



PRODUCT SPECIFICATION

ESH-A-CH2-100 Remote Sensor

Analog Remote Sensor with Catalytic Hydrogen Sensor

Dimensions: Size Weight	5.0 x 5.0 x 2.1 in (127 x 127 x 53 mm) without optional splash guard (Option -S) 0.04 lbs / 181 g
Construction	ABS / Polycarbonate blend, water/dust tight, corrosion resistant (designed to meet IP54 standard with splash guard installed, Option -S)
Sensor: Type Life Span	Catalytic Approximately 5 years (application dependent)
Gases Detected:	Hydrogen (H ₂)
Sensor Range:	0 – 100% LEL
System Power:	4-wire: 12 - 24 <u>VDC</u> , 1 W Class 2
Operating Temperature:	-20°C to +40°C (-4°F to 104°F)
Operating Humidity:	15 to 90% non-condensing
Indicators:	None on device, analog signal sent back to transmitter
Signal:	Current loop into a 100 ohm load or Voltage signal of 0.40 to 2 volts
Accuracy:	±0.5% LEL
Repeatability:	no data available
Long Term Zero Drift:	< 5% LEL / month
Long Term Sensitivity Drift:	< 5% signal / month
Response Time (T₉₀):	<10 seconds
Warm Up Time:	2-minutes after power up. Warm up time depends upon how long sensor has been without power. Long periods may require a 24+ hour warm up to meet published specification
% Relative Sensitivity:	Relative to Methane = 100%, Hydrogen = 106%, Ethylene = 96%, Propane = 82%, Isobutane = 74%, n-Pentane = 67%, Hexanes = 50%
Safety:	Automatic resetting thermal overload fuse (reset capabilities to 500 times)
Wiring:	VDC 4-conductor shielded 18 awg stranded
Sensor Mounting:	Typically on or near the ceiling, H ₂ is lighter than air (application dependent)
Monitoring Area:	5000 ft ² / 465 m ²
Suggested Alarm Setpoints:	Low Alarm: 10% LEL / Mid Alarm: 15% LEL / High Alarm: 20% LEL
Certifications:	CSA-C22.2 No. 205-12 / UL508 (Edition 17):2007 EMC Directive 2004/108/EC, EN 50270:2006, Type 1, EN61010 FCC Part 15
Notes:	Never install gas detectors in the direct path of moving air. ESH-A is not a standalone device, it must be connected to a transmitter or cGas-SC.

Test conditions: flow rate of 300 mL/min using methane; conditions at 23°C ±2°C, 60% RH and 1 atm

Conditions Affecting Catalytic Sensors:

- Typically designed to operate within specific temperature ranges. High temperatures can accelerate wear and reduce lifespan.
- Excessive humidity can affect sensor components, leading to corrosion or malfunction. Maintaining optimal humidity levels is crucial.
- Paint fumes, cleaning products, sand, water, insects can reduce lifespan and compromise performance.
- Dust and dirt can compromise sensor performance lifespan, both during storage and operation.
- Silicone, lead and chlorinated hydrocarbon vapours can poison catalytic sensors. Other compounds, especially hydrogen sulphide and halogenated hydrocarbons can be absorbed or form compounds that are absorbed by sensor which can result in the temporary loss of sensitivity and in most cases a sensor will recover after a period of operation in clean air. Even when the sensor is not powered, exposure to compounds that poison or inhibit the sensor can impact its lifespan.
- Excessive vibration or impact can damage the sensor.
- When storing, package securely in a sealed container.
- Requires calibration gas with air balance.
- Install gas detector vertically so the display is over top of the sensor vent and device is flat against a wall or column. Never install gas detectors in the direct path of moving air.

In addition to the factors listed above, most sensors will suffer general wear and tear and it may not always be easy to detect the damage caused, making regular maintenance important to help keep the sensors in good working order. Regular maintenance includes inspecting, cleaning if necessary, bump testing and calibration.