NO & NC Circuits

[0m:0s]

[0m:4s] Hi I'm Josh Bloom, welcome to another video in the RSP Supply education series. If you find that these videos are helpful to you, it certainly helps us out if you could give us a big thumbs up and subscribe to our channel.

[0m:16s] In today's video, we are going to be talking about some electrical terminology and circuit types that are often used when talking about control. I am referring to both normally open circuits and normally closed circuits. For the purpose of this video, we want to talk about what it means to be either normally open or normally closed in an electrical circuit.

[0m:40s] We will also talk about some of the most common types of electrical circuits that can be found in each of these scenarios so that you might better understand when to use one or the other.

[0m:52s] Having a good understanding of how we use normally open and normally closed circuits will allow for more safe and effective operation of the electrical equipment you use on a daily basis.

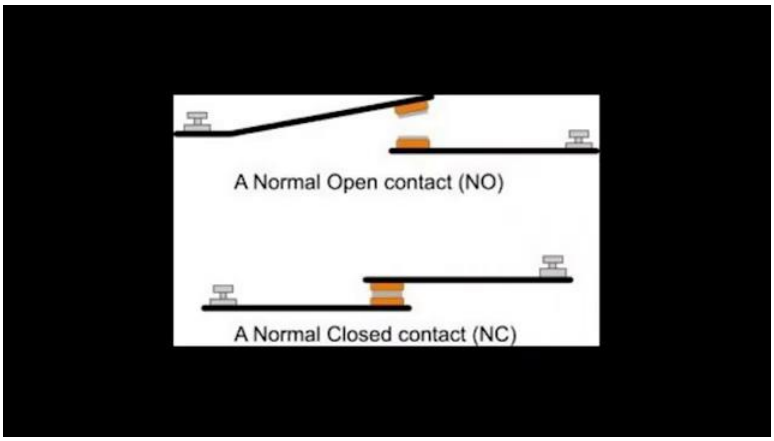
[1m:6s] Please remember that the information shared in this video is intended to provide only a basic overview on this topic

[1m:13s] and should never be used in the place of proper electrical instruction.

[1m:18s] With that said, let's take a closer look at the normally open and normally closed circuits to see what we can learn.

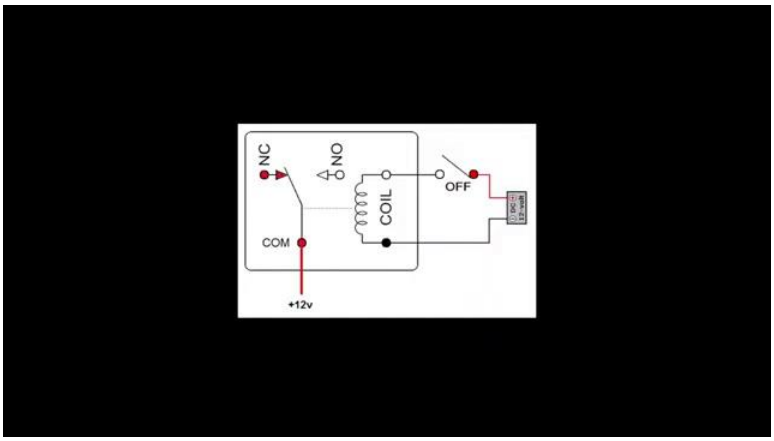
[1m:26s] Let's first look at a normally open electrical circuit and find out what it means and in what situations we will use this type of circuit.

[1m:34s] When referring to a normally open or normally closed circuit, in most cases, we are referencing some kind of relay contact set. In relays, there will be a set of contacts that can be actuated when the relay is energized. These contacts can be normally open or normally closed. So, when referencing a normally open circuit, it would mean that in the contacts normal state, the contact would not touch. Therefore, no power would be able to flow through the circuit.



[2m:6s] If you have not seen our other videos in which we talk about relay functionality in great detail, we will link those videos in the description below.

[2m:15s] Regarding normally open circuits, it is only when the contact changes state that the power will be able to flow through the circuit.

