

1000VA Railway Quality DC-AC Sine Wave Inverters with Convection Cooling by Heatsink Assembly Fins for Railway and other Heavy-Duty Applications

RSI 1K-HSA-F31 Series



- Sinusoidal wave shape
- Field-proven rugged design
- For train and mobile applications
- Meets requirements of EN50155
- Convection cooling via heatsink assembly
- 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. 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. Convection cooling is achieved by installing the unit on a heatsink assembly block which is specifically designed for the unit. The heatsink assembly also allows for mounting on uneven and thermally non-conductive surfaces. 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. It is manufactured at our plant under strict quality control. Industrial quality versions of this design are also available.

SPECIFICATIONS

Input Voltage

36Vdc (25 – 51V)
48Vdc (33 – 67V)
72Vdc (50 – 101V)
96Vdc (67 – 135V)
110Vdc (77 – 154V)
24Vdc (17 – 34V) with derating
to 750VA

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/Load Regulation

± 6% from no load to full load
± 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°C to +55°C ambient
temperature range for full
specification without derating.
Consult factory for extended
temperature range

Temperature Drift

0.05% per °C over operating
temperature range

Cooling

Natural air 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 installed
Optional Output Fail Alarm (Form C)

Dimensions (W x H x L)

F31 enclosure installed on HSA F31
heatsink assembly
Overall dimensions:
572 x 150 x 356 mm
22.5" x 5.9" x 14"
Mounting holes are clear

Weight

9kg (19.8 lbs)

Connections

Input: Suitable terminals for
input current
Output: 3-pole terminal block
with 13mm spacing

RoHS Compliance

Compliant

Warranty

Two years subject to application
within good engineering practice

ABSOPULSE power supplies are designed and built to customer requirements. The specifications on this data sheet are generic guidelines only and are subject to change.

OEM of industrial and railway quality DC-DC converters, AC-DC power supplies and battery chargers, 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

<https://absopulse.com/contact> | <https://www.absopulse.com>