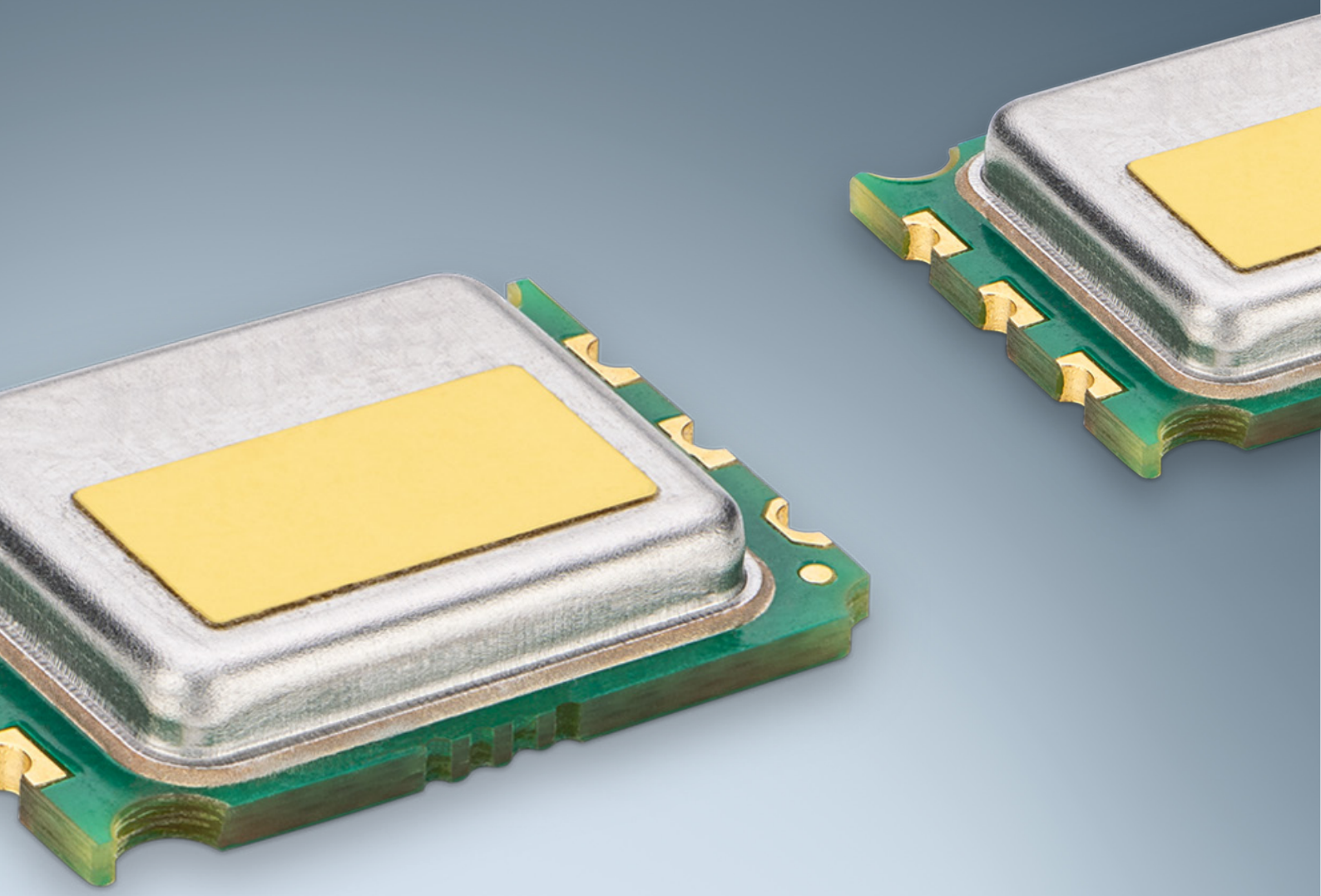
Formaldehyde sensors

Formaldehyde sensing made easy



SENSIRION

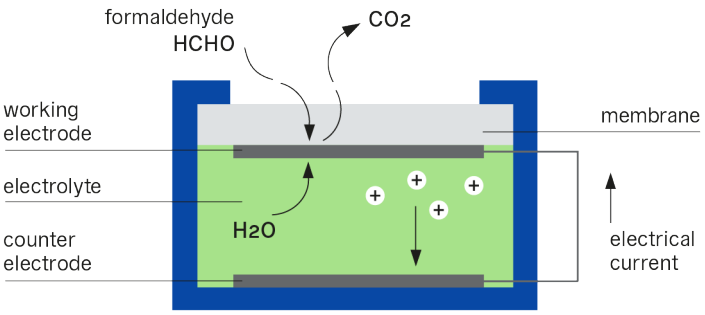
Low concentration formaldehyde detection

