

1CO Sensor

Carbon Monoxide (CO) Gas Sensor
Part Number: 2023B1010

Document Purpose

The purpose of this document is to present the performance specification of the 1 Series 1CO carbon monoxide gas sensor.

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

To the best of City Technology's knowledge, the data provided in this document is more suitable when the sensor is used at 20°C, 50% rH and 1013 mBar for 3 months from the date of sensor manufacture. For guidance on sensor performance outside of these limits, please refer to the 1CO Characterization 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



Enhanced performance
over an extended
environmental range



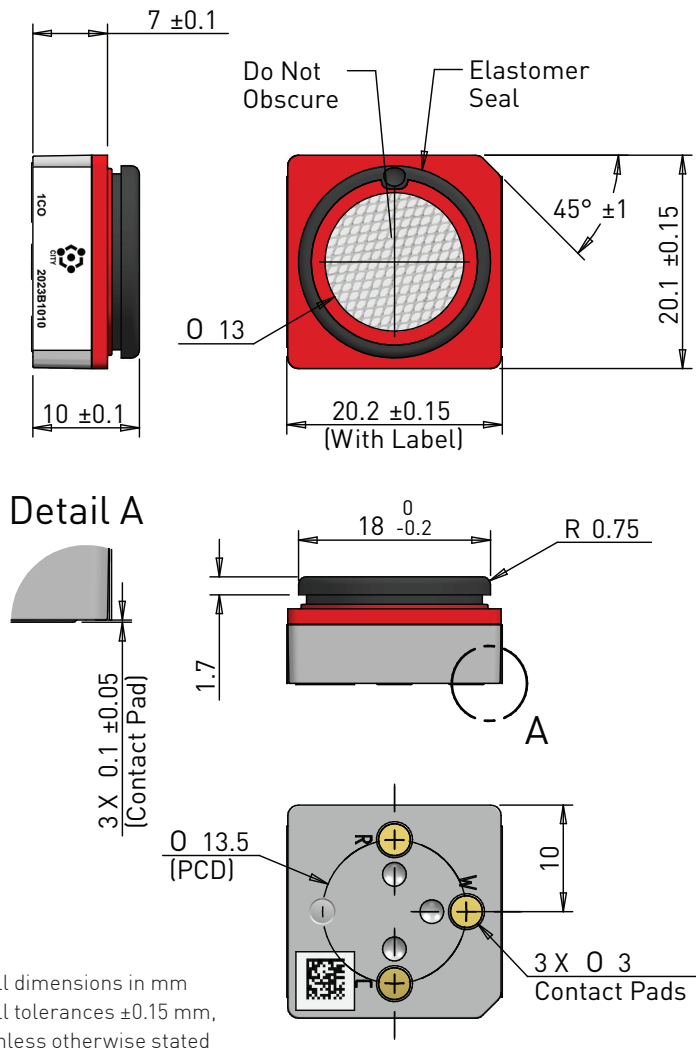
5-year life and
warranty

RoHS 

RoHS compliant

TECHNICAL SPECIFICATIONS	
Measurement	
Technology	Electrochemical
Measurement Range	0.5 to 1000 ppm CO (EN45544 applications)
Maximum Overload	2000 ppm CO
Onboard Filter	To remove acid gases (see note on page 3)
Sensitivity*	50 ± 10 nA/ppm
T50 Response Time	< 15 seconds (@ 20°C) < 20 seconds (@ -40°C to +60°C)
T90 Response Time*	Typically < 20 seconds
Recovery Time from 2000 ppm to <40 ppm from 100 ppm to <2 ppm	< 180 seconds < 30 seconds
Baseline Offset* (in clean air)	< ±3 ppm CO equivalent
Baseline Shift -40°C to +60°C	< ±12 ppm CO equivalent
Repeatability*	< ±2% of measured value
Linearity*	Linear ± 5% (0 - 2000 ppm CO)
Electrical	
Recommended Load Resistor	5 - 10 Ω
Bias Voltage	No Bias
Mechanical	
Weight	< 5 g
Outer Plastic Body Material	Noryl N110
Sealing Gasket Material	TPU
Contact Material	Gold plated niobium
Orientation Sensitivity	None
Environmental	
Operating Temperature Range	-40°C to +60°C
Recommended Storage Temp	0°C to +20°C in sealed container
Operating Humidity Range	5% rH to 95% rH non- condensing (Refer to Characterization Note)
Operating Pressure Range	600 to 1200 mbar
Lifetime	
Storage Life	6 months in original packaging
Long Term Output Drift*	< 5% signal loss per annum
Expected Operating Life	5 years in air

Product Dimensions



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

* Specifications are more ideal when the sensor is used 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.

Filter Information

Activated carbon cloth filter with high surface area:

- Removes acid gases such as SO₂, NO₂, and H₂S
- 25,000 ppm hours H₂S filter capacity
- Protects from exposure to alcohol such as methanol, ethanol and IPA (<1000 ppm hours).

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 vapors is avoided, both during storage, fitting into instruments, and 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.

Every effort has been made to ensure the accuracy of this document at the time of printing. In accordance with the company's policy of continued product improvement City Technology reserves the right to make product changes without notice. The products are always subject to a programme of improvement and testing which may result in some changes in the characteristics quoted. As the products may be used by the client in circumstances beyond the knowledge and control of City Technology, we cannot give any warranty as to the relevance of these particulars to an application. City Technology warrants goods of its manufacture as being free of defective materials and faulty workmanship. City Technology's standard product warranty applies unless agreed to otherwise by City Technology in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to City Technology during the period of coverage, City Technology will repair or replace, at its option, without charge those items it finds defective. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall City Technology be liable for consequential, special, or indirect damages. Though City Technology provides application assistance personally, or through our literature and website, it is up to the customer to determine the suitability of the product in the application.