Media Release
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Sensirion inside: DFRobot Gravity SFA40 Formaldehyde Sensor Module

Sensirion, the expert in environmental sensing solutions, is pleased to announce that DFRobot, a leading provider of open-source hardware, has integrated Sensirion's SFA40 formaldehyde sensor chip into its new Gravity SFA40 Formaldehyde Sensor Module. Combining precise formaldehyde (HCHO) detection with DFRobot's plug-and-play Gravity ecosystem, the module enables developers to easily integrate reliable indoor air quality monitoring into their applications.



Precise formaldehyde detection with minimal interference

Formaldehyde (HCHO) is a harmful indoor air pollutant that can be released from furniture, building materials and household products. Reliable detection at very low concentrations is essential for monitoring indoor air quality, supporting effective air purification and helping building owners reduce the health risks associated with poor indoor air quality. At the heart of DFRobot's new module is Sensirion's SFA40 sensor, which uses advanced electrochemical sensing technology to deliver reliable formaldehyde measurements with exceptionally low cross-sensitivity to other gases.

Key features include:

- **High selectivity:** less than 0.3% cross-sensitivity to ethanol, minimizing interference from common substances such as alcohol and perfume.
- **Precise measurement:** detection range of 0–1000 ppb, with a typical accuracy of ±20 ppb or ±20% of reading within the 0–200 ppb range.
- **Environmental compensation:** integrated SHT4x temperature and humidity sensing for improved measurement stability.
- **Low power consumption:** average operating current of just 80 µA at 2 Hz.

Simplifying integration for developers

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By combining Sensirion's sensing technology with DFRobot's standardized Gravity interface, the module makes formaldehyde detection accessible for rapid prototyping and product development. Its compact 32 × 22 mm design, standard 4-pin connector and compatibility with Arduino and Raspberry Pi enable straightforward integration into a wide range of applications. Comprehensive development resources, including Arduino and Python libraries, further simplify implementation. Potential applications include indoor air quality monitors, smart home systems, air purifiers, building ventilation systems and portable formaldehyde detectors.

Combining sensing expertise with easy integration

"This collaboration with Sensirion addresses a key market need – air quality detection moving toward precise quantification," says Ashley Gong, Marketing Director at DFRobot. "By combining Sensirion's advanced electrochemical sensing with DFRobot's modular design, the Gravity SFA40 Formaldehyde Module delivers low cross-sensitivity with precise quantification, along with steady output and easy integration."

"This partnership marks a key step in making precise quantification sensing more accessible," says Bailey Dong, Channel Manager at Sensirion. "Leveraging the strengths of Sensirion's SFA40 and DFRobot's plug-and-play modular ecosystem, we have created a formaldehyde solution that balances professional performance with easy integration."

The DFRobot Gravity SFA40 formaldehyde sensor module is now available through the official DFRobot online store.

Related links:

- Sensirion SFA40 formaldehyde sensor: https://sensirion.com/products/catalog/SFA40
- DFRobot Gravity SFA40 formaldehyde sensor module: https://www.dfrobot.com/product-3020.html

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About Sensirion – Experts for Environmental and Flow Sensor Solutions

Sensirion is one of the world's leading developers and manufacturers of sensors and sensor solutions that improve efficiency, health, safety, and comfort. Founded in 1998, the company now employs around 1,200 people at its headquarters in Stäfa, Switzerland, and in numerous international subsidiaries. Their product range includes environmental sensors for the precise and reliable measurement of humidity and temperature, volatile organic compounds (VOC), nitrogen oxides (NOx), carbon dioxide (CO_2), formaldehyde and particulate matter (PM2.5), as well as gas and liquid flow sensors, differential pressure sensors and gas leakage sensors. These solutions are used across a wide range of applications. As a pioneer in innovation, Sensirion develops solutions for the specific needs of customers and partners from the automotive, industrial, medical, HVAC and consumer electronics markets, as well as high-quality products for cost-efficient mass production. More information and current key figures are available at www.sensirion.com.

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