CUSTOM POWER DESIGN

ELECTRONICS CONSULTANTS PROVIDING CUSTOM DESIGN, DEVELOPMENT, TEST & SUPPORT

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WIDE RANGE DC-DC HYDROGEN STACK CONVERTERS.

UP TO 1500W INPUT, WITH WIDE STACK VOLTAGE RANGE.

Model Number Selection (other input and output voltages available).

OUTPUT	INPUT: 12-36V	18-48V	24-60V	30-84V
27.6V (24V Bat.) at 55A	SM5510	SM5520	SM5530	SM5540
41.4V (36V Bat.) at 36.0A	SM5511	SM5521	SM5531	SM5541
55.2V (48V Bat.) at 27.2A	SM5512	SM5522	SM5532	SM5542
69.0V (60V Bat.) at 21.8A	SM5513	SM5523	SM5533	SM5543
82.8V (72V Bat.) at 27.8A	SM5514	SM5524	SM5534	SM5544
96.6V (84V Bat.) at 15.6A	SM5515	SM5525	SM5535	SM5545
110.4V (96V Bat.) at 20.8A	SM5516	SM5526	SM5536	SM5546
124.2V (108V Bat.) at 10.5A	SM5517	SM5527	SM5537	SM5547
138.0V (120V Bat.) at 10.9A	SM5518	SM5528	SM5538	SM5548
220.8V (192V Bat.) at 6.8A	SM5519	SM5529	SM5539	SM5549

- **HIGH OUTPUT POWER IN COMPACT SIZE.**
- **UP TO 3KW TOTAL OUTPUT IN BOOST MODE.**
- **FEATURES 'STACKLIMIT'© CONTROL.**
- **REMOTE ON / OFF CONTROL FACILITY.**
- **MANUAL OR PROCESSOR BASED VERSIONS.**

TEMPORARY PICTURE REPRESENTATIVE OF SHAPE AND CONNECTIONS.

GENERAL DESCRIPTION. A small converter handling up to 1500W from a hydrogen stack, with various dc outputs, model dependent. The input and output are ohmically isolated, making installation very simple. The output has a constant current limit and the unit can be turned on/off remotely, via a logic compatible / stack voltage control input. Note that connection terminals are underneath. In 'BOOST' mode, the output 'sits' on top of the stack, allowing up to 3KW output. NOTE: Output voltage must be higher than the input in boost.

The unit is intended for use with fuel cell stacks, where maximum power is available at a well defined stack voltage, typically 45% of the stack's open circuit voltage. By setting the **'STACKLIMIT'©** of the converter to this voltage, the unit will start to fold back with high load, balancing the stack at maximum possible stack output.

A fixed output current limit applies, but normally the stack will limit before the current limit is reached.

Units may be used for N x 12V battery charging.

The output impedance of the unit is deliberately degraded to permit parallel use, with reasonable load sharing.

Power input and output is via 5mm female terminal posts, underneath the raised base of the unit.

SPECIFICATION.

INPUT VOLTAGE: See model listing above.
The **'STACKLIMIT'©** is variable by potentiometer, from minimum input voltage to 55% of maximum input, see text.

OUTPUT:

Voltage (10% Load): -	Nominal + 100mV ±50mV.
Line Regulation: -	< ± 0.05V for a 10% input change.
Load Regulation: -	<-0.1V for a 10% to 90% change.
Low Frequency Ripple: -	Less than 100mV pp.
Current Limit: -	Nominal plus 10%, ± 7%.
On/Off Control: -	The unit will draw less than 0.1mA until voltage (3V to 84V) is applied to the control input.

GENERAL:

Protection:	Over-current output limit with input fusing.
Size:	295mm x 133mm x 88mm.
Weight:	2400 grams.
Storage Temp Range:	-40 to +70C.
Operating Temp Range:	-40 to +40C.
Manufacturer	Made in UK.

CAUTION: This adaptor is supplied on the basis of the user determining the suitability for the purpose for which it is to be used. Do not use in a moving vehicle without the consent of the vehicle manufacturer. Do not use for aviation or marine applications without our written agreement. Do not use for life dependent applications.

Made in the UK

We reserve the right to change the specification without notice. Document 5510-993