

PRODUCT BROCHURE

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VOLTAGE CONVERTERS
POWER SUPPLIES
BATTERY CHARGERS
LOW VOLTAGE DISCONNECTS
USB CHARGERS

INTRODUCTION

Welcome to our latest Alfatronix Catalogue featuring all products in the portfolio. Here you will be able to find all the information you need on DC-DC converters, mains power supplies and desktops as well as PowerTector LVD battery protectors and battery chargers.

Prominent in this year's catalogue is also our brand new range of USB mobile phone and tablet chargers. These are usually installed on buses and coaches and allow passengers to charge their mobile phones and tablets as they travel. They are suitable for both 12V and 24V systems and charge at 5Vdc, thus negating the need for mains inverters in most circumstances. Over the coming months and years, you will see these increasingly installed in public transport throughout Europe.

Our DC-DC range is more extensive than ever and now offers converters from 36W to 600W and includes 24V-12V and 12V-24V configurations as well as an improved range of 12V-12V and 24V-24V stabilisers.

As well as our brick in the lead mains power supplies, our desktop range continues to be very popular and new radio configurations are added regularly, so please check for up to date information. Today, all popular radio transceivers are covered by the Alfatronix Desktop or "wedge," range, as they have become popularly known in the market.

All products are manufactured at our factory in Poole, England and are available for fast despatch, usually within a day or two. We have distributors throughout Europe and beyond for fast delivery within your local area and our engineering team is always available to assist with any issues relating to application or installation. Here at Alfatronix, we make every effort to maintain the very highest of quality standards backed by a return to base lifetime guarantee.

Whether you are involved in the communications, automotive or marine markets, are specifying original fit components at OEM level or require power conversion as part of a system integration, we have a wide range of products to suit your needs.

Keith Reilly
 Managing Director



USB Chargers



Voltage Converters



Power Supplies



CONTENTS

| | |
|--|----|
| PowerVerter and DD Series Selection Table | 03 |
| PowerVerter 24Vdc to 12Vdc Voltage Converters | 04 |
| Dual output 24Vdc to 12Vdc Voltage Converters | 06 |
| USB Chargers | 08 |
| DD Series and DDi Series Voltage Converters | 10 |
| DD Series 12V to 24V 'UP' Converters | 12 |
| Bespoke and Variant Options | 14 |
| OEM Options | 15 |
| ICi Series DC-DC Intelligent Battery Chargers | 16 |
| PowerTector Low Voltage Disconnect | 18 |
| AD Series Mains Power Supplies | 20 |
| AD Series Desktop Power Supplies | 22 |
| IC Series Intelligent Battery Chargers (AC-DC) | 26 |
| IP65 Ruggedised Converters | 28 |
| Alfatronix Mounting Methods | 30 |



POWERVERTER & DD SERIES SELECTION TABLE

The following table provides an overview of our DC-DC products. Simply choose the input/output voltage configurations on the left against the continuous power rating (expressed in Watts) across the top.

| | | WATT RATING | | | | | | | |
|----------------|--|-----------------------------|---------------------------|-----------------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------|
| | | 36W | 72W | 108/144W | 168/216W | 240/288W | 400W | 600W | 1200W |
| INPUT & OUTPUT | 24V-12V NON-ISOLATED Converters | PV3s 3Amp ◆ | PV6s 6Amp ◆ | PV12s 12Amp ◆ | PV18s 18Amp ◆ | PV24s 24Amp ◆ | PV50s 50Amp | | |
| | 24V-12V ISOLATED Converters | PV3i 3Amp ◆ | PV6i 6Amp ◆ | PV12i 12Amp ◆ | PV18i 18Amp ◆ | PV24i 24Amp ◆ | | | |
| | 24V-12V Dual Output Switched NON-ISOLATED | PV3s-A 3Amp ◆ | PV6s-A 6Amp ◆ | PV12s-A 12Amp ◆ | | | | | |
| | 12V-24V NON-ISOLATED Converters | | DD12-24 072 3Amp ◆ | DD12-24 108 4.5Amp ◆ | DD12-24 168 7Amp ◆ | DD12-24 240 10Amp ◆ | DD12-24 400 17Amp ◆ | DD12-24 600 25Amp ◆ | |
| | 12V-12V ISOLATED Converters | DDi12-12 036 3Amp ◆ | DDi12-12 072 6Amp ◆ | DDi12-12 108 9Amp ◆ | | | | | |
| | 24V-24V ISOLATED Converters | DDi24-24 036 1.5Amp ◆ | DDi24-24 072 3Amp ◆ | DDi24-24 108 4.5Amp ◆ | DDi24-24 168 7Amp ◆ | DDi24-24 240 10Amp ■ | | | |
| | 48V-12V NON-ISOLATED Converters | | DD48-12 072 6Amp ◆ | DD48-12 108 9Amp ◆ | | | | | |
| | 48V-12V ISOLATED Converters | DDi48-12 036 3Amp ◆ | DDi48-12 072 6Amp ◆ | DDi48-12 108 9Amp ◆ | | | | | |

- ◆ Denotes non-isolated common earth products.
- Denotes isolated products. These provide isolation between input and output and are often used for marine applications or for petrochemical applications to prevent sparking. They can also help to reduce the effects of EMC interference. They can always be used in place of non-isolated products but not vice versa.
- ◆ Denotes product is also available in IP65 versions. *Please add the suffix -RU to the part number when ordering.*
- Denotes product is IP20 force air fan cooled.

Many products have an intermittent current rating, so occasional short periods above the continuous ratings are permissible. Intermittent ratings are normally 25% above the continuous ratings, though often greater on smaller units. Permissible max usage cycle is 2 minutes, followed by 8 minutes rest.

In addition to the standard products tabled, a number of wide input products are also available. These are configured to operate from both 12V and 24V systems. *For further information, please see page 14: Bespoke and Variant Options.*

Output voltages are generally set to typify normal battery output voltages as follows: 12V nominal = 13.6V, 24V nominal = 27.2V, 48V nominal = 54.4V.

Most products are available with alternative output voltage options at extra cost, for example 12V instead of 13.6V.

Most products are IP53 as standard. Many products are also available as IP65 versions. Part numbers will have -RU suffix. *Please see data sheet for clarification.*

POWERVERTER

24VDC TO 12VDC VOLTAGE CONVERTERS

24VDC TO 12VDC VOLTAGE CONVERTERS

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

A COMPREHENSIVE RANGE

There are 14 products in the range from 3A to 50A 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, forestry and agricultural vehicles, as well as commercial and leisure marine vehicles.

TAMPER PROOF

These units are IP53, so 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.

PRODUCT VARIANTS

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



Galvanically isolated units are suitable for marine applications and come complete with the green tamperproof label for petrochemical applications.



New PV50s, 50Amp converter

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.

All 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 fixing kit for din rail installation is also available (see page 30).

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



Many units in the PowerVerter range are also available as IP65 Versions. Please add the suffix -RU to the part number when ordering.

CHOOSE YOUR POWERVERTER PRODUCT

| Part Number | Cont/Int Power | Nominal Voltage | Dimensions | Weight |
|-------------|----------------------|---------------------------|------------------|--------|
| PV3s | 3A/6A non-isolated | 24Vdc input, 12Vdc output | 67 x 87 x 50mm | 200g |
| PV6s | 6A/10A non-isolated | 24Vdc input, 12Vdc output | 89 x 87 x 50mm | 250g |
| PV12s | 12A/18A non-isolated | 24Vdc input, 12Vdc output | 127 x 87 x 50mm | 405g |
| PV18s | 18A/22A non-isolated | 24Vdc input, 12Vdc output | 167 x 87 x 50mm | 605g |
| PV24s | 24A/30A non-isolated | 24Vdc input, 12Vdc output | 167 x 87 x 50mm | 620g |
| *PV50s | 50A/60A non-isolated | 24Vdc input, 12Vdc output | 283 x 125 x 74mm | 1820g |
| PV3i | 3A/6A isolated | 24Vdc input, 12Vdc output | 89 x 87 x 50mm | 280g |
| PV6i | 6A/10A isolated | 24Vdc input, 12Vdc output | 127 x 87 x 50mm | 505g |
| PV12i | 12A/18A isolated | 24Vdc input, 12Vdc output | 167 x 87 x 50mm | 590g |
| PV18i | 18A/22A isolated | 24Vdc input, 12Vdc output | 217 x 87 x 50mm | 775g |
| PV24i | 24A isolated | 24Vdc input, 12Vdc output | 217 x 87 x 50mm | 785g |
| PV3s-A | 3A/6A non-isolated | 24Vdc-12Vdc dual output | 67 x 87 x 50mm | 200g |
| PV6s-A | 6A/10A non-isolated | 24Vdc-12Vdc dual output | 89 x 87 x 50mm | 250g |
| PV12s-A | 12A/18A non-isolated | 24Vdc-12Vdc dual output | 123 x 87 x 50mm | 425g |

Other input and output voltage configurations are available as special orders, please ask our sales team.

