This ULU

The *ULU.04 – Dual 7-segment display* can be used to display a two-digit character message.

Used parts

Only standard parts are used:

1x casing 80 x 50 x 20mm;	2x M3 standoff male/female 7mm;
4x 4-bit data connector;	2x black M3 bolt 8mm;
4x colored O-ring 8 x 5 x 1.5mm;	2x M3 lock nut;
1x power connector;	1x prototype PCB 12 x 16-holes.
2x single digit 0.56" 7-segment display;	

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.
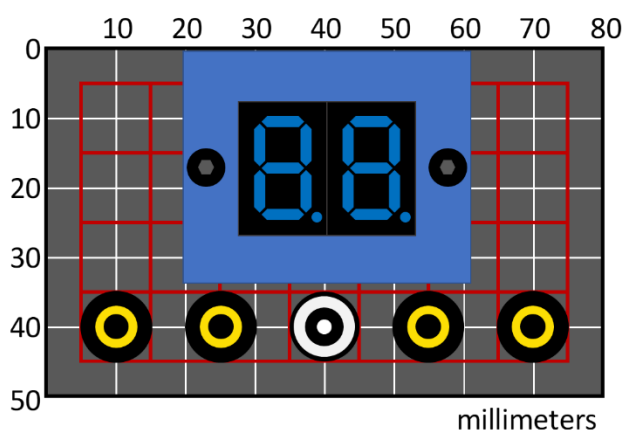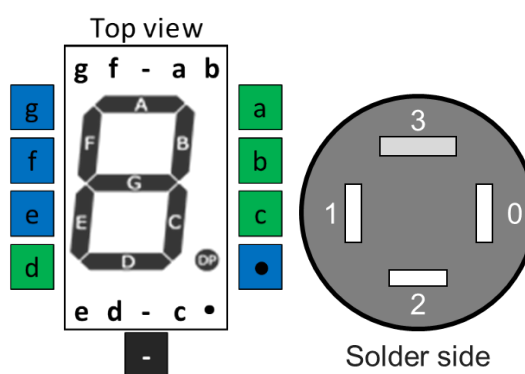

Figure 1 – Drill guide
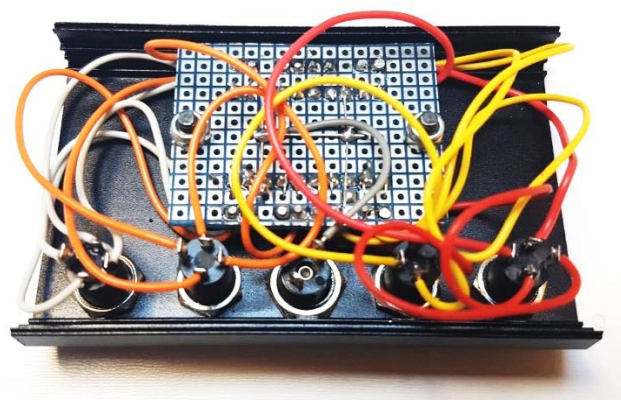

Figure 2 – 7-segment and data socket pinout

Figure 3 – ULU inside

Figure 4 – Completed ULU

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.

Usage

The *ULU.04 Dual 7-segment display* has two ways to operate, namely:

1. Show a static two-digit text in combination with appropriate cabling (see Figure 5).
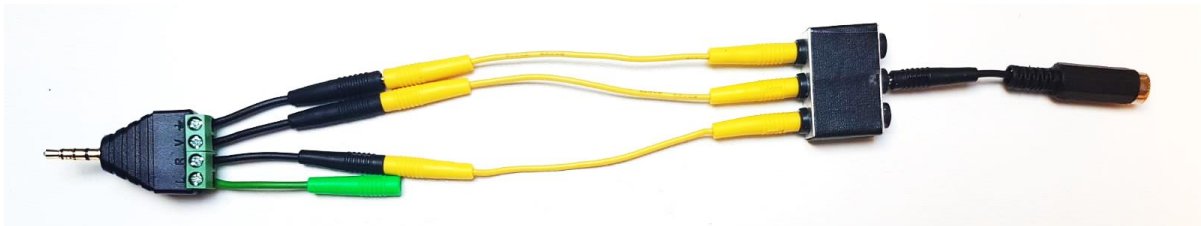2. Show a dynamic two-digit text in combination with *ULU.19 16x18 paper ROM*.

Figure 5 – From right to left: power to signal adapter, signal expander and data to quad signal adapter
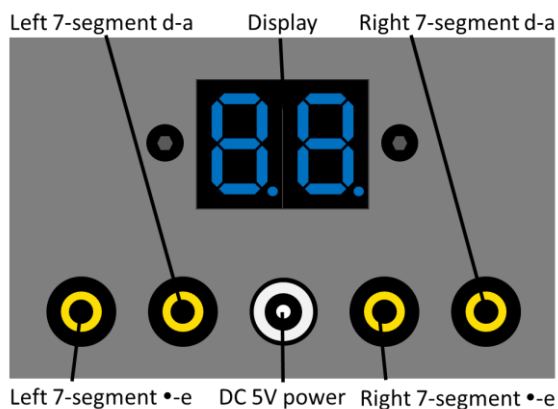
Figure 6 – Controls and connectors

The LSB of the 4-bit data connector is the a-segment, respectively e-segment.