

# H2scan Gen5 Hydrogen Sensor



*The H2scan Gen5 Hydrogen Sensor pairs a high performance ASIC to H2scan's field-proven thin-film hydrogen sensor. This stand-alone sensor system has been designed to provide precision hydrogen measurement, at a lower cost for the high-volume OEM.*

## APPLICATIONS

*The Gen5 Hydrogen Sensor is industry's #1 solid-state hydrogen sensor technology in a robust yet compact package. Rated for a wide temperature range and marine exposure, the Gen5 Hydrogen Sensor installs directly onto a transformer and can withstand the harshest industrial applications including:*

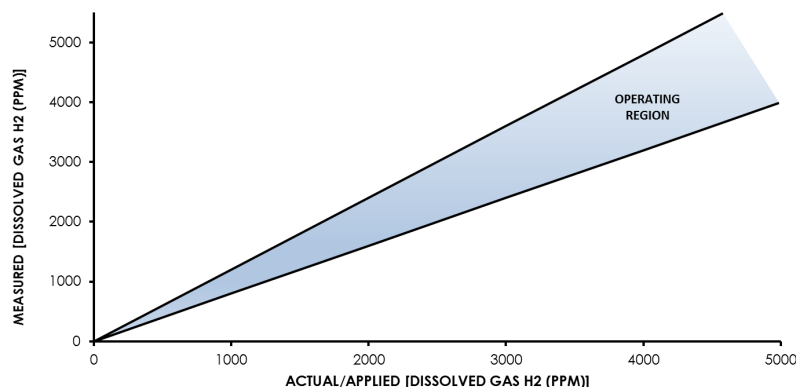
- Small Distribution Transformers
- Vault Transformers
- Wind Farm Transformers
- Railroad/Traction Transformers
- Offshore platforms



## FEATURES

- Precise Hydrogen Specific Measurements
- Sensing device immersed directly in oil for hydrogen measurement
- Functionality over a broad temperature range
- High EMI/RFI rating
- IP68 Ingress Protection

**TOTAL ERROR BAND**  
Error Limits of All Points (0-100% of range)



## PERFORMANCE SPECIFICATIONS

### Measurement Range:

25-5000 ppm

### Accuracy:

20% of reading or 25 ppm, whichever is greater

### Repeatability:

10% of reading or 15 ppm, whichever is greater

### Response Time:

< 60 min (90% of step change)

### Cross Sensitivity:

Less than 2% cross-sensitivity to other gases (CO, CO<sub>2</sub>, Hydrocarbons)

### Calibration:

No periodic calibration is required.

## FUNCTIONAL SPECIFICATIONS

### Temperature of Insulating Liquid - Operation:

-40°C to 105°C

### Temperature of Insulating Liquid - Survival:

-40°C to 135°C

### Pressure of Insulating Liquid:

Maximum 3 bar; minimum 0.1 mbar

### Maximum Rate in Changing Temperature:

Fast increase in temperature (24°C/hour), e.g. during transformer start-up

## ENVIRONMENTAL SPECIFICATIONS

### Ambient Temperature:

-40°C to +70°C (IEC 60068-2-2 & EN 50155 Section 13.4.4)

### Humidity and Corrosion Resistance:

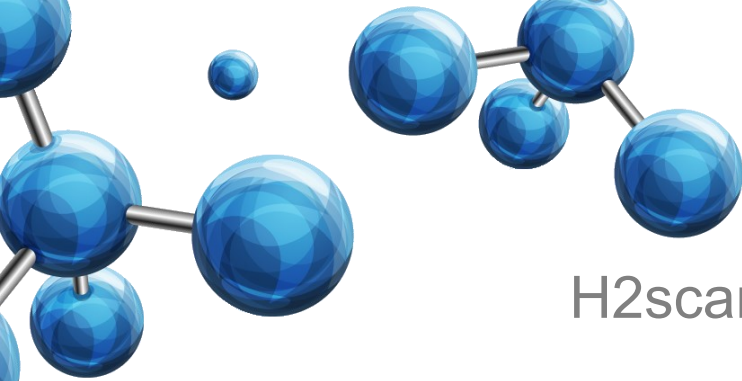
Class C5M Marine rated; salt-water condensing (IEC 60068-2-11 & DIN EN ISO 12944)

### Ingress Protection:

IP68; 25 feet water for 14 days (IEC 60529)

**Vibration:** 3-axis Sinusoidal, Wideband and Random [Simulated Long-Life] (IEC 60068-2-6 table C.2, IEC 60068-2-64 paragraph A.2, category no. 2, IEC 61373: 2010 Cat 1B section 9)

**Shock:** 30g, shock duration 18ms (IEC 60068-2-27)



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## PHYSICAL SPECIFICATIONS

### Wetted Materials:

316SS, 40% mineral filled Nylon, polyimide, glass

### Sealing:

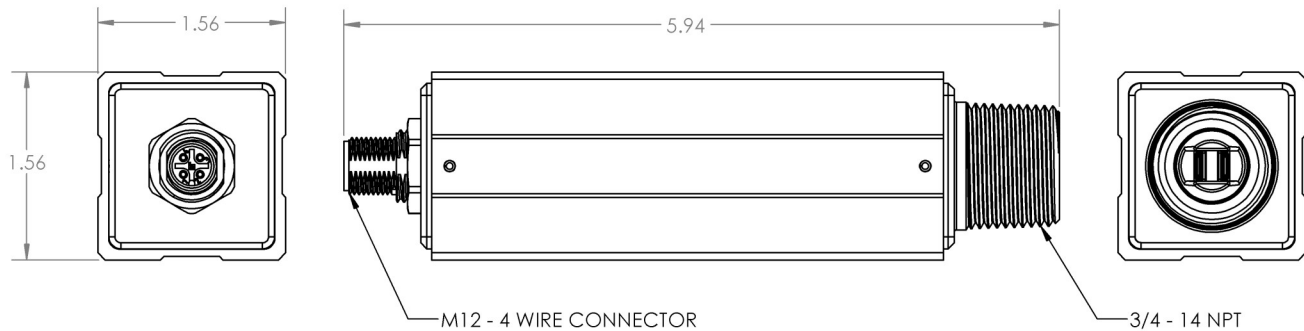
Hermetic glass-to-metal feedthrough, Buna-N gaskets

### Housing:

Hard Anodized 6061 Aluminum

## DIMENSIONS

(inches)



## ELECTRICAL SPECIFICATIONS

### Communication Port:

Isolated RS485 Serial Port: 2 Wire, MODBUS

User selectable Device ID

### Internal Data Storage:

Data capacity is more than one (1) year of sensor data recorded every hour. Data includes hydrogen concentration, rate of change per day, rate of change per week, and events.

### Power Supply:

9 to 48 VDC, 10 Watt

### Ratings:

CE Mark (IEC 61000)

ROHS 2011/65/EU compliant

EMC/RFI and Other Electrical Certification

- IEC 55022 IFCC Part 15
- IEC 55024
- IEC 55011
- IEC 61000-4-2 through 61000-4-6, and 61000-4-8
- IEC 61010-1
- IEC 60255-5
- IEC 61326

