BREEZE TECHNOLOGIES

AIR QUALITY SENSOR

User Manual v7.1

BREEZE
TECHNOLOGIES

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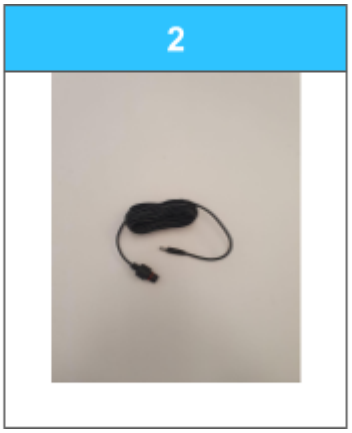
Introduction

Description

The Breeze Air Quality Sensor is an IoT-enabled device that analyzes air pollutants in real time. It detects standard gasses as well as particles. An LED visualizes the device state, e.g. in case of connection loss or measurement errors. The device requires a constant internet connection to the Breeze Cloud. The Breeze Adaptive Cloud Calibration calibrates the Air Quality Sensor's readings on the fly and increases the Air Quality Sensor data accuracy and reliability.

In the box

1. Breeze Technologies Air Quality Sensor
2. Power Cord
3. Power Adapter
4. Screws (4)
5. Dowels (4)
6. Zip ties (2)
7. Mounting Plate



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Tools Required

- Drill (diameter: 3mm | 1/8 inch) - optional
- Marker - optional
- Screwdriver - optional
- Scissors - optional

Handling and Mounting Instructions

General Safety Instructions

- Do not open the device
- Do not modify the device in any manner
- Do not use different equipment to power the Air Quality Sensor as the original cable and plugs provided by Breeze Technologies
- Do not dispose of the device or battery into fire or hot oven
- Do not expose the device or the battery to extremely low or high air pressure
- Do not immerse the device in water
- Do not use the device in explosive or hazardous areas

Site Selection Guidelines

Sensor environment

There should be no sources of exhaust gas, such as exhaust air ducts, in the vicinity of the sensor. Furthermore, care should be taken to ensure that no underground garage entrances and exits or smokers' corners are used as a location for the sensor.

Accessible location

Choose a location for the Air Quality Sensor that is easily reachable, both during the initial installation phase and for any potential maintenance tasks in the future. Accessibility ensures that the Air Quality Sensor can be installed without difficulty and allows for convenient servicing or adjustments when needed.

Good signal strength

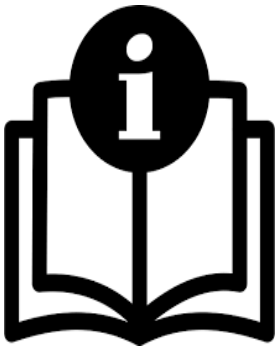
The Air Quality Sensor communicates and transmits data via the LTE-M network or your local WiFi network. It is important to check the strength of the cellular/WiFi signal at the location before installing the Air Quality Sensor. A strong and stable signal is crucial for reliable and consistent data transmission. Insufficient signal strength can lead to problems or interruptions in data transmission. Also, make sure that the network is not blocking any external devices due to security settings.

Heat Protection

Ensuring optimal performance of the Air Quality Sensor involves protecting them from direct sunlight and heat-conductive materials. Key considerations include avoiding installation near

materials with high heat conductivity, shielding the Air Quality Sensor from direct sunlight to prevent overheating.

Mounting Instructions



- Take into account the length of the supplied cable
- Avoid putting excessive strain on the cable
- Leave sufficient space above for sliding the Air Quality Sensor into the holder from the top
- Ensure that the Air Quality Sensor is mounted at a height of at least 1.5 m (5 ft) and a maximum of 4 m (13.1 ft) above the ground
- Make sure that the Air Quality Sensor has sufficient clearance in all directions from the nearest obstacle (The Air Quality Sensor ideally requires an unobstructed air supply within a 180° angle)

Mounting to a wall

Installation Steps:

1. Position the mounting plate (7) for the Air Quality Sensor at the correct location on the wall and mark the drill holes using a marker
2. Drill all 4 holes (diameter: 3 mm | 1/8 inch)
3. Insert the dowels (5) into the drilled holes
4. Secure the mounting plate (7) to the wall using the screws (4) and a screwdriver
5. Carefully slide the Air Quality Sensor (1) into the mounting plate (7) from above
6. Connect the power plug (3) to the power cord (2)
7. Insert the power cord (3) into the Air Quality Sensor (1) and insert the power plug (3) into the nearest power outlet
8. Please wait until the Air Quality Sensor changes its LED color from (a) red to (b) blue after a few minutes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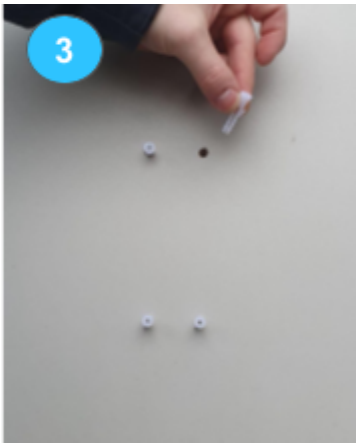
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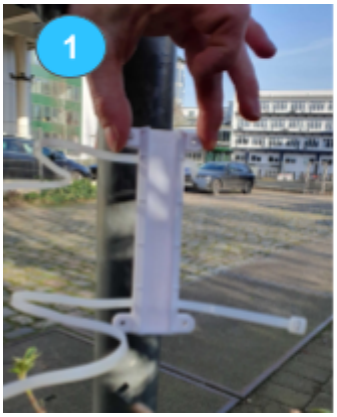
8a


8b

Mounting to a pole

Installation Steps:

1. Take both zip ties (6) and pass them through the openings at the top and bottom of the mounting plate (7)
2. Place the mounting plate (7) at the position of the pole/ grid where the Air Quality Sensor (1) is to be attached
3. Pass the strand of zip ties (6) around the object to be attached and pass the strands through the small openings of the zip tie (6)
4. Tighten the zip ties (6) and cut off excess material with a box cutter or scissors
5. Proceed as above from step 5



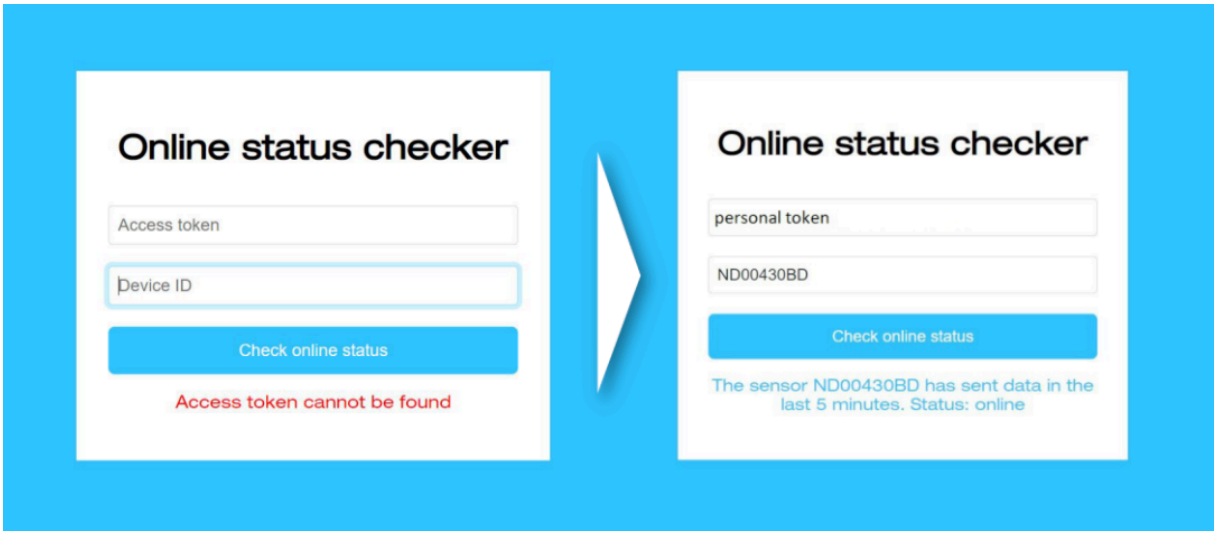
Installation Checkbox

- ☐ The cables and connectors provided by Breeze Technologies were used
- ☐ The Air Quality Sensor has sufficient open airflow
- ☐ The Air Quality Sensor is positioned at a height between 1.5 m (5 ft) and a maximum of 4 m (13.1 ft)
- ☐ There are no strongly heat-conductive materials in the vicinity, and the Air Quality Sensor is protected from direct sunlight
- ☐ The mentioned safety instructions were adhered to during installation and operation
- ☐ The signal strength of the WiFi or cellular network is sufficient

