Fermion MEMS Gas Sensor - MiCS-5524 (Breakout)

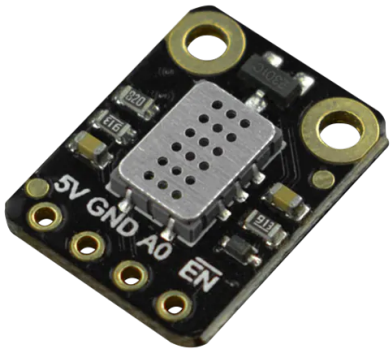
SEN0440

Product Overview

01/12/2023

For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description



DFRobot Fermion MEMS Gas Sensor - MiCS-5524 (Breakout) is a MOS gas sensor that detects hydrogen and nitrogen oxide gas concentrations. This sensor uses MEMS technology to detect concentrations of a variety of gases like CO, CH_4, C_2H_5OH, C_3H_8, C_4H_{10}, H_2, H_2S, and NH_3. The matching sample code integrates the concentration conversion formula of various gas to facilitate the testing and use of sensors. The MiCS-5524 supports a 5V power supply and analog voltage output. This gas sensor features power supply enable/disable pins for low power consumption. Typical applications include indoor carbon monoxide and natural gas leakage detection, indoor air quality monitoring, and early fire detection.

Features

- Support a variety of harmful gas detection
- Integrate the calculation formulas of various gas concentration
- Low power consumption
- I^2C digital output
- Compatible with the 3.3V to 5.5V master controller

Specifications

- Detection of physical quantities:
  - Gas concentration or gas leakage of CO, CH_4, C_2H_5OH, C_3H_8, C_4H_{10}, H_2, H_2S, and NH_3
- $4.9V_{DC}$ to $5.1V_{DC}$ operating voltage range
- 0.45W power dissipation
- Measuring range:
  - 1ppm to 1000ppm (Carbon monoxide CO)
  - 10ppm to 500ppm (Ethanol C_2H_5OH)
  - 1ppm to 1000ppm (Hydrogen H_2)
  - 1ppm to 500ppm (Ammonia NH_3)
  - >1000ppm (Methane CH_4)

The information contained in this document should be used as a guideline only.

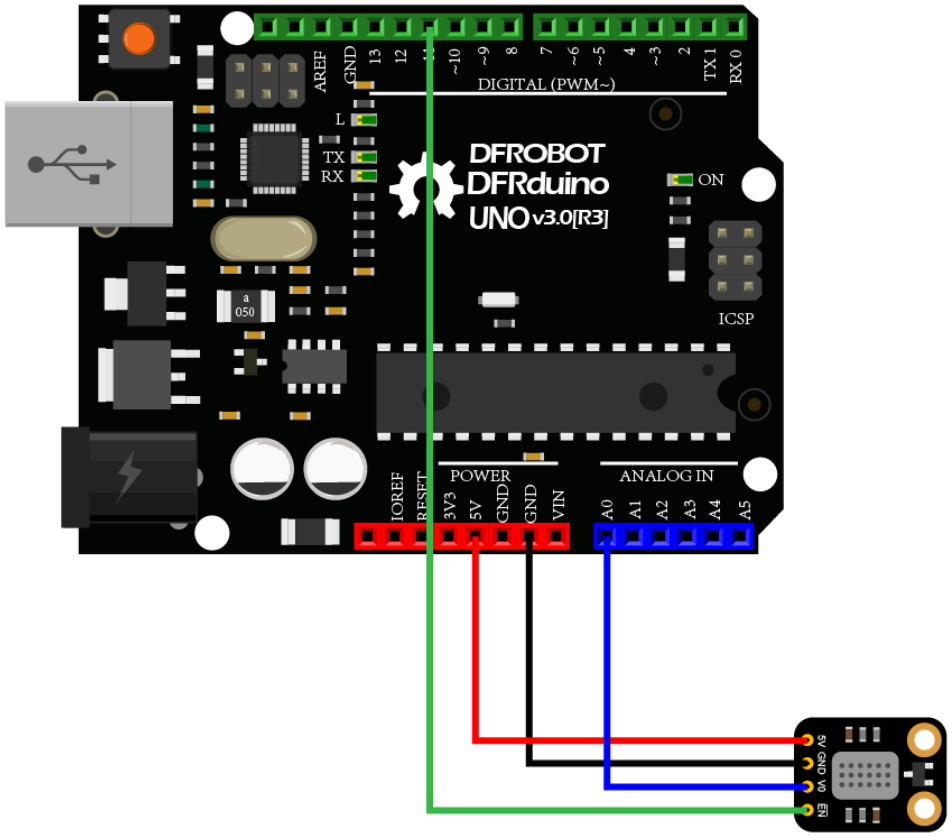
Specifications

- -30ºC to 85ºC working temperature range
- Working humidity:
  - 5% RH to 95% RH (No condensation)
- -40ºC to 85ºC storage temperature range
- Lifespan:
  - >2 years (in the air)
- 12mm x 16mm circuit board size
- 2mm Inner diameter/4mm outer diameter mounting hole size

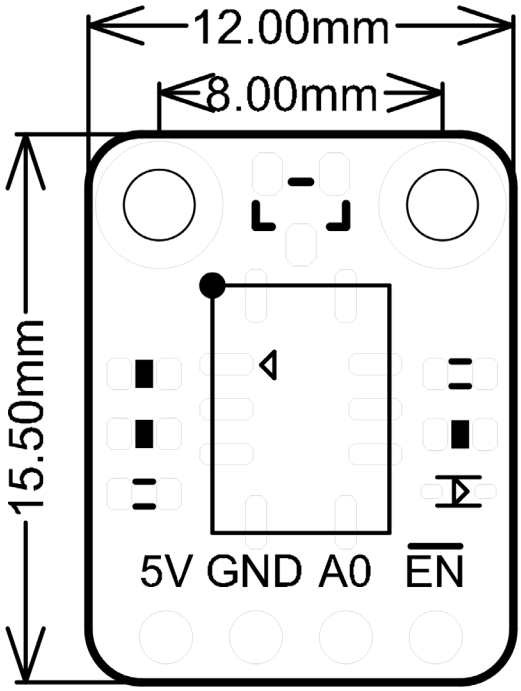
Applications

- Gas leak detection
- Gas safety equipment
- Air environment detection

Connection Diagram

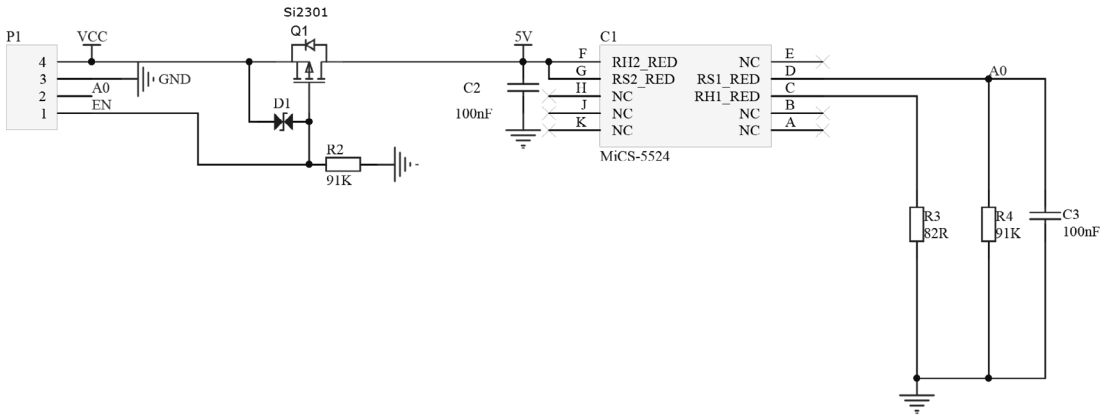


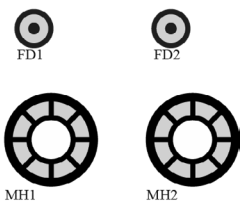
Sensor Dimensions



PCB Information	Name:SEN0440(V1.0)	Thickness: 1.0mm
Engineer: HDJ	Top SolderMask: Black	Bottom SolderMask: Black
Date: 20210618	Top Silkscreen: White	Bottom Silkscreen: White

Schematics





Mouser Part Number

View Part

To learn more, visit https://www.mouser.com/new/dfrobot/dfrobot-fermion-mems-gas-sensor/

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