

# Aranet4 sensor



Wireless indoor air quality monitor

## USER MANUAL & DATASHEET

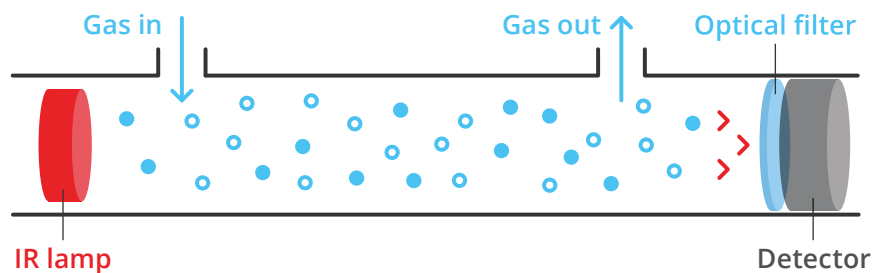


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# What is the Aranet4 device?

The Aranet4 sensor is a battery powered CO<sub>2</sub> meter with additional measurements of temperature, relative humidity and atmospheric pressure. \* The device is suitable for monitoring the CO<sub>2</sub> level in indoor environments such as at home, in office or at school.

Measurement data are displayed on power-efficient e-ink screen allowing for long battery life. Additionally the device can provide a visual and sound notifications in case the CO<sub>2</sub> level surpasses the high concentration level of 1400 ppm (parts per million) – level typically associated with complaints of drowsiness and poor air quality.



Aranet4 uses the nondispersive infrared (NDIR) sensor to measure the concentration of CO<sub>2</sub>. The CO<sub>2</sub> gas in the chamber absorbs infrared light and this absorption is measured by the sensor. The less light passes through – the higher the CO<sub>2</sub> concentration. The CO<sub>2</sub> gas absorbs only a specific wavelength of the light therefore an optical filter is used.

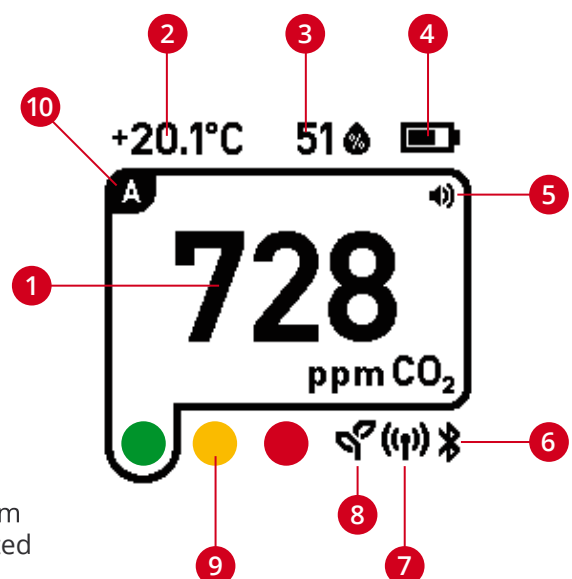
By using the Aranet4 app on your smart device it is possible to wirelessly access the real-time data and up to one week of historical measurement data. The app also allows to configure the Aranet4 device. The Aranet4 app supports connection of several Aranet4 sensors to monitor their parameters remotely from a single smart device.

Additionally up to 100 Aranet4 PRO devices can be connected to the Aranet PRO base station. Refer to the chapter **Using Aranet4 device with the Aranet PRO base station**.

\* Atmospheric pressure data measurements are available only on the Aranet4 app. More information in chapter **How to pair the Aranet4 to my smart device**.

## The Aranet4 sensor screen explained

- 1 CO<sub>2</sub> concentration level in ppm (parts per million).
- 2 Temperature of the air in Celsius or Fahrenheit. Refer to the switch positions of the Aranet4 in chapter **Switch positions explained**.
- 3 Relative humidity of the air (RH %).
- 4 Battery level.
- 5 Alarm status. The speaker symbol is visible when alarm function is activated. The alarm settings can be adjusted using the Aranet4 app.



**6** Bluetooth status. If the Bluetooth symbol is visible the Bluetooth pairing function is enabled. Refer to switch positions of the Aranet4 in chapter **Switch positions explained**. Make sure Bluetooth connectivity is enabled on your smart device in order to connect to the Aranet4 device.

**7** Radio status.\* If the radio symbol is visible, the connectivity with Aranet PRO base station is enabled. Refer to switch positions of the Aranet4 in chapter **Switch positions explained**.

**8** CO<sub>2</sub> indication mode. If the leaf symbol is visible the CO<sub>2</sub> level indication is set to plant mode (plants require higher CO<sub>2</sub> level than humans). If the leaf symbol is not visible, then CO<sub>2</sub> level indication is set to human mode. You can select the mode using the Aranet4 app.

