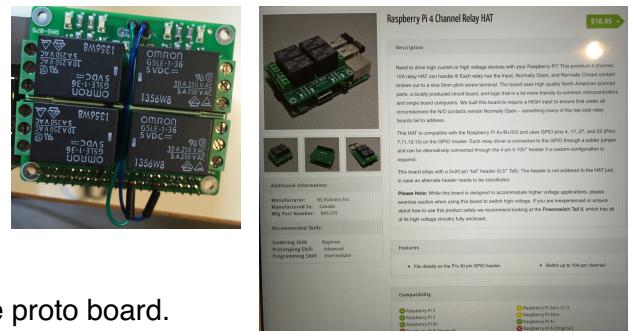


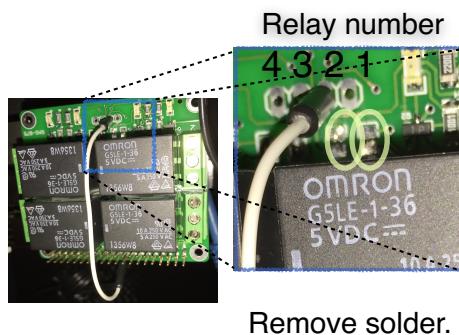
# Hardware: BC Robotics Raspberry Pi 4 Channel Relay HAT

I opted for this board since it fits right in on top of a raspberry PI, without having to do much work.

The tall relays require extra tall stacking headers on the relay board (not so much) as well as the proto HAT board, and it just barely made a connection when using <http://adafr.it/1979> connectors and having nothing at the bottom of the proto board. See if you can find one that is a bit taller for the proto board.



## 1. Unsolder default ports for the first two relays 1 and 2

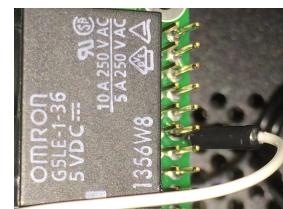


The default gpio ports for the four relays are #4, #17, #27 and #22.

The gpio #4 and #17 are used for inputs on the proto board, so you should change the first two relays into gpio port #18 and #24. (relays 3 and 4 stays on the defaults gpio #27 and #22).

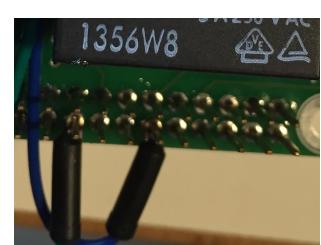
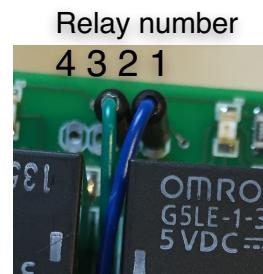
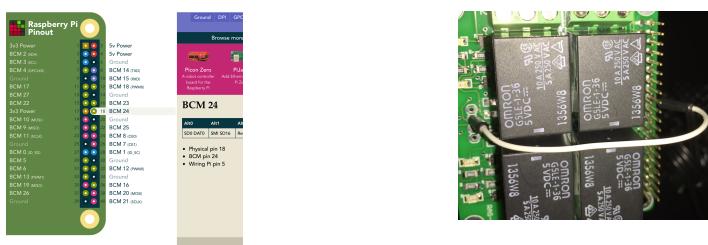
In order to do that, you have to remove two solder blobs connecting the default pins #4 and #17, and add wires to connect to qpio pins #18 and #24

## 2. Attach a wire from relay 1 to gpio #18



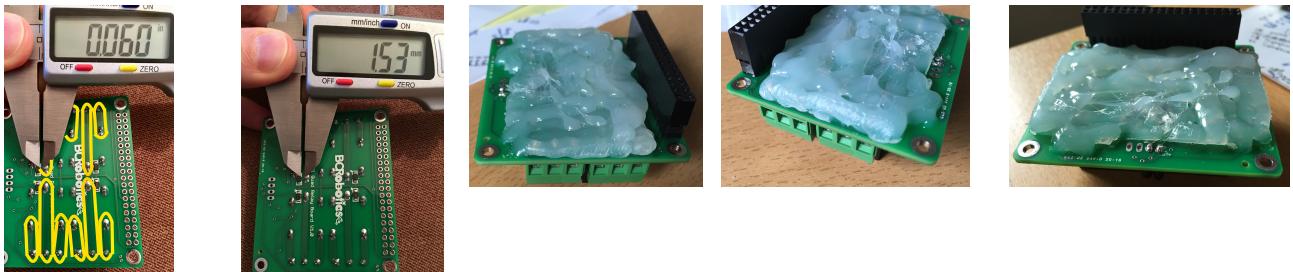
I made one end of the wire a loop, that would fit tightly around one of the connector legs, so I could potentially move to other gpio ports. If you do not want to do this, you can solder the wire directly to a pin, so that it does not loop over the edge of the board.

## 3. Attach a wire from relay 2 to gpio #24



## Below the relay board

The Bottom of the relay board is not protected against shortcuts. The marked lines should be protected well against touching anything. Using a glue gun to cover the entire surface around the marked lines gives a good protection. The board itself has a few places (board version 1.0), where the wires get too close to low power control wires, according to high voltage guide lines. BC Robotics will change this in the next revision of the board.



The new version of this board RAS-075 has improved the insulation, and looks like this.

