Netatmo User Manual

Version 1 / September 2012

An interactive version of this manual is
embedded in your Netatmo
iPhone/iPad/Android application.
It is also available at **http://my.netatmo.com**
on your personal account.

Tips and troubleshooting

How does it all works?

How does it all works?

The outdoor module (the small one) wirelessly sends its measurements to the indoor module (the big one) using radio signal. Using your Wifi access point, the indoor module then sends both its own measurements and the outdoor module's measurements to your internet Netatmo personal account.

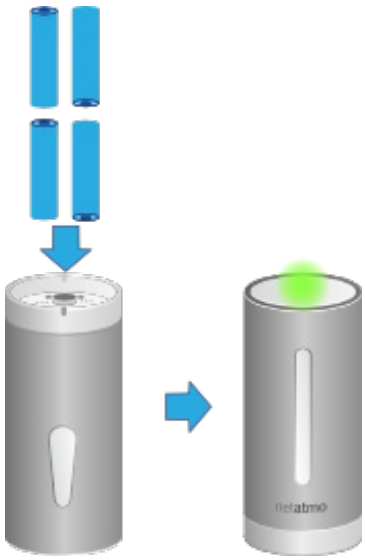
When you launch the Netatmo App on your iPhone, those measurements are downloaded from your Netatmo personal account and displayed by the App.

Power supply

Outdoor module

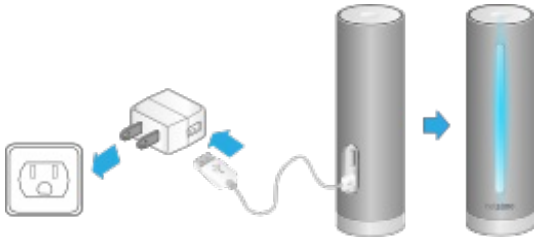
The outdoor module is power supplied by 4 AAA batteries.

Upon introducing the batteries, a green led on top of the module should light up.



Indoor module

The indoor module is power supplied by the USB wall adapter and its USB cable. When pluged-in, the indoor module should light up in blue.



Measurements on demand

Measuring on demand

Touching on the top button of the indoor module instantly triggers measurements. Updated data is then directly sent to your iPhone.

Direct CO2 reading

When measuring on demand, the indoor module display CO2 level using the following color code:

- Green = Good
- Yellow = Could be improved
- Red = Room should be ventilated.

No outdoor data?

Outdoor data are not displayed ?

If your outdoor module data are not displayed in the Netatmo dashboard, although indoor measurements are still visible, the link between the two modules might not be working. This may occur because of one of the following reasons:

Reason 1: low on batteries

Check to outdoor module's batteries. When inserting batteries, the outdoor module should flash in green. If not sure about your batteries still working, change them.

Reason 2: weakened radio signal

If the outdoor module is located too far away from the indoor module, or if both modules are separated by obstacles solid like concrete walls, data might not be transmitted correctly. In that case, make sure to bring the two modules closer from one another.

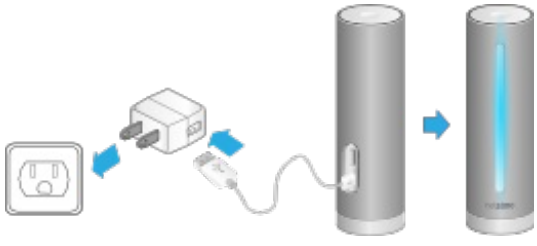
No data at all?

Missing measurements

The Netatmo App dashboard is not displaying any measurements? This can happen because of one of the following reason:

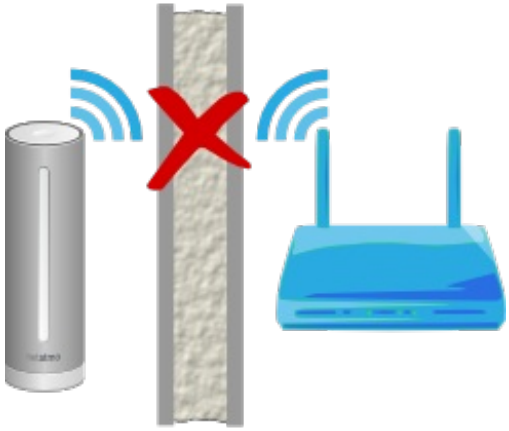
Reason 1: Power supply is out

The indoor module may not be power supplied any more. Unplug the wall-adapter and plug it back in: the indoor module should light on (blue light).



