



CUSTOM POWER DESIGN

ELECTRONICS CONSULTANTS PROVIDING CUSTOM DESIGN, DEVELOPMENT, TEST & SUPPORT



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BATTERY POWER ADAPTORS (BATTERY TO MAINS CONVERTERS).

MAINS DC VERSION SM 2211, 300 VDC

MAINS AC VERSION SM 2212 220VAC.

GENERAL DESCRIPTION.

A small converter sealed to IP65, made in two versions, generating regulated mains level output, capable of powering most small office or laboratory equipment from any battery producing 11-32 Volts (covers 12v and 24v battery systems). The power outlet is Bulgin PX0730P, 3 pin connector, sealed to IP68. The cable mounted mating half is a bulgin PX0731/S. The unit can be turned on/off by a logic compatible input (maximum voltage 38V).

Models SM2211, with a Mains DC output, is suitable for equipment employing switched mode power conversion, where the incoming AC mains is immediately rectified to produce 300V DC. This is true of most modern equipment.

Version SM2212 has a stepped odd function quasi sine wave AC output of 220V RMS, and a peak voltage of 310V. This output, also suitable for switched mode supplies, is required for machines employing a mains transformer, making it suitable for almost all equipment.

The specification allows for up to 120 watts of continuous power to be used, with short surges up to 200 watts (170 watts for AC unit), accommodating disk drive run-up, motor operation, etc.

Full over-current and short circuit protection is provided.

FIXING:

Four M5 (M4 on SM1762) threaded fixing holes are available on the mounting face. They are positioned at each corner of a rectangle measuring 63mm by 113mm placed centrally on the lid of the box. Screw penetration must not exceed 12mm.

INSTALLATION.

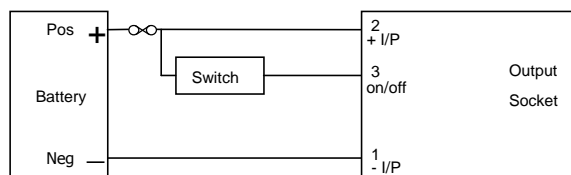


Figure 1. **NOTE:-** The output earth pin and the negative input pin are both connected to the case.

CAUTIONS:

Do not cover. The unit will run hot when under elevated load. Do not operate the unit with the cover off. Only operate the unit from a battery. Use at least 6mm² wire to connect the converter to the battery. The case is connected to the negative input. Do not reverse the polarity of the input voltage. Thin wire will cause fire hazard. Do not connect the unit to any

other power source. Do not use with capacitive loads greater than 0.5uF. Power factor correction capacitors must be removed from fluorescent tubes. Units will not operate ground fault interrupters (RCD). Do not use in a moving vehicle without the vehicle manufacturer's consent. Do not use for marine or aviation applications without our written agreement. Not to be used for life support. This equipment is supplied on the basis of the user determining the suitability of use.

SPECIFICATION.

MAINS DC UNIT SM 2211 OUTPUT:

300V DC +-10%, 120W continuous, 150W peak at 11V input, rising linearly to 200W peak above 12V input, on a duty cycle of 10%, 30 seconds maximum for any one pulse. The output is only suitable for use on equipment employing switched mode power conversion (no mains transformer). This covers most modern office equipment.

MAINS AC UNIT SM 2212 OUTPUT:

220V AC RMS, 310V peak +-10%, stepped square pulse output (quasi sine wave). Power available (resistive load), 120W continuous, 140W peak at 11V input, rising linearly to 170W peak above 12V input, on a duty cycle of 10%, 30 seconds maximum for any one pulse. The output is suitable for use on most equipment. Max. Live to neutral capacitance 0.5uF.

INPUT:

11V to 32V DC continuous, 10V to 38V for 10 seconds. This covers both 12V and 24V Battery systems. Input current may be approximated from the expression:- Input Current = 1.2 x Power Out - Input Voltage (84 % efficiency in to a resistive load). An external fuse is required.

GENERAL

Size: 50mm x 174mm x 95mm.
Weight: 0.9 Kg.
Storage Temperature: -40 to +70C.
Operating Temperature: -40 to +35C.
Manufacturer: Made in the United Kingdom

ON/OFF CONTROL:

The unit draws less than 1mA until a positive voltage of greater than 2V is applied to the control input (pin 3). The unit then produces output, drawing current in proportion to output power.

Made in the UK. We reserve the right to change the specification without notice

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