Circuit Ideas

the 741 which was chosen for the merit of low cost.

The l.e.d. shown in the circuit has a twofold use. Firstly, when there is an offset voltage at the input, on shorting all four wires of the probe on a dead conductor, it will light or, alternatively, the ammeter will show a reading. Secondly, when the probe input is reversed the l.e.d. will again light. Diodes D_{1-2} and D_{3-6} provide protection to the circuit which may be floated from voltage to voltage when in use. Finally, the d.c. converter enables the circuit to use a single battery.

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P.c.b. ammeter

This circuit allows measurement of current in a single printed circuit conductor, without the necessity of breaking the track. The device uses a probe of four wires and when all the wires are in contact with a conductor a p.d. appears at the input of a differential amplifier. The two outer wires carry a current of opposite polarity via an ammeter. Because there is a negative feedback loop in the conductor, the differential amplifier input voltage will return to zero when the outgoing current is equal to that of the unknown current, the former being read from the ammeter. The differential amplifier offset voltage must be maintained to as near zero as the twenty-turn preset potentiometer will permit. An advantage would be to use a 725C instead of