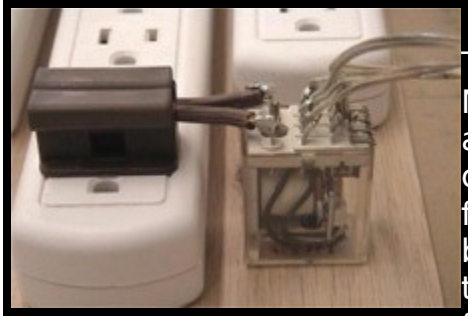
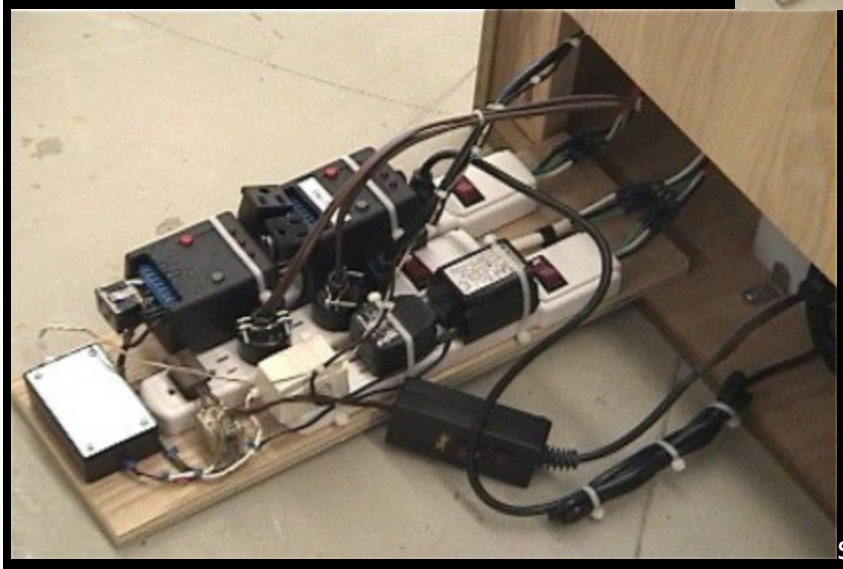
RElay TriGGEr



Shown is a 120V, 4 Pole, Double Throw, KH style or "Ice Cube" relay. Nicknamed that since these relays are always covered with clear shells so you can actually see inside. That must be for geeks like me that have to see it before I can understand it. I work with these as they are readily available from surplus places such as All Electronics for just a few bucks. Ice cube relays come in different volts and amps, so be certain about your needs before choosing the one you will work with.

First we need to understand exactly what this little goodie does. In some cases we want to trigger something that is merely closing a circuit and is passive where it isn't actually sending 110 volts through the circuit, but connecting two points to complete a circuit which is sensed by the device we are trying to trigger. When the ice cube relay is hooked up to 110V in this case anyway, it opens and closes a host of points inside the cube which can open or close the circuit on your device if hooked up to the proper two leads. This relay is a 4 Pole,



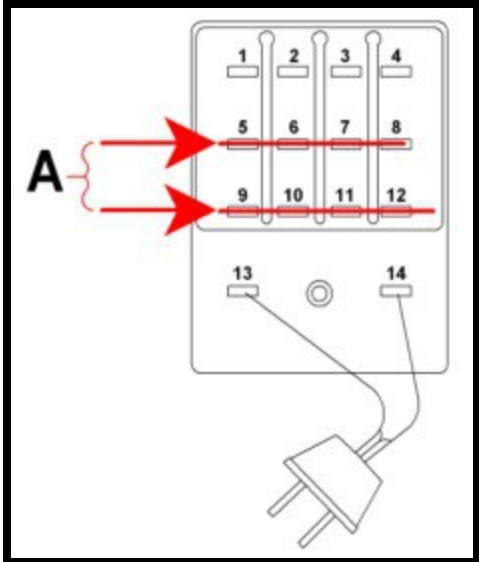
so it has 4 circuits that it closes when energized and also features 4 other circuits that remain closed until that time. More on that next. There are lots of examples, but here I am going to use a fog machine as was just one of the many devices that was used on the single relay shown in the top photo here in the Electrocution. This one relay was employed to activate the voice, another activated a fog machine, and finally the last two activating two Vari-Pet Timers from Cowlacious Designs for two independent animations. In this

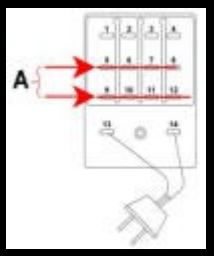
case I used a power strip to trigger the relay along with numerous other 110V devices.

So using the fog machine as an example of just how this works, you

should get a pretty good idea how to use this for the other items which are triggered by passively connecting a single circuit. In this photo you can see the wired hand held remote control with a switch in the middle. Since I need so many items to go off at the same time with this prop it isn't practical to try to do it by hand, hence the reason for the conversion.

