

Product Flyer

TwinSense

Published in May 2019 - technical changes reserved



V&F
Analyse- und
Messtechnik
GmbH

Process Mass Spectrometer TwinSense

Fast Response and Selectivity

Knowing the customer's high profile expectations combined with more than 30 years of experience, the model TwinSense reflects the latest development step within the series of our process mass spectrometers. Focusing applications for non-limited gas components, online gas analysis should offer reliability, highest possible flexibility and robustness, all in one.

Proven Technology

The TwinSense 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. Minimized service- and operation costs, flexibility and user friendly handling are achieved by combination of well proven technology and state of the art manufacturing capabilities.

High operating comfort

An easy-to-use software package - the V&F Viewer program - comprises system controls and measurement configurations, data acquisition from the analyzer via TCP/IP network using the Microsoft.NET framework. Alternatively, the analyzer can be operated via AK protocol. Functions for matrix correction and calibration are integrated in the V&F Viewer program. These features allow for high accuracy and reproducibility. Graphical representation of all important data enables the user to quickly assess the quality of the measurement as well as the overall instrument performance.

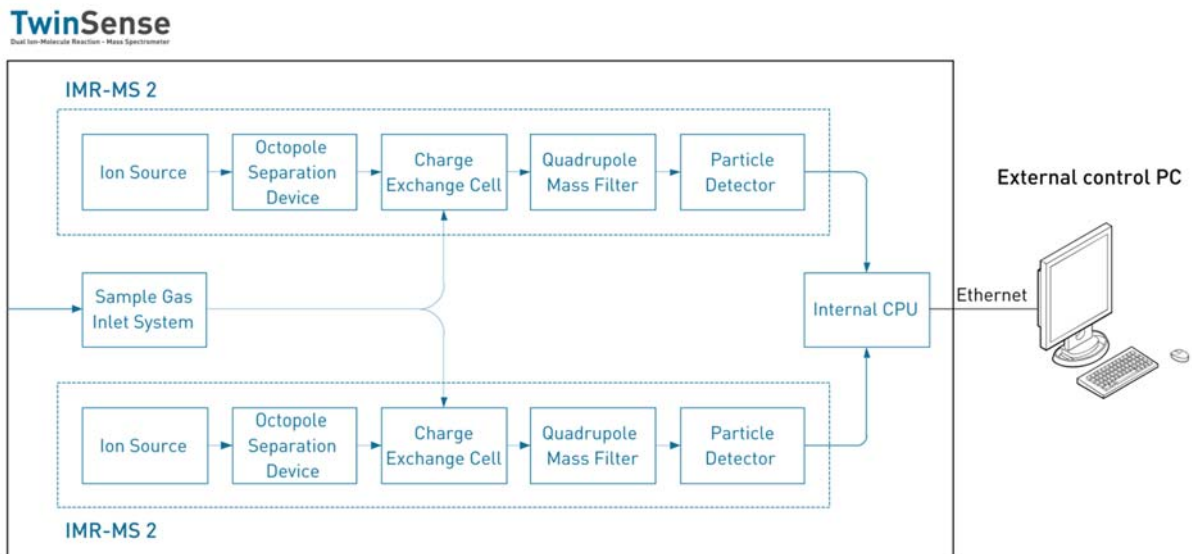


Typical Applications

- Development of combustion engines (diesel and gasoline)
- Fast measurement of non-regulated hydrocarbons
- Ammonia measurements on DeNOx catalysts
- NOx measurements on diesel engines
- Alternative fuels
- Catalysts development
- Desulphurization strategies

Function principle

The TwinSense is a mass spectrometer based on the patented Ion-Molecule Reaction (IMR-MS) concept. The IMR technique elegantly combines the inherent advantages of online mass spectrometry such as the fast measuring speed with the selectivity needed for the quantification. Unlike other ionization techniques, IMR-MS causes significantly lower fragmentation of the analytes.



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
- temperature controlled gas inlet, no sample preparation (wet, ambient air) needed
- user friendly software package - operator interface with 4-button control
- minimized service- and operation costs

Specification, technical data

Technical Data	IMR-MS 1	Technical Data	IMR-MS 2
Mass range / Resolution	7 – 519 amu / < 1 amu	Mass range / Resolution	7 – 519 amu / < 1 amu
Analysis time	>= 1 msec/amu	Analysis time	>= 1 msec/amu
Measuring range¹	10 ⁵	Measuring range¹	10 ⁵
Response time¹	T90 < 20 msec	Response time¹	T90 < 20 msec
Lower detection limit¹	0.4 ppt	Lower detection limit¹	0.4 ppt
Concentration drift	< ± 5% over 24 h	Concentration drift	< ± 5% over 24 h
Reproducibility	< ± 3%	Reproducibility	< ± 3%
Accuracy	< ± 2%	Accuracy	< ± 2%
Ambient temperature	20°C - 35°C	Ambient temperature	20°C - 35°C
Humidity max.	80 % (non-condensing)	Humidity max.	80 % (non-condensing)
Gas consumption	30 – 250 ml/min	Gas consumption	30 – 250 ml/min
Gas inlet temperature	50°C – 190°C adjustable	Gas inlet temperature	50°C – 190°C adjustable
Gas inlet pressure	0.75 – 2 bar(a)		
Power	230V/50Hz or 115V/60Hz 1250 W		
Dimension (WxHxD)	600 x 1692 x 700 mm		
Weight	208 kg		

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



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