

Gas sensing for a changing world



We're at the forefront of today's hottest sensor trends

Indoor Air Quality

The climate control industry measures indoor air quality by the level of temperature, humidity and carbon dioxide (CO₂). Consumers, on the other hand, rate air quality by the amount of volatile organic compounds (VOCs) such as cooking odors, bio-effluence and outdoor pollutants. These VOCs are not detected by temperature, humidity or CO₂ sensors. For that, you need AppliedSensor's air quality solutions.

Hydrogen Gas Sensing

Concerns over global warming and rising oil prices have focused worldwide attention on hydrogen as an alternative fuel source. Both the U.S. government and the European Union have earmarked billions of dollars to accelerate the development of tomorrow's hydrogen economy. AppliedSensor has the products you need to detect hydrogen gas in automotive, industrial, commercial, residential and consumer applications.



Air quality detection beyond CO₂

Indoor Air Quality Module

This sensitive, low-cost solution for detecting poor air quality caused by volatile organic compounds (VOCs) such as cooking odors, bio-effluence and outdoor pollutants can be integrated into any demand-controlled ventilation environment, including commercial facilities, offices, classrooms, kitchens, and bathrooms. The modules are equipped with a sensor element based on micro-machined metal oxide semiconductor (MOS) technology and unique application-specific algorithms to control a climate system to increase air flow, turn on a fan, open a window, or emit an odor-masking fragrance.

Automotive air quality for comfort and safety

Automotive Air Quality Modules

Now drivers and passengers can enjoy high-quality air in the vehicle cabin without having to fuss with the recirculation button. This easy-to-integrate air quality module reduces the amount of pollutants entering the vehicle cabin by signaling the fresh air inlet door/ventilation flap to close when undesirable substances are detected.



Fast, flexible, highly sensitive and selective

Hydrogen Safety Sensors

Hydrogen Safety Sensors enable the safe use of hydrogen gas. The modules feature low power consumption and flexible packaging and are designed for installation in fuel cell vehicles and hydrogen filling stations. Unlike sensors that have severe cross sensitivity to a variety of combustible gases, it is based on Field Effect (FE) technology, making it highly selective to hydrogen gas without interference from background gases or water vapor.

Flammable vapor detection

Flammable Vapor Detection Modules

Flammable Vapor Detection Modules detect flammable vapors selectively and rapidly using a highly stable quartz microbalance sensor element optimized for gasoline vapor. Substances detected include gasoline, methyl ethyl ketone, dichloromethane and toluene. This unique technology can be applied to both atmospheric and power-vent water heaters.



Sensor technologies for diverse applications

Metal Oxide Semiconductor (MOS) Sensors

Sensors based on MOS technology use tin oxide-based sensing thick films deposited onto two different types of substrates: alumina substrates (thick-film sensors) and Si-micro-machined substrates (micro sensors). Applications include automotive, packaging and food control, medical, security, process control, and more. Gases detected include CO, CH₄, NO₂, gasoline and volatile organics.

Field Effect (FE) Sensors

Sensors based on FE technology utilize the field effect generated by gases in metal oxide semiconductor field-effect transistor (MOSFET) devices with catalytic metals. The charging of the gate contact by the gas molecules results in a voltage change in the sensor signal. The choice of operating temperature, gate metal, and structure of the gate metal determine the selectivity of the gas response. Gases detected include various hydrogen species such as H₂ and NH₃.

Quartz Microbalance (QMB) Sensors

Sensors based on QMB technology measure the frequency of polymer-coated quartz crystals. The frequency is influenced by bulk absorption of analyte molecules into the polymer matrix. The sensitivity and selectivity of QMB sensors can be varied through the selection of different polymer coatings, having different functional groups in the side chains. Gases detected include large molecule hydrocarbons.

AppliedSensor has 25 years of experience developing sensors for a wide variety of companies and applications. Bring us your toughest sensor challenges and we'll utilize our intellectual property, proprietary software tools and specialized services to find just the right solution for you. It could be as simple as integrating one of our products into your design - or working in partnership on a completely new sensor product. Either way, please visit our website at www.AppliedSensor.com to learn more about how we have helped other customers, or call us to discuss your unique requirements.

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