



Key Features & Benefits:

- Industry leading reliability
- Improved performance variability

Technical Specifications

MEASUREMENT

Operating Principle	3-electrode electrochemical
Measurement Range	0-500 ppm
Maximum Overload	2000 ppm
Filter	To remove acid gases and hydrocarbons
Sensitivity	$0.07 \pm 0.015 \mu\text{A/ppm}$
Response Time (T_{90})	20 Seconds at 20°C
Baseline Offset (clean air)	$< \pm 2$ ppm equivalent
Zero Shift (-20°C to +40°C)	$< \pm 5$ ppm
Repeatability	$< \pm 3\%$
Linearity	Linear to within $\pm 5\%$ of span

ELECTRICAL

Recommended Load Resistor	5 Ω
Bias Voltage	Not required

MECHANICAL

Housing Material	Noryl 110
Weight	5g (approx.)
Orientation	Any

ENVIRONMENTAL

Typical Applications	Portable life safety
Operating Temperature Range:	
Continuous	-20°C to +40°C
Intermittent	-40°C to +55°C
Operating Pressure Range	1 atm \pm 10%
Operating Humidity Range	15% to 90% RH non-condensing

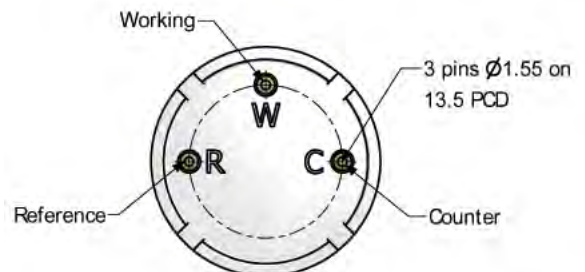
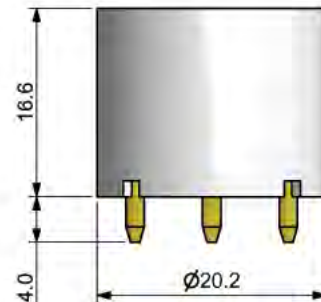
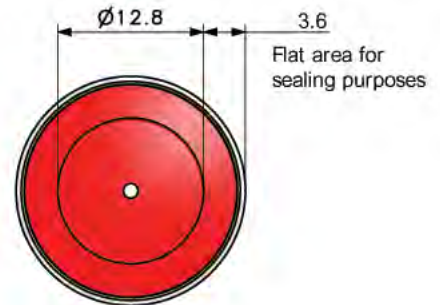
INTRINSIC SAFETY DATA

Maximum at 2000ppm	0.2 mA
Maximum o/c Voltage	1.3 V
Maximum s/c Current	< 1.0 A

LIFETIME

Long Term Output Drift	$< 5\%$ per annum
Recommended Storage Temp	10°C to +30°C
Expected Operating Life	2 years in air
Storage Life	6 months in sealed container
Standard Warranty	18 months from date of despatch

Product Dimensions



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

IMPORTANT NOTE: All performance data is based on conditions at 20°C, 50%RH and 1013mBar, using City Technology recommended circuitry. For sensor performance data under other conditions, refer to the Characterisation Note and Technical Note.

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 Sensitivity 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 gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.

Gas	Concentration Used (ppm)	Reading (ppm CO)
Carbon Monoxide	50	50
Hydrogen Sulfide	20	<5
Sulphur Dioxide	20	<5
Nitrogen Dioxide	20	$-5 \leq X \leq 0$
Nitric Oxide	50	<25
Chlorine	0.5	0
Hydrogen	200	<20
Ethylene	100	85
Carbon Dioxide	5000	0
Ammonia	50	0

The cross-sensitivity values quoted are based on tests conducted on a small number of sensors. They are intended to indicate sensor response to gases other than the target gas. Sensors may behave differently with changes in ambient conditions and any batch may show significant variation from the values quoted.

WARNING: By the nature of the technology used, any electrochemical or catalytic bead sensor can potentially fail to meet specification without warning. Although City Technology makes every effort to ensure the reliability of our products of this type, where life safety is a performance requirement of the product, and where practical we recommend that all sensors and instruments using these sensors are checked for response to gas before use

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Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.