Netatmo User Manual

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.

Netatmo Weather Station NWS01. Version 1 / May 2012

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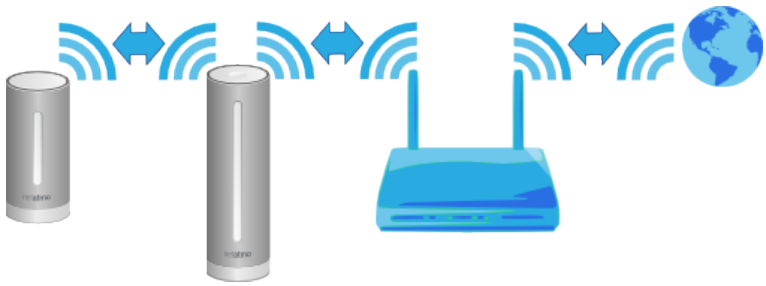
Tips and troubleshooting

1 How does it all work?

1.1 How does it all work?

The outdoor module (small) wirelessly sends its measurements to the indoor module (large) using a radio signal. Using your Wi-Fi access point, the indoor module then sends both its own measurements and the outdoor module's measurements to your personal online Netatmo account.

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



2 Configuration setup

2.1 Configuring with a smartphone

When you configure your Netatmo Weather Station with a smartphone, the weather station is connected to the wall adapter using the provided USB cable (USB to micro-USB) and the phone is connected to the Weather Station using bluetooth. You need to have your phone's bluetooth turned on. To turn on the bluetooth, please visit the phone's setting menu.

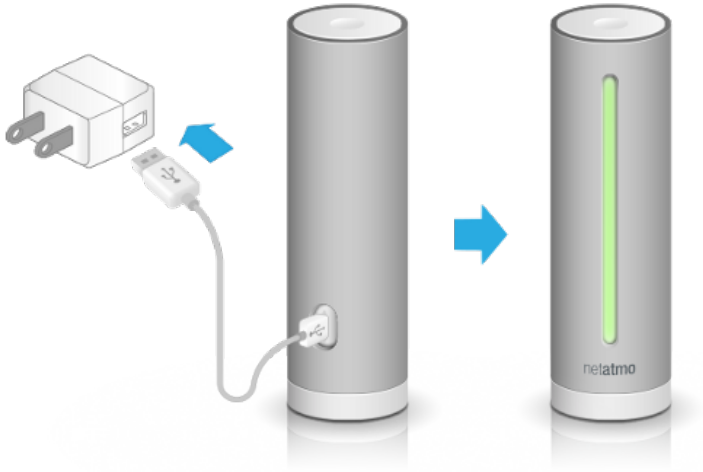
2.2 Configuring with a computer (Mac/Windows/Linux)

When you configure your Netatmo Weather Station with a computer, the weather station is not connected to the wall adapter. It is only connected to the computer using the provided USB cable (USB to micro-USB). No additional cable is needed.

3 Power supply

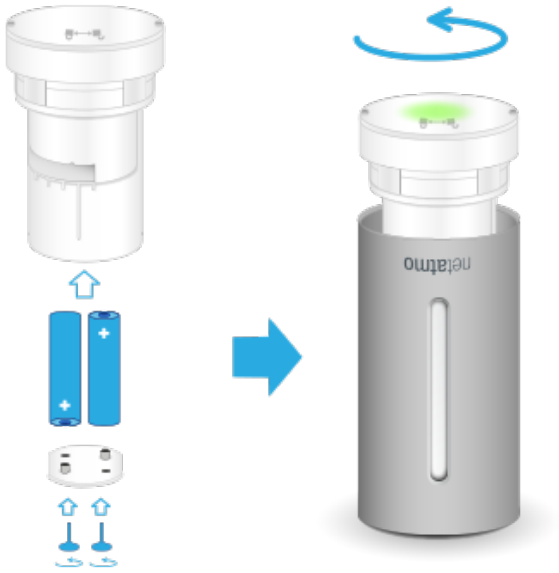
3.1 Indoor module

The indoor module is powered by the USB wall adapter and USB cable. When plugged-in, the indoor module should light up green.



3.2 Outdoor and Additional indoor module

The outdoor module and additional indoor module are powered by AAA Alkaline batteries. Upon introducing the batteries, the light of the module should light up green.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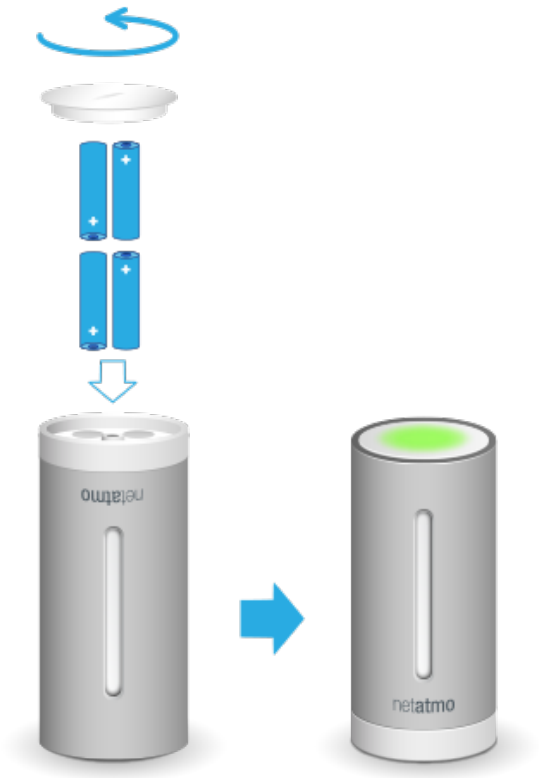
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4 Measurements on demand

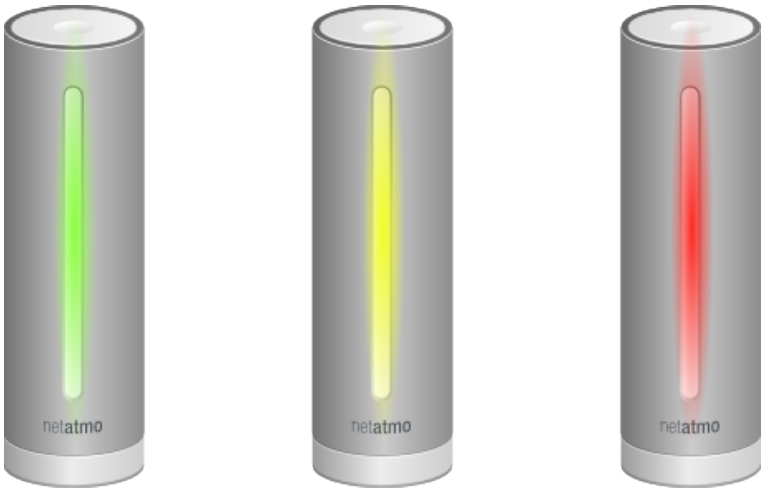
4.1 Measurements on demand

Touching the top button of the indoor module instantly triggers the measurement process. Updated data is then sent directly to your devices.

4.2 Direct CO2 reading

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

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



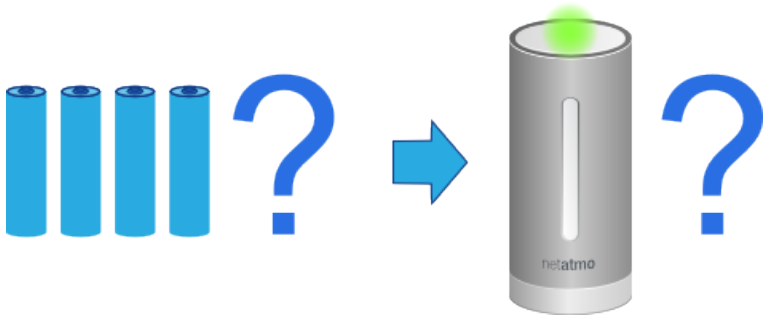
5 No outdoor data?

