

## IC replaces mechanical-interlock switches

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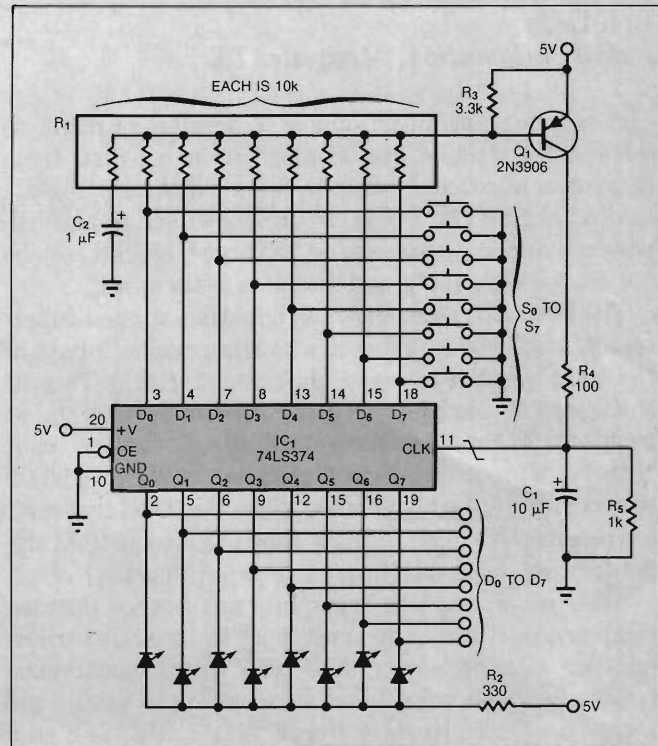
As an alternative to mechanical-interlock switches or membrane switches with latches, **Fig 1's** circuit debounces, latches, and displays status information for a group of eight pushbutton switches in which only one switch at a time is active. The circuit's only IC is an octal latch.

Closing any one of the switches turns on transistor  $Q_1$  and discharges capacitor  $C_2$ . Current through  $Q_1$  then charges  $C_1$ , causing a positive transition at IC<sub>1</sub>'s CLK input (pin 11), which turns on the LED for that switch. The LED remains on until you depress another switch. Because the CLK input is edge-triggered and remains high until you release all the switches, two or more switch closures cannot register at one time unless they occur within approximately one millisecond.

Capacitor  $C_1$  provides a delay that debounces each switch closure. Capacitor  $C_2$  causes  $Q_1$  to turn on briefly at power-up, which produces a pulse at IC<sub>2</sub>'s CLK input, ensuring all LEDs are off by latching all ones at the Q outputs of IC<sub>1</sub>.

**EDN**

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**Fig 1**—This single-IC circuit debounces a group of eight pushbutton switches, latches the last switch closure, and provides an LED indicator for the currently active circuit.