H2scan
ADVANCED HYDROGEN SENSING

HY-OPTIMA® 5000 Series

INLINE HYDROGEN
PROCESS ANALYZER

General Use Inline Hydrogen Process Analyzer

The HY-OPTIMA® 5000 Series is a robust, compact hydrogen specific inline process analyzer providing accurate real-time hydrogen measurements. The novel sensor design stands up to harsh gas streams and its autocalibration technology eliminates periodic calibration to provide maintenance free operation. This improves process efficiencies, increase yields, reduces maintenance costs, and supports the hydrogen economy. The compact design allows for use as a stand-alone device or easily integrated into OEM analytical instruments.

Robust Design

The solid-state design has no moving parts and does not degrade over time, ensuring high reliability. Once installed and field calibrated, H2scan's patented auto calibration feature eliminates drift and the need for periodic calibrations, requiring no further maintenance. The unit communicates via Modbus RTU over RS485, or analog 4-20 mA with optional accessories available.

Performance and Safety

The Hy-OPTIMA 5000 series analyzers are CE approved for safe general use operation. Model 5031, 5033, and 5034 analyzers are intended for use in dry gas streams where hydrogen is always present. The model 5032 is for use in processes where hydrogen is occasionally or intermittently present, such as in the event of a leak or an upset condition. For Hazardous location applications, H2scan recently announced its intrinsically safe Hy-OPTIMA 5330 series analyzers with added interfaces to simplify application.

Applications

Refining:

- Catalytic reforming
- Hydrodesulphurization
- Tail gas treating units
- Flare Monitoring Fuel gas

Natural Gas:

- Wobbe index or calorific value
- Blending and injection points
- Compressor stations

Hydrogen Economy:

- Fuel cells and electrolyzers

Petrochemical:

- Polymer feeds and flare gas process streams

Industrial Gas Supply and Hydrogen Production:

- Air separation stream methane reforming

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Operating Conditions

Environmental	
Ingress Protection	IP68
Operating Temperature (Ambient)	-40° C to +85° C
Storage Temperature	-40˚ C to +105˚ C
Mechanical	
Dimensions H x W x D	149.8 mm x 40.64 mm x 40.64 mm
Weight	0.4 kg (0.8 lbs)
Electrical	
Input Voltage	9-48 VDC
Input Power	10 W
Fittings	Electrical Fitting Sensor: M12 4-wire. Fitting: 3/4" -14 MNPT
Communication	
Digital	RS485, 2-wire; 19200 baud, 8 bit data, 2 stop bits, no parity; Modbus RTU Protocol
Analog	4 - 20 mA available via optional accessory
Performance	
Recommended Operating Pressure	0.95 - 1.1 atm absolute (14.0 - 16.1 psia)
Maximum Operating Pressure	10 atm absolute
Prcoess Gas temperature	-40 to 60° C
Flow Rate	0.1 to 10 slpm (3/4" tube)
Operating Humidity	95% RH (non-condensing)
Calibration	None (auto calibrating)
Certifications	
CE, FCC, RoHS, WEEE, Conflict Minerals -UL and hazardous locations (coming soon)	

Product Selection

Model	Hydrogen Range		CO Limit	H2S Limit	T90 Response Time (sec)	Accuracy		Drift/Week	Repeatability		Linearity	
	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
5031	0.3%	10%	<100 ppm	<20 ppm	<90	0.15%	N/A	None	0.15%	N/A	0.15%	N/A
5032	0.4%	5%	0	0	<60	0.3%	N/A	None	0.3%	N/A	0.3%	N/A
5033	0.5%	100%	<100 ppm	<1000 ppm	<60	0.3%	1%	None	0.2%	0.4%	0.2%	0.4%
5034	0.5%	100%	20%	3%	<90	0.3%	1%	None	0.2%	0.4%	0.2%	0.4%

Specifications are subject to change without notice.
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