5.1 Outdoor data is not displayed?

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

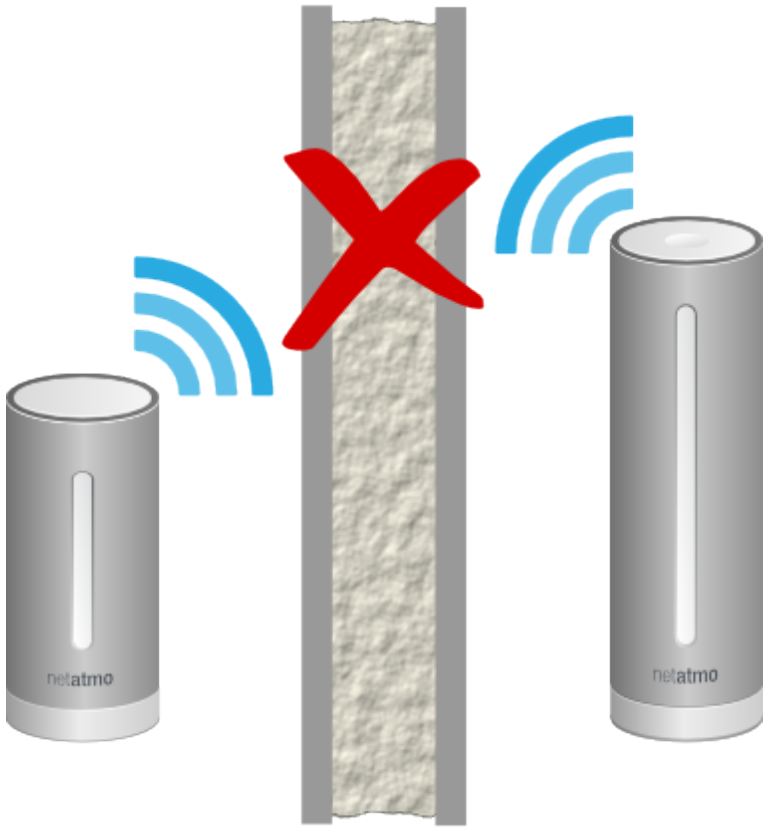
5.2 Reason 1: Batteries are low

Check the outdoor module's batteries. When inserting batteries, the outdoor module should flash green. If you are unsure whether your batteries still work, replace them.



5.3 Reason 2: Weak radio signal

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



5.4 Reason 3: Too close to the indoor module

If the outdoor module is too close to the indoor module (a few centimeters/inches) it may not operate properly.

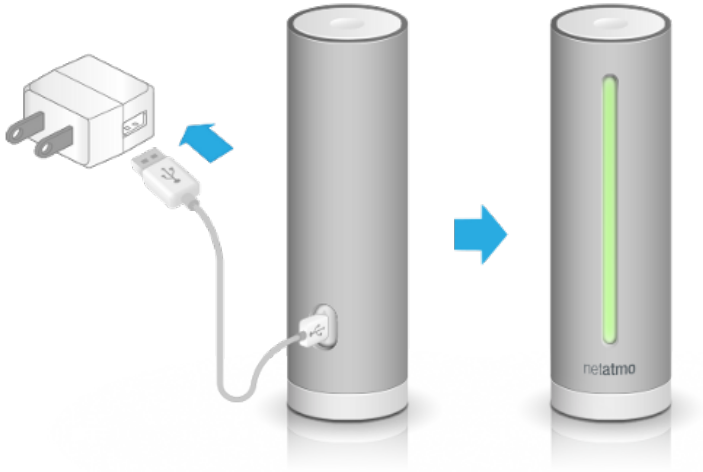
6 No data at all?

6.1 Missing measurements

The Netatmo App dashboard is not displaying any measurements? This may be due to one of the following reasons:

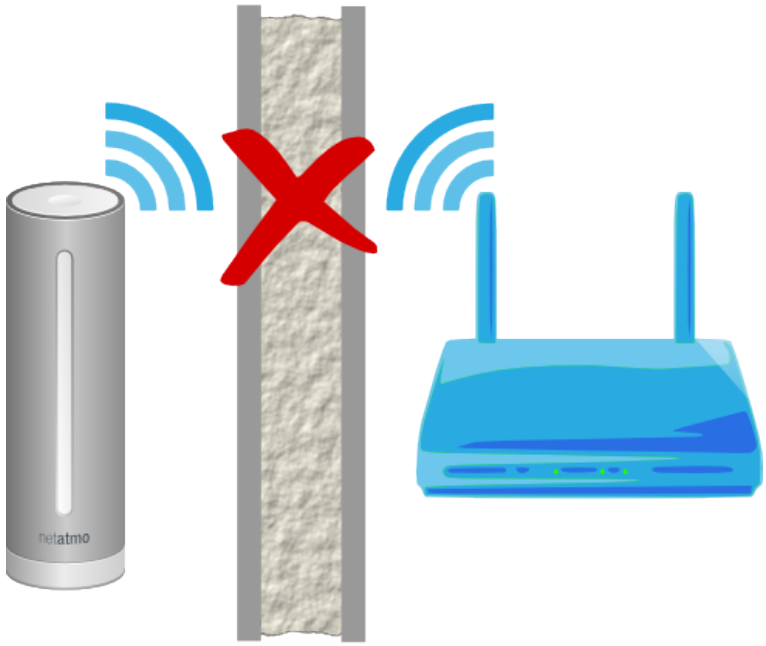
6.2 Reason 1: Power supply is out

The indoor module may not be connected to the power source. Unplug the wall-adapter and plug it back in: the indoor module should light up green.



6.3 Reason 2: Wi-Fi signal is too weak

If the indoor module is located too far away from your Wi-Fi 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 Wi-Fi router or access point.



6.4 Reason 3: Wi-Fi 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 and upload data to your account. Fix your Station's Wi-Fi setup.

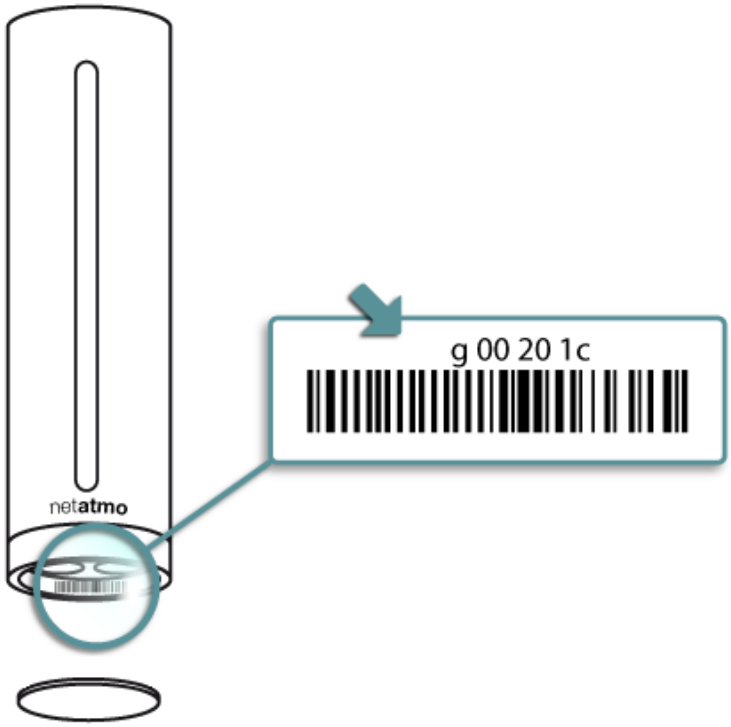
6.5 Reason 4: Internet access is down

The Netatmo Station can access your Wi-Fi router, but your internet access is not working. If this occurs, please check your internet access.

7 Advanced troubleshooting

7.1 Station's MAC address

If needed, the station's MAC address is at the bottom of the indoor module. Replace the " g " by " 70:ee:50 ". For example g002460 has the MAC address 70:ee:50:00:24:60.



You can also read it directly from your stations' setting menu.

8 Additional indoor modules

8.1 What are additional indoor modules?

You can add indoor modules to your Netatmo Weather Station. They don't work separatly and need the Netatmo Station to operate.

They measure temperature, humidity and CO2, and allow you to monitor one more room in your house.

You can add up to 3 additional indoor modules to your Netatmo Weather Station.

8.2 Setup

To add an additional indoor module to the station, follow the instructions on its box, or click on " Add a new module to one of your stations " in the menu " My stations ".

8.3 Troubleshooting

If the additional indoor module is too close to the indoor module (a few centimeters/inches) it may not operate properly.

8.4 App compatibility

iOS 4 or higher
Android 4.0 or higher
Windows Phone 8.0 or higher

9 Additional rain gauge module

9.1 What is the additional rain gauge module?

You can add an additional rain gauge module to your Netatmo Weather Station. It does not work separatly and need the Netatmo Station to operate.

It allows you to monitor rain fall.

You can add only one rain gauge module to your Netatmo Weather Station.

9.2 Setup

To add an additional rain gauge module to the station, follow the instructions on its box, or click on “ Add a new module to one of your stations ” in the menu “ My stations ”.

9.3 App compatibility

iOS 6 or higher
Android 4.0 or higher
Windows Phone 8.0 or higher

10 Additional Wind Gauge module

10.1 What is the additional Wind Gauge module?

You can add an additional Wind Gauge module to your Netatmo Weather Station. It does not work separately and needs the Netatmo Station to operate.

