

AQUA WATCHER



Water Quality Monitoring and Usage Monitoring System

3rd year unified project (E/16/049,E/16/134,E/16/388)

User Manual

Content

1.0 Registration for the Service.	3
1.1 Contents in the box	3
1.2 User Registration	4
2.0 Device Installation	5
2.1 Water Level Monitor	5
2.2 Water Quality Monitor	5
3.0 Device Configuration	6
3.1 Store Device ID	6
3.2 Connect to WiFi	7
4.0 Operation	8
4.1 How to Monitor Your Devices	8
4.2 Alarms, Warnings and Notices	14
5.0 Troubleshoot	14
5.1 Troubleshoot the hardware modules	14
5.2 Troubleshoot connecting to the Configuration server of the device	14

1.0 Registration for the Service

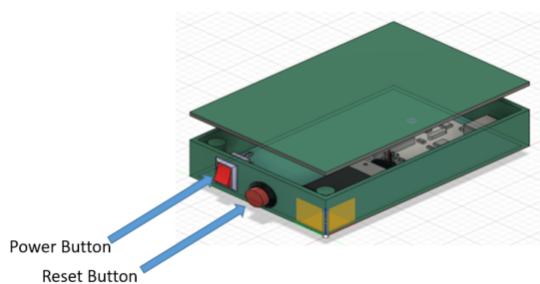
1.1 Contents in the box

- Water Level Monitoring Module
- Water Quality and Usage Monitoring Module
- Magnetic Knobs x 2
- Water Resistant Connector Cable
- User Guide

Water Level Monitoring Module

This device is used for water level monitoring.

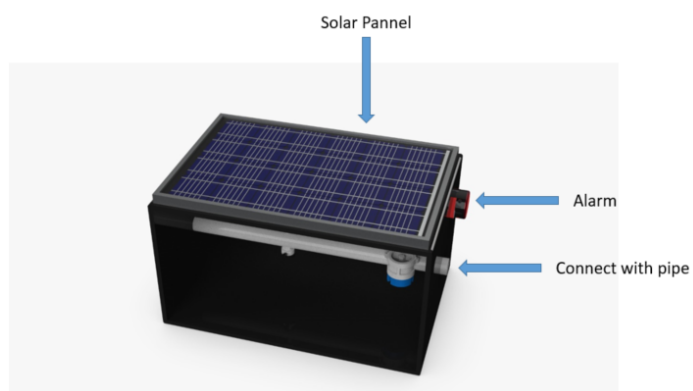
View of the module to identify the power and resets switches.



Water Quality and Usage Monitoring Module

This device is used for water quality monitoring.

View of the module to identify the connection to the pipes



Magnetic Knobs

To install the Water Level Measuring Module.



Connector Cable

To interconnect the modules.

