

Instrumentation for the hydrogen industry

Measurement and control solutions
for hydrogen applications



Reliable solutions

For your hydrogen applications

Fuji Electric France provides robust instrumentation solutions specifically designed to meet the requirements of hydrogen applications. Our technologies ensure accurate measurement and continuous monitoring throughout the entire value chain: production, storage, distribution and end uses.

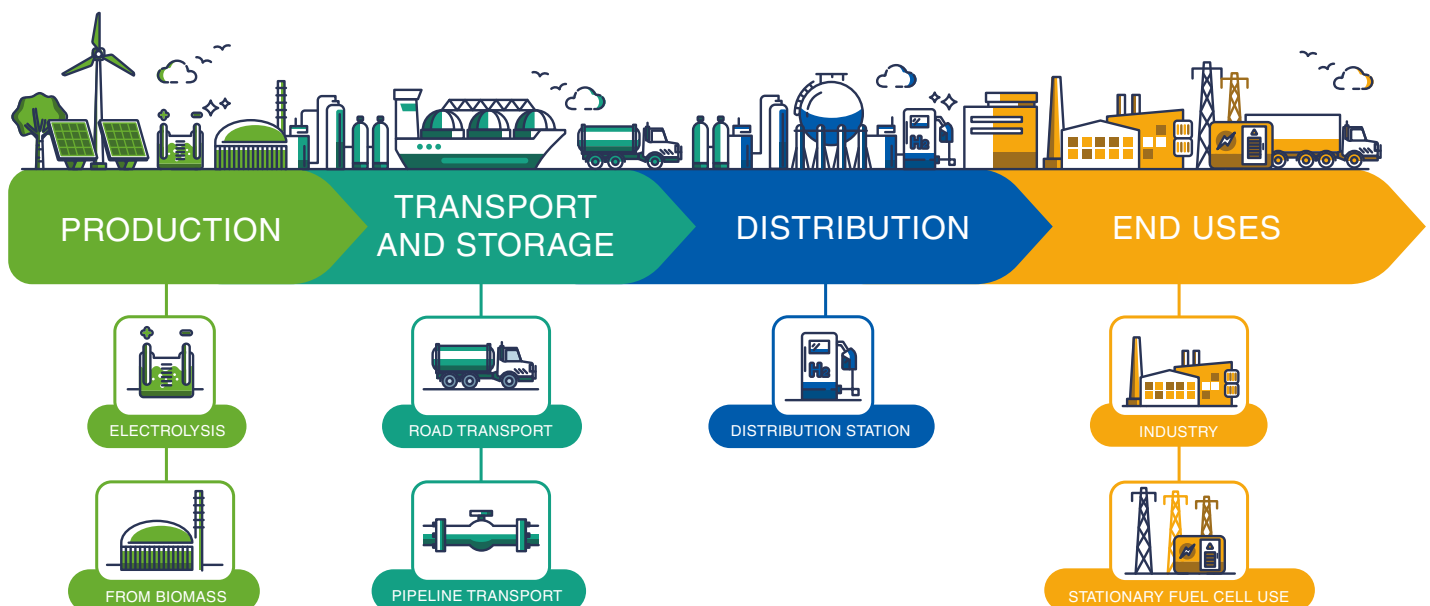
Designed to address hydrogen-related challenges (low gas density, leakage risks, purity requirements and high pressures), our instruments guarantee safety, performance and regulatory compliance. Their resistance to demanding environments ensures optimal equipment availability and full process control.

Our experts support you with dedicated technical assistance, application-specific product selection and full traceability to meet the growing requirements of the hydrogen sector.



Applications for hydrogen

From production to end uses



➤ Flow measurement

Measuring flow using non-intrusive technology



FSJ Non-intrusive ultrasonic steam flowmeter

Ranges: 0 - 50 m/s / 120 to 180 °C

Certifications: CE

Fluid: Steam



FSV Time Delta-C Non-intrusive ultrasonic flowmeter

Ranges: 0 - 32 m/s / -40 to +200 °C

Certifications: CE

Fluids: Liquids, water, brine



V-Cone flowmeter

Differential pressure & primary element technology

Certifications: CE

Fluids: Liquids, steam and gas

➤ Level measurement

Continuous liquid level measurement



FCX FKE / FKB / FKD / FKM Level transmitters

Measurement: Hydrostatic level

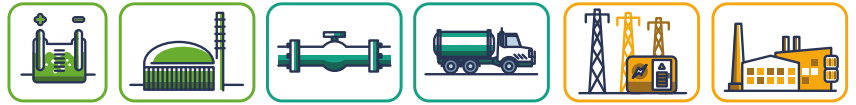
Ranges: 0 - 13 m

Certifications: CE / SIL2 / SIL3

Fluids: Water, brine, H₂

➤ Pressure measurement

Measuring pressure, flow or density



FCX FKC Differential pressure transmitter

Ranges: 0 - 1 mbar / 0 - 20 bar

Certifications: SIL2 / SIL3

Fluids: H₂, O₂, N₂, CO, CO₂, NH₃, CH₄,
water, brine, air

FCX FKR High-pressure gauge pressure transmitter

Ranges: 0 - 700 bar / 0 - 1500 bar

Certifications: SIL2 / SIL3

Fluids: H₂, O₂, N₂, CO, CO₂, NH₃, CH₄,
water, brine, air

FCX FKP Gauge pressure transmitter

FCX FKH Absolute pressure transmitter

Measurement: Absolute / Gauge (with display)

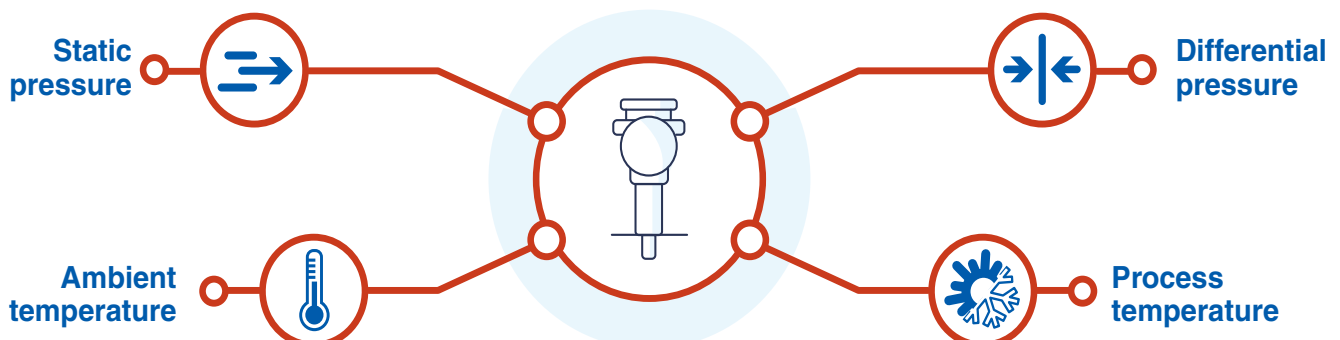
Ranges: 0 - 130 mbar / 0 - 100 bar

Certifications: SIL2 / SIL3

Fluids: H₂, O₂, N₂, CO, CO₂, NH₃, CH₄,
water, brine, air

Accurate pressure measurement in any environment:

The processor and optimisation algorithm continuously compensate for external variations, ensuring accurate and repeatable measurements thanks to Gyration 4D™ technology.



Pressure transmitters for hydrogen

Enhanced safety, guaranteed compliance



In hydrogen applications, safety is an absolute priority. Fuji Electric pressure and level transmitters are designed to meet the most demanding industry standards, with SIL2 / SIL3 certifications, full traceability and architectures that ensure effective risk management.

Their robust design limits hydrogen permeation and ensures measurement stability even under high pressures. Combined with advanced protection technologies, these capabilities guarantee safe, durable operation in compliance with industrial standards, from electrolysis processes to high-pressure transport.

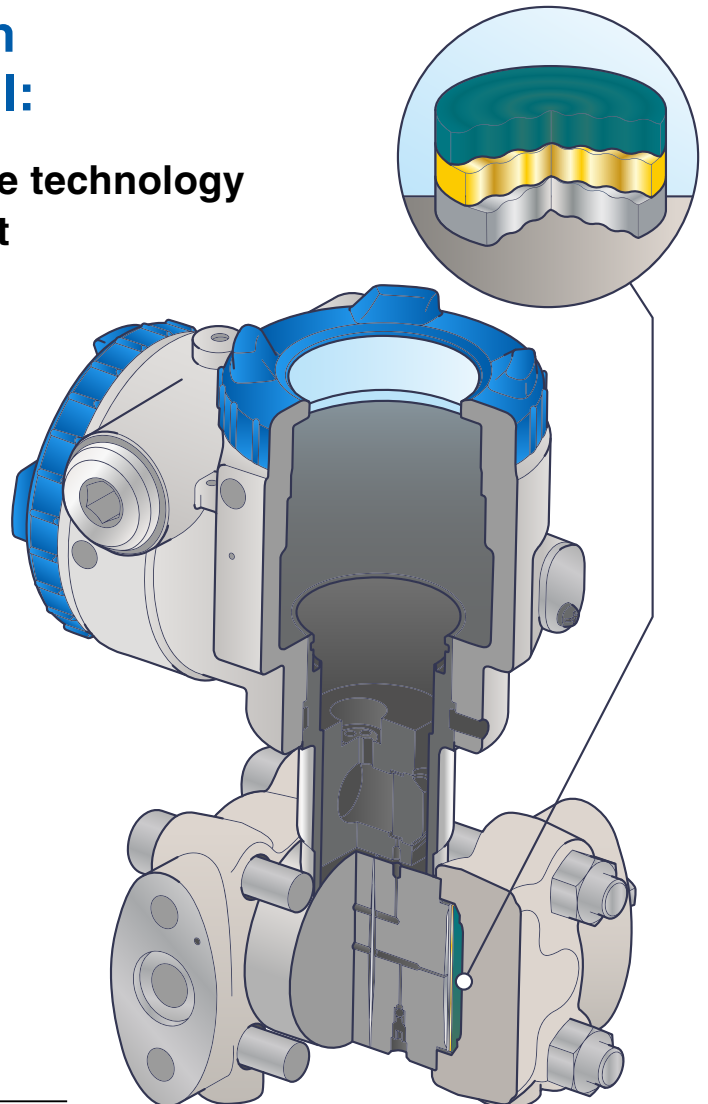
A coating to prevent hydrogen diffusion in the measuring cell:

Innovative gold and ceramic membrane technology for H₂ pressure and level measurement

Fuji Electric's unique hydrogen sensor design, incorporating HydroSeal™ technology, provides enhanced protection against hydrogen permeation through a specifically optimised membrane.

A 316L stainless steel diaphragm is coated with a 3 µm layer of gold, followed by a ceramic layer that ensures effective electrical insulation between the fluid and the diaphragm.

This HydroSeal™ structure, proprietary to Fuji Electric, limits the diffusion of hydrogen atoms and delivers performance significantly superior to standard steels and gold-plated membranes.



➤ Gas analysis

Measuring hydrogen purity and oxygen content



ZAF Hydrogen analyser

Measurement: H₂ percentage

Ranges: 0 - 3.5% to 100% / 100 - 90% / 100 - 80%

Gases: N₂, CO₂, Ar, He

Technology: Thermal conductivity

Fast analysis with repeatability < +/- 1% FS

Reverse scale available



ZAJ Oxygen analyser

Measurement: O₂ percentage

Ranges: 0 - 0.5% to 100% / 100 - 98% to 0%

Gas: H₂

Technology: Paramagnetic pressure

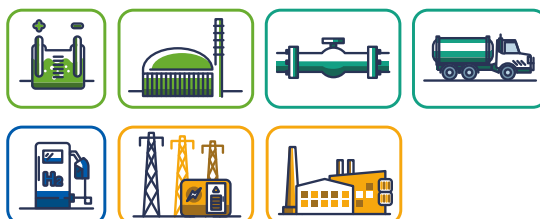
Fast analysis with repeatability < +/- 1% FS

Very low sensitivity to interfering gases

No contact between hydrogen and the sensor

➤ Temperature measurement

Measuring while ensuring resistance to high pressures



Temperature indicator transmitter

Measurement: Pt100 probe & thermocouple

Ingress protection rating: IP67

Temperature probes

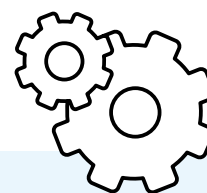
Measurement: Pt100 probe & thermocouple

Ranges: -270°C to 600°C / up to 1200 bar

Ingress protection rating: IP68

Services

Maintenance contracts and instrument commissioning



Fuji Electric provides expert guidance in metrological monitoring and maintenance of your measuring instruments.

Our team of experts works alongside you to create a tailored maintenance plan, perfectly aligned with your needs. We ensure the accuracy and reliability of your instruments throughout their entire lifecycle.

With our expertise, you can minimize operational risks, streamline your processes, and maximize the value of your installation.

Quality

Certifications & Approvals

Our commitment to excellence is reflected in compliance with rigorous international and local standards.

We operate within an integrated management system driven by continuous improvement, meeting the requirements of ISO 9001 and ISO 14001 certifications.



Quality Certification:

ISO 9001: 2015

Quality Management Systems
(certificate No. 1997/8402)



Environmental Certification:

ISO 14001: 2015

Environmental Management Systems
(certificate No. 2014/59264)



Explosive atmospheres

ATEX - IECEx - cCSAus - TR CU 012

Product compliance

UE - EAC - UKCA - RoHS - REACH

Safety

SIL2 / SIL3 (IEC 61508 & IEC 61511)

Marine

DNV (Type approval)

Oil & Gas

NACE MR0103 and NACE MR0175

Fuji Electric France

Specialist in instrumentation and gas analysis

At Fuji Electric France, we combine innovation and technical expertise to deliver sustainable solutions and address the environmental challenges faced by our customers.

Backed by 30 years of experience in designing and manufacturing pressure transmitters, along with our expertise in gas analysis solutions, we support industries in their energy transition.

Our mission:

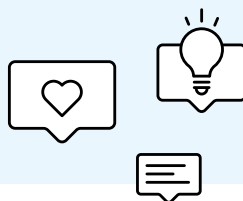
Helping industries produce clean energy, save energy, and protect the environment for a sustainable future.

With a strong focus on excellence and innovation, we deliver tailored, high-performance solutions. Together, let's tackle today's challenges and build a more responsible and sustainable future!

Get more information

➤ Connect with us on social media!

Expert advice, industry news, upcoming events, tutorials, tips & more.



YouTube

LinkedIn

➤ Discover our full range of measuring instruments and gas analysis solutions.



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