

# Environmental Sensor Breakout - BME688

SEN-19096

## Product Overview

09-12-2022

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

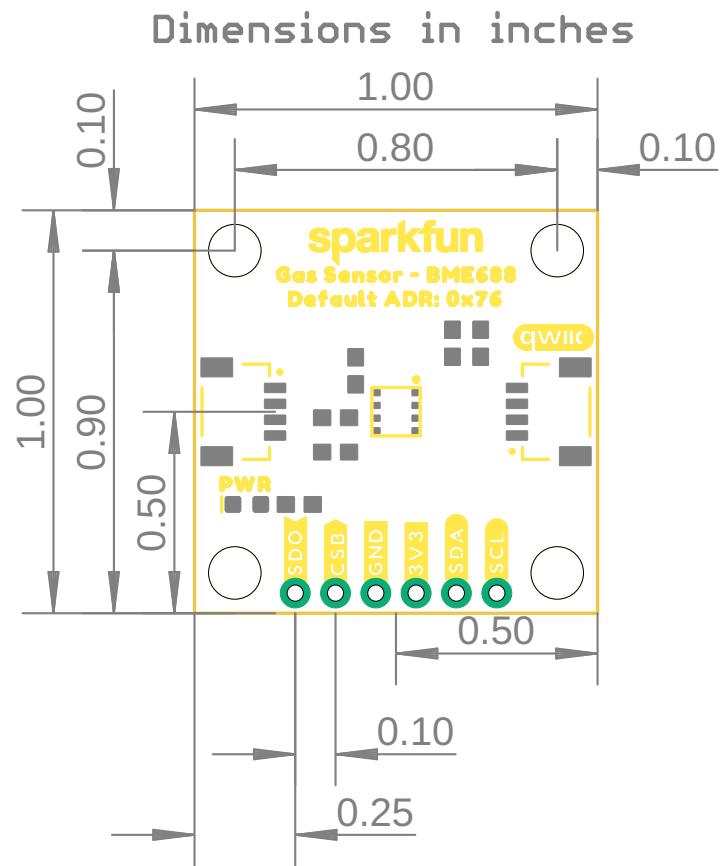
SparkFun Environmental Sensor Breakout - BME688 (Qwiic) combines a gas scanning sensor with temperature, humidity, and barometric pressure sensing. It is an all-in-one environmental sensor. The sensor communicates via either I<sup>2</sup>C or SPI. The BME688's gas sensor detects gases such as carbon monoxide and hydrogen in the part per billion (ppb) range, in addition to volatile organic compounds (VOCs) and volatile sulfur compounds (VSCs).



## Features

- Bosch BME688 AI gas sensor
- Uses I<sup>2</sup>C interface (Qwiic-enabled):
  - 0x76 (Default) or 0x77 (I<sup>2</sup>C Address)
  - 2x Qwiic connectors
- Operating voltage range:
  - 1.71V to 3.6V
  - Typically, 3.3V if using the Qwiic cable
- Relative humidity:
  - 0% to 100% operating range
  - $\pm 3\%$ RH absolute accuracy
  - $\pm 0.008\%$ RH resolution
- Temperature:
  - -40°C to +85 °C operating range
  - $\pm 1.0\%$ C absolute accuracy
  - 0.01°C resolution
- Pressure:
  - 300hPa to 1100hPa operating range
  - $\pm 60$ Pa (0°C to 65°C) absolute accuracy
  - 0.18PA resolution, highest oversampling
- Gas:
  - 0.92 F1 score (H<sub>2</sub>S scanning)
  - 10.8 sec/scan standard scan speed
  - $\pm 15\% \pm 15$  sensor-to-sensor deviation
- Typical current consumption (varies based on mode and active sensor):
  - 2.1 $\mu$ A to 18mA
  - 0.15 $\mu$ A (sleep mode)
  - 3.9mA in standard gas scan mode

## Board Dimensions



## Mouser Part Number

[View Part](#)

To learn more, visit

<https://www.mouser.com/new/sparkfun/sparkfun-environmental-sensor-breakout-bme688/>