

Demand controlled ventilation (DCV)

CO₂ enhanced ventilation for more energy efficiency in ventilation

DCV systems regulate the amount of fresh air supplied to a given room. CO₂ concentration is monitored to optimize exchange rates, maximize comfort and reduce energy consumption. Sensirion's CO₂ sensor portfolio supports a wide range of DCV system requirements, from matching high accuracy regulations to meeting building standards (e.g. ASHRAE 91.2, WELL, etc) to non-regulated use cases.

Target customers:

- Ventilation components and building control manufacturers



Application challenges

- 1 Regulation compliance
- 2 Size constraints
- 3 Size and cost pressure
- 4 Alternatives



Sensirion's solutions

- 1 Sensirion's portfolio can cover all the requirements for current and future DCV regulations
- 2 SCD41 is an attractive alternative to larger NDIR sensors
- 3 Options available to meet customer requirements on size and cost
- 4 STCC4 can support non-regulated and battery-powered use cases

Sensirion sensor solution:



SCD30: High accuracy NDIR CO₂ sensor

Size (LxWxH): LxWxH mm3



SCD41: High accuracy CO₂ sensor with reduced form factor

Size (LxWxH): LxWxH mm3



STCC4: CO₂ sensor with unmatched form factor

Size (LxWxH): 4 x 3 x 1.2 mm3

Key sensor features

- SCD30: NDIR high accuracy CO₂ sensor for ASHRAE compliance applications.
- SCD41: Photoacoustic high accuracy sensor for WELL & RESET compliance
- STCC4: Low power, low size CO₂ sensor for non-regulated application

Other applications

- Indoor air quality monitors
- Smart speakers
- Mobile phones, laptops, tablets
- Air purifiers (window open)
- Thermostats

FAQs

• What support does Sensirion offer for successful design-in?

If support for design-in, algorithm development or data analysis is necessary, Sensirion's field application engineering teams cover all continents and are ready to support. With excellent sensor expertise, design-in experience, in-house testing set-ups and applications insights, with Sensirion you can comfortably rely on bringing solutions successfully to market.

• At what point in the development process do I need to involve Sensirion?

Involving Sensirion should occur as soon as the design and requirements of the application have been defined. Early collaboration ensures optimal sensor performance in the end device and preventing common pitfalls.

• What is the value of adding a CO₂ feature to a thermostat?

CO₂ detection is crucial for defining air freshness, as high levels indicate poor air quality. Numerous research proved a clear correlation between CO₂ levels and sleep quality, cognitive performance and virus infection risk. Integrating a CO₂ sensor can prompt manual action such as opening a window or an automated response such as activating an HRV system.

• Why Sensirion?

As one of the largest manufacturers, Sensirion sensors are integrated into millions of households worldwide, intensively cooperating with numerous renowned brands. With decades of experience, robust supply chains and manufacturing control, Sensirion ensures top-quality products.

Getting started



SEK-
SCD30



SEK-
SCD41



SEK-
STCC4

Useful documents



Datasheets, application notes, handling instructions, sample codes, step files, certificates

SENSIRION