Relay Wiring - A Simple Switch

From HalloweenWiki

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Materials:

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1 Lamp socket
1 Lamp cord w/plug
1 Kit74
1 Screwdriver
Wiring nuts
Wire strippers/cutters
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Use a relay on the Kit74 as a simple switch!

Wiring a Relay: Simple Switch

This is a simple wiring guide. It will show you, with photos, how to wire up a single light bulb to a single relay on the kit74. This will allow you to use the Haunt Controller software to turn on and off your light.

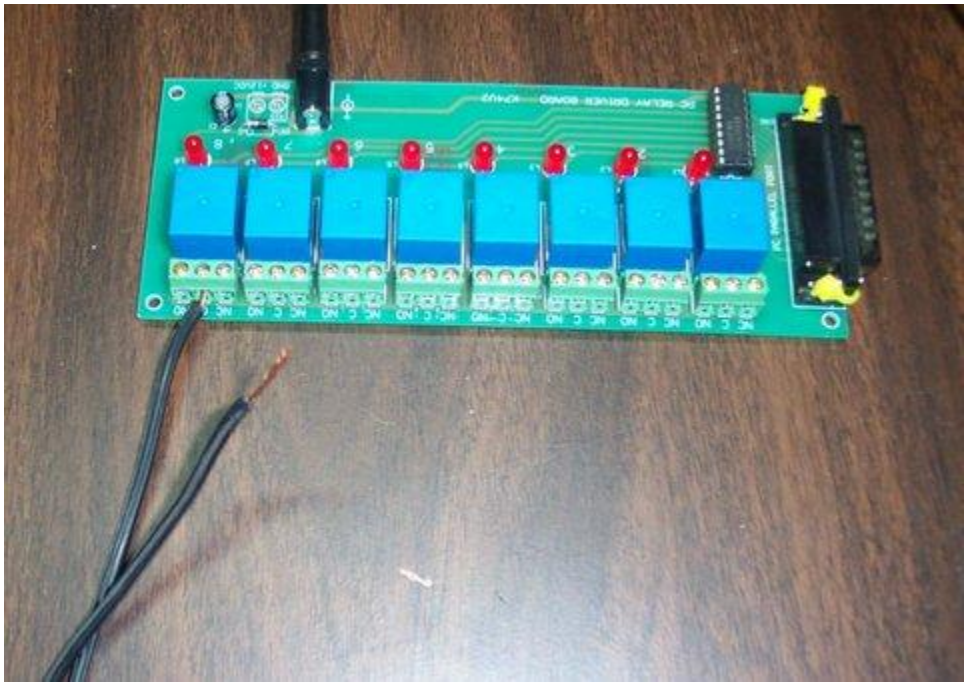
This article assumes that you want the light to turn ON when you turn on the relay.

You will need a Kit74, assembled, a lamp cord with plug, a lamp socket with leads, a light bulb, and a couple of wire nuts.

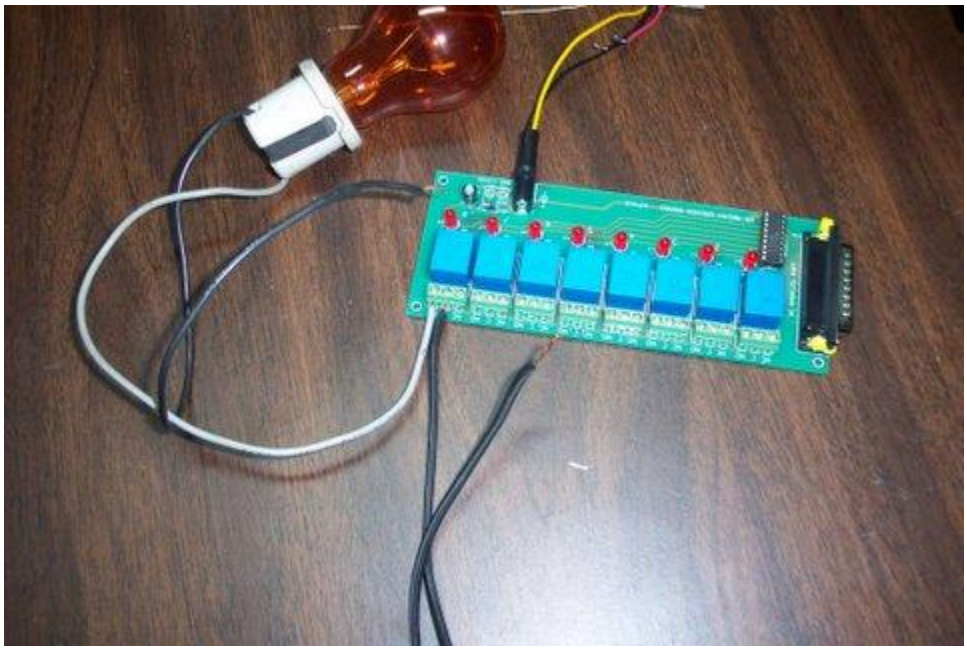
WARNING: This how-to uses 110VAC household current! Attempting this project is at your own risk.

