

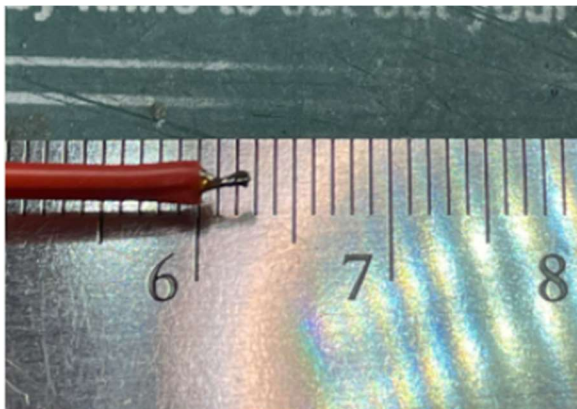
Mix a small amount of epoxy and glue magnets to sensor base.

Orient the magnets so that they hold each other in place while they dry.



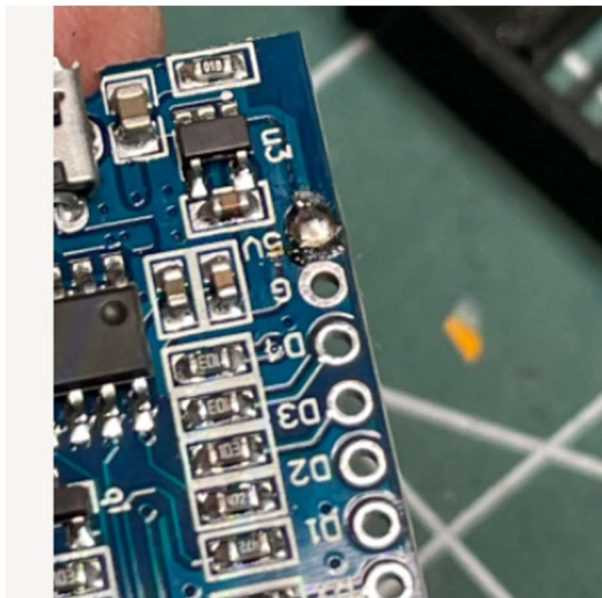
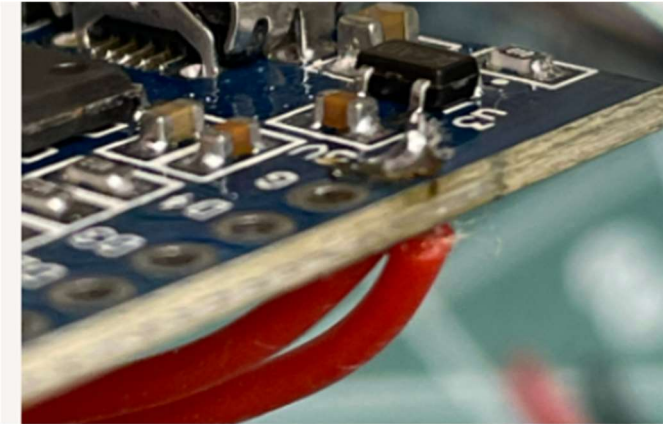
Cut two sets of Red Black Yellow & Blue wire approx. 12-13 inches long.

Strip the ends about 3mm and twist colored pairs together and tin w solder



Add some flux to the esp8266 on 5v G D1 & D2

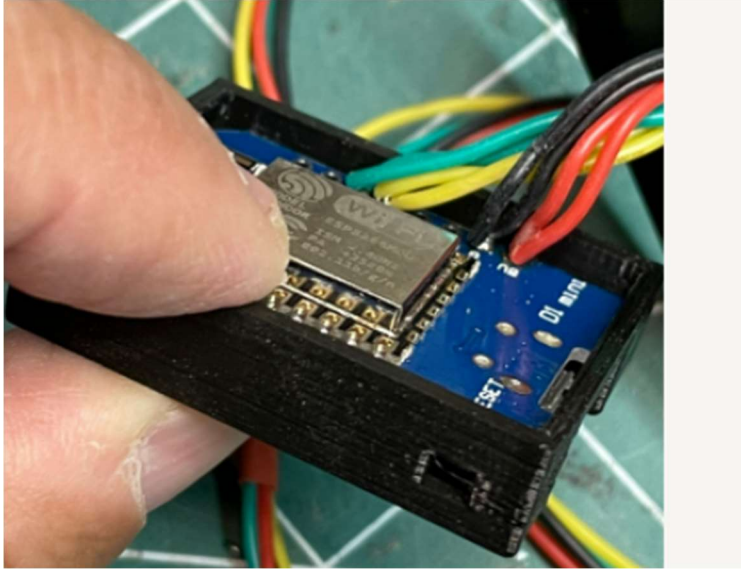
Insert Red pair into 5v from top and solder on bottom. Be sure to keep wires straight so they won't interfere w case.



