CITY TECHNOLOGY
ENGINEERING SAFETY

5SC Low CO CiTiceL® Sensor

Low CO Sulfur Dioxide (SO_2) Sensor
Product Code: AD528-W00

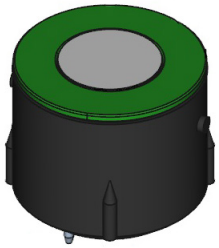
Document Purpose

The purpose of this document is to present the performance specification of the 5SC sulfur dioxide gas sensor.

This document should be used in conjunction with Operating Principles (OP08) and the Product Safety Datasheet (PSDS 19).

The data provided in this document are valid at 20°C, 50% RH and 1013 mBar for 3 months from the date of sensor manufacture.

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 (OP20).



KEY FEATURES & BENEFITS

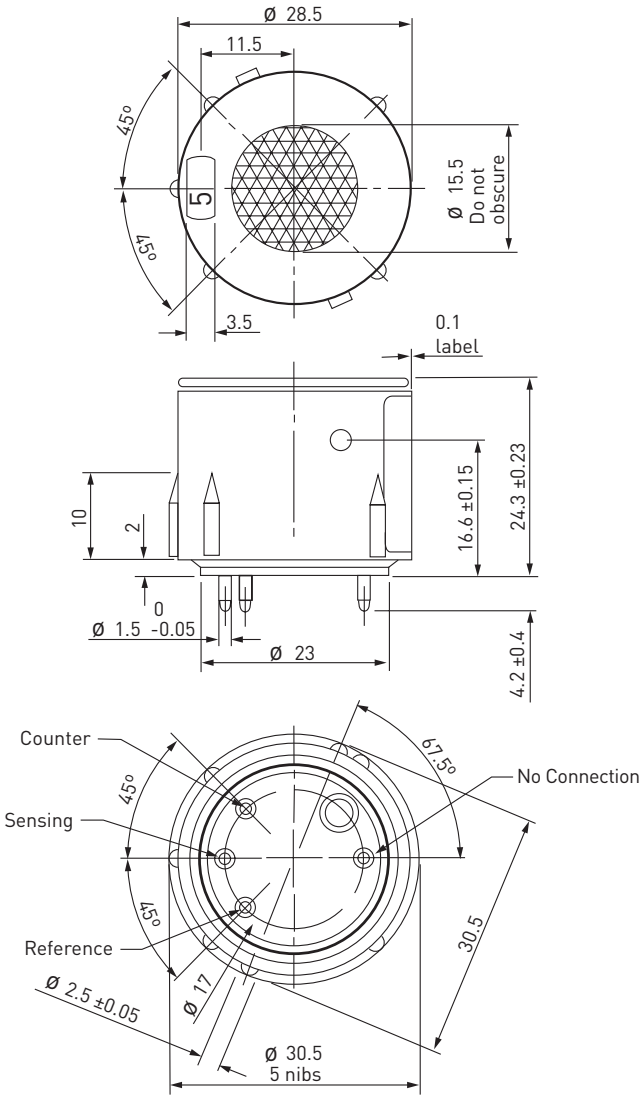
- Low cross sensitivity to CO
- Wide measurement range and high maximum overload
- Designed to meet HJ 57-2017 standard
- Designed to meet EN 50379 standard
- RoHS Compliant

TECHNICAL SPECIFICATIONS	
Measurement	
Operating Principle	3-electrode electrochemical
Measurement Range	0 ppm to 2000 ppm SO_2
Maximum Overload	5000 ppm SO_2
Filter	To remove effects of H_2S and HCl
Sensitivity*	0.1 µA ±0.02 µA/ppm
T90 Response Time*	< 35 seconds
Baseline Offset (clean air)*	± 2 ppm equivalent
Cross Sensitivity to 20,000 ppm CO*	
without compensation	< 60 ppm SO_2 equivalent
with compensation	< 5 ppm SO_2 equivalent*
Maximum Zero Shift (20°C to 40°C)	5 ppm SO_2 equivalent
Resolution (when using recommended electronics)	1 ppm
Repeatability	1% of signal
Linearity	Linear
Electrical	
Recommended Load Resistor	10 Ohm
Bias Voltage	Not required
Mechanical	
Weight	10 g nominal
Housing Material	ABS
Orientation	Any
Environmental	
Operating Temperature Range	-20°C to +50°C*
Recommended Storage Temp	0°C to 20°C
Operating Pressure Range	Atmospheric ±10%
Pressure Coeffcient	0.08% signal/mBar
Operating Humidity Range	15% to 90% RH non-condensing
Lifetime	
Long-Term Sensitivity Drift	< 2% signal loss/month
Expected Operating Life	Two years in air
Storage Life	6 months in CTL container

* 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.

Note 1: CO cross sensitivity can be compensated for by use of the compensation coefficient quoted on the sensor label. See 5SC Characterisation Note or contact City Technology Ltd for further details.

Product Dimensions (without bayonette fitting)



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

IMPORTANT NOTE: Connection should be made via PCB sockets only. Soldering to the pins will seriously damage your sensor

Poisoning

CiTiceLs 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, 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 CiTiceL as the solvent may cause crazing of the plastic.

Cross Senstivity Table

Whilst CiTiceLs are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.

IMPORTANT NOTE: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

Gas	Cross Interference %
Nitrogen Dioxide, NO_2	~ -125
Hydrogen Chloride, HCl	0
Ethylene, C_2H_4	<50
Hydrogen, H_2	<3
Hydrogen Sulfide, H_2S	0
Nitric Oxide, NO	0

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.

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