

Time Delay Relays Basics

[0m:0s]



[0m:4s] Hi I'm Josh Bloom, welcome to another video in the RSP Supply education series. Today we're going to be talking about time delay relays, some of the more commonly used time delay relays, how they work, and where we might use them. So much like a normal relay, a time delay relay still relies on a coil once that coil is energized, it closes a set of contacts which allows current to pass through. For more detailed information on the function of a relay, please see our other videos linked in the description below.

[0m:31s] Although there are many similarities between normal relays and time delay relays, a time delay relay offers us an additional functionality. This additional functionality allows us to control the actual on/off function of the contacts, which allows us to control various different devices that we use on a daily basis. So, let's talk about some of the most common types of time delay relays and where we might find them being used.

[0m:54s] First let's discuss an on delay relay. In a normal relay when the coil is energized, the contacts are instantly closed, allowing that current to pass through.

[1m:4s] In an on delay, relay when the coil is energized, the contacts are delayed for a given period of time which we can typically configure before the contacts are actually closed.

[1m:15s] So, a common use for an on delay relay is when we want to reduce the inrush current we might see when we power on a device. So, think of when you turn something on, like a motor, for instance, you might see the lights dim.

[1m:27s] If we're turning two things on at one time, we might even trip a breaker or blow a fuse. In order to reduce that risk, we use a time delay relay. The time delay relay allows us to power one device slightly later than another device. So, by using these on delay relays that allows us to prevent too much inrush current that might blow a fuse or trip a breaker in

our electrical circuit. Next let's talk about off delay relays. They function in a very similar way, with the main difference being, on the on delay relay,

[1m:58s] the delay happens when the coil is energized. In the off delay relay, the delay happens when the coil is de-energized. So, for instance, if we energize a coil contacts will close instantly. When the coil is de-energized, there is a delay before the contacts open.

[2m:17s] So a very common example of this might be our garage door opener light.

[2m:22s] When we press the button to open or close our garage door, you typically notice that the light stays on. This is the function of a off delay relay, which delays the light turning off.

[2m:34s] Another common example of an off delay relay is when we are running a motor. That motor tends to get very hot and it might be operating in conjunction with a cooling fan. When we turn the motor off,

[2m:46s] the off delay relay allows the fan to continue to cool the motor for a given period of time, and then that fan will turn off eventually. We also might find time delay relays that offer both functions: on and off delay. Let me give you a personal example of this. At my house, I own a table saw that I use in conjunction with a shop vac that helps clear the sawdust in the table saw.

[3m:11s] I have a time delay relay that functions both on and off delay. So, when I turn my table saw on, I don't want too much inrush current to trip my breaker while I power both my saw and my vacuum at the same time. So, I turn the saw on, the time delay relay delays the powering of my vacuum, and then turns on a few seconds later. When I turn the saw off, I want the vacuum to continue to run for a few seconds to clear out any sawdust that might still be in my table saw.

[3m:41s] So on and off, relays are the most common time delay relays that are being used today. However, there are dozens of other types and configurations of time delay relays that are being used in various applications. For a full line of time delay relays and 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.





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