It allows you to monitor wind speed and direction.

You can add only one Wind Gauge module to your Netatmo Weather Station.

10.2 Setup

To add an additional Wind Gauge module to the station, follow the instructions on its quick start guide, or click on “ Add/Remove a module ” in the settings menu, under “ My stations ”. The app will guide you through the installation.

10.3 App compatibility

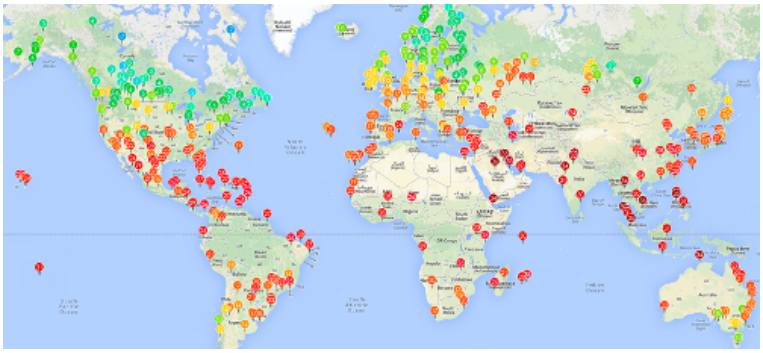
iOS 7 or higher

Android 4.0 or higher

Windows Phone 8.0 or higher

11 Contributing to the Weathermap and the public API

11.1 Contributing to the Weathermap and the public API



By choosing to contribute you will be sharing only your outdoor data, indoor data is kept private. Your outdoor measurements will be used for the https://dev.netatmo.com/doc/.

You can opt-in or out at any time from the settings menu of your station.

If you opt-out, your station will appear on the weathermap only to you, it will not be public.

Sensors

12 Thermometer

12.1 Temperature measurement

The temperature is measured by both indoor and outdoor modules.

12.2 Minimum and maximum

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

Minimum and maximum temperatures are the highest and lowest temperatures measured during 24 hours, from midnight to midnight.

12.3 Temperature trend

12.4 “Feels like” temperature

Your Netatmo Dashboard displays a “feels like” temperature.

This is 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 combination of two usual formulae: wind-chill which represents the effect of wind on cold temperatures and Humidex/Heat Index which represents the effect of moisture on high temperatures.

12.5 Humidex vs. Heat index setting

The formula used to represent the effect of moisture on high “ feels like ” temperature is either Humidex or Heat index, depending on your geographical region. Default settings use Heat index in the United States, and Humidex in Canada and Europe. You can manually change the formula used in the the unit-setting menu.

12.6 Dew point

It is the temperature to which air must be cooled to reach saturation (assuming air pressure and moisture content are constant). When saturation is reached, water vapour starts condensing into liquid water.

A higher dew point indicates more moisture present in the air.

The dew point is always lower than (or equal to) the air temperature.

12.7 Did you know?

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 the humidity level: the dryer the air, the higher the comfort temperature.

12.8 Wise steps for accurate temperature measurements

You will improve the accuracy of your temperature measurements by protecting your modules from exposure to direct sunlight.

Also, measurements on demand, when used frequently, trigger the indoor module's lights, which may artificially increase the measured temperature.

13 Barometer

13.1 Pressure measurement

Mean sea level pressure is measured by the indoor module.

13.2 Pressure trend

13.3 Mean Sea Level Pressure

In order to allow the comparison between different barometric pressures measured by different weather stations, it is necessary to match the barometric pressure measurements recorded at different altitudes: 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.

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

13.4 How does the station know its altitude?

When you setup the Netatmo Station with your smartphone, the Netatmo App uses the smartphone's GPS to localize your station and your altitude.

13.5 How do I set my station's altitude?

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

13.6 Did you know?

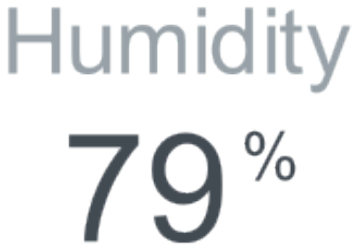
The indoor and outdoor barometric pressure is always the same.

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

14 Hygrometer

14.1 Relative humidity measurement

Relative humidity is measured by both indoor and outdoor modules.



14.2 Did you know?

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

14.3 What is relative humidity?

Relative humidity is a measurement 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 that specific temperature; any additional moisture at that point will transform into condensation.

If the temperature decreases, but the amount of moisture in the air does not change, the relative humidity increases.

14.4 Did you notice?

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

14.5 What happens if the station is exposed to high humidity?

When the weather is very humid (due to rain) the humidity sensor may become saturated. It usually takes a few hours for it to dry, and return to its normal state.

15 CO2 Sensor

15.1 CO2 measurement

Due to the 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 air quality indicator. The CO2 level is measured by the station's indoor module.

15.2 CO2 indicator

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

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

This indicator is represented by a colorful gas bubble.

For a direct reading, the light on the indoor module uses the same color code: if you touch the top of the indoor module, it briefly lights up and gives you an indication of the current CO2 level in the room.

15.3 Units

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

15.4 Typical ppm values

- Outdoor, CO2 level is always around 400 ppm.

- In an appropriately ventilated room, the CO2 level should remain below 1000 ppm for the upmost comfort.

- In a closed room such as a meeting room with several people or a small bedroom at night, CO2 can easily go past 1000 ppm.

15.5 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.

15.6 CO2 Alerts

When the CO2 level rises above 1000 ppm, a notification is sent to your smartphone and the indoor module briefly lights up yellow.

When the CO2 level goes above 2000 ppm, a second alert is sent to your smartphone and the indoor module briefly lights up red.

15.7 How does the Netatmo station measure the CO2 concentration?

The sensor measures CO2 using an optical process: the Station is embedded with a light bulb and an infrared receiver. Light is emitted from the bulb and partially absorbed by the CO2 contained in the ambient air. The higher the CO2 level, the more the light is absorbed. The infrared receiver then measures the amount of light received and from there it deducts the CO2 level. This method works regardless of the ambient light.

15.8 Calibration

To ensure the 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 air.

15.9 Manual CO2 calibration

If the Netatmo station fells on the ground or goes under similar shocks, it may be necessary to perform a manual calibration of the CO2 sensor.

For this purpose please visit the CO2 Calibration tab of your station, from the menu " My stations ". Once the manual CO2 calibration started, please don't unplug the station for at least 6 hours, to let it calibrate.

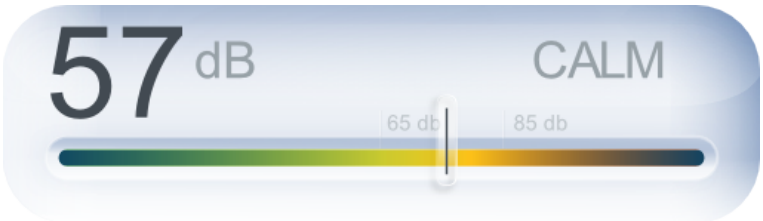
If the station did not go under excessive shock manual CO2 calibration should not be needed.

16 Sound meter

16.1 Acoustic comfort measurement

Acoustic comfort is measured by the indoor module.

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



16.2 How does the Netatmo station measure acoustic comfort?

The Netatmo weather station evaluates the surrounding acoustic comfort by measuring the average noise level (in dB) over a 5-minute interval.

16.3 Did you know?

- The usual human ear cannot distinguish sounds below 30 dB.

- A prolongated exposure to sound levels over 65 dB noticeably disminishes your ability to concentrate.

- In many countries, continuous exposure to noise during a workday is limited to an 85 dB level.

- Sounds over 95 dB can put your hearing at risk.

17 Rain gauge

17.1 Rain fall measurement

Rainfall is measured with a tipping buckets rain gauge. Water makes the buckets tip, and the number of tips is counted through a magnet placed on the buckets.

17.2 Displayed measures

Your dashboard displays:

- Rainfall in mm/h or inches/h measured over the last hour.

- Rainfall accumulation during the day (measured from midnight to midnight).

A reminder of the forecasted rainfall value for the day (forecasted from midnight to midnight), which let you compare and estimate remaining rainfall for today.

17.3 Setup and precaution

The rain gauge should be placed horizontally, if possible between 0,5 and 1,5 m (2 and 5 feet) high and 3 m (10 feet) away from surrounding obstacles.

To fix the rain gauge, you may use a 1/4 inches standard camera mounting screw, or the two holes pierced in the rain gauge plastic base.

The rain gauge cannot measure snowfall and it is recommended not to leave it outside in very low temperatures (-20°C/-4°F or lower).

17.4 Calibration

If you wish to recalibrate your rain gauge, please visit the “ calibration ” section of your weather station settings menu.

