

Remember when flip phones were cool?

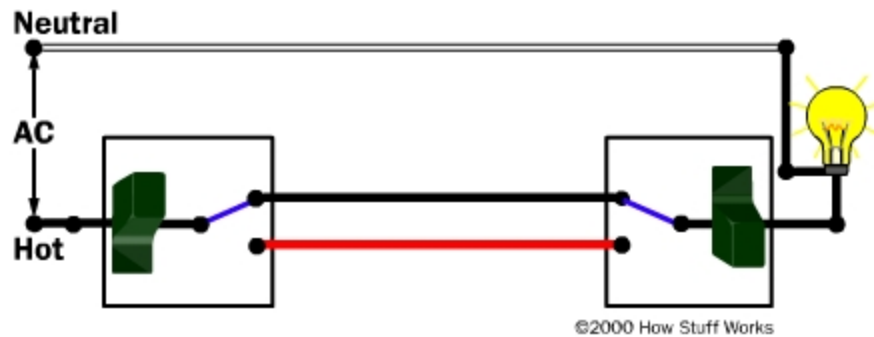


Think back to early 2000s when flipping a phone open was in style, now fast forward 5-10 years where having a Motorola Razor was no longer “cool”. A few weeks ago, I was cleaning out my old nightstand and I found a flip phone; it felt like I discovered a fossil from the Jurassic period.

Have you ever wondered how your old flip phone senses when you open and close it? You’re probably thinking there’s some kind of switch connected to the hinge of the phone or laptop to detect its opening and closing. If so, you are right for the most part, but if you really want to get technical, it is much more complex. A standard switch would be very unreliable for such applications; I’m sure Samsung knows all about using unreliable parts in their phones.....

Since regular switches are unreliable, many phones and laptops use a reliable and inexpensive device called a **Reed Switch**.

Before we get into the Reed Switch, let’s discuss a regular switch. Many circuits have a switch so that they can be turned on and off. When the switch is OFF, there is a gap in the circuit such that the electrons are not able to flow. When the switch is ON, the gap closes and electricity can flow and turn on a light or device. A simple ON/OFF switch is what you would typically have in your room to turn your light on and off. The proper name of an ON/OFF switch is a *Single- Pole, Single Throw* (SPST) switch. A single pole means that only one “Hot Wire” can be connected to it. Single- Throw means that when you switch it, it only connects to another wire that connects to the light or device.

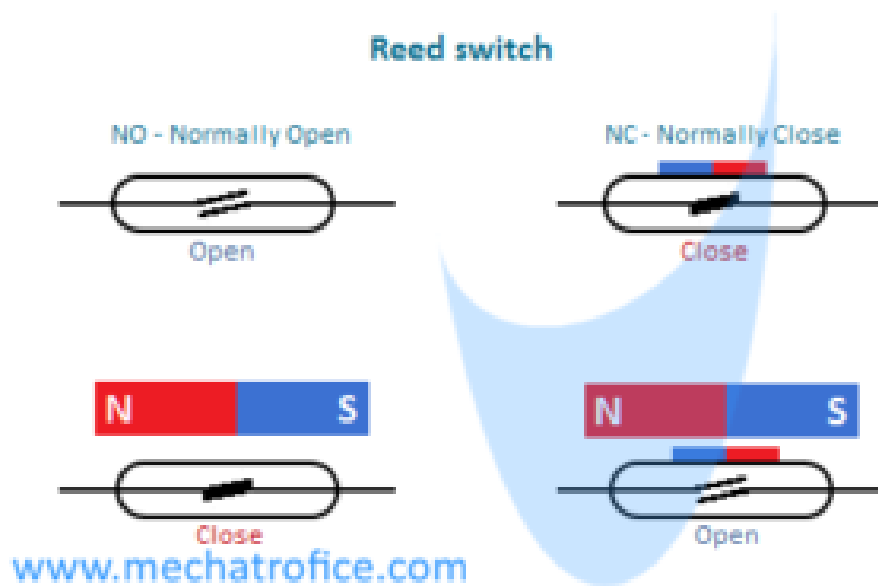


A regular switch (pictured above) has two electrical contacts that join when you flip your switch. A Reed Switch has 2 contacts made from ferromagnetic material; they are sealed inside a thin glass envelope to protect them. Reed switches come in two different types called normally open and normally closed. Normally open is when the switch is Off, and normally closed is when the switch is ON. A Reed Switch works as both an electrical and a magnetic bridge, where magnetism and electricity flows through the switch.



In a normally open(NO) application the contacts are normally separated, and when you bring a magnet up to the switch the 2 contacts become opposite magnetic poles, which causes the leads to attract and snap together.

In a normally closed (NC) Reed Switch the contacts are normally snapped together, and when you bring a magnet close to it they snap open. When the magnet is taken away it returns to its normally closed position.



Now that you know about Reed Switches we can link your knowledge to your flip phone or laptop. Each has a normally closed Reed Switch in the lower part of the device, and a magnet in the upper part where the screen is. When the device is open, the Reed Switch and magnet are far apart, which caused the contacts to be pushed together allowing power to flow. When the device is closed, the magnet meets the switch causing the contacts to be separated inside the switch.