Household current can kill, so be sure to unplug things you are working on BEFORE you touch any wire, and follow standard electrical guidelines. If you feel that you cannot handle this project, do not attempt it!

First, gather up your kit74, the lamp cord, lamp socket, and a screwdriver. Split and strip the two wires from the lamp cord, leaving about 1/8" bare copper exposed on one lead, and about 1/4" copper exposed on the other. Do the same thing or the lamp socket. The shorter leads are necessary to ensure they are inserted fully into the relay terminal, and they cannot touch.

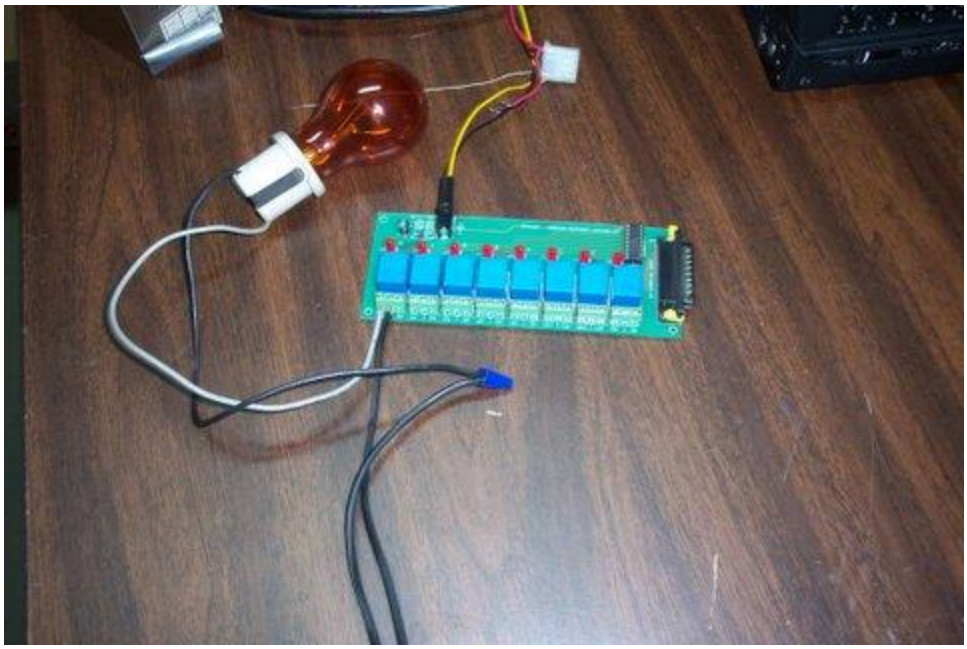


Take the lead from the lamp cord with 1/8" copper exposed, twist the strands so it won't come unraveled, and insert it into the terminal marked "C" on one of the relays of the kit 74. Tighten with a screwdriver. "C" stands for "Common", and this lead is connected to one side of the relay at all times.

