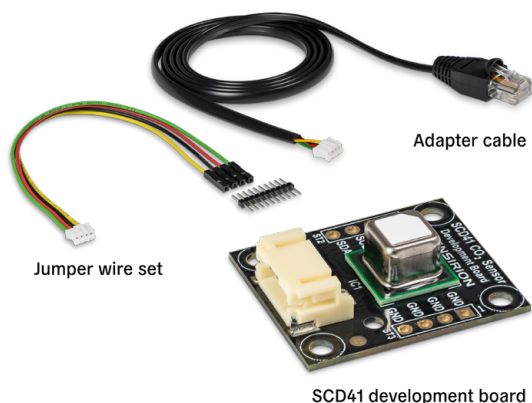


SEK-SCD41 Evaluation Kit

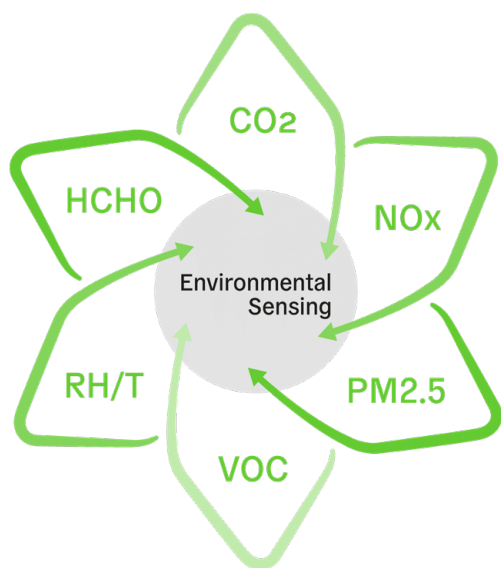
The SEK-SCD41 has been designed for easy evaluation of the SCD41 CO₂ sensor. In addition to the SCD41 development board, the evaluation kit includes two cable sets. The “adapter cable” allows you to connect to a computer via the SEK-SensorBridge, which must be bought separately and can be ordered via 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

