This ULU

The *ULU.10 – Octal LED* can be used to display eight signals or two four-bit data words or feed a 7-segment display.

Used parts

Only standard parts are used:

1x casing 80 x 50 x 20mm;
8x 2mm signal connector;
8x black O-ring 9 x 5 x 2mm;
2x 4-bit data connector;
2x colored O-ring 8 x 5 x 1.5mm;
1x power connector;
1x 1-pole ON-ON switch;
8x 3mm round LED;
8x resistor to dim the LED;
8x LED holder;
1x single digit 0.56" 7-segment display;
8x resistor to dim the segments;
2x M3 standoff male/female 7mm;
2x black M3 bolt 8mm;
2x M3 lock nut.

Construction

The standard ULU specifications are applicable as specified in the datasheet *ULU.00 – Common specifications*. This ULU is a high density ULU and has two unusual things. First, for the switch (left) and the power connector (right), the standard grid is not followed. To create enough space, they are positioned off-grid on respectively 7,5mm and 72,5mm. Secondly the ground is switched. By switching the ground, either the LED's or 7-segment display is connected to the ground and therewith activated.

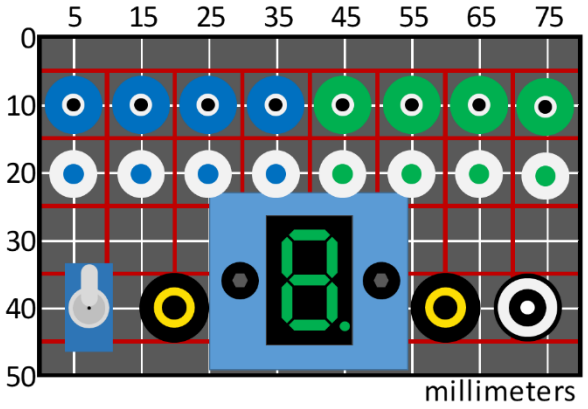

Figure 1 – Drill guide

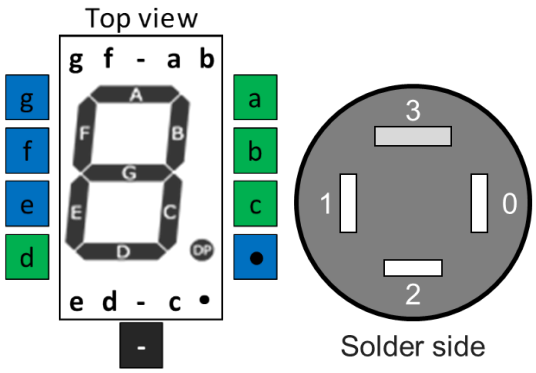

Figure 2 – 7-segment and data socket pinout

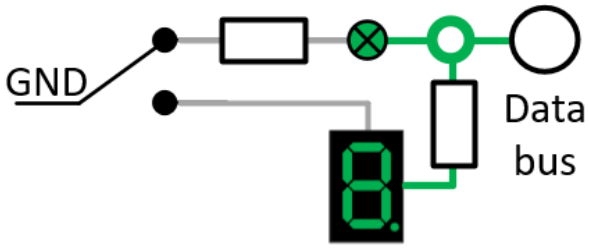

Figure 3 – Schematic for 1 channel

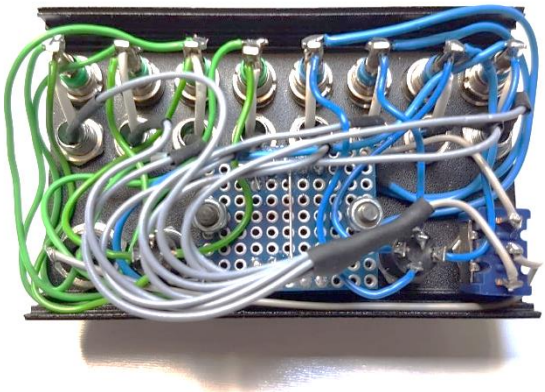

Figure 4 – ULU inside

Every 2mm socket is connected to the LED, to the corresponding data bus pin and to the corresponding 7-segment display segment. This connection is made on the 2mm socket connector. In order to save space, all the 7-segment resistors are soldered to the connection wire with a shrink fit tube attached for isolation and strengthening.

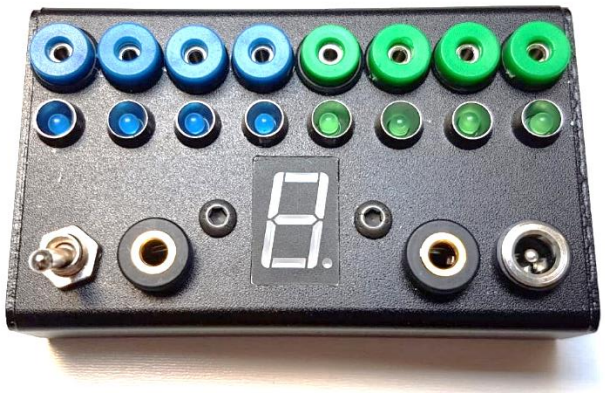

Figure 5 – Completed ULU

Usage

The *ULU. 10 – Octal LED* has four functions, namely it can be used to:

1. show the values of eight signal lines;
2. show the values of two 4-bit data words;
3. show characters on a 7-segment display;
4. connect four separate signal lines to a 4-bit data bus.

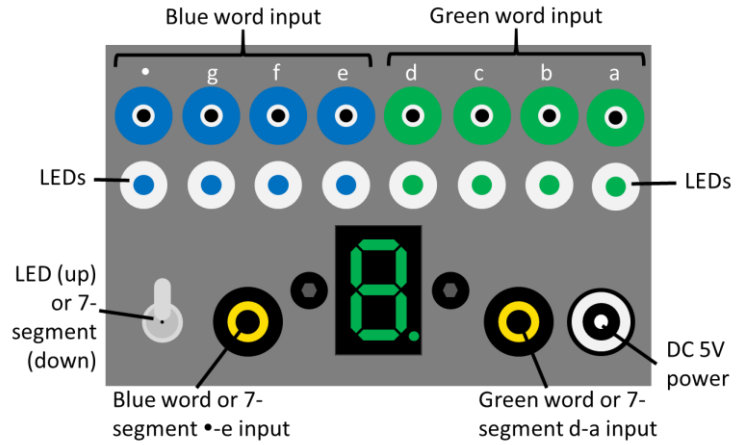

Figure 6 – Controls and connectors