

PowerVerter *24Vdc to 12Vdc* Converters

24Vdc to 12Vdc Converters

These products offer a convenient way to operate mass produced 12Vdc equipment, such as cell phones, in car entertainment equipment, professional communication equipment, telematics equipment, refrigerators, televisions, etc. from the 24Vdc mobile electrical systems found on diesel engined vehicles and vessels and the 28Vdc systems found on aircraft.

These cool running products use switch mode technology and are assembled using surface mount technology.

All the products are CE marked, e marked and meet the requirements of FCC Class B.

A Comprehensive 24Vdc to 12Vdc Converter Range

This leaflet covers the PowerVerter series, ten products from 3 Amps to 30 Amps in isolated or common earth configurations. They have been optimised for high volume 24Vdc to 12Vdc applications such as on heavy goods vehicles, coaches, buses, construction, forestry and agricultural vehicles, commercial vessels, yachts and many types



of light aircraft. Consequently they are manufactured at low cost and offer excellent value for money. All the products may also be used for constant voltage lead-acid battery charging providing the battery manufacturers guidelines are followed.

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Secure Isolation

It's your choice. The PowerVerter range offers an isolated option at every power rating. Some vehicle manufacturers, such as Scania, require that "the converter shall be ground loss protected". This means that the output voltage shall not exceed the specification if the supply ground connection and/or the load ground connection is lost. This requires an isolated converter. Isolated converters also prevent a direct connection between the 24Vdc input and the 12Vdc appliance in the case of a semiconductor failure.

Cool Running

The converters operate with a power conversion efficiency as high as 93%. This results in very little heat being generated. The reliability of semiconductors is inversely



proportional to temperature so high efficiency leads to high reliability. The Mean Time Between Failure figure is around 160 years!

Rugged and Compact

The converters are enclosed in a rugged aluminum extrusion. The low mass Surface Mount Technology components are also less prone to damage from vibration and shock, further increasing the reliability of the units. The use of SMT results in a very compact unit, making it easier for the installer to find a convenient location.

Tamper Proof

There are no ventilation holes to permit stray objects, dust or water droplets to enter the case. There are 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.

Fast Installation

All the units consume an off load current of less than 15mA, which is probably less than the self discharge current of the vehicle's battery. In most cases this can be ignored, speeding the installation by removing the need to fit a remote switch.

The low heat dissipation allows them to be mounted in less well ventilated positions which makes installation easier.

All the products fit onto a 'Click 'n' Fit' mounting clip which is fixed in three points allowing it to be mounted on uneven surfaces. It is easy to fit the clip into awkward places and then simply click the unit into position.

A red LED indicates when there is output from the converter. This gives reassurance to the installation engineer and speeds fault finding.

Product Coding

The product code is developed as follows, taking the PV3i as an example:

PV	PowerVerter 24Vdc to 12Vdc converter
3	3 amps continuous output (12Vdc output at 3 amps)
i	Isolated between input and output (s indicates switchmode, non-isolated)



for use on vehicles, vessels and aircraft

Choose *your* PowerVerter

All PowerVerter convert 24Vdc to 12Vdc		Isolation	
		Non-Isolated Common Negative	Isolated Input to Output
Load current Continuous/ intermittent	3/6A	PV3s	PV3i
	6/10A	PV6s	PV6i
	12/18A	PV12s	PV12i
	18/21A	PV18s	PV18i
	24/30A	PV24s	PV24i

The intermittent current may be drawn for a maximum of 2 minutes followed by 8 minutes rest.

Dati tecnici Convertitori DD

Modello	Dimensione	Peso	Modello	Dimensione	Peso
PV3s	67 x 87 x 50mm	225g	PV18s, PV24s, PV12i	167 x 87 x 50mm	620g
PV6s, PV3i	89 x 87 x 50mm	270g/290g			590g
PV12s, PV6i	127 x 87 x 50mm	405g	PV18i, PV24i	217 x 87 x 50mm	835g

Caratteristiche Comuni	
Gamma di tensioni in ingresso	17 a 32 Vcc
Tensione d'uscita	13.6Vcc +15% e -20% ad estremi valori di temperatura, carico, tolleranza d'ingresso, etc.
Protezioni transitorie	Rispetta la norma ISO 7637-2 per i Veicoli Commerciali a 24 Vcc
Protezioni elettrostatiche	Rispetta le norme ISO10605, ISO14892, contatto : >8kV, scarica : 15kV
Disturbo acustico	<50mV sul picco a carica continua. Rispetta la norma CISPR25
Assorbimento senza carico	<15mA
Efficienza	Normalmente: 90% per le unità non-isolate e 85% per le unità isolate
Isolamento	>400Vrms tra ingresso, uscita e contenitore, solo sulle unità isolate
Durata media di funzionamento ottimale	>100 anni (HRD4)
Temperatura d'esercizio	-25°C a + 30°C per rispettare le specifiche di questa tabella. Da + 30°C a + 80°C l'ampereaggio decresce in maniera lineare a 0
Temperatura di stoccaggio	-25°C a +100°C
Umidità d'esercizio	95% massima, non condensante
Contenitore	Alluminio anodizzato. Resistente a polvere, acqua e urti. Rispetta la norma IP533
Connessioni	Quattro connettori da 6.3 mm
Spia tensione erogata	LED rosso accanto agli attacchi d'erogazione
Metodi di Montaggio	Fissaggio a "T" tipo 'click' con 3 punti di fissaggio, o binari tipo DIN
Protezioni:	Sovracorrente Surriscaldamento Transitorie Guasto catastrofico
Omologazioni	Direttiva EMC 89/336/EEC Direttiva Automotive EMC 95/54/EC Direttiva sulla Marchiatura CE 93/68/EEC VIDG5 AES. Per uso su veicoli di Polizia e Pompieri
Controlli	Rispetta le norme ISO 7637-2, ISO10605, ISO14982, ISO11451, ISO11452, CISPR 25, VDE0879-3, EN60945 Annesso A
Marchi	CE



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