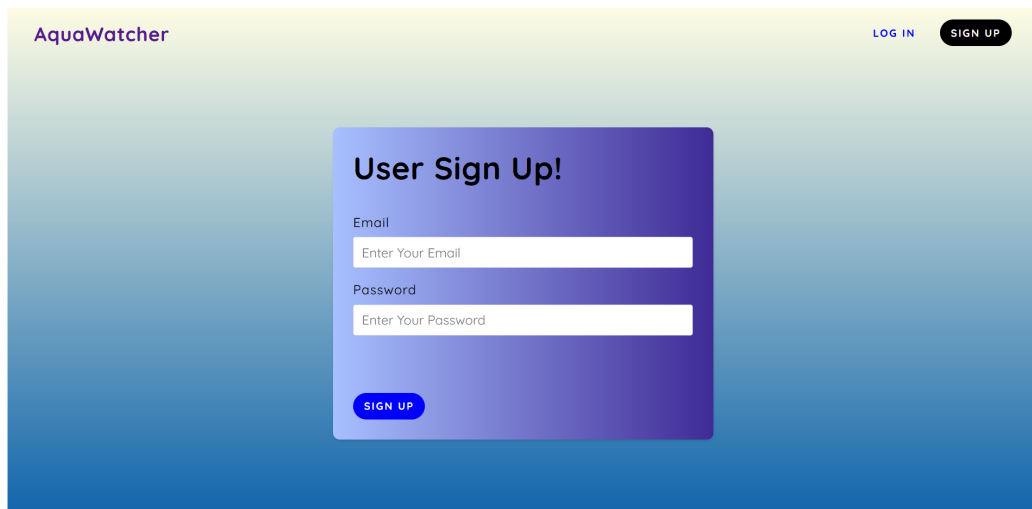
1.2 User Registration

1.2.1 What You Need Before You Begin

- WiFi internet router and an internet connection.
- Email account.
- Computer / Android / iOS supported device.

1.2.2 User Registration

1. Visit www.aquawatcher.ml website
2. Select sign up option

The image shows a web browser window with the AquaWatcher logo in the top left corner. In the top right corner, there are two links: "LOG IN" and "SIGN UP". The "SIGN UP" link is highlighted with a dark blue background. In the center of the page, there is a "User Sign Up!" form. The form has a blue header with the title "User Sign Up!". Below the title, there are two input fields: "Email" with the placeholder text "Enter Your Email" and "Password" with the placeholder text "Enter Your Password". At the bottom of the form, there is a blue button with the text "SIGN UP".

3. Enter your email account and a password. (Make sure email is not registered before and the password is secure)
4. Then click on the SIGN-UP button.
5. From now on you have 24 hours to complete the sign-up process, otherwise, you will have to follow the same steps as before.
6. Then you should log in to your email account and click on the verification button on the verification email to continue the Sign Up process.
7. This will verify your account and redirect you to your account.
8. Provide required information and submit to complete the registration process.

2.0 Device Installation

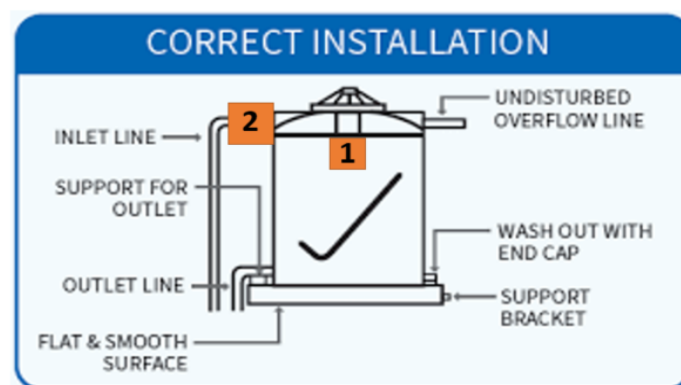
2.1 Water Level Monitor

1. First empty the tank.
2. Remove the closing lid.
3. Then install Water Level Monitor using 2 magnetic knobs; set 1 knob on top of the device and the other one on top of the lid. Magnetic force will hold the lid. Make sure the module is levelled.
4. Close the tank.



2.2 Water Quality Monitor

1. First remove the inlet of the tank.
2. Then Install the "Water Quality Monitor" to the inlet and then insert inlet pipe to the back of the device.
3. Make sure to expose the device to direct sun light if you choose to use our solar panel integrated version.