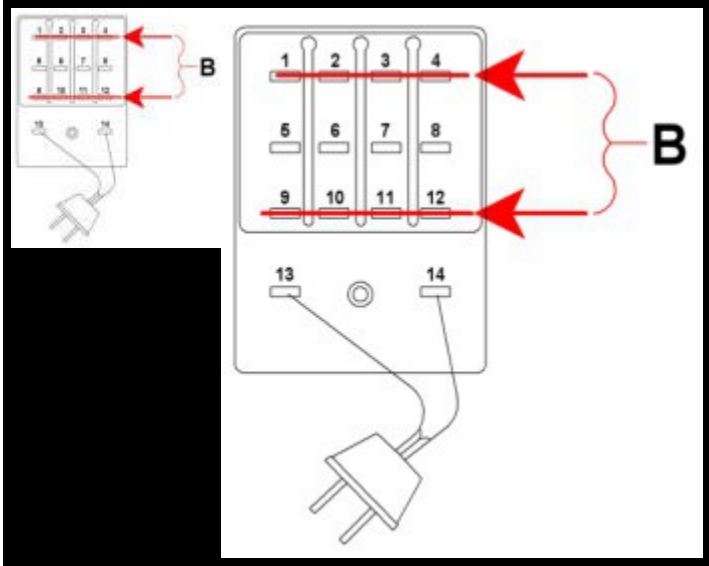
I open the switch box up and test the two leads connected to the switch to see if they carry current while the circuit is closed ("closed" meaning when the circuit or wire is fully connected in a continuous manner with no breaks as it would have when the switch is not being depressed) using a 110 V meter. Since I determined that it is indeed a passive circuit, I simply solder a remote wire to each lead of the switch legs (I could eliminate the switch or just leave it there and not worry about it, depending on my future plans for that remote control). The other ends of the wire will now go to the relay and when activated, the readied fogger will emit fog.





The relay, as seen from an aerial view as shown in this schematic, has numerous rows of connecting posts. On this particular relay, the second row and

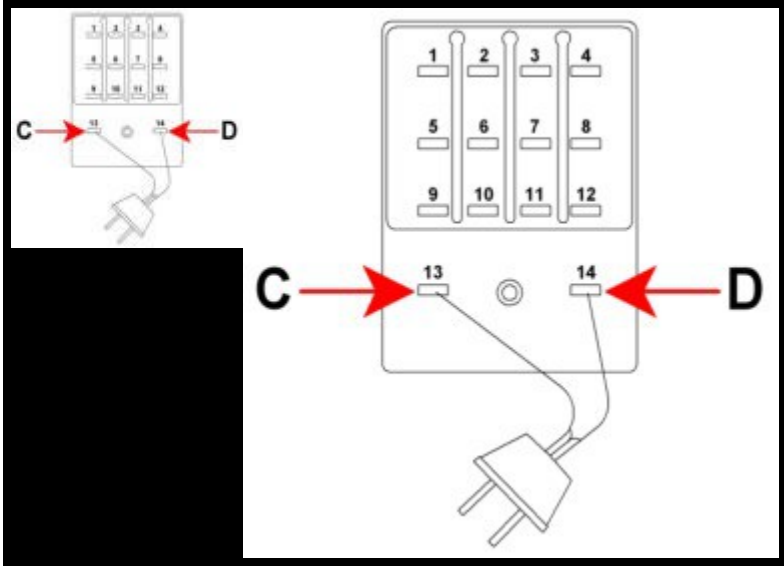
bottom row are the posts where you can connect one wire to each which are "normally open", meaning they are keeping the circuit from connecting. Once power is applied to the relay, 4 points inside connect 4 different circuits. In this case these 4 circuits are; 5 & 9, 6 & 10, 7 & 11 and 8 & 12. These are isolated from each other, so there is no possibility of one device bleeding into the circuit of the next.



Next we have the top row and the bottom row which are "normally closed" which means two wires hooked to the 1 & 9 legs would have a complete circuit when the power if off to the relay. And sometimes you want the circuit to remain in effect until the moment something else is activated. An example of that would be the Dr. Jekyll / Mr. Hyde illusion using a two way mirror and lighting to make the person's face peering into the mirror turn into a monster. The other circuits here are 2 & 10, 3 & 11 and 4 & 12.

So what if you have a relay but it is different from this 4 pole unit, how can you find out which points close which circuits? Use a continuity tester as shown here. This unit is similar to the volt meter I used earlier, but different in as much as it actually sends out a low voltage DC current down the line and allows a person to see if two legs are open or closed as the relay is activated and un-activated. When the little light inside the meter appears, you have a closed circuit. Be sure you are using a relay that only closes two passive points inside each circuit and does send out any current of it's own. Electricity

can kill if mishandled.



Finally we hook up the relay to a standard power cord to enable activation of it and consequently our fog machine. Pick up a multi outlet extension cord for about .70 cents at WalMart or elsewhere and lose the female gang end. Solder each leg to the two bottom posts for your power in. The post on the relay directly between these two points is a threaded ground which I do not bother with myself. Now you have the elements of a remotely controlled event! By plugging this in to a wireless remote base unit, you can now set off your fogger, a voice to a monster or an elaborately timed animatronic from anywhere in your haunt or yard!

Once I get my relay set up the way I am happy with in my props I then coat the entire top of the exposed posts and wires with hot glue until they are completely covered and cannot shock me while handling the event while plugged in. For a deeper look into using this relay for more items look at the how-to Motion Trigger.

Rest In Pieces,

Death Lord