Do same with Black pair connected to G

Yellow pair to D2

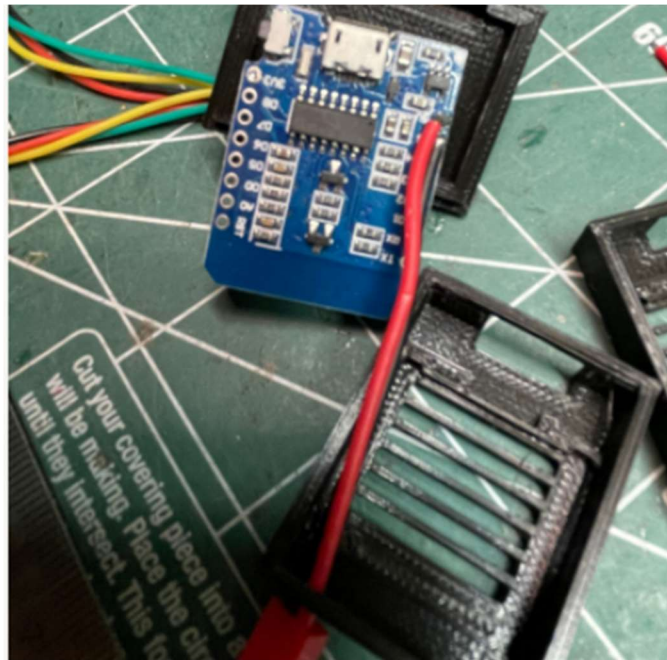
Blue Pair to D1 (green in my picture)



Strip and Tin ends of JST plug

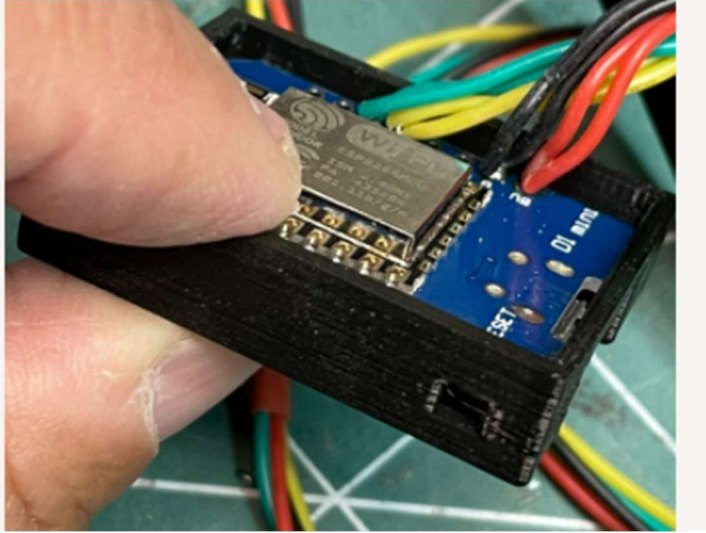
Insert JST plug through the round hole in case (plug on the outside) and solder black to G then Red to 5V keeping the leads flat against the board

(keep leads on inside of solder connection - towards center of board)