18 Wind Gauge

18.1 Wind measurement

Wind speed and direction are measured using four ultrasonic transducers. The Wind Gauge measures the time between the moment a signal is emitted and the moment it is received, along two perpendicular directions. Wind speed along the N-S axis and W-E axis are then merged using trigonometric functions to obtain the real speed and the direction.

18.2 Displayed measures

Your dashboard displays:

(1) Current average wind speed and direction:measured over the last 5 minutes. The arrow indicates the wind direction and its size is proportional to the speed. Light grey dashes around the arrow indicate the dominant wind directions during the last hour.

An arrow pointing down means that the wind is blowing from the North (N = 0°). An arrow pointing to the left means that the wind is blowing from the East (E = 90°).

(2) Current wind gust(speed and direction), measured over the last 5 minutes.

(3) Maximum wind gust(speed and direction) for the day (since last midnight).

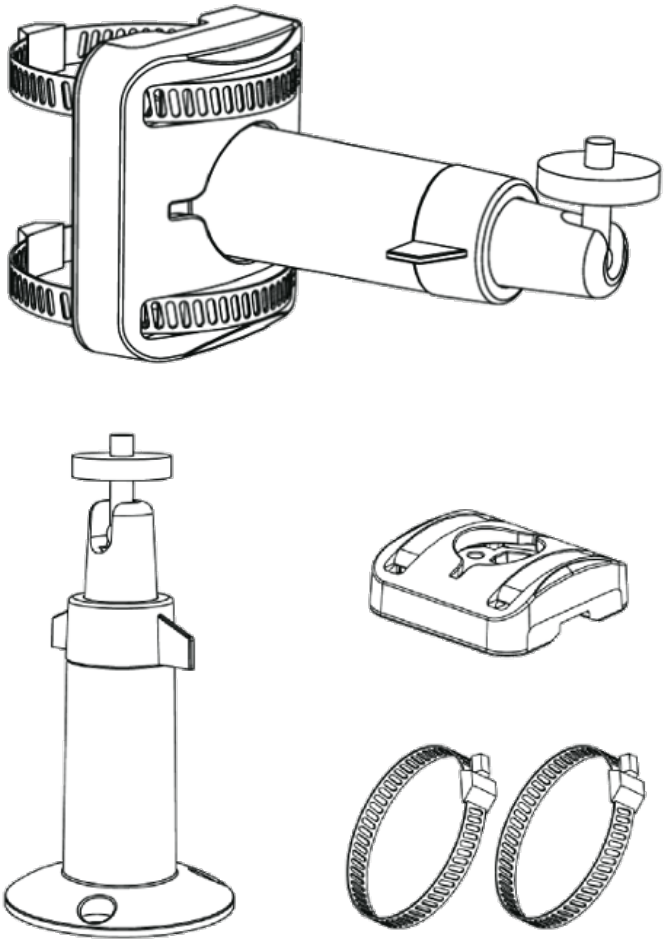
Graphs let you navigate through historic average wind (speed and direction) and gusts (speed and direction).

18.3 Setup and precaution

The Wind Gauge should be placed at the highest point possible in order to get reliable measures and avoid turbulences created by obstacles surrounding it. It is recommended to place it about 1 m / 4 ft. above the top of your roof.

The Wind Gauge should be placed horizontally and the arrow (there's one at on the top and one in the bottom) must be pointing to the North. You can use your smartphone's compass app to check that when you install your Wind Gauge at home.

To secure the Wind Gauge, you may use a 1/4 inches standard camera mounting screw. You can buy a mount made for Netatmo Weather Station accessories from the Netatmo Online Shop.



It is important not to touch the four wind sensors in the middle space of the device. This could damage them or change the calibration of your Wind Gauge.

The Wind Gauge should not be twisted, use the four screws at the bottom to acces the battery compartment.

Other functions

19 Current weather conditions

19.1 Current weather icon

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

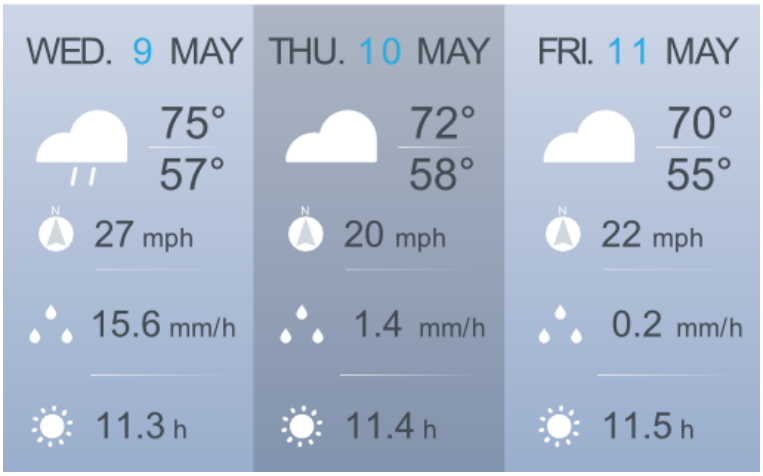
20 7-day forecast

20.1 Forecast

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

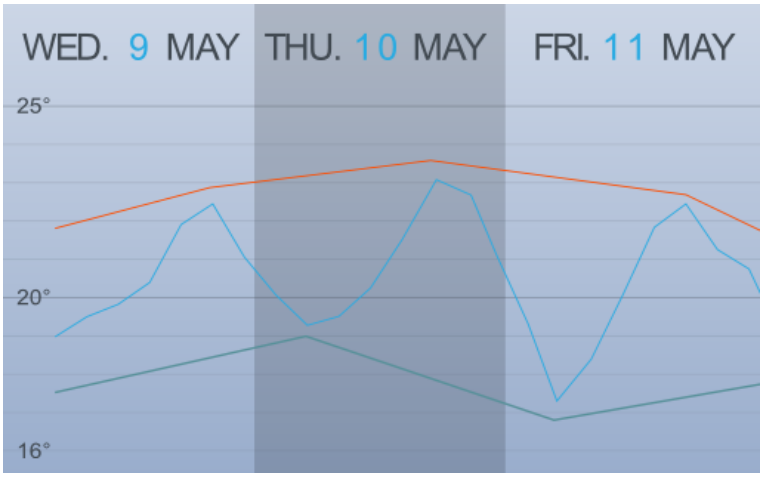
20.2 Summary mode

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



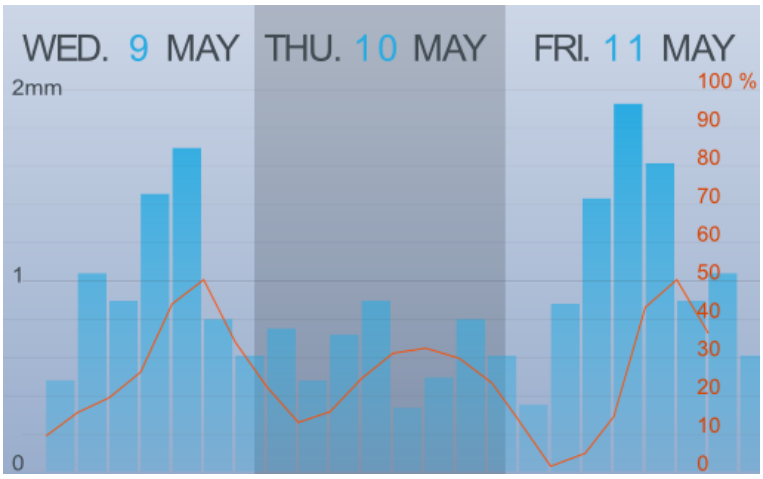
20.3 Temperature mode

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



20.4 Rain mode

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



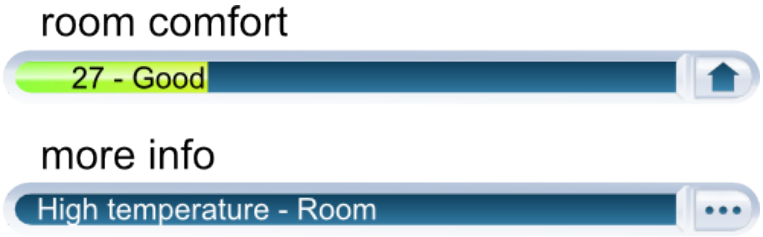
21 Indoor comfort

21.1 Indoor comfort index

The indoor comfort index is displayed in the indoor dashboard

21.2 Complementary information available on the mobile app

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



21.3 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.

22 Notifications

22.1 What are notifications?

Notifications are computed by your Netatmo Weather Station and sent to your smartphone. They are implemented to help you improve your environment with basic daily steps.

Those notifications are stored in your Netatmo embedded events timeline.

