

SPELLER EFFECT SIGN DISPLAY

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The circuit described here uses low-cost and easily available IC CD4017 to produce a speller type light display. In such displays, each letter of the sign sequentially lights up, one after the other, until all letters are glowing. After a few seconds, the letters switch off and the cycle repeats. This circuit provides a maximum of nine channels and therefore can be used to spell a word or sign having up to nine characters.

Timer IC1 (555) is configured in

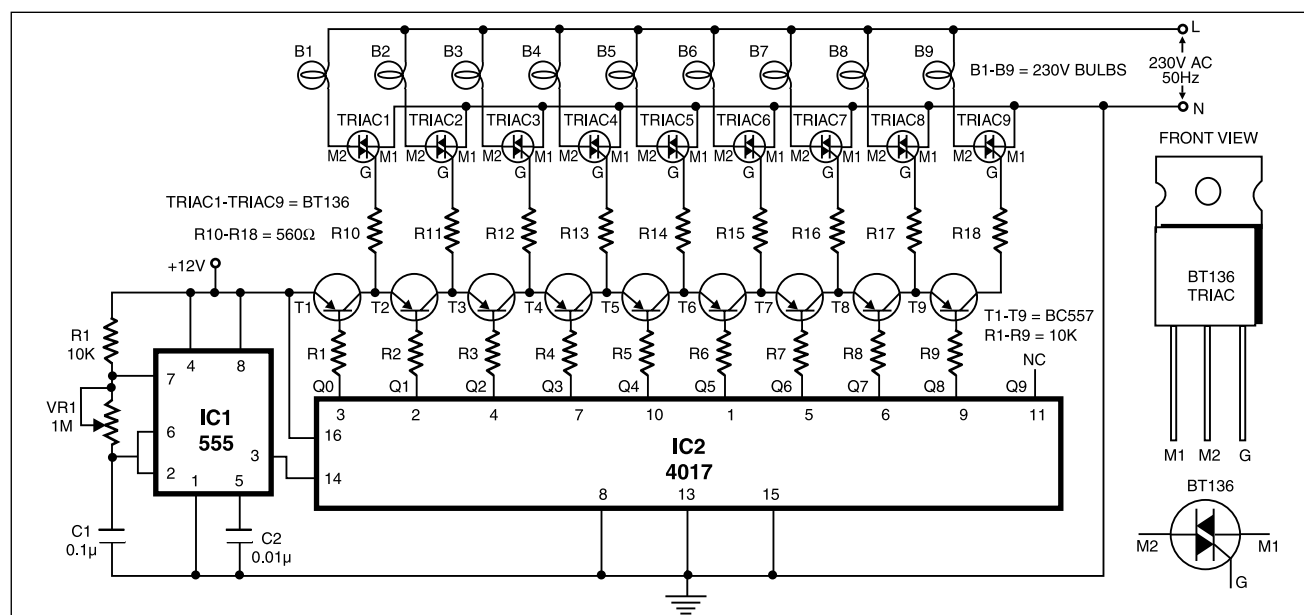
CD4017 is a decade counter having ten outputs, of which one output is high for each clock pulse. However, this produces running lights effect. To change this sequence to get the speller effect, pnp transistors T1 through T9 are wired as shown in the figure. Nine triacs (triac 1 through triac 9) are used to drive 230V bulbs. (In place of 230V bulbs, miniature lamps connected in series in the form of characters or letters can also be used, provided the voltage drop across the series

high, transistor T1 goes off and its output at the collector goes low. Since the emitter of transistor T2 is connected to the collector of transistor T1, and collector and emitter terminals of transistors T1 through T9 are connected in series, all transistors next to transistor T1, i.e. transistors T2 through T9, do not get supply and hence all their outputs go low.

Next, when Q1 output goes high, transistor T2 goes off. Thus outputs of transistors T2 through T9 remain low. Since Q0 output at this instant is low, transistor T1 is forward biased and its output goes high to light up the first character.

Similarly, when Q2 output goes high, Q0 and Q1 outputs are low and therefore outputs of transistors T1 and T2 go high to light up the first and second characters.

This process continues until all transistors turn on, making all the characters



astable mode to produce clock signal for triggering IC2 (CD4017). Speed of switching on the display can be controlled by varying preset VR1.

combination is 230 volts.)

When any of the outputs of IC2 goes high, the corresponding transistor connected to the output goes off. When Q0 is

to light up. The cycle repeats endlessly, producing the speller type light effect. □