

1000VA Railway Quality DC/AC Sine Wave Inverter with Encapsulated Internal Modules, Low Profile RSI 1KP-F31 Series

- Sinusoidal wave shape
- Field-proven rugged design
- Fully encapsulated internal modules
- Conduction/convection cooled - no fans
- Low profile, compact size
- Full electronic protection



This rugged, railway quality 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. It is built with internal power modules that are entirely potted with a thermally conductive MIL-grade silicon rubber compound to ensure immunity to high levels of shock, vibration and humidity. 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 EN50155 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 (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
3000Vdc input to 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 @ 60Hz or
400Hz/8.7A rms continuous;
or 230Vac @ 50Hz/4.3A 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

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 cold-plate
temperature for full specification

Temperature Drift

0.05% per °C over operating
temperature range

Cooling

Conduction via base plate to
customer cold plate

Environmental Protection

Fully encapsulated internal
modules

Shock/Vibration

IEC 61373 Cat 1 A&B

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

F31: 483 x 68 x 356 mm
19" x 2.7" x 14" including
terminals and mounting flanges

Weight

12.5 kg (28 lb)

Connections

Input: terminal block or threaded studs
Output: compression-type
terminal block

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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