H-SENSE

Process Mass Spectrometer, Model H-SENSE

On-Line Process Analysis of Hydrogen

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 H-SENSE had been introduced to the industry in order to fulfil the demand of a highly dynamic H_2 and He analytical instrument.

Proven Technology

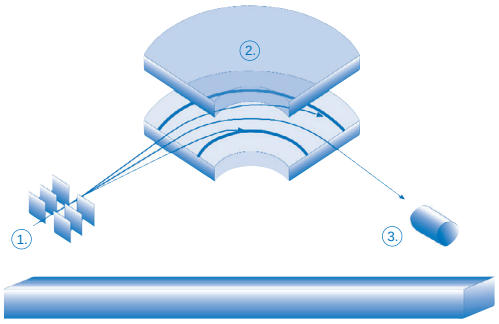
Robustness and reliability together with proven components for gas inlet and vacuum system, optimized serviceability and a minimum of operational cost reflect more than 15 years of experience within the field of the mass spectroscopy. Combining well proven technology with our unique and highly dynamic sampling system, the **H-SENSE** offers reliable low maintenance operation.

The measurement principle is based on the sector field mass spectroscopy, optimized to measure fast, dynamic and on-line the mass range of 2-4 amu with the overall response time less than 1 sec .

Stand Alone or Combined Applications

As a stand alone machine, or with the ideal combination together with our well proven IMR mass spectrometer AIRSENSE, applications range from emission control to land fill monitoring, from fuel cell to sensor R&D and engine test benches.

Our user friendly software package takes over all systems set up and data reporting issues.



1. Ion Source
2. Sector Mass filter
3. Particle Detector

Principle of Operation

Targeting the specific needs within the applications, the series H-SENSE is based on the Electron Pulse Ionization (EIMS) Mass Spec principle optimized to measure H_2 and He 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 only Hydrogen and Helium.

The unique and fully automated gas inlet system compensates for pressure variations in between 500 mbar and 3 bar. The system guarantees the correct measurement and avoids any discrimination of the gas.

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 Functions Benefits

- Fast and reliable Measurement
- High Flexibility, Dynamic Range
- Proven Sample Gas Inlet, Integrated sample conditioning System

Technical Data

Mass range	2, 3, 4 amu
Lower detection limit	0 .... 30.000 ppm and 0,1 .... 100 Vol.%
Analisys time	4 Hz
Measurement range	< 1 ppm for H_2, He
Response time	T90 < 1 sec.
Linearity	10^3
Drift	± 3% over 12 h {at 1% H_2)
Ambient temperature Temperature change	10°C - 35°C, max. 1°C/h

Humidity	< 90% at + 45°C (non condensing)
Sample conditioning	integrated
Max. Gas inlet temperature	190°C
Gas outlet temperature	< 5°C
Gasflow Max.	150 l/h
Sample inlet filter	< 2µm
Data interface	2 x analog 0-10V, 4-20 mA serial RS 232, AK-Protocol

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