**9** CO<sub>2</sub> threshold level indication.

**When the human mode of the CO<sub>2</sub> indication is selected:**

● **Green** represents normal level (below 1000 ppm)

● **Yellow** represents average level (1000 to 1400 ppm)

● **Red** represents high level (above 1400 ppm)

**When the plant mode is selected:**

● **Green** represents normal level (above 500 ppm)

● **Yellow** represents average level (500 to 300 ppm)

● **Red** represents low level (below 300 ppm)

**10** CO<sub>2</sub> calibration mode indication. Symbol "A" is displayed when calibration is set to automatic. No letter is displayed when calibration is set to manual mode.

## Switch positions explained

The Aranet4 device has four small configuration switches that allow the user to adjust the preferences of the device.

To access the configuration switches, open the cover of the battery compartment on the back of the device. While batteries remain inserted, adjust the switch position (up or down) using the pin tool that is supplied with the Aranet4 device (or any other suitable thin tool).

Switches can be adjusted while batteries are removed as well, **but note that if you remove the batteries, the measurement history will be erased from Aranet4 memory.** The changed preference setting will be enabled once the batteries are inserted back in.

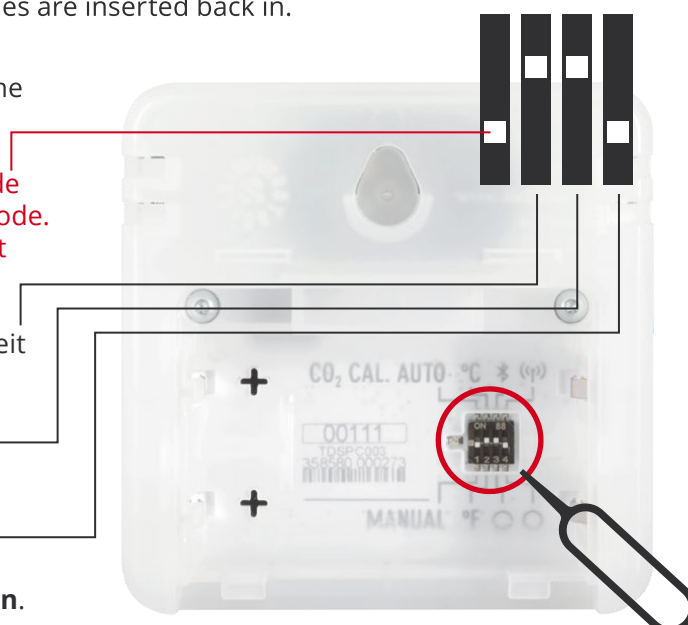
The positions of the configuration switches have the following meaning:

**AUTO / MANUAL** – switch the CO<sub>2</sub> calibration mode to either manual (default position) or automatic mode. Use **MANUAL** calibration mode in case you are not certain which mode to use.

**°C / °F** – switch between either Celsius or Fahrenheit degrees.

**Bluetooth / 0** – enable or disable (0) the Bluetooth connectivity.

**Aranet radio / 0 \*** – enable or disable (0) the Aranet radio connectivity. Refer to chapter **Using Aranet4 device with the Aranet PRO base station.**



\* Function available only in Aranet4 PRO.

## CO<sub>2</sub> calibration

The Aranet4 device is calibrated at the factory. However, the user can perform CO<sub>2</sub> calibration manually when needed. During the manual calibration the Aranet4 device must be exposed to fresh air (about 420 ppm of CO<sub>2</sub>) and the environment should be stable (not changing). Maintain a distance of at least 1 meter from the device during the calibration process.

To start the manual CO<sub>2</sub> calibration, change the position of the switch from MANUAL to AUTO and then back to MANUAL (maintain maximum of 1 second between each movement). The calibration progress will be displayed on the screen of the device. In case of a calibration failure message, make sure that the environment requirements are met and repeat the process from the beginning.

Manual calibration can be done using the Aranet4 app as well.

In case of automatic calibration mode, the Aranet4 device needs to be exposed to a fresh air at around 420 ppm (for instance, outdoors or room with good air exchange) at least once a week.

## How to pair Aranet4 to my smart device?

Connect your smartphone with the Aranet4 device via Bluetooth by using iOS or Android (access to device's location should be allowed due to general requirement for Bluetooth apps to work correctly on Android OS) app to:

- ✓ Access real-time measurement data overview
- ✓ View seven day measurement history
- ✓ Set alarms and frequency of sensor readings
- ✓ View atmospheric pressure monitoring
- ✓ Access all nearby Aranet4 devices
- ✓ Do the CO<sub>2</sub> calibration of the device
- ✓ Get access to the available firmware updates

The Aranet4 device can be connected to a smart device using the Bluetooth connection and the Aranet4 app on either iPhone or Android. Make sure Bluetooth connectivity is enabled on your smart device and on your Aranet4 device.

To connect your Aranet4 device to your smart device do the following steps:

- 1 Launch the Aranet4 app and on the main page (My devices) add a new device by clicking on the (+) symbol.
- 2 Select your Aranet4 device from the list.
- 3 When prompted, confirm the start of pairing.
- 4 Type in the 6 digit passcode that is shown on the display of your Aranet4 device.



Your mobile phone must have either Android 6.0 or newer (for Android) or iOS 11.00 or newer (for iPhone) in order for you to be able to download the app.

## Using Aranet4 device with the Aranet PRO base station

The Aranet PRO base station serves as a device for collecting, storing and maintaining data from all types of Aranet sensors, including Aranet4. Up to 100 sensors can be connected to a single Aranet PRO base station which has a capacity to store the measurement history up to 10 years.

To connect the Aranet4 device to the Aranet PRO base station, initiate the sensor pairing mode on

the Aranet PRO base station and start the pairing on the Aranet4 device by changing the switch position from disable (0) to enable (radio symbol). Alternatively, while switch is in the enable position (radio symbol on screen is visible), remove and reinsert the batteries. Please note, that by removing the batteries, the measurement history will be erased from the Aranet4 memory.

Find out more about the Aranet PRO base station at [aranet.com](http://aranet.com) and follow the User Guide on how to pair Aranet sensors to the Aranet PRO base station.

## Frequently asked questions (FAQ)

If you can't find the answer that you are looking for in this manual, please take a look at the Aranet4 FAQ section at [aranet4.com/faq](http://aranet4.com/faq). Otherwise send us a message to [support@aranet.com](mailto:support@aranet.com).

## Returns and warranty

In case of a return or a warranty claim, please contact your sales representative. For Terms and Conditions refer to [aranet4.com/terms-conditions](http://aranet4.com/terms-conditions)



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Datasheet	Aranet4 PRO	Aranet4 HOME
Measurements	CO <sub>2</sub> (carbon dioxide), temperature, relative humidity, atmospheric pressure	
Measurement range		
CO <sub>2</sub>	0-9999 ppm	
temperature	0 °C to 50 °C (32 °F to 122 °F)	
relative humidity	0 % to 85 % RH	
atmospheric pressure	0.3 to 1.1 atm (4.4 to 16.0 psi)	
Measurement accuracy*		
CO <sub>2</sub>	0-2000 ppm ±50 ppm or 3 % of reading; 2001-9999 ppm ±10 % of reading	
temperature	±0.4 °C (±0.72 °F)	
relative humidity	±3 %	
atmospheric pressure	±0.001 atm	
CO <sub>2</sub> measurement calibration	Automatic or manual (at 420 ppm)	
Operating environment	Indoor use	
Data transmission	1, 2, 5, 10 minutes	
Data protection	Data encryption	
Power options	2 AA Alkaline batteries	
Battery life at 20°C / 68°F	Up to 2 years**	
Operating temperature	0 °C to 50 °C (32 °F to 122 °F)	
Operating humidity	0 % to 85 % non-condensing	
Dimensions	70 x 70 x 24 mm / 2.716" x 2.76" x 0.94"	
Weight	104 g (3.7 oz)	
Construction	Polycarbonate	
Protection class	IP20	
Marking	CE	
Included	2 AA Alkaline batteries	
Frequency	Depends on the base station instructions	
Line of sight range	Bluetooth up to 10 m / 33 ft Aranet radio up to 3 km / 1.9 mi	Bluetooth up to 10 m / 33 ft
Transmitter power	Bluetooth: -12 dBm or 4 dBm (selectable by user) Aranet LoRa radio: 14 dBm	Bluetooth: -12 dBm or 4 dBm (selectable by user)
Compatible base stations	Aranet PRO (from v1.3.2)	-
Part number	TDSPC003 (EU) TDSPC0U3 (NA) TDSPC0R3 (RU)	TDSPC003.001 (Global)

\* For best accuracy, recommended operating range is 10 °C to 40 °C (50 °F to 104 °F) and 20 % to 60 % RH (non-condensing). Prolonged operation beyond these ranges may result in a shift of sensor reading, with slow recovery time.

\*\* Bluetooth pairing disabled, LoRa radio disabled, data transmission at a 10 minute interval.

**Aranet4 is not impact resistant!**

**Do not use the device in high humidity environments (greater than 85%)!**

**Do not leave the device in direct sunlight!**

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