CITY TECHNOLOGY
ENGINEERING SAFETY

1H_2S Sensor

Hydrogen Sulfide (H_2S) Analogue Gas Sensor
Part Number: AC400-R00A-CIT

Document Purpose

The purpose of this document is to present the performance specification of the 1series 1H_2S hydrogen sulfide gas sensor.

This document should be used in conjunction with the 1H_2S Characterisation Note, the Operating Principles (OP08), and the Product Safety Datasheet (PSDS 5).

For guidance on sensor performance outside of these limits, please refer to the 1H_2S Characterisation Note.

Output signal can drift below the lower limit over time. For guidance on the safe use of the sensor, please refer to the Operating Principles (OP08).

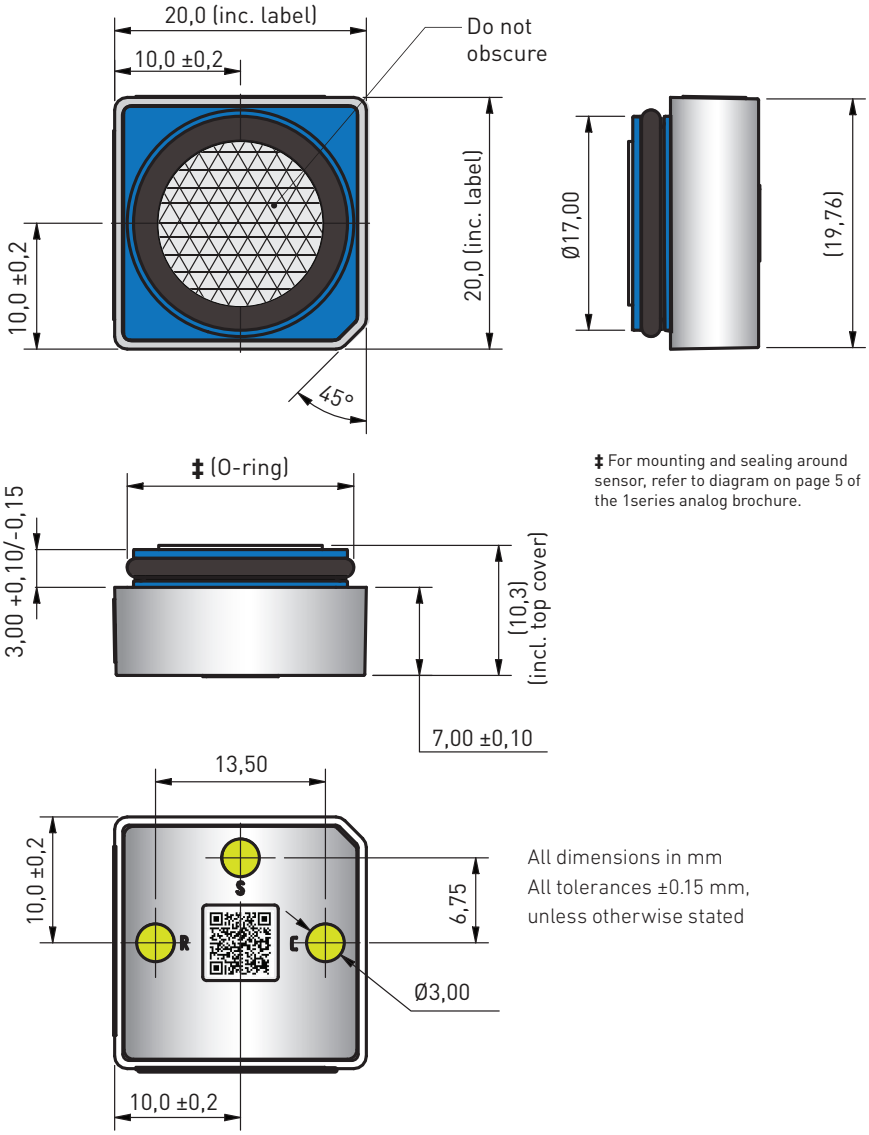
KEY FEATURES & BENEFITS

- Enables smaller instruments
- Designed to meet global performance standards:
  - ANSI/ISA 92.00.01-2010
  - BS EN 45544-1:2015
  - AS/NZS 4641-2007
- Enhanced performance over an extended environmental range
- 5-year expected operating life
- RoHS compliant

TECHNICAL SPECIFICATIONS	
Measurement	
Technology	Electrochemical
Measurement Range	0.5 ppm H_2S to 200 ppm H_2S
Maximum Overload	500 ppm
Onboard Filter	None
Sensitivity*	175 nA/ppm ±35 nA/ppm
T90 Response Time*	Typically < 30 seconds
T50 Response Time	< 15 seconds @ 20°C < 30 seconds @ -40°C to 60°C
Recovery Time* (from 200 ppm to <4 ppm)	< 180 seconds
Baseline Offset* (in clean air)	< ±0.5 ppm H_2S equivalent
Baseline Shift (-40°C to 60°C)	< ±3 ppm H_2S equivalent
Repeatability*	< ±5% of measured value
Linearity* (0 ppm H_2S to 200 ppm H_2S)	Linear ±5%
Electrical	
Recommended Load Resistor	5 Ω to 10 Ω
Bias Voltage	No bias
Mechanical	
Weight	< 5 g
Outer Plastic Body Material	Modified PPO
O-ring Material	FKM75 ±5 shore A
Contact Material	Gold plated
Orientation Sensitivity	None
Environmental	
Operating Temperature Range	-40°C to 60°C
Operating Humidity Range	5% rH to 95% rH non-condensing (Refer to Characterization Note)
Operating Pressure Range	600 mbar to 1200 mbar
Lifetime	
Long Term Output Drift*	< 10% signal loss per annum
Expected Operating Life	5 years in air

*Specifications are valid at 20°C, 50% RH, and 1013 mBar, using City Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first 3 months. Output signal can drift below the lower limit over time.

Product Dimensions



‡ For mounting and sealing around sensor, refer to diagram on page 5 of the 1series analog brochure.

All dimensions in mm
All tolerances ±0.15 mm, unless otherwise stated

Pinout

Pin	Label	Description
1	S	Sensing electrode
2	R	Reference electrode
3	C	Counter electrode

Poisoning

Gas sensors are designed for operation in a wide range of environments and harsh conditions. However, it is important that exposure to high concentrations of solvent vapours is avoided during 1) storage, 2) fitting into instruments and 3) operation.

When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.

Do not glue directly on or near the sensor as the solvent may cause crazing of the plastic.

SAFETY NOTE

This sensor is designed to be used in safety-critical applications. To ensure that the sensor and/or instrument in which it is used, are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may jeopardize the safety of people and property.

For more information
www.citytech.com

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