Trial fit board in case. Make sure it seats flat all the way around

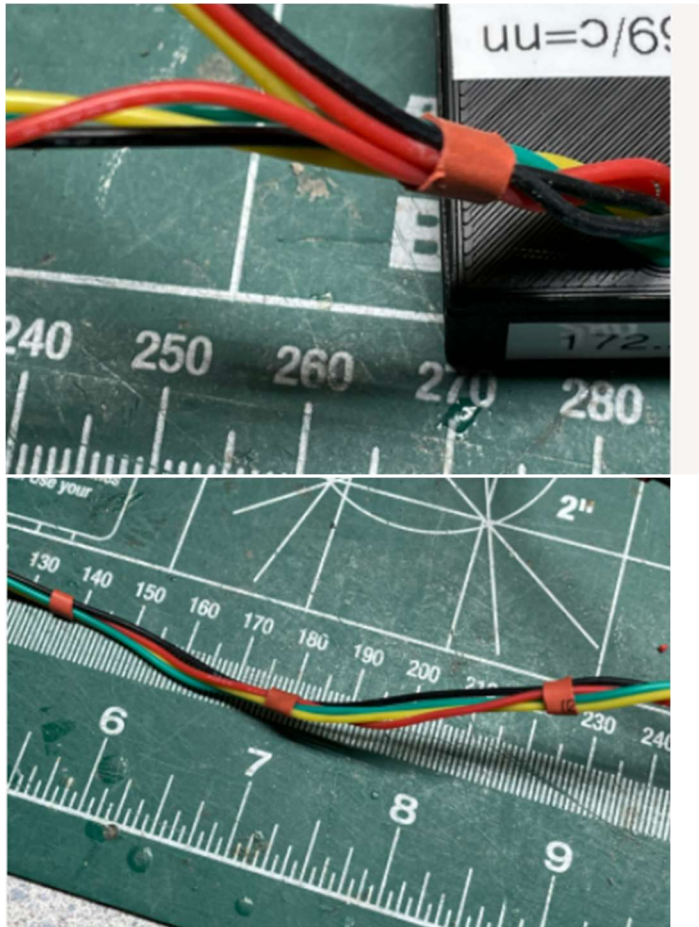
Look at JST leads to make sure they aren't interfering, you may need to twist them a little.



Pull all wires through cover and snap shut. Insert side near wires first and work around. If board is flat it'll snap shut. It's a tight fit.

And add small piece of medium shrink tubing around all wires exiting case.

Separate each set of Red Black Yellow & Green wires. Add 3 or 4 small pieces of shrink tubing to each set of wires.



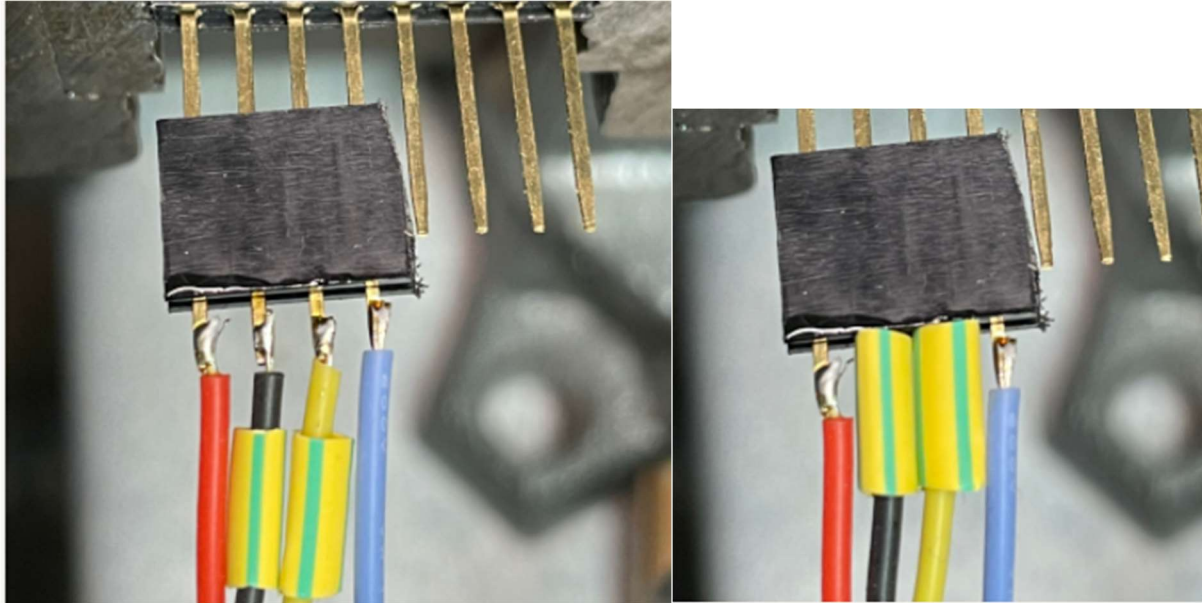
Strip approx. 3 mm from the ends of each wire and tin with solder.

Flux is your friend. Tin the pins on the short plugs, use the long pins as a holder to keep pins in place in case you use too much heat. THE LONG PINS ARE JUST A HOLDER and aren't used for anything else.

