

Electrolysis for hydrogen production

Smart sensor technologies to
optimize your electrolysis process





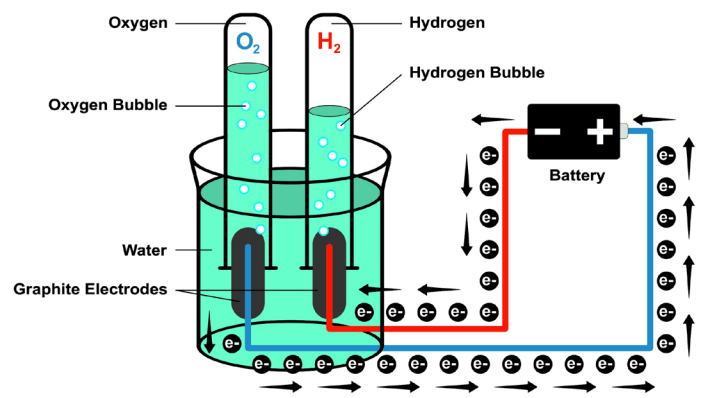
Electrolyzer fuel cell byproduct consists of water vapor and oxygen. Precise measurements of dew point, oxygen and hydrogen can provide an index to the efficiency of the electrolyzer. Maximizing the safety and efficiency of an electrolyzer requires sensor technology that you can rely on. Panametrics offers you the complete system for moisture, oxygen and hydrogen measurements from a single source, providing unrivaled levels of accuracy and reliability.

Panametrics analysis devices have been ensuring customer and process safety for decades.

As a recognized leader in gas analyzers, you can be sure that we provide the best combination of technology and expertise to ensure accurate process measurements. Panametrics analyzers are designed for complex applications that require maximum reliability and measurement accuracy.

A partnership with Panametrics not only brings you reliability and consistency in measurement, but also offers solutions completely tailored to your process, supported by local technical teams.

Our technology and application specialists are experts in developing the best gas analysis solutions for your measurement. Along with our global network we ensure our partners receive first-class local support for all requirements, including, commissioning, calibration service and product training.



Electrolyzer example

HygroPro



IS moisture transmitter for general purpose and hazardous area

The HygroPro combines a technologically advanced aluminum oxide moisture sensor with state-of-the-art software and electronics for unrivaled overall performance. The HygroPro moisture transmitter is a safe, compact, loop-powered moisture transmitter designed specifically to meet the demands of rugged industrial applications. With certified intrinsically safe electronics packaged in an IP67/Type 4X housing, the HygroPro is ideal for use in Hydrogen production applications.

Features

- Range -110 to +20°C dew/frost point
- 12 to 30 VDC, loop powered
- Internal calculation of ppmV
- Intrinsically safe design ATEX II 1 G Ex ia IIC T4*
IECEX Ex ia IIC T4*
C-US Class I, Division 1, Groups A,B,C&D, Type 4X
- Built-in temperature and pressure sensors
- Non-volatile storage of calibration data
- Calibration traceable to national standards
- Connection via two-wire cable
- Complete program control via a six-key keypad
- Integrated display/user interface
- Analog and digital outputs
- Operating pressure up to 345 bar
- Protection class IP67, NEMA4X
- Weight: 550 g

* when installed with proper protection

DewPro MMY30/31



MMY30 Transmitter



MMY31 Transmitter

Moisture transmitter for general purpose

This dew point or ppmv moisture transmitter is ideal for general purpose applications in gases. It is a cost-effective, loop-powered dew point transmitter designed for "in-line" installation (MMY31) or with an integral flow cell (MMY30) for filtration and flow regulation.

Features

- Measurement range -90°C to 10°C dew point, 0 to 10 ppmv, 0 to 1000 ppmv (fully adjustable with optional integral display)
- Loop-powered, 4 to 20 mA transmitter
- Integral filtering and flow regulation (MMY30)
- Standard operating pressure 0 to 120 bar (MMY31), 0 to 31 bar (MMY30)
- Power Supply 24 VDC nominal, 12 to 30 VDC
- Weight 1.5 kg (MMY31) 2 kg (MMY30)
- Trouble-free indoor or outdoor mounting
- Microcontroller electronics in Type 4X/IP67 enclosure
- Integrated display with user interface

XMTC



Reliable and accurate analysis of hydrogen concentration in a compact and robust package

The XMTC is a compact, reliable, tried and tested thermal conductivity analyzer, which is ideal for all types of hydrogen generators. The XMTC is configured for Class I/Zone 1 environments and equipped with solvent-resistant cells. It is an extremely versatile and cost effective analyzer that is used for percentage measurements in binary or quasi-binary gas compositions.

Features

- Extremely stable, glass-coated thermistors
- One or two point calibration using a button
- PC interfaces for digital output
- Weather and/or explosion proof version
- EX version ATEX/IECEX II 2 G Exd IIC T6 Gb
C-US Class I Div. 1 Groups A, B, C & D
- Analog output 4-20 mA, isolated, 800 Ω max., programmable in the field
- Power supply 24 VDC ± 2 VDC, max. 1.2 A
- Dimensions
 - Weatherproof housing (H x D): 242 mm x 145 mm
 - Ex-proof housing (H x D): 266 mm x 145 mm
- Weight 4.3 kg
- Protection class IP66/Type 4X
- Standard ranges

0% to 2%	0% to 100%
0% to 5%	50% to 100%
0% to 10%	80% to 100%
0% to 25%	90% to 100%
0% to 50%	

oxy.IQ



Reliable oxygen measurement in a compact, unique design

The oxy.IQ is a two-wire transmitter with 17 different percentage and ppm measuring ranges for oxygen analysis, where user friendliness and customer integration are the focus. The oxy.IQ combines all these functions with the help of proven sensor technology in an intrinsically safe design that is perfect for measuring oxygen in a variety of process gases.

Features

- 4-20mA, two-wire, loop powered
- Display with keypad
- Intrinsic safe option Class I, Div 1, Groups ABCD, T4
ATEX/IECEX Ex ia IIC Ga T4
- Proven O₂ sensor technology
- User-programmable
- Intuitive user interface with diagnosis function
- Microprocessor based technology
- Low maintenance, economical, compact
- Sensor failure output alarm
- Display of the sensor lifetime
- Error display according to Namur
- Standard O₂ Ranges

PPM O ₂ :	Percent O ₂ :
0 to 10 ppmv	0% to 1%
0 to 20 ppmv	0% to 2%
0 to 100 ppmv	0% to 5%
0 to 200 ppmv	0% to 10%
0 to 500 ppmv	0% to 25%
0 to 1000 ppmv	0% to 50%
0 to 2000 ppmv	
0 to 5000 ppmv	
0 to 10.000 ppmv	



Panametrics, a Baker Hughes Business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement. Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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