CO₂ SENSOR · LORAWAN



Square CO2

The CO_2 sensor that keeps up with the room. It follows CO_2 minute by minute when the air turns stale, so ventilation can too, on a battery that lasts the life of the product.

- Every minute when CO_2 is high
- Reports the CO_2 values you choose
- Temperature · humidity · pressure · light
- LoRaWAN · NFC · threshold alarm
- Battery for the product's life, 10+ years

OVERVIEW

A CO_2 reading every fifteen minutes misses most of what happens in a meeting room. Square CO2 follows the room: every five minutes in the dark, every two with the lights on, and every minute once CO_2 passes your limit, say 650 ppm. Crossing the limit is reported at once; otherwise a report goes out only when the value has moved. Ventilation, whether run by rules or AI optimisation, hears within minutes rather than quarter-hours.

The same logic protects the battery. In normal operation the sensor draws around 10 µA, so its 4,000 mAh battery lasts the life of the product, more than ten years. The battery stops being a maintenance item: no battery rounds, less waste. Each report carries the CO_2 values you choose (minimum, maximum, mean or current), so the peaks can show as well as the trend. It reports temperature, humidity, pressure and light as well.

WHY IT MATTERS

Better air, less energy

Ventilation hears within minutes instead of at the next quarter-hour: air when people arrive, savings when they leave.

A battery for the product's life

More than ten years: the battery lasts as long as the product. No battery rounds, lower lifetime cost, less waste.

Sees the peaks

Choose min, max, mean or current CO_2 per report, so the stuffy half-hour shows up as well as the average.

Measured, for rules with numbers

A calibrated CO_2 sensor for schools, offices and public buildings where CO_2 is regulated.



Square CO2 in use

DRAFT EDITION

Specifications

SENSING

Sensors	CO_2, temperature, humidity, pressure, light
CO_2 accuracy	±(100 ppm + 10 %), 400–5,000 ppm
Measuring	Default dark 5 min · lit 2 min · high CO_2 1 min, configurable within limits
Threshold alarm	Report at once; discreet red LED if set

POWER AND HOUSING

Battery	$LiMnO_2$, 4,000 mAh, the product's lifetime: 10+ years
IP rating	IP30, indoor
Operating temp	–20 to +60 °C
Dimensions	58 × 58 × 15 mm
Weight	65 g
Mounting	Adhesive, or optional screw mounting kit

CONNECTIVITY

Reporting	Every 15 min if changed beyond the set step; every 2 min at high CO_2 · configurable within limits
Report contents	Your choice of CO_2 (min, max, mean, current), temperature, humidity, pressure and light
Protocol	LoRaWAN 1.0.4, Class A, OTAA
Frequency	EU868 · US915 · AU915 · AS923-1 · AS923-2 · KR920 · IN865
Configuration	NFC (Android) and over the air; alternative VSM apps through the Hugin app or over LoRaWAN
Memory	Built-in data memory
Positioning	2.4 GHz Wi-Fi geopositioning via cloud service

TYPICAL USE

- Demand-controlled ventilation in offices and meeting rooms
- AI or rule-based HVAC that reacts in minutes
- CO_2 compliance in classrooms and lecture halls
- Public buildings where CO_2 limits are regulated
- Finding rooms that are over-occupied or under-ventilated
- Large estates where battery rounds are a real cost

WHAT EVERY SENSOR SHARES

Years on one battery

Ultra-low-power design, and cloud-side processing where it saves energy. Battery life depends on the sensor and how often it reports: well over ten years for most sensors.

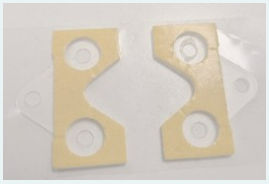
Configured over the air

Every sensor takes its settings over the air, so a change of reporting interval or threshold never means a ladder. Square, Square Xtreme, Puck and Prism can also be set up on site with an Android phone over NFC, and they run downloadable VSM apps: a sensor already on the wall can be given a new task without touching the hardware.

IN THE BOX · MOUNTING



Adhesive back



Square screw mounting kit

In the box

Square CO2, adhesive pre-applied. No tools, no power supply.

Mounting

Adhesive, or optional screw mounting kit — the square screw mounting kit is sold separately.

MORE INFORMATION

Product page and downloads: sensative.com/sensors/square-air-co2
Manuals, payload decoders and integration guides: public.yggio.net/docs
Questions and quotes: sales@sensative.com · Buy: shop.sensative.com or a Sensative reseller

DRAFT EDITION

Specifications are subject to change without notice in the interest of continuous product improvement.