

ECO-Sure X SENSOR



The ECO-Sure® 'X' is a long life, high quality, cost effective 2-electrode electromechanical cell designed for the detection of Carbon Monoxide CO in a range of applications but particularly for domestic/residential Carbon Monoxide detection, industrial fire detection and ventilation control. The 'X' version offers a 10 year warranted lifetime. This sensor is renowned worldwide for its long lifetime and stable performance. The ECO-Sure (2e) is a recognised component under UL2075.

SPECIFICATION

Operating Principle:	2-electrode electrochemical
Gas Detected:	Carbon Monoxide CO
Measurement Range:	0 – 500 ppm
Maximum Overload:	1,000 ppm
Expected Operating Life*:	> 10 years in normal use from date of manufacture
Sensitivity:	40 – 60 nA per ppm
Temperature Range*:	Continuous: -10°C to +50°C Intermittent: -20°C to +50°C
Pressure Range:	1 atm \pm 10%
Humidity Range* (non-condensing):	Continuous: 15 - 90% Intermittent: 0 - 99%
Response Time (T90):	< 30 seconds
Baseline Offset (clean air):	-2 to 4 ppm equivalent
Zero Shift* (-10°C to +50°C):	< +10 ppm equivalent
Long Term Output Drift:	< 5% per annum
Repeatability:	< \pm 5%
Linearity:	Within \pm 5%
Recommended Load Resistor:	5 Ω
Bias Voltage:	Not required

Intrinsic Safety Data*

Maximum