TECHNICAL DATA

| | |
|--------------------------------------|--|
| Input voltage range | 17-32Vdc |
| Output voltage | 13.6Vdc +15% -20% at extremes of temperature, load, input tolerance, etc. |
| Intermittent output power | As stated, 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, ISO14982, >8kV contact, 15kV discharge |
| Output noise | <50mV pk-pk at continuous load. Meets CISPR25. |
| Off load current (quiescent current) | <15mA |
| Power conversion efficiency | Typically: 90% for non-isolated units, 85% for isolated units, *95% |
| 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 |
| Operating humidity | 95% max., non-condensing |
| Casework | Anodised aluminium, glass filled polycarbonate, dust water and impact resistance to IP533 |
| Connections | Four 6.3mm push-on flat blade connectors *(5 way Phoenix connector including enable on/off terminal and mating half) |
| Output indicator | Green LED adjacent to output terminals |
| Mounting method | Click 'n' fit mounting clip, fitted separately using three hole fixture (see page 30) * 4 hole cradle |
| 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 protection | Protected by internal input and output fuses |
| Approvals | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive |
| Designed to | EN50498, ISO 7637-2, ISO 11452-1, ISO 14892, EN12895, EN60945, EN55022, FCC15B. |
| Markings | CE and E marked |



POWERVERTER

DUAL OUTPUT 24VDC TO 12VDC VOLTAGE CONVERTERS

PV-A RANGE DUAL OUTPUT CONVERTERS WITH SWITCHED OUTPUT

Some automotive equipment, such as In Car Entertainment (ICE) usually has two links to the vehicle's electrical system, one for security and one for switching the equipment on and off.

The security circuit senses when the equipment has been removed from the vehicle by having a permanent connection to the vehicle battery. The on/off function is controlled from the ignition switch so that when the ignition key is removed, the ICE equipment is turned off, preventing the battery from becoming discharged.

Also, some truck manufacturers run other 12V equipment, such as a cigar lighter socket from the same feed, while others prefer to leave it on.



Alfatronix have developed three voltage converters, a 3Amp, 6Amp (continuous) and a 12A (continuous), which overcome these configuration problems. The Alfatronix converters mimic the 12V battery and 12V ignition function by providing two outputs, either of which can provide full power. One output is available whenever the 24V battery is connected. The other output is switched by the 24V ignition switch. Now the ICE equipment can be fitted to the 24V truck as simply as fitting it to a 12V car.

Of course, the Dual Output Range can be used for any application where a dual output is required or where a switched and permanent or memory connection must be retained.

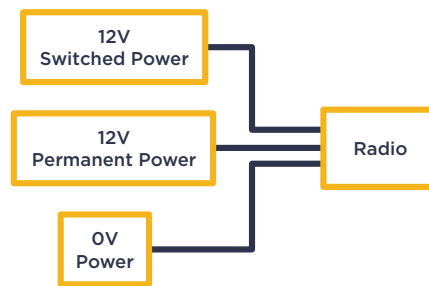
The PV12s-A is ideal for powering in car entertainment systems where a permanent memory circuit is required for security purposes.



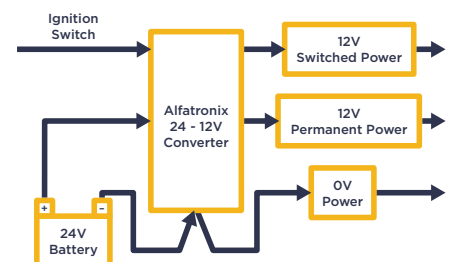
The PV3s-A is ideal for smaller applications where a switched and permanent circuit are both required.



TYPICAL APPLICATIONS



THE ALFATRONIX SOLUTION



CONNECTION SOLUTIONS



PV12s-A Connections

| Pin No. | Colour | Description |
|---------|--------|------------------------------|
| 1 | Red | +12Vdc Switched Output |
| 2 | Yellow | +12Vdc Permanent Output |
| 3 | White | 0Vdc Output |
| 4 | Blue | 0Vdc Input |
| 5 | Green | +24Vdc Input |
| 6 | Brown | +24Vdc Ignition Switch Input |

CHOOSE YOUR PV-A RANGE PRODUCT

| Part Number | Cont/Int Power | Nominal Voltage | Dimensions | Weight |
|-------------|----------------------|---------------------------|-----------------|--------|
| PV3s-A | 3A/6A non-isolated | 24Vdc input, 12Vdc output | 67 x 87 x 50mm | 200g |
| PV6s-A | 6A/10A non-isolated | 24Vdc input, 12Vdc output | 89 x 87 x 50mm | 250g |
| PV12s-A | 12A/15A non-isolated | 24Vdc input, 12Vdc output | 126 x 87 x 50mm | 455g |

TECHNICAL DATA

| | |
|--------------------------------------|---|
| Input voltage range | 17-32Vdc |
| Output voltage | 13.6Vdc +15% -20% at extremes of temperature, load, input tolerance, etc. |
| Output power | As stated, from either output or combination of both. Intermittent ratings as stated, 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, ISO14982, >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) | <15mA |
| Power conversion efficiency | Typically: 90% |
| 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 |
| Operating humidity | 95% max., non-condensing |
| Casework | Anodised aluminium, glass filled polycarbonate, dust water and impact resistance to IP533 |
| Connections | Five 6.3mm push-on flat blade connectors 6-way 070 connector (PV12s-A) |
| Output indicator | Green LED adjacent to output terminals, None on PV12s-A |
| 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 protection Protected by internal input and output fuses |
| Approvals | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive |
| Markings | CE and E marked |

POWERVERTER Pro

12/24VDC USB CHARGERS

FOR MOBILES AND TABLETS – THE SAFE ALTERNATIVE FOR ON BOARD POWER

The widespread use of smartphones and computer tablets has created an increasing need for user accessible, on the move charging systems. The PowerVerter USB Chargers can be easily installed onto any vehicle and allow both drivers and passengers to readily access power to charge any device connected via a USB lead.

This type of system has the distinct advantage of largely negating the need for mains electricity on vehicles. The 5Volt DC power is much safer than mains, so installation is quick and simple. Passengers can access the charging facility directly and power their equipment simply through the USB charging lead which is supplied with all such products.

All versions in the range can be connected directly to both 12Vdc and 24Vdc systems without adjustment. The advanced electronic design will detect the charge status of the device and alter the charging process accordingly. This ensures that whatever device is connected, be it Apple, Android, iPad, phone or tablet, it will always be charged as fully as time and capacity allow.



THE RANGE

The PowerVerter USB range has been completely re-designed for 2016 to include a standard design that can be used in regular as well as slim-line installations. Aesthetically the design has been improved with a dark grey body and contrasting light grey ring as well as an attractive and more obvious LED indicator. This helps to draw attention to the unit and encourages use. Part numbers are: PVPro-S for a single output and PVPro-D for a double output.

The front fitting system has also been improved with a round bezel with tamperproof covering ring to hide the screws, yet still allow the unit to be replaced quickly and easily should this be required. Part numbers are: PVPro-Sff (single output) and PVPro-DFf (double output).

Electronically, the design now includes automatic short circuit detection, so in the event of tampering or compromise, the unit will automatically shut down, then re-start again once the fault has been removed.

A charger only version is also available for permanent, behind the scenes installations without customer interface. Part number is: PV-USB2. The range is completed with our 'Pod'. This is ideal for retrofit installations and is designed to fit underneath the seat in front.

complete assembly including; PVPro USB charger, pod and 1.2m of fused cable. Please order part numbers; PVPro-S-Assy (single) and PVPro-D-Assy (double).

COMMERCIAL INSTALLATIONS

The PowerVerter USB chargers offer an advanced design that effectively counteracts the voltage drop common when output currents vary as different devices charge at different rates. This avoids the common problem of the phone or tablet indicating it is charging when in fact very little current is being supplied. They also have an exceptionally low quiescent current of less than 2mA meaning that multiple devices can safely be installed throughout buses and coaches without materially discharging the battery.

They have been designed to meet the rigorous standards required for on board commercial vehicle applications including BS EN50498 and ISO 7637-2 and are both CE and E marked. The casings are made from V0 rated (self-extinguishing) high impact polycarbonate and the electronic assembly is predominantly by computer controlled SMT for maximum reliability.

All versions have a subtle blue LED light to highlight their location on the vehicle.

- 12Vdc and 24Vdc systems
- Up to 2.1A output (single) 3.0A (double) max 1.5A per socket
- Apple and Android compatible
- Dashboard, slim-line seat back or underseat pod configurations
- LED output indicator
- CE and E Marked



PowerVerter USB PVPro-S and PVPro-D single and double outputs



Slim design can be installed with as little as 20mm rear space available.



PVPro-S, front fitting version can be screwed in place from the front, then covered with attractive ring to avoid tampering.



PV-USB2: Charger only, no interface. For under-dash use.

WARRANTY

Like all products, the USB chargers are manufactured using rugged components to provide years of service in demanding commercial environments. Due to the limitations of public use, the guarantee on these products is limited to three years.

