Cheap Touch Switch

This circuit, originally designed as the switch of an alarm system for a disabled person, takes advantage of the high input impedance of the 2N7000 'FETlington.' The high value resistor R1 pulls the gate of Q1 to the positive rail. If the operator's finger is placed across the sensor contacts, the gate voltage falls close to zero. This switches Q1 off.

Q2 acts to invert the signal from Q1 and so the relay is normally de-energised. R3 and R4 provide the correct voltage at the base of Q2. C1 adds some delay to overcome any 'contact' bounce from the sensor.

The type of transistor used for Q2 is not critical and nor is the supply rail voltage. R1 may be reduced to 10M to reduce sensitivity. With a value of 22M it was found the switch could be activated by breathing on the sensor! For the prototype a small piece of stripboard was used for the sensor.