

# DD and DDi Series Voltage Converters

## 12V-12V, 24V-24V, 12V-24V and 48V-12V Converters for a wide range of applications

If you need to fit 24V equipment onto a 12V vehicle, then an up converter from the DD Series offers a fast and easy way to configure your system. Or, if you need to stabilise your voltage or isolate your supply, then the DDi Series of 12V-12V and 24V-24V Isolators will suffice. There are also 48V-12V units available for telecoms and forklift truck applications.

### A Wide Product Range

There are three 12V-24V products in the range running at currents from 3A (DD 12-24 072) to 10A (DD 12-24 240), while there are 5 more products from 3A – 10A in the 12V-12V and 24V-24V isolator range. All products use modern switchmode designs and are built using the same manufacturing concepts and technologies as the successful **PowerVerter** range which will of course meet your 24V-12V requirements.



12V-12V and 24V-24V units provide a stable output voltage as well as providing galvanic isolation for a variety of applications



### 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.

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, 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.



The 12V-24V converters have been used for a variety of applications including bus ticketing systems on mini buses and for 24V bow thrusters on leisure craft.

### Product Variants

Many PowerVerter and DD Series products can be configured with alternative output voltages etc., for specialist applications. Please call our sales team to discuss your requirements.

### Product Coding

The product code is developed as follows taking the DDi 12-12 036 as an example:

|              |                              |
|--------------|------------------------------|
| <b>DD</b>    | DC input and output          |
| <b>i</b>     | Denotes isolated converter   |
| <b>12-12</b> | Nominal 12V input and output |
| <b>036</b>   | 36W Capacity Unit            |



## Choose your DD Series Product

| Part Number   | Power                   | Nominal Voltage           | Dimensions      | Weight |
|---|-------------------------|---------------------------|-----------------|--------|
| DDi 12-12 036   | 36W (3A) Isolated       | 12Vdc input, 12Vdc output | 89 x 87 x 50mm  | 290g   |
| DDi 12-12 072   | 72W (6A) Isolated       | 12Vdc input, 12Vdc output | 162 x 87 x 50mm | 540g   |
| DDi 24-24 072   | 72W (3A) Isolated       | 24Vdc input, 24Vdc output | 127 x 87 x 50mm | 440g   |
| DDi 24-24 108   | 108W (4.5A) Isolated    | 24Vdc input, 24Vdc output | 167 x 87 x 50mm | 540g   |
| DDi 24-24 168   | 168W (7A) Isolated      | 24Vdc input, 24Vdc output | 217 x 87 x 50mm | 780g   |
| DDi 24-24 240   | 240W (10A) Isolated     | 24Vdc input, 24Vdc output | 217 x 87 x 62mm | 880g   |
| DD 12-24 072  | 72W (3A) Non-Isolated   | 12Vdc input, 24Vdc output | 89 x 87 x 50mm  | 300g   |
| DD 12-24 168  | 168W (7A) Non-Isolated  | 12Vdc input, 24Vdc output | 167 x 87 x 50mm | 640g   |
| DD 12-24 240  | 240W (10A) Non-Isolated | 12Vdc input, 24Vdc output | 217 x 87 x 50mm | 820g   |
| DD 48-12 072  | 72W (6A) Non-Isolated   | 48Vdc input, 12Vdc output | 89 x 87 x 50    | 260g   |
| DD 48-12 108  | 108W (9A) Non-isolated  | 48Vdc input, 12Vdc output | 127 x 87 x 50   | 360g   |
| <b>Other input and output voltage configurations are available as special orders, please ask our sales team</b> |                         |                           |                 |        |

## Technical Data

|                                      |  |
|--------------------------------------|--|
| Input voltage range                  | 12Vdc, 24Vdc or 48Vdc +/- 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   |
| Electrostatic voltage protection     | Meets ISO10605, ISO14892, >8kV contact, 15kV discharge   |
| Output noise                         | <50mV pk-pk (100mV on 24V units) 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   |
| Operating temperature                | -25°C to +30°C to meet this specification table<br>-30°C to +80°C de rate linearly to 0A   |
| Storage temperature                  | -25°C to +100°C  |
| Operating humidity                   | 95% max., non-condensing   |
| Casework                             | Anodised aluminium, glass filled polycarbonate, dust water and impact resistance to IP533. (excludes DDi 12-12 072 and DDi 24-24 240 which are ventilated, IP20). DDi 24-24 240 is also fitted with a cooling fan. |
| Connections                          | Four 6.3mm push-on flat blade connectors   |
| Output indicator                     | Red LED adjacent to output terminals   |
| Mounting method                      | 'Click 'n' fit mounting clip, fitted separately using three hole fixing  |
| Safe area protection: Over current   | Limited by current sensing circuit   |
| Over heat                            | Limited by temperature sensing circuit   |
| Transients                           | Protected by filters and rugged component selection  |
| Catastrophic failure                 | Protected by internal input and output fuses   |
| Approvals                            | 2004/108/EC The general EMC directive<br>2006/96/EC The automotive directive<br>93/68/EEC The CE marking directive   |
| Markings                             | CE and e marked  |



**Alfatronix Limited**, 29 Newtown Business Park, Poole, Dorset, BH12 3LL, England  
 Telephone: +44 (0)1202 715517. Fax: +44 (0)1202 715122  
 Website: <http://www.alfatronix.co.uk>. E mail: [sales@alfatronix.co.uk](mailto:sales@alfatronix.co.uk)  
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