CHOOSE YOUR USB Pro PRODUCT

| Part Number | Description | Dimensions (mm) | Weight |
|-------------|---|-------------------------------|--------|
| PVPro-S | Single output 12/24-5V USB Charger 2.1A | Ø37 x 33; Hole Ø30; Depth 23 | 20g |
| PVPro-D | Double output 12/24-5V USB Charger 3.0A (1.5A per socket) | Ø37 x 33; Hole Ø30; Depth 23 | 24g |
| PVPro-SFf | Single output 12/24-5V USB 2.1A Front fitting | Ø47 x 33; Hole Ø30; Depth 23 | 23g |
| PVPro-DFf | Double output 12/24-5V USB Charger 3.0A Front fitting | Ø47 x 33; Hole Ø30; Depth 23 | 27g |
| PV-USB2 | Single output charger only 12/24-5V USB 2.1A | 85 x 24 x 14 | 30g |
| PV-USB-POD | Mounting pod for USB Chargers | Width 60; Height 52; Depth 80 | 55g |
| PV-USB-H1 | Standard 1.2m wiring with inline 2A fuse | 1 x Red 1.2m, 1 x Black 1.2m | 50g |

TECHNICAL DATA

| | |
|--------------------------------------|--|
| Input voltage range | 9-32Vdc |
| Output voltage | 5Vdc +/- 0.2V |
| Output Power | 2.1A (single) 3.0A (double) - max 1.5A per socket |
| Application | Charges all USB devices including Apple and Android |
| Transient voltage protection | Meets ISO7637-2 International standard for 12/24V vehicles |
| Output noise | <50mV pk-pk |
| Off load current (quiescent current) | <1.7mA |
| Power conversion efficiency | 90% |
| Operating temperature | -25°C to +30°C to meet this specification table |
| Storage temperature | -25°C to +100°C |
| Operating humidity | 95% max., non-condensing |
| Casework | Black polycarbonate body |
| Connections | Input: 6.3mm push-in flat blade connectors Output: USB type A single socket/double socket |
| Output indicator | Blue LED output indication |
| Mounting method | 30mm diameter hole with or without bezel. USB2 for non through fitting applications. |
| Safe area protection: | Over Current Limited by current sensing circuit Over heat Limited by temperature sensing circuit Overvoltage and Undervoltage Limited by sensing circuit Reverse Polarity Limited by sensing circuit Transients Protected by filters and rugged component selection Catastrophic protection Internal fuse |
| Approvals | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive AES5 |
| Designed to | EN50498, EN61373 and ISO 7637-2 To fully meet railway approval to EN50155 & EN50121-3-2 the PVPro is to be used in conjunction with a PV6i-R or PV12i-R |
| Markings | CE and E marked |
| IP Rating: | IP30 |

DD SERIES AND DDi SERIES VOLTAGE CONVERTERS

12V-12V, 24V-24V & 48V-12V CONVERTERS FOR A WIDE RANGE OF APPLICATIONS

The sensitivities of modern electronic equipment to variable input voltages, susceptibility to EMC interference and in some cases, the need to isolate the supply has made voltage stabilisation an important section of our product range. Start/Stop technology on motor vehicles has added to this problem. The DDi Series offers a wide range of 12V-12V and 24V-24V isolated products that ensure a stable and reliable voltage can be delivered to important equipment, even when the electrical system is under duress, such as during engine cranking. Units are available from 36-240W. The range now also offers 48V-12V units, suitable for the telecoms and forklift truck markets. *For 12V-24V converters, see DD Series 'Up' Voltage Converters*



A COMPREHENSIVE PRODUCT RANGE

There are three products in the 12V-12V isolator range from 36W to 108W and a further four products in the 24V-24V range from 72W to 240W. There are also three 48V-12V products from 36W to 108W. All products use modern switchmode designs and are built using the same concepts and technologies as the successful PowerVerter range, which will of course meet your 24V-12V requirements.

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.

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

The green 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 output |
| i | Denotes isolated converter |
| 12-12 | Nominal 12V input/output |
| 036 | 36W capacity unit |



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



CHOOSE YOUR DD SERIES PRODUCT

| Part Number | Power | Nominal Voltage | Dimensions | Weight |
|--------------|-------------------------|---------------------------|-----------------|--------|
| DDi12-12 036 | 36W (3A) Isolated | 12Vdc input, 12Vdc output | 89 x 87 x 50mm | 280g |
| DDi12-12 072 | 72W (6A) Isolated | 12Vdc input, 12Vdc output | 127 x 87 x 50mm | 440g |
| DDi12-12 108 | 108W (9A) Isolated | 12Vdc input, 12Vdc output | 167 x 87 x 50mm | 540g |
| DDi24-24 072 | 72W (3A) Isolated | 24Vdc input, 24Vdc output | 127 x 87 x 50mm | 440g |
| DDi24-24 108 | 108W (4.5A) Isolated | 24Vdc input, 24Vdc output | 167 x 87 x 50mm | 540g |
| DDi24-24 168 | 168W (7A) Isolated | 24Vdc input, 24Vdc output | 217 x 87 x 50mm | 780g |
| DDi24-24 240 | 240W (10A) Isolated | 24Vdc input, 24Vdc output | 217 x 87 x 62mm | 870g |
| DD48-12 072 | 72W (6A) Non-Isolated | 48Vdc input, 12Vdc output | 89 x 87 x 50mm | 270g |
| DD48-12 108 | 108W (9A) Non-Isolated | 48Vdc input, 12Vdc output | 127 x 87 x 50mm | 370g |
| DD48-12 240 | 240W (20A) Non-Isolated | 48Vdc input, 12Vdc output | 217 x 87 x 50mm | 770g |
| DDi48-12 036 | 36W (3A) Isolated | 48Vdc input, 12Vdc output | 89 x 87 x 50mm | 290g |
| DDi48-12 072 | 72W (6A) Isolated | 48Vdc input, 12Vdc output | 127 x 87 x 50mm | 405g |
| DDi48-12 108 | 108W (9A) Isolated | 48Vdc input, 12Vdc output | 167 x 87 x 50mm | 560g |

Other input and output voltage configurations are available as special orders, please ask our sales team.

For DIN Rail Mounting - see page 30.

TECHNICAL DATA

| | |
|--------------------------------------|--|
| Input voltage range | 12Vdc, 24Vdc +/- 30%, 48Vdc -30% +25% |
| 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, ISO14982, >8kV contact, 15kV discharge |
| Output noise | <50mV pk-pk (100mV on 24V units) at continuous load. Meets CISPR25. |
| Off load current (quiescent current) | <15mA |
| 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 |
| Operating humidity | 95% max., non-condensing |
| Casework | Anodised aluminium, glass filled polycarbonate, dust water and impact resistance to IP533 (excludes DDi 24-24 240 which is ventilated and fitted with a cooling fan to IP20). |
| Connections | Four 6.3mm push-on flat blade connectors |
| Output indicator | Green LED adjacent to output terminals |
| Mounting method | Click 'n' fit mounting clip, fitted separately using three hole fixture |
| 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 | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive |
| Designed to | EN50498, ISO 7637-2. |
| Markings | CE and E (e) marked |

DD SERIES

12-24V "UP" VOLTAGE CONVERTERS

12V-24V "UP" CONVERTERS FOR A WIDE RANGE OF APPLICATIONS

If you need to fit 24V equipment onto a 12V electrical system, then an "up" converter from the DD Series offers a fast and easy way to configure your system. Now with a range from 72W (3A output) to 600W (25A output), these products offer state of the art designs for fast installation and long term reliable operation. Typical applications include the installation of 24V equipment on 12V vehicles and installation of specialist equipment requiring higher operating voltages.



400W AND 600W 12-24V UNITS

The latest addition to the range includes two high current (17 and 25 Amps output) units. These use state of the art designs with efficiency up to 93% and practically all components are mounted using computer controlled surface mount technology (SMT). The result is a robust product with low component mass. The mechanical aspects include a brand new casing profile designed for maximum heat dissipation as well as a new design of our highly successful mounting cradle that allows the unit to be fully wired before being "clicked" into place. This provides for a faster installation time with mechanics capable of withstanding long term vibration with no risk of screws falling out.

CASING FORMATS

12V-24V converters are available in two casing formats. Units from 72-240W use the standard Alfatronix aluminium casings with polycarbonate endcaps and three point mounting cradle. The larger 400W and 600W units occupy a larger heatsink casing and utilise the heavy duty Phoenix connector. Installation is by way of the larger four point 'I' shaped mounting cradle.

ALSO AVAILABLE IN IP65 FORMAT

The DD Series 12-24V products are available in either standard IP53 format (like most Alfatronix converters) or the ruggedised IP65 versions. Just add -RU to the part number. These are suitable where the installation is in a particularly hostile environment and subject to increased water and dirt exposure.



PRODUCT CODING

The product code is derived as follows, taking the DD 12-24 072-RU as an example:

| | |
|--------------|-------------------------------|
| DD | DC input and output |
| 12-24 | Denotes 12V input, 24V output |
| 072 | Denotes wattage |
| -RU | Denotes IP65 version |

CHOOSE YOUR DD SERIES PRODUCT

| Part Number | Power | Nominal Voltage | Dimensions | Weight |
|-------------|-------------------------|---------------------------|------------------|--------|
| DD12-24 072 | 72W (3A) Non-Isolated | 12Vdc input, 24Vdc output | 89 x 87 x 50mm | 300g |
| DD12-24 168 | 168W (7A) Non-Isolated | 12Vdc input, 24Vdc output | 167 x 87 x 50mm | 640g |
| DD12-24 240 | 240W (10A) Non-Isolated | 12Vdc input, 24Vdc output | 217 x 87 x 50mm | 800g |
| DD12-24 400 | 400W (16A) Non-Isolated | 12Vdc input, 24Vdc output | 233 x 125 x 74mm | 1510g |
| DD12-24 600 | 600W (25A) Non-Isolated | 12Vdc input, 24Vdc output | 283 x 125 x 74mm | 1800g |

Other output voltage configurations are available as special orders, please ask our sales team

