Centre zero LED bar/dot meter

THIS CIRCUIT drives twenty LEDs with a single bar/dot driver. Ten LEDs (green) are for a positive input signal and ten LEDs (red) for a negative input signal. A yellow LED, which is lit permanently, gives the centre zero indication. The LEDs would, for best effect, be mounted on a panel as shown below in the circuit.

When used in the bar mode, the bar of light elongates to the left for an increasing negative signal and to the right for an increasing positive signal.

When the input is negative, the output of the comparator swings low, switching off Q3 and switching on Q1, which enables LEDs 11-20. As there is no gain in the absolute value amplifier, the full-scale reading is equal to that set by the internal reference of IC3. This means that the full-scale value of this circuit is about ± 1.2 V. This value can be altered by conditioning the required input signal. The LM3915 may be substituted for the LM3914 if a logarithmic, rather than a linear, scale is desired.

CENTRE ZERO BAR/DOT METER