Breeze Online Status Checker

With the Breeze Online Status Checker you are able to check if the Air Quality Sensor is online. For this, our customers receive a personal token after signing the contract. Together with the Air Quality Sensor ID, the token can be used to easily check whether the Air Quality Sensor is online after installation. Find the Breeze Online Status Checker here:

https://onlinestatus.breeze-technologies.de

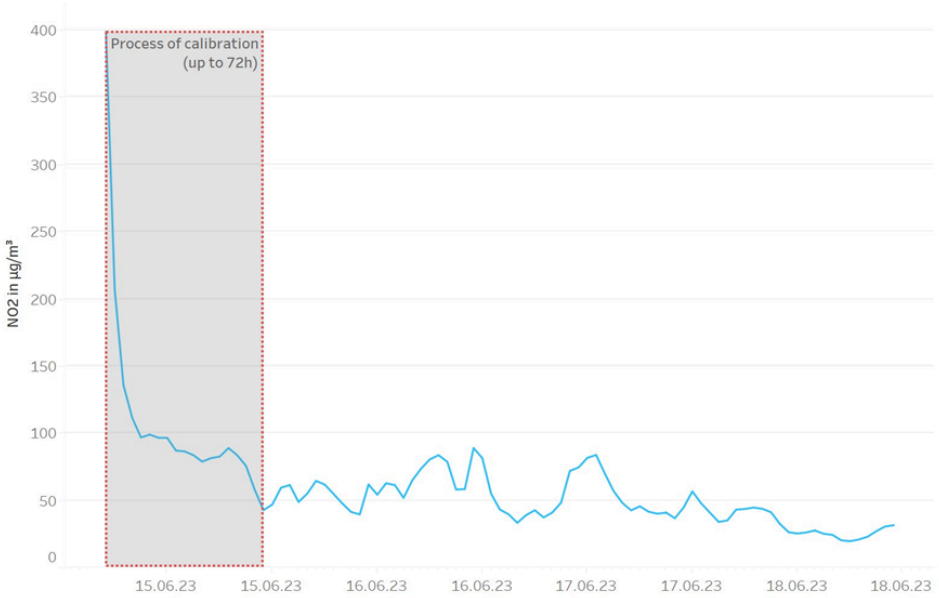


After Installation

Air Quality Sensor Calibration Process

When the Air Quality Sensor has been replaced to a new location and turned on for the first time, it requires a recalibration process before the collected data is usable again. This occurs, for example, when the device is initially installed or when there is a change in location. The Air Quality Sensors must then reach their required operating temperature and undergo a stabilization process. The figure below illustrates how to identify this recalibration phase using the NO2 measurement parameter. This process can take up to one week.

Illustration of the internal calibration process of the sensor exemplified by NO_2



Once the Air Quality Sensor provides reliable data and meets Breeze Technologies' quality standards, our customers will be informed and the Air Quality Sensor will be visible in the Environmental Intelligence Cloud (see next section).

Breeze Technologies Environmental Intelligence Cloud (EIC)

Our environmental analytics cloud platform, EIC, gathers real-time data from Breeze Air Quality Sensors as well as external data sources. Based on machine learning and big data technologies, we use our proprietary Adaptive Cloud Calibration Engine to increase data reliability and accuracy. The Breeze cloud platform allows you to achieve an arbitrarily high data resolution and can assist facility management, environmental scientists, and

municipality management and governments in understanding air quality, its influences, and how to improve it.

Please use the login portal on the following website to access the EIC:

https://portal.breeze-technologies.de/login

Our customers will automatically receive their password to the e-mail address provided to us as soon as the Air Quality Sensor has arrived. The Air Quality Sensor will be displayed in the EIC once the calibration process described above has been completed.

Further Information

FAQ

How can I add a new user to my EIC account?

New users can only be added to your EIC account by the Breeze Technologies support team. Please send a request for account generation and the first name, surname and e-mail address of the new user to our support team.

How can I change the address of the sensor or change its location in the "map" tab in my EIC account?

Log in to the EIC and click on the "Dashboard" tab at the top of the menu. Then search in the selection for the Air Quality Sensor for which the address needs to be changed. Click on "configuration" at the bottom right. A menu for updating the Air Quality Sensor information appears, including the option to re-enter the address below. If you have problems finding the address because the Air Quality Sensor is located in a remote area, please contact our support team.

Which time zone is used in the "Data" tab, and which time zone is used when downloading the measurement data in the EIC?

In the "Data" tab, the time zone of your browser is always used as the basis for the timestamps. In the downloaded file, the timestamps are converted to UTC format accordingly.

Breeze Technologies Citizen Portal

Our Citizen Portal for global air quality data serves as a comprehensive and hyperlocal source of information for interested citizens. It functions as a one-stop shop where the public can access air quality data from both public monitoring stations and Breeze Technologies' own Air Quality Sensors. Boasting over 12,500 datasets worldwide, the platform stands as one of the largest air quality information databases globally.

Accessible via: https://map.breeze-technologies.de/en

Contact

General Issues

hello@breeze-technologies.de

Questions regarding current projects

hello@breeze-technologies.de

Blog

Latest Information, Background Stories and Images
https://www.breeze-technologies.de/blog/

Impressum

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