22.2 Personalized notifications

Your Netatmo stations is set up with the following default notifications: CO2, temperature, pressure and humidity. You can find details about each notification below, and you can activate and deactivate each notification from the personalized notifications menu of your station.

In addition to those default notifications, you can create personalized notifications by choosing a module (indoor/outdoor), a measurement type (high CO2, low temperature...) and a threshold.

22.3 CO2 notifications (default)

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

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

22.4 Freezing notification (default)

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

22.5 Pressure drop notification (default)

When the pressure drops by more than 2 mbar (0.06 inHg) in the last hour, this notification warns you that weather has deteriorated.

22.6 Room temperature notifications (default)

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

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

22.7 Humidity notification (default)

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

22.8 Rain notification (default)

When rain starts, you receive a notification.

22.9 Wind (only available if a Wind Gauge module is installed):

When strong wind gusts are detected, a notification will be sent to your smartphone:
- Very strong wind detected: moderate danger (>65 km/h / >40 mph)
- Storm wind detected: significant danger (>85 km/h / >53 mph)
- Violent storm wind detected: severe danger (>110 km/h / >68 mph)

22.10 NOAA Weather Alerts (US)

Weather alerts from the National Weather Service are sent as notifications to your Netatmo app. They are selected according to your station's location.

Typical message will look like " Dense Fog Advisory issued February 01 at 4:18AM AKST until February 01 at 12:00PM AKST by NWS ".

More information about those alerts and sources can be found on the National Weather Service Website.

22.11 MeteoAlarm Weather Alerts (Europe)

Weather alerts in Europe are provided thanks to the MeteoAlarm service.

Typical message looks like " Fog alert (meteoalarm). Station's name: reduced visibility (Level 1/3) "

This service is provided by Eumetnet, the Network of European Meteorological Services. More information can be found on the MeteoAlarm Website.

23 Graphs

23.1 Automated recording

Your Netatmo station is automatically and constantly recording measurements. Those measurements are accessible as graphs that you can easily access in your Netatmo app.

23.2 Navigating from dashboard to graphs on a smartphone

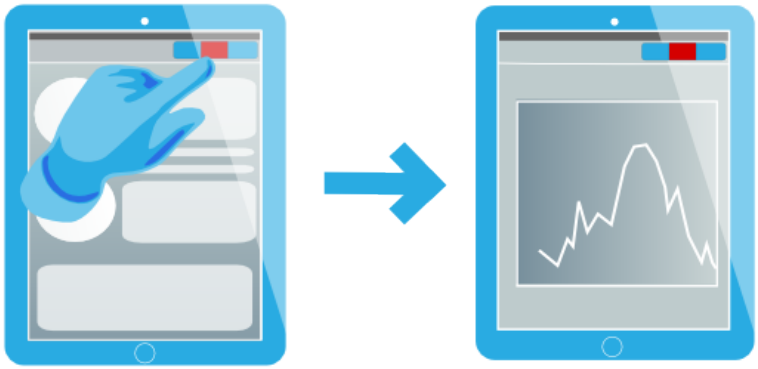
You can access to graphs by tilting your smartphone into landscape mode.

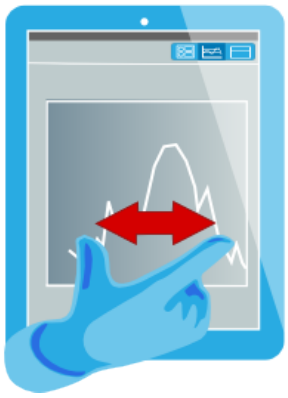
You can zoom in and out by pinching the graphs in and out.

23.3 Navigating from dashboard to graphs on a tablet

You can access to graphs by tapping the graph button on the upper right corner.

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





23.4 Showing graphs in the browser app

In the Netatmo browser app (available here) graphs are displayed in the middle of the screen. To display a given type of measure, select it in the left column.

You can display the graph by day, week, month or year.

Air Quality

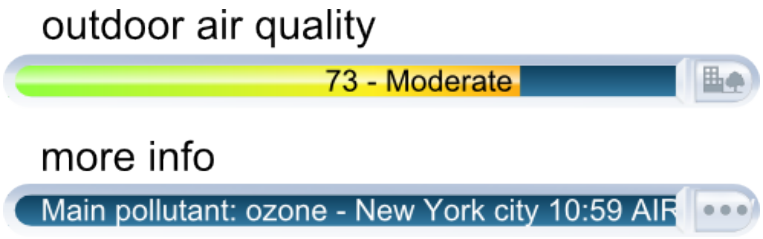
24 Air Quality (USA)

24.1 Outdoor air quality index

The outdoor Air Quality Index AQI is displayed on the outdoor dashboard.

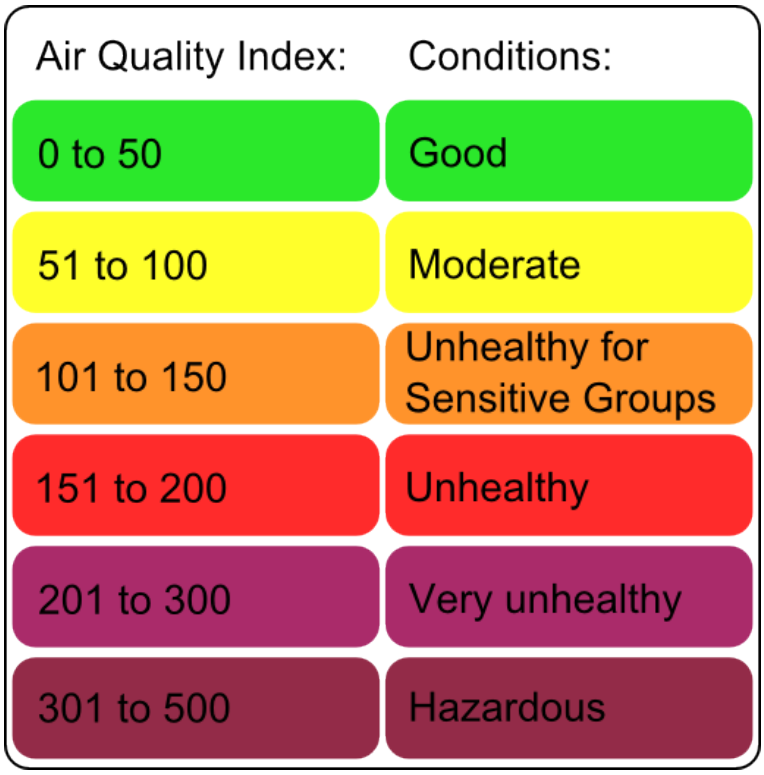
24.2 Complementary information available on the mobile app

By pressing the " ... " button on the air quality gauge, you can view complementary information: the main pollutant and the time of the report.



24.3 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 color orange means that conditions are " unhealthy for sensitive groups, " while the color red means that conditions may be " unhealthy for everyone, " and so on.



24.4 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.

24.5 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.

25 Air Quality (Canada)

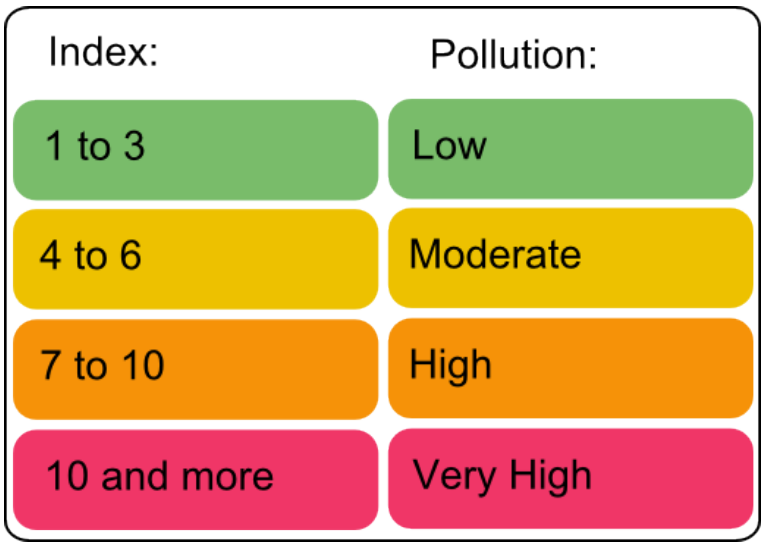
25.1 Outdoor: Air Quality Health Index

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

This index is not available outside the 74 largest Canadian cities.

25.2 AQHI colors

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



25.3 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

25.4 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.

