

INDUSTRIAL PRODUCT DATASHEET

Grove - Air Quality Sensor(BME688) with built-in AI, High-Performance 4-in-1, Gas, Humidity, Pressure and Temperature sensor

The Grove - Air Quality Sensor (BME688) is a compact, high-accuracy 4-in-1 environmental sensor with built-in AI for advanced gas detection.

SKU

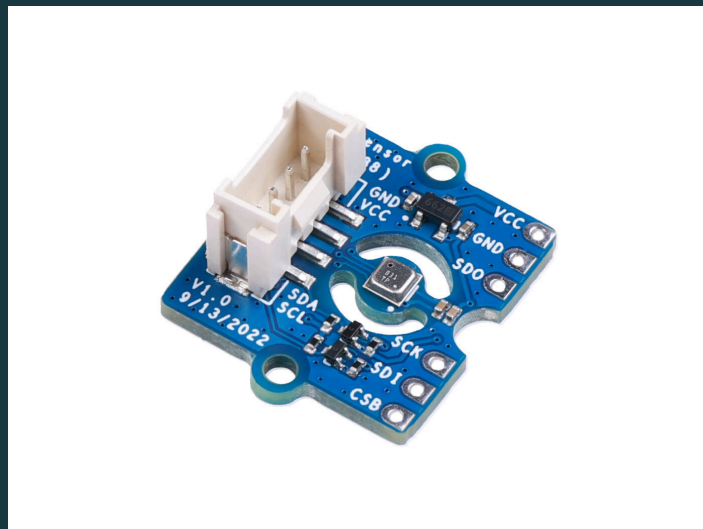
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UPDATED

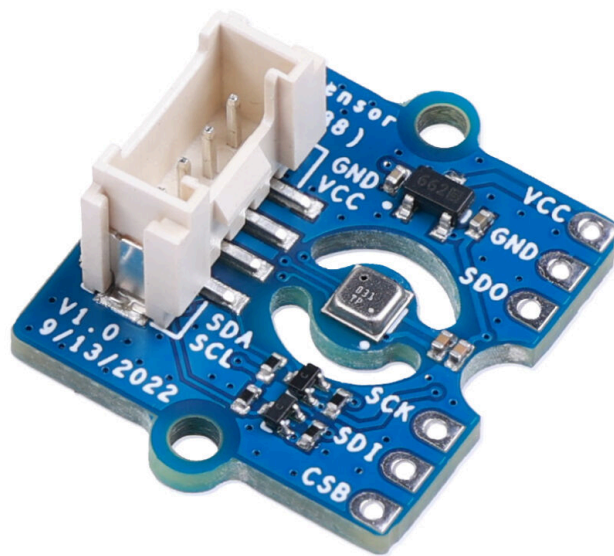
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PRICE

\$33.00(Excl. VAT)



Overview

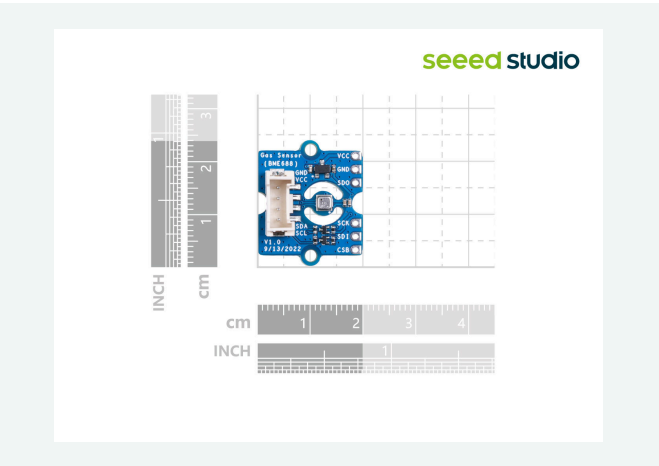
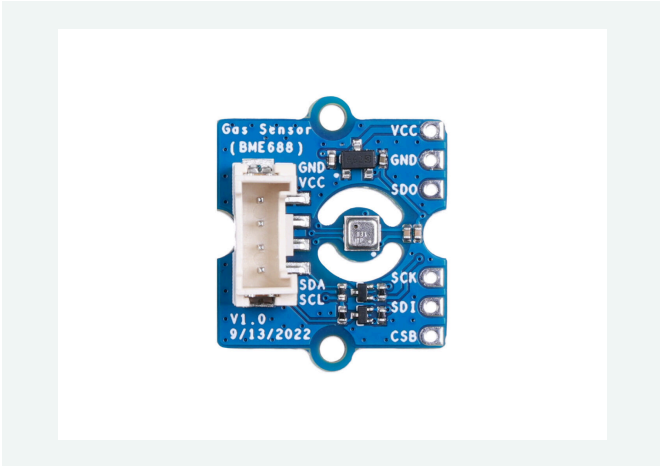
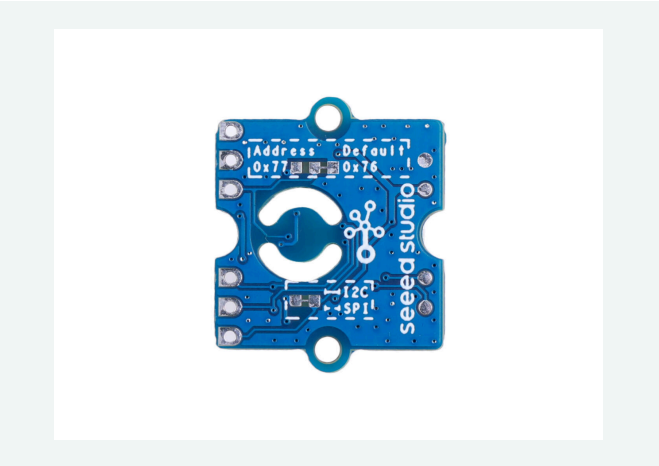
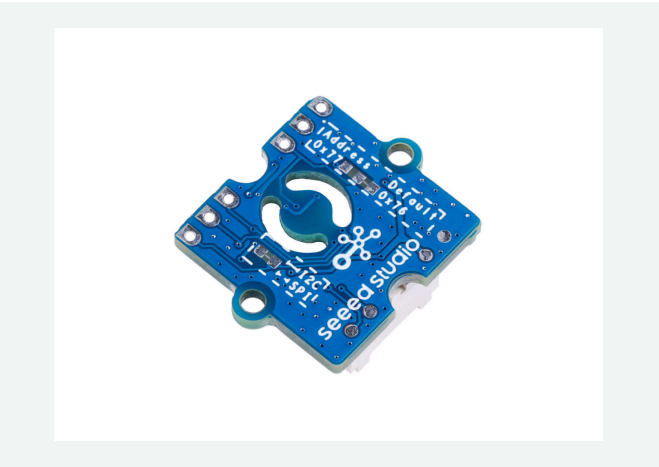


