# 220V LIVE WIRE SCANNER

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This simple circuit lets you scan a 220V live wire. The clock input of the IC is connected to a wire, which acts as the sensor. Here, we have used 10cm length of 22SWG wire as the sensor.

When you hold the sensor (metallic conductor or copper wire) close to the live wire, electric field from mains activates the circuit. As the input impedance of the CMOS IC is high, the electric field induced in the sensor is sufficient to clock it. The output obtained at pin 11 of CD4017
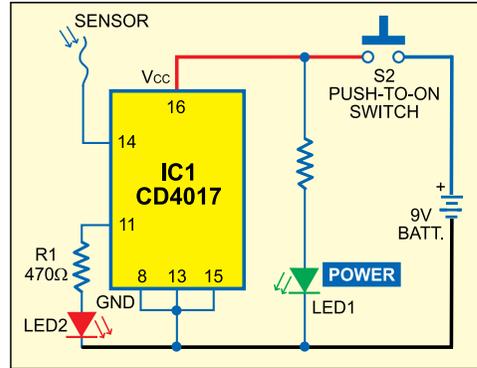
drives the LED. Flashing of the LED (LED2) indicates the presence of mains, while LED1 indicates that the scanner is active.

The circuit can be used to find stray leakage from electrical appliances like fans, mixers, refrigerators, etc. It can be easily assembled on any general-purpose board or the discrete components can be directly soldered on the IC.

A 9V PP3 battery powers the circuit. If you use a mains adaptor, make sure that it is well regulated and isolated; otherwise, even the stray electric field from mains transformer will clock the circuit.

Caution. Use insulated wire as sensor to avoid risk of exposure to live AC mains. ●