

Pocket Money Kit of the Month – July 2019

No 10 – Speed controller

We all have controllers for our model railways, whether they are DC or DCC. They can be expensive but are usually a one-off purchase.

However, there are times when a simple speed controller is all that is required.

Possible uses include:

- Manual speed control (e.g. for a loco, cooling fan, etc.).
- Set-and-leave speed control (e.g. for a windmill or watermill).
- To provide a basic variable voltage power supply for use on your workbench.

There is no need to buy extra expensive controllers for these types of uses.

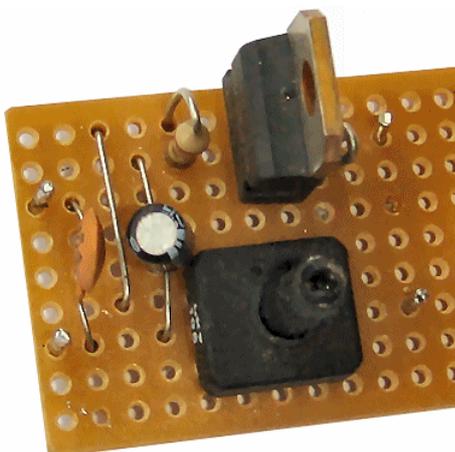
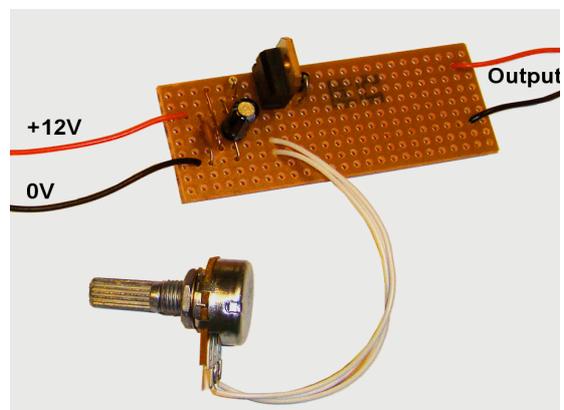
We have several basic speed controllers in our demonstration layouts that we take to exhibitions.

The tramcar, the shuttle, the Thomas loco, etc. use these modules as a cheap and reliable speed control module.

The PMP10 module has two input connections (from the 12V supply) and two outgoing connections (to the motor being controlled).

This image shows a variable resistor wired to the module. This allows easy control over the output voltage, using a knob.

This could be handy for a kid's first train set or for allowing visitors to control certain features at an exhibition.



For use with the unattended shuttle module (PMP4), the potentiometer can be replaced by a 4k7 preset. The preset is adjusted to match the speed requirements of the loco being used and the loco is then left to run by itself.

The picture shows the module used to control the speed of our Thomas loco on the 'Uppen Doon' layout.

This setup can also be used if you require a fixed voltage for any other layout feature (e.g. setting the speed for a windmill or watermill).

Also, if you can't afford an expensive variable voltage supply, this will prove a low-cost alternative. Just add a panel voltmeter (also available at our meetings)

The speed controller module is capable of handling currents up to 1.5A. When such high currents are being taken, a heatsink should be bolted to the LM317 chip on its plain metal side. This should not be required when running a small N gauge loco. Remember, though, that the voltage cannot be reduced to zero; there is always at least 1.2V on the output.

While it does not have the sophisticated features of other loco controllers (acceleration, deceleration, etc.), it is a good starter project that provides basic control at a great price.

It uses just six components.

The kit is available at all West of Scotland activities (for £1.30) or can be purchased from the national MERG website as PMP 4.