The Grove - Air Quality Sensor (BME688) is the first gas sensor with AI, trainable via Bosch's AI Studio to detect different gas mixtures, and integrates high-performance gas, humidity, temperature, and pressure sensing. It measures VOCs, VSCs, carbon monoxide, and hydrogen in the ppb range, with $\pm 3\%$ humidity, $\pm 1.0^\circ\text{C}$ temperature, and ± 1 hPa absolute pressure accuracy, suitable for indoor/outdoor air quality monitoring and applications like spoilage, leak, and wildfire detection.

Key Features

- **The first gas sensor with AI:** Trainable to detect different gas mixtures and their presence (e.g. coffee) with Bosch's AI Studio
- **High-performance 4-in-1 environmental sensor:** Detect gas, humidity, temperature, and barometric pressure sensing in a compact size
- **Detect a wide variety of gases:** Volatile organic compounds (VOCs), volatile sulfur compounds (VSCs), and other gases such as carbon monoxide and hydrogen in the part per billion (ppb) range
- **High accuracy:** Measure humidity with $\pm 3\%$ accuracy, temperature with $\pm 1.0^{\circ}\text{C}$ accuracy, $\pm 1^{\circ}\text{C}$ and barometric pressure with ± 1 hPa absolute accuracy
- **Easy to use:** Compatible with Grove port, just plug-and-play

Product Gallery



Specification

Dimensions	24mm L * 20mm W * 9.9mm H
Weight	G.W 7.5g

Battery	Exclude
Operating Voltage	3.3V/V
Operating Range	-40~+85°C; 0-100% r.H.; 300-1100hPa
Humidity Absolute Accuracy	± 3%r.H. (20-80 %r.H.,25°C)
Humidity Resolution	0.008 %r.H.
Pressure Absolute Accuracy	± 0.6 hPa (300-1100 hPa, 0-65°C)
Pressure Resolution	0.18 Pa, highest oversampling
Temperature Absolute Accuracy	±1.0°C
Temperature Resolution	0.01°C
Digital Interface	I2C(up to 3.4MHZ)/ SPI(3 and 4 wire, up to 10MHz)
I2C address	0x76(default)/ 0x77(optional)

Applications

- **Indoor and outdoor air quality measurement**
- **Bad breath or spoiled food detection:** based on the measurement of volatile sulfur compounds, which are an indicator of bacteria growth
- **Detection of unusual gases and smells:** which might indicate for instance a leakage or fire
- **Diaper state detection:** e.g. for baby care
- **Early detection of odors & bad smells**
- **Wildfire detection**

Part List

Grove - Temperature, Humidity, Pressure and Gas Sensor (BME688)	1
Grove cable	1

Compliance & Logistics

HSCODE	9025900090
USHSCODE	9025900600
UPC	
EUHSCODE	9013101000
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/Grove-Gas-Sensor-BME688-p-5478.html>
- [Flyer](#)
- [BME688 Datasheet](#)
- [BME AI-Studio Manual](#)
- [BME688 Software tools](#)
- [C Library](#)

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