



DC/AC inverter for railway applications



Description

The 250W ACR series is a range of medium power inverters that provide a 230Vac true sinewave output with very low distortion. Designed for connection directly to the train auxiliary supply, the inverters incorporate surge and transient filtering ensuring compliance with both the traditional and latest rail specifications and norms for protection and EMC. The rugged construction and various mounting options ensure compliance with vibration and shock requirements.

Special features include:

- True sinewave output
- Very low distortion
- 250W continuous output power (400W peak)
- Protected to IP65

Input specifications

The following input voltages versions are available as standard:

- 110V (66.0 - 137.5V) dc (Suffix A)
- 72V (43.2 - 90.0V) dc (Suffix D)
- 52V (31.2 - 65.0V) dc (Suffix C)
- 36V (21.0 - 50.4V) dc (Suffix F)
- 24V (16.8 - 33.6V) dc (Suffix B)

Parameter	Detail
Input Ripple	To EN50155
Input Protection	Reverse polarity protection. Surges and transients EN50155
Inrush Current	Limited to typically 5 x nominal current (after 0.1ms)
Efficiency	75% to 85% dependent on voltage combinations
Hold-up time	10ms to EN50155 2017 Class S2 - 72V & 110V models only. (All models meet S2 to EN50155 2007)

Output specifications

Parameter	Detail
Maximum Output Power	250W continuous 400W peak (for 15 seconds)
Output Voltage	230Vac
Setting Tolerance	±0.6% at 50% load, 15°C to 25°C
Output frequency	50Hz
Frequency Tolerance	±2%
Waveform	True Sinewave

Output specifications (Continued)

Parameter	Detail
Harmonic Distortion	<1.5%
Output Current	1.1A continuous, 1.7 for 15 seconds
Line & Load Regulation	±5.0% combined
Temperature Coefficient	<0.02% / °C
Output Ripple	Typically 5% Pk-Pk of Output Voltage
Short circuit protection	Latch operates instantaneously if output power exceeds 15A (typically). LED indication provided. Reset by power-down, power-up.
Delayed current limit	Latch operates if output power exceeds approximately 275W for longer than 16 to 20 seconds. LED indication provided. Reset by power-down, power-up.
Thermal Protection	Output shuts off when safe internal temperature is exceeded. Auto recovery.
Isolation	Input to Output 1.0kV ac (tested at 1.5kV dc)
	Input to Case 1.0kV ac (tested at 1.5kV dc)
	Output to Case 1.0kV ac (tested at 1.5kV dc)
Indicators	Input OK Green LED
	Output OK Green LED
	Lock out Red LED
	Over-current latch Red LED

Environmental details

Parameter	Detail
Operating Temperature	-25°C to +55°C (no derating)
Storage Temperature	-40°C to +85°C
Cooling	By convection
Relative Humidity	99% max.
Shock & Vibration	EN 50155 (EN 61373)
Environmental Protection	IP65

Applicable norms

Parameter	Detail
EMC	RIA 12, EN50155 (2017), EN50121-3-2 (2016)
Other	EN50155 (2017), LUL G6621, EN45545-2 (2020)

Mechanical characteristics

Parameter	Detail
Construction	Fully enclosed in sealed diecast aluminium case
Dimensions	Length = 280mm
	Width = 180mm
	Height = 100mm (Dimensions exclude base plate and connector)
Weight	<6.5kg (5kg excluding mounting plate)
Connections	Input and output via circular bayonet connector (shell size 18-11), earth via M5 stud
Fixings	Base plate allows surface mounting via six ø 9.5mm fixing holes. Other base plates available upon request.

Technical drawing

