

A Higher Current 'Steady State' Accessory Decoder (ACC6)

The present steady state decoder (ACC3a with ACC5 firmware) was designed to have a flexible output arrangement for driving LEDs, lamps and low current motorised point motors like 'Tortoises'. In some applications the current capability was somewhat inadequate, especially for higher current point motors like Lemaco or Fulgurex where there was significant voltage drop in the transistorised output stages.

A new design has now been developed and tested using integrated circuit output drivers rated at 1 amp for each output – although other factors limit the total output for all drivers to 1.5 amps at any one time. Also, the output voltage has been made adjustable from 5v to 15v to allow for any voltage drops in the outputs and enable a 5v logic level output if needed. The output terminal block now includes a 0v connection to simplify logic connection or 'voltage' drives as the output stages can both source and sink the full current. The output stages also include protection diodes so solenoids and relays can be driven directly without need for external diodes.

The provision for 'on board' resistors for LED drives has been removed. If the decoder is intended for LED use, then ACC3a should be chosen.

The firmware (ACC6) is identical in function to ACC5 except the polarity of the outputs has been reversed to suit the 'non'inverting' nature of the driver ICs (SN754410). While the 'dual' mode and Lenz 'toggle' provision remains, the default setting is now for 'single' mode on the assumption that ACC6 will usually be used for driving bi-polar point motor drives.

For the schematic see ACC6_sch.pdf

For the PCB layout see ACC6_pcb.pdf

For the source code see ACC6_1.asm and ACC6_1.HEX

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