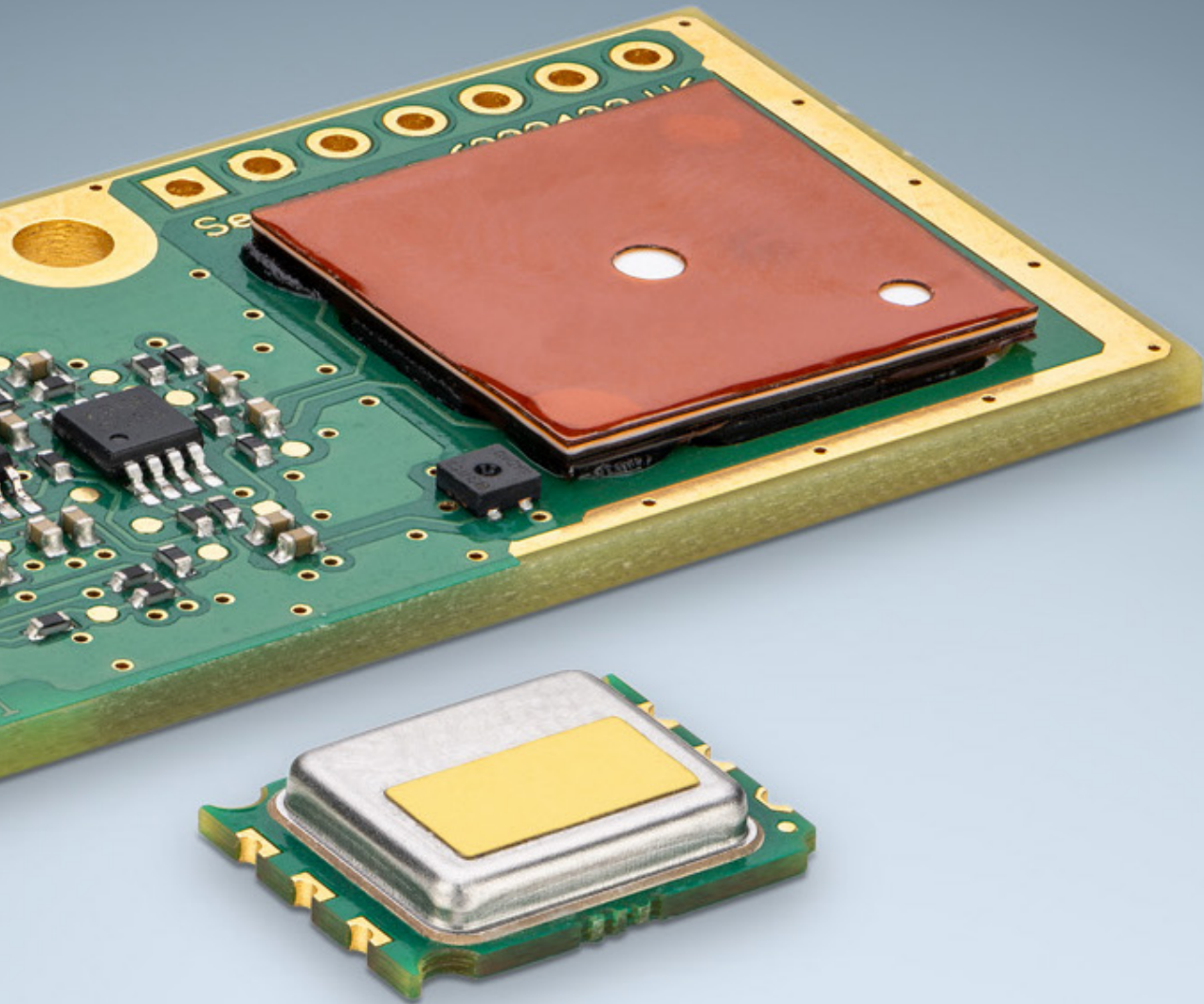


Formaldehyde sensors

Formaldehyde sensing made easy



SENSIRION

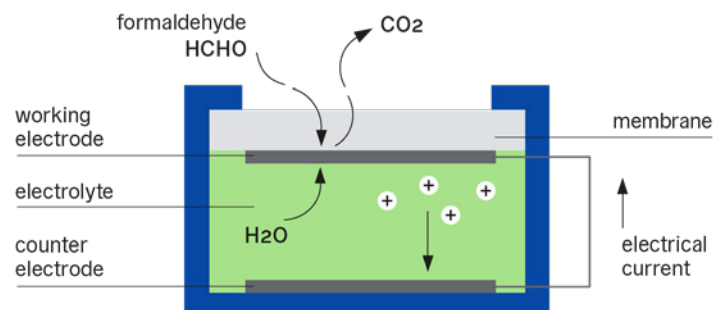
Low concentration formaldehyde detection

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 SFA30 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.

