

RSW 3000 Railway Sinewave Inverter

RoHS Compliant
Directive 2002/95/EC



Pure sinewave



High frequency technology



Light weight, compact size



Full electronic protection



Extended temperature range



Designed for rolling applications according to EN50155



Remote inhibit (Standby)



Output fail alarm (Form B)



3-Phase synchronization

Applications

- Railway Applications
- Industrial Controls
- Telecom Power Plants
- Marine & other rugged environments
- Electric Utilities and Substations
- Base Station Power

Sinewave Inverter

Series RSW3000

Description

The RSW3000 consists of sine-wave 120Vac or 230Vac output voltage DC-AC converters. The frequency can be set to 50Hz or 60Hz, and input and output are galvanically isolated.

The RSW3000 inverters consist of two cascaded converters, one DC-DC generating an intermediate output voltage from the input voltage. That intermediate voltage is inverted to supply the output voltage and frequency by means of a second DC/AC converter.

The topology for the first converter is a fixed frequency push-pull type that provides the isolation between input and output. The second converter consists of a bridge inverter also at fixed frequency and fully PWM controlled by means of microcontroller that is equipped with an LC output filter that removes the switching frequency components and delivers a sine-wave output.

The RSW3000 inverter is equipped with an input polarity protection by means of an external fuse.

It also features maximum average power protection as well as maximum output peak current protection. This protects the semiconductors even when an output short-circuit occurs. It also features a disable function for input under-voltage, which protects the batteries from harmful discharges.

Features

- Sine wave output voltage
- Selectable output frequency: 50/60Hz
- High input-output isolation 3000Vrms
- Remote inhibit
- Remote control via RS232
- Adjustable output voltage
- Designed for rolling applications according to EN50155
- Fire and smoke EN45545-2 approved
- Protection against overloads and short-circuits
- Protection against input undervoltage
- 3-Phase synchronization
- Output fail alarm by isolated relay contacts

Specifications (Specifications Subject to Change Without Notice)

Model	Input	Output	Power	Output peak current		Efficiency	No load input current
				5s	10ms (lopk)		
RSW3000-24-230	24 Vdc	230 Vac	2400 VA	15A	32A	89 %	< 0.7 A
RSW3000-36-230	36 Vdc	230 Vac	3000 VA	20A	32A	90 %	< 0.5 A
RSW3000-48-230	48 Vdc	230 Vac	3000 VA	20A	32A	91 %	< 0.4 A
RSW3000-72-230	72 Vdc	230 Vac	3000 VA	20A	32A	91 %	< 0.3 A
RSW3000-110-230	110 Vdc	230 Vac	3000 VA	20A	32A	92 %	< 0.2 A
RSW3000-24-120	24 Vdc	120 Vac	2400 VA	28A	52A	88 %	< 0.7 A
RSW3000-36-120	36 Vdc	120 Vac	2500 VA	32A	52A	89 %	< 0.5 A
RSW3000-48-120	48 Vdc	120 Vac	2500 VA	32A	52A	89 %	< 0.4 A
RSW3000-72-120	72 Vdc	120 Vac	2500 VA	32A	52A	90 %	< 0.3 A
RSW3000-110-120	110 Vdc	120 Vac	2500 VA	32A	52A	91 %	< 0.2 A

INPUT	
Input voltage range	-30, +25% Vin nom
Maximum input ripple	5% Vin nom (Vrms, 100Hz)
OUTPUT	
Output voltage	120 / 230Vac sinusoidal
Output frequency	50 / 60Hz ± 0.25Hz
Load regulation	< 4%
Line regulation	< 2% Vin -25% ... +25% < 10% Vin -30% ... +30%
Output wave distortion THD	< 2% (average of 16 samples)
Output HF ripple	< 2.5%
ENVIRONMENTAL	
Storage temperature	-25 ... 80°C
Operating temperature:	
Full load	-25 ... 55°C (EN50155 T1)
50% load	-25 ... 70°C (EN50155 T3)
Relative humidity without condensation	5 ... 95%
Cooling	<i>Controlled internal fan</i>
MTBF (MIL-HDBK-217-E; G _b , 25°C)	100.000 h
EMC	
Immunity according	EN61000-6-2 (EN50121-3-2)
Emissions according	EN61000-6-4 (EN50121-3-2)
SAFETY	
Dielectric strength: Input /output	3000 Vrms / 50Hz / 1min
Dielectric strength: Output / ground	1500 Vrms / 50Hz / 1min
Dielectric strength: Input / ground	500 Vrms / 50Hz / 1min
Safety according to	EN60950-1
Fire and smoke	EN45545-2
MECHANICAL	
Dimensions	395 x 194 x 78.5 mm
Weight	<6000 g
Connections	Input: M6 Screws Output: terminal block cable or solid wire max. 6mm ² or AWG10
PROTECTIONS	
Protection against overloads < 10ms	Current limited at lopk
Protection against overloads > 10ms	I ² T limited by shutdown
CONTROL	
Output OK LED	<i>Green</i>
Alarm LED	<i>Red</i>
Output failure alarm	Isolated contact relay open when alarm (< 0.3A at 150Vcc)
Remote OFF	4 ... 24 Vdc
Three-phase input synchronization	100 ... 250 Vac
Status and programming	RS232 port

Available from:

RIPEnergy[®]

The power conversion company



RIPEnergy AG
Wägitalstrasse 24
CH-8854 Siebnen
Switzerland

Ph +41-(0)43-818 53 85
Fax +41-(0)43-818 53 87
www.ripenergy.ch