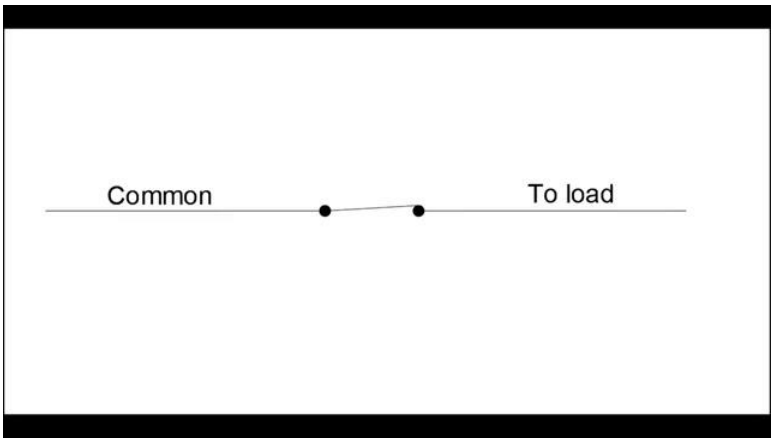


[2m:24s] This state change typically occurs when power is applied to the coil on the relay or other electrical device.

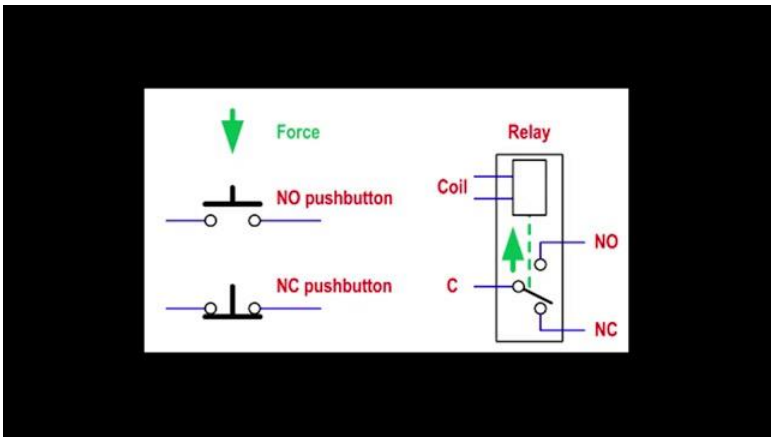
[2m:31s] These normally open circuits are commonly used to monitor the state of a device. For example,

[2m:38s] it is common to see electrical devices that have a normally open contact set that will close when the device fails, or when it turns on, or if something is changed. It all depends on the device that you are referring to. However, normally open contacts are used in many different situations to provide information about the devices we use every day. Normally open contacts can also be used in power distribution scenarios as well, like you might see on a CONTACTOR. Again, it depends on the specific situation and what the desired result might be. Looking at normally close contacts, when the contact is in its normal state or not being acted upon the contact will be closed.

[3m:24s] These closed contacts will allow power to flow between them.



[3m:29s] It is only when the relay or other electrical device is energized or changes state that the normally closed contact will open, thus cutting off the flow of electricity.



[3m:40s] Much like normally open contacts, normally closed contacts are used to monitor the status of many different types of electrical devices. However, they are used very differently. Because normally close contacts allow for power to flow in their normal state, they are often used in situations where normal operation needs to be interrupted. For instance, normally close contacts are commonly used in emergency stop scenarios. They are often wired in series with critical motor control circuits that the operation can be interrupted by the push of a button or a state change within the system. It is not very common to see normally close contacts being used in power distribution scenarios, because in those situations, you typically only want to provide main power to the electrical hardware at certain times.

[4m:33s] So, while a normally closed circuit functions in a very similar way to normally open circuits, they are used differently depending on the need of your particular system.

[4m:45s] Once again, having a better understanding on how these types of circuits work will allow you to more safely and effectively use any electrical equipment you may encounter, especially electrical hardware operating within more complex control systems where normally open and normally close contacts are most commonly used. For a full line of industrial electrical hardware as well as thousands of other products, please go to our website. For more information or other educational videos, go to RSPSupply.com, the Internet's top source for industrial hardware. Also, don't forget: like and subscribe.