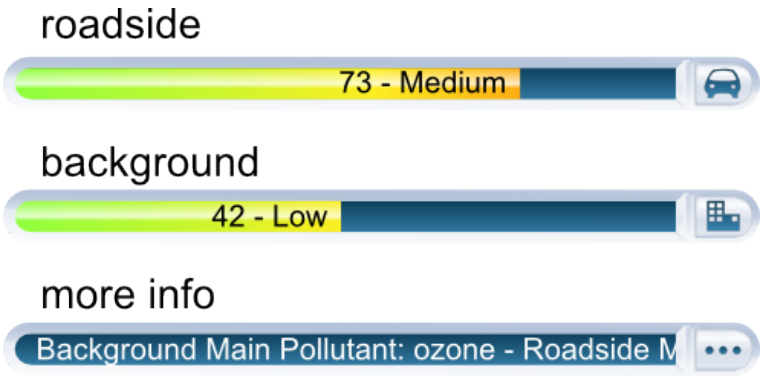
26 Air Quality (Europe - Citeair)

26.1 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.

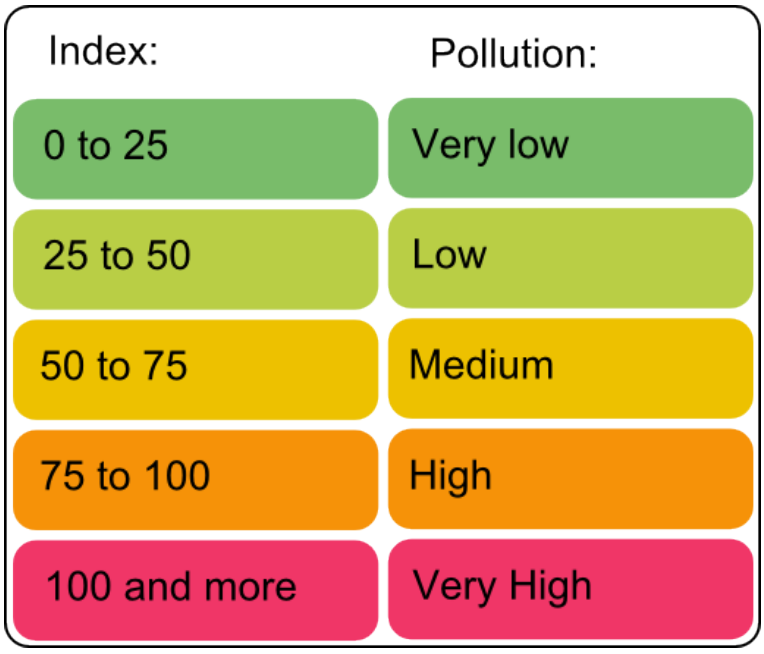
26.2 Complementary information available on the mobile app

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.



26.3 Citeair indices color code scale

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



26.4 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).

26.5 Source and Acknowledgement

These 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 here.

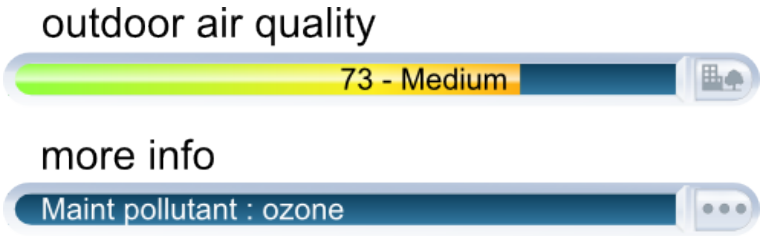
27 Air Quality (Europe - Citeair/MACC)

27.1 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 model MACC.

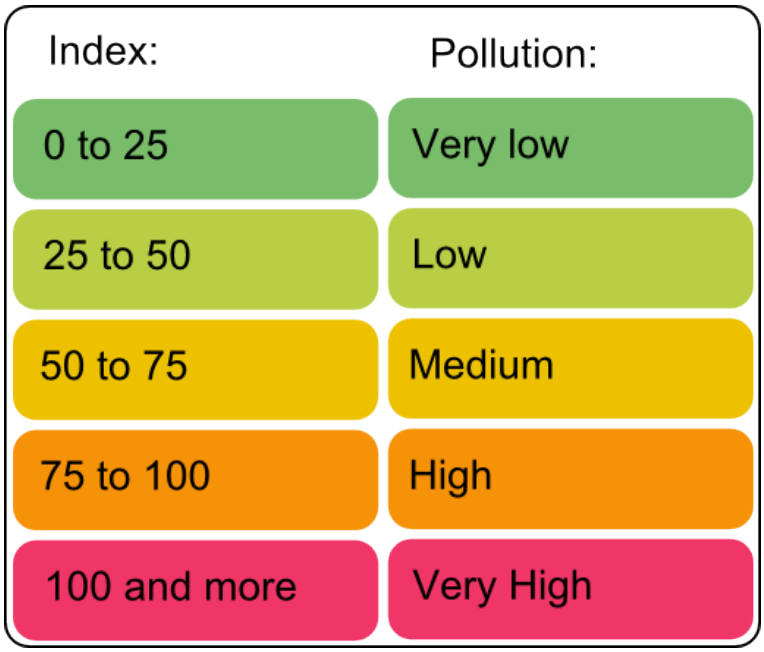
27.2 Complementary information available on the mobile app

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



27.3 CiteAir index color code

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



27.4 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.

27.5 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 model 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 Program. 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

28 Air quality (Australia)

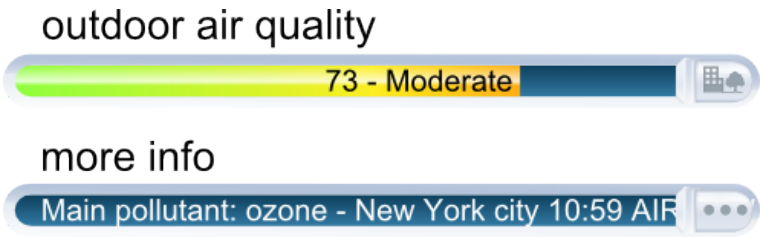
28.1 Outdoor air quality index

The outdoor Australian Air Quality index AQI is displayed on the outdoor dashboard.

This index is available through air quality monitoring stations in New South Wales, South Australia, Queensland and Victoria.

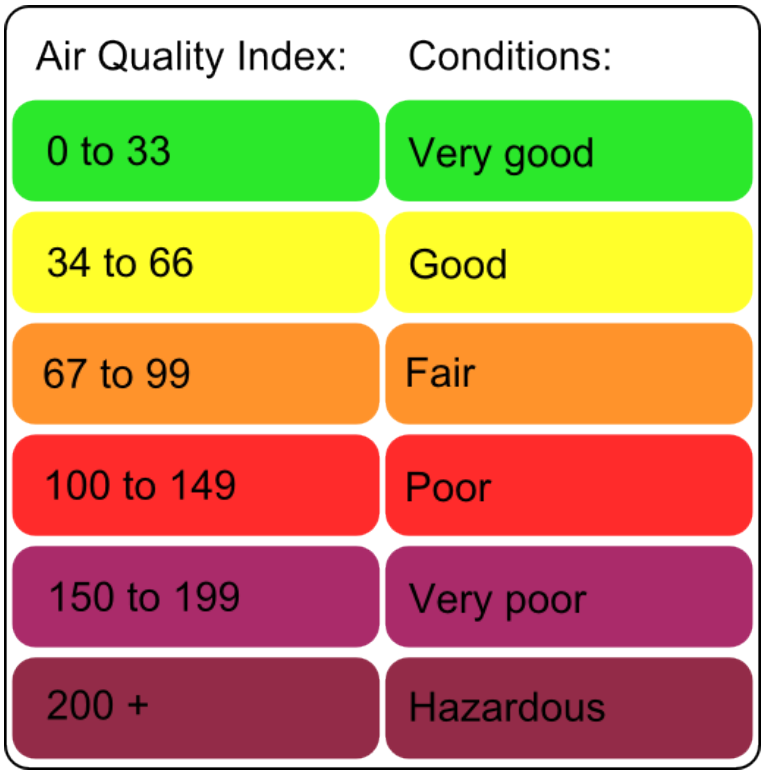
28.2 Complementary information available on the mobile app

By touching on the " ... " button in the air quality gauge, you can view complementary information such as the main pollutant.



28.3 Australian AQI Colors

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



28.4 Understanding the Australian AQI

The Australian AQI is divided into six categories:

" Very good " AQI is 0 - 33.
" Good " AQI is 34 - 66.
" Fair " AQI is 67 - 99.
" Poor " AQI is 100 - 149.
" Very poor " AQI is 150 - 199.
" Hazardous " AQI higher than 200.
Details about AQI calculation are provided by the official authorities for Queensland.

28.5 Where does the Australian AQI come from?

The Australian air quality index is provided in New South Wales by the Department of Environment and Heritage Protection QLD.