Formaldehyde, a common indoor pollutant found in wood-based furniture and floorings, paints, and cosmetics, poses health risks already at extremely low concentrations as both a respiratory irritant and a carcinogenic chemical. To address the challenge of detecting such low concentrations in a household environment, Sensirion has developed the SFA40 and SFA40 – highly sensitive and selective sensors that accurately distinguish harmful formaldehyde in the presence of other, typically harmless VOCs.

In-house sensor calibration and testing infrastructure enable efficient processes. Each sensor is individually calibrated and tested in our laboratories in Switzerland for quality and accuracy.

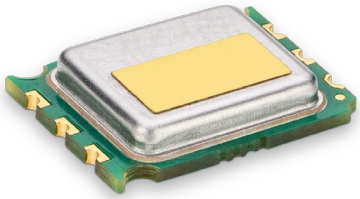
Electrochemical measurement principle

Our formaldehyde sensors are based on an amperometric electrochemical measurement principle that enables minimum cross-sensitivity and excellent long-term stability. At the working electrode, formaldehyde is decomposed and an electrical current flows between the counter electrode and the working electrode. The current is proportional to the formaldehyde concentration. Thanks to the Sensirion-specific chemistry, the sensor is selective to formaldehyde with respect to other VOCs.



SFA40

The SFA40 is one of the world's smallest electrochemical formaldehyde sensors, measuring just 10 × 13 × 2.4 mm³, unlocking vast new applications. The sensor provides a digital output with exceptional selectivity and accuracy, integrating an electrochemical cell and a specialized ASIC. It features unprecedented low power consumption and is designed for easy integration into air purifiers, indoor air quality monitors and air conditioners.



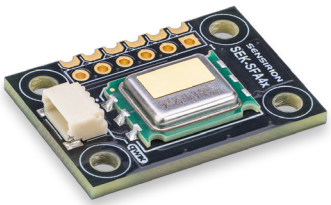
Features	Benefits
Small footprint of 10 × 13 × 2.4 mm³	Facilitates space-efficient design-in
Ultra-low power consumption of 80 µA (even lower modes are under development)	Enables low power applications
Patented electrochemical cell with anti-dry technology	Excellent long-term stability
Uniquely low cross sensitivity to other VOCs	Reliable formaldehyde measurements in real life conditions
Fully factory calibrated module	Easy to use and life-time calibrated

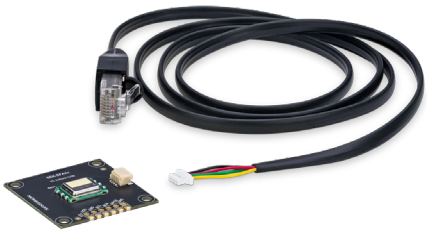
Applications

- Air purifiers
- Indoor air quality monitors
- Compact, portable and non-rechargeable battery driven formaldehyde monitors
- Air conditioners

SEK-SFA40 Evaluation Kit

- 1× SFA40 development board
- 1× adapter cable
- 1× jumper wire set





Learn more

about the **SFA40**

about the **SEK-SFA40**

Specifications

Product	Measurement range (ppb)	Size	Sensor output	Cross sensitivity to ethanol	Limit of detection (ppb)	Lifetime	Supply voltage	Average supply current for continuous measurement mode	Max supply current	Interfaces	Compatibility with IAQ standards	Operating range (%RH)
SFA40	0–1000	13 × 10 × 2.4 mm³	Formaldehyde concentration in ppb	< 0.3%	< 20	> 6 years	1.62–3.6 V	80 µA @ 2 Hz	2 mA	I²C	GB/T, WELL, ASHRAE, WHO	> 10–90 %