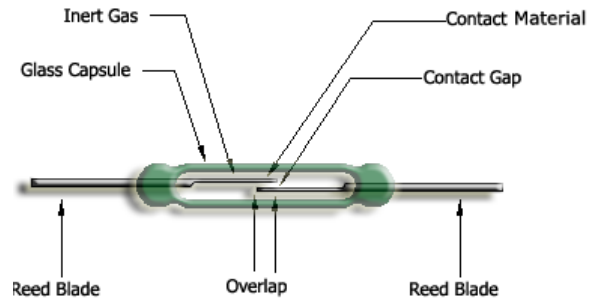
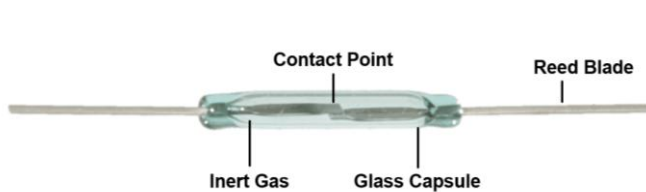


REED SWITCH

- ❑ The Reed switch was invented in 1936 by W.B. Ellwood at Bell Telephone Laboratories, and it earned its patent in 1941.
- ❑ The switch looks like a small glass capsule with electrical leads poking out of each end.

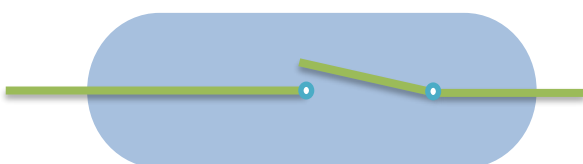


- ❑ A Reed Switch is an electromechanical device that operates as a contact switch controlled by an external magnetic field. It consists of two thin ferromagnetic metal reeds (usually made of nickel-iron) hermetically sealed inside a small glass tube.
- ❑ These reeds are aligned with a small gap between them and are designed to close or open their contacts in the presence of a magnetic field.
- ❑ Reed switches are prized for their simplicity, reliability, and low power consumption, making them ideal for a wide range of applications—from industrial sensing to consumer electronics.

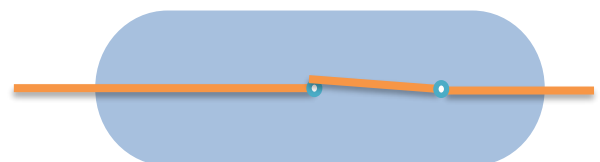


Working mechanism Reed Switch

- The switching mechanism is comprised of two ferromagnetic blades, separated by only a few microns.
- When a magnet approaches these blades, the two blades pull toward one another.
- Once touching, the blades close the normally open (NO) contacts, allowing electricity to flow.



Symbol for Reed Switch



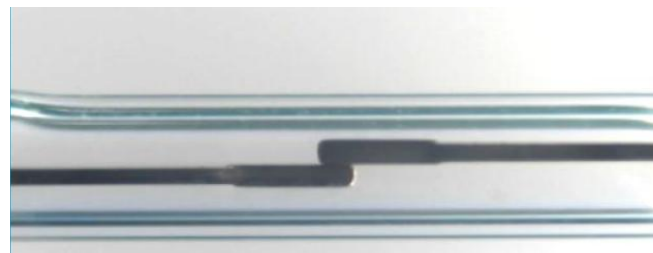
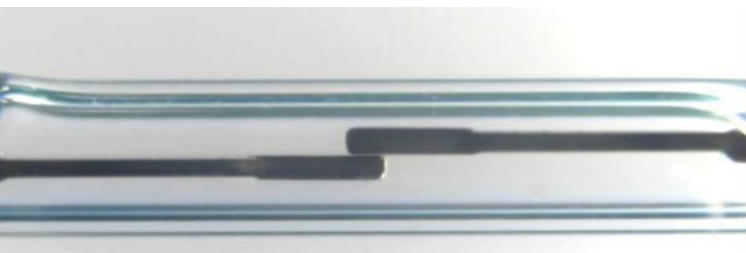
REED SWITCH

Reed switch- working mechanism

The working principle of a reed switch is straightforward:

- When a magnetic field (from a permanent magnet or an energized coil) is brought close to the switch, the reeds become magnetized and attract each other.
- This causes the contacts to either close (normally open switch) or open (normally closed switch), depending on the configuration.
- Once the magnetic field is removed, the reeds demagnetize and return to their original positions.

The switch can be activated by proximity to a magnet, making it an excellent candidate for use in magnetic proximity sensors.



Types of Reed Switches

- 1. Normally Open (NO)** – Contacts are open in the absence of a magnetic field and close when the magnet is near.
- 2. Normally Closed (NC)** – Contacts are closed in the absence of a magnetic field and open when a magnet is applied.
- 3. Change-over (SPDT)** – Contains a common contact that switches between two others depending on the presence of a magnetic field.

✦ Applications of Reed Switches

- **Door/window sensors** in security systems.
- **Speed sensing** in bicycles and automotive systems.
- **Liquid level detection** in tanks and reservoirs.
- **Proximity sensing** in appliances (e.g., washing machines, refrigerators).
- **Medical devices** where a non-contact switch is preferred for hygiene



Summary

Reed switches offer a highly reliable and efficient method of magnetic sensing and switching. Their non-contact operation and compact design make them a go-to component in many electromechanical systems, especially where durability, simplicity, and isolation from the environment are key.