CUSTOM POWER DESIGN

ELECTRONICS CONSULTANTS PROVIDING CUSTOM DESIGN, DEVELOPMENT, TEST & SUPPORT

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48V TO 12V BATTERY CONVERTER:- 250W.

MODEL SM 2439 13.8 VDC OUTPUT AT 18A.

This space normally reserved for photograph.

- VERY HIGH CONVERSION EFFICIENCY.
- HIGH OUTPUT POWER IN COMPACT SIZE.
- CHARGE A 12V BATTERY FOR HIGH PEAK LOADS.
- REMOTE ON / OFF CONTROL.
- OUTPUT OVERVOLTAGE PROTECTION.

GENERAL DESCRIPTION. A small highly efficient converter, generating 13.8 volts DC, capable of powering most 12 volt battery vehicle equipment when supplied from any battery producing 44-56V Volts. The input and output share a common zero volt return, making installation very simple.

The specification, given in detail opposite, allows for up to 250 watts of continuous power to be used, with surges up to 25A (minimum current limit). The unit incorporates an electronic relay to turn it on/off remotely, driven by a control input (max. voltage 3 - 70V).

Power input and output is via 4mm screw terminals.

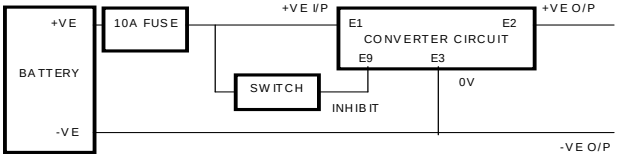
The unit is supplied as an open frame PCB measuring 127mm wide by 133mm long by 40mm high, with a right angle mounting flange at one end. Use only in metal enclosure.

Note that the mounting flange needs to be bolted, using thermal paste, on to a flat metal area capable of dissipating 30W when maximum load is used continuously. Unit efficiency is about 90%. Maximum flange temperature must be limited to 70C.

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. The negative input lead is connected to case and output ground making the unit suitable only for negative earth systems. <u>This is an open pcb unit, use only in a metal enclosure to protect from fire.</u>

WARNING:- reversal of the battery connections will result in permanent damage voiding the warranty. A 10A battery fuse must be fitted at source.

INSTALLATION. Note: close switch to inhibit output.



FIXING:- Six 4mm diameter-fixing holes are available on the mounting flanges to ensure solid clamping to the heat sinking surface.

SPECIFICATION.

INPUT:- 44V to 56V DC continuous, 40V to 63V for 10 seconds. This covers general 48V Battery systems.

INPUT FUSE:- Fit 10A external fuse close to battery.

NO LOAD OUTPUT VOLTAGE:- 13.8 VDC +- 0.1V.

LINE REGULATION:- Less than +- 0.1V for a 6V static input change.

LOAD REGULATION:- Less than 0.2V for a 0.5A to 12A static change.

LOW FREQUENCY RIPPLE:- Less than 50mV pp.

MAXIMUM OUTPUT:- 250W continuous. Operation in current limit is allowed to facilitate 12V lead acid battery charging but Flange temperature must be limited by external Heatsink.

CURRENT LIMIT:- 27A +- 2A

OVERVOLTAGE PROTECTION:- Limits at 16.5V +- 1.5V, by fusing Zener diode (one shot, short circuit).

INHIBIT CONTROL:- The unit draws less than 1mA if a positive voltage between 3V and 70V is applied to the inhibit input (logic compatible). This is opposite to our normal control.

SIZE AND WEIGHT:- 127mm by 135mm by 40mm. 0.4Kg.

TEMPERATURE RANGE:- -20C to +50C operating, -40C to +70C storage.

Made in the United Kingdom.

Warning: Fuse battery 10A at source. Operate only in a metal enclosure to protect from fire.

SMET Ltd. manufactures a large range of Battery Converters and Battery to 230V/115V AC Mains Inverters.

TECHNICAL SUPPORT: Because of the specialist nature of our units, all questions should be directed to SMET Ltd. on +44 (0)118 930 2299. Call if you are not sure about your application, or visit our web site for help.

We reserve the right to change the specification without notice Document 2439-993