

DD Series and DDi Series Converters

12Vdc-12Vdc Converters

These products offer a convenient way to provide a stable, regulated output voltage where equipment is sensitive to the variable output typical of lead acid batteries. They are fully isolated and can therefore provide isolation between input and output which maybe required for certain installations or to reduce EMC.

12Vdc-24Vdc Converters

While the PowerVerter range are useful in allowing fast installation of 12Vdc equipment to 24Vdc vehicles, the DD Series offer a range of non-isolated 12Vdc to 24Vdc voltage converters. These allow fast and simple installation of 24Vdc equipment on 12Vdc vehicles.

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

All products are CE marked and e marked for automotive use.

24Vdc-12Vdc High Power Converter

In addition to the regular range of 24Vdc-12Vdc converters in the PowerVerter Range, there is now the DD24-12 600 that offers a continuous power rating of 50 Amps. This unit is ideal for powering large items of

12Vdc equipment or multiple loads from 24Vdc systems on vehicles, vessels and aircraft.



A comprehensive range

This leaflet covers the DD Series and DDi Series. (For 24Vdc-12Vdc, please refer to the high power converter or the PowerVerter leaflet.) This series covers five main products. Firstly, there is the DDi 12-12 036. This is a 36W unit which will provide isolation and regulation from a typical 12V lead acid battery.

In addition, there are three units, all non-isolated, (common earth) which convert 12Vdc-24Vdc and come in a range from 72W to 240W. Finally, there is the high powered 24Vdc-12Vdc, 50 Amp continuous converter, the DD24-12 600. All of the products use the same high volume manufacturing techniques of the PowerVerter range and consequently offer an exceptionally high quality, yet low cost solution and enjoy the benefit of our comprehensive no quibble warranty.

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 100mA, 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 DDi 12-12 036 as an example:

DD	Dc input and dc output
i	Isolated unit, input and output voltage
036	Wattage of unit

AlfaTRONIX

for use on **vehicles, vessels and aircraft**

Choose *your* DD Series product

Model	Power	Voltage	Dimensions	Weight
DDi 12-12 036	36 watt (3 amp)	12Vdc-12Vdc isolated converter	89x87x50mm	290g
DD 12-24 072	72 watt (3 amp)	12Vdc-24Vdc non-isolated converter	89x87x50mm	290g
DD 12-24 168	168 watt (7 amp)	12Vdc-24Vdc non-isolated converter	167x87x50mm	620g
DD 12-24 240	240 watt (10 amp)	12Vdc-24Vdc non-isolated converter	217x87x50mm	835g
DD 24-12 600	600 watt (50 amp)	24Vdc-12Vdc non-isolated converter	300x76x110mm	1180g

Technical *data*

Input voltage range	12Vdc or 24Vdc +/- 30%
Output voltage	13.6Vdc or 27.2Vdc +15% -20% at extremes of temperature, load, input tolerance, etc
Intermittent output power	Continuous rating +25%, taken for a maximum of 2 minutes followed by 8 minutes rest
Transient voltage protection	Meets ISO7637-2 International Standard for 24Vdc Commercial Vehicles
Electro static voltage protection	Meets ISO10605, ISO14892, >8kV contact, 15kV discharge
Output noise	<50mV pk-pk at continuous load. Meets CISPR25 and VDE0879-3
Off load current (quiescent current)	<100mA
Power conversion efficiency	Typically: 90% for non-isolated units, 85% for isolated units
Isolation	>400Vrms between input, output and case, on isolated products only
Mean time between failures	>162 years (HRD4)
Operating temperature	-25°C to +30°C to meet this specification table +30°C to +80°C de-rate linearly to 0A
Storage temperature	-25°C to +100°C (DD 24-12 600: -25°C to +85°C)
Operating humidity	95% max, non-condensing
Casework	Anodised Aluminium, Glass Filled Polycarbonate Dust water and impact resistance IP533
Connections	Four 6.3mm push-on flat blade connectors (DD 24-12 600: M6 screw terminals at both input and output)
Output indicator	Red LED adjacent to output terminals
DD 24-12 600 operating indicators	Yellow LED indicates 24Vdc input. Green LED indicates 12Vdc output. Red indicates a fault
Mounting method	'Click 'n' Fit' mounting clip, fitted separately using three hole fixing (DD 24-12 600: two mounting holes on the main body of the converter)
Safe area protection: Over current Over heat Transients Catastrophic failure	Limited by current sensing circuit Limited by temperature sensing circuit Protected by filters and rugged component selection Protected by internal input and output fuses
Approvals	89/336/EEC The General EMC Directive 95/54/EC The Automotive EMC Directive 93/68/EEC The CE Marking Directive
Tested to	ISO7637, ISO10605, ISO14982, ISO14983, ISO11451, ISO11452, CISPR 25, VDE0879-3, EN60945
Markings	CE marked and e marked (DD 24-12 600: e mark pending)



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