29 Air Quality (China US embassy)

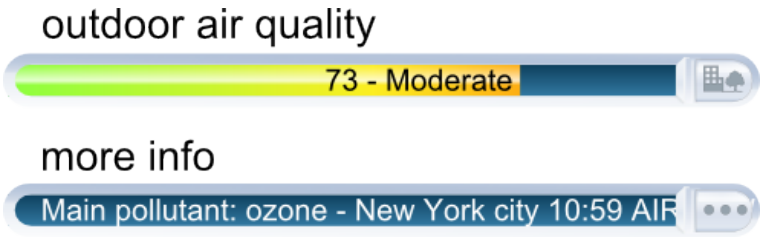
29.1 Outdoor air quality index

The outdoor Air Quality Index AQI is displayed on the outdoor dashboard.

This index is made available by the US embassy's air quality monitoring stations.

29.2 Complementary information available on the mobile app

By touching on the " ... " button in the air quality gauge, you can view complementary information (when available): main pollutant, hour and location of the report.



29.3 AQI colors

This color code scale makes it easier for anyone to understand quickly whether air pollution is reaching unhealthy levels in their communities. For example, the color orange means that conditions are " unhealthy for sensitive groups, " while the color red 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

29.4 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.

29.5 Where does the outdoor AQI come from?

The AQI in China is provided by the United States Embassy in Beijing, the US Consulate in Guangzhou and the US Consulate in Shanghai. More information can be found here for Guangzhou.

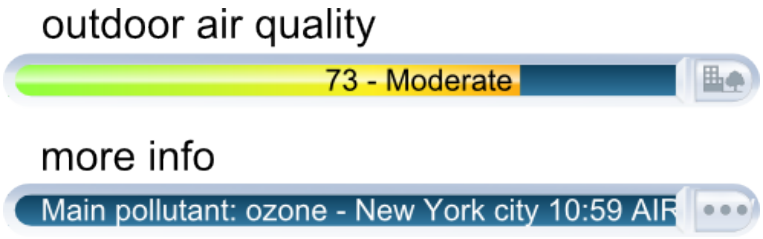
30 Air Quality (China)

30.1 Outdoor Air Pollution Index

The Outdoor Air Pollution Index is displayed on the outdoor dashboard.

30.2 Complementary information available on the mobile app

By touching on the “ ... ” button in the air quality gauge, you can view complementary information (when available): main pollutant, hour and location of the report.



30.3 Air pollution colors

This color code scale makes it easier for anyone to understand quickly whether the air is polluted.

Air Pollution Index:	Conditions:
0 to 50	Excellent
51 to 100	Good
101 to 150	Slightly polluted
151 to 200	Lightly polluted
201 to 250	Moderately polluted
251 to 300	Heavily polluted
300 +	Severely polluted

30.4 Understanding the Air Pollution Index

The Air Pollution Index is divided into seven categories:

“ Excellent ” Air Pollution Index is 0 - 50. No health implications.

“ Good ” Air Pollution Index is 51 - 100. No health implications.

“ Slightly Polluted ” Air Pollution Index is 101 - 150. Slight iritations may occur, individuals with breathing or heart problems should reduce outdoor activities.

“ Lightly Polluted ” Air Pollution Index is 151 - 200. Slight iritations may occur, individuals with breathing or heart problems should reduce outdoor activities.

“ Moderately Polluted ” Air Pollution Index is 201 - 250. Healthy people will be noticeably affected. People with breathing or heart problems will experience reduced endurance in activities. These individuals and elders should remain indoors and restrict activities.

“ Heavily Polluted ” Air Pollution Index is 251 - 300. Healthy people will be noticeably affected. People with breathing or heart problems will experience reduced endurance in activities. These individuals and elders should remain indoors and restrict activities.

“ Severely Polluted ” Air Pollution Index higher than 300. Healthy people will experience reduced endurance in activities. There may be strong irritations and symptoms and this may trigger other illnesses. Elders and the sick should remain indoors and avoid exercise. Healthy individuals should avoid outdoor activities.

30.5 Where does the outdoor Air Pollution Index come from?

The Air Pollution Index in China is provided by the Ministry of Environmental Protection of the People’s Republic of China. More information can be found here.

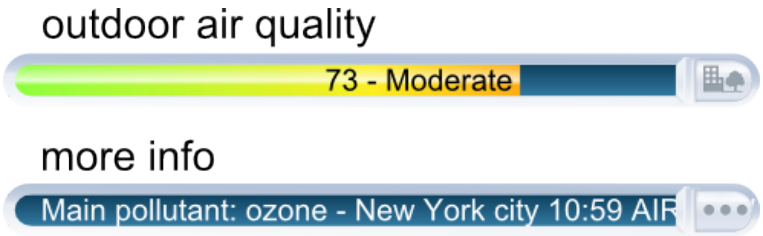
31 Air Quality (Hong Kong)

31.1 Outdoor Air Pollution Index (API)

The Outdoor Air Pollution Index (API) is displayed on the outdoor dashboard.

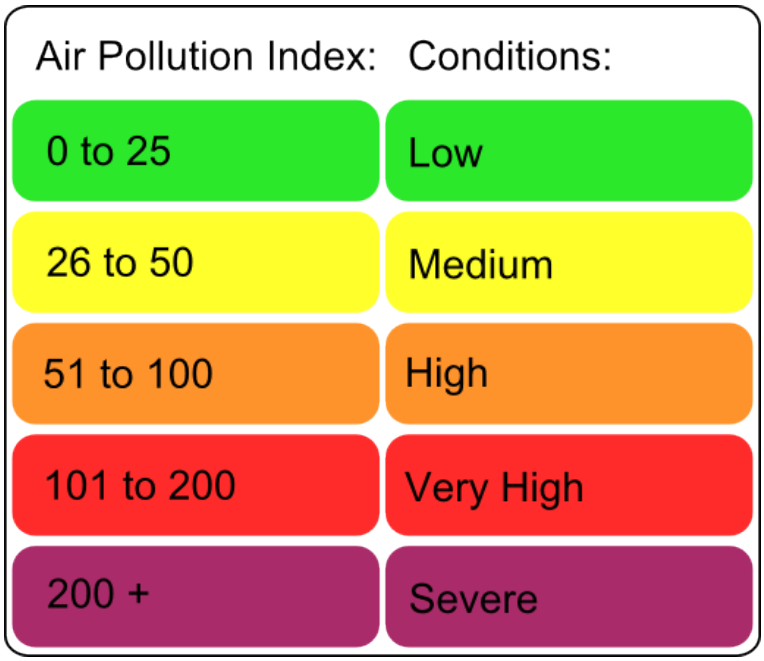
31.2 Complementary information available on the mobile app

By touching on the “ ... ” button in the air quality gauge, you can view complementary information (when available): main pollutant, hour and location of the report.



31.3 API colors

This color code scale makes it easier for anyone to understand quickly whether the air is polluted.



31.4 Understanding the Air Pollution Index

The Air Pollution Index is divided into seven categories:

“ Low ” API is 0 - 25. No response action required.

“ Medium ” API is 26 - 50. No response action required.

“ High ” API is 51 - 100. No immediate response action is suggested. Long-term effects may, however, be observed if exposed at such level persistently for months or years.

“ Very High ” API is 101 - 200. Persons with existing heart or respiratory illnesses, childrens and the elderly are advised to reduce physical exertion and outdoor activities. They are also advised to seek advice from a medical doctor before participating in sport activities and take more breaks during the activities.

“ Severe ” API higher than 200. Persons with existing heart or respiratory illnesses, childrens and the elderly are advised to avoid physical exertion and outdoor activities. The general public is advised to reduce physical exertion and outdoor activities. They are also advised to seek advice from a medical doctor before participating in sport activities and take more breaks during the activities.

31.5 Where does the outdoor API come from?

The API in Hong Kong is provided by the Environmental Protection Department of the Government of the Hong Kong Administratif Special Region. More information can be found here.

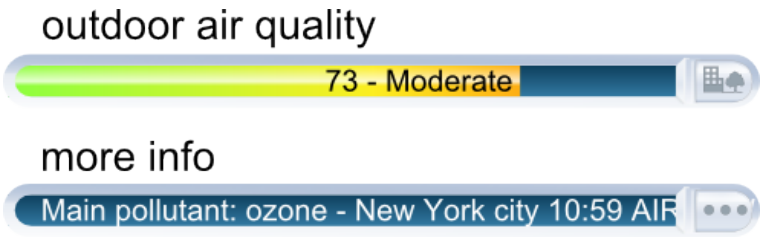
32 Air Quality (Japan)

32.1 Outdoor Air Pollution Index (AQI)

The Outdoor Air Pollution Index (AQI) in Japan is displayed on the outdoor dashboard.

