

Using EzyBus to control Cobalt Point Motors

Since Davy offered the opportunity to share project development, I thought I would share how I have extended the EzyBus system into the earlier part of my layout, Killin, built in the days when EzyBus was merely a twinkle in Davy's eyes!

The other more recent end of the layout, Ballachulish (remarkably and fictitiously linked with Killin!), has been using EzyBus successfully since its beginnings a couple of years ago, with points operated by servos, and it made sense to extend the system to Killin.

However, Killin used 10 DCC Concepts Cobalt motors to operate the points (over 2 separate station boards), and I decided to keep these. Originally they were operated by sprung centre-off switches on the mimic control panel, and linked to the station boards by 30 or more flexible wire connections to the baseboard. I used twin 9v batteries to power them.

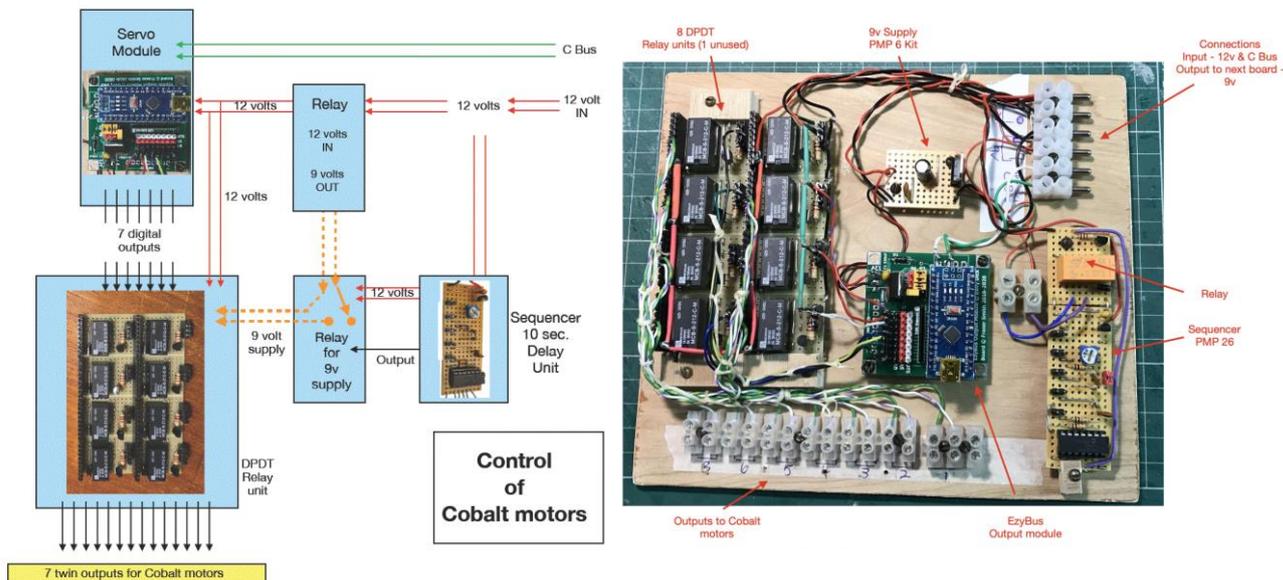
It became clear that the way forward was to equip a new mimic panel with an EzyBus switch unit, and install a servo output module (using the digital outputs) on each of the two boards that make up the station layout. Cobalts can use either a continuous 12v supply or a temporarily applied supply sufficient to move the point across (they will happily hold at each end un-aided if required). However for operation by EzyBus it was necessary to buy or build DPDT relay units, as detailed in the EzyBus manual - 7 on one station board and 3 on the other. For obvious reasons buying the relay units from China was not a present option. So it was that I embarked on a mini project to build the 2 modules from scratch.

However, two other issues needed addressing. Firstly, Cobalts happily run on 9v rather than 12v, and last longer at the lower voltage. A 9v supply was easy to add, using the PMP 6 kit, with a 7809 regulator instead of the 7812 supplied in the kit. The bridge rectifier was unnecessary since I already had a 12v supply. Additionally, it necessitated re-jigging the circuit shown in the EB manual, to feed the 9v into the DPDT outputs of the relays. This was easy to do on the strip board.

The second issue became apparent after initial tests showed that during the initial 10 or 15 second warm up period, when EB set itself up, all the Cobalts would start up, and run from one end of travel to the other and back again. Not ideal if rolling stock was sitting over the points!

What was needed was to delay the 9v power to the relay modules until EB had settled. Davy suggested using the Sequencer Kit - PMP 26. This worked well, setting a delay of 10 seconds or more, easily adjusted if necessary.

Diagrams 1 & 2 show the arrangement of the separate modules, and the video shows the final arrangement of the station board with 7 points and point motors.



Initial testing indicates the system works well, and there is no movement of the Cobalt motors at switch-on.

An enjoyable and therapeutic use of “lockdown” time!

Click [HERE](#) for Video

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