

# POWERVERTER RAILWAY

## DC TO DC VOLTAGE CONVERTERS

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These railway approved converters are the perfect solution if your system specification requires high performance products for the railway industry, other demanding applications or galvanic isolation. This Alfatronix range of DC-DC converters have been designed and approved for railway applications. They meet all the necessary standards for RF immunity, transient and electrostatic discharge including EN50121 and EN610004 as well as shock and vibration to EN61373.

### 24VDC TO 12VDC VOLTAGE CONVERTERS

The 24Vdc-12Vdc Railway Converter Series can be used to power 12Vdc equipment from the rolling stock 24Vdc source and consists of three products providing 6 amps, 12 amps, and 24 amps continuous power. The circuit provides transient and EMC protection and can be used to protect ancillary equipment from interference and voltage surges.

The products are housed in a strong aluminium casing with a "Click 'n' Fit" mounting clip which is fixed in three points permitting a quick and easy installation method on uneven surfaces and awkward places. They have vibration proof connections, providing long term reliability and a green LED indicating when there is output from the converter, reassuring the installation engineer, and reducing time spent on finding faults.

Protected to IP53, there are no ventilation holes to permit stray objects, dust, or water droplets to enter the case, and no external fuses to be tampered with. Fuses will only blow if there is a fault so there is no need to make them accessible.



PRI24-12 072, PRI24-12 144 and PRI24-12 288 can be used to provide power in a wide variety of railway applications



PRI110-12 108 Voltage converters for DC-DC conversion and isolation.

### 110VDC AND 72VDC TO 12, 24 OR 48VDC VOLTAGE CONVERTERS

This range of DC-DC Voltage converters includes units capable of input voltages of either 110Vdc or 72Vdc and are available with 12Vdc, 24Vdc or 48Vdc output configurations, comprising of 6 products in total. All units are housed in a strong aluminium casing and are installed securely through the mounting holes in the metal end plates, fixed and secured in place by 4 screws (provided).

Output operation of the converter is confirmed by a green LED on the side of the unit, reassuring that the unit is operational or helping to speed up fault finding.

All six of these units are protected to IP20.



# CHOOSE YOUR RAILWAY CONVERTER

Part Number	Cont/Int Current	Nominal Voltage	Power Rating	Dimensions	Weight
PRI24-12 072	6A/10A isolated	24Vdc input, 12Vdc output	72W	127 x 87 x 50mm	505g
PRI24-12 144	12A/18A isolated	24Vdc input, 12Vdc output	144W	167 x 87 x 50mm	590g
PRI24-12 288	24A/30A isolated	24Vdc input, 12Vdc output	288W	217 x 87 x 50mm	785g
PRI72-12 072*	6A/9A isolated	72Vdc input, 12Vdc output	72W	184 x 87 x 58mm	735g
PRI72-24 072*	3A/4.5A isolated	72Vdc input, 24Vdc output	72W	184 x 87 x 58mm	735g
PRI110-12 108*	9A/12A isolated	110Vdc input, 12Vdc output	108W	184 x 87 x 58mm	735g
PRI110-24 108*	4.5A/5.5A isolated	110Vdc input, 24Vdc output	108W	184 x 87 x 58mm	735g
PRI110-48 108*	2.3A/3A isolated	110Vdc input, 48Vdc output	108W	184 x 87 x 58mm	735g

## TECHNICAL DATA

Input voltage range	24Vdc (17-32Vdc); 72Vdc (55-100Vdc); 110Vdc (85-150Vdc)
Output voltage	13.6Vdc, 27.2Vdc or 54.4Vdc +/- 15% at extremes of temperature, load & input tolerance.
Intermittent output power	As stated, taken for a maximum of 2 minutes followed by 8 minutes rest
Transient voltage protection	EN50121-3-2 to EN61000-4-4
Electrostatic discharge	EN50121-3-2 to EN61000-4-2
RF Immunity	Conducted: EN50121-3-2 to EN61000-4-6, Radiated to EN61000-4-3
RF Emissions	EN50121-3-2 to EN55016-2-3 and EN55016-2-1
Surges	EN50121-3-2 to EN61000-4-5
Vibration, Shock, Impact	EN61373
Output noise	<50mV pk-pk @12Vdc/100mV @ 24Vdc/100 @ 48Vdc at continuous load
Off load current (quiescent current)	<30mA
Power conversion efficiency	Typically: 82%
Isolation	>400Vrms between input, output and case
Operating temperature	-25°C to +55°C to meet this specification table +30°C to +80°C de-rate linearly to 0A
Storage temperature	-25°C to +70°C
Operating humidity	95% max., non-condensing
Casework	PRI24-12 - Anodised aluminium, glass filled polycarbonate, dust water and impact resistance to IP533 PRI72 and PRI110 - Anodised aluminium to IP20, with fan
Connections	Four 6.3mm push-in flat blade connectors *1m three core lead on input and two 6.3mm push-on flat blade connectors on output
Output indicator	Green LED adjacent to output terminals
Mounting method	Click 'n' fit mounting clip, fitted separately using three hole fixture *Mounting holes in end plates, fixed in place by 4 screws (provided)
Safe area protection:	Over current Limited by current sensing circuit Over heat Limited by temperature sensing circuit Reverse polarity Limited by sensing circuit Transients Protected by filters and rugged component selection Catastrophic protection Protected by internal input and output fuses
Approvals	2014/30/EU The general EMC directive (UKCA 2016 No 1091) 93/68/EEC The CE marking directive Railway Standards to EN50155 (EN50121-3-2), EN45545-2 (pending) and EN61373.
Markings	CE and UKCA