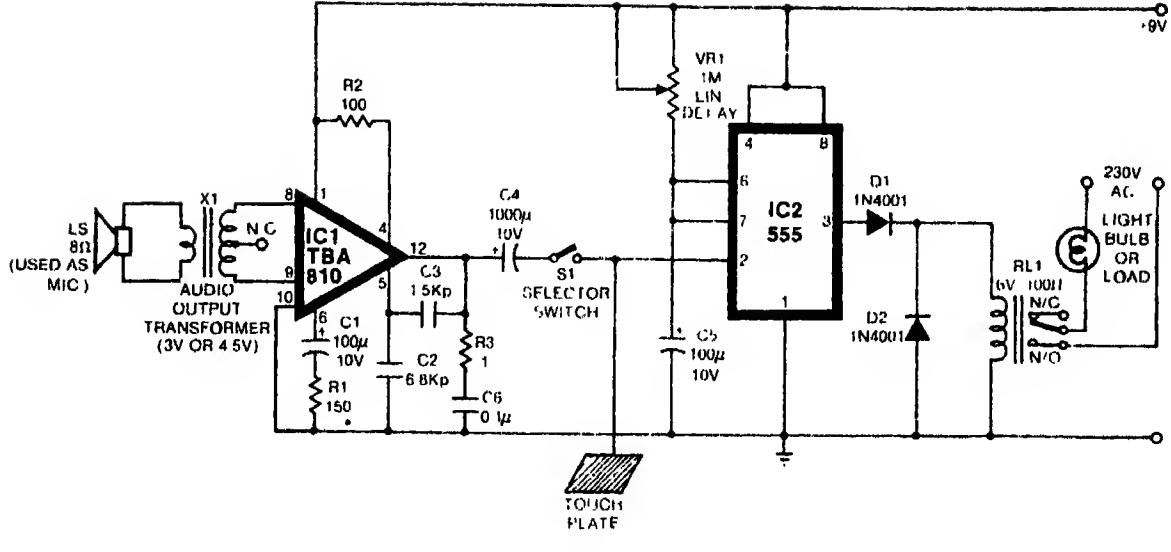
Clap Switch-Cum-Touch Switch With Timer

The two-in-one circuit described here is very simple. It can be used as a sound or clap switch with timer, and also as a touch switch with timer. It will cost around Rs 80 only. Power consumption for this circuit is 20 mA at 9 volts when relay is in 'off' state and 100 mA at 9 volts when relay is in 'on' state.

This circuit uses TBA810, a 7-watt audio amplifier, along with IC 555 timer circuit. Output of the amplifier is given to pin 2 of IC 555 through switch S1. Output transformer of 3 volts is connected at the input of audio amplifier with its 8-ohm side towards the speaker. The centre terminal of this transformer is kept open.

When a 9-volt supply is applied to the circuit with closing switch S1, the relay operates. It remains in this 'on' state for certain interval of time due to the timer circuit. This interval of time can be changed by potentiometer VR1. When relay switches to 'off' state after some time, a clap sound made in front of speaker actuates the relay for certain interval of time


+9V
VR1
1M
LIN
DELAY
R2
100
4
8
6
7
2
1
3
IC2
555
D1
1N4001
D2
1N4001
230V
AC.
LIGHT
BULB
OR
LOAD
RL1
6V 100Ω
N/C
N/O
LS
8Ω
(USED AS
MIC)
X1
N.C
AUDIO
OUTPUT
TRANSFORMER
(3V OR 4.5V)
IC1
TBA
810
8
1
4
12
5
9
10
6
C1
100μ
10V
R1
150
C3
1.5Kp
C2
6.8Kp
R3
1
C6
0.1μ
C4
1000μ
10V
S1
SELECTOR
SWITCH
C5
100μ
10V
TOUCH
PLATE

again. This process can be repeated. The range for this clap switch is about three metres if a good speaker with light cone is used.

If switch S1 is open and the metallic plate is touched with a finger, the relay operates for some time and then switches to 'off' state. So this circuit can be used as touch switch with timer.

The sound switch can be used as a doorlight. In the dark, a clap can switch on a light bulb connected in relay circuit for certain interval of time. The circuit can also be used in toy motors so that a clap makes the toy motor start rotating and stop after some time.

Similarly, touch switch can also be used for doorlight or with a toy motor as mentioned above.

To save your cash box from being stolen, you can connect a wire from touch switch to the cash box. When someone touches your cash box, an electric bell connected in the relay circuit can be sounded.

Lab Note. Sensitivity of the circuit can be increased by replacing the audio output transformer connected between IC1 and speaker with a 0-18V (500 mA) step-down transformer by connecting its primary windings to IC1 and secondary to the speaker acting as a microphone

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