# HY-OPTIMA™ 1700 Intrinsically Safe Process Hydrogen Monitor

## Description

H2scan's HY-OPTIMA™ 1700 in-line, real time hydrogen-specific process monitors are designed for ease of use, interface flexibility and true process control. The HY-OPTIMA™ 1700 is an intrinsically safe, solid state sensor that is configured to operate in process gas streams with up to 95% relative humidity and temperatures up to 100ºC. It is ideal for hydrogen production and petrochemical applications where real time measurements of hydrogen can increase process plant efficiencies, improve diagnostics and enhance maintenance management translating into higher profitability.

## Performance

Hydrogen Sensitivity Range:
0.5% to 100% hydrogen by volume at 1 ATM
Typical Response Time: T90 less than 30 sec
Ingress Protection: IP64 capable
Calibration Interval: 90 days
Product Life Expectancy: 10 years
Accuracy: ± (0.03 x indication + 0.2) percent hydrogen by volume

## Interface Options

Power Barrier Input Voltage: 24 VDC nominal
Power Barrier Input Voltage Range: 20 VDC to 28 VDC
Intrinsically Safe Sensor Input Voltage: 10 VDC
Sensor Input Voltage Range: 5 VDC to 28 VDC
Input Power: 10 W
Analog Output: 4 mA to 20 mA
Serial Communication: RS422

## Adapter Fittings

½ in. MNPT thread
½ in. FNPT thread
-8 SAE/MS thread size
… and many other industry standards.

## Operating Conditions

Operating Humidity: 0% to 95% RH
Flow Rate: 0.1 slpm to 50 slpm
Pressure: 0 to 7 bar gauge, 0 to 100 psi gauge
Process Gas Temperature Range: -20ºC to 100ºC
Operating Temperature Range: -20ºC to 40ºC
Storage Temperature Range: -40ºC to 50ºC
Calibration Background Gas: Nitrogen

## Included Accessories

Intrinsically Safe Power Barrier
Armored Power / Analog Cable: 4 m
Calibration Cup

## Optional Accessories

Single Channel Intrinsically Safe Analog Output Barrier (with or without relays)
Single Channel Intrinsically Safe RS422 Serial Interface Barrier
Serial Interface Cable: 4 m (custom lengths available)
Armored Power / Analog Cable (custom lengths available)

## Dimensions

Total Length: 10.3 in.
Length of Enclosure: 6.8 in.
Length of Tube: 2.9 in.
Width: 3.4 in.
Depth: 1.4 in.

## Certification

CE 0359 Ex
II 1 G, Ex ia II H2, d+d IIB T3
II 2 G, Ex ib II H2, ib d IIB T3
ITS07ATEX25634X

*Figure 1* shows the hazardous area designations for this apparatus. Note that the sensor probe tip is rated for Category 1 (Zone 0) and the electronics assembly is rated for Category 2 (Zone 1).

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Specifications subject to change without prior notice.
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