

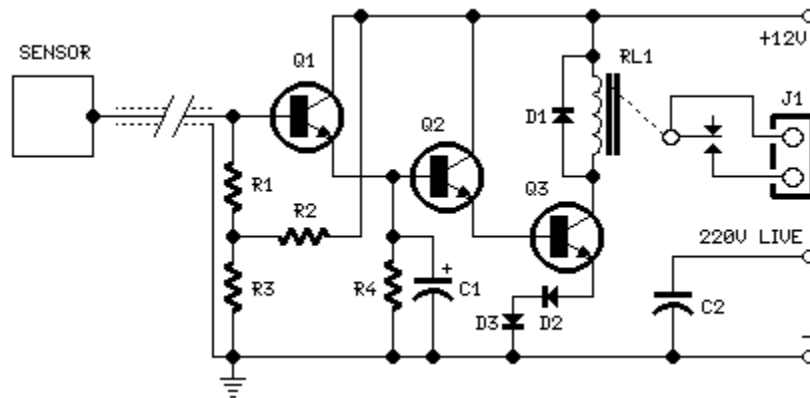
# Capacitive Sensor

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**Special design for shop-windows animation**  
**Useful for many types of touch controls**

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## Circuit diagram:



## Parts:

R1,R2\_\_\_\_\_1M 1/4W Resistors

R3,R4\_\_\_\_\_47K 1/4W Resistors

C1\_\_\_\_\_10 $\mu$ F 25V Electrolytic Capacitor

C2\_\_\_\_\_470pF 630V Ceramic or Polyester Capacitor

D1-D3\_\_\_\_1N4002 100V 1A Diodes

Q1-Q3\_\_\_\_BC337 45V 800mA NPN Transistors

RL1\_\_\_\_\_Relay with SPDT 2A @ 220V switch  
Coil Voltage 12V. Coil resistance 200-300 Ohm

J1\_\_\_\_\_Two ways output socket

Sensor\_\_\_\_Aluminium or copper thin sheet with the dimensions of a post-card,  
glued at the rear of the same (approx. 15x10.5 cm.)

Thin screened cable

## Circuit description:

The purpose of this circuit is to animate shop-windows by means of a capacitive sensor placed behind a post-card-like banner. The card is placed against the glass inside the shop-window, and the visitor can activate the relay placing his hand on the card, from the outside. Especially suited for toy-shops, the circuit can activate model trains, small electric racing cars, lights etc. Further applications are left at user's imagination. Adopt it to increase the impact of your shop-window on next Christmas season!

Q1, Q2 & Q3 form a high impedance super-Darlington that drives the relay, amplifying the 50Hz alternate mains-supply frequency induced in the sensor by the human body. C1 & D2, D3 ensure a clean relay's switching. Power supply can be any commercial wall plug-in transformer with rectifier and smoothing capacitor, capable of supplying the voltage and current necessary to power the relay you intend to use.

**Note:** For proper operation, circuit ground must be connected via a small value, high voltage-rating capacitor to one side of the mains supply socket. The "Live" side is the right one.

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