Electrical Troubleshooting 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.

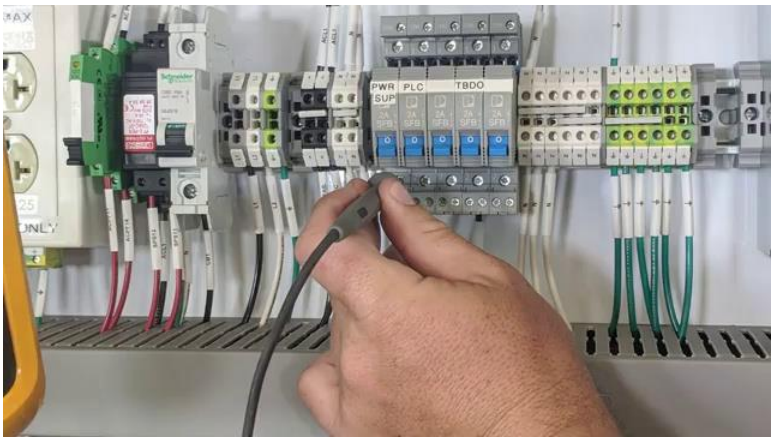
[0m:16s] In today's video, we want to talk about a very useful skill when dealing with any kind of electrical system.

[0m:22s] Whether it is your own home and you're trying to figure out why your outlets aren't working or complex situations like electrical control systems, and you're trying to determine why motors aren't starting or why you aren't receiving the signals that you might expect.

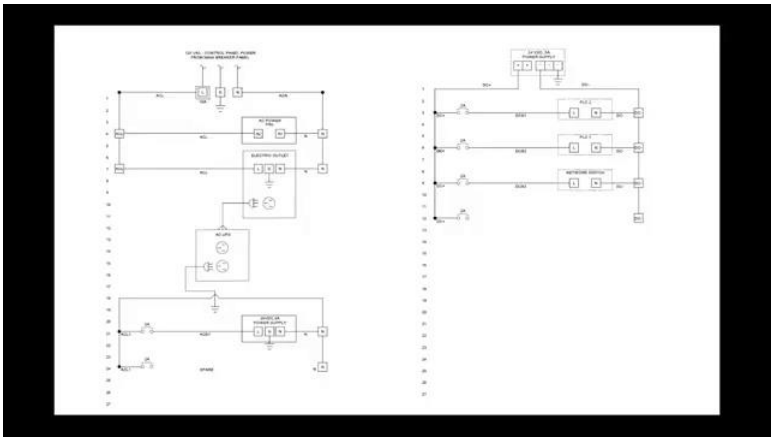
[0m:38s] The skill that I am referring to is electrical troubleshooting, and today we want to provide you with a few simple tips and tricks that can help you more easily identify and resolve some of the more common electrical issues that you may encounter. Please keep in mind that there are hundreds of different troubleshooting techniques that can be used and the information we provide you today will reference just a few ways that we have found that can be effective in resolving common electrical problems. With that said, let's look at some tips and tricks to get you started when resolving those pesky electrical issues. One of the first things you should always look at when having electrical trouble is to check the power source, especially in situations where a device is not functioning or will not turn on. It is very common to find issues where the device is sourcing power from.

[1m:34s] This can be a device such as a circuit breaker, a fuse, disconnects, and relays. Make sure they are functioning properly. Ensure that the proper voltage is being supplied.

[1m:47s] If breakers have been tripped, make sure that the current passing through the device does not exceed the rating of the breaker itself. In these situations, it is very common to see that the problem lies with the device providing power, so always check your power source. The next tip:



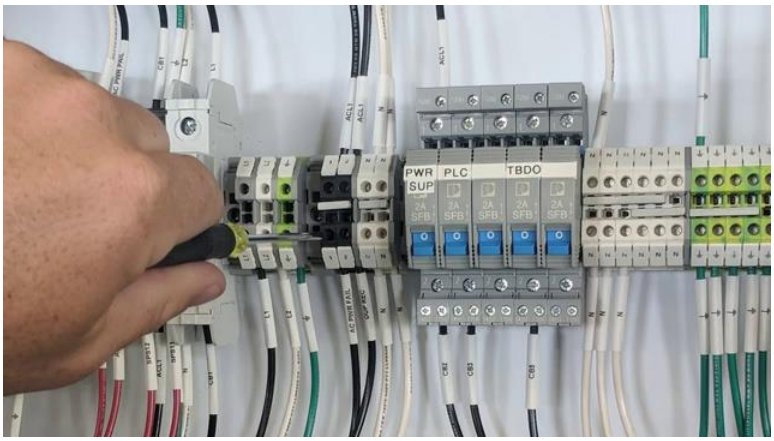
[2m:6s] when electrical circuits aren't working, verify a proper return path. Whether working with AC or DC power, it is essential that a return path is present, such as a neutral wire in low voltage AC circuits, or DC negative or ground wire in DC circuits. Without this return path, the circuit will not function as intended.



