

Product Flyer

C02Sense

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V&F
Analyse- und
Messtechnik
GmbH

Process Mass Spectrometer CO2Sense

Trace Analysis and Quality Control

Minimizing any health risk caused by unknown contaminations or impurities of the product, food- and beverage industry takes the responsibility for quality control of all incoming components into their production process. Due to a high profile specification in line with more than 30 years of experience in the field of process mass spectrometry, the model CO2Sense reflects the latest development within this range, targeting the highest possible flexibility and dynamic performance. With only one single measurement system, various applications such as truck filling stations, online process control or certification of single bottles and storages tanks can be monitored either continuously or on demand.

Proven Technology

The CO2Sense is based on the Ion-Molecule Reaction (IMR) mass spectrometer principle and is the multi-purpose level model focusing applications for non-limited gas components, highest flexibility and robustness all in one. Unlike others, the IMR mass spectrometry offers a unique fast response time, a wide dynamic range, selective measurements and lowest detection limits. The common specifications for CO₂ quality within the food and beverages industry, like International Society of Beverage Technologists (ISBT) and European Industrial Gases Association (EIGA), can be fulfilled with the CO2Sense.

High operating comfort

A user friendly software package - the V&F Viewer program - contains system controls and measurement configurations, data reporting and data transfer by via a TCP/IP network using the highly approved technology Microsoft.net. Integrated functions for correlations, matrix correction and calibration allow a selective analysis with high measuring accuracy and reproducibility. Assessment of measuring data is already possible while viewing online.



Typical Applications

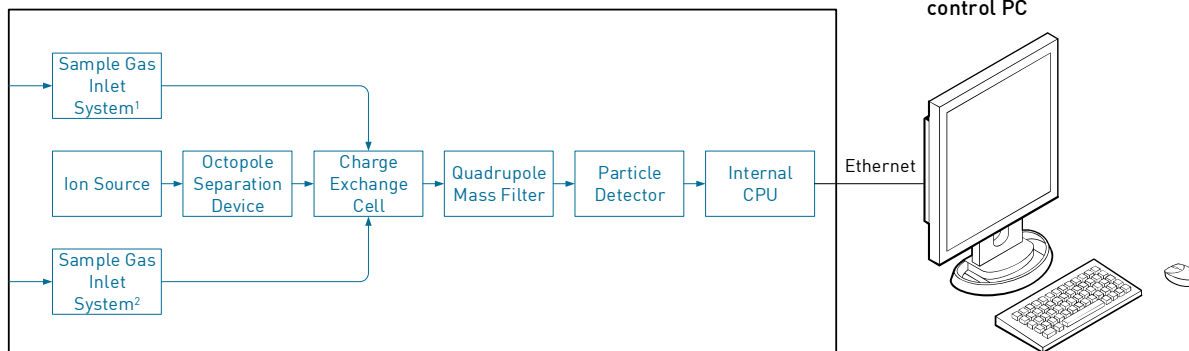
- Final CO₂ quality control - monitoring of organic and inorganic impurities in CO₂
- Process control - monitoring of impurities in the CO₂ feed- and process gas

Function principle

Targeting specific needs within the application, the model CO2Sense is based on a patented measurement principle called Ion-Molecule Reaction (IMR). By using the IMR technique, the measurement becomes fast, selective and free of any interference. Unlike others, almost no fragmentation or overlapping spectra can damage the interpretation of the detected results.

CO₂Sense

Ion-Molecule Reaction - Mass Spectrometer



¹ Sample gas inlet for final CO₂ product quality

² Optional sample gas inlet for CO₂ feed- and process gas analysis

IMR means the use of primary ions with low energy level (10 eV to 14 eV) to completely ionize the probe gas molecules. The signal/noise ratio is optimized by the integrated octopole separator, focusing the primary ions and filtering out any interference. The quadrupole mass filter (7-519 amu) separates the molecules for further detection at the fast pulse counter.

Features, benefits

- wide dynamic range with lowest detection limits
- robust and reliable
- highest possible flexibility together with a unique fast response time
- high in sensitivity and selectivity
- automatic pressure regulation ranging from 0.75 to 2 bar(a)
- integrated matrix – correction – calculation and auto-calibration
- user friendly software package
- minimized service- and operation costs

Specification, technical data

Technical Data	IMR-MS	Technical Data	IMR-MS
Mass range	7 – 519 amu	Ambient temperature	20°C - 35°C
Resolution	< 1 amu	Humidity max.	80 % non-condensing
Analysis time	>= 1 msec/amu	Gas consumption	3000 ml/min
Measuring range ¹	10 ⁵	Gas inlet temp. product gas	unheated
Response time ¹	T90 < 20 msec	Gas inlet temp. raw/process gas	50 °C – 190 °C adjustable
Lower detection limit ¹	0.5 ppb	Gas inlet pressure	0.75 – 2 bar(a)
Concentration drift	< ± 5% over 24 h	Power	230V/50Hz or 115V/60Hz 800 W
Reproducibility	< ± 3%	Dimension (WxHxD)	534 x 743 x 639 mm
Accuracy	< ± 2%	Weight	87 kg

¹ depending on the measured components, system setup and the settings



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