Add short piece of medium heat shrink on two center pins (or all of them if you're not in a hurry)

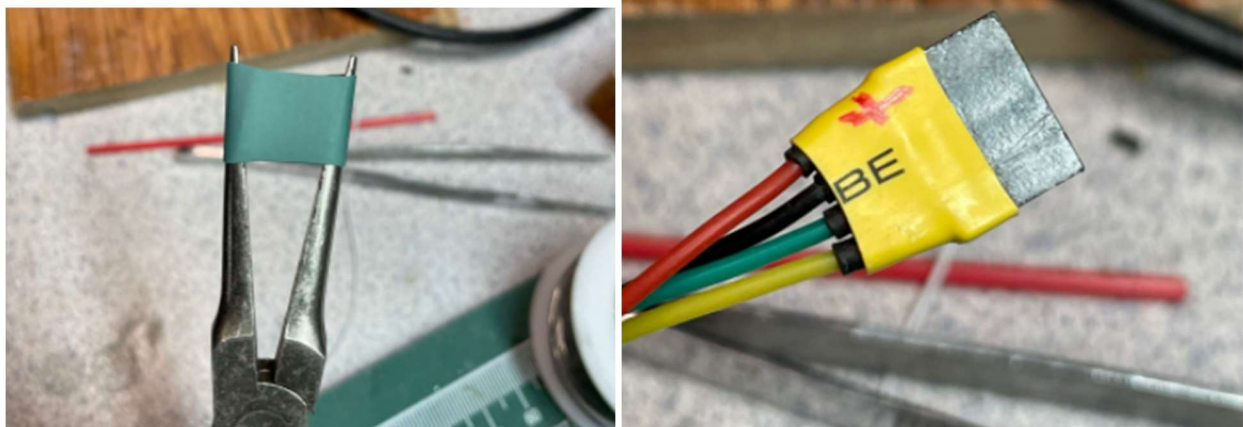
Solder

YELLOW/BLUE COLORS ARE WRONG IN PIC



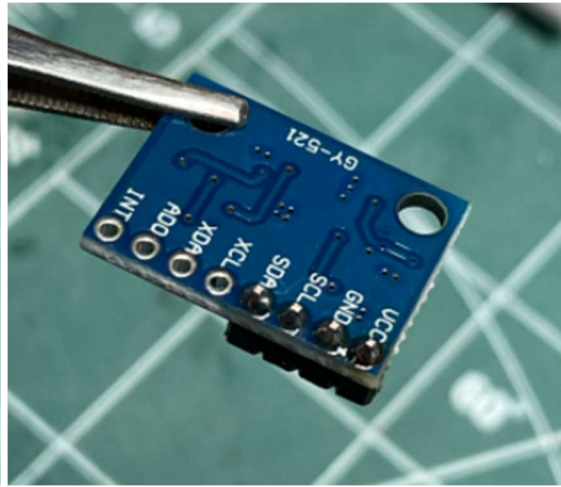
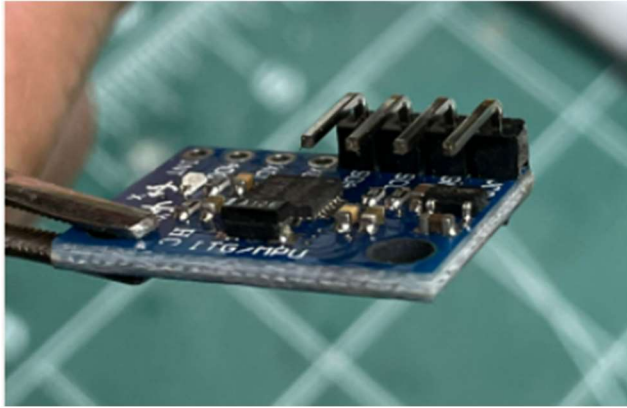
Cut piece of large heat shrink and stretch a bit with needle nose pliers to cover plugs

(I know colors are different)

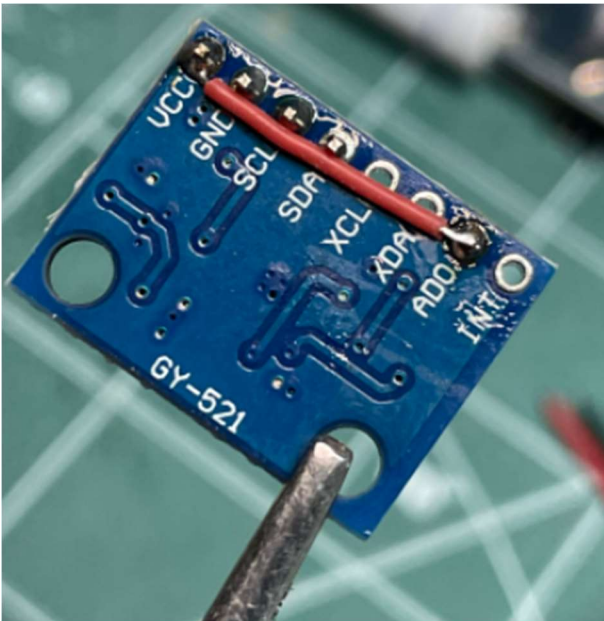


Be sure to use flux and solder 90 degree pins to MPU6050 boards to VCC GND SCL SDA