TECHNICAL DATA

| | |
|--------------------------------------|---|
| Input voltage range | 12Vdc +/- 30% |
| Output voltage | 27.2Vdc +/-5% at extremes of temperature, load, input tolerance etc |
| Continuous current rating | 3A - 25A depending on model |
| Intermittent rating | Continuous rating +20%, taken for a maximum of 2 minutes followed by 8 minutes rest |
| Transient voltage protection | Meets ISO7637-2 International standard for 12V and 24Vdc commercial vehicles |
| Electrostatic voltage protection | Meets ISO10605 |
| Output noise | <100mV pk-pk at continuous load |
| Off load current (quiescent current) | <20mA (400W and 600W enable off), less than 100mA (72 - 240W units) |
| Power conversion efficiency | Typically 93% |
| 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 +70°C |
| Operating humidity | 95% max., non-condensing |
| Casework | Anodised aluminium, glass-filled polycarbonate, dust, water and impact resistance to IP53. Ruggedised versions also available to IP65. |
| Connections | Four 6.3mm push on flat blade connectors (72W - 240W) Five terminal connector with screw tightening with mating half supplied (400W and 600W units) |
| Output indicator | Green LED adjacent to output terminals |
| Mounting method | "Click 'n' fit" mounting clip, fitted separately using 3 hole fixing (4 hole on 400W and 600W) |
| 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 |
| Input/Output over voltage protection | Controlled by internal circuitry |
| Catastrophic failure | Protected by internal input and output fuses |
| Approvals | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive |
| Designed to | EN50498, ISO 7637-2 |
| Markings | CE and E/e marked |

Q DD SERIES

BESPOKE AND VARIANT OPTIONS

FROM 9V TO 110V DC INPUT WITH A RANGE OF OUTPUTS TO SUIT YOUR NEEDS

From our comprehensive range of DC-DC converters, we can design bespoke solutions to your power needs. Input voltages from 9Vdc - 110Vdc are available with output voltages set to suit your needs. Products can also be upgraded, for example, to higher IP ratings or for high temperature performance. With specialist engineering skills in Switchmode DC-DC power conversion, we can undertake complete bespoke design projects to suit your requirements.



- A variety of mounting methods are available including the Alfatronix Click 'n' Fit system.
- Like all Alfatronix products, the variant units are covered by our No Quibble Lifetime Warranty.

RECENT EXAMPLES

- Wide input (11V-32V) unit with 10V output to power GPS systems on waste disposal trucks.
- Wide input (9V-32V) unit with 9V output to power thermal printers.
- Wide input (9V-32V) unit with 5V output for data logging systems on buses.
- Wide input (9V-32V) unit for motorway information signs.



Power solutions for forklift trucks, combine harvesters, trams and other specialist vehicles can all be served, as well as a variety of general industrial applications.



DC-DC VOLTAGE CONVERTERS

For annual volumes of over 10,000 units, Alfatronix can offer a bespoke design solution for OEM customers wishing to integrate DC-DC conversion into their vehicle electronics assembly. This enables the use of dedicated connectors and package dimensions to suit vehicle drawings and offers the opportunity to maximise performance within a given power conversion application.

Operating at the forefront of technology in DC-DC conversion, our engineers can offer advanced technological solutions with unparalleled reliability and performance. Features and benefits can be designed in line with dedicated needs to optimise benefits in assembly.

Some of the latest electronic designs can be assembled entirely using robotic Surface Mount Technology (SMT) providing excellent build repeatability. Quality is controlled entirely by process and the high capacity automated production equipment means assembly costs can be competitive against low cost off shore locations. Using these methods Alfatronix can maximise price to performance ratios while offering outstanding supply chain efficiency.

Please contact our sales team for more information.



ICI SERIES

DC-DC INTELLIGENT BATTERY CHARGERS

DC-DC INTELLIGENT BATTERY CHARGERS

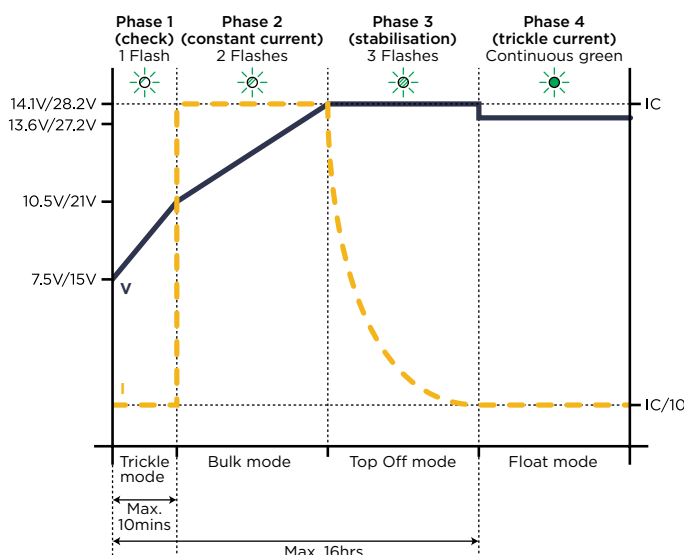
While many applications can be supplied using a standard voltage converter or stabiliser, sometimes there can be a requirement to charge one DC battery from another in order to provide independent power. The Alfatronix range of DC-DC chargers are based on the very successful PowerVerter range but configured to offer a four stage charging program that will ensure that batteries are charged to a maximum capacity providing long term reliable power.

These products come with many of the same safety and protection features as the PowerVerter, but are also additionally designed to detect faulty batteries and dead cells. They will also ensure that they will not operate unless the source battery is attached to a charging source such as a vehicle alternator or mains unit. In this way, you can ensure that the charger will not allow unintentional draining of the source battery.



MANY KEY FEATURES

These intelligent battery chargers operate a four stage charging cycle. The first stage monitors the battery to establish that the battery is in good condition before starting the three stage process. This feature is of key importance in ensuring that faulty batteries are not inadvertently charged causing overheating and potential system failure. The units are also reverse polarity protected and when re-connected correctly will operate normally without reset. The Alfatronix three point mounting cradle is also supplied for fast and easy installation.



- These intelligent DC-DC battery chargers offer a comprehensive 4 stage charging programme as well as protection against battery source drainage. A fifth terminal is also available to allow the unit to be installed as a float-mode charger if required as an alternative.
- All the battery chargers are galvanically isolated so can be used on any application including automotive, marine, petrochemical or off road applications.
- DC-DC chargers are suitable for providing auxiliary power on a wide variety of vehicles including fire, police and ambulance, as well as farming, forestry, commercial and leisure marine.

CHOOSE YOUR BATTERY CHARGER

| Part Number | Cont/Int Power | Input Voltage | Dimensions | Weight |
|--------------|----------------|---|-----------------|--------|
| ICi24-12 144 | 12A Isolated | 24Vdc input, 12Vdc output (variable charge voltage) | 167 x 87 x 50mm | 600g |
| ICi24-24 144 | 6A Isolated | 24Vdc input, 24Vdc output (variable charge voltage) | 167 x 87 x 50mm | 600g |
| ICi12-12 072 | 6A Isolated | 12Vdc input, 12Vdc output (variable charge voltage) | 167 x 87 x 50mm | 600g |
| ICi12-24 072 | 3A Isolated | 12Vdc input, 24Vdc output (variable charge voltage) | 167 x 87 x 50mm | 600g |

For AC-DC Battery Chargers, please see our IC Series AC-DC Intelligent Battery Chargers on page 26

TECHNICAL DATA

| | |
|--------------------------------------|--|
| Input voltage range | 24-32Vdc, 12-16Vdc. Configured to prevent depletion of source battery. |
| Output voltage | 12V or 24V nominal through the intelligent battery charging curve. Please see charge graph for further information. |
| Transient voltage protection | Meets ISO7637-2 International standard for 24Vdc commercial vehicles |
| Electrostatic voltage protection | Meets ISO10605, >8kV contact, 15kV discharge |
| Output noise | <50mV pk-pk (100mV on 24V units) at continuous load. Meets CISPR25. |
| Off load current (quiescent current) | Typically <5mA. Unit will shut down when source battery is not being charged. |
| Power conversion efficiency | Typically 85% |
| Isolation | >400Vrms between input, output and case, on isolated products only |
| 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 |
| Operating humidity | 95% max., non-condensing |
| Casework | Anodised aluminium, glass-filled polycarbonate, dust, water and impact resistance to IP533 |
| Connections | Five 6.3mm push-on flat blade connectors |
| Output indicator | Multicolour LED adjacent to output terminals indicating power and charging mode |
| Mounting method | "Click 'n' fit" mounting clip, fitted separately using three hole fixing |
| Safe area protection: | <ul style="list-style-type: none"> 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 | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive |
| Designed to | EN50498, EN55022, ISO 7637-2, EN61204-3 |
| Markings | CE and E marked |

POWERTECTOR LOW VOLTAGE DISCONNECT

SOLID STATE BATTERY GUARDS

The PowerTector Battery Guard is a solid state battery device that will monitor the source voltage and disconnect the equipment from the battery if the voltage falls below a pre-determined level. This can work to ensure that there is always sufficient voltage remaining in the battery to start a vehicle engine or ensure power is available for other critical applications. The total discharge of a lead acid battery can also cause damage to the cells significantly shortening the life of the battery. The PowerTector unit can also be set to disconnect equipment at a lower voltage that will still protect the battery from total discharge, while allowing for maximum battery usage. A timed version is also available which will disconnect automatically a set period after the ignition has been switched off.



A WIDE RANGE OF FEATURES

There are six units in the range from 10A to 200A. The 10A and 20A unit offer a simple inline system, usually wired to a specific piece of equipment. These units do not require chassis mounting and simply connect and tie wrap neatly within the wiring system.

The 40A and 60A units are connected by M6 brass bolts, the 100A and 200A by M10 brass bolts and use a three point mounting system to avoid rocking or stress to the electronics when mounted on uneven surfaces. Heat is dissipated into our custom manufactured die cast casing and all units will operate at full power without additional heatsink dissipation.

MANUAL SHUTDOWN FACILITY

From 40A upwards, the units have the facility to be manually shutdown either through the ignition or a dedicated switch. In addition, from 100A upwards the units can have an override switch fitted. This allows the units to be reactivated for four minutes to allow emergency actions to be performed.

ALARM & DISCONNECT DELAY FEATURE

An alarm output is provided which, once the threshold has been reached for 10 seconds, will activate, sounding an alarm or other indicating device for a further 50 seconds prior to disconnection. This allows the operator to restart the engine or take other action to maintain continuous power. (alarm not provided)

TIMED VERSIONS

In addition to the standard PowerTectors, the PT-T versions offer a timed facility. This will disconnect the output after a set time after the ignition has been turned off. If required, during this time period, the voltage can still be monitored and disconnected if it falls below a set level to protect the battery power and system. The unit will reactivate when the ignition has been turned on again and the battery voltage has reached 8.5Vdc (12V systems), 17Vdc (24V systems).

FULLY PROGRAMMABLE

All units in the range are supplied pre-programmed for a variety of scenarios offering higher or lower disconnect voltages and it is quick and simple to select the correct programme to suit your needs.

- All PowerTectors from 40A upwards are mounted in a rugged die cast aluminium casing with glass filled polycarbonate cover providing terminal protection and insulation.
- Smaller units; 10A and 20A, are available in a lightweight, polycarbonate casing that can be simply fitted in the wiring, like an inline fuse without the need to drill the vehicle chassis.



- Using the simple programming terminal, select the pre-set disconnect voltage according to your requirements.
- LED indicates operational status.
- Audible alarm and/or visual indicator can be installed in the dashboard or cockpit to alert operator of a potential problem.
- Switch terminal allows the unit to be operated via the ignition or a manual switch.
- The PowerTector battery guards offer excellent protection for communication and other mission critical applications

CHOOSE YOUR POWERTECTOR PRODUCT

| Part Number | Power | Input Voltage | Dimensions | Weight |
|-------------|-----------------|------------------------------------|-----------------|--------|
| PT10 | 10A continuous | 9Vdc-32Vdc (Automatic Referencing) | 155 x 30 x 15mm | 45g |
| PT10-T | 10A continuous | 9Vdc-32Vdc (Auto Ref) Timed | 155 x 30 x 15mm | 45g |
| PT20 | 20A continuous | 9Vdc-32Vdc (Automatic Referencing) | 155 x 30 x 15mm | 45g |
| PT20-T | 20A continuous | 9Vdc-32Vdc (Auto Ref) Timed | 155 x 30 x 15mm | 45g |
| PT40 | 40A continuous | 9Vdc-32Vdc (Automatic Referencing) | 76 x 78 x 33mm | 155g |
| PT40-T | 40A continuous | 9Vdc-32Vdc (Auto Ref) Timed | 76 x 78 x 33mm | 155g |
| PT60 | 60A continuous | 9Vdc-32Vdc (Automatic Referencing) | 76 x 78 x 33mm | 155g |
| PT60-T | 60A continuous | 9Vdc-32Vdc (Auto Ref) Timed | 76 x 78 x 33mm | 155g |
| PT100 | 100A continuous | 9Vdc-32Vdc (Automatic Referencing) | 124 x 97 x 51mm | 530g |
| PT100-T | 100A continuous | 9Vdc-32Vdc (Auto Ref) Timed | 124 x 97 x 51mm | 530g |
| PT200 | 200A continuous | 9Vdc-32Vdc (Automatic Referencing) | 124 x 97 x 51mm | 530g |
| PT200-T | 200A continuous | 9Vdc-32Vdc (Auto Ref) Timed | 124 x 97 x 51mm | 530g |

TECHNICAL DATA

| | |
|--|--|
| Input voltage range | 9-32Vdc (Automatic Referencing) |
| Output voltage | Equal to input voltage when operating (maximum of 100mV drop across terminals) |
| Transient over current rating (% of continuous value) | 110% for 10s 200% for 1s 300% for <0.5ms On over current shutdown there is a retry every 30s |
| Quiescent current when shutdown (while running) | Typ 2mA @ 13.6V, (PT40/60 Typ 4mA @ 13.6V), (PT100/200 Typ 6mA @ 13.6V) |
| Transient voltage protection | Meets ISO7637-2 International standard for 24V vehicles |
| Electrostatic voltage protection | Meets ISO10605, >8kV contact, 15kV discharge |
| Operating temperature | -25°C to +60°C to meet this specification table |
| Storage temperature | -25°C to +100°C |
| Ingress protection | IP65 |
| Casework | Silver anodised aluminium, glass filled polycarbonate |
| Connections | PT10/20 Insulated 6.3mm push-on flat blade connectors PT40/60 M6 ring tongues PT100/200 M10 ring tongues 6.3mm push-in flat blade connectors for earth, switch, override and alarm Programming lead with 2.8mm blade connector provided |
| Output indicator | Green LED for programming and output indication |
| Mounting method | PT10/20 tie wrap to wiring (supplied) PT40/60/100/200 3off half inch No8 pozi pan head screws (supplied) |
| 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 protection Set by external input fuse (set by application demands) and ground line fuse max 1A |
| Approvals | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive AES5 |
| Designed to | EN50498, ISO 7637-2 |
| Markings | CE and E marked |

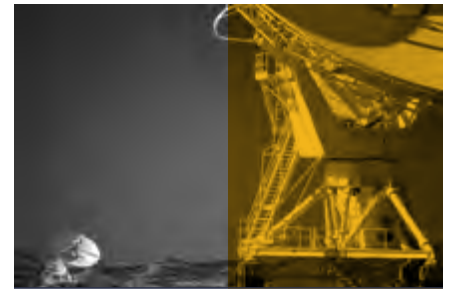


AD SERIES

115/230V_{AC} MAINS POWER SUPPLIES

MAINS POWER SUPPLIES IN 12V, 24V & 48V CONFIGURATIONS

The AD Series units may be used to supply mobile radios and other appliances from AC mains used in offices, portable site cabins, communication cabins, telephone exchanges, remote antennae sites, ships, oil rigs etc. The units will accept either European 230Vac or US 115Vac inputs and are available as standard in 12V, 24V and 48V output configurations. Input is via a standard IEC-320 C13/14 power cord with UK, European or US mains plugs - *please state your requirement*.



AD Series Power supplies can also be fitted with DIN rail clips for rack mounted applications: *see page 30*.



FAST INSTALLATION

There's nothing worse than a power supply lying around on the floor. The T-shaped mounting clip, common to many Alfatronix products, allows the power supplies to be installed quickly and simply in many out of the way locations, such as underneath desks or on walls. The 3 point 'T' clip can be fitted securely, even on uneven surfaces, quickly and simply, and then the power supply simply 'clips' in place.

BATTERY CHARGING REQUIRED?

A fixed voltage battery charging facility is also available with the supplementary loom; P/N AD BB loom. For dedicated battery charging units, *please check out our IC Series Intelligent Battery Chargers (page 26)*.

FULL CIRCUIT PROTECTION

The AD Series supplies have transient, overload and overheat protection for reliable operation even in the toughest environments.

RUGGED AND COMPACT

These units, often referred to as 'brick in the lead' supplies are housed in a rugged, corrosion resistant anodised aluminium extrusion. The low mass surface mount technology components offer excellent resistance to shock and vibration, thus further increasing the reliability of these products.

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

DESKTOP VERSIONS ALSO AVAILABLE

While the brick power supplies offer a versatile solution, if you are powering a mobile radio, try our *Desktop Versions (page 22)*. These are configured to attach to the radio forming one dedicated unit and are available for a variety of radios including Motorola, Hytera, Tait, Kenwood, Icom, Maxon and Vertex.

PRODUCT CODING

The product code is derived as follows, taking the AD 115/230-12 108 as an example:

| | |
|----------------|---|
| AD | AC input and DC output |
| 115/230 | Denotes auto select US or European AC input voltage |
| -12 | Nominal 12Vdc output |
| 108 | 108W capacity unit |

CHOOSE YOUR AD SERIES PRODUCT

| Product Codes | Output Voltage | | | Power | Dimensions | Weight |
|---|-------------------|-------------------|-------|-----------------|------------|--------|
| | 12Vdc | 24Vdc | 48Vdc | | | |
| AD 115/230-12 036 | AD 115/230-24 036 | AD 115/230-48 036 | 36W | 174 x 87 x 62mm | 675g | |
| AD 115/230-12 072 | AD 115/230-24 072 | AD 115/230-48 072 | 72W | 174 x 87 x 62mm | 675g | |
| AD 115/230-12 108 | AD 115/230-24 108 | AD 115/230-48 108 | 108W | 174 x 87 x 62mm | 675g | |
| AD 115/230-12 168 | AD 115/230-24 168 | AD 115/230-48 168 | 168W | 225 x 87 x 62mm | 900g | |
| AD 115/230-12 240 | AD 115/230-24 240 | AD 115/230-48 240 | 240W | 264 x 87 x 62mm | 1150g | |
| Additional Loom for battery charging - P/N: AD BB Loom | | | | | | |

TECHNICAL DATA

| | | |
|---|--|---|
| Input voltage range | Auto-Select, 85-135Vac and 170-265Vac, 47-440Hz | |
| Output voltage options | 13.6Vdc, 27.2Vdc or 54.4Vdc, as ordered. Worst case limits are +/- 4% | |
| Output Noise | <50mV pk-pk at continuous load (100mV on 24V versions, 200mV on 48V versions) | |
| Power Conversion Efficiency | Typically 83% | |
| Isolation between input and case/output | 1.5kVac/3.0kVac rms | |
| Isolation between casework to ground | Connected directly to mains input ground | |
| Normal operating temperature | -25°C to +30°C to meet this specification table +30°C to +70°C de rate linearly to 0A | |
| Storage temperature | -25°C to +100°C | |
| Max case temperature | 70°C at full load with 25°C ambient | |
| Operating humidity | 95% max, non-condensing | |
| Casework | Anodized aluminum, glass-filled polycarbonate | |
| Connections: | Input | IEC-320 C14 socket, C13 terminated cordset |
| | Output | 6.3mm push-on blade terminals |
| | Ground | 6.3mm push-on blade terminals, adjacent to input (additional external ground if required) |
| Output indicator | Green LED adjacent to output terminals | |
| Mounting method | 'Click 'n' fit' mounting clip or rubber feet. DIN rail clips available if required (see page 30). | |
| 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 protection | Protected by internal input and output fuses |
| Approvals | 2014/30/EU The general EMC directive 2014/35/EU The low voltage directive 93/68/EEC The CE marking directive | |
| Designed to | EN60950, EN55022, EN61204-3 | |
| Markings | CE | |

DESKTOP POWER SUPPLIES

The desktop power supplies, popularly called the "wedge" due to its distinctive, ergonomically friendly shape, offer a convenient way to convert 12Vdc mobile radio transceivers for use as desktop base stations. They will operate from AC supplies, either 115V or 230V without manual adjustment and output up to 108W (9Amps).



Radio Transceiver + Alfatronix Desktop Power Supply + Alfatronix Battery Back Up Box

- We started making these for Motorola radios 12 years ago, now we have 24 varieties for 9 manufacturers.
- The desktop units are supplied with endplates configured to fit with your radio - see complete list on page 24.
- For a complete system, order our fully compatible battery back up box - P/N AD BBB (to include a 7Ah battery) or AD BBB NB (excluding the battery).

BATTERY BACK UP BOX

The AD Series Desktop Power Supplies include a battery back up output as standard. This can be connected to maintain charge in a lead acid battery to supply power in the event of a mains failure. As a neat alternative to a loose battery, Alfatronix also supply a battery back up box, P/N AD BBB. This is designed to fit underneath the desktop supply and radio assembly and includes a 7Ah lead acid gel battery, presenting all three components as one tidy desktop assembly.

The battery back up box also includes a speaker (mounted on the front of the unit) for those wishing to use hands free radio operation.

CAN'T FIND WHAT YOU'RE LOOKING FOR?

Alfatronix Desktop "wedge" power supplies are configured to suit a wide range of radio transceivers from many manufacturers - see list on Page 24. However, if you use a variety of radio

not listed, or cannot find a compatible unit, try our UNIVERSAL unit (P/N AD UN UNI). This uses a mechanical interlocking fixing system (3M "Dual Lock") to fix the transceiver securely to the power supply.

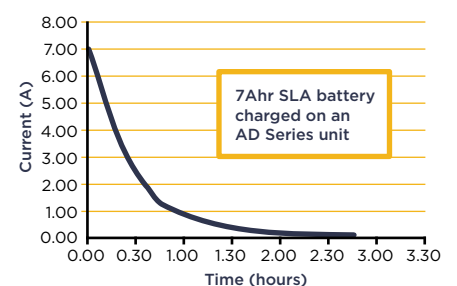
PRODUCT CODING

The product codes are developed to be as intuitive as possible. Taking the Motorola AD MT CM as an example:

| | |
|-----------|---|
| AD | AC input & DC output |
| MT | Denotes the radio manufacturer, in this case Motorola |
| CM | Denotes a popular radio compatible with this unit |

Please note: Like most part numbers, the CM fits a range of radios, not just the CM. See page 24 for a complete list.

BATTERY CHARGING CURVE



TECHNICAL DATA

| | |
|---|--|
| Input voltage range | Auto-select, 85-135Vac and 170-265Vac, 50Hz/60Hz |
| Output voltage & current | 13.6Vdc. Worst case limits are +/- 4% 108W (9A) |
| Output Noise | <50mV pk-pk at continuous load |
| Power Conversion Efficiency | Typically 83% |
| Isolation between input and case/output | 1.5kVac/3.0kVac rms |
| Isolation between casework to ground | Connected directly to mains input ground |
| Normal operating temperature | -25°C to +30°C to meet this specification table +30°C to +70°C de rate linearly to 0A |
| Storage temperature | -25°C to +100°C |
| Max case temperature | 70°C at full load with 25°C ambient |
| Operating humidity | 95% max, non-condensing |
| Casework | Anodized aluminum, glass-filled polycarbonate |
| Connections: | Input Output Ground |
| Output indicator | Green LED mains output on Orange LED battery back up mode |
| Mounting method | By rubber feet on base and direct attachment to radio above. |
| Safe area protection: | Over current Over heat Transients Catastrophic protection |
| Approvals | 2014/30/EU The general EMC directive 2014/35/EU The low voltage directive 93/68/EEC The CE marking directive |
| Designed to | EN60950, EN55022, EN61204-3 |
| Markings | CE |

| | Weights and Dimensions | | | |
|-----------|------------------------|-------|--------|--------|
| | Width | Depth | Height | Weight |
| AD UN UNI | 168mm | 125mm | 58mm | 800g |
| AD BBB | 163mm | 145mm | 70mm | 2810g |
| AD BBB NB | 163mm | 145mm | 70mm | 318g |

Note: The general body of all wedges measure as above. The endplates protrude further to allow fixing to the radio.

Technical Note: AD BBB contains SLA Battery 12V 7Ahr, both AD BBB and AD BBB NB contain Speaker 8 OHM 3W

AD SERIES

DESKTOP POWER SUPPLIES

FULL PRODUCT LIST

| Brand | Alfatronix Part Number | Model | Width (mm) | Height (mm) | Depth (mm) |
|----------|------------------------|------------------|----------------|-------------|------------|
| Motorola | AD MT-3100/DM | MTM5400 Tetra | 170 | 49 | 155 |
| | | MTM800 Tetra | 170 | 49 | 155 |
| | | PRO3100 | 177 | 56 | 176 |
| | | PRO5100 | 168 | 48 | |
| | | PRO7100 | 168 | 48 | |
| | | GM340 | 168 | 48 | 187 |
| | | GM640 | 168 | 48 | 187 |
| | | GM350 | 168 | 48 | 183 |
| | | GM360 | 168 | 48 | 183 |
| | | GM660 | 168 | 48 | 199 |
| | | GM380 | 168 | 48 | 199 |
| | | DM 1400/DM 1600 | 169 | 44 | 134 |
| | | DM2600 | 169 | 44 | 134 |
| | | DM 3400/DM 3401 | 175 | 51 | 206 |
| | | DM 3600/DM 3601 | 175 | 51 | 206 |
| | | DM 4400/DM 4401 | 175 | 51 | 206 |
| | | DM 4600/DM 4601 | 175 | 51 | 206 |
| Motorola | AD MT-CM | CM-140 | 169 | 44 | 118 |
| | | CM-160 | 169 | 44 | 118 |
| | | CM-340 | 169 | 44 | 118 |
| | | CM-360 | 169 | 44 | 118 |
| Kenwood | AD KW TK-762 | TK-760 | 140 | 40 | 145 |
| | | TK-860 | 140 | 40 | 145 |
| | | TK-762 | 140 | 40 | 145 |
| | | TK-780 | 140 | 40 | 145 |
| | | TK-880 | 140 | 40 | 145 |
| | | TK-980 | 140 | 40 | 145 |
| | | TK-981 | 140 | 45 | 145 |
| Kenwood | AD KW TK-7102H | NX-700/800 | 160 | 45 | 157 |
| | | TK-7302/8302 | 160 | 43 | 137 |
| | | TK-7180 | 160 | 45 | 157 |
| | | TK-7189E | 160 | 45 | 157 |
| | | TK-8180 | 160 | 45 | 157 |
| | | TK-8189E | 160 | 45 | 157 |
| | | TK-7360/8360 | 160 | 43 | 160 |
| Kenwood | AD KW TK-7160 | TK-7160 | 160 | 43 | 107 |
| | | TK-7162 | 160 | 43 | 107 |
| | | TK-8160 | 160 | 43 | 107 |
| | | TK-8162 | 160 | 43 | 107 |
| | | TK-7102 | 160 | 43 | 107 |
| | | TK-8102 | 160 | 43 | 107 |
| Icom | AD IC IC-F310 | IC-F310s | 140 | 40 | 170 |
| | | IC-F410s | 140 | 40 | 170 |
| | | IC-F310 | 140 | 40 | 170 |
| | | IC-F410 | 140 | 40 | 170 |
| | | IC-F510 | 140 | 40 | 170 |
| | | IC-F610 | 140 | 40 | 170 |
| | | IC-F320s | 140 | 40 | 170 |
| | | IC-F420s | 140 | 40 | 170 |
| | | IC-F320 | 140 | 40 | 170 |
| | | IC-F420 | 140 | 40 | 170 |
| | | IC-F520 | 140 | 40 | 170 |
| | | Icom | AD IC IC-F1700 | IC-F1710 | 175 |
| IC-F2710 | 175 | | | 45 | 170 |
| IC-F1810 | 175 | | | 45 | 170 |
| IC-F2810 | 175 | | | 45 | 170 |
| Icom | AD IC IC-F1010 | IC-F1010 | 150 | 50 | 180 |
| | | IC-F2010 | 150 | 50 | 180 |
| | | IC-F1020 | 150 | 50 | 180 |
| | | IC-F2020 | 150 | 50 | 180 |
| | | IC-F1610 | 150 | 50 | 180 |
| | | IC-F2610 | 150 | 50 | 180 |
| | | IC-A110 Euro | 150 | 50 | 180 |
| Icom | AD IC IC-F110 | IC-F110 | 150 | 40 | 117.5 |
| | | IC-F110S | 150 | 40 | 117.5 |
| | | IC-F210 | 150 | 40 | 117.5 |
| | | IC-F210S | 150 | 40 | 117.5 |
| | | IC-F5022 | 150 | 40 | 117.5 |
| | | IC-F6022 | 150 | 40 | 117.5 |
| | | IC-F121/IC-F121S | 150 | 40 | 167.5 |
| | | IC-F221/ICF221S | 150 | 40 | 167.5 |
| | | IC-F111/IC-F111S | 150 | 40 | 167.5 |
| | | IC-F211/IC-F211S | 150 | 40 | 167.5 |
| | | IC-F5122 | 150 | 40 | 167.5 |
| | | IC-F6122 | 150 | 40 | 167.5 |
| | | IC-F5012 | 150 | 40 | 167.5 |
| | | IC-F6012 | 150 | 40 | 167.5 |
| | | Icom | AD IC IC-F5062 | IC-F5062 | 160 |
| IC-F6062 | 160 | | | 45 | 150 |
| Tait | AD TA-8000 | TM8105 | 160 | 50 | 175 |
| | | TM8110 | 160 | 50 | 175 |
| | | TM8105 | 160 | 50 | 175 |
| | | TM8250 | 160 | 50 | 175 |
| | | TM8255 | 160 | 50 | 175 |
| | | TM9300 | 160 | 50 | 175 |
| | | TM9400 | 160 | 50 | 175 |

