



CUSTOM POWER DESIGN

ELECTRONICS CONSULTANTS PROVIDING CUSTOM DESIGN, DEVELOPMENT, TEST & SUPPORT



Tel: +44 (0)118 930 2299

A DIVISION OF SMET LTD

Fax: +44 (0)118 930 2206

www.custompsdesign.com

Unit 19, The Markham Centre, Station Road, Theale, Berks. RG7 4PE.

custom@custompsdesign.com

WIDE RANGE DC-DC HYDROGEN STACK CONVERTERS.

UP TO 500W INPUT, WITH WIDE PERMISSABLE VOLTAGE RANGE.

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

OUTPUTS	INPUT: 12-36V	18-48V	24-60V	30-84V
5.0V at 85A	SM5420	SM5430	SM5440	SM5450
9.0V at 55.0A	SM5421	SM5431	SM5441	SM5451
12.0V at 41.7A	SM5422	SM5432	SM5442	SM5452
15.0V at 33.3A	SM5423	SM5433	SM5443	SM5453
18.0V at 27.8A	SM5424	SM5434	SM5444	SM5454
21.0V at 23.8A	SM5425	SM5435	SM5445	SM5455
24.0V at 20.8A	SM5426	SM5436	SM5446	SM5456
48.0V at 10.5A	SM5427	SM5437	SM5447	SM5457
13.8V at 36.2A	SM5428	SM5438	SM5448	SM5458
27.6V at 18.1A	SM5429	SM5439	SM5449	SM5459

- HIGH OUTPUT POWER IN COMPACT SIZE.
- REMOTE ON / OFF CONTROL FACILITY.
- FEATURES 'STACKLIMIT'© CONTROL.
- MANUAL OR PROCESSOR BASED VERSIONS.



TEMPORARY PICTURE REPRESENTATIVE OF SHAPE AND CONNECTIONS.

GENERAL DESCRIPTION. A small converter handling up to 500W 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.

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.

Note: New models, with processor control of the proprietary 'STACKLIMIT'©, will be available soon, correcting for stack variation. Please discuss this option with sales.

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

Units may be used for 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:	247mm x 103mm x 63mm.
Weight:	1400 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 5420-993