

# AD Series *AC to DC* Voltage Converters

## AC-DC Voltage Converters

The desktop versions within the AD Series, commonly referred to as the 'Wedge', offer a convenient way to convert 12Vdc mobile radio transceivers for use as desktop base stations. They will operate from alternating current supplies of between 85 to 135Vac and 170 to 265Vac without manual adjustment. The continuous power rating is 108 Watts.

This product also has a battery back up facility which will enable an external battery to power the transceiver should the mains supply fail. This will cut in automatically in the event of a mains failure.



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

The wedge meets the European Low Voltage Directive and the EMC Directive. It also meets the requirements of UL1950 and FCC Class B.

### Applications

The *wedge* may be used to supply radiotelephones from ac mains used in offices, portable site cabins, communication cabins, remote antenna sites, ships, oil rigs, etc.

### Rugged and Compact

The *wedge* is housed in a rugged corrosion resistant anodized aluminum extrusion – it can be dropped and jumped on without damage! 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. The wedge rests on the four rubber feet that are provided.

### Designed for ease of use

The radio is mounted at an angle to aid viewing and operation. The wedge has a microphone clip on either side of the radio (not universal version) thus allowing for left or right handed operators.

A red LED indicates when the output from the unit is supplied from the mains. However, if a back up battery has been fitted, and the



**DESKTOP VERSIONS**  
with battery backup



mains supply should fail, a yellow LED will light, indicating that the output is supplied from the back up battery. This gives reassurance to the operator of the status of the equipment.

### International Connections

The mains input is via a national cordset attached to the *wedge* via an IEC-320 C13/14 plug and socket. The DC output is via two 6.3 mm (1/4") push on connectors. A ground stud is also provided.

### Full Circuit Protection

The *wedge* has transient, overload and over temperature protection. The *brick* versions (see *AD Series leaflet*) may be used as building blocks and wired in parallel.

### Product Coding

The new AlfaTronix AD Series codes have been developed to 'say everything'. They include all the product characteristics in one simple code and can be explained as follows, taking the AD115/230-12 108 as an example:

| AD         | AD Series (AC-DC power supplies)                    |
|------------|---|
| 115/230    | 115/230Vac input                                    |
| 12         | 12Vdc output  |
| 108        | 108 watts continuous output (9 amps at 12Vdc)       |
| AD MT 3100 | Indicates endcaps filter for Motorola Pro/GM Series |

**Alfa**TRONIX

*for use in* **offices, on ships and oil rigs**

# Choose *your* Desktop AC-DC Converter

| Product Code                      | Description              | Applications  | Output Current   | Size  |
|-----------------------------------|--------------------------|---|--|---|
| AD 115/230-12 108 desktop version | PSU alone, no end panels | For the models listed below, order the appropriate end panels                   | 9 Amps Continuous  | 168x127x89mm (6.61"x5"x3.5")<br>775g (27.3oz) (excluding cable) |
| AD MT 3100                        | End panels (pair)        | Motorola America Pro Series   | To order: select the basic wedge product code and then order the end plates to match the transceiver of your choice. The end plates are supplied and fitted, free of charge, at the factory prior to despatch. The unit has been approved under the basic part number but the end panels are needed to adapt it to your transceiver. |   |
| AD MT 3100                        | End panels (pair)        | Motorola Europe GM Series   |  |   |
| AD KW TK-762                      | End panels (pair)        | Kenwood TK-762 (and transceivers of the same dimensions)                        |  |   |
| AD KW TK-7102H                    | End panels (pair)        | Kenwood TK-7102H (and transceivers of the same dimensions)                      |  |   |
| AD MX PM160                       | End panels (pair)        | Maxon PM160 (and transceivers of the same dimensions)                           |  |   |
| AD IC IC-F1010                    | End panels (pair)        | Icom IC-F1010 (and transceivers of the same dimensions)                         |  |   |
| AD IC IC-F310                     | End panels (pair)        | Icom IC-F310 (and transceivers of the same dimensions)                          |  |   |
| AD YS VX2000/3000                 | End panels (pair)        | Yaesu VX2000/3000 (and transceivers of the same dimensions)                     |  |   |
| AD UN UNIVERSAL                   | End panels (pair)        | Universal for general use – transceiver attaches with 'dual lock' pads provided |  |   |

## Common Characteristics

|  |   |
|--|---|
| Input voltage range  | Auto-Select, 85-135Vac and 170-265Vac, 47-440Hz   |
| Output voltage options   | 13.6 Vdc. Worst case limits are +/-4%   |
| Output noise   | <50mV pk-pk at continuous load.   |
| Power conversion efficiency  | Typically 85%   |
| Isolation:<br>Between input and case/output<br>Casework to ground  | 1.5kVac/3.0kVac rms<br>Connected directly to mains input ground   |
| Mean time between failures   | >100 Years (HRD4)   |
| Normal operating temperature   | -25°C to +30°C to meet this specification table<br>+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   |
| Case work  | Anodized aluminum   |
| Connections:<br>Input<br>Output<br>Ground  | IEC-320 C14 socket, C13 terminated cordset<br>6.3 mm push-on blade terminals<br>Stud with crimp eyelet, adjacent to output  |
| Mains Output indicator   | Red LED adjacent to output terminals  |
| Battery Back Up:<br>Output indicator<br>Float charge current   | Yellow LED adjacent to back up terminals lights when battery is in use<br>300mA   |
| Mounting method  | Rubber feet   |
| Safe Area Protection: Over current<br>Over temperature<br>Output over voltage<br>Transients<br>Catastrophic failure<br>Battery short circuit | Limited by current sensing circuit<br>Limited by temperature sensing circuit<br>Protected by independent shut down circuit<br>Protected by filters and rugged component selection<br>Protected by internal input and output fuses<br>Protected by 15A external fuse |
| Approvals  | 89/336/EEC The General EMC Directive<br>73/23/EEC The Low Voltage Directive<br>93/68/EEC The CE Marking Directive   |
| Tested to  | EN50081-1, EN50082-1, EN55014-1, EN61000-3-3, EN60950, UL1950, CSA 950-95, FCC Class "B", VDE0805   |
| Markings   | CE  |



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