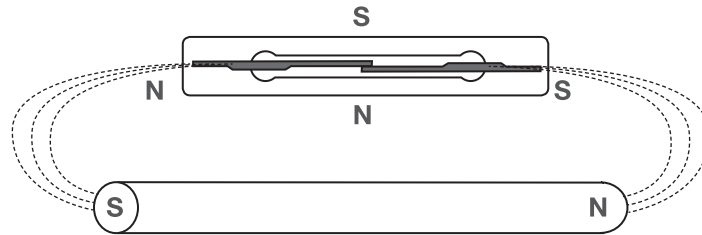


Design and working of magnetic switches

Working principle of magnetic contacts

The magnetic contact consists of a magnetic switch and a magnet. The main component of the magnetic switch is the reed contact. The reed contact works on the basis of the principle that two contact tongues fused in a glass body containing inert gas act as carriers of the magnetic flux as well as the electric current. Thus, the path of the electric current is identical to the path of the magnetic flux.

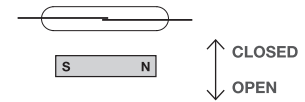


The flux of the magnetic reed switch

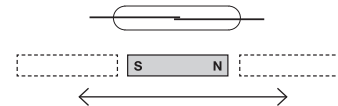
If you bring a permanent magnet (as the above display shows) close to the reed switch, the switch comes into the magnetic field of the magnet. A north pole and a south pole are formed at the air gap, i.e., in the contact zone of the switch, and they attract each other. If the magnetic field is adequately strong, the force of attraction overcomes the spring force of the contact tongues and the contact closes.

Examples of switching operations

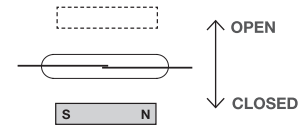
The magnet is moved vertically to the reed switch. The switch closes only once when the magnet displacement is maximum:



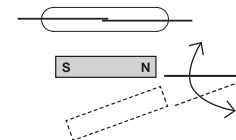
The magnet is moved parallel to the reed switch. The switch closes up to three times at maximum magnet displacement and once at minimum displacement:



Magnet is actuated horizontally to the longitudinal axis of the switch. The magnet moves at right angles to the longitudinal axis of the switch this time. The switch closes only once:



The magnet swivels in relation to the reed switch. The magnet must be moved at a bigger angle so that the switch closes once:



A ring magnet moving parallel to the reed switch can have up to three closing points at maximum distance – or one closing point at minimum distance:

