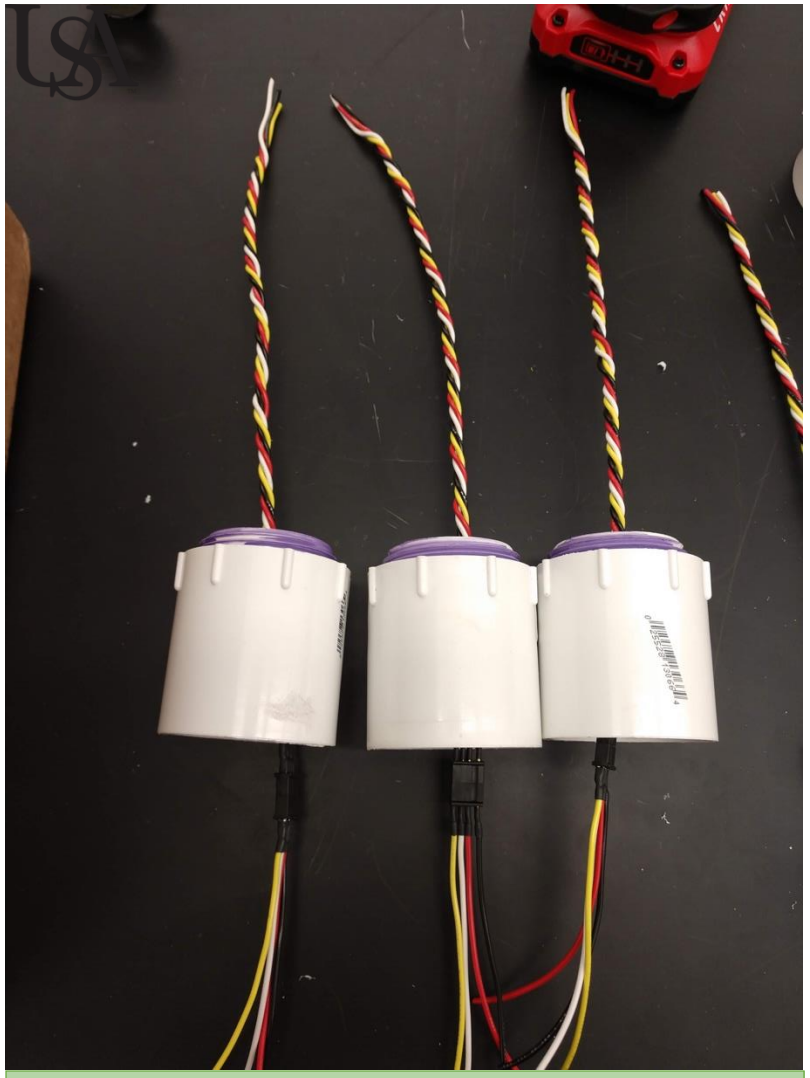
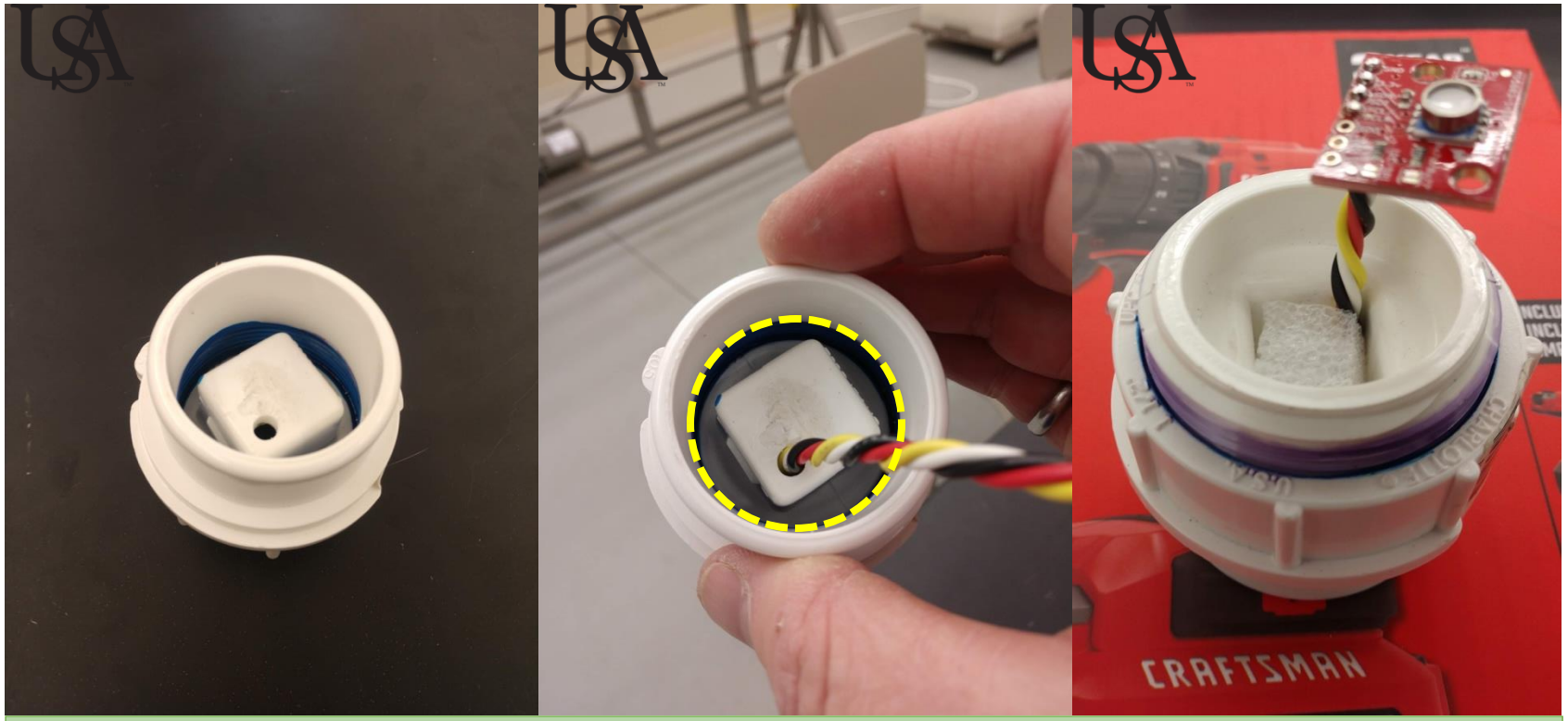


Updated design uses a 1.5-inch “cleanout” housing and plug. This is a slip-slip coupler over the main housing, and has a threaded female fitting for a cap on the opposite end

The male threaded plug gets flipped upside down and screwed into the fitting with a few threads exposed to accept a protective cap.



A small hole is drilled through the plug cap to thread the sensor breakout wires. The sensor is then soldered to the wire leads. The sensor board is bedded in small amount of epoxy putty and then the entire area is flooded with flowable epoxy. I place a small piece of foam in the cleanout plug recess to take up space and prevent the epoxy putty from settling. I also like to add flowable epoxy on the back side (see yellow dashed circle middle photo) above the PVC threads for added safety. This step is probably not necessary.

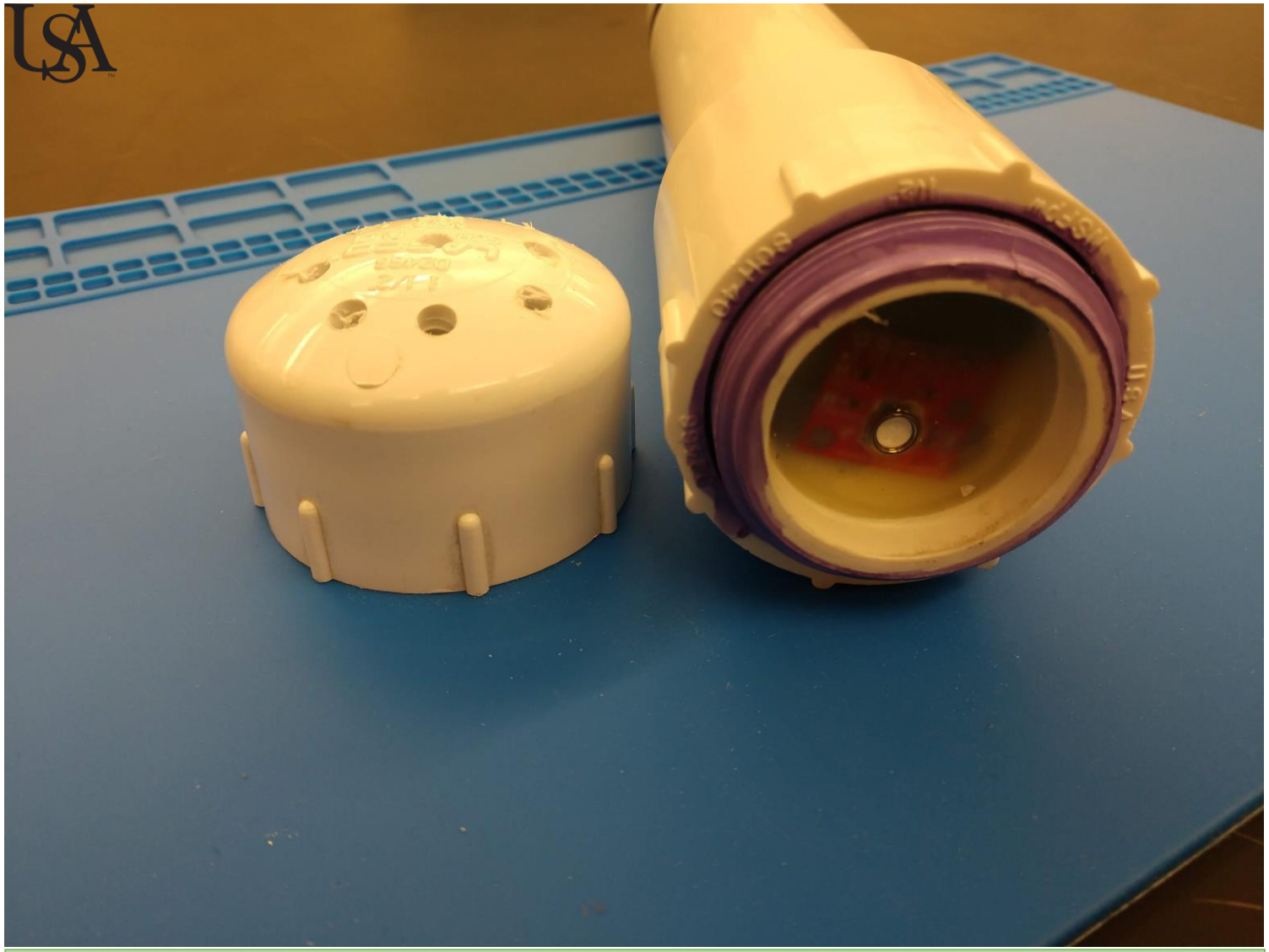
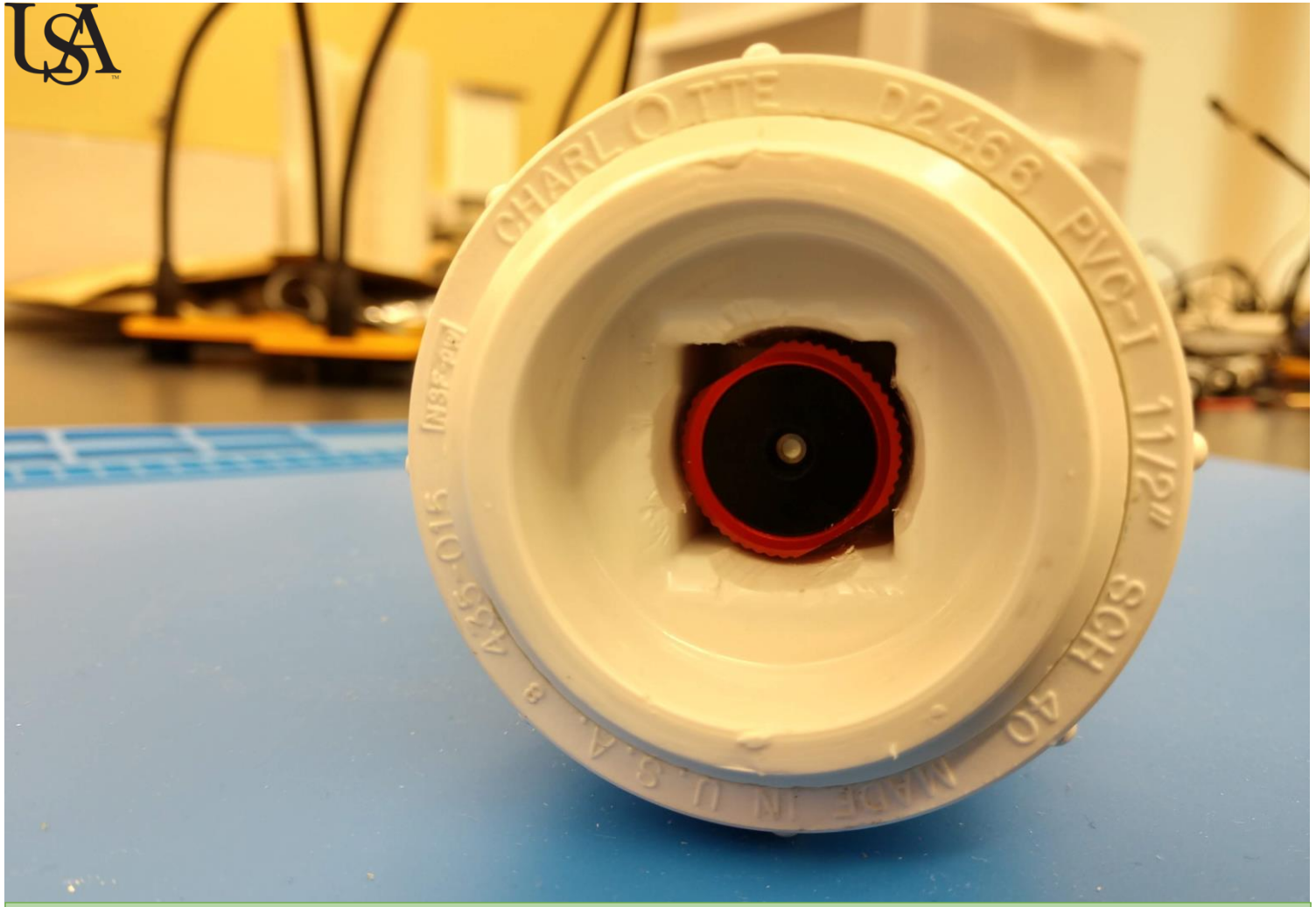
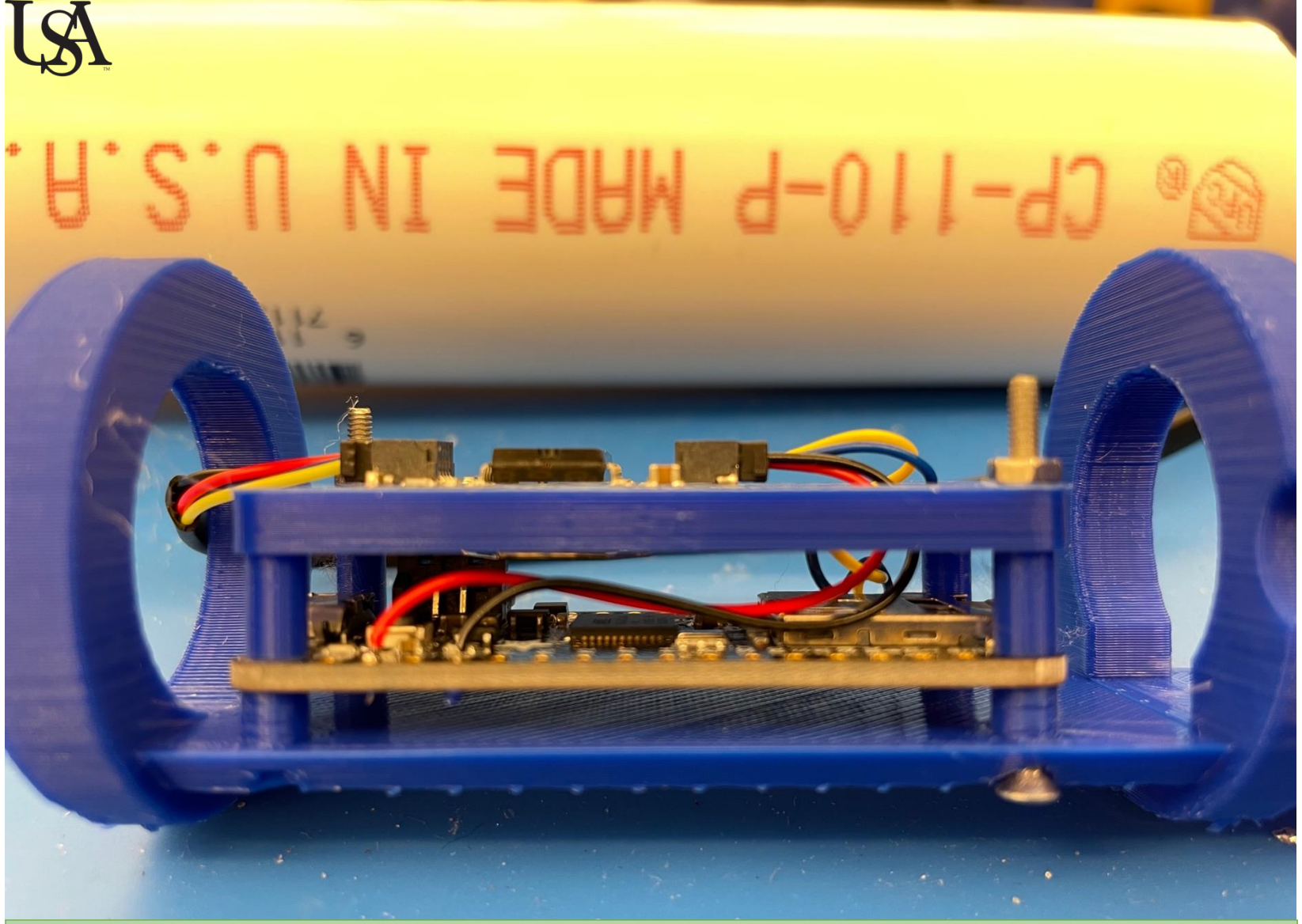


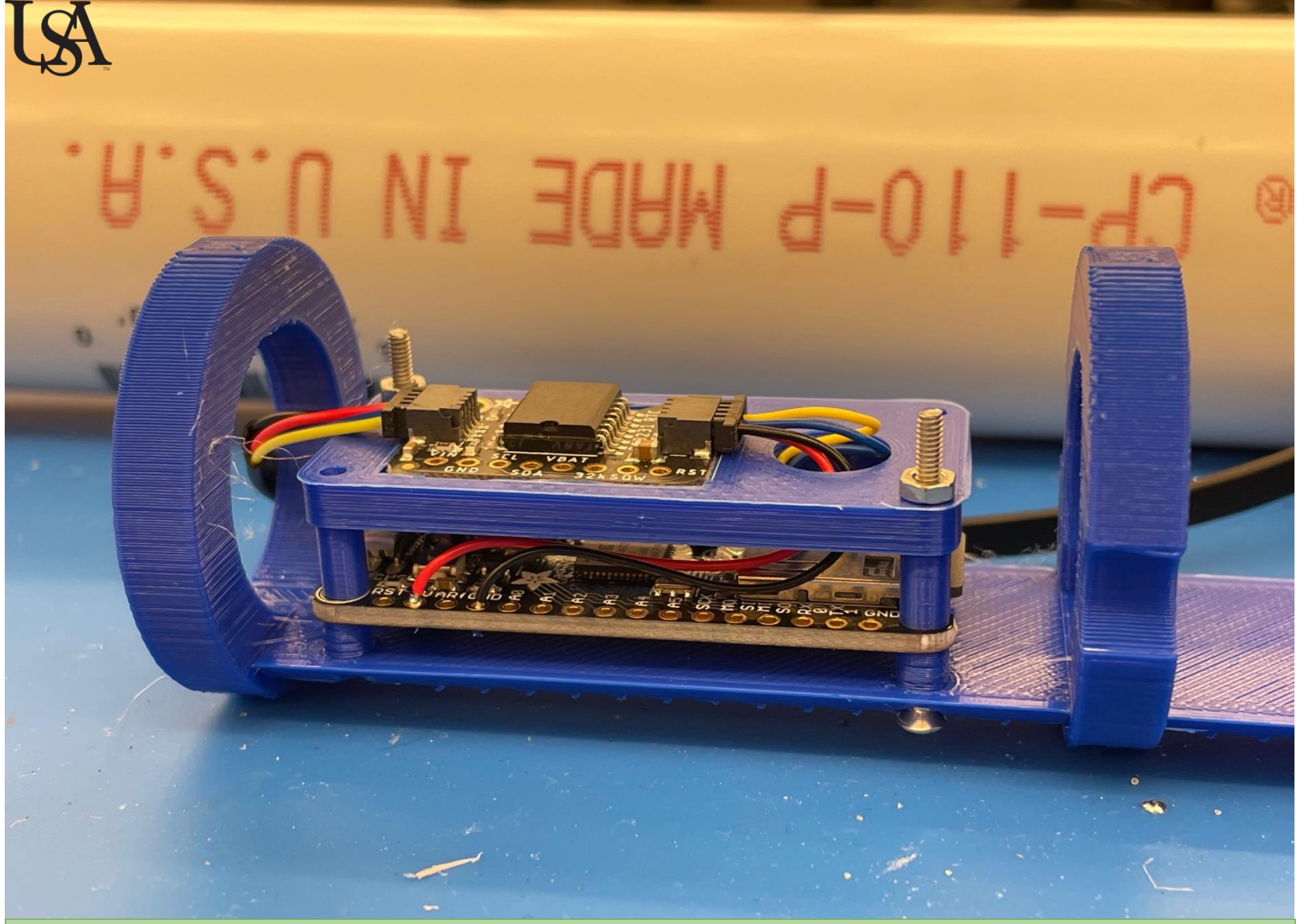
Photo of final assembly with sensor board potted in epoxy. The threaded cap (left) can be screwed down over the exposed cleanout plug threads to protect the exposed MEMS sensor membrane/gel.



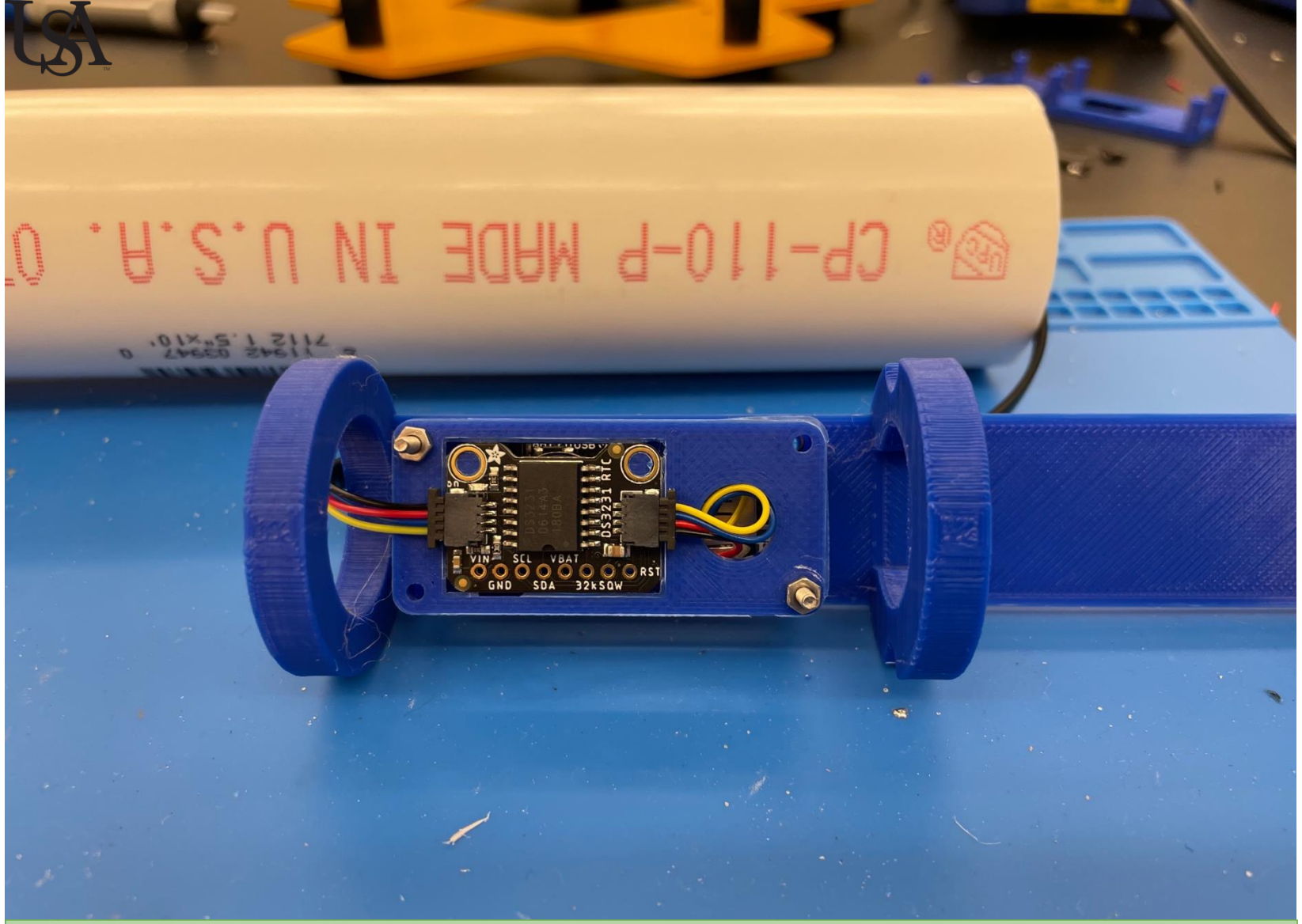
New sealed sensor (Blue Robotics) simplifies assembly. The internal cavity of the cleanout plug (the square protrusion) must be enlarged with a drill bit. A hole is then drilled through the cleanout plug to accept the sensor wires and threaded post. I recommend sealing the back side of the pressure sensor using epoxy while tightening the nut. Do not use the o-ring if using this method.



