A relay is basically an electrically operated switch – it is like a normal SPST or SPDT switch, but instead of pushing a button, or flicking a switch, a coil is energised to activate the switch.

**RELAY at rest**

When the relay is not energized, the COMMON and NC are connected.

**RELAY when energised**

When the relay is energized, the contacts changeover so that COMMON and NO are connected.

The circuit diagram for a relay makes it easy to see each connection.

The main use for a relay is to interface between two different voltage circuits – for example a 12v sensor circuit can drive the relay coil, and the contacts can operate a mains 220v a.c. bulb.

An example of this circuit is shown right. It is a night light, that will turn on a light when darkness falls. Note the sensor forms part of a potential divider, which is connected to the transistor that drives the relay. The contacts then activate the high voltage circuit.

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