

PowerMaster *Low Voltage* Converters



DC-DC or AC-DC LV Converters

These products offer a convenient way to use 12, 24, 36 or 48 Vdc equipment from ac or dc Low Voltage supplies of between 50 and 360V. They will automatically adjust to American or European mains input voltages. These cool running products use switch mode technology and are assembled using surface mount techniques.

A Comprehensive Low Voltage Converter Range

The PowerMaster converters operate from Low Voltage ac or dc inputs of between 50V to 360V. (For Extra Low Voltage products see our PowerSelector Range). To cover the input voltage range we offer two groups of products. The division occurs at around 140V although there is a wide overlap. Each group cover a 3:1 input range and accept dc or a wide frequency of ac input including 50, 60 and 400Hz. The continuous power ratings are 36, 72 and 144 Watts. The nominal voltage outputs are factory set at 12, 24, 36 or 48Vdc.

The units may be used to supply radiotelephones and other appliances from ac mains used in offices, portable site cabins, communication cabins, telephone exchanges, remote antenna sites, ships, oil rigs, etc. The dc applications include use on trains, cranes and other dc electric traction vehicles such as milk floats, trams, underground vehicles, mining machinery, etc. All the products may be used for constant voltage lead-acid battery charging providing the battery manufacturers guidelines are followed.

These units have been approved to the European Low Voltage Directive and are CE Marked. They are UL Marked and also meet the requirements of UL1950 and FCC Class B.

Rugged and Compact

The units are housed in a rugged corrosion resistant anodised aluminium extrusion. The units can be dropped, jumped on and splashed without damage. The low mass Surface Mount Technology components are also less prone to vibration damage, 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.

Fast Installation

All the products fit onto a 'Click 'n' Fit' mounting clip. It is easy to fit the clip into awkward places then click the unit into the clip. The clip is fixed in three points allowing it to be mounted on uneven surfaces. The units are compact enough to be neatly mounted onto a bulkhead, under a desk, under a shelf or alongside an appliance. They may also be used as a free standing 'brick in the lead' power unit, resting on the four rubber feet that are provided.

A red LED indicates when there is output from the converter, this gives reassurance to the installation engineer and speeds any fault finding in the wiring.

International Connections

The mains input is via an internationally accepted IEC Connector and included is a detachable mains lead which can be configured for each country. The DC output is via two 6.3 mm (1/4") push on connectors.

Full Circuit Protection

The units have transient, overload and overheat protection.

Product Coding

The product code is developed as follows, taking PM72 L-12 as an example.

PM	PowerMaster mains power supply product
72	72 watts continuous output (12 V nominal at 6 amps)
L	Low input range (50 to 150V)
12	12Vdc nominal output (actually 13.6 Vdc)



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

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		Output Voltage			
		12	24	36	48
Input Voltage 50 to 160	L	PM36 L-12	PM36 L-24	PM36 L-36	PM36 L-48
		PM72 L-12	PM72 L-24	PM72 L-36	PM72 L-48
		PM144 L-12	PM144 L-24	PM144 L-36	PM144 L-48
Input Voltage 110 to 360	H	PM36 H-12	PM36 H-24	PM36 H-36	PM36 H-48
		PM72 H-12	PM72 H-24	PM72 H-36	PM72 H-48
		PM144 H-12	PM144 H-24	PM144 H-36	PM144 H-48

The product code indicates the output power.

To calculate the output current, divide the first number in the product code by the nominal output voltage (12, 24, 36, 48 Vdc).

Technical *data*

Product Code	PM36	PM72	PM144	
Power Rating*	36/72 Watts	72/120 Watts	144/216 Watts	*Continuous/Intermittent
Profile	87 x 62 mm	87 x 62 mm	87 x 62 mm	(The intermittent power can be used for a maximum of 2 minutes followed by 8 minutes rest)
Length	137 mm	182 mm	232 mm	
Weight	700g	1050g	1400g	
Common Characteristics				
Input Voltage Range	• L 40-130 Vac or 50-160 Vdc • H 85-264 Vac or 100-370 Vdc			
Electro Static Voltage Protection	Meets ISO10605, ISO14892, >8kV contact, 15kV discharge			
Output Voltage Options	13.6 Vdc, 27.2 Vdc, 40.8 Vdc or 54.4 Vdc. Worst case limits are +/-4%			
Output Noise	<50mV pk-pk at continuous load. Meets CISPR25 and VDE0879-3			
Power Conversion Efficiency	Typically 85%			
Isolation	• Input to Output: 4 kVac rms • To case: 3kVac rms			
Mean Time between Failures	>100 Years (HRD4)			
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 at 25°C Ambient			
Operating Humidity	95% max, non condensing			
Case Work	Anodised Aluminium			
Connections	• Input – IEC320 Type C13/C14 • Output – 6.3 mm push on			
Output Indicator	Red LED adjacent to output terminals			
Mounting Method	Rubber feet or 'Click 'n' Fit' mounting clip, fitted separately using three hole fixing			
Safe Area Protection: Over Current Over Heat Output Over Voltage Transients Catastrophic failure	Limited by current sensing circuit Limited by temperature sensing circuit Protected by independent shut down circuit Protected by filters and rugged component selection Protected by internal input and output fuses			
Approvals	89/336/EEC The General EMC Directive 73/23/EEC The Low Voltage Directive 93/68/EEC The CE Marking Directive			
Tested to	EN50081-1, EN50082-1, EN55014-1, EN61000-3-2, EN61000-3-3, EN60950, EN60945 Annex A, CEI60077, UL1950, CSA950-95, FCC Class "B", VDE0805, CISPR25 and VDE0879-3, ISO10605, ISO14892.			
Markings	CE, UL			



AlfaTronix Limited 29 Newtown Business Park, Poole, Dorset BH12 3LL Great Britain.
Tel: +44 (0) 1202 715517. Fax: +44 (0) 1202 715122. E-mail: sales@alfatronix.ltd.uk
Web Site: <http://www.alfatronix.ltd.uk>