| Brand | Alfatronix Part Number | Model | Width (mm) | Height (mm) | Depth (mm) |
|--------------|------------------------|--|-------------------|----------------|-------------------|
| Yaesu/Vertex | AD VS VX-2200 | VX2200E/2100E | 165 | 46 | 155 |
| Yaesu/Vertex | AD VS VX-4500 | VX-4500/4600 EVX-5300/5400/5600 | 165 165 | 45 45 | 155 155 |
| Yaesu/Vertex | AD VS FP-2500 | VX-2000V VX-2000U FP-2500E | 160 160 160 | 40 40 40 | 105 105 110 |
| Yaesu/Vertex | AD VS VX-4104 | VS-4104-0-50 VX4100E VX4200E | 165 165 165 | 43 43 43 | 155 155 155 |
| Maxon | AD MX PM160 | PM100 PM160 | 174 174 | 58 58 | 167 167 |
| Nokia EADS | AD NK EA-TMR880 | TMR880 | 190 | 58 | 130 |
| Nokia EADS | AD NK EA-TMR880i | TMR880i TMR880i remote head | 182 190 | 60 72 | 125 36 |
| Novel | AD NR-M400 | NM-60-100 NM-60-400 | 225 225 | 47 47 | 180 180 |
| Hytera | AD HYT 600 | TM 600 TM 610 | 152 152 | 43 43 | 125 125 |
| Hytera | AD HYT 785 | MD 785 | 170 | 60 | 180 |
| Hytera | AD HYT 680 | MT 680 | 180 | 60 | 180 |
| Hytera | AD HYT MD655 | MD652/MD652G MD655/MD655G | 165 165 | 46 46 | 140 140 |
| Sepura | AD SP 8000 | SBM800/SCM8000/SEM8000 | 177 | 60 | 184 |
| Universal | AD UN UNI | Cleartone Hytera TM 800 Simoco Sepura | | | |

The Alfatronix range of Desktop Power Supplies provide bespoke solutions for radios from a wide range of manufacturers. For any not listed the *AD UNI* version can be used with any radio.



Motorola
1400/1600



Motorola
MTM800 TETRA



Motorola
DM3400



Hytera
MD785



Tait
TM8105



Hytera
TM600

INTELLIGENT BATTERY CHARGERS

The IC Series Intelligent Battery Chargers offer an ideal way of charging any type of lead acid battery safely and reliably. The rugged, fully protected unit (IP65) can be used in a variety of applications including on trucks, off road vehicles, boats, caravans and in depots and workshops.

A WIDE RANGE OF PRODUCTS

There are four products in the range, all accepting the standard European 230Vac inputs. The products are available for charging either 12Vdc or 24Vdc systems. They use the latest manufacturing techniques and are cool running with high efficiency. Like the other products in our range, they use switchmode technology.

PRODUCT CODING

The product coding is derived as follows, taking the IC 230-12 108 as an example.

| | |
|------------|---|
| IC | Intelligent Charger |
| 230 | 230Vac input |
| -12 | 12V nominal – suitable for charging 12V lead acid batteries |
| 108 | 108W capacity unit |

RUGGED & COMPACT

The chargers are enclosed in a rugged, anodised aluminium extrusion protected from dust, damp and impact to IP65. The units can be installed practically anywhere, on boats or vehicles, on road and off, at depots and garages.

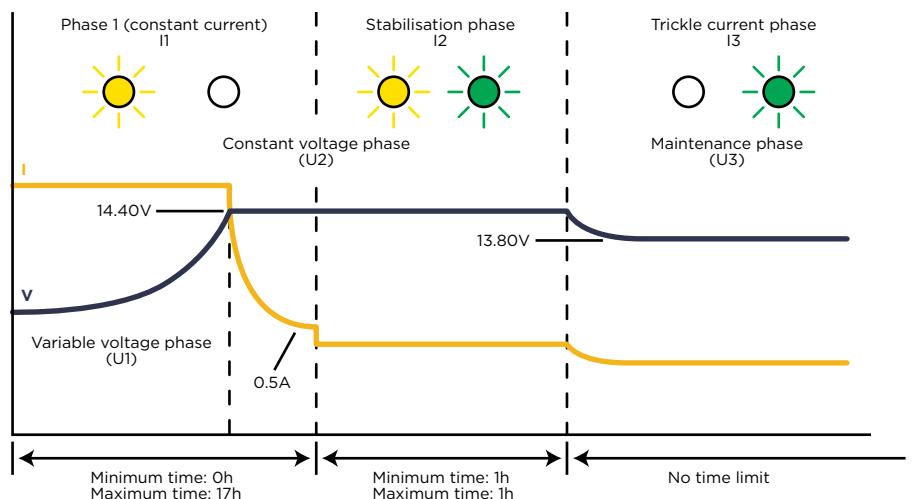


- 12V units are ideal for small vehicle applications such as cars, minibuses, small marine craft, caravans and motorhomes, and a variety of industrial uses.
- 24V units are ideal for heavy vehicle applications such as HGVs, fire service vehicles, larger marine craft, off road and forestry vehicles, and for use in depots and workshops.



INTELLIGENT CHARGING SYSTEM

The Alfatronix IC Series is suitable for all types of lead acid batteries. Charging is through a 3 stage system. The first stage is the bulk charging phase. This state is indicated when the yellow LED is illuminated and continues through stage 2 of the process. When the current is below 10% of maximum output, the charger automatically adjusts to reduce the output voltage to reliably top up the battery. At this stage the green LED is illuminated indicating that the battery is fully charged. Should the voltage level fall below the nominal values during the maintenance stage, the charger will go back to step one and repeat the process.



CHOOSE YOUR IC SERIES PRODUCT

| Max Load | Nominal Voltage | Part Number | Size (mm) | Weight (g) |
|----------|-----------------|--------------|---------------|------------|
| 7A | 12 | IC230-12 108 | 184 x 87 x 45 | 1100 |
| 3A | 24 | IC230-24 108 | 184 x 87 x 45 | 1100 |
| 17A | 12 | IC230-12 240 | 235 x 87 x 58 | 1750 |
| 12A | 24 | IC230-24 300 | 235 x 87 x 58 | 1750 |

TECHNICAL DATA

| | |
|-----------------------------|---|
| Input voltage range | 180Vac - 270Vac |
| Input over voltage | 285Vac |
| Output voltage (12V units) | 13.5Vdc - 14.4Vdc according to charge cycle (STD 14.4) |
| Output voltage (24V units) | 26.8Vdc - 29.0Vdc according to charge cycle (STD 28.8) |
| Power conversion efficiency | Typically 88 - 91% |
| Off load current | <2mA |
| Operating temperature | -30°C - +55°C |
| Storage temperature | -55°C - +85°C |
| Casework | Anodised aluminium, dust, water and impact protected to IP65 |
| Connections | Input - IEC lead, Output - flying lead |
| Output indicators | Yellow and green LEDs according to cycle |
| Mounting method | By 4 screws |
| Safe area protection: | <ul style="list-style-type: none"> Over current Current limited to maximum ratings of each model Over heat Internal control to reduce output in over temperature situations Transients Protection both on input and output Catastrophic failure With fuse on output |
| Approvals | 2014/30/EU The general EMC directive 2014/35/EU The low voltage directive 93/68/EEC The CE marking directive |
| Designed to | EN61204-3, EN60335-2-29, EN 55022B |
| Markings | CE |



POWERVERTER & DD SERIES

IP65 RUGGEDISED CONVERTERS

HARSH ENVIRONMENTS

These products offer the same great electrical characteristics as our PowerVerter and DD Series, but are provided in "Ruggedised" casings for use in harsh environments. Using the well-known Ingress Protection System, the product range has been tested and subjected to demanding environmental conditions and awarded a rating of IP65. All Ruggedised PowerVerterers are enclosed in a durable aluminium 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.

