This ULU

The *ULU.03 Dual relay & data switch* offers two double pole double throw (DPDT) relays as well as a 4-bit double throw data switch (4PDT). The manual equivalent of this ULU is the *ULU.43 Data switch*.

Used parts

Only standard parts are used:

1x casing 80 x 50 x 20mm;
14x 2mm signal connector;
14x black O-ring 9 x 5 x 2mm;
3x 4-bit data connector;
3x colored O-ring 8 x 5 x 1.5mm;
1x power connector;
2x 3mm round LED ;
2x resistor to dim the LED;
2x LED holder;
2x mini (SRD-5VDC-SL-C) relay;
2x Fly back diode 1N5817.

Construction

The standard ULU specifications are applicable as specified in the datasheet *ULU.00 – Common specifications*.

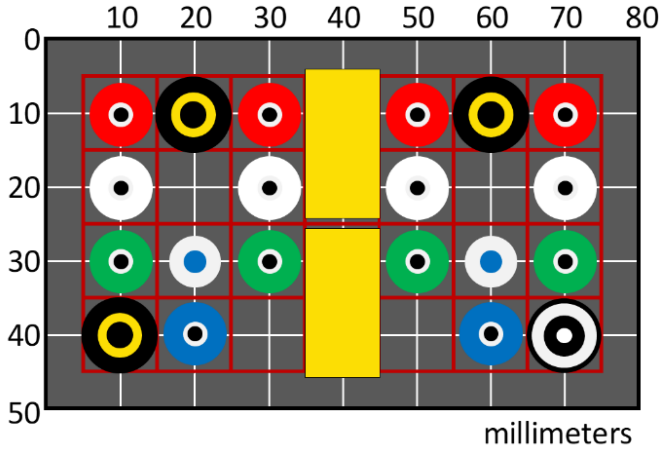

Figure 1 – Drill guide

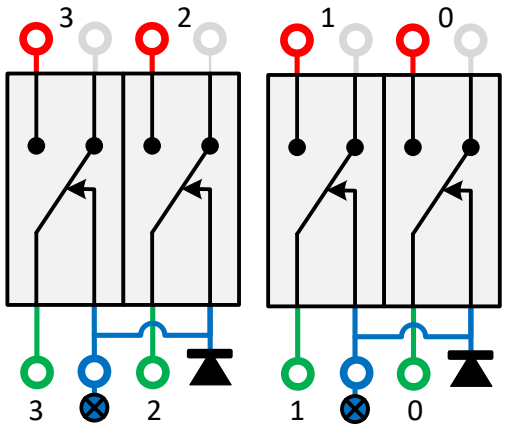

Figure 2 – Schematic (ground is left out)

Figure 3 – ULU inside

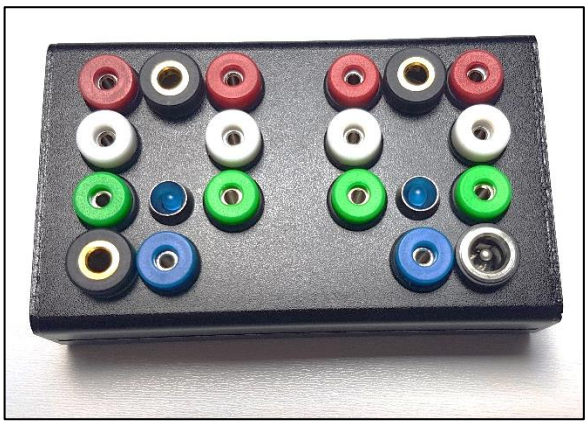

Figure 4 – Finished ULU

The two relays are taped with double sided tape to the top half of the enclosure. The 4-bit data bus connectors have a small colored rubber ring placed, to show their function (common, NO or NC). Those colors are the same as the colors used for the corresponding signal connectors.

The common, NO and NC connectors are connected both to the 2mm sockets and to the corresponding poles in the 4-bit data bus connector. The pins of the data bus are indicated by the numbers in Figure 2: the MSB at the left and the LSB at the right (top view).

Usage

Both relays can be switched separately. To use the ULU as a data switch, both coils (the blue connectors) must be interconnected (see Figure 5). It is good to remember that the 4-bit data connector and signal connectors can be used interchangeable. For instance, the common can be fed by four individual signal lines and the output can be passed through two 4-bit data bus cables (see Figure 6).

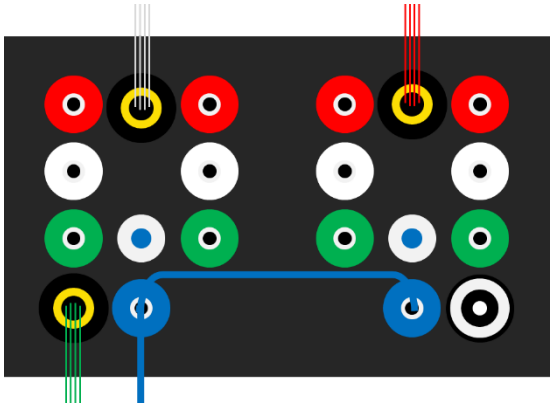

Figure 5 – The ULU used as 4-bit data switch

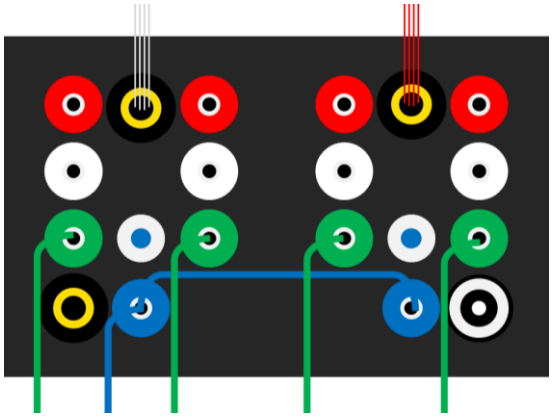

Figure 6 – Same function when 4 signal lines are used

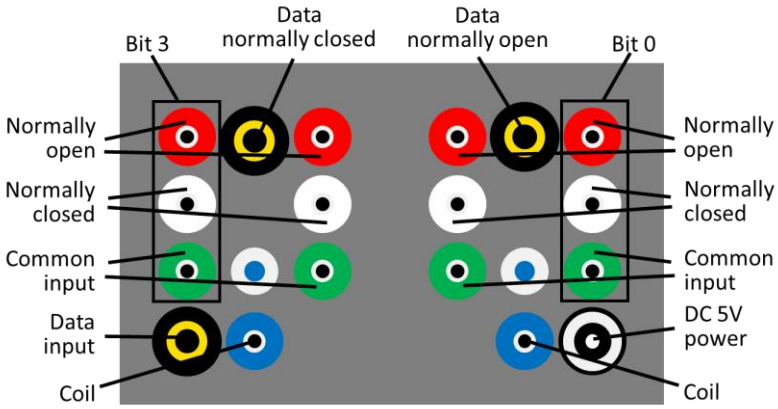

Figure 7 – Controls and connectors