



ENIGMA 1A SWITCHING REGULATOR MODULE

Thank you for purchasing the Enigma 1A Switching regulator module. **We want you to be completely happy with the performance of this product, therefore please read this manual carefully before use.**

Successful use of this module requires a basic electronic knowledge and soldering ability. If you are unsure about any information in this manual, or need any help, please contact Enigma Shop **before** powering up the unit.

The Enigma 1A switching regulator was designed to provide a fixed 12V or 15V output from a high voltage input of up to 50V in a package with small dimensions, low noise and high efficiency. Normal linear regulators, although common and very cheap, generate a lot of heat and can only accept input voltages of up to 32V. Uses for this module might be, for example, powering RF exciters, driver stages or fans in a high powered transmitter which runs from 48V DC.

Circuit description

This module is based around the National Semiconductor LM2575HV integrated circuit. Our design is very similar to that of the manufacturers' data sheet design, but has been carefully laid out to minimize noise and keep the dimensions small, whilst requiring no heatsinking or cooling. Our module uses high quality components throughout, such as low ESR electrolytic capacitors and a gold-plated printed-circuit-board. In addition to the standard manufacturers' circuit, we have added an extra low-pass filter section on the output to reduce noise and ripple which could affect sensitive equipment.

Fitting/ installation

Install the board into your enclosure using M3 nuts, bolts and PCB stand-offs. Ensure the bottom of the PCB is not in contact with the casing or short-circuits could occur.

Solder input and output connections to the circuit board using a soldering iron (25-50W recommended power). The positive (+) and negative (-) pads on the board are clearly marked, as are the Input and output sections of the board. Either solder the wires on top of the pads, or there are holes provided for the wires to be fed through and soldered. If the module is being fitted into a metal enclosure which uses the casing as the ground/negative (-) connection, then there is no need to connect negative wires to the module as the connection will be made through the mounting screws. If unsure, connect the negative wires anyway.

Apply DC power to the board, and the correct (12V or 15V) output should be present on the output pads, which can be checked with a voltmeter on the DC setting.



Your regulator module is now ready for use.

Specifications

Input – 17 to 50V

Output – 12V or 15V (depending on model) +/-5%

Output ripple - 0.1% of output voltage

Output current – 1A maximum

Protection – Overload, short-circuit and thermal protection

Switching frequency – 42-63KHz

Dimesions - 60mm x 30mm x 19mm

Troubleshooting

The output voltage is too low Check input voltage is high enough (>2v above output required)

The module gets hot Check output current is not too high (max 1A)

There is no output Check input is present

Check output is not overloaded or short-circuited

Check ground connections (-)

Need further help?

Contact Enigma Shop at info@enigma-shop.com

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