CCS801

www.ams.com/Gas-Sensors

CCS801 – Analog VOC Sensor

- High sensitivity to Volatile organic compounds (VOCs)
- Optimized low-power modes
- Compact 2x3mm package
- Product lifetime >5 years
- Maintenance free

We provide innovative analog solutions to the most challenging applications in sensor and sensor interfaces, power management, and wireless.

General Description

The air quality we experience indoors is very important because we spend most of our time at home, at work, in school or in vehicles. Until recently, Indoor Air Quality (IAQ) was defined as proper temperature, humidity and CO_2 levels. However, offensive odors, smoke and other VOCs can have more impact on human comfort, productivity and health within a building.

ams Metal Oxide gas sensors have been developed using a unique technology platform enabling sensor miniaturization, low power consumption and ultra-fast response times for a wide range of applications. CCS801 can detect low levels of VOCs typically found indoors. ams has developed software libraries containing proprietary algorithms to correlate measured VOC data to an equivalent CO_2 level (eCO_2), where the main cause of VOCs is from humans.

Applications

- Monitoring indoor air quality in smart home, IoT and other consumer applications.

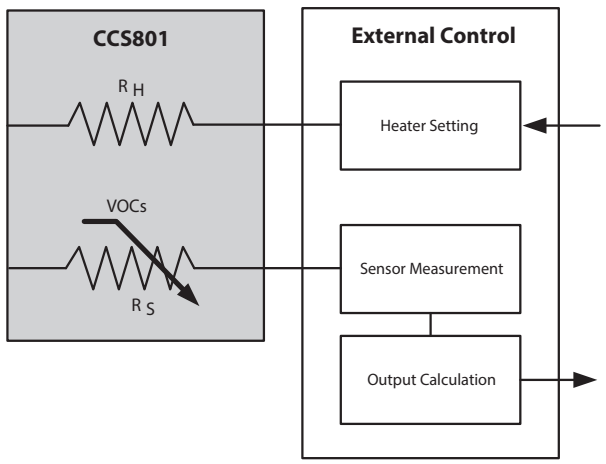
Benefits

- High sensitivity to VOCs
- Optimized low-power modes
- Compact 2x3mm package
- Product lifetime >5 years
- Maintenance free

Specification	
Operating temperature range	-5 to +50°C
Operating humidity range	10 to 95% RH
Storage temperature range	-5 to +50°C
Average power consumption [1]	0.9mW
Typical sensor resistance	50KΩ - 1.4MΩ
Typical heater resistance	50Ω - 66Ω
Signal output component	Resistance change
Package	4lead, 2x3x1mm DFN
Sensing Properties	
VOCs detected	Alcohols, Aldehydes, Ketones, Organic Acids, Amines, Aliphatic and Aromatic Hydrocarbons
Response time	Seconds
Expected product lifetime	>5 years
Cross sensitivity	Humidity and Hydrogen
Restrictions	
Contact of the sensitive layer with liquids should be avoided	
Do not operate gas sensors in the vicinity of silicone and polysiloxanes	

[1] Based on a sensor measurement duty cycle of 2.5%, heater ON for 1.5secs (0.5s @ 1.6V, 1s @ 1.4V) and then heater OFF for 58.5s (0V).

Block Diagram



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