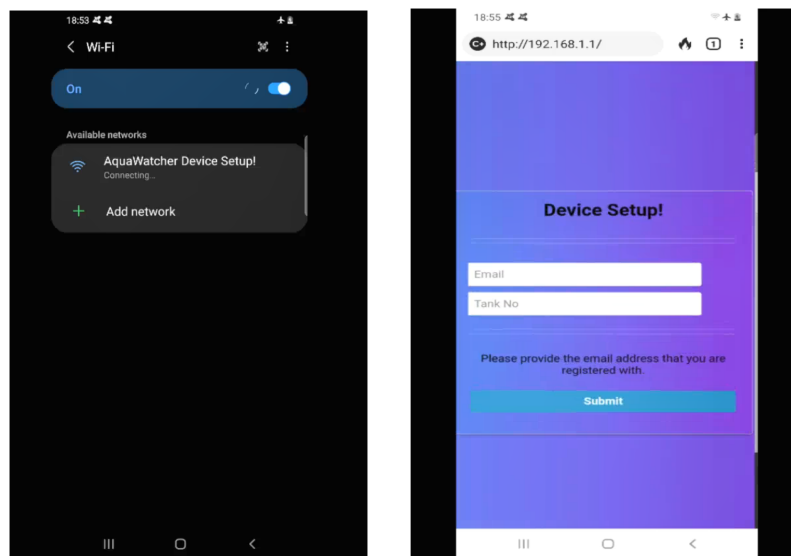
1 - Water Level Monitor

2 - Water Quality Monitor

3.0 Device Configuration

3.1 Store Device ID

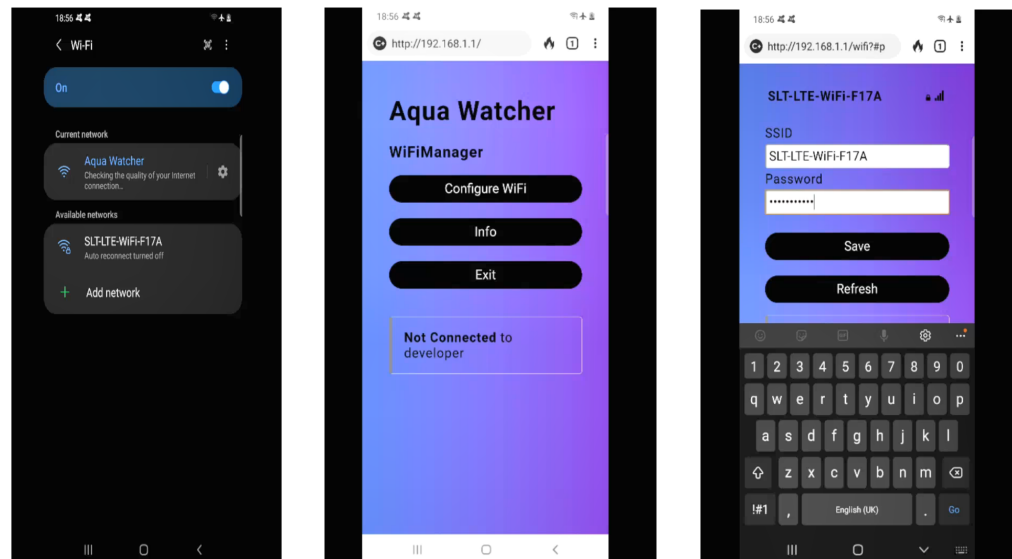
1. Turn on the device.
2. Connect to AquaWatcher Device Setup! Network.
3. Go to network configuration or go to www.aqwsetup.com within the local network.
4. It will direct you to a web server.
5. Enter your email address and corresponding device number.
Make sure you are entering the email address you used to register to the service.



6. In case of resetting these values, hit the reset button and restart the process again.

3.2 Connect to WiFi

1. After the previous step, the device will set up another WiFi network aquawatcher.
2. Connect to it using WiFi.
3. Go to network configuration.
4. It will direct you to a web server.
5. Then select Configure WiFi
6. Enter your WiFi credentials.
7. In case the device can not access any available WiFi connection, check the WiFi information you entered.
8. To reset these values, hit the reset button and restart the process.