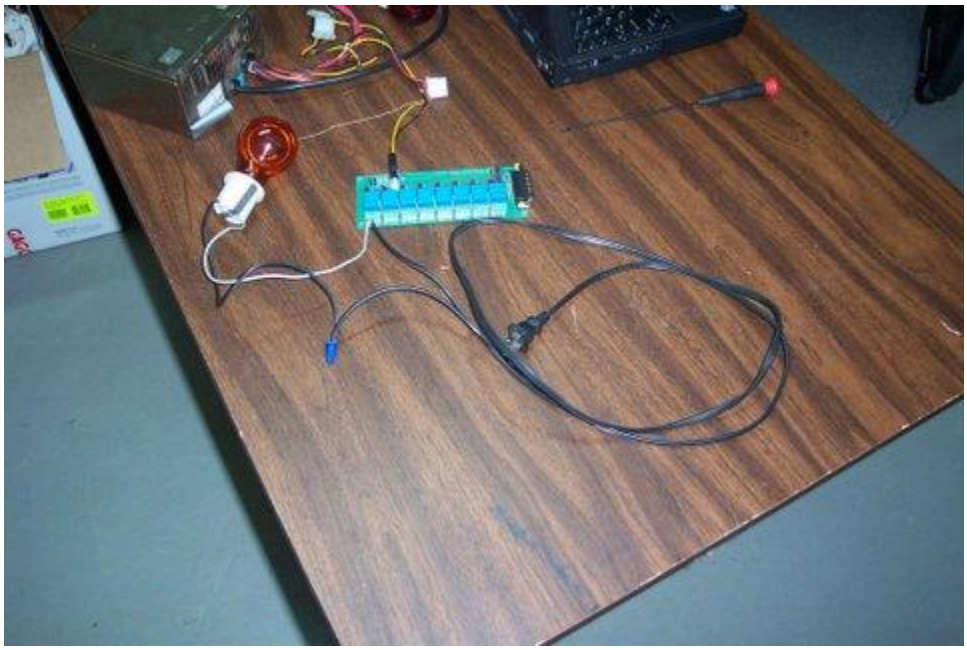


Next, connect the 1/8" lead from the lamp to the terminal on the same relay marked "NO". This stands for "Normally Open", which means that "Common" and "Normally Open" terminals do not connect when the relay is not activated. Tighten this down with the screw, and ensure that no strands are exposed from the terminal block and that no bare wire is touching anything else. If your bare leads are too long to fit fully into the terminal block, remove the wire, and trim the exposed copper.

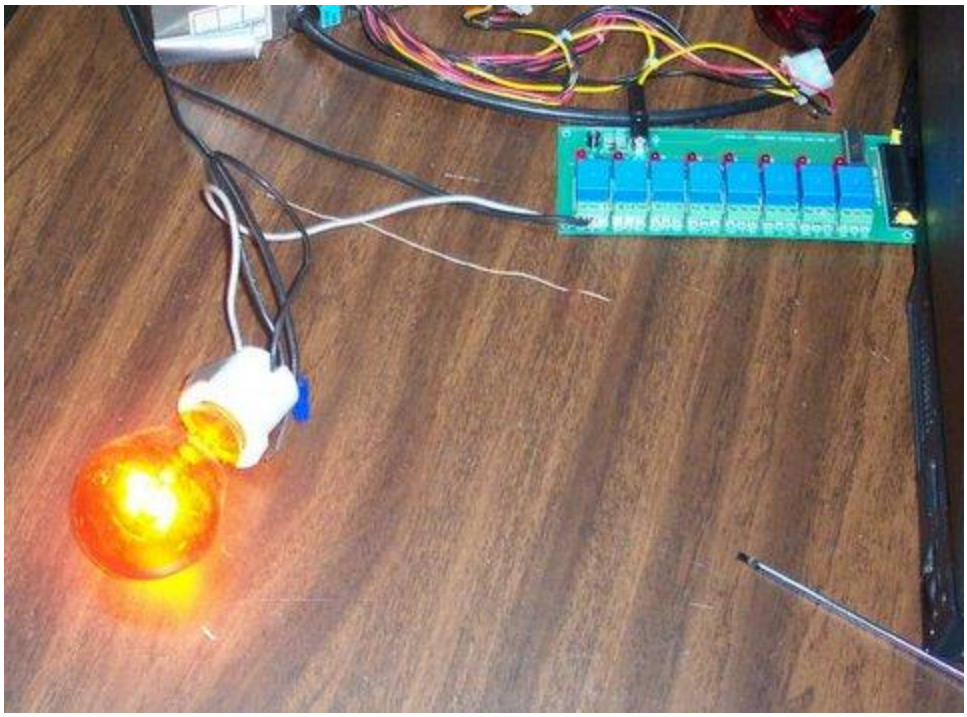
Give each wire a gentle tug to ensure that they are firmly locked into place.



