RSW 1500 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 RSW1500

Description

The RSW1500 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 RSW1500 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 RSW1500 inverter is equipped with an input polarity protection by means 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 undervoltage, 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 (Iopk)		
RSW1500-12-230	12Vdc*	230Vac	1200VA	10A	16A	87%	<0,8A
RSW1500-24-230	24Vdc	230Vac	1500VA	10A	16A	88%	<0,4A
RSW1500-36-230	36Vdc	230Vac	1500VA	10A	16A	89%	<0,3A
RSW1500-48-230	48Vdc	230Vac	1500VA	10A	16A	90%	<0,2A
RSW1500-72-230	72Vdc	230Vac	1500VA	10A	16A	90%	<0.15A
RSW1500-110-230	110Vdc	230Vac	1500VA	10A	16A	91%	<0.1A
RSW1500-12-120	12Vdc*	120Vac	1200VA	20A	30A	86%	<0.8A
RSW1500-24-120	24Vdc	120Vac	1500VA	20A	30A	88%	<0.4A
RSW1500-36-120	36Vdc	120Vac	1500VA	20A	30A	88%	<0.3A
RSW1500-48-120	48Vdc	120Vac	1500VA	20A	30A	89%	<0.2A
RSW1500-72-120	72Vdc	120Vac	1500VA	20A	30A	89%	<0.15A
RSW1500-110-120	110Vdc	120Vac	1500VA	20A	30A	90%	<0.1A

INPUT	
Input voltage range	-30, +25% Vin nom, (10 … 15Vdc)*
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)
Operating temperature 50% load	-25 … 70°C (EN50155 T3)
Relative humidity without condensation	5 … 95%
Cooling	Controlled internal fan
MTBF (MIL-HDBK-217-E; G_b, 25°C)	130.000 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	
Dimension	160 x 351 x 64.5mm
Weight	3800 g
Connections	Input: M6 Screws Output: terminal block cable or solid wire max. 6mm² or AWG10
PROTECTIONS	
Protection against overloads < 10ms	Current limited at Iopk
Protection against overloads > 10ms	I²T limited by shutdown
CONTROL	
Output OK LED	Green
Alarm LED	Red
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:

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