

SOIL MOISTURE INDICATOR
CODE 908 **LEVEL 1**

This measuring humidity in soil circuit presents 4 levels of measurement. If there is low humidity, few LED will display, if there is high humidity, most LED will light on.

Technical specifications:

- power supply : 9VDC.
- consumption : 20mA max.
- status of humidity : 4 levels.
- PCB dimensions : 1.59 x 0.84 inch.

How to works:

"P" point is a measurer. Voltage will flow through R1K to water in the soil to the base of TR1 that makes TR1 working. The emitter and the collector of TR1 is connecting with LED to display result. If there is high humidity at "P" point, TR1 can conduct high voltage and most or all LEDs will display. If there is low humidity, TR1 conducts low voltage and few or none LED display.

PCB assembly:

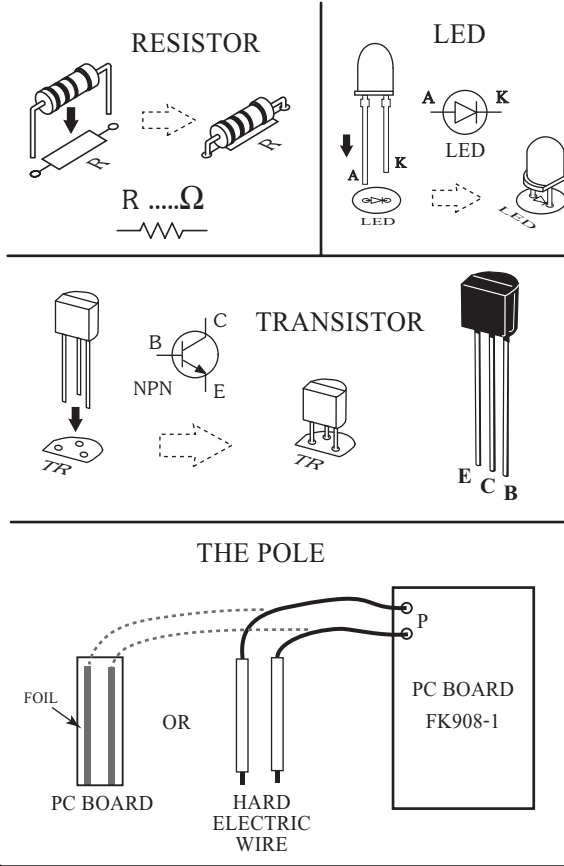
Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. The LED has a flat spot on the body which lines up with the line on the overlay. Now check that you really did mount them all the right way round!

Testing:

Connect the power supply 9VDC to circuit. With the positive pole is connected to "+" point and the

negative pole is connected to "-" point. Connect the pole (making from PC board or hard electric wire) to "P" point. Dipping the pole into the water. LED will light on.

Figure 1. Installing the components



Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

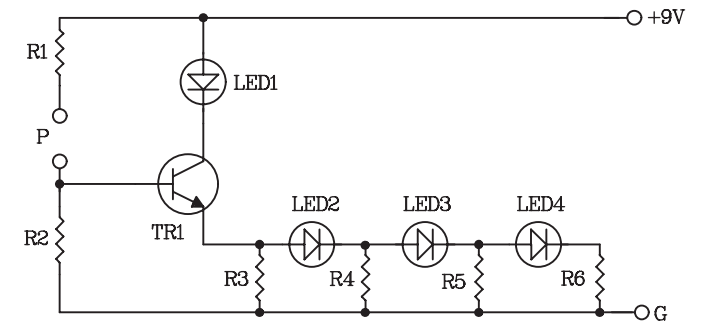


Figure 2. The soil moisture indicator circuit

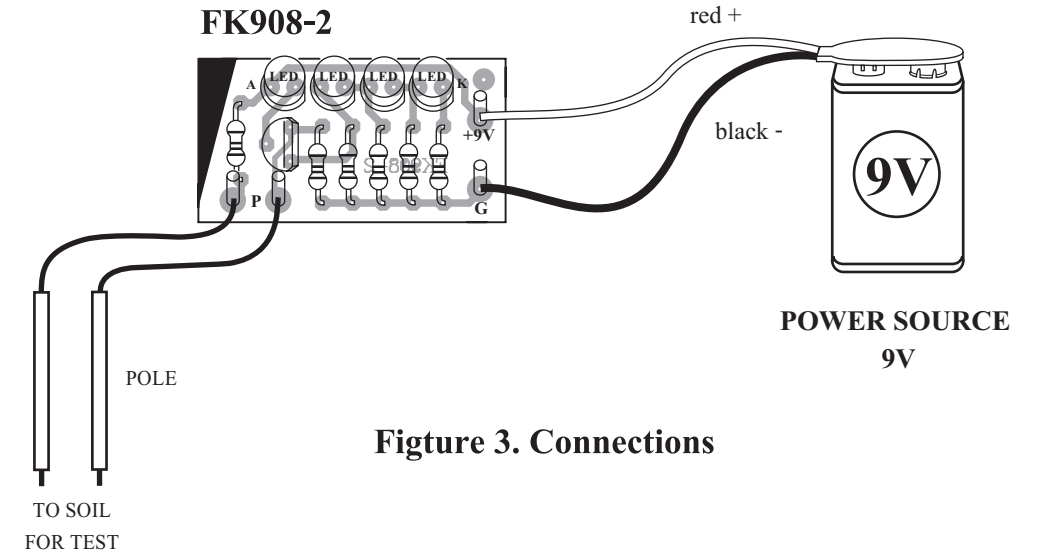
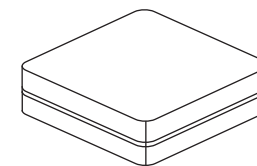


Figure 3. Connections



NOTE:

FUTURE BOX FB01 is suitable for this kit.

NEW KIT SET

| CODE FK | DESCRIPTION | POWER |
|---------|--|-------------------------|
| 167 | FIREFLY LIGHT (NIGHT ACTIVATE) | 3VDC. |
| 275 | THREE TRAIN SOUNDS (IC DIGITAL) | 3VDC. |
| 276 | OWL VOICE (IC DIGITAL) | 3VDC. |
| 326 | DUAL STATION INTERCOM&DOOR BELL (WITH 2 SPEAKER) | 6-12VDC. |
| 436 | UHF REMOTE CONTROL 1 CH. | TX. 9VDC. RX. 12VDC. |
| 673 | MINI POWER AMP 1+1W. STEREO | 3-12VDC. |