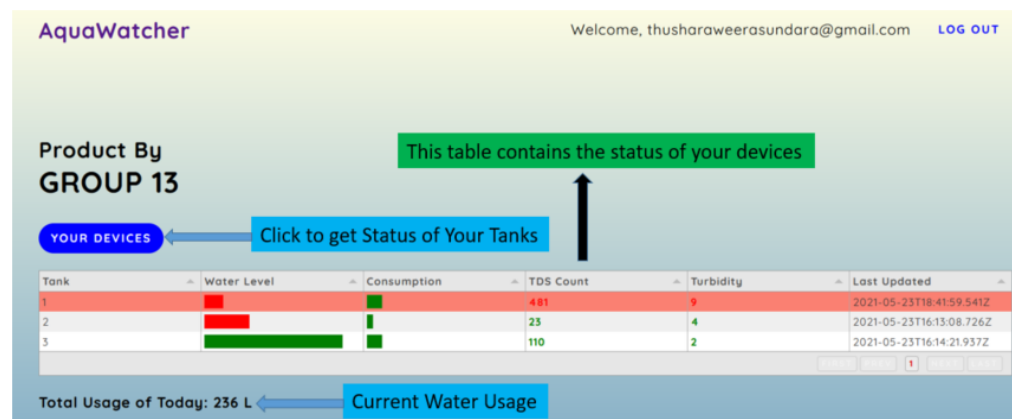
9. Now, the device will use your router to connect with the internet.

4.0 Operation

4.1 How to Monitor Your Devices

a) Using the Website

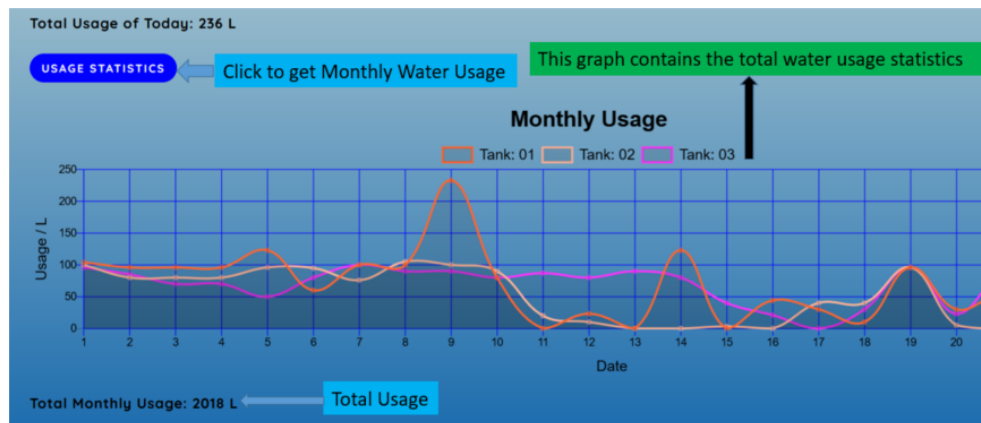
1. Go to our website using URL: www.aquawatcher.ml
2. Login by providing user email and password.
3. Now you can monitor your devices from here,



- Water Quality is measured as TDS and Turbidity values.
- Tanks which have contamination are highlighted in red color. Issue is in red letters.
- If the TDS count > 200 and / or Turbidity > 5 water is contaminated.
- Water Level and Usage are represented as a bar. By moving the cursor on top of them will display the actual value.
- Field "Last Updated" displayed the most recent update received by devices.

Color	Water Level	Water Usage
Red	Low	High
Yellow	Medium	Medium
Green	High	Low

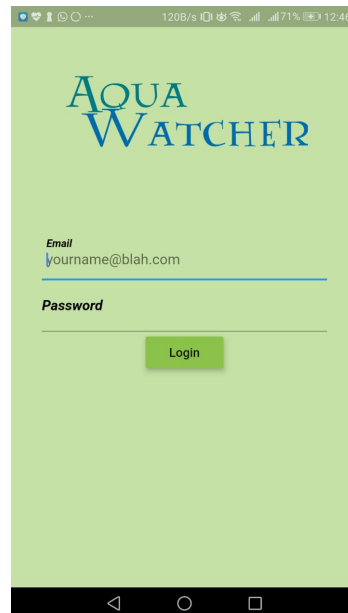
4. Now you can monitor Water Usage Statistics here,



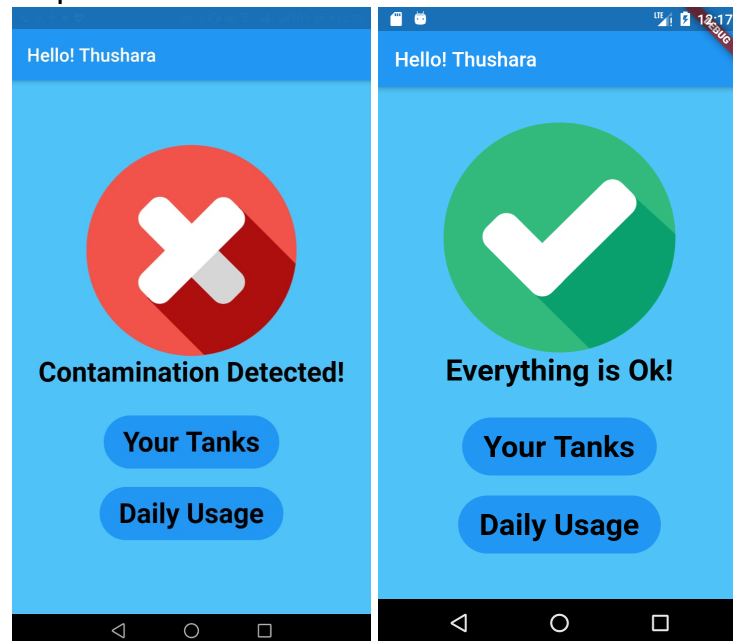
- Date vs Water Usage in Litres graph.
- This graph renews at 2400 hrs on the last day of the month.
- Total Usage displays the total usage of all your tanks.

b) Using the Mobile Application

- Current version (v1.1) of the mobile application is designed for delivering status about the water requirements , alerting users if there is contamination and notifying when there is special news such as water cuts. The Aquawatcher team is planning to improve the application in the future versions.
- Login Screen
 - This is a simple login screen where you have to type the email address and the password you gave earlier in the registration. (Note : If you haven't registered or verified your account , you should do it before logging in with the mobile application.)
 - When you login successfully, you will access the home screen.

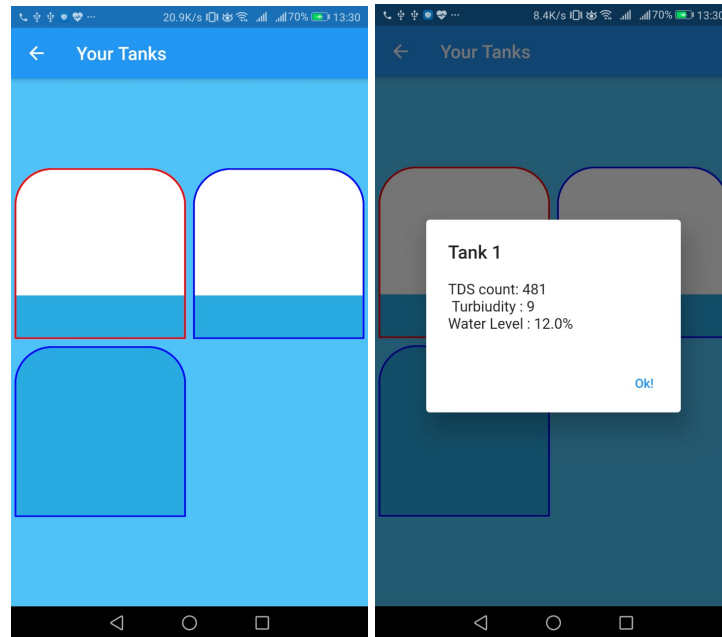


- Home screen
 - The home screen tells the user the basic status of the tanks. If there is no contamination issue in the tanks, the home screen will say *everything is ok!* And if there is contamination , the home screen will change to *contamination detected* .
 - In the home screen , you can see two buttons named *your tanks* and *usage* where you can access the respective screens.



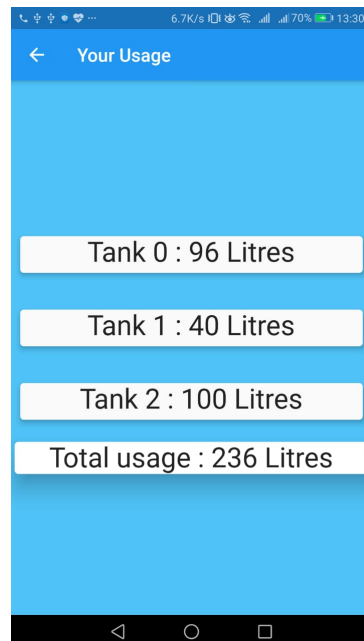
- Tanks screen

- In the tank screen , you will see the status of your tanks. The thumbnails represent the water level and the water quality of the tanks. Water levels are represented by the blue colour portions in the thumbnails and if there is contamination , the respective thumbnail will have a red border.
- If you touch a tank, a message will pop up which says the TDS , turbidity and the water level of the tank.

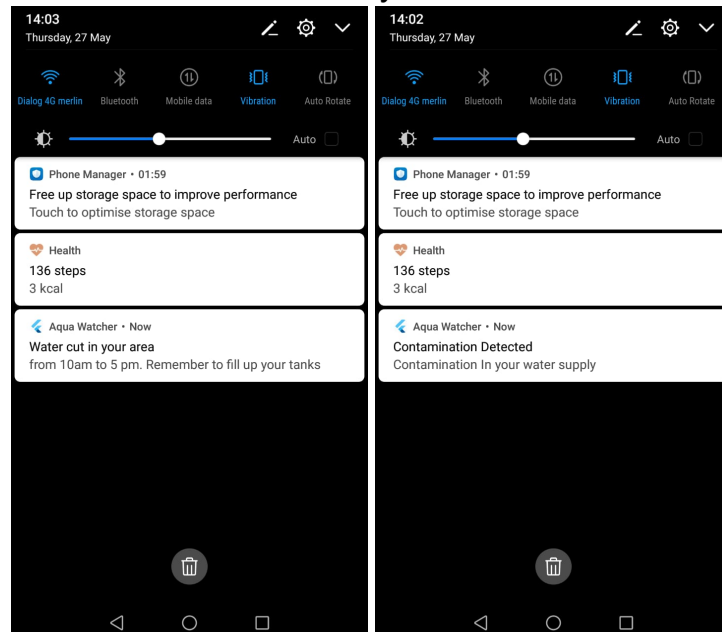


- Usage screen

- This screen shows the daily usages of your tanks.



- Notifications and alerts
 - You will get alerts when there is contamination or a water cut is scheduled by the authorities.



4.2 Alarms, Warnings and Notices

- On water contamination detection
- On water overflow
- On low water level
- On special announcements : ex :- pending water cuts

a) Mobile App users will directly receive the above items via the app.

b) Special announcements will be received as emails as well.

c) In case of of internet connection issue, alarm in the device will go off in case of an emergency : ex:- contamination, overflow

5.0 Troubleshoot

5.1 Troubleshoot the hardware modules

- Make sure the cables are securely plugged in. Otherwise there will be errors in the communication between modules which leads to faulty functionality of the device. Otherwise the readings will be ignored and the new updates will not be received by the server.
- Make sure the device number and your email is entered correctly to the device.
- Make sure the Water Level Monitoring module is levelled after installation to prevent erroneous level readings.
- Make sure not to compromise the watertight covers in the modules.

5.2 Troubleshoot connecting to the Configuration server of the device

- If the server doesn't start automatically, try pressing the reset button.
- If you are not automatically redirected to the server upon connecting with the network, then type www.aqwsetup.com on your browser. This will lead to the configuration server.
- Else, you can find the local IP address of the device in the network configuration menu and type it in your browser to access the server.

Related Links

Our Website	<u>https://cepdnack.github.io/e16-3yp-water-quality-monitoring-and-usage-monitoring-system/</u>
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