Product Flyer

HSense

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V&F
Analyse- und
Messtechnik
GmbH

Process Mass Spectrometer HSense

Dynamic Online Measurement

Highly sophisticated analytical techniques can be a leading factor towards the success in applications such as process optimization, or fuel cell R&D. The series HSense had been introduced to the industry in order to fulfill the demand of a highly dynamic Hydrogen and Helium analytical instrument.

Proven Technology

Robustness and reliability together with proven components for gas inlet and vacuum system, optimized serviceability and a mini-mum of operational cost reflect more than 30 years of experience within the field of the mass spectroscopy. Combining well proven technology with our unique and highly dynamic sampling system, the HSense offers a reliable low maintenance operation.

Stand Alone or Combined Applications

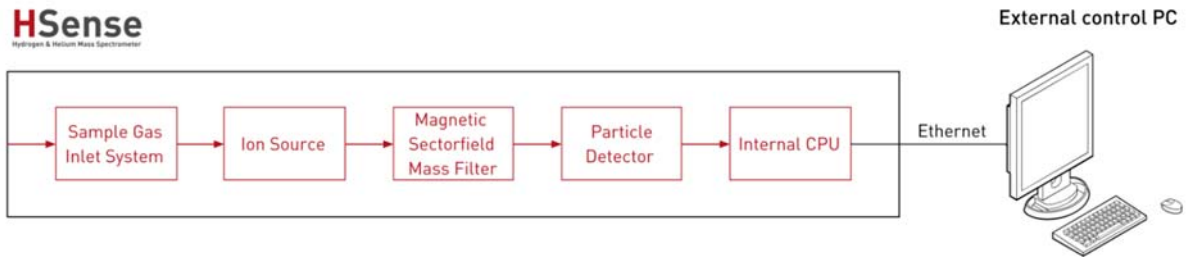
As a stand-alone machine, or with the ideal combination together with our well proven IMR mass spectrometers AirSense, CombiSense or TwinSense, applications range from emission control to landfill monitoring, from fuel cell to sensor R&D and engine test benches. Our user friendly software package takes over all systems setup and data reporting issues.

Typical Applications

- Hydrogen and Helium measurements
- Development of combustion engines and catalyst research
- Fuel cell research and development
- Fuel cell testing
- Breath analysis
- Sensor research and development

Function principle

The HSense is based on the Electron Impact Ionization Mass Spectrometry (EIMS) principle optimized to measure Hydrogen and Helium fast and reliably. By using the electron ion source the gas sample ions are energized, focused and separated further on in a magnetic field in order to detect the mass range of 2-4 amu with the overall response time less than 1 sec.



The HSense is available with unique and fully automated gas inlet systems in order to compensate pressure variations, optimize the amount of withdrawn sample gas and thus guarantees the correct measurement. Any contamination due to condensation or particulate matters is minimized by the integrated 2 micron fine filter in combination with a cross flow sample conditioning system, which takes care of any potential water content.

Features, benefits

- fast and reliable measurement
- automatic pressure regulation – depending on the type of gas inlet
- robust
- proven temperature controlled gas inlet
- high flexibility
- dynamic range
- integrated sample conditioning system
- without sample preparation (wet, ambient air)
- operator interface with 4-button control
- user friendly software package

Specification, technical data

Technical Data	SF-MS	Technical Data	SF-MS
Mass range	2 – 4 amu	**Reproducibility**	‹ ± 3%
Resolution	‹ 1 amu	**Accuracy**	‹ ± 2%
Analysis time	›= 1 msec/amu	**Ambient temperature**	10°C - 35°C
Measuring range[1]	0 -50.000 ppm, 0 – 100 Vol%	**Humidity max.**	80 % (non-condensing)
Response time[1]	T90 ‹ 1 sec	**Power**	230V/50Hz or 115V/60Hz 500 W
Lower detection limit[1]	< 1 ppm for H2, < 20 ppb for He	**Dimension (WxHxD)**	534 x 743 x 639 mm
Concentration drift	‹ ± 3% over 24 h	**Weight**	65 kg

[1] depending on the measured components, concentrations, system setup and the settings

Technical Data	Integrated sample conditioning	Technical Data	Integrated sample conditioning
Sample inlet filter	2 µm	**Gas inlet temperature**	max. 190°C
Gas consumption	max 150 l/h	**Gas outlet temperature**	< 5°C

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