

## HY-OPTIMA™ 1740 Process Hydrogen Analyzer

### Description

H2scan's HY-OPTIMA™ 1740 in-line, real time hydrogen-specific process analyzers are designed for ease of use, interface flexibility and true process control. The HY-OPTIMA™ 1740 is an intrinsically safe device that incorporates our patented solid-state sensor and is configured to operate in background gas streams having carbon monoxide concentrations up to 100 ppm, sulfur stream concentrations up to 1000 ppm, up to 95% relative humidity and temperatures up to 100°C. The HY-OPTIMA™ 1740 is ideal for hydrogen gas production, petroleum refining and petrochemical applications where continuous 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

Response Time: T90 < 30 sec

Ingress Protection: IP64 capable

Recommended Verification Interval: 90 days

Product Life Expectancy: 10 years

**Accuracy(\*):**

± 0.15% absolute for 0.5 to 10% H<sub>2</sub>

± 0.50% absolute for 10 to 100% H<sub>2</sub>

**Drift/week:**

± 0.10% absolute for 0.5 to 10% H<sub>2</sub>

± 0.20% absolute for 10 to 100% H<sub>2</sub>

**Repeatability:**

± 0.10% absolute for 0.5 to 10% H<sub>2</sub>

± 0.20% absolute for 10 to 100% H<sub>2</sub>

**Linearity:**

± 0.10% absolute for 0.5-10% H<sub>2</sub>

± 0.20% absolute for 10-100% H<sub>2</sub>

### 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

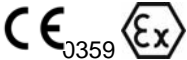
Sensor Input Voltage Range: 5 VDC to 28 VDC

Input Power: 10 W

Analog Output: 4 mA to 20 mA

Serial Communication Options: RS422

### Certifications



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II 2 G, Ex ib II H<sub>2</sub>, ib d IIB T<sub>3</sub>

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### 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: -20°C to 100°C

Operating Temperature Range: -20°C to 40°C

Storage Temperature Range: -40°C to 50°C

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)

### Adapter Fittings

½ in. MNPT thread

½ in. FNPT thread

-8 SAE/MS thread size

... and many other industry standards.

### 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.



\* Sensor performance specifications are only valid for units configured for a maximum 65°C dry process stream temperature. All figures assume pressure compensation, operating in ambient that do not contain Oxygen and are in addition to any errors in the gasses used. The accuracy is specified for serial port output only.

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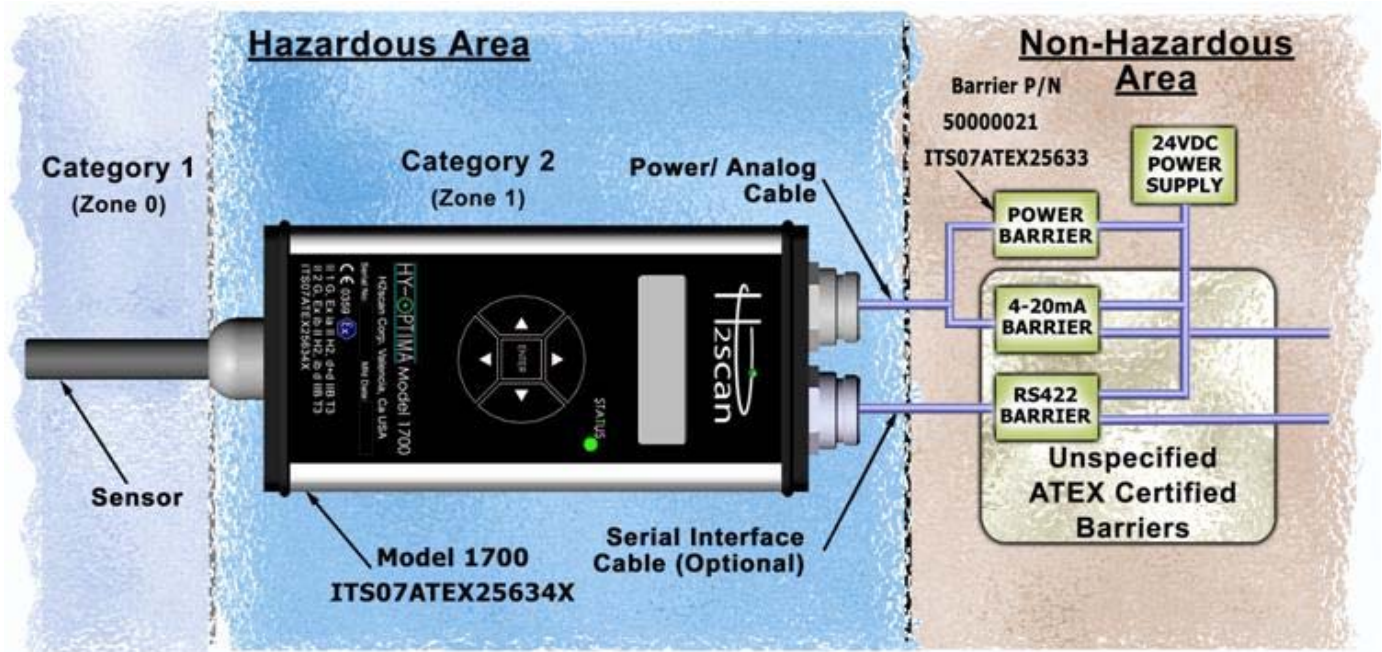


Figure 1: Hazardous Area Installation and Attachment

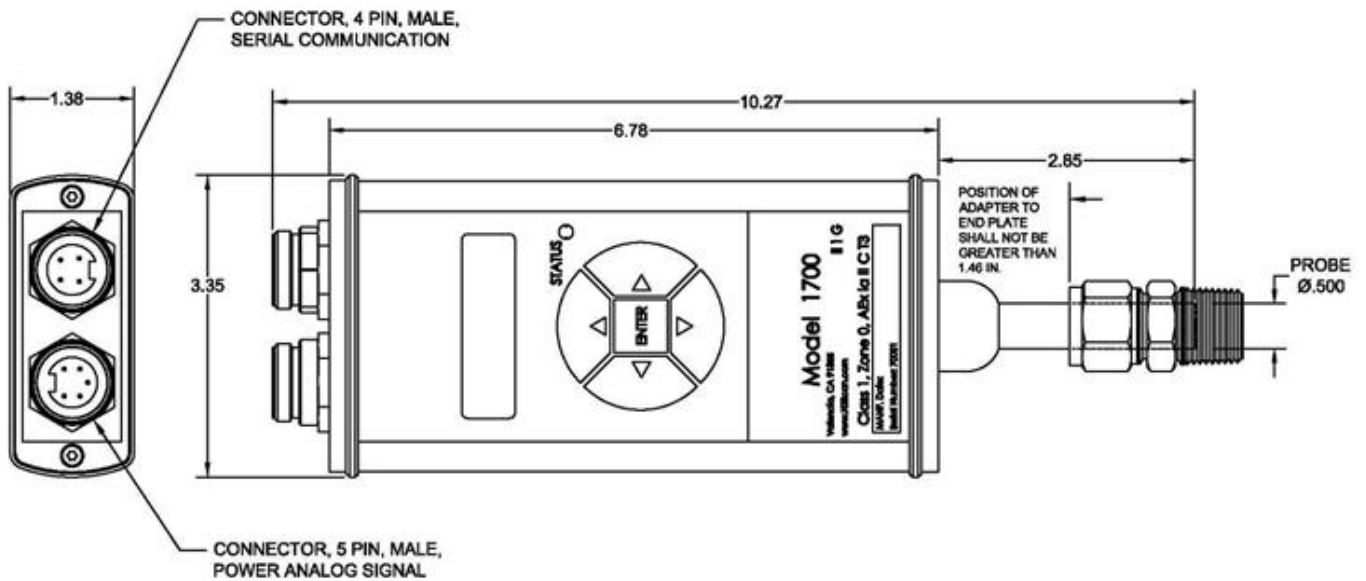


Figure 2: Dimensions (inches)