[2m:30s] I have found that this problem is most common on newer circuits being powered for the first time.

[2m:35s] For whatever reason, this return sometimes gets missed and can cause all kinds of headaches when trying to find the problem.

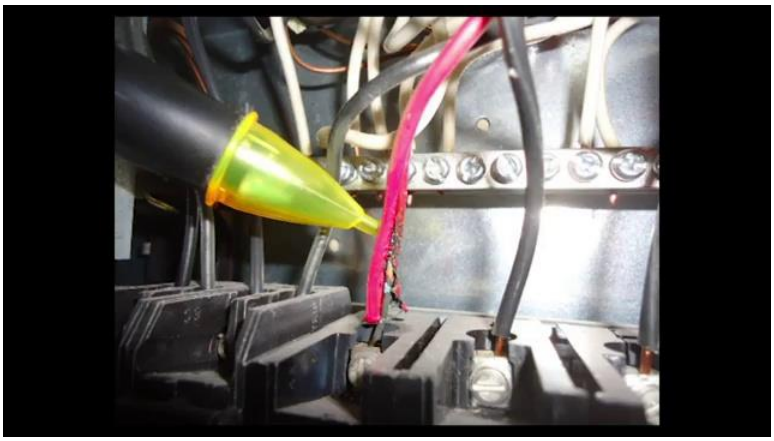
[2m:44s] So, always check for the return path. Another tip is to always check for loose electrical connections. This can be more difficult, especially in larger control systems where hundreds of wires may be present.



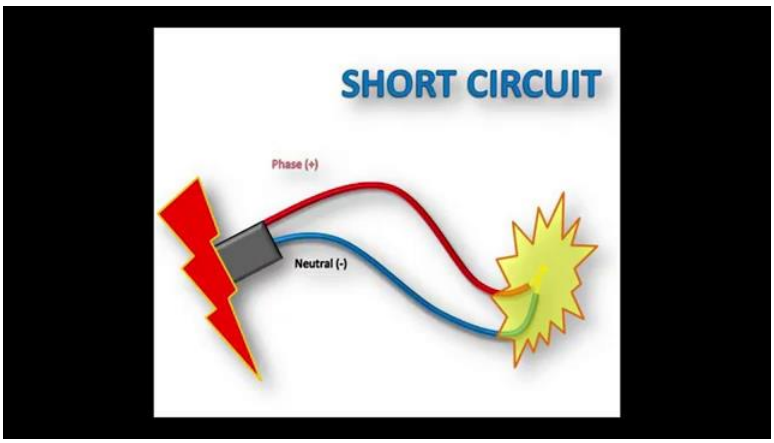
[2m:58s] But, it is not uncommon to find that the source of electrical trouble is many times a loose wire connection. If you are having intermittent continuity issues, this might be a hint to determine if this is your problem. A good way to check for loose connections is to pull test the wire that you suspect might be causing the problem.

[3m:21s] A word of warning:

[3m:23s] if the circuit is live, you may be exposing those circuits. So, use caution and follow all electrical codes and guidelines at all times.



[3m:33s] It may be best to disconnect the power before checking for loose connections on the circuit you are working with. With that said, this is a very common problem and should be checked when you are trying to determine why your circuit is failing. Lastly, a great tip to follow is to always check for short circuits, especially in situations where you are seeing intermittent power surges that are blowing fuses or tripping circuit breakers. Depending on the complexity of your system,



[4m:6s] finding a short circuit can be easy and sometimes very difficult. However, short circuits do happen and cause all kinds of problems in electrical systems, not to mention they are a huge safety hazard and can be the cause of electrical shock and electrical fires. So, be careful, but ensure that if a short circuit exists, you safely identify it and fix the problem.

[4m:31s] As mentioned before, these are just a few tips that we have found to be helpful when troubleshooting electrical issues.

[4m:39s] However, there are many different methods which we have not discussed that are also very effective.

[4m:45s] Please ensure that you use caution when performing these kinds of tasks, and if you have any concern or doubt about what you are doing, seek the help of a qualified person that can assist you further.

[4m:58s] Otherwise, happy troubleshooting and stay safe. For a full line of industrial electrical hardware 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.