INNOVATIVE TECHNOLOGY

Utilising the same GORE-TEX® technology that is used in extreme outdoor clothing, the Ruggedised range is able to breathe freely, without compromising the water tight and dust tight seal. This free-flow of air ensures that the pressure remains equal inside and outside the unit thus allowing it to operate within a large temperature range and at varying altitudes safely.

FAST INSTALLATION

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.

ANTI-VIBRATION

As well as being dust and water tight to IP65, the units are vibration resistant. They have an anti-vibration cable gland fitted into a hexagonal recess to prevent unwanted knocks from loosening it, so they can be fitted into rugged environments care-free.



ADDITIONAL FEATURES

The RU range has the same features as the standard PV & DD range, but in addition, they also offer the following benefits:

- Dust, water and impact resistant to IP65.
- Breathable vent to prevent unwanted build up of pressure.
- Anti-vibration cable gland.
- Supplied with 1m of cable as standard.

PRODUCT VARIANTS

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



CHOOSE YOUR RU SERIES PRODUCT

| Part Number | Power | Nominal Voltage | Dimensions | Weight |
|------------------|-------------------------|---------------------------|------------------|--------|
| PV3s-RU | 36W (3A) non-isolated | 24Vdc input, 12Vdc output | 86 x 91 x 52mm | 325g |
| PV6s-RU | 72W (6A) non-isolated | 24Vdc input, 12Vdc output | 108 x 91 x 52mm | 370g |
| PV12s-RU | 144W (12A) non-isolated | 24Vdc input, 12Vdc output | 146 x 91 x 52mm | 505g |
| PV18s-RU | 216W (18A) non-isolated | 24Vdc input, 12Vdc output | 186 x 91 x 52mm | 820g |
| PV24s-RU | 288W (24A) non-isolated | 24Vdc input, 12Vdc output | 186 x 91 x 52mm | 835g |
| *PV50s-RU | 600W (50A) non-isolated | 24Vdc input, 12Vdc output | 274 x 125 x 74mm | 2340g |
| PV3i-RU | 36W (3A) isolated | 24Vdc input, 12Vdc output | 108 x 91 x 52mm | 390g |
| PV6i-RU | 72W (6A) isolated | 24Vdc input, 12Vdc output | 146 x 91 x 52mm | 510g |
| PV12i-RU | 144W (12A) isolated | 24Vdc input, 12Vdc output | 186 x 91 x 52mm | 690g |
| PV18i-RU | 216W (18A) isolated | 24Vdc input, 12Vdc output | 236 x 91 x 52mm | 1035g |
| PV24i-RU | 288W (24A) isolated | 24Vdc input, 12Vdc output | 236 x 91 x 52mm | 1050g |
| DDi 12-12 036-RU | 36W (3A) isolated | 12Vdc input, 12Vdc output | 108 x 91 x 52mm | 390g |
| DDi 12-12 072-RU | 72W (6A) isolated | 12Vdc input, 12Vdc output | 146 x 91 x 52mm | 505g |
| DDi 12-12 108-RU | 108W (9A) isolated | 12Vdc input, 12Vdc output | 186 x 91 x 52mm | 835g |
| DDi 24-24 072-RU | 72W (3A) isolated | 24Vdc input, 24Vdc output | 146 x 91 x 52mm | 540g |
| DDi 24-24 108-RU | 108W (4.5A) isolated | 24Vdc input, 24Vdc output | 186 x 91 x 52mm | 640g |
| DDi 24-24 168-RU | 168W (7A) isolated | 24Vdc input, 24Vdc output | 236 x 91 x 52mm | 880g |
| DD 12-24 072-RU | 72W (3A) non-isolated | 12Vdc input, 24Vdc output | 108 x 91 x 52mm | 400g |
| DD 12-24 168-RU | 168W (7A) non-isolated | 12Vdc input, 24Vdc output | 186 x 91 x 52mm | 740g |
| DD 12-24 240-RU | 240W (10A) non-isolated | 12Vdc input, 24Vdc output | 236 x 91 x 52mm | 920g |
| DD 12-24 400-RU | 400W (16A) non-isolated | 12Vdc input, 24Vdc output | 221 x 125 x 74mm | 2080g |
| DD 12-24 600-RU | 600W (25A) non-isolated | 12Vdc input, 24Vdc output | 274 x 125 x 74mm | 2340g |
| DD 48-12 072-RU | 72W (6A) non-isolated | 48Vdc input, 12Vdc output | 108 x 91 x 52mm | 360g |
| DD 48-12 108-RU | 108W (9A) non-isolated | 48Vdc input, 12Vdc output | 146 x 91 x 52mm | 460g |
| DDi 48-12 036-RU | 36W (3A) isolated | 48Vdc input, 12Vdc output | 108 x 91 x 52mm | 390g |
| DDi 48-12 072-RU | 72W (6A) isolated | 48Vdc input, 12Vdc output | 146 x 91 x 52mm | 510g |

Other input and output voltage configurations are also available as special orders, please ask our sales team

TECHNICAL DATA

| | |
|--------------------------------------|--|
| Input voltage range | 12Vdc, 24Vdc +/- 30%, 48Vdc -30% +25% |
| 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 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, ISO14982, >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) | <15mA (PowerVerter), <15mA (DD Series exc. 12-24), <100mA (DD Series 12-24 units) |
| Power conversion efficiency | Typically: 90% for non-isolated units, 85% for isolated units * 95% |
| Isolation | >400Vrms between input, output and case, on isolated products only |
| Operating temperature | -25°C to +30°C de rate output current linearly from +30°C to 0A at +80°C |
| Storage temperature | -25°C to +100°C |
| Operating humidity | 100% |
| Casework | Anodised aluminium, glass filled polycarbonate, dust water and impact resistance to IP65 |
| Connections | 4 wires (1m in length) stripped and tinned for individual connection |
| Voltage drop in 1m supplied cable | 60mV per amp @ 25°C on units with output current < 18A 10mV per amp @ 25°C on units with output current ≥ 18A |
| Output indicator | Green LED adjacent to cable gland |
| Mounting method | Click 'n' fit mounting clip, fitted separately using three hole fixture (see page 30) * 4 hole cradle |
| 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 protection | Protected by internal input and output fuses |
| Approvals | 2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive |
| Markings | CE and E marked |

'T' SHAPED MOUNTING CRADLE

Many Alfatronix products are installed using our 'T' shaped mounting cradle. This is manufactured from VO rated (self-extinguishing) glass filled polycarbonate material and exhibits excellent strength and durability characteristics. The three point design allows for flat installation, even on uneven surfaces and it is both quick and easy to install as the bracket itself can be used as a template for accurate drilling before being screwed firmly into position. The converter can be fully wired before being clipped securely onto the bracket. The clip design is entirely vibration proof and, as the body of the converter covers the screw heads, once installed it is virtually impossible for any of the screws to vibrate loose, a potential long term problem on a diesel vehicle.

This bracket is supplied as standard with all PowerVerter DC-DC converters up to 240W (24A), DD Series converters (up to 240W) and Brick in the lead AD Series mains power supplies.

1.



2.



3.



DIN RAIL MOUNTING CLIP

The din rail mounting pack is sold separately as an alternative to the 'T' shaped bracket and is supplied in a pack of two. Please order part number: DIN RAIL CLIP Pack (2). These are compatible with all units supplied with a 'T' bracket (which should be discarded). For PV3s units, only one clip is sufficient. A pair of clips should be used for all other installations.

1.



2.



3.



POWERTECTOR INSTALLATION METHODS

Depending on the size of the units, the PowerTector battery guards use two different mounting methods.

For any units up to 20A, it is not necessary to drill into the vehicle chassis as these small, lightweight units can be wired in place, then simply tie-wrapped in position in a similar way as an in line fuse.

1.



2.



3.



Units from 40-200A use a die cast aluminium body configured with three mounting holes. These are offset slightly from the heatsink structure to allow installation onto uneven surfaces and provide for airflow beneath the unit.

1.



2.



3.



'I' SHAPED MOUNTING CRADLE

This cradle is supplied as standard and used for the more powerful, heavier units from 400W upwards. Examples include DD 12-24 400, DD 12-24 600 and PV50s. It is manufactured from V0 rated (self-extinguishing) glass filled polycarbonate material and exhibits excellent strength and durability characteristics. The four point design includes spacer washers to allow for flat installation, even on uneven surfaces and it is both quick and easy to install as the bracket itself can be used as a template for accurate drilling before being screwed firmly in position. The converter can be fully wired before being clipped securely onto the bracket. The clip design is entirely vibration proof and as the body of the converter covers the screw heads, once installed it is virtually impossible for any of the screws to vibrate loose, a potential long term problem on a diesel vehicle.

1.



2.



3.

