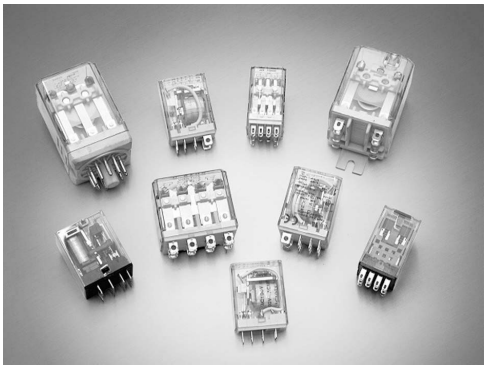
RELAY

A relay is an electrical switch that opens and closes under the control of another electrical circuit. It is therefore connected to output pins of the microcontroller and used to turn on/off high-power devices such as motors, transformers, heaters, bulbs, etc. These devices are almost always placed away from the board's sensitive components. There are various types of relays, but all of them operate in the same way. When current flows through the coil, the relay is operated by an electromagnet to open or close one or many sets of contacts. Similar to optocouplers, there is no galvanic connection (electrical contact) between input and output circuits. Relays usually demand both higher voltage and higher current to start operation, but there are also miniature ones that can be activated by low current directly obtained from a microcontroller pin.



This figure shows the most commonly used solution.

In order to prevent the appearance of high voltage self-induction, caused by a sudden stop of the current flow through the coil, an inverted polarized diode is connected in parallel to the coil. The purpose of this diode is to "cut off" the voltage peak.