



IVSrail300 RAILWAY SINE WAVE INVERTER

SERIES IVSrail300

This rugged DC/AC inverter uses field proven, microprocessor controlled high frequency PWM technology to generate the required output power with pure sine wave output voltage.

It is a mature design with a track record in numerous applications. The DC/DC inputstage boosts the input voltage to a higher DC bus voltage, which feeds the DC/AC inverter to generate the required AC output. The high frequency conversion enables a compact construction, low weight and high efficiency.

The unit has full electronic protection.

The input and output are filtered for low noise.

Cooling is via baseplate to a cold plate surface and by natural convection. The use of components with established reliability results in high MTBF.

The unit meets the requirements of EN 50155 for electronic equipment used on railway rolling stock.

It is manufactured at our plant under strict quality control. Customized versions are available.



Pure
Sinewave



High
frequency
technology



Light weight,
compact size



Full electronic
protection



Extended
temperature
range



Conduction
convection
cooled



Optional
Output fail
alarm
(Form C)

APPLICATIONS

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

FEATURES

- Sine wave output voltage
- Field-proven rugged design
- Conduction / convection cooled, no fan
- High input-output isolation 3000Vrms
- Low profile
- Compact size
- Designed for rolling applications according to EN50155
- Full electronic protection

SPECIFICATIONS

Input Voltage	24Vdc (17-34V) 36Vdc (25-51V) 48Vdc (33-67V) 72Vdc (50-101V) 96Vdc (67-135V) 110Vdc (77-154V) Consult factory for other inputs
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 3000VDC Input to output
Output Voltage	230Vac @ 50Hz/1.3A rms continuous or 115Vac @ 60Hz or 400Hz/2.6A rms continuous Isolated floating output Consult factory for other output requirements
Output Wave Form	Sinusoidal
Total Harmonic Distortion	Less than 5% at full load
Line Regulation	Maximum 0.5%
Load Regulation	Maximum ± 2% from no load to full load
Load Crest Factor	3.0 at 90% load
Output Ripple Noise	High frequency ripple is less than 500mVrms (20MHz BW)
Efficiency	Typically 80% at full load Dependent on input/output combination
Output Overload Protection	Current limiting with short circuit protection Thermal shutdown with automatic recovery in case of insufficient cooling
Output Overvoltage Protection	280Vac (for 230Vac output) or 140Vac (for 115Vac output) by internal supply voltage limiting

Standards	Designed to meet C22.2 No. 107.1 - 01, UL 458, EN60950, EN 62368-1, CE and EN50155
EMI	EN55032 Class A or B according to requirements and EN50121-3-2 conducted and radiated
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)
Operating Temperature	-25 to +50°C cold-plate temperature for full specification Extended temperature range available on request
Humidity	5 - 95% non-condensing
Temperature Drift	0.05% per °C over operating temperature range
Cooling	Conduction to customer heat sink or chassis and natural convection
Environmental Protection	Ruggedizing, Conformal coating
Shock/Vibration	IEC 61373 Cat 1 A&B
Dimensions	FX: 153 x 67 x 357 mm (W x H x L) including terminal block and flanges Mounting holes are clear
Weight	2.2 Kg
Connections	Barrier type terminal block with 3/8" spacing
MTBF	150,000 hours at 45°C Demonstrated MTBF is significantly higher
Indicators	None
Control Input	None
Alarm output	None Optional output Fail Alarm (Form C)
RoHS Compliance	Fully compliant
Warranty	2 years

Terminal Block Pin-out

AC OUTPUT			ALARM				DC INPUT					
L1	L2	NOT USED	FAIL OPEN	COM	FAIL CLOSED	NOT USED	GND	-	-	+	+	
1	2	3	4	5	6	7	8	9	10	11	12	

