

SIMPLE LIE DETECTOR

IN this skin resistance indicator the output from a 741 operational amplifier is used to control the frequency of a CMOS voltage controlled oscillator. The base frequency, with the components shown is 300Hz with a control voltage V_c at zero rising to 5kHz at a control voltage of 10V.

The 741 is operated in the differential mode. Here, the voltage applied to the non-inverting terminal (pin 3) via the probes, is compared to the voltage at the inverting terminal (pin 2). This latter voltage will be held at one half of the supply voltage by the two 100k Ω resistors. Thus, as the skin resistance decreases, the voltage at pin 3 increases to become more positive than that at pin 2. The point at which this occurs is set by means of VR2.

The increase in the output voltage, causes an increase in the output frequency from the v.c.o. Potentiometers VR1/2 are interactive and are adjusted to give a suitable starting frequency at the v.c.o. output.

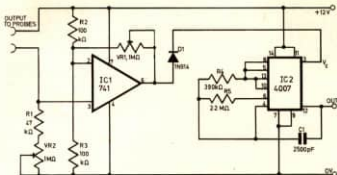


Fig. 1

The circuit may be used to monitor changes in skin resistance under stress (or relaxation!) for biofeedback or other purposes. Supply rails down to 6V may be used without any real degradation in performance.

The output may be quite easily detected using a crystal earpiece.

For the greatest sensitivity the probes should be connected to alternate strips of copper if the circuit is made up on Veroboard.

P. R. G. Reynolds,
Benfleet,
Essex