IndoorCO$_2$Map

App Manual

Revised June 2026 • Project background at indoorco2map.com/about.html

Introduction

This manual explains how to use the IndoorCO$_2$Map app. To read more about the goals of the project, see indoorco2map.com/about.html.

The app needs no user account: it is used anonymously and only submits data to the IndoorCO$_2$Map servers when you actively start *and* submit a measurement. It never sends data passively just from being installed or running. Please still read the *Privacy & Data Protection* section at the end.

Requirements

You need a supported CO_2 sensor. Without one you can still browse and download the data on indoorco2map.com.

The app runs on iOS and on Android 11 or newer (older Android versions are not supported). Currently supported sensor models:

- Aranet4
- Airvalent (older firmware may not work – update if in doubt)
- Inkbird IAM-T1 (limited support)*
- Airspot Health (limited support)*

*Limited-support models may not work well on phones that aggressively shut down background apps; this mostly affects some Android models.

First Time Setup

On first launch the app requests **Bluetooth** and **Location (GPS)** permissions. Both are required: without Bluetooth the app cannot read the sensor, and without Location it cannot find places near you.

If you decline, you can grant them again from inside the app – on many phones the red status icons open a dialog or link to the right settings. On other phones you may need to change it in your phone's system app settings. Uninstalling and reinstalling, then granting the permissions, also works.

You do not need to choose a sensor type: the app automatically scans for all supported sensor types. Just pick your sensor from the dropdown at the top of the main screen.

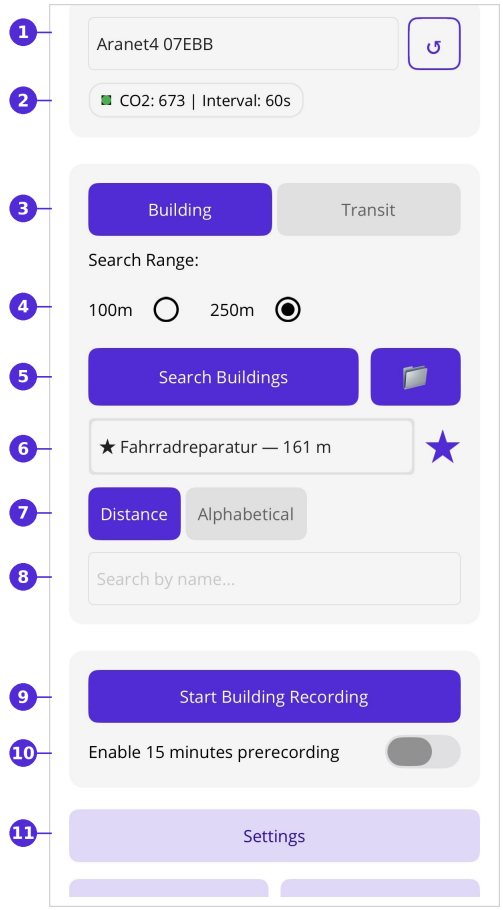
If you have an Aranet4 or Airvalent that is not yet paired to your phone, a PIN popup appears automatically – enter the PIN shown on the sensor's display. If you miss it, restart the app or pair the sensor through your phone's Bluetooth settings. Without pairing the app can still show the current CO_2 level, but it cannot read the history (so the 15-minute prerecording feature will not work). If you already use the official Aranet or Airvalent app, the sensor is usually already paired.

The Main Screen

The quick version. After the one-time setup, taking a measurement is usually just four steps:

1. Wait a few seconds for the app to find your sensor and read its data.
2. Tap Search Buildings.
3. Select the place you want to measure from the list.
4. Tap Start Building Recording.

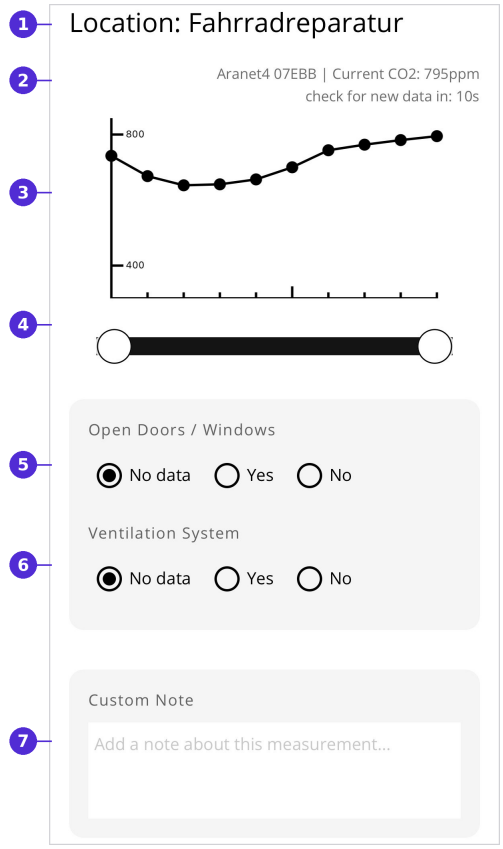
The controls below give you more options when you need them.



1. **Sensor & reconnect.** A dropdown of the detected sensors (e.g. Aranet4 07EBB). The app scans for all supported sensor types automatically, so just pick yours from the list. Tap the circular arrow to re-scan and reconnect if the sensor drops out.
2. **Live status.** The current CO_2 reading and the sensor's measurement interval. The small square is green when the sensor is connected and sending data, red when it is not.
3. **Building / Transit.** Switch between measuring a building or room and measuring public transport (see *Transit measurements*).
4. **Search Range.** How far around your position to look for places: 100 m or 250 m. Use the smaller range in dense areas for a shorter, more relevant list.
5. **Search Buildings / cache.** Search Buildings finds nearby places (a few seconds). Your exact position is not transmitted – the app works out on the device which map tiles to request from the backend (see *Privacy*). The folder button loads nearby places *instantly* from the local cache – useful where you have measured before or have no connection.
6. **Result list & favourite.** Tap a place to select it. The star toggles it as a favourite (marked with a filled star); favourites appear at the top of the list when they are nearby.
7. **Sort order.** Sort the list by Distance or Alphabetical.
8. **Search by name.** Filter the found places by typing part of the name.
9. **Start Building Recording.** Begins a measurement for the selected place and switches to the recording screen.
10. **Enable 15 minutes prerecording.** When on, the recording also includes the 15 minutes before you pressed start, read from the sensor's history. Aranet4 / Airvalent only, and the sensor must be paired. Handy if you forgot to start in time.
11. **Settings.** Further preferences and diagnostic options, such as copying the logs (see *Advanced Features*).

Recording a Measurement

After you tap Start Building Recording the app switches to recording mode.



1. **Location.** The place you are measuring.
2. **Live status.** The current CO_2 value and a countdown to the next reading (*check for new data in:* ...). Points are added automatically at the sensor's interval.
3. **Chart.** All measurements since the recording started. At least **five data points** are required before you can submit – about five minutes at a one-minute interval, longer if the sensor interval is slower. Change the interval in the manufacturer's official app.
4. **Trim slider.** Sensors take a few minutes to settle on the real room level, so drag the *left* handle to drop the start of the recording. Drag the *right* handle to drop the end – for example if you left the building before submitting.
5. **Open Doors / Windows.** Optionally record whether windows or doors were open: No data (default – nothing reported), Yes, or No.
6. **Ventilation System.** The same for mechanical ventilation: No data, Yes, or No.
7. **Custom Note.** An optional free-text note saved with the measurement. This note becomes part of the public dataset, so do not put personal information here.

Submitting. Scroll down and tap Submit / Upload to send the measurement and end the recording. You get a confirmation that the upload succeeded and return to the main screen. The new entry usually appears on the map within a few minutes.

Advanced Features

15-minute prerecording

When the toggle on the main screen (10) is on, the app reads the sensor's history and includes the 15 minutes before you pressed start. Useful if you forgot to start in time. Currently works only with the Aranet4 and Airvalent, and the sensor must be paired.

Favourites

Use the star next to a place (6) to mark it as a favourite. Favourites are shown at the top of the search list when they are nearby, instead of the usual distance sorting.

Cached locations

If you are somewhere you have measured before, tap the **folder** button next to Search Buildings (5). It retrieves nearby places instantly from the local app cache, without a fresh GPS lookup.

Transit measurements

Besides buildings you can measure public transport: tap Transit (3). Choose your start and destination and the line you used; you can filter by transit type and search lines by name. Currently **Bus, Tram, Train and Monorail** are supported. The feature works but is still being refined; flights and ferries may be added later.

Choosing the sensor

The app scans for all supported sensor types automatically. If more than one sensor is in range – for example several of the same type – pick the one you want from the dropdown at the top (1). With a single sensor it is selected for you.

Copy Debug Log / Copy Persistent Log

The app keeps some information about its internal state to help diagnose problems. This data stays *only on your device* and is never sent anywhere on its own. The **Debug Log** is detailed and is cleared each time the app starts; the **Persistent Log** is stored in the app cache and keeps mainly the more serious errors across restarts. From Settings you can copy either log to your clipboard and paste it somewhere – to investigate yourself or to send to the developer. Most users never need these.

Privacy and Data Protection

The app has no registration and usage is anonymous. Even so, an anonymous measurement can in rare situations be traced back to you – not by us or the general public, but, for example, a doctor's office you measured in could in principle infer from the timestamp that it was you. In almost all situations this is not an issue, but please keep it in mind. Likewise, if you are the only user in an area, people who know you use the app might assume (rightly or wrongly) that a given measurement on the map is yours.

The following data is submitted only when you transmit a measurement. Unless noted, it is part of the publicly available dataset.

Common to all measurements

- the version number of the app you use (*non-public*)
- the time at which the measurement was started
- the CO_2 values you measured, each with a timestamp
- the custom note you entered, if any
- a signature verifying the data was sent using the app (*non-public, planned*)

Building measurements also include

- open windows / doors: yes / no / not reported
- ventilation system: yes / no / not reported
- the latitude and longitude of the centre of the place you measured
- the OpenStreetMap name, ID and type of the place
- a random ID, different for each measurement (*non-public*)

Transit measurements also include

- the OpenStreetMap name, ID and type of the start of your journey
- the OpenStreetMap name, ID and type of the destination
- the OpenStreetMap name, ID and type of the transit line you used
- a random ID, different for each measurement (*non-public*)

Finding nearby places does not send your position anywhere. The app uses your GPS position only on the device, to work out which map tiles to request from the IndoorCO_2Map backend, so your exact GPS position is never transmitted.