Product Data Sheet

Product Datasheet

A2EF Carbon Monoxide Sensor

Document Purpose

The purpose of this document is to present the performance specification of the A3EF carbon monoxide gas sensor.

This document should be used in conjunction with Operating Principles (OP20) and the Product Safety Datasheet (PSDS 16).

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).

Product Data Sheet

Technical Specifications

MEASUREMENT

Operating Principle	Electrochemical
Measurement Range	0-200 ppm CO
Maximum Overload	1000 ppm CO
Auxiliary Electrode	To compensate for H_2 cross sensitivity
Filter	To remove acid gases & alcohol
Sensitivity*	0.15 ± 0.03 µA/ppm (in recommended circuit with gain 2)
Response Time (T_{90})*	< 40 seconds
Baseline Offset (clean air)*	< 3 ppm equivalent
Zero Shift (-20°C to +40C)	<5 ppm
Resolution	1 ppm
When using recommended circuitry	
Repeatability	< 2% of signal
Linearity	Linear

ELECTRICAL

Recommended Gain	2.2
Bias Voltage	Zero

MECHANICAL

Weight	25 g
Orientation	Any

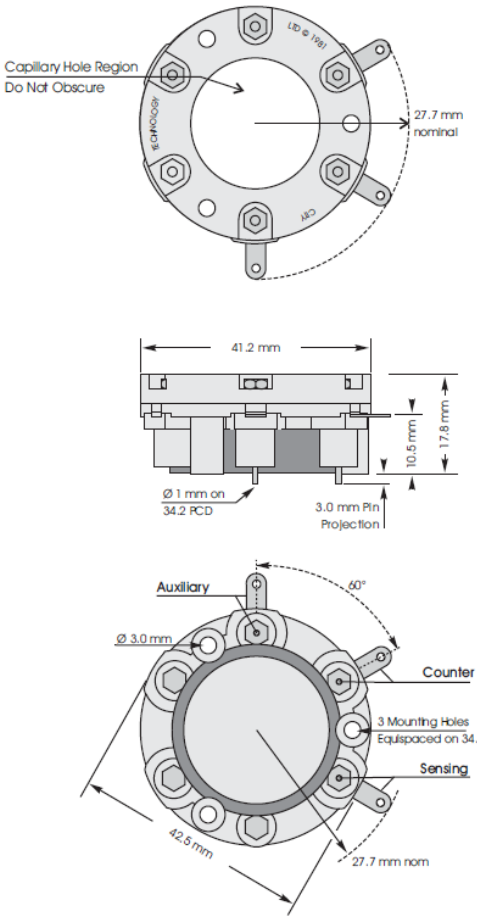
ENVIRONMENTAL

Operating Temperature Range	-20°C to +50°C
Recommended Storage Temp	0°C to 20°C
Operating Pressure Range	800 - 1200 mBar
Storage Pressure Range	800 - 1200 mBar
Maximum Pressure Differential	±100 mBar
Pressure Coefficient	0.02% signal/mBar
Operating Humidity Range	15 - 90% RH non-condensing

LIFETIME

Long Term Sensitivity Drift	< 10% signal loss/rear
Expected Operating Life	Three years in air
Storage Life	6 months in original container

Product Dimensions



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.

*** Specifications are valid at 20°C, 50% RH and 1013 mBar, using manufacturer 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 Data Sheet

Poisoning

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, 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.

Cross Sensitivity Table

Whilst sensors 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 (%)
Hydrogen Sulfide H_2S	0
Sulfur Dioxide, SO_2	0
Nitric Oxide, NO	0
Hydrogen, H_2	-4 < x$ < +4
Hydrogen Chloride, HCl	0
Nitrogen Dioxide NO_2	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.