Tip: put some solder on tip of iron and tack the VCC pin while holding in place, then solder the rest when straight.

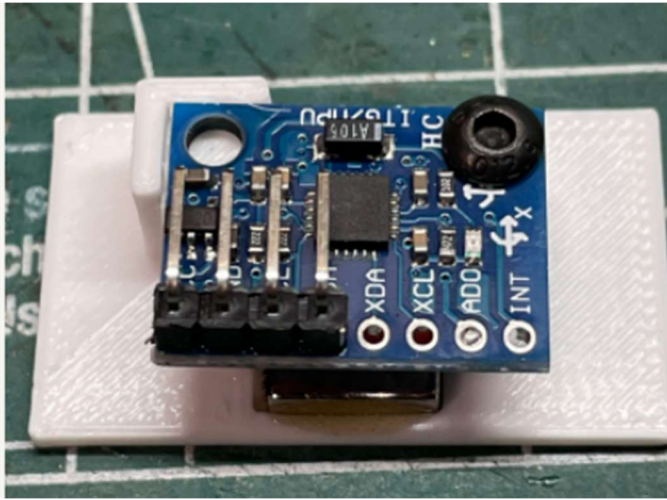


On ONLY ONE of the Boards add a jumper from VCC to AD0.

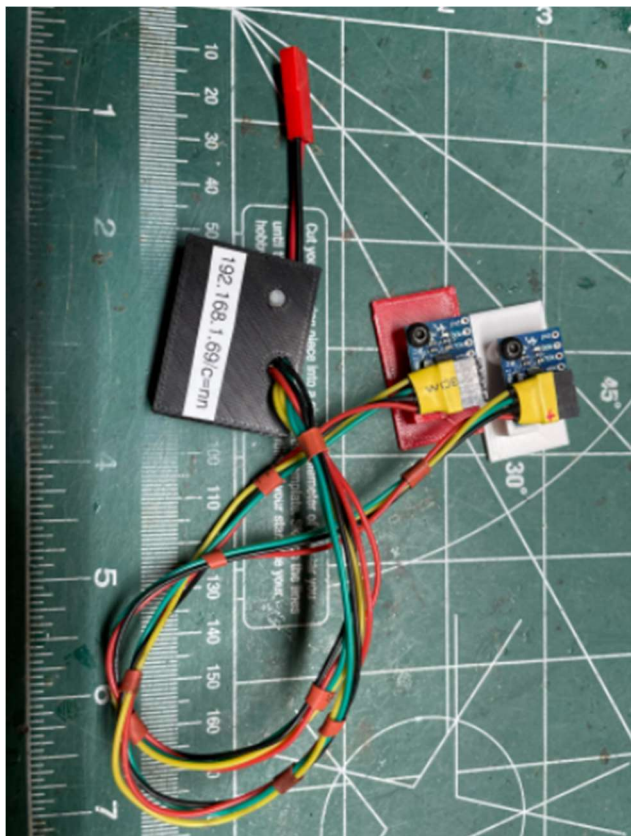


Mount MPU6050's on sensor base.

The one WITHOUT the jumper goes on the RED base.



When you plug in sensors, the RED wire is always to the outside.



Shrink heat shrink, Make an extension with a male and female end using above techniques.
Don't forget the small pieces of medium heatshrink.

The WEMOS D1 Mini is already flashed with correct firmware.

Plug it in and go !

Usage Instructions:

- Once the gauge has initialized and calibrated...
- Block up your aircraft so it's stationary and can't move.
- Place a sensor on each of the control surfaces parallel with the hinge line.
- Open web page showing sensors (ie 192.168.1.1/?c=50)
- Move the control surfaces to their neutral position and press the zero sensor button.
- Both sensors should be reading zero degrees & zero mm travel.
- You are now ready to measure the movement of the control surfaces from their neutral position.