

# HY-OPTIMA® 2700 Series

## EXPLOSION PROOF IN-LINE HYDROGEN PROCESS ANALYZER

**H2scan®**  
Advanced Hydrogen Sensing



### Explosion Proof In-line Hydrogen Process Analyzer

The HY-OPTIMA® 2700 Series in-line hydrogen process analyzer is ideal for gas streams where real-time, hydrogen-specific measurements can enhance process plant efficiencies, improve yields, and reduce maintenance costs:

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

### Benefits

The HY-OPTIMA 2700 Series analyzer provides the most accurate, tolerant and affordable hydrogen process gas measurement solution for industrial markets. The explosion proof analyzer uses a solid-state, non-consumable sensor for direct hydrogen measurement with no cross sensitivity to most gases present in process gas streams. Since it is a solid state device, the sensor does not degrade over time.

### Applications

#### Refining:

- Catalytic reforming
- Hydrodesulfurization
- Fuel gas
- Tail gas treating units

#### Natural Gas:

- H<sub>2</sub> in natural gas or biomethane

#### Industrial Gas Supply:

- Air separation
- Steam methane reforming
- Electrolysis process streams

#### Petrochemical:

- H<sub>2</sub> measurement in polymer feeds and flare gas process streams

#### Manufacturing:

- Metals annealing
- Semiconductors
- Oil hydrogenation



## Operating Conditions

Environmental		
Ingress Protection	IP67	
Operating Temperature	-20°C to 55°C (-4° F to 131°F)	
Storage Temperature	-30°C to 80°C (-22° F to 176°F)	
Humidity	0 to 95% RH, non-condensing	
Mechanical		
Dimensions H x W x D	190.5 x 137.06 x 144.78 mm (7.5 x 5.39 x 5.66 in)	
Weight	2.7 kg (5.9 lbs)	
Electrical		
Power Input	90-240 VAC, 50-60 Hz	
Input Power	15 W	
Power Consumption	5 W (no external connection), up to 25 W (with 2 sensors connected)	
Safety Certifications	Analyzer	Remote Control
US/Canada	Class I, Div 1, Groups B, C, D	Class I, Div 1, Groups A, B, C, D
ATEX*	II 2 G Ex d IIB + H <sub>2</sub> T4 Gb	II 1 G Ex ia IIC T4
IECEX*	Ex db IIB + H <sub>2</sub> T4 Gb	Ex ia IIC T4 Ga
KOSAH	Ex db IIB + H <sub>2</sub> T4	Ex ia IIC T4
UKCA*	II 2 G Ex d IIB + H <sub>2</sub> T4 Gb	II 1 G Ex ia IIC T4



\*Max pressure 1.1 ATM Absolute and max ambient temperature 55°C (131°F) at the analyzer

Performance	
Operating Pressure at Analyzer	<b>Recommended:</b> 0.95-1.1 ATM Absolute (14.0-16.1 psia) <b>Maximum:</b> 2 ATM Absolute (29.4 psia)
Process Gas Temperature	-20°C to 60°C (-4°F to 140°F)
Flow Rate	0.1 to 10 slpm
Operating Humidity	95% RH (non-condensing)
Calibration	90 days

## 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	
2710	0.03%	10%	Yes	<100 ppm	<20 ppm	<90	0.15%	N/A	0.15%	N/A	0.15%	N/A	0.15%	N/A	N <sub>2</sub>
2720 <sup>1</sup>	0.4%	5%	No	0	0	<60	0.3%	N/A	0.3%	N/A	0.3%	N/A	0.3%	N/A	O <sub>2</sub> , N <sub>2</sub>
2730	0.5%	100%	Yes	<100 ppm	<1000 ppm	<60	0.3%	1.0%	0.2%	0.4%	0.2%	0.4%	0.2%	0.4%	N <sub>2</sub>
2740	0.5%	100%	Yes	20%	3%	<90	0.3%	1.0%	0.2%	0.4%	0.2%	0.4%	0.2%	0.4%	N <sub>2</sub>

<sup>1</sup>: Sensor performance specifications are absolute and assume a dry process stream, an ambient temperature of 25°C (77°F), pressure compensation, and are in addition to any errors in the calibration gases used. Accuracy, drift, repeatability, linearity are defined as  $\pm$  the values listed.

Specifications subject to change without notice  
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