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smartGAS
MIKROSENSORIK

INNOVATIVE GAS SENSORS

NDIR ETHYLENE SENSOR FOR FRUIT AND VEGETABLE STORAGE



blue performance

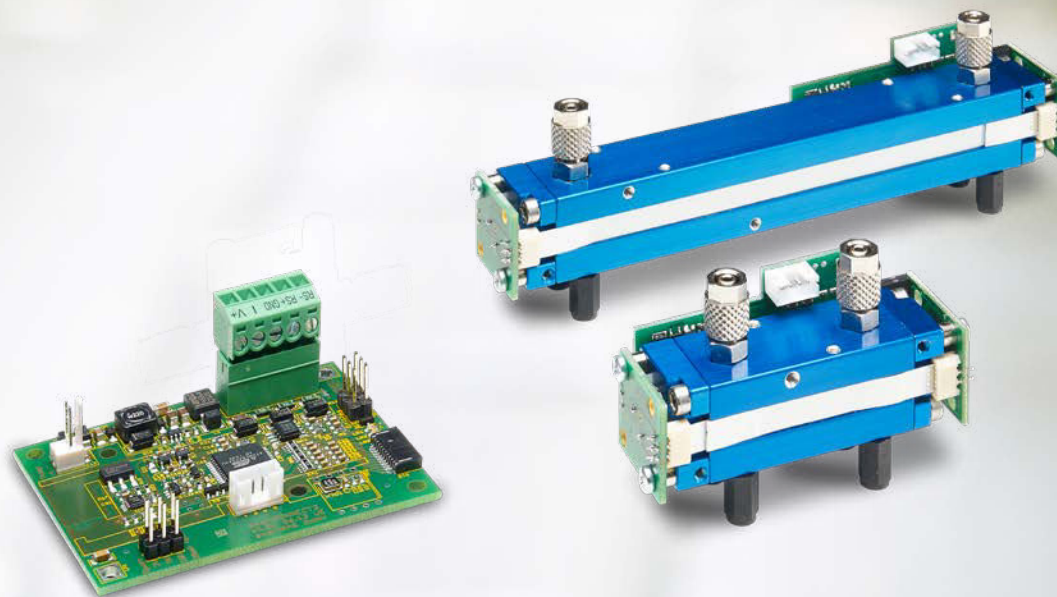
ETHYLENE

NDIR ETHYLENE SENSORS – IMPROVING FRUIT STORAGE AND RIPENING PROCESSES

All smartGAS sensors are based on the NDIR principle (non-dispersive infrared). They feature excellent long-term stability and high selectivity over a big range of gases. This guarantees absolutely reliable measurements with accurate readings also in harsh environments.

To the contrary to electrochemical sensor, which are based on chemical reactions, our optical NDIR sensors require very little maintenance.

We deliver our NDIR gas sensors fully calibrated and temperature compensated, as well as pressure compensated on request. The convenient plug & play interface facilitates connection to your hardware.



With its new FLOWEVO sensor range, smartGAS Mikrosensorik GmbH offers the ideal sensors for perfectly monitoring the optimum ambient conditions – during transport, storage or ripening of vegetables.

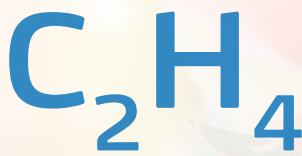
We look forward to talk with you about our solutions!



TECHNICAL APPLICATION OF ETHYLENE IN FRUIT AND VEGETABLE STORAGE

Ethylene is a plant hormone and plays an important role in the ripening process of various fruits, such as apples, bananas and tomatoes. During the storage, the metabolic processes in fruit and vegetables continue. As a result, quality and the degree of ripeness change during this time. Correct storage under the relevant ambient conditions can delay these phenomena.

Typical factors are:



ETHYLENE – C_2H_4

- Ethylene controls the aging and ripening process
- Post-ripening by adding several hundred ppm of ethylene is possible
- smartGAS ethylene sensors 0 ... 2000 ppm - [Item number: F3-032205-05000](#)



CARBON DIOXIDE – CO_2

- Increasing the carbon dioxide concentration to 2 – 5 %
- Reduced respiratory activity and thereby reducing the ripening of the fruit
- smartGAS CO_2 sensors: 0 ... 5 % vol. % - [Item number: F3-212506-05000](#)



OXYGEN – O_2

- Lowering the oxygen concentration to 2 to 3%
- Reduced metabolic activity of the stored product
- smartGAS sensors are not cross-sensitive to oxygen



TEMPERATURE

- Lowering the temperature. The optimal temperature is between 0°C and 15°C
- reduced cellular respiration, metabolism and enzymatic degradation processes
- smartGAS sensors have an operating temperature of 0 ... 50 °C



RELATIVE HUMIDITY

- Relative humidity > 90% prevents vegetables from drying out
- smartGAS sensor can be operated even at high relative humidity (environment)

SMARTGAS – SMART SOLUTIONS FOR GAS MEASUREMENT



The smartGAS Mikrosensorik GmbH is a dynamic company specialized in the development, the production and the marketing of innovative gas sensors and gas analyzing solutions. smartGAS develops, produces and sells both OEM and customized sensor systems. All products are based on infrared absorption (NDIR) which allows selective detection of a gas and accurate determination of its concentration. Recent developments have seen not only significant reduction in size but also an increase in the number of detectable gases. The sensors are used in applications such as fruit ripening and storage, high voltage, emission monitoring, process control, refrigeration analyzers and monitoring, analytical appliances and process control.

The goal of smartGAS is to simplify the handling of gases using the innovative IR technology to protect the environment and to advance the safety for humans and equipment. Therefore we offer our standard products and customized solutions and provide support and assistance for the design in.