HY-OPTIMA® 700B Series

GENERAL USE IN-LINE HYDROGEN PROCESS ANALYZER

H2scan® Advanced Hydrogen Sensing

Solid State, Minimal Maintenance General Use Hydrogen Process Analyzer

The HY-OPTIMA® 700B in-line hydrogen process analyzer series is ideal for gas streams where real-time, hydrogen-specific measurements can enhance process plant efficiencies, improve yields, and reduce maintenance costs. It provides the most accurate, tolerant and affordable hydrogen process gas measurement solution for industrial markets. The general use analyzer uses a solid-state, non-consumable sensor for direct hydrogen measurement in process gas streams, with no cross sensitivity to other gases.

Benefits

- Highly reliable
- Low life cycle cost
- Easy to install and operate
- Minimal maintenance required
- No cross sensitivity to combustible gases
- Real-time, continuous hydrogen measurement
- No reference or carrier gases required
- Non-consumable solid state technology
- Field-configurable settings

Ease of Use

With no moving parts, the analyzer is extremely reliable and easy to use. Once installed and field calibrated, it typically only requires a quick calibration every three months, using readily available primary standard gases that span the expected operating range. No other maintenance is necessary. Communication with the unit is either via an analog 4-20 mA output or serial communication using RS232 or RS422.

Performance and Safety

The model 710B, 730B and 740B analyzers are intended for use in dry gas streams where hydrogen is always present, and can be safely exposed to hydrogen continuously. The model 720B is for use in processes where hydrogen is occasionally present in an air, oxygen or nitrogen background for short periods, as may occur if there is a leak or an upset condition.

Applications

Fuel Cells:

- H_2 measurement on both anode and cathode side

Natural Gas:

- H_2 in natural gas or biomethane

Industrial Gas Supply and Hydrogen Production:

- Air separation
- Steam methane reforming
- Electrolysis process streams

Laboratory:

- Research applications

Manufacturing:

- Metals annealing
- Semiconductors
- Oil hydrogentation

27215 Turnberry Lane, Unit A, Valencia, CA 91355, USA | +1 661-775-9575 | hello@h2scan.com | www.h2scan.com | 90000145

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Product Specifications

Performance	
Operating Pressure at Analyzer	**Recommended**: 0.95 - 1.1 ATM Absolute (14.0 - 16.1 psia) **Maximum**: 2 ATM Absolute (29.4 psia)
Process Gas Temperature	-20°C to 60°C (-4°F to 316.4°F)
Flow Rate	0.1 to 10 slpm
Operating Humidity	<95% RH (non-condensing)
Calibration Interval	90 days
Output Signals	
Analog	4-20 mA
Serial	RS232 or RS422
Relays	1A/30 VDC SPDT
Power	
Input Voltage	10-26 VDC
Input Power	10 W
Physical	
Dimensions	236.22 x 86.36 x 35.56 mm (9.3 x 3.4 x 1.4 in)
Weight	0.4 kg (0.8 lbs)
Adapter Fitting	½ in MNPT
Environmental	
Operating Temperature	-20°C to 55°C (-4°F to 131°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)
Certifications	
UL	UL
CE	CE

Product Selection

Model	Hydrogen Range		Hydrogen MUST be present	CO Limit	H2S Limit	T90 Response Time (sec)	Accuracy		Drift/Week		Repeatability		Linearity		Calibration Background Gas
	Low	High					Low to 10% H2	10 to 100% H2	Low to 10% H2	10 to 100% H2	Low to 10% H2	10 to 100% H2	Low to 10% H2	10 to 100% H2	
710B	0.1%	10%	Yes	<100 ppm	<20 ppm	<90	0.15%	N/A	0.15%	N/A	0.15%	N/A	0.15%	N/A	N_2
720B[1]	0.4%	5%	No	0	0	<60	0.3%	N/A	0.3%	N/A	0.3%	N/A	0.3%	N/A	O_2, N_2
730B	0.5%	100%	Yes	<100 ppm	<1000 ppm	<60	0.3%	1.0%	0.3%	1.0%	0.2%	0.4%	0.2%	0.4%	N_2
740B	0.5%	100%	Yes	20%	3%	<90	0.3%	1.0%	0.3%	1.0%	0.2%	0.4%	0.2%	0.4%	N_2

1: Sensor performance specifications are absolute and assume a dry process stream, an ambient temperature of 25°C (77°F), constant pressure, and are in addition to any errors in calibration gases used.