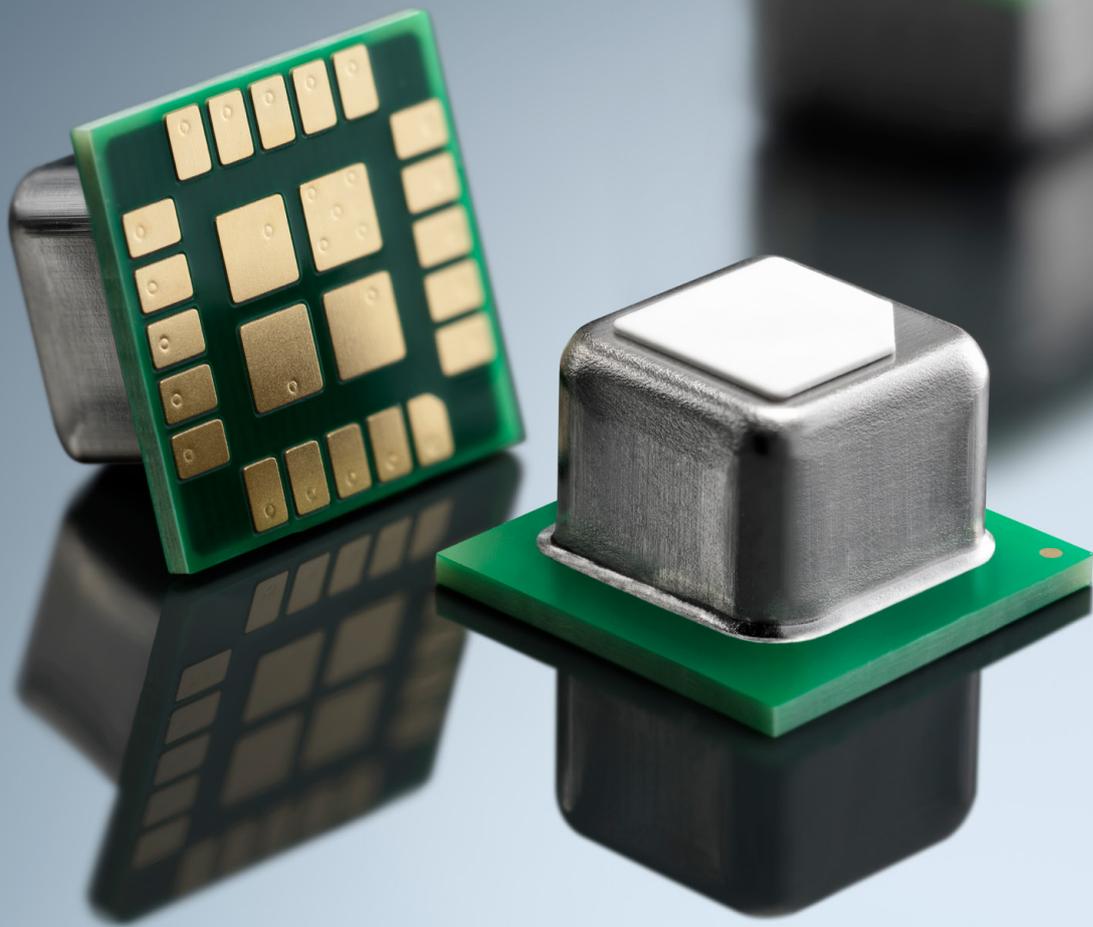


# SCD4x Carbon Dioxide Sensor

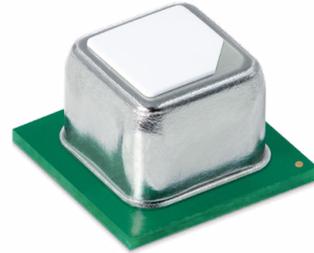
Breaking the size barrier in CO<sub>2</sub> sensing



**SENSIRION**

# SCD4x Carbon Dioxide Sensor

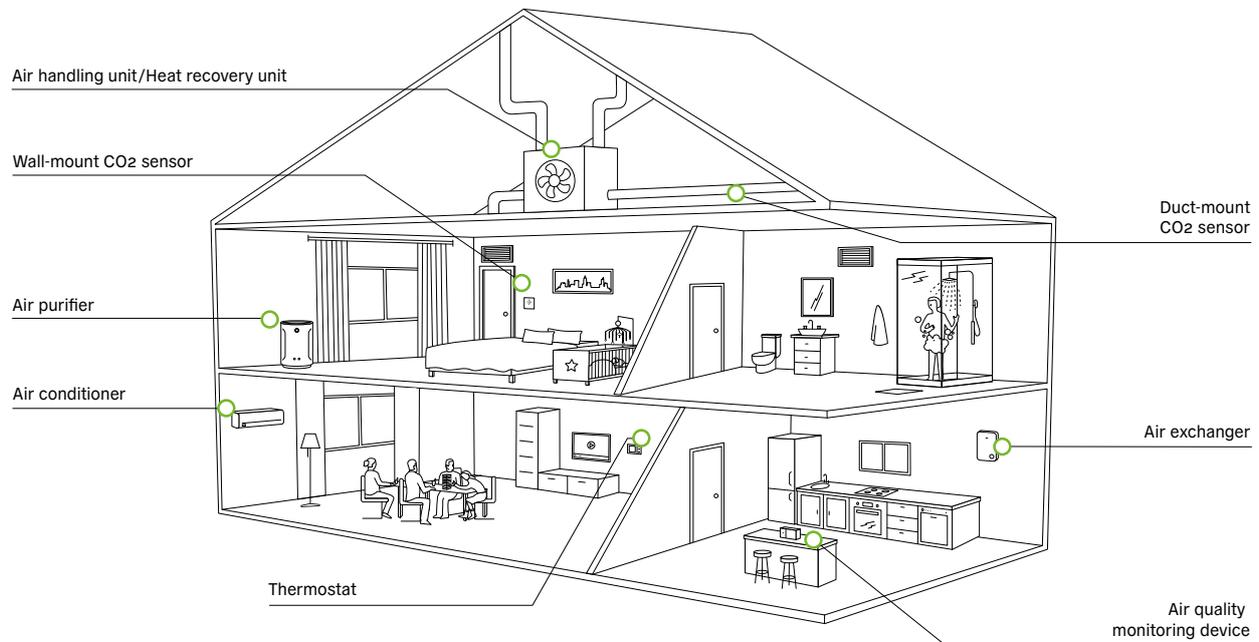
Once again, Sensirion delivers groundbreaking innovation in environmental sensing to create healthier and more productive environments. With a proven track record in CO<sub>2</sub> sensing, Sensirion now breaks the size barrier with the SCD4x – the first miniaturized CO<sub>2</sub>, humidity and temperature sensor that fits into a space of just one cubic centimeter. Tape and reel packaging combined with its SMD assembly processing make the SCD4x ideal for high-volume applications.



The SCD4x is enabled by the photoacoustic sensing principle and Sensirion's patented PASens® and CMOSens® Technology to deliver unmatched small sensor size combined with high performance. SMD compatibility and the small footprint allow cost- and space-effective integration to boost freedom of design for customers. The integrated best-in-class humidity and temperature sensor enables superior on-chip signal compensation and additional RH and T outputs. Finally, the large range of applicable supply voltages, robustness towards external stresses and adjustable power consumption make the SCD4x the perfect fit for a variety of applications.

## Applications

The SCD4x is perfectly suited for a wide range of commercial and residential HVAC applications:



### NDIR vs. photoacoustic sensing technology

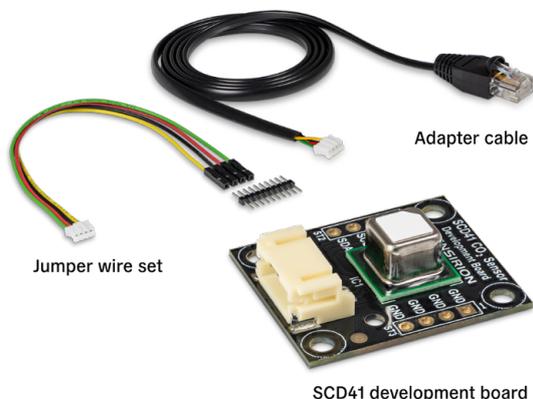
Features	Typical NDIR CO <sub>2</sub> Sensor	SCD4x CO <sub>2</sub> , RH + T Sensor
High selectivity	✓	✓
Small size	✗	✓
Additional sensor outputs	✗	✓
Cost-effective assembly	✗	✓
Mechanical robustness	✗	✓
Cost-effective BOM	✗	✓

### Sensor Specifications

	SCD40	SCD41	SCD42
Measurement accuracy	± (50 ppm + 5% of reading) @ 400–2,000 ppm	± (40 ppm + 5% of reading) @ 400–5,000 ppm	± 75 ppm @ 400–1,000 ppm ± (40 ppm + 5% of reading) @ 1,001–2,000 ppm
Response time (T <sub>63%</sub> )	60 s	60 s	60 s
Supply voltage range	2.4–5.5 V	2.4–5.5 V	2.4–5.5 V
Operating temperature range	-10 to +60 °C	-10 to +60 °C	-10 to +60 °C
Interface	I <sup>2</sup> C	I <sup>2</sup> C	I <sup>2</sup> C
Size	10.1 × 10.1 × 6.3 mm <sup>3</sup>	10.1 × 10.1 × 6.3 mm <sup>3</sup>	10.1 × 10.1 × 6.3 mm <sup>3</sup>
Assembly	SMD	SMD	SMD

# SEK-SCD41 Evaluation Kit

The SEK-SCD41 has been designed for easy evaluation of the SCD41 CO2 sensor. In addition to the SCD41 development board, the evaluation kit includes two cable sets. The “adapter cable” allows you to connect to a computer via the SEK-SensorBridge, which must be bought separately and can be ordered via one of our distribution partners. Sensirion’s SEK-ControlCenter viewer software can be used for evaluating the sensor. In addition, the kit includes a jumper cable that enables fast prototyping, e.g., through integration into existing platforms (like Arduino, RaspberryPi, etc.). The software and relevant documentation can be downloaded from our website.



Learn more: [www.sensirion.com/my-scd-ek](http://www.sensirion.com/my-scd-ek)

## Environmental sensing

Environmental conditions have a major impact on our well-being, comfort, and productivity. Sensirion’s sensor solutions provide detailed and reliable data on key environmental parameters such as humidity, temperature, volatile organic compounds (VOCs), particulate matter (PM2.5), formaldehyde, NO<sub>x</sub> and CO<sub>2</sub>. Environmental sensing opens up new possibilities to create smarter devices that improve our comfort and well-being as well as increase energy efficiency in a wide variety of applications. We accompany you through the entire product development process, from the initial idea to product launch and beyond. Our expertise ranges from prototype construction, design-in support and use-case development to inline testing at the mass production stage.