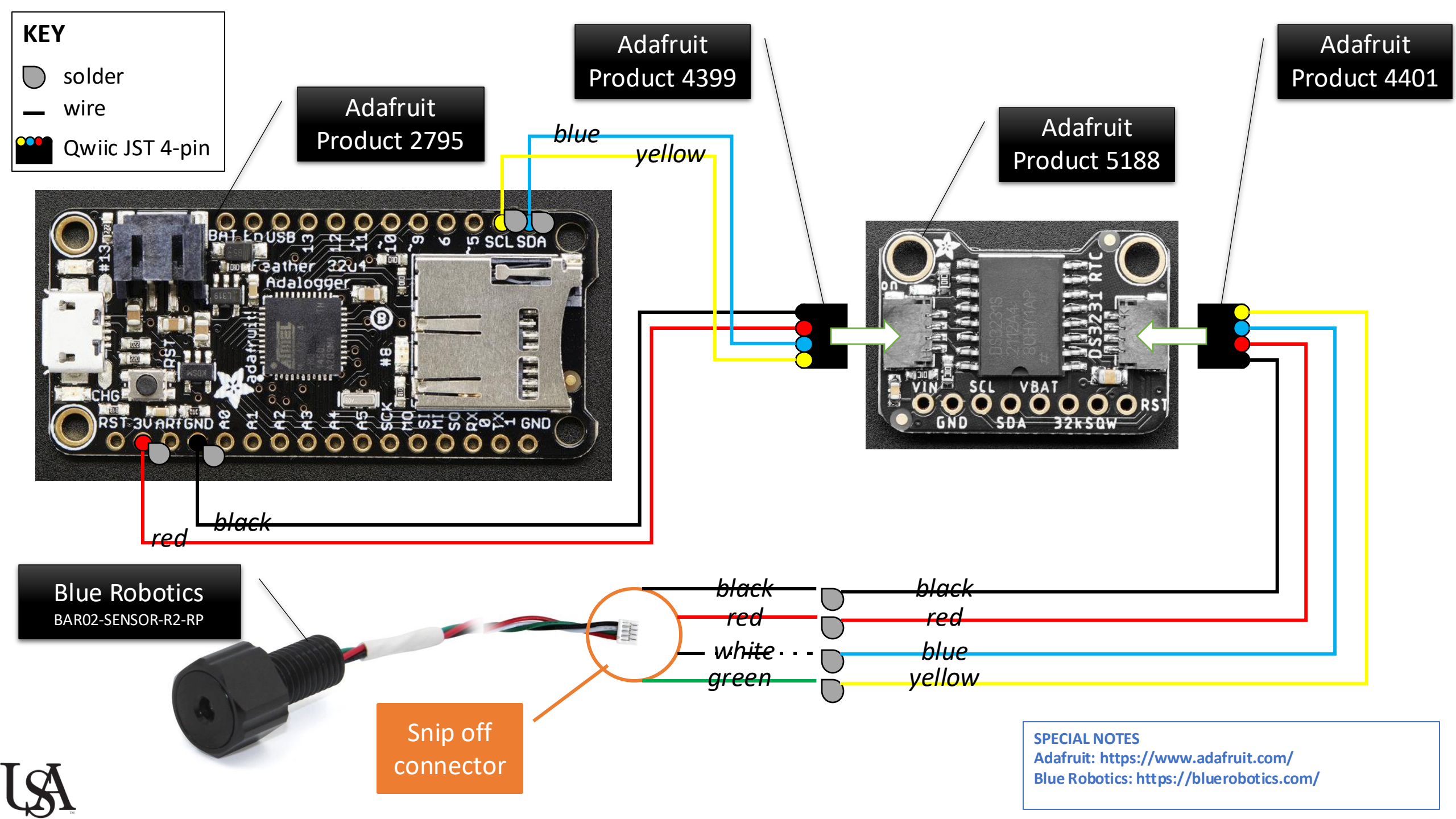
New simplified Feather components only require 8 solder connections and substitutes new components for those commonly out of stock or hard to find. Shown are the Adalogger Feather 32u4 board on the bottom and the new Adafuit DS3231 Precision RTC on top resting in a 3D-printed holder.



