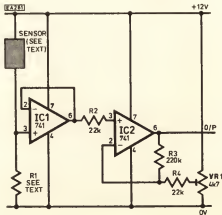


SIMPLE PRESSURE SENSOR

THIS unit was originally designed as part of a burglar alarm system, although, as it is capable of giving an output which is almost linearly proportional to pressure, it may find many other uses such as a tactile sensor in a robot.



The circuit shown is a linear reading pressure sensor. The voltage at the output of the potential divider formed by the sensor and R1 (which rises with increased pressure) is buffered by IC1 and fed to the amplification stage IC2—the resulting out-

put is directly proportional to pressure. The preset VR1 is used to set the output voltage to a convenient level in the absence of an input. This output could then be fed into an A/D converter for use in a robotic system.

The sensor is a piece of conductive foam of the type with which CMOS i.c.s are supplied. As the foam is compressed its resistance decreases. In the prototype the foam was sandwiched between a piece of p.c.b. material with a wide strip of copper removed from the middle, and a piece of plain circuit board. Built in this way the foam bridges the gap on the p.c.b. although the foam could be sandwiched between two pieces of copper backed board with one terminal of the sensor being taken from each.

The resistor R1 should be approximately $\frac{1}{4}$ the value of the uncompressed resistance of the foam.

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