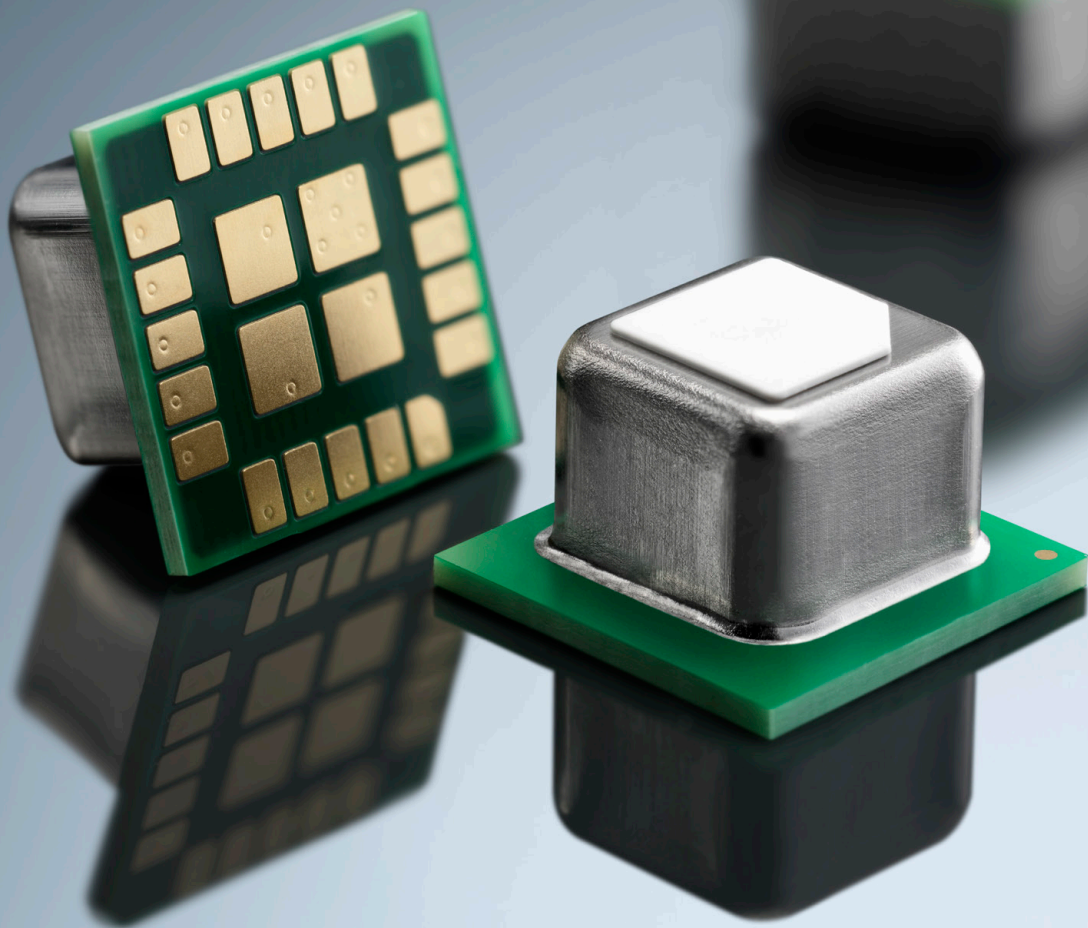
Environmental sensing

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_x and CO₂. 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.



SCD4x Carbon Dioxide Sensor

Breaking the size barrier in CO₂ sensing

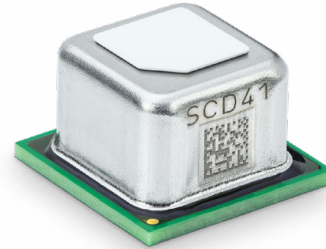


SENSIRION

SCD4x Carbon Dioxide Sensor

Description:

The SCD4x is Sensirion's next-generation miniature CO₂ sensor. Based on the photoacoustic NDIR sensing principle and Sensirion's patented PASens® and CMOSens® technology, it offers high accuracy at an unbeatable price with the smallest form factor. The SMD assembly allows cost- and space-efficient integration of the sensor with maximal design freedom. The integrated SHT4x humidity and temperature sensor provides on-chip signal compensation. The sensor's tape and reel packaging makes the SCD4x ideal for high-volume applications.

