidal

Total Harmonic Distortion
Less than 5% at full load

Line Regulation
Maximum 0.5%

Load Regulation
Maximum ± 6% from no load to full load.
A ± 2% load regulation option is available.

Load Crest Factor
2.0 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
Input voltage dependent
Typically 80% at full load

Operating Temperature
-25 to +55°C cold-plate temperature for full specification

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
IEC 61373 Cat 1 A&B

Humidity
5 - 95% non-condensing

MTBF
120,000 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 31: 483 x 68 x 356 mm (19" x 2.7" x 14") including terminal blocks and flanges. Mounting holes are clear.

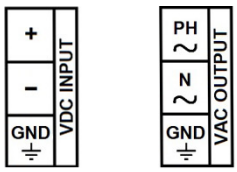
Weight
7 kg (15 lb)

Connections
Input: Compression-type terminals or threaded studs
Output: Compression-type terminals

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

Terminal Block Pin-out



Please note that ABSOPULSE inverters are designed and built to customer specifications. The specifications on this data sheet are generic and will vary depending on input/output configuration and other customer requirements. Generic specifications are 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

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Made in Canada