

# Set up for the Well System Monitor

## How the system works

The well monitor system connects over WiFi to the Particle.io cloud service. This is how it talks to the internet and how we can talk to it. The Android app can also connect to the Particle.io cloud and talk to the well monitor system. To provide long-term data logging we use the IFTTT service to gather data from the well monitor system and store it in a Google cloud spreadsheet.

Well Monitor ----> WiFi ----> Particle.io ---> IFTTT ----> Google Spreadsheet  
|  
'----> Android app

## Accounts

You will need accounts at the following websites:

1. Gmail
2. Particle.io
3. IFTTT

For the Santa Rosa installation account user names and passwords, see the document of that name.

## Well Monitor WiFi Setup (you only do this once)

Before continuing you will need to have know your WiFi network name and password. As you work through this list of actions you may want to check each step off as you go.

- A. Claim the Particle Photon into your Particle.io account
- B. Install the Particle.io application on your phone
- C. Get the Particle Photon onto your local WiFi.
  - a. Put Photon into WiFi configuration mode
    - i. Connect the WSM to power. Wait about one minute.
      1. If the Photon is “flashing blue” about twice a second then go on to the next step.
      2. If the Photon is “breathing cyan” or “flashing green” then
        - a. On the Photon find the Setup button (see photos below)
        - b. Hold down the Setup button until the LED starts flashing blue. Now release the Setup button.
    - ii. The LED should now be flashing blue. If not, repeat the process

- b. Start the Particle.io app on your phone.
  - i. Log in using the Particle.io credentials above.
  - ii. Find the + button to add a new device.
  - iii. Select Photon
  - iv. Follow the directions in the app to provide your WiFi credentials to the Photon. IMPORTANT - if the app asks you to provide a new name for the device, just backspace to clear the name field and tap Done.
- c. The Photon LED will turn colors, eventually turning green, then flashing green.
  - i. Then the LED will turn cyan.
  - ii. Then the LED will begin "breathing" cyan.
- d. You are done. Your Photon is now connected to the Particle.io cloud.

## Test your Well System Monitor

- A. Install the WSM .apk file on your phone.
- B. Start the WSM application from our email to you.
- C. Note the HT switch indicator in the app.
- D. Change the position of the physical switch on your WSM system.
- E. Press the Refresh button in the phone app.
- F. Note that the HT switch indicator has changed.
- G. Ok, it's all working

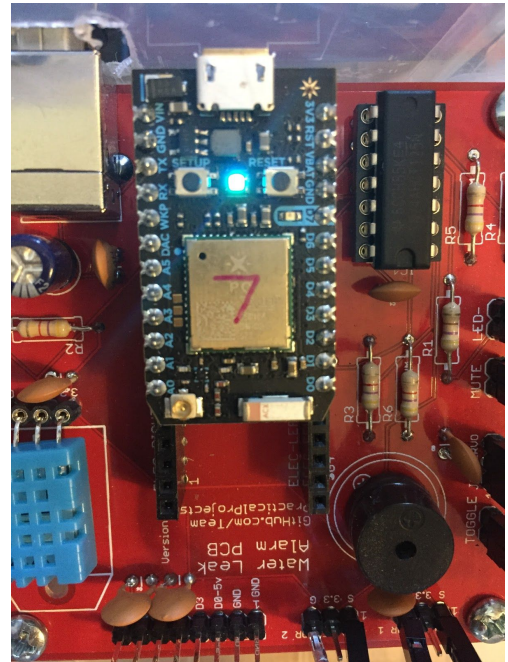
## Hook it up.

- A. Mount the WSM in a convenient location within 6 feet of the well system relay box.
- B. Mount the RJ11 box, near the pressure pump and the well pump relays.
- C. From the RJ11 box, run two wires to a currently unused set of contacts on the relays.  
(shorting these wires will not hurt our system)
  - a. Yellow and Green to the well pump
  - b. Red and Black to the pressure pump
- D. Use the telephone cord to connect the RJ11 box to the WSM.
- E. You are done!

# Helpful Photos

## The Particle.io Photon processor

1. There is an LED in the center of the board. When the device is initializing this LED will turn many colors. If something goes wrong the color will help diagnose the issue. When it finally starts “breathing cyan” then the device is connected to the Particle.io cloud service.
2. Note the two little buttons on either side of the LED. The one on the left is labeled SETUP and the one on the right is RESET.



There is another LED on the right side of the board. When working properly the blue LED will blink on/off every five seconds.

This is NOT the LED that is controlled by the Reset and Setup buttons.