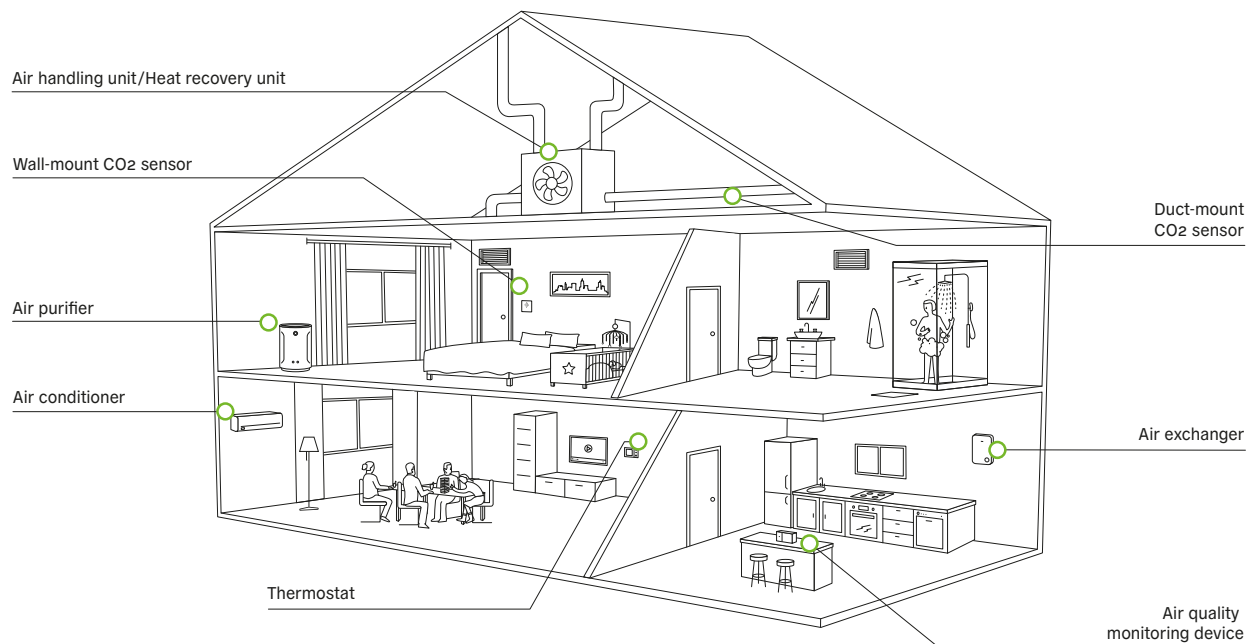


The SCD40 of the SCD4x product family provides accurate CO₂ sensing over a concentration range of 400–2,000 ppm and is ideal for cost-sensitive applications. For low power and indoor air quality applications, the SCD41 offers several important features, such as a specified CO₂ accuracy range from 400 – 5,000 ppm, higher accuracy specifications and low-power measurement modes. Applications requiring compliance with IAQ standards – such as RESET®, WELL Building Standard™ and California Title 24 Building Energy Efficiency Standards – are well served by the SCD41.

CO₂ is a key indicator for IAQ, as high levels affect cognitive performance and well-being. The SCD4x enables smart ventilation systems to regulate ventilation in the most energy-efficient way. In addition, IAQ monitors and other connected devices based on the SCD4x help maintain low CO₂ concentrations for a healthy and productive environment.

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 ₂ Sensor	SCD4x CO ₂ , RH + T Sensor
High selectivity	✓	✓
Small size	✗	✓
Additional sensor outputs	✗	✓
Cost-effective assembly	✗	✓
Mechanical robustness	✗	✓
Cost-effective BOM	✗	✓

Technology	Benefits
Proprietary sensing technologies	Highest accuracy in smallest form factor
Small footprint	Fits into every device
Low number of components	High reliability
Long sensor lifetime of >10 years	Reliable sensor hardware
Voltage range of 2.4 – 5.5 V	Flexibility for battery and wired applications
Automatic self-calibration (ASC)	Enable autonomous drift compensation
Multiple low power modes	Potential for battery-powered applications
SMD soldering, tape & reel packaging	Straight-forward design-in
Built-in humidity and temperature sensor	On-chip signal compensation
Digital I ² C interface	Simple sensor communication

Sensor Specifications

	SCD40	SCD41
Measurement accuracy ¹	± (50 ppm + 5% of reading) @ 400 – 2,000 ppm	± (50 ppm + 2.5% of reading) @ 400 – 1,000 ppm ± (50 ppm + 3% of reading) @ 1,001 – 2,000 ppm ± (40 ppm + 5% of reading) @ 2,001 – 5,000 ppm
CO ₂ output range	0 – 40,000 ppm	
Minimum sampling rate	5 s	
Response time (τ _{63%})	60 s	
Size	10.1 × 10.1 × 6.3 mm ³	
Assembly	SMD	
Interface	I ² C	
Lifetime	>10 years	
Supply voltage range	2.4 – 5.5 V	
Average current for periodic mode	3.3 V = 15 mA, 5 V = 11 mA	
Temperature operating conditions	–10 to 60 °C	
Humidity operating conditions ²	0 – 95% RH	

¹ Rough handling, shipping and sensor assembly can temporarily impact the accuracy. Accuracy can be fully restored through the forced recalibration (FRC) or ASC algorithms at least 5 days after sensor assembly. Please see the datasheet for more information.

² Accuracy can be reduced at relative humidity levels below 10%. Please see the datasheet for more information.