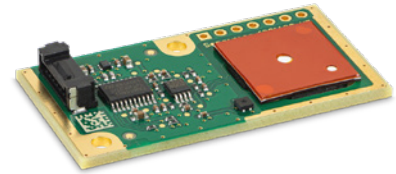
Electrochemical measurement principle

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.



SFA30

The SFA30 is Sensirion's digital formaldehyde sensor designed for easy integration and meets the requirements outlined in standards from the WHO, GB/T, WELL, and ASHRAE. Based on the electrochemical measurement principle, the SFA30 exhibits very low cross-sensitivity to other VOCs, even ethanol. The temperature and humidity sensor enables on-chip signal compensation. Its patented electrochemical cell with anti-dry technology effectively addresses the lifetime limitations caused by the evaporation of traditional liquid electrolytes, ensuring excellent stability and a lifespan of over six years.



Features	Benefits
Patented electrochemical cell with anti-dry technology	Excellent long-term stability and >6 years lifetime
Integrated SHT humidity and temperature sensor	On-board RH and T compensation, additional RH and T output
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
- Air conditioners

SEK-SFA30 Evaluation Kit

- 1× SFA30
- 1× UART to USB adapter cable (2 meter length)
- 1× jumper wire set



Learn more



about the
SFA30

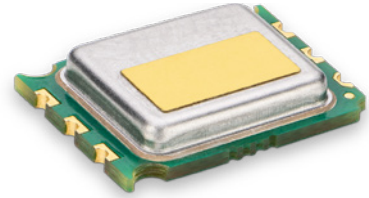


about the
SEK-SFA30

SFA40

Coming soon in Q1 2025

The SFA40 is one of the world's smallest electrochemical formaldehyde sensors, measuring just $10 \times 13 \times 2.4 \text{ mm}^3$, 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 $10 \times 13 \times 2.4 \text{ mm}^3$	Facilitates space-efficient design-in
Ultra-low power consumption of $80 \mu\text{A}$ (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

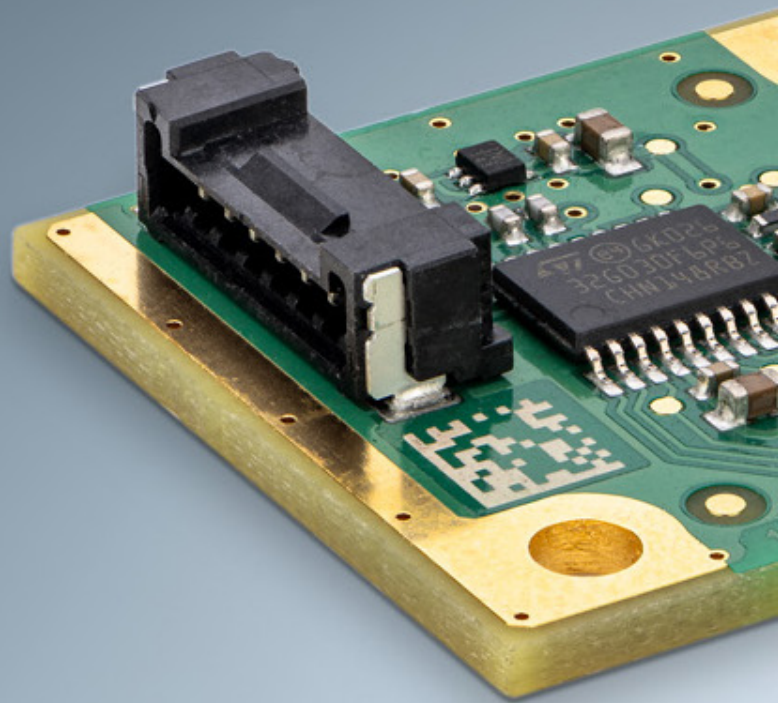
- Air purifiers
- Indoor air quality monitors
- Compact, portable and non-rechargeable battery driven formaldehyde monitors
- Air conditioners

Learn more



about the
SFA40

Product	Measurement range (ppb)	Size	Sensor output	Cross sensitivity to ethanol	Limit of detection (ppb)	Life-time	Supply voltage	Average supply current for continuous measurement mode	Max supply current	Inter-faces	Compatibility with IAQ standards	Typical accuracy (%RH)	Operating range (%RH)	Typical accuracy (°C)
SFA30	0-1000	46 × 24 × 5.5 mm ³	Formaldehyde concentration in ppb, RH, T	< 0.5%	< 20	> 6 years	3.15-5.5 V	1000 μA	5 mA	I ² C, UART	GB/T, WELL, ASHRAE, WHO	2.5	10-90	0.2
SFA40	0-1000	13 × 10 × 2.4 mm ³	Formaldehyde concentration in ppb	< 0.3%	< 20		1.62-3.6 V	80 μA @ 2 Hz	2 mA	I ² C	GB/T, WELL, ASHRAE, WHO			



Technology at heart,
future in mind.