

# The PM Bench Tester Mk2

## Pot Driven Speed Controller

### Features

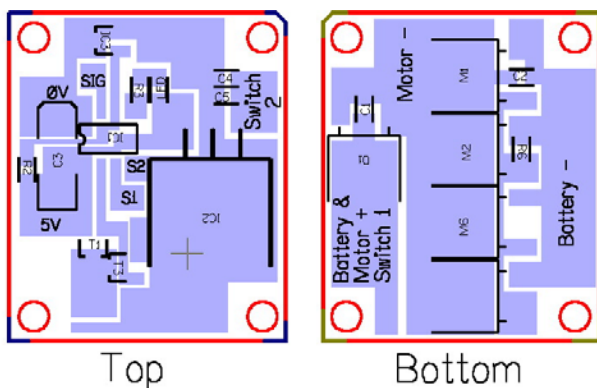
- High variable current (75 Amps continuous, 120 Amps 10 seconds from cold)
- Large input voltage range, 6V to 18Vdc (5 to 12 cells).
- Very low on resistance (~1 mΩ) for minimum loss.
- Micro controller controlled full digital operation for reliable performance.
- New features are:- smaller purpose built circuit board, and the output is configurable for full voltage range or for 7.2 V output from 12 V input (default).
- Output block out at start up to prevent sudden motor operation.
- Small package
- LED, which shows No output, Full output & over 7.2V on 12V, Input configuration.
- Supply Voltage Brown Out protection reduces power drawn from battery when the loaded voltage is below ~5V.
- Simple Potentiometer power control.

### Mounting

Drill outs have been placed in each corner of the circuit board. Make certain any screws do not contact tracks in the board. Insulating washers would be a good idea.

Mount the circuit board off the back plane with spacers to allow air circulation. Some free ventilation is recommended at high currents, preferable with a fan if the tester is mounted in an enclosed space. Add a switch to the small figure of eight cable for on/off operation if required and mount it and the pot in a suitable position

### Connections



The PM Bench Tester requires no external schottky diode, as it is included in the device. Connect the shorter power wires to the power source, and insulated clips (or plug) to the long power wires.

The diagram above shows all wire connection points if at some time they become disconnected or require replacing. On/off switch is connected between Switch 1 & Switch 2, and

the pot, which can be from 1k ohm to 50 k ohm, is connected on 0V, 5V and Sig.

The PM Bench Tester is programmed to produce just over 7.2V from a 12 V power source. If full scale output is required, bridge the two terminals S1 & S2. Alternately attach a switch between these pads to be able to change between the two modes quickly.

### Operation

- a) Connect the PM Bench Tester to the power source.
- b) Connect Bench Tester to the motor to be tested with the clips or plug.
- c) Turn on the on/off switch. No output should occur. LED will flash if power setting is above Off.
- d) Reduce the power setting below Off by turning the Pot anticlockwise. The LED will come on.
- e) Turn the pot clockwise for power. LED will go out and then on when full power is reached. When operating in the 7.2V from 12 V supply mode (default), the LED will light when ~7.2V is reached.

Reduce power and turn of switch or disconnect from power source before disconnecting from motor. Damage from short circuit outputs is not covered by warranty.

**Warranty** – The PM Bench Tester is warranted for life against faulty parts or workmanship. Abuse, reverse connections & exceeding maximum ratings are not covered.

### Specs

Dimensions	28.4 x 25.4 x 9 mm
Rating	6 – 18Vdc, 75Amp continuous
PWM frequency	4kHz
Power	Fully variable from 1.1 V to 7.3V (on 12 V supply) or 11% to 100% in full range mode

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### Disclaimer

*Although great care was taken in designing, programming and assembly of this speed controller, the end user will take all responsibility for any damage or injury caused by any device containing this controller. Due to the nature of radio control, no guarantees can be given as to the safe use of this product.*