



MULTI-WAY TOUCH SWITCH

THIS circuit has been developed to eliminate the possibility of activating the wrong combination of switches. Switch C can never be switched 'on' when either switches A or B or both are 'on'. Circuit D enables switches A and B to be switched 'on' simultaneously.

This circuit senses the 50Hz noise our body is always picking up and uses that as the control signal. IC3a is connected as a standard amplifier with a gain of about 50. When a finger touches the touch plate, the noise voltage on the touch plate is amplified and then rectified by D1 and filtered by C1 to provide a small voltage change across R4, providing a logic 1 pulse at IC1a. IC1a and IC1b acts as a memory.

When the finger is removed, point a remains at logic 1. The output of switch A goes from logic 1 to logic 0. The l.e.d. D11 goes on when point a is at logic 1 and will remain so as long as it is at logic 1.

To enable switch C to be turned 'off' when switch A is 'on', point a is connected via an inverter to point c of switch C. This will result in the memory circuit of switch C being reset, and its output will go to logic 1 if it is at logic 0.

Switch B is wired similarly to switch C. Switch D is wired to switches A and B at point a and b respectively to enable switches A and B to be switched 'on' simultaneously.

Further stages can be added to this

multi-way switch and different switching combinations can also be chosen.

Multi-pole function can be achieved by connecting an inverter to point a or its equivalent point in the other stages.

This unit was intended for direct interface with TTL, but the output could be used to drive a relay if heavier loads are required.

The knob of a door could be used as a touch plate, thus using the unit as a burglar alarm.

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