A 50-mm STEMMA QT / Qwiic 4-pin JST cable package (snip off one connector) is soldered to the Adalogger board from the top down (top being the side with the microSD holder. That ss threaded up through the hole in the DS3231 cradle and plugged into one of the DS3231 STEMMA QT connectors.



The 200-mm STEMMA QT / Qwiic 4-pin JST cable package (one end snipped off) is then soldered to the wire leads coming from your pressure sensor (see next page for more info). The JST connector is plugged into the other STEMMA QT connector on the DS3231.


KEY
solder
wire
Qwiic JST 4-pin
Adafruit Product 2795
Adafruit Product 4399
Adafruit Product 5188
Adafruit Product 4401
blue
yellow
black
red
Blue Robotics
BAR02-SENSOR-R2-RP
black
red
white
green
black
red
blue
yellow
Snip off connector
SPECIAL NOTES
Adafruit: https://www.adafruit.com/
Blue Robotics: https://bluerobotics.com/

KEY

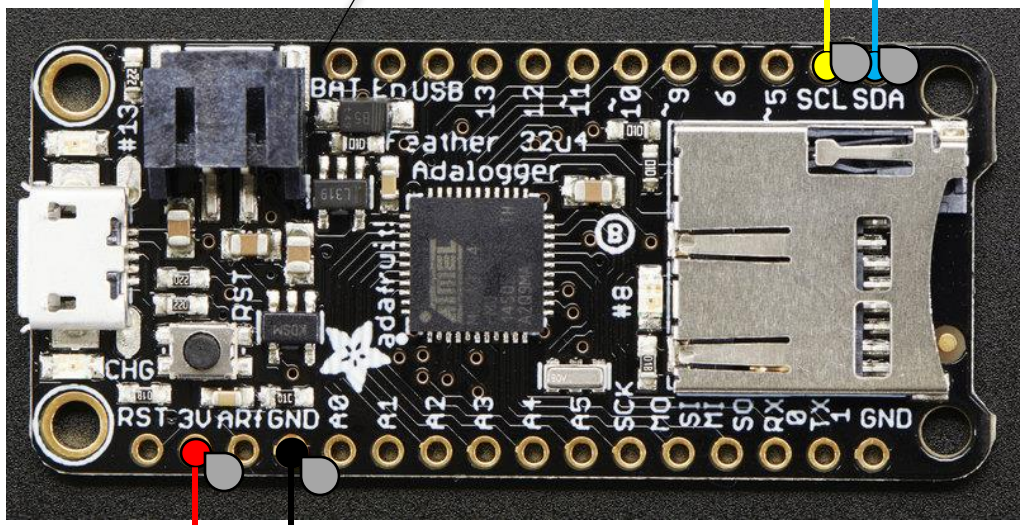
- solder
- wire
- Qwiic JST 4-pin

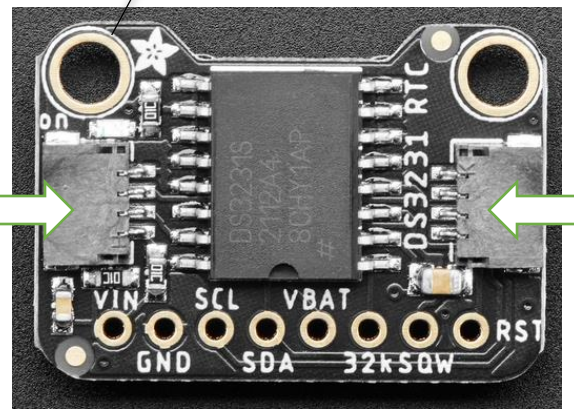
Adafruit Product 2795

Adafruit Product 4399

Adafruit Product 5188

Adafruit Product 4401





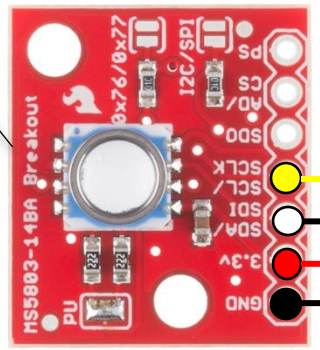
blue

yellow

black

red

SparkFun MS5803
SEN-12909



black
red
white
yellow

black
red
blue
yellow

SPECIAL NOTES
Adafruit: https://www.adafruit.com/
SparkFun: https://www.sparkfun.com/