USER MANUAL

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User Manual

Introduction

The purpose of the website is to help users access historical data recorded by air-quality-monitoring sensors and view analytics displayed in the form of Data charts, that depict the air quality in and around the area of Aberdeen City. They will then be able to use this data to see trends related to the changes in air quality over time. The historical data is retrieved from an existing application which provides the details that we display.

For simple queries about the website, consult the FAQs page first, before reading this manual.

The functionalities of the application are listed below

- Access to various sensors by location on a map
- Access to individual sensor details
- Access to Live Data, Past Data and Data Charts
- The ability to compare different air monitoring sensors of the same type.

Website Menus

This website has the following menu links:

1. "**Map**" which takes users to the map page
2. "**Sensor list**" which takes users to the list of sensor page and
3. "**Comparisons**" which takes users Comparison page

4. “**FAQs**”
5. “**Help**”

Types of sensors

There are three types of sensors, and they include:

BME280

The BME280 collects the following data on air quality

- Pressure
- Humidity
- Temperature

SDS011

The SDS011 collects the following data on air quality

- P1
- P2

DHT22

The DHT22 collects the following data on air quality

- Humidity
- Temperature

Website pages

Map Page

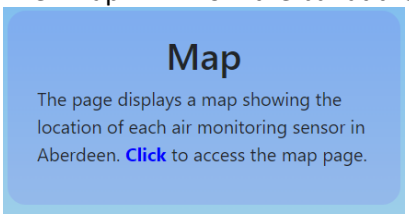
The map page displays a map with clickable pointers colored in blue showing the location of individual sensors on the map of Aberdeen city. Clicking on a pointer shows the sensor ID and a link labeled “More Details” which will take you to the page containing sensor details.

The map shows the locations of air monitoring sensor points in Aberdeen. You can zoom in by double-clicking on the map interface and out by press SHIFT while double-clicking. You can also change the zoom by using the scroll wheel on most traditional mouse hardware.

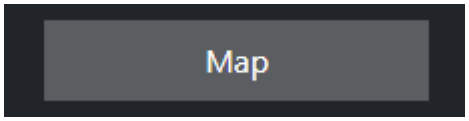
If you click and hold your cursor on the map, you may move the held cursor to pan the map around to view more areas in the world.

To access the map page and a sensor’s details (27686 in this example). Please follow these steps:

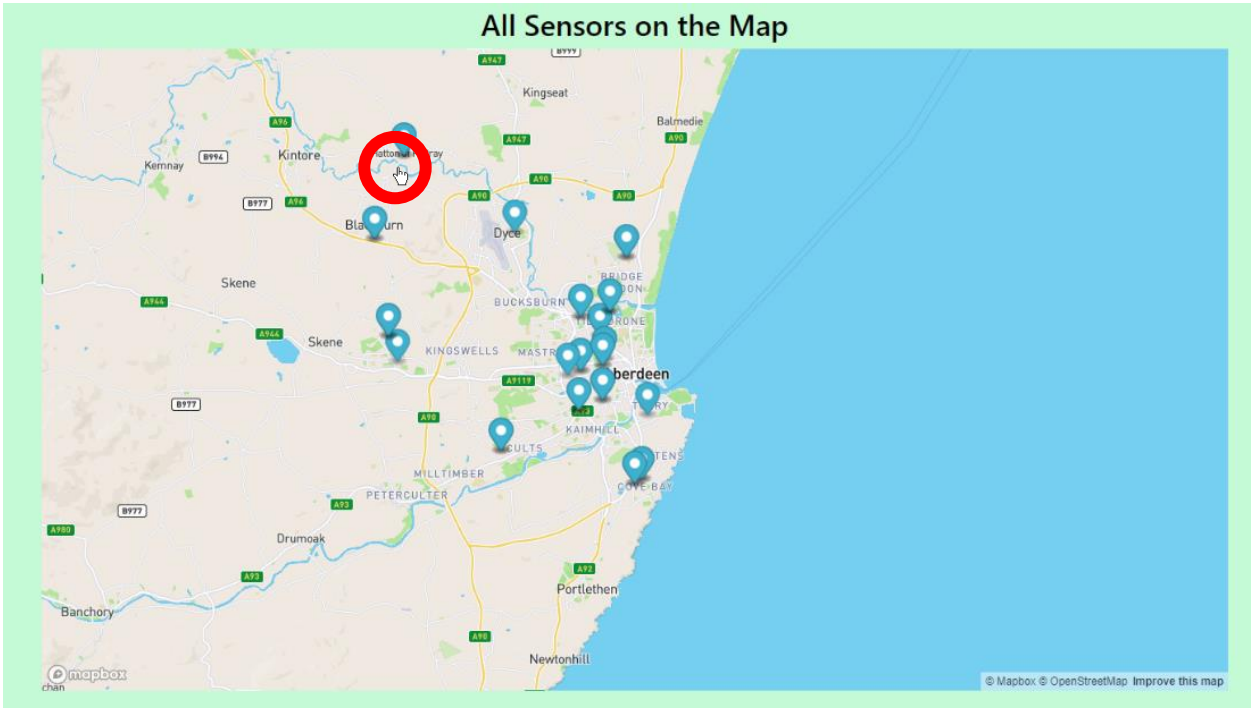
1. Click on the “Map” box on the landing page to display the map page
   OR
   The "Map” link from the bar at the top of any of the pages



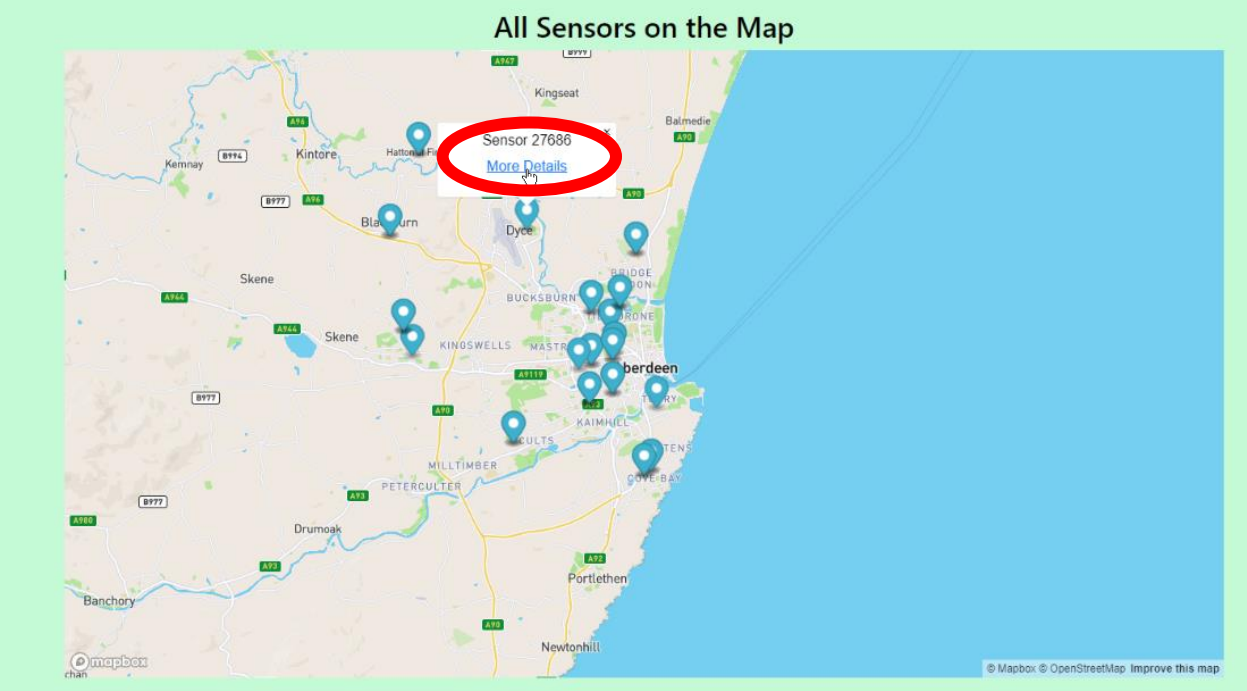
OR



2. Click on the blue colored pointer at the location of your choice



3. Click the “**More Details**” link to display sensor information



You will now be on the page that displays the details of the sensor, including sensor’s live reading, past data readings and charts for use in analysis.

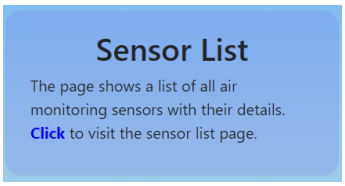
Further explanation of this page is detailed in a later section of this manual titled; “Sensor Details Page”.

Sensor list page

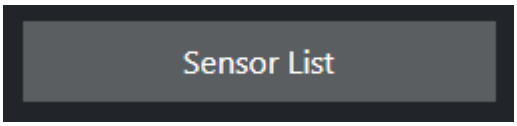
This page contains a list of all sensors available which allow users to access the details on individual sensors if a user do not want to use the map page, if they were unable to locate the required sensor on the live map from the previous section.

This page is accessed in the same manner as the “Map Page”, either:

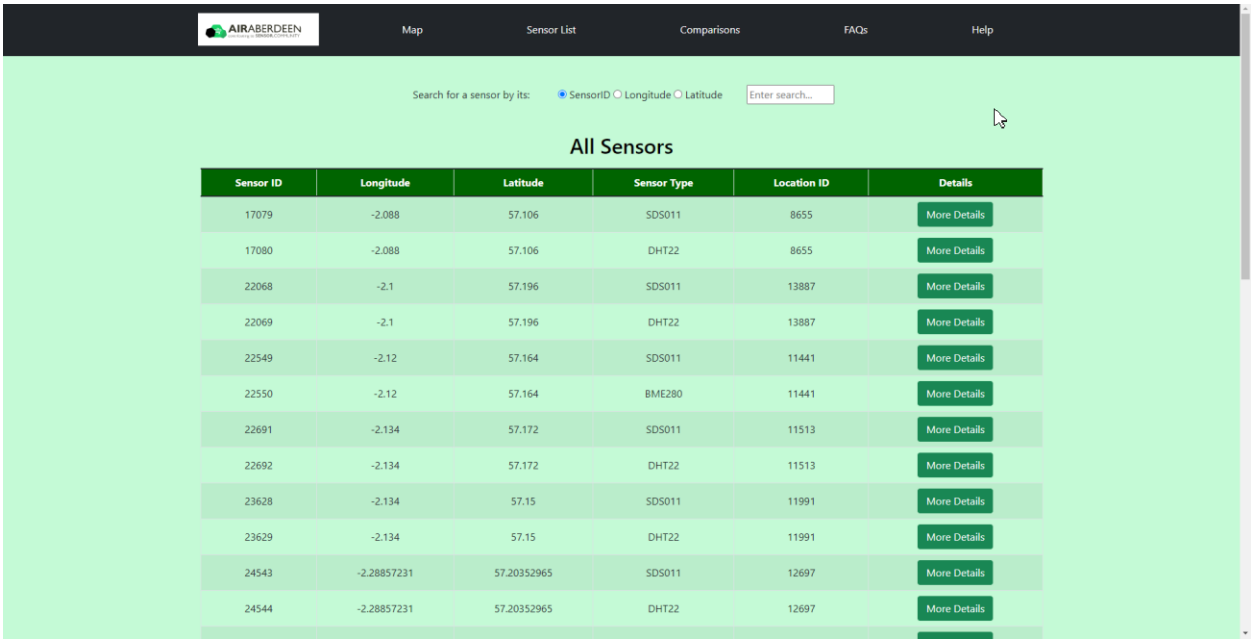
Through the Landing page OR the link at the top of the pages on the website:



OR



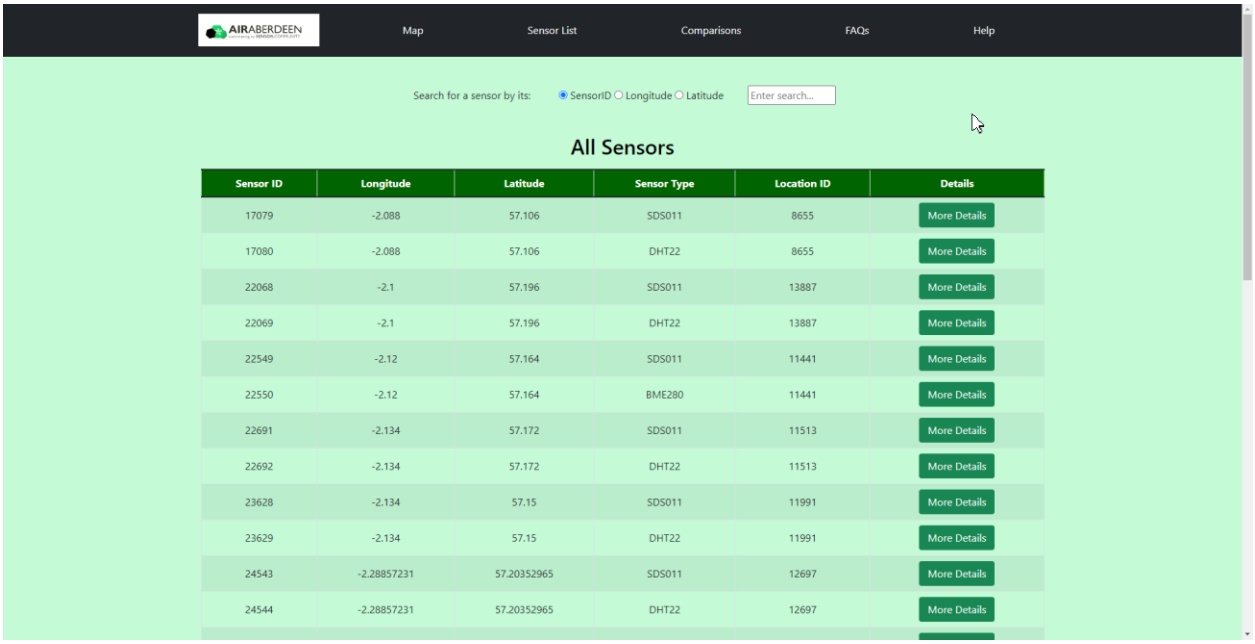
Upon opening the page, a list of all sensors should be displayed as shown below:

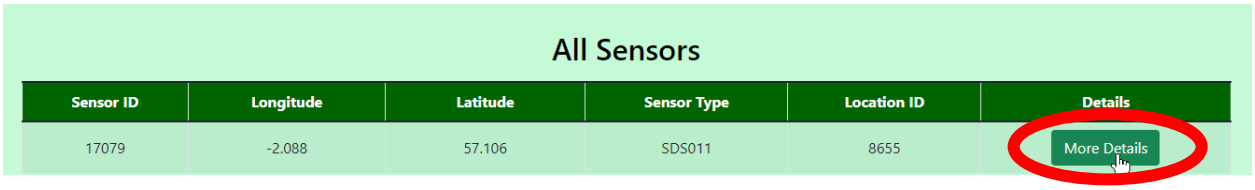


To avoid scrolling through the entire list of sensors, you can use the search bar at the top of the page, below the navigation bar, to find a sensor that you are looking for:

Simply select one of the details you know about the sensor from the provided list, and enter the information you are looking for, the either press the ‘ENTER’ key or click on the search button.

Once you have located the sensor that you need, you can access the rest of its details and date by clicking on the **“More Details”** button. See the below figures for reference.





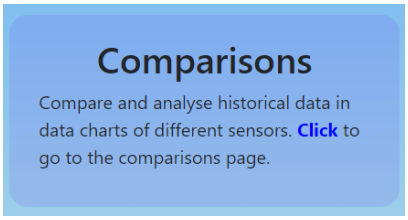
Comparison Page

This page allows users to select two different sensors belonging to the same type and compare their details. It also shows both sensor's data for a particular type of reading on a single chart, e.g. Humidity.

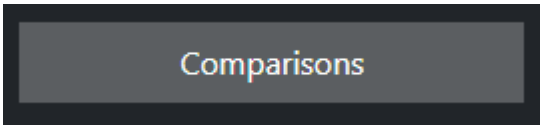
The information that is included on each sensor is listed on a provided table.

This page is accessed in the same manner as the "Map Page", either:

Through the Landing page OR the link at the top of the pages on the website:

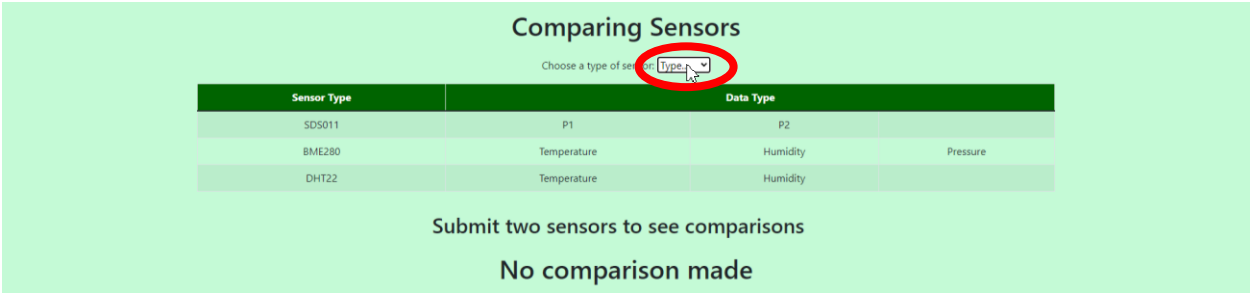


OR

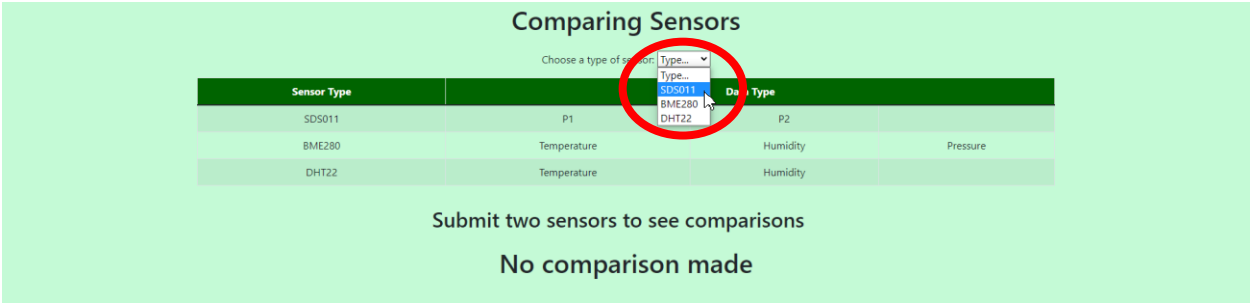


To compare two sensors, follow the below steps. This example will use sensors 17079 and 22549:

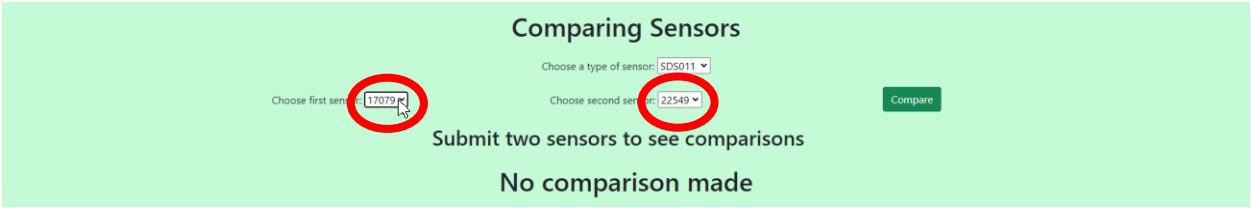
1. To select the type of sensor, click on the drop-down box to see each the sensor types



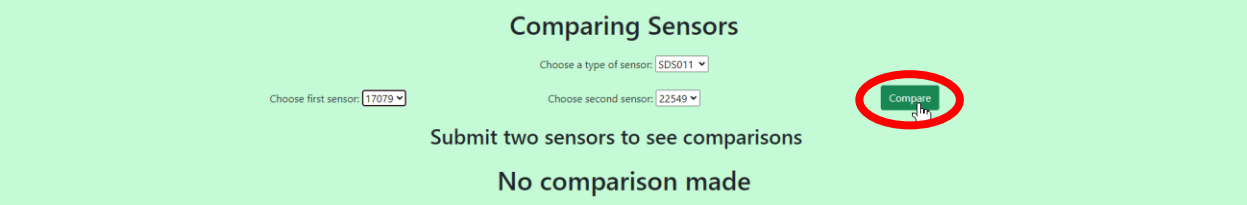
2. Then select the type you want to compare from the list



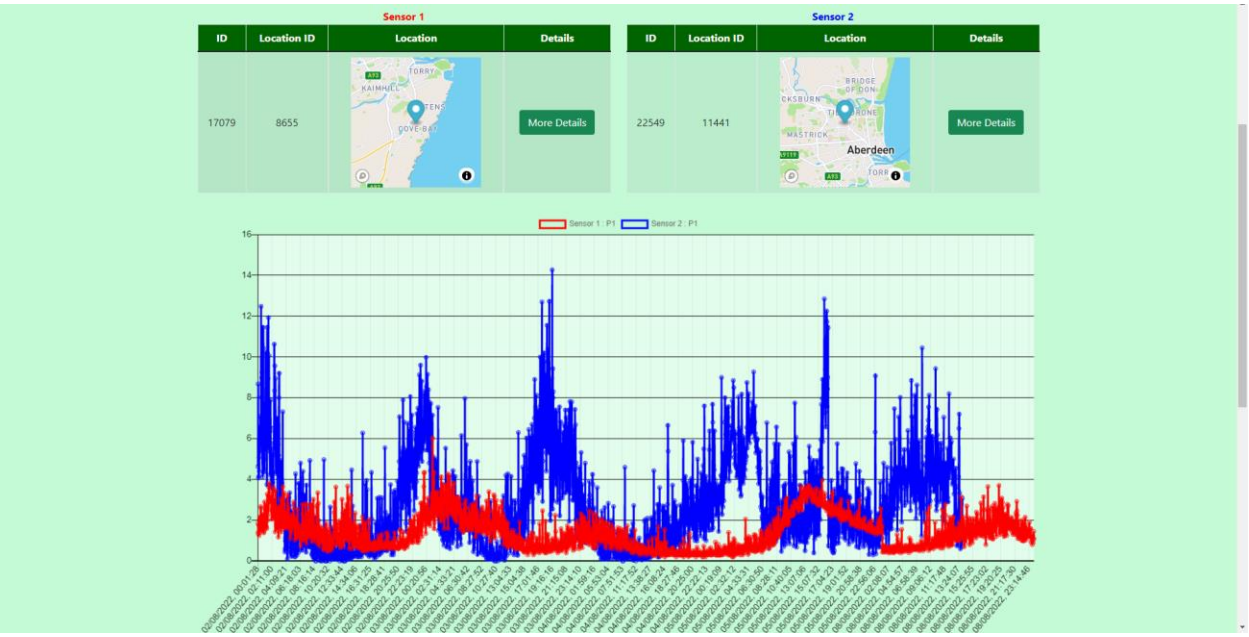
3. Then click on the drop-down list for both the sensors that you are going to compare



4. Click on the “**compare**” button to compare selected sensors



5. You should now see the results of your comparison displayed like below



The first sensor’s details will be displayed in **Red**, while the second sensor’s details will be in **Blue**.

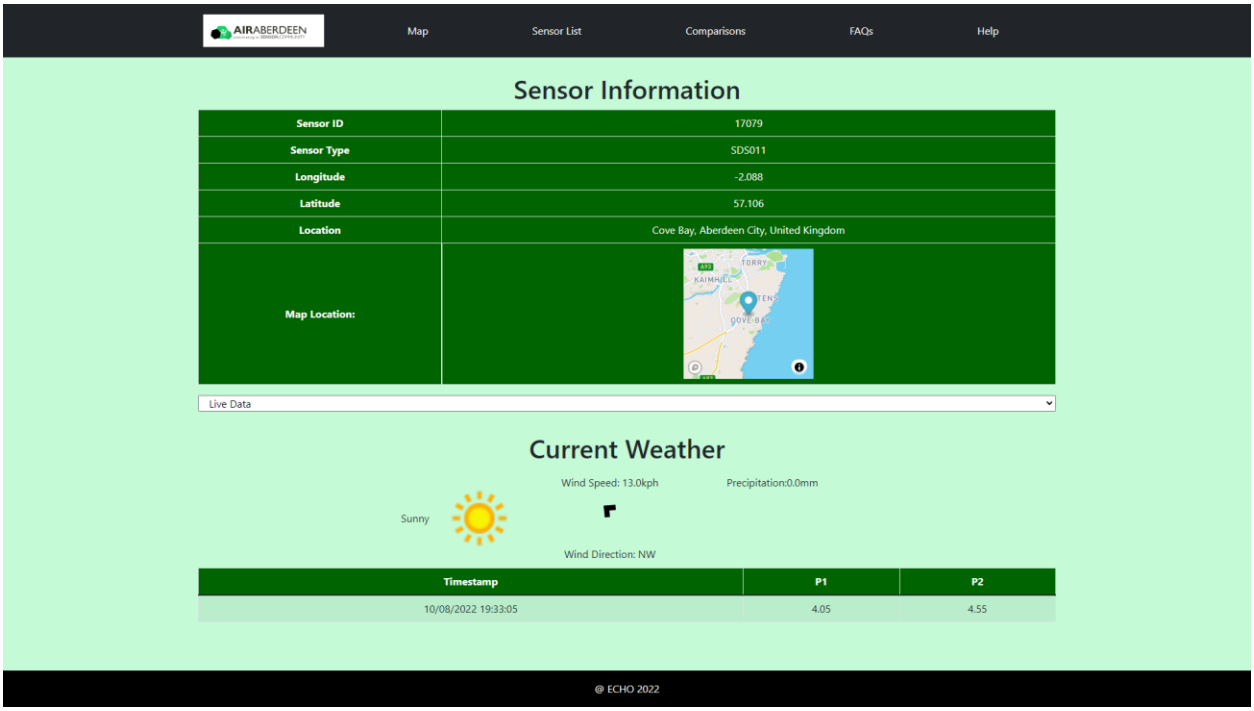
The option to run another search will still be displayed at the top of the page, if you want to try comparing another pair of sensors. Simply follow the same steps as before.

You can also access one of the sensor’s details page by clicking the ‘More Details’ button like before.

Sensor Details Page

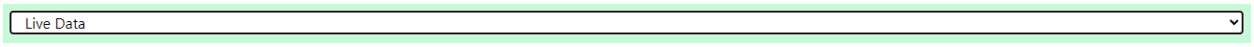
This page changes based on which button was pressed to access the page. Unlike every other page on the site, this page cannot be reached by a link at the top of the page.

It can only be accessed by clicking one of the 'More Details' buttons within this site. These buttons dictate which sensor's information will fill the page's contents. Below is an example using sensor 17079.

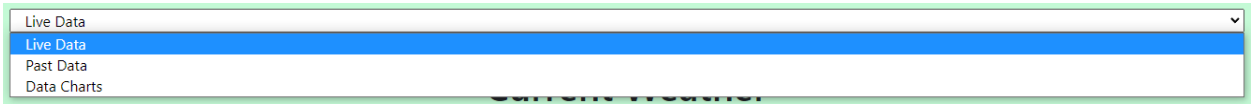


The first part of the page contains the details of the physical sensor, and the second half contains the readings taken by the sensor. These are divided into three sections and accessed as shown below.

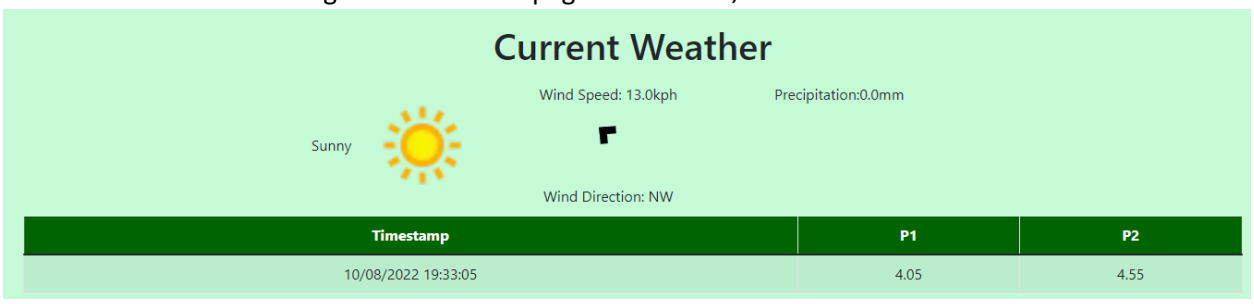
Click on this drop-down box:



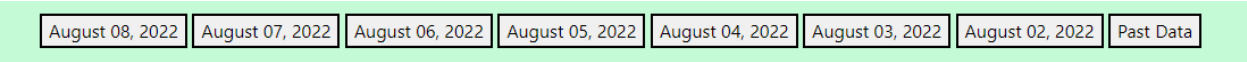
Then select which type of data you need from the following list:



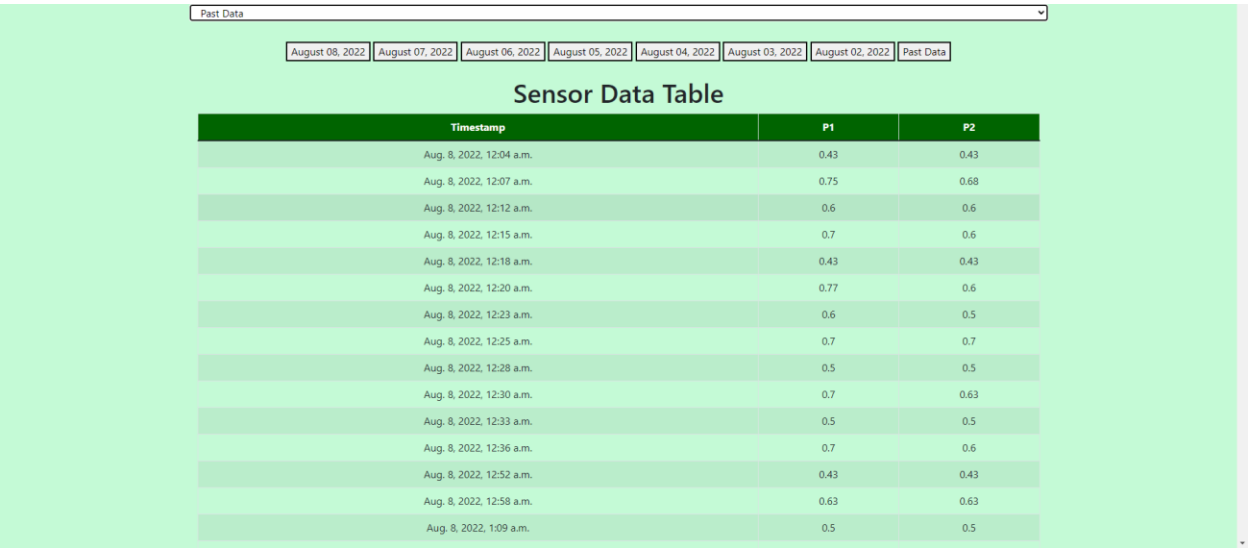
Live Data shows the reading at the time this page was loaded, and should look similar to this:



Past Data shows the readings for the last 7 days, as well as older archived data. You can choose a day or the archive using these buttons (dates will be relevant to the time you access the page):



The list of readings should then be displayed as follows:



Sensor Data Table

Timestamp	P1	P2
Aug. 8, 2022, 12:04 a.m.	0.43	0.43
Aug. 8, 2022, 12:07 a.m.	0.75	0.68
Aug. 8, 2022, 12:12 a.m.	0.6	0.6
Aug. 8, 2022, 12:15 a.m.	0.7	0.6
Aug. 8, 2022, 12:18 a.m.	0.43	0.43
Aug. 8, 2022, 12:20 a.m.	0.77	0.6
Aug. 8, 2022, 12:23 a.m.	0.6	0.5
Aug. 8, 2022, 12:25 a.m.	0.7	0.7
Aug. 8, 2022, 12:28 a.m.	0.5	0.5
Aug. 8, 2022, 12:30 a.m.	0.7	0.63
Aug. 8, 2022, 12:33 a.m.	0.5	0.5
Aug. 8, 2022, 12:36 a.m.	0.7	0.6
Aug. 8, 2022, 12:52 a.m.	0.43	0.43
Aug. 8, 2022, 12:58 a.m.	0.63	0.63
Aug. 8, 2022, 1:09 a.m.	0.5	0.5

The final section is the Charts for the sensor. Here the data from the ‘Past Data’ section is displayed via a number of Charts that show the progression of readings over time, like so: