

DATASHEET

Hydrogen Purity

Measuring Solution for Fuel Cell Hydrogen Analysis
according to SAE J2719 and ISO 14687



Superior Reliability

Fast And Precise

Maximize Profits

Measurement Solution

- Analysis of multiple critical contaminants
- Advanced spectroscopic technologies
- Detection limits from part-per-million (ppm) down to sub-part-per-billion (ppb)

HYDROGEN PURITY

According to SAE J2719 / ISO 14687 Specifications

Process Insights hydrogen solution continuously monitors the smallest impurities in fuel cell hydrogen.

Our analyzers offer detection limits that are ideally suited for the contaminant limits set by SAE and ISO hydrogen pu-

rity standards and fulfill the requirements for analytical techniques outlined in ISO 21087. With only three technologies, Process Insights offers a unique solution that can be easily integrated into your processes. Reduce the complexity of multiple vendors and get a complete solution from a single source.

Applications

Process Insights solution ensure contamination control throughout the Hydrogen supply chain.

- Production
- Transportation
- Storage
- Fueling

Features

Only three technologies to determine all impurities in hydrogen for fuel cells continuously and quickly.

- Cavity ring-down spectroscopy (CRDS)
- Gas chromatography (GC)
- Mass spectrometry (MS)
- General Purpose or ATEX Zone 1

Benefits

Process Insights offers a unique total solution in a cabinet from a single source.

- Reliable analysis with high reproducibility
- Fast process control possible
- Protect the fuel cells

Contaminant	SAE J2719/ISO 14687 Concentration Limit	Process Insights LDL (3σ)	Analyzer
Helium (He)	300 ppm	0.5 ppm	MAX300-LG MS
Nitrogen (N ₂)	300 ppm	1.0 ppm	MAX300-LG MS
Argon (Ar)	300 ppm	0.02 ppm	MAX300-LG MS
Methane (CH ₄)	100 ppm	1.0 ppm	MAX300-LG MS
Moisture (H ₂ O)	5 ppm	0.1 ppm	Prismatic 3 CRDS
Oxygen (O ₂)	5 ppm	1.0 ppm	MAX300-LG MS
Carbon Dioxide (CO ₂)	2 ppm	0.32 ppm	Prismatic 3 CRDS
Carbon Monoxide (CO)	0.2 ppm	0.05 ppm	Prismatic 3 CRDS
Formaldehyde (CH ₂ O)	0.2 ppm	0.02 ppm	MAX300-LG MS
Formic Acid (CH ₂ O ₂)	0.1 ppm	0.02 ppm	MAX300-LG MS
Ammonia (NH ₃)	0.1 ppm	0.01 ppm	Prismatic 3 CRDS
Total Hydrocarbons, ex. CH ₄	2 ppm	0.05 ppm	iOMv GC
Total Sulfur	0.004 ppm	0.002 ppm	iOMv GC
Total Halogenated Compounds	0.05 ppm	0.01 ppm	MAX300-LG MS

System Highlights

Detection range	As per SAE J2719 / ISO 14687
Number of sample streams	1 sample stream
Analysis rate	1. Mass Spectrometer: < 10 seconds 2. CRDS: < 5 minutes 3. GC AGS iMOv < 8 minutes

System Specifications

Power Supply Options	400 VAC, 60 HZ, 3-phase, 16 Amp circuits
Power Consumption	Nominal 4000 Watts
Weight	Standard Enclosure: 450 kg
Dimensions WxHxD	• Cabinet: 1150 x 1900 x 800mm • Outer: 2000 x 2000 x 800
Ambient Requirements	Temperature: 5°C to 30°C
Area Classification Options	• General Purpose • ATEX Zone 1 – II2G Ex pxb [ib Gb] IIC T4 Gb
System Control interface options	Fiber Optic Ethernet, Modbus TCP/IP
Additional Utilities	Purge gas (for hazardous area installations) Air :pre-pressure 7 barg – 400 NI/min
Special Utilities for ADS iMOv Gas Chromatograph	• Instrument Air @ 6 barg for valve actuation • Helium – Carrier Gas @ 6 barg • H2 – Flame Fuel @ 6 barg • Air – Burner Air @ 6 barg
Process Sample requirements	• Sample pressure MAX: 1.5 barg • Sample pressure MIN: 0.5 barg • Sample flow rate 0.5 – 1.0 NI/min



PREMIUM INSIGHTS – GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights products and solutions deliver innovative and differentiated analysis and measurement technologies that add high value to our customers and protect the environment.

Our commitment is to deliver smart and affordable innovation that optimizes process, improves safety, and transforms our world.

CENTERS OF EXCELLENCE

PROVIDING PROVEN SOLUTIONS FROM A GLOBAL TECHNOLOGY LEADER

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