E Stop Circuit Basics

[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. In today's video, we're going to be talking a bit more about electrical circuit functionality.

[0m:21s] More specifically, we want to talk about how electrical circuits might be paired with an E stop button.

[0m:27s] This is a very common practice and is used all over the world.

[0m:32s] We plan to share with you what an E stop is and why it is important to use an E stop

[0m:38s] with certain types of electrical circuits and all other kinds of mechanical equipment. We will also talk about one or 2 ways you might wire an e stop to ensure that it functions in a way that you expect, while also providing a level of safety for the circuit.

[0m:55s] As always, the information we provide in this video is intended as a basic overview and should never take the place of electrical code and guidelines as well as proper electrical instruction. If you have questions regarding your specific scenario, please seek the help of a qualified person. With that said, let's take a closer look at how e stops work and why we use them.

[1m:19s] Let's first clarify what an E stop is. An e stop is an electrical device that allows an operator to quickly switch off power to electrical and mechanical components, such as motors, conveyor belts, presses, and other types of equipment without damaging electrical hardware.

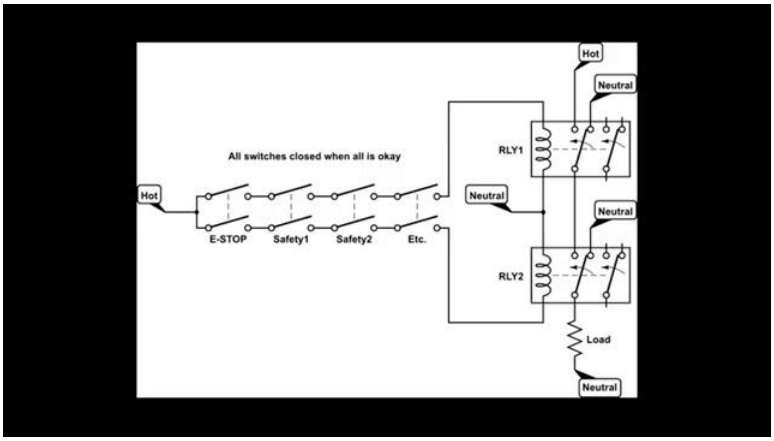
[1m:38s] E stops are required as a safety measure in many different environments, and depending on the situation, may be paired with other safety hardware like safety relays. For this video, we want to look at some basic examples of where an e stop can be used and how it can help provide a more safe environment for anyone working around potentially dangerous hardware, while also not damaging critical components that may be expensive to replace or repair. Most e stops are very simple to operate and normally can be actuated by simply pressing down on the top of the e top.

[2m:19s] This simple function allows for quick action to be taken in the event of a hazardous situation.

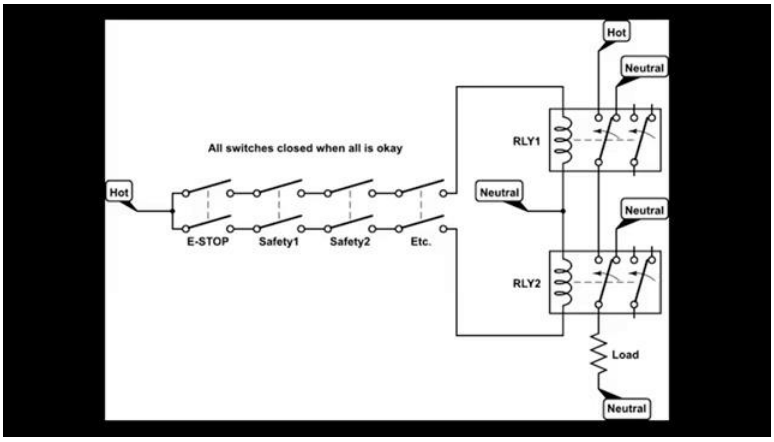
[2m:26s] Most e stops will consist of a set of contact blocks that can be wired to various pieces of electrical equipment.