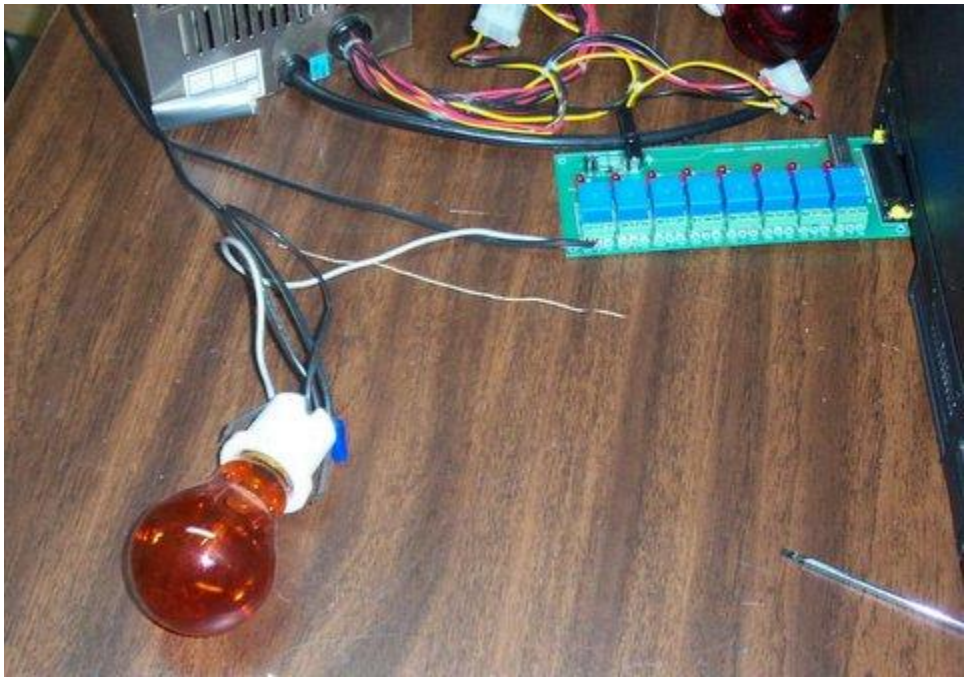
Finally, connect the 1/4" bare lead from the lamp socket to the 1/4" bare lead from the lamp cord with a wire nut. Ensure that no bare wires are exposed.



This is what you should have now. Attach the kit74 to your PC, and verify that the kit74 is on a non-conducting surface. Plug in the lamp cord. Once the lamp cord is plugged in, **DO NOT TOUCH the kit 74!** The traces on the bottom of the board will have 110VAC running on them, and it would be dangerous to touch.



Fire up the Haunt Controller software, and trigger the relay your lamp is attached to. It should light. In the photo above, you can see that the red LED is on while the lamp is on (click photo for larger image).



Now, turn off the relay. The lamp should go off. In the photo above, notice that the LED is not on.

Congratulations! You have successfully wired a lamp to a relay. The relay acts exactly like the switch you have on the wall, but you can control it with your PC. In a production environment, make sure you mount your kit74 so that it cannot be moved, especially during operation, and that all cables are tied and secured. Check with local electrical codes to ensure you comply with all regulations.

If, for whatever reason, you would like the lamp to turn OFF when the relay is turned ON, simply move the wires that connect to NO (Normally Open) to the terminal labeled NC (Normally Closed). Remember to turn off power to all devices before attempting to change wiring arrangements!

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