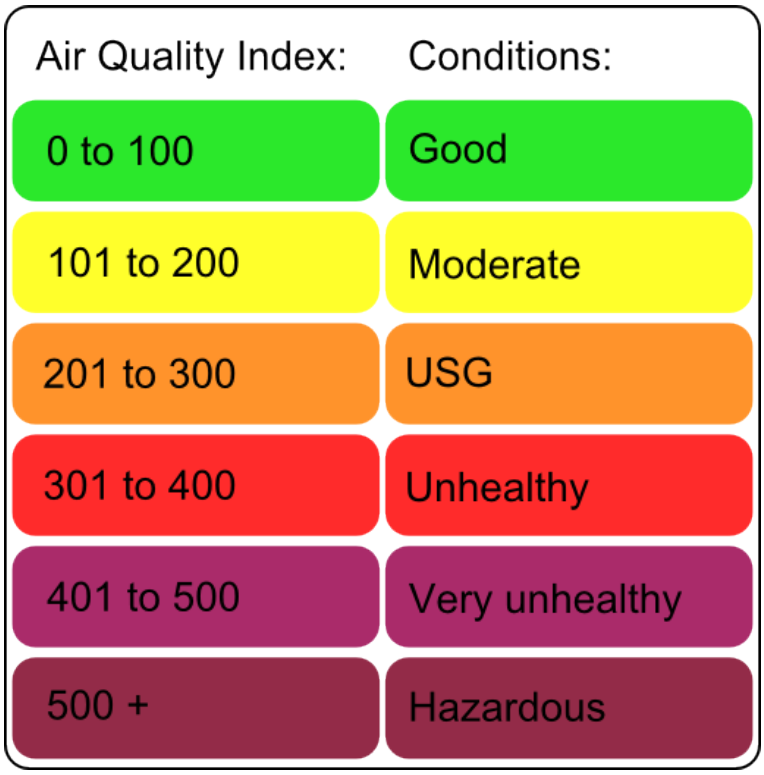
32.2 Complementary information available on the mobile app

By touching on the " ... " button in the air quality gauge, you can view complementary information (when available): main pollutant, hour and location of the report.



32.3 AQI colors

This color code scale makes it easier for anyone to understand quickly whether the air is polluted.



32.4 Understanding the Air Pollution Index

The Air Pollution Index is based on the following pollutants: SO2, NO, NO2, OX, NMHC, PM10 and PM2.5. It is divided into seven categories:

“ Good ” AQI is 0 - 100. Air quality is considered satisfactory, and air pollution poses little or no risk.

“ Moderate ” AQI is 101 - 200. 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 201 - 300. 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 301 - 400. Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.

“ Very Unhealthy ” AQI is 401 - 500. This would trigger a health alert signifying that everyone may experience more serious health effects.

“ Hazardous ” AQI higher than 500. This would trigger a health warning of emergency condition. The entire population is then more likely to be affected.

32.5 Where does the outdoor AQI in Japan come from?

The AQI in Japan is based on Air Pollution data provided by the Atmospheric Environmental Regional Observation System : AEROS. This Air Pollution data is summed-up as a comprehensive Air Quality Index (AQI) using formulae similar to American and European standard formulae. The Air Pollution data can be found here.

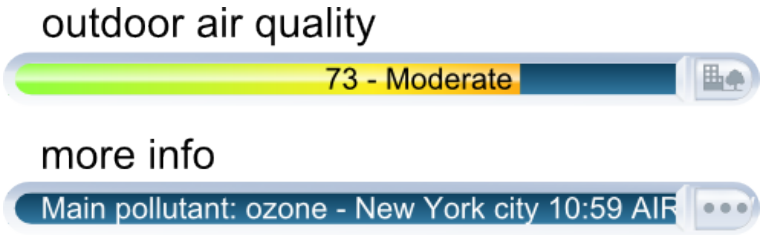
33 Air Quality (Taiwan)

33.1 Outdoor Pollutant Standards Index (PSI)

The Pollutant Standards Index (PSI) in Taiwan is displayed on the outdoor dashboard.

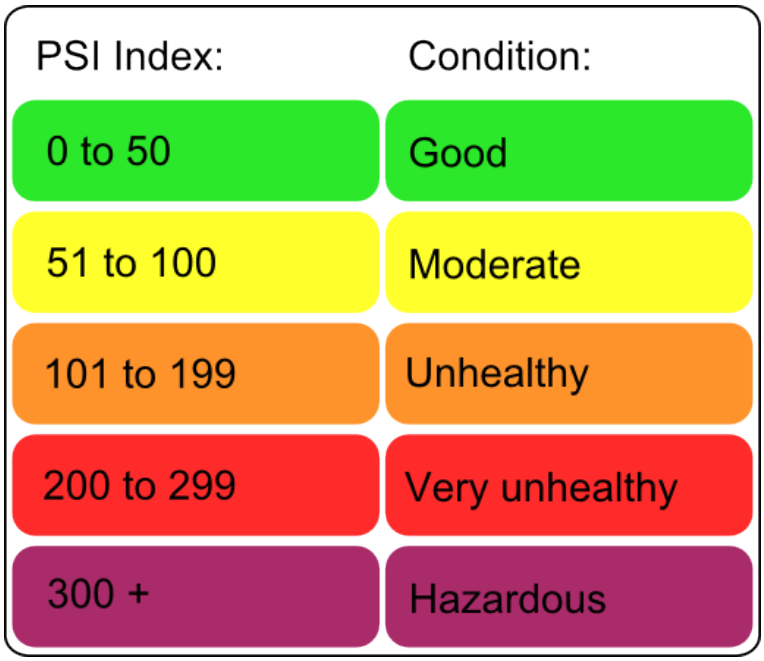
33.2 Complementary information available on the mobile app

By touching on the " ... " button in the air quality gauge, you can view complementary information (when available): main pollutant, hour and location of the report.



33.3 PSI colors

This color code scale makes it easier for anyone to understand quickly whether the air is polluted.



33.4 Understanding the Pollutant Standards Index

The Air pollution index (PSI) is based on air monitoring station on the same day PM10 (does not include the 10-micron particle size of suspended particles than coarse-grained) values, the concentration of sulfur dioxide, nitrogen dioxide, carbon monoxide and ozone concentrations.

It is divided into 5 categories:
“ Good ” PSI is 0 - 50.
“ Moderate ” PSI is 51 - 100.
“ Unhealthy ” PSI is 101 - 199.
“ Very Unhealthy ” PSI is 200 - 299.
“ Hazardous ” PSI higher than 300.

33.5 Where does the outdoor PSI in Taiwan come from?

The PSI in Taiwan is provided by the Environmental Protection Administration, Executive Yuan R.O.C. (Taiwan). More information can be found here.

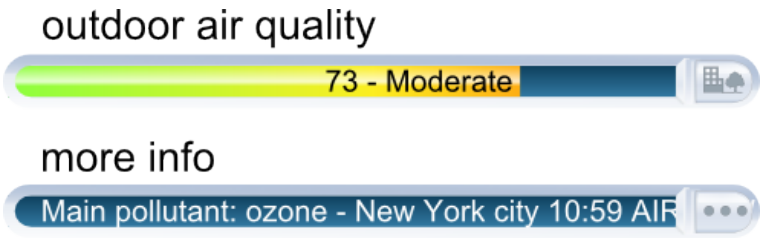
34 Air Quality (Greater Mexico City)

34.1 Metropolitan Air Quality Index (IMECA)

Metropolitan Air Quality Index (IMECA) in Mexico is displayed on the outdoor dashboard.

34.2 Complementary information available on the mobile app

By touching on the " ... " button in the air quality gauge, you can view complementary information (when available): main pollutant, hour and location of the report.



34.3 IMECA colors

This color code scale makes it easier for anyone to understand quickly whether the air is polluted.

IMECA Index:	Condition:
0 to 50	Good
51 to 100	Moderate
101 to 150	Unhealthy
151 to 200	Very unhealthy
201 +	Hazardous

34.4 Understanding the IMECA index

The IMECA index is calculated using the Air Quality measurements by SIMAT (Sistema de Monitoreo Atmosférico de la Ciudad de México). The IMECA is calculated using averaged measurements of ozone (O3), sulphur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO) and particles lower than 10 micrometers (PM10).

It is divided into 5 categories:
“ Good ” IMECA is 0 - 50.
“ Moderate ” IMECA is 51 - 100.
“ Unhealthy ” IMECA is 101 - 150.
“ Very Unhealthy ” IMECA is 151 - 200.
“ Hazardous ” IMECA higher than 200.

34.5 Where does the IMECA in Mexico come from?

The IMECA in Mexico is provided by SIMAT. More information can be found here.