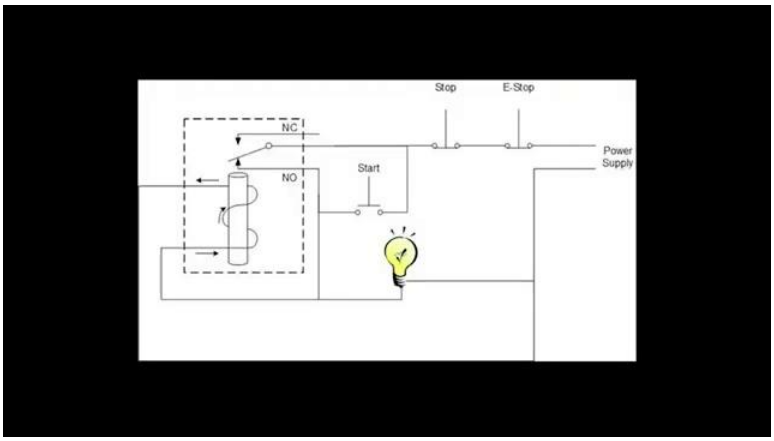
[2m:33s] Typically an e stop will have both normally open and normally close contacts that when wired correctly, will disconnect power to potentially hazardous equipment and can

also provide feedback in the way of an audible or visual alarm or signal back to a PLC. In order for each stops to function properly, it is very important that the stop is wired in series with the equipment that you want to control.

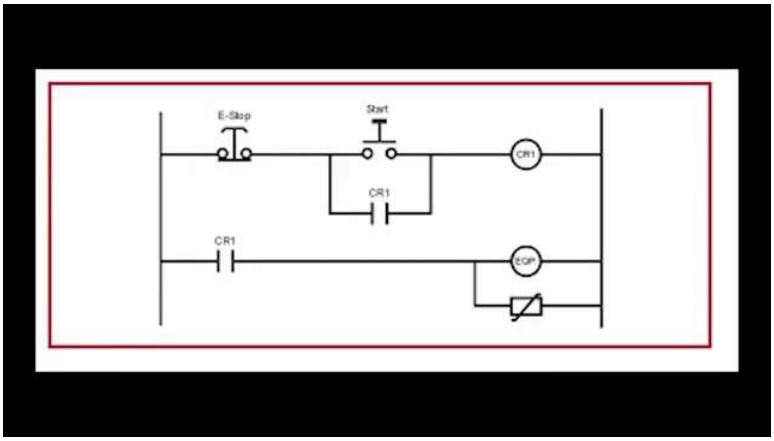


[3m:0s] When using an E stop with a motor, it is common to see that it is wired in series with a coil that controls the contacter on the motor starter.





[3m:10s] This method of install ensures that if the e stop is depressed,



[3m:15s] the motor will be switched off.

[3m:17s] There are many other wiring methods that can be used to provide a similar effect depending on the hardware and your specific needs. When integrating these devices into your system,

[3m:29s] it helps to simply think of them as a light switch. In order for the light or whatever device you are powering to function, the switch must be closed or turned on. To power down the device, the switch must be opened or turned off.

[3m:45s] The E stop acts like a light switch. It is a quick and simple way to power down a piece of equipment.

[3m:51s] How it is wired can greatly impact how it functions. The amount of wiring configurations that can be used

[3m:58s] is almost endless when you consider all of the different types of hardware that exist and are designed for this purpose. However,

[4m:8s] just remember a few things. First, wire the E stop in series with the device you want to control. With the option to use multiple contacts sets, it is possible to switch off multiple pieces of equipment at once. Also, e stops can be used to monitor equipment status if the correct contact sets are used. Understanding how E stops work and why we use them is critical to the safety of workers and the equipment we use every day.

[4m:39s] Recognizing their capabilities and limitations will enable you to ensure that any e stops you use in the future will be installed correctly. And lastly, they will allow for the safe operation of various types of equipment while making sure workers are kept safe. For a full line of e stops as well as thousands of other products, please go to our website.

[5m:1s] 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.