

1000VA, Low-profile, Conduction Cooled Sine Wave Inverter for Industrial and Harsh-Environment Applications RSI 1KP Series

- Fully encapsulated modules
- Highly ruggedized
- Conduction cooling
- Sinusoidal output voltage
- Full electronic protection
- Field-proven design topology



The RSI 1KP Series rugged, compact DC/AC Inverter uses high frequency PWM technology to generate 1000VA output power. It is a mature design with a track record in numerous applications. The unit is comprised of internal modules which are fully encapsulated in thermally conductive MIL-spec silicon rubber compound to ensure resistance against shock, vibration, moisture, humidity, salt, fog, dust, and insects. The cooling is solely by conduction. The RSI 1KP has full electronic protection. The input and output are filtered for low noise. 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 components with established reliability results in high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on rolling stock. It is also suitable for transportation, mining, oil rigs, military and other harsh environments. The RSI 1KP is manufactured at our plant under strict quality control. Versions for railway applications are also available. The unit meets the requirements of EN50155 for electronic equipment used on rolling stock. It is also suitable for transportation, mining, oil rigs, military and other harsh environments.

SPECIFICATIONS

Input Voltage
24V, 36V, 48V, 125V, 250VDC
±15% are standard
Consult factory for other inputs

Input Protection
Inrush current limiting
Varistors
Reverse polarity protection
Internal safety fuse
Lower voltage than the specified minimum input will not damage the unit

Isolation
500Vdc input to chassis for input voltages up to 48Vdc;
1700Vdc input to chassis for input voltage 125Vdc
2250Vdc input to chassis for input voltage 250Vdc
2250Vdc input to output
Output neutral is connected to the chassis, internally
Floating output as option

Standards
Designed to meet
C22.2 No. 107.1 - 01,
UL 458 and EN60950

EMI
EN 55022 Class A
as a minimum

Output Voltage
115Vac/8.7A /60Hz or 400Hz ;
or 230Vac/4.35A /50Hz
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
Better than 0.5%

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

Load Crest Factor
Maximum 3.0 at 90% load

Output Noise
High frequency ripple is better 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
140/280V by internal supply voltage limiting

Efficiency
Depends on input and output voltage combination.
Typically 76% at full load

Operating Temperature Range
- 25° C to +60° C cold-plate temperature

Temperature Drift
0.05% per °C over operating temperature range

Cooling
Conduction cooling via base plate to customer chassis or heat-sink

Environmental Protection
Fully encapsulated internal modules

Shock/Vibration
Designed to meet IEC 61373
Cat 1 A&B

Humidity
5 - 95% non-condensing or condensing

MTBF
Min. 160,000 hours at 45°C
Demonstrated MTBF significantly higher

Indicators
None

Control Input
None
Option: Remote inhibit

Alarm Output
Option: output fail alarm (Form C)

Package/Dimensions
F 31: 483 x 67 x 355 mm
(19" x 2.6" x 14") including terminal blocks and flanges.
Mounting holes are clear.

Weight
12.5 Kg (28 lb)

Connections
Input/output: compression-type terminal block
(Phoenix SMKDS 5/3-9,6)

RoHS Compliance
Fully compliant

Warranty
Two years subject to application within good engineering practice

Enhancements to these general specifications can be accommodated upon request. Specifications are subject to change

Designer and manufacturer of quality ac-dc power supplies and battery chargers, converters, inverters, dc-output 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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