



## RSW1500 RAILWAY SINEWAVE INVERTER

### SERIES RSW1500

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 are equipped with a maximum average power protection as well as maximum output peak current protection. This protects the unit even when an output short-circuit occurs.

It also features a disable function for input undervoltage, which protects the batteries from harmful discharges.



Pure  
Sinewave



High  
frequency  
technology



Light weight,  
compact size



Full electronic  
protection



Extended  
temperature  
range



Remote inhibit  
(Standby)



Output fail  
alarm  
(Form B)

### APPLICATIONS

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

### FEATURES

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

# SPECIFICATIONS

Model	Input voltage Vdc	Input voltage range Vdc	Output voltage Vac	Active Output power W	Appar. Output power VA	Output current A	Output peak current		Efficiency %	No load input current A
							5s A	10ms (lopk) A		
RSW1500-12-230	12*	10 - 15	230	1200	1200	5.2	6.8	16	87	<2.0
RSW1500-24-230	24	16.8 - 30	230	1500	1500	6.5	10	16	88	<1.0
RSW1500-36-230	36	25.2 - 45	230	1500	1500	6.5	10	16	89	<0,66
RSW1500-48-230	48	33.6 - 60	230	1500	1500	6.5	10	16	90	<0,45
RSW1500-72-230	72	50.4 - 90	230	1500	1500	6.5	10	16	90	<0.34
RSW1500-110-230	110	77 - 138	230	1500	1500	6.5	10	16	91	<0.21
RSW1500-12-120	12*	10 - 15	120	1200	1200	10	13	30	86	<1.5
RSW1500-24-120	24	16.8 - 30	120	1500	1500	12.5	20	30	88	<0.8
RSW1500-36-120	36	25.2 - 45	120	1500	1500	12.5	20	30	88	<0.51
RSW1500-48-120	48	33.6 - 60	120	1500	1500	12.5	20	30	89	<0.35
RSW1500-72-120	72	50.4 - 90	120	1500	1500	12.5	20	30	89	<0.28
RSW1500-110-120	110	77 - 138	120	1500	1500	12.5	20	30	90	<0.16

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 <sub>b</sub> , 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, EN62368-1
Fire and smoke	EN45545-2 aproved
Mechanical	
Dimension	161.6 x 360.5 x 65.6mm
Weight	3800 g
Connections	Input: M6 Screws Output: terminal block cable or solid wire max. 6mm <sup>2</sup> or AWG10
Protections	
Against overloads	Current and I <sup>2</sup> T limited
Against overtemperature	Shutdown with auto-recovery
Control	
Output OK LED	Green
Alarm LED	Red
Output failure alarm	Isolated contact relay open when alarm (< 0.3A at 150Vcc)
Remote inhibit input	OFF: applying 4...110 Vdc, Impedance >3k3Ω
Status and programming	RS232 port