Reason 2: Wi-Fi signal is too weak

If the indoor module is located too far away from your Wifi router, or separated by solid obstacles such as concrete walls, the station might not be able to transmit data correctly. In that case, make sure to bring the indoor module closer to your Wifi router or access point.



Reason 3: Wifi password has changed

If you have changed your Wi-Fi password, the Netatmo weather station won't be able to connect to your Wi-Fi network anymore, and upload data to your account. To fix your Station's Wifi setup, just follow this link.

Reason 4: Internet access is down

The Netatmo Station can access your Wi-Fi router, but your internet access is not working. In that case, please check your internet access.

Sensors

Thermometer ›

Temperature measurement

Temperature is measured by both indoor and outdoor modules.

79.5 °F

Minimum and maximum

When you slide up or down the indoor panel in the dashboard, minimum and maximum temperatures will appear below the current temperature : minimum is indicated in green and maximum in red.

Minimum and maximum temperatures actually are the higher and lower temperatures measured during the day, from midnight to midnight.

Felt-like temperature

In your Netatmo Dashboard is displaying felt-like temperature.

This is a computed data, obtained by adding the combined effect of moisture and wind over human perception of heat and cold.

To achieve reliable data, the station uses a smart combination of two usual formulae: wind-chill that represents the effect of wind on cold temperatures and Humidex that represents the effect of moisture on high temperatures.

Did you know it?

The indoor comfort temperature ranges from 20°C to 24°C (68°F to 75.2°F) in Winter time, and 23°C to 26°C (73.4°F to 78.8°F) in Summer time.

Comfort temperature depends on humidity level: the dryer is the air, the higher is the comfort temperature.

Good pratice for accurate temperature measurements

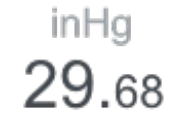
You will improve the accuracy of your temperature measurements by preventing your modules from being exposed to direct sunlight.

Similarly, any heat source, such as a too frequent use of the indoor module's lights (triggered by measures on demand) will tend to artificially increase the measured temperature.

Barometer ›

Pressure measurement

Mean sea level pressure is measured by the indoor module.



Mean Sea Level Pressure

In order to allow comparison between different barometric pressure mesured by different weather stations, it is necessary to match barometric pressure measurements recorded at different elevations: sea elevation, valley

elevation, mountain elevation. To do so, the raw pressure measurements are adjusted by a standardized formula. The value resulting from this is called mean sea level pressure.

Your Netatmo station displays the mean sea level pressure, meaning the pressure that the Netatmo station would measure if it were at sea level elevation.

The mean sea level pressure is also the value given by weather forecast and reports on TV or Web.

How does the station knows its elevation?

When you setup the Netatmo Station with your iPhone, the Netatmo App uses the iPhone GPS to localize your station and searches ground elevation.

How to set my station's elevation?

In the setting menu/my stations/your station's name/location you can set the exact elevation of your station on the map.

Did you know it?

The barometric pressure indoor and outdoor is always the same.

For that reason the barometer sensor is located in the indoor module only.

Hygrometer >

Relative humidity measurement

Relative humidity is measured by both indoor and outdoor modules.

Did you know it?

Dry environments can cause throat or nose irritation. Comfortable indoor humidity ranges from 30% up to 70%.

What is relative humidity?

The relative humidity is a measure of the amount of water vapor in the air (at a specific temperature) compared to the maximum amount of water vapor air can hold at that specific temperature level. Humidity is represented by a percentage value.

Relative humidity depends on the temperature of the air. Warm air can hold more moisture than cold air.

A relative humidity of 100 % indicates that the air is holding all the water it can at the specified temperature, and any additional moisture at that point will transform into condensation.

If the temperature decreases, but the amount of moisture in the air doesn't change, the relative humidity goes up (since the maximum amount of moisture that cooler air can hold is smaller).

Did you notice?

If you blow into the station, the humidity level raises!

What happens if the station gets soaked?

