

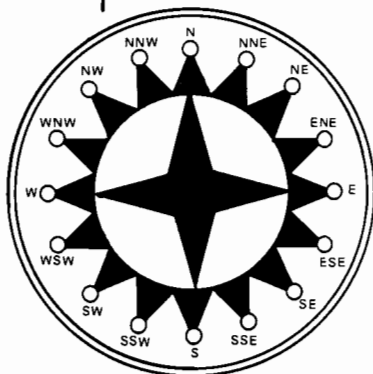
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# electronic weathercock

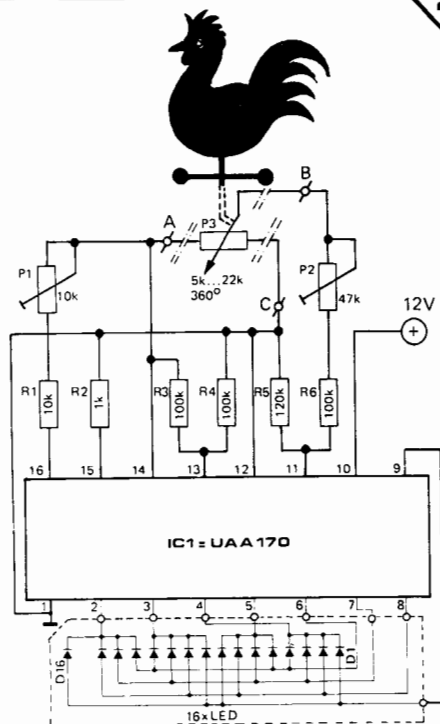
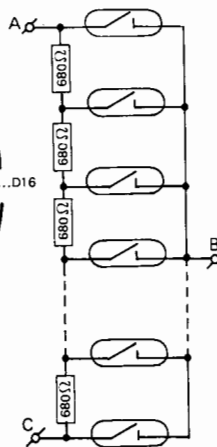
Until recently, finding out which way the wind is blowing has always necessitated putting on one's shoes and stepping outside the door, thereby exposing oneself to the vagaries of the British climate. However with a little technical ingenuity, it is possible nowadays to know the precise direction of the wind without leaving the comfort of one's fireside. The electronic weathercock functions by connecting the vane to a potentiometer which turns with the vane. The voltage at the slider of the potentiometer is then proportional to the angle through which the vane is turned by the wind. The size of this voltage (and hence the direction of the wind) may be displayed in digital form using a UAA 170 and 16 LEDs.

The circuit is designed so that there is a smooth interchange between the LEDs. Potentiometer P1 controls the brightness of the LEDs, whilst P2 is set such that, when the voltage at the slider of P3 (which is connected to the vane) is at a maximum, then D16 lights up. Further details regarding the UAA 170 may be found in *Elektor* 12, April 1976.

Potentiometer P3 may present a slight problem, in that it must be of a type which can be adjusted through  $360^\circ$ . If such a potentiometer proves difficult to find, then



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one solution is to use sixteen reed relays, each of which is enabled whenever a magnet connected to the vane passes over the relay. In this case a resistance divider replaces the potentiometer. Readers who are adept at making very small printed circuit boards, may like to replace the carbon track of a conventional potentiometer by a small 16-segment circuit board and connect each segment to the resistance divider.

The supply does not need to be stabilised, since the IC has an internal reference voltage output (pin 14) which is (gratefully) utilised. The maximum current through an LED is approx. 50 mA, thus a suitable supply would be a transformer producing 100 mA with a voltage of 9 or 12 V. The circuit is completed by a bridge rectifier and a  $470 \mu 25 \text{ V}$  electrolytic capacitor.