

MULTI-SWITCH DOORBELL WITH INDICATORS



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Here's the circuit of a multi-switch input musical doorbell (shown in Fig.1). The circuit is built around the popular and less expensive quad D-latch CD4042B (IC1). When switch S6 is pushed to 'on' condition, the circuit gets +9V and the four data inputs (D1 through D4) of IC1 are in low state because these are tied to ground via resistors R1 through R4. Polarity input (POL) pin 6 of IC1 is

also pulled down by resistor R5. Clock input (pin 5) of the quad D-latch is wired in normally low mode and hence all the four outputs (Q0 through Q3) have the same states as their corresponding data inputs. As a result, LED1 through LED4 are in off condition.

There are four switches fitted at four different doors/gates outside the home and a monitoring panel (as shown in Fig. 2) in the common room of the home. If any switch is pressed by a visitor (for example,

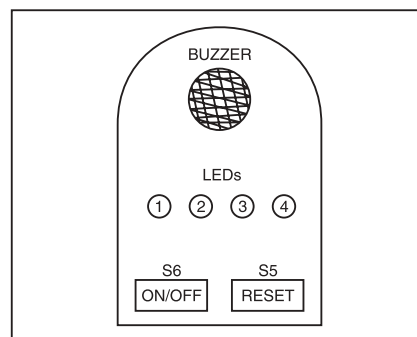


Fig. 2: Suggested panel layout of musical doorbell

switch S1 at door 1), pins 2 and 4 of IC1 go high.

Simultaneously, pin 3 to IC1 (Q0 output) goes low and LED1 starts glowing to indicate that switch S1 is pressed by someone.

Next, output pin 13 of the dual 4-input NOR gate (IC2, here wired as a single 4-input OR gate) goes high to forward bias buzzer-driver transistor T1 via resistor R10.

The final result is a soft and pleasing musical bell, which lasts until reset switch S5 is pressed by the owner. For this latching arrangement, output pin 13 of IC2 from the NOR gate is fed back to the clock input of IC1.

The circuit costs around Rs 100.

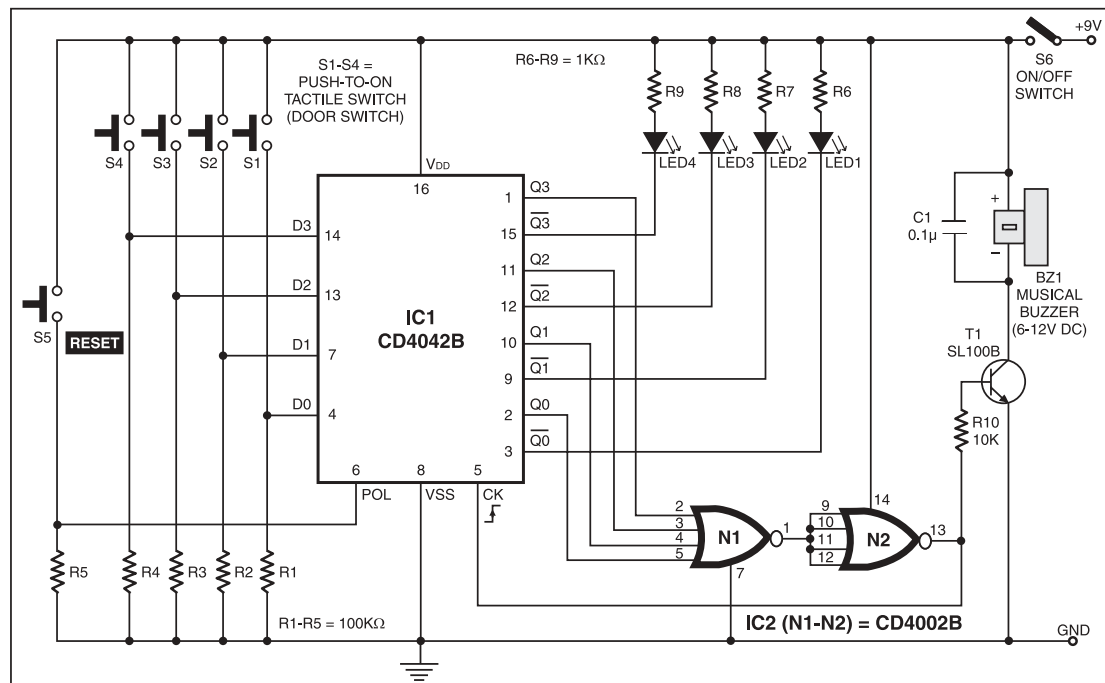


Fig. 1: Multi-switch doorbell with indicators