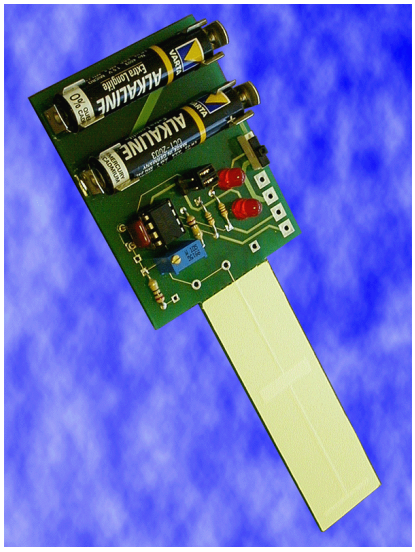
E114 QLevel™ SENSOR EVAL BOARD

Instructions

1. **Turn on switch at top of board.**
2. **Insert the yellow probe end into water so that the first sense element (visible near the tip under the yellow plastic film) is covered - one LED should come on.**
3. **Insert the probe further until the second sense element is covered - the second LED will light**



You can try other electrodes instead of the attached electrode - but you will have to break off the probe and connect to P4 to do so. Be sure to read the QT114 datasheet for helpful tips and advice on configuring the chip and designing electrodes.

Battery life is measured in years, so don't worry about leaving it on!

Description The E114 demo board demonstrates Quantum's QT114 level sensor IC. The IC requires only a single external component – a capacitor – (plus the probe of course) to operate. A pot (optional in most circuits) is also included to let you trim the trip-points. There are also two jumpers which change the way it operates (see below).

Other Fluids The probe of the E114 board is designed for use with aqueous fluids. It will not work with oils or other low-dielectric substances without modification. The QT114 datasheet describes different probe types that may be used with fluids other than water-based ones.

Options The QT114 is designed for maximum flexibility and can be reconfigured to accommodate several options. These can be set by moving the jumpers:

1. **OUT Polarity:** The QT114 chip can be set for active-high or active-low output. This is accomplished with the jumper nearest the batteries. When set to 'LO', the OUT lines become active low. On 'HI', they become active-high.
2. **Slosh Filter:** The filter is enabled by setting the jumper to 'ON'. The 'slosh' filter takes 15 seconds or more to filter out the effects of moving fluids (as in a moving car). Please read the QT114 datasheet for details on functionality.

The option inputs are read constantly, and can be changed whenever you want.

C1 Capacitor The capacitor C1 is the reference sample cap. It is socketed and can be easily removed and replaced for experimentation. The pot R3 has a limited effect on the calibration points and is used to fine-tune the calibration point for a given value of C1.

Outputs The QT114 has CMOS drive outputs which can sink up to 5mA. If the sensor is operated directly from a battery (like in the E114), care should be taken to prevent the load from drawing down the battery voltage while it is being driven: Droop in battery voltage can cause trip point errors, since the QT114 uses the power supply as a reference.

QT114 IC's are also available in an SOIC package.

Please refer to the QT114 datasheet for further details.

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