When the weather is really humid (pouring rain...) the humidity sensor can be temporarily saturated. It usually takes a few hours to desaturate, and go back to normal.

CO2 Sensor >

CO2 measurement

By accumulation of gases from adhesives, cleaning products, smoke, dust, dust mites and mold in a confined space, your indoor air can rapidly become unhealthy. The CO2 is produced by human activities and can rapidly concentrate in confined spaces such as a living room, bed room, office... As CO2 level rises, so does the concentration of unhealthy components of indoor air. CO2 level is therefore a good confinement and air quality indicator. The CO2 level is measured by the station's indoor module.

CO2 indicator

For a quick CO2 levels reading, the following color code is used:

- Green = good
- Yellow = Could be improved
- Red = Air should be ventilated.

This indicator is present in the application as a colorful gas bubble.

For a direct read on the station, the light on the indoor module use the same color code: if you touch to top of the indoor module, it briefly lights up and give you an indication of the actual CO2 level in the room, with the same color code.

Units

CO2 is measured in ppm (parts per million), meaning the number of CO2 molecules among one million of air molecules. Usual indoor CO2 levels vary between 400 and 5000 ppm.

Typical ppm values

- Outdoor, CO2 level is always around 400 ppm.
- In a room appropriately ventilated, CO2 level must stay below 1000 ppm.
- In a closed room such as a meeting room with a couple of person or a small bedroom at night, CO2 can easily go pass 1000 ppm.

Consequences

CO2 is not dangerous when kept within such values. Nevertheless, when it rises over 1000 ppm, it is an indication that indoor air has not been renewed for a long time. If this happens, ventilating the room is a simple and effective action.
Over 2000 ppm CO2 can also cause sleepiness and slight headaches.

CO2 Alerts

When the CO2 level rises above 1000 ppm, a first notification is sent to your iPhone/Android and the indoor module briefly lights up in yellow.
When the CO2 level goes above 2000 ppm, a second alert is sent to your iPhone/Android and the indoor module briefly lights up in red.

How does the Netatmo station measure the CO2 concentration?

Your CO2 sensor measures CO2 by an optical process: the Station embeed a light bulb and an infrared receiver. Light is emitted by the light bulb and partially absorbed by the CO2 contained in the ambient air. The higher the CO2 level, the more light is absorbed. At the end the infrared receiver measures the amount of light received and deduce the CO2 level from it. This method works regardless of the ambient light.

Calibration

To ensure accuracy of your CO2 measurements, the Netatmo Weather Station automatically and regularly recalibrates its CO2 sensor. This calibration is performed assuming that the CO2 level surrounding the station lowers to 400 ppm at least once a week. To achieve a precise calibration, make sure to ventilate the room for a period of time long enough to entirely renew the room air.

Sound meter

Acoustic comfort measurement

Acoustic comfort is measured by the indoor module.

You can visualize data and measurements directly on the Netatmo App dashboard.

How does the Netatmo station measure acoustic comfort?

The Netatmo weather station records the average noise level (in dB) over a 5 minutes interval, and evaluates the surrounding acoustic comfort from it.

Did you know it?

- The usual human ear cannot distinguish sounds below 30 dB.
- A prolongated exposure to sounds levels over 65 dB noticeably disminishes your ability to concentrate.
- In many countries, continuous exposure to noise during a workday is limited to a 85 dB level.
- Sounds over 95 dB can put your hearing at risk.

Other functions

Current weather conditions

Current weather icon

The current weather condition is estimated, using the latest up-to-date information available at your station's precise location.

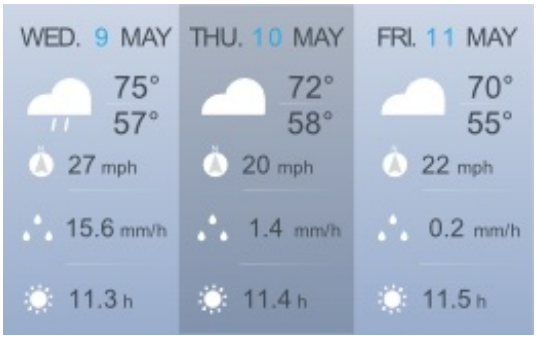
7-day forecast

Forecast

The Netatmo App offers a complete 7-days detailed weather forecast. It is localized according to your Netatmo Weather Station location and transmitted from our servers throught Internet and to your Netatmo App. This weather forecast data is provided by MeteoGroup.

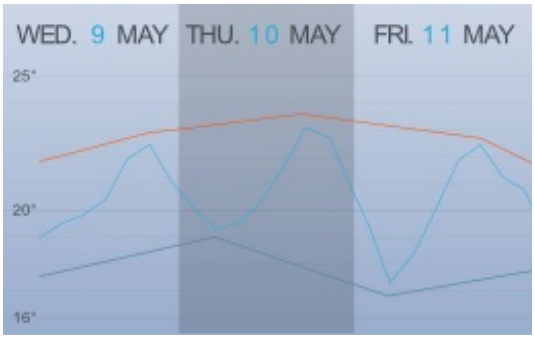
Summary mode

The Summary mode gives you: minimum and maximum temperature of the day, wind speed, amount of rain and sunlight duration.



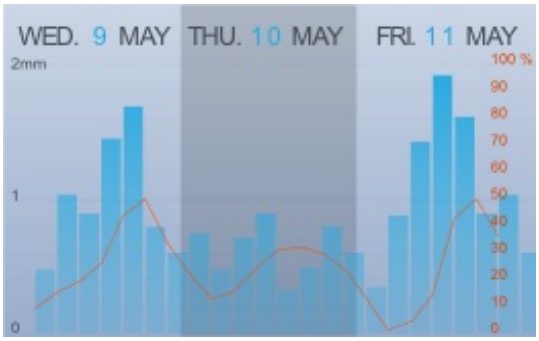
Temperature mode

The Temperature mode gives you: the temperature during the day (in blue) the maximum temperature (in red) and the minimum temperature (in green).



Rain mode

The Rain mode gives you: the amount of rain per 3 hours period (represented by blue bars) and the probability of rain (represented as a red curve).



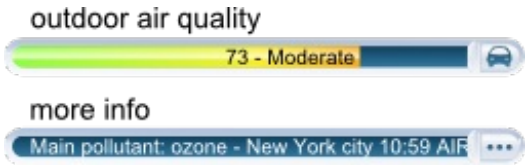
EPA air index (USA)

Outdoor air quality index

The outdoor air quality index AQI is displayed on the outdoor dashboard.

Complementary information

By touching on the "..." button in the air quality gauge, you can display complementary information: main pollutant and hour of the report.



AQI colors

EPA has assigned a specific color to each AQI category to make it easier for anyone to understand quickly whether air pollution is reaching unhealthy levels in their communities. For example, the orange color means that conditions are "unhealthy for sensitive groups," while the red color means that conditions may be "unhealthy for everyone," and so on.

Air Quality Index:	Conditions:
0 to 50	Good
51 to 100	Moderate
101 to 150	Unhealthy for Sensitive Groups
151 to 200	Unhealthy
201 to 300	Very unhealthy
301 to 500	Hazardous

Understanding the AQI

The AQI is divided into six categories:

"Good" AQI is 0 - 50. Air quality is considered satisfactory, and air pollution poses little or no risk.

"Moderate" AQI is 51 - 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.

"Unhealthy for Sensitive Groups" AQI is 101 - 150. Although general public is not likely to be affected at this AQI range, people with lung disease, older adults and children are at a greater risk from exposure to ozone, whereas persons with heart and lung disease, older adults and children are at greater risk from the presence of particles in the air.

"Unhealthy" AQI is 151 - 200. Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.

"Very Unhealthy" AQI is 201 - 300. This would trigger a health alert signifying that everyone may experience more serious health effects.

"Hazardous" AQI higher than 300. This would trigger a health warning of emergency condition. The entire population is then more likely to be affected.

Where does the outdoor air quality index come from?

The outdoor air quality index (AQI) in the United States is provided by the U.S. Environmental Protection Agency (EPA) as part of the AIRNow program. A list of sources and AIRNow partners can be found here.

Air Quality Health Index (Canada) ›

Outdoor: Air Quality Health Index

The outdoor Air Quality Health Index (AQHI) is displayed on the outdoor dashboard.

AQHI colors

This color code scale makes it easier to understand air pollution at a glance.

Index:	Pollution:
1 to 3	Low
4 to 6	Moderate
7 to 10	High
10 and more	Very High

Understanding the AQHI

The AQHI is divided into four categories:

"Low" AQHI is 1 - 3. At Risk Population: Enjoy your usual outdoor activities. General Population: Ideal air quality for outdoor activities.

"Moderate" AQHI is 4 - 6. At Risk Population: Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms. General Population: No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.

"High" AQHI is 7 - 10. At Risk Population: Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy. General Population: Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.

"Very high" AQHI higher than 10. At Risk Population: Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion. General Population: Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

For more information about "At Risk Population", please follow this link

Where does the AQHI come from?

The Air Quality Health Index (AQHI) is a new public information tool that helps Canadians protect their health on a daily basis from the negative effects of air pollution. This tool has been developed by Health Canada and Environment Canada, in collaboration with the provinces and key health and environment stakeholders.

The use Licence can be found here.

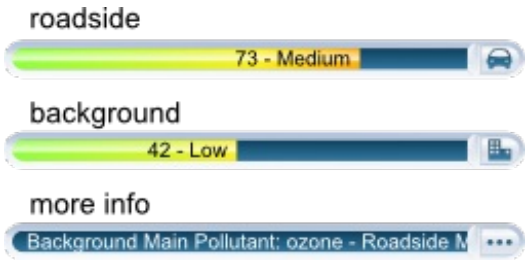
Citeair index (Europe) ›

Outdoor air quality: pollution index

The European Citeair indices for air pollution (Common information to European Air) are displayed on the outdoor dashboard. They are computed by Citeair using real-time pollutant monitoring. This monitoring is provided by partner air quality surveillance organisms.

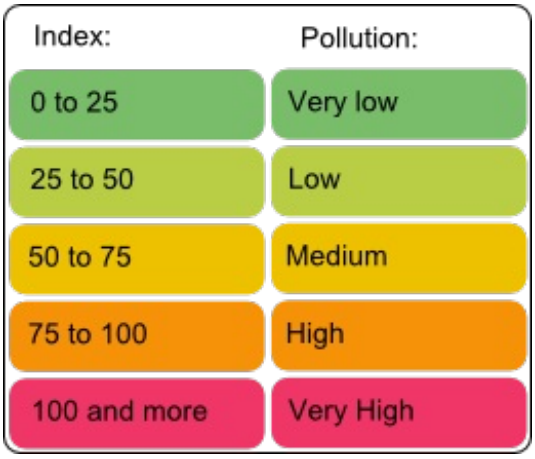
Complementary information

By touching on the icon button on the air quality gauge, you may switch between background air pollution index, traffic air pollution index and complementary information about the main pollutant.



Citeair indices color code scale

This color scale makes it easier to understand air pollution at a glance.



Understanding the Citeair indices

Those indices have 5 levels using a scale from 0 (very low) to > 100 (very high) and are a relative measure of the amount of air pollution. They are based on 3 pollutants of major concern in Europe: particles (PM10), nitrogen-dioxyde (NO2), and ozone (O3) and will be able to take into account to 3 additional pollutants (CO, PM2.5 and SO2) where data are also available.

Two indices have been developed to inform the public on two types of pollution exposure:

- Background, representing the general situation of the given agglomeration (based on urban background monitoring sites),
- Roadside, being representative of city streets with a lot of traffic, (based on roadside monitoring stations).

Source and Acknowledgement

Those indices have been developed under the framework of the Citeair project (Common information to European air) and co-funded by the INTERREG IIIC and INTERREG IVC programs. Those indices are computed based on data provided by partner air quality surveillance organisms and are available on the website Air Quality Now. The list of partner organisms is available here.

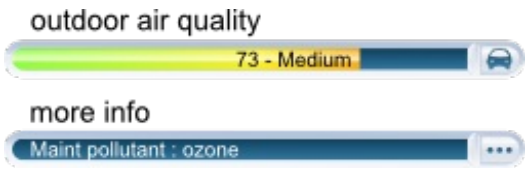
Citeair - MACC index (Europe) ›

Outdoor air quality: pollution index

The European Citeair index for air pollution (Common information to European Air) is displayed on the outdoor dashboard. It is computed from forecast results provided by the European pollution modelisation MACC.

Complementary information

By touching on the icon button in the air quality gauge, you can display complementary information about the main pollutant.



CiteAir index color code

This color code scale makes it easier to understand air pollution at a glance.

Index:	Pollution:
0 to 25	Very low
25 to 50	Low
50 to 75	Medium
75 to 100	High
100 and more	Very High

Understanding the Citeair index

This index has 5 levels using a scale from 0 (very low) to > 100 (very high), it is a relative estimation of the amount of air pollution. It is based on 5 pollutants of major concern in Europe: particles (PM10), nitrogen dioxyde (NO2), ozone (O3), carbon monoxyde (CO) and sulfur dioxyde (SO2).

This index is a background estimated index representing the overall pollution level.

Source and Acknowledgement

Those indices have been developed under the framework of the Citeair project (Common information to European air) and co-funded by the INTERREG IIIC and INTERREG IVC programs: Air Quality Now

The computation method for those indices, provided by Citeair, has been applied to forecast results provided by the European pollution modelisation MACC-II.

The MACC-II (Monitoring Atmospheric Composition and Climate - Interim Implementation) is the current pre-operational atmospheric service of the European GMES programme.

MACC-II is a Collaborative Project (2011-2014) funded by the European Union under the 7th Framework Programme. It is coordinated by the European Centre for Medium-Range Weather Forecasts and operated by a 36-member consortium.

The GEMS project (Global and regional Earth-system Monitoring using Satellite and in-situ data) is funded by the European Commission within the 6th Framework Program for Research and Development under the contract SIP4_CT-2004-516099

Indoor comfort ›

Indoor comfort index

The indoor comfort index is displayed in the indoor dashboard.

Complementary information

By touching on the icon button in the indoor comfort gauge, you can display the main discomfort factor (temperature, humidity, CO2 or noise).

Indoor comfort index

Your indoor comfort is computed from indoor temperature, humidity, CO2 and acoustic comfort.

When the CO2 is high, the temperature too cold or too hot, the room too dry, or too noisy, your indoor comfort index deteriorates.

Notifications ›

What are notifications?

Notifications are computed by your Netatmo Weather Station and sent to your iPhone/Android. They are implemented to help you improve your environment with daily basic actions.

Those notifications are displayed your iPhone's notification centre and as badges on the Netatmo app icon.

Those notifications are also stored in your Netatmo embedded events timeline.

CO2 notifications

When the CO2 level rises above 1000 ppm, this notification indicates the potential benefites of ventilating the room.

Similarly, above 2000 ppm, this notification warns you that you should open the window the refresh your living environment.

Freeze notification

When the outdoor temperature reaches 3°C (37°F), this notification warns you about freezing conditions.

Pressure drop notification

When the pressure drops by more than 2 mbar (0.06 inHg) in the last 30 minutes, this notification warns you that weather deteriorates.

Room temperature notifications

When the indoor temperature drops below 10°C (50°F) this notification warns you about potential heating system failure.

Similarly, when the indoor temperature drops below 3°C (37°F), this notification warns you about freezing conditions indoor.

Humidity notification

When the humidity rises by 20% in a short time, you are notified.

Highlights ›

What are highlights?

Highlights are personalized analysis based on a week's measurements data: every week-end, 1 or 2 remarkable facts are highlighted from your station's raw data.

Highlights are displayed in the event timeline of the Netatmo App.

Example

Your Netatmo station can detect temperature degradation over several weeks, CO2 peaks, large pressure variations...

Graphs ›

Automated recording

Your Netatmo station is automatically and constantly recording measurements. Those measurements are accessible as graphs in your Netatmo app.

Navigating from dashboard to graphs

You can easily access the graphs anytime by turning your iPhone in landscape mode.

Navigating from events timeline to graphs

When you select (touch on) a notification or a highlight in your event timeline and tilt your iPhone/Android, the corresponding section of the graph where this event took place is automatically displayed. This event is indicated by an orange marker on the graphs.

Zoom in and out

You can zoom in and out by pinching the graphs in and out.

Scroll the graphs

You can explore past measurements by scrolling the graphs left or right with a finger.