

1SO₂ Sensor

Sulphur Dioxide (SO₂) Analogue Gas Sensor
Part Number: AD300-R04A-CIT

Document Purpose

The purpose of this document is to present the performance specification of the 1series 1SO₂ sulphur dioxide gas sensor.

This document should be used in conjunction with the 1SO₂ Characterisation Note, the Operating Principles (OP08), and the Product Safety Datasheet (PSDS 11).

For guidance on sensor performance outside of these limits, please refer to the 1SO₂ 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



Enhanced performance over an extended environmental range



5-year expected operating life in clean air

RoHS 

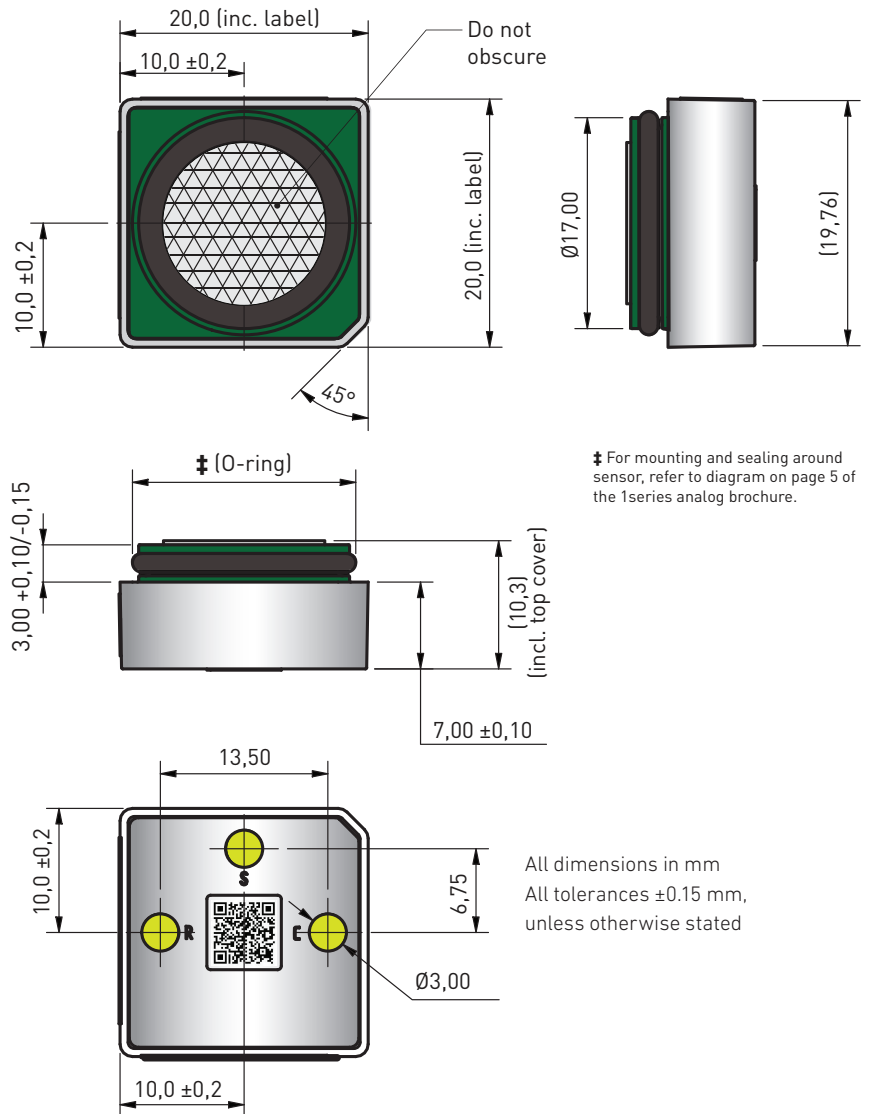
RoHS compliant

TECHNICAL SPECIFICATIONS	
Measurement	
Technology	3 electrode electrochemical
Measurement Range	0.1 ppm SO ₂ to 20 ppm SO ₂
Maximum Overload	150 ppm SO ₂
Filter	To remove H ₂ S
Filter Capacity	400 ppm hours @ 25 ppm H ₂ S
Sensitivity*	160 nA/ppm ±40 nA/ppm
T90 Response Time*	Typically < 30 seconds
T50 Response Time*	< 10 seconds @ 20°C
Baseline Offset* (in clean air)	-0.2 ppm to 0.5 ppm equivalent
Zero Shift (20°C to 40°C)	< 0.2 ppm equivalent
Repeatability*	< ±2% of signal
Linearity	Linear over measurement range 0 ppm to 20 ppm and within ±5%
Electrical	
Recommended Load Resistor	10 Ω
Bias Voltage	No bias
Mechanical	
Weight	< 5 g
Outer Plastic Body Mat'l	Modified PPO
O-ring Material	FKM75 ±5 shore A
Contact Material	Gold plated
Orientation Sensitivity	None
Environmental	
Typical Applications	Portable life safety
Operating Temperature Range (Continuous)	-20°C to 50°C
Operating Temperature Range (Intermittent)	-40°C to 55°C
Operating Humidity Range	15% rH to 90% rH non-condensing. Extended exposure to extreme humidity conditions will degrade sensor performance
Operating Pressure Range	600 mbar to 1200 mbar
Lifetime	
Long Term Output Drift*	< 10% signal loss per annum
Expected Operating Life	5 years in clean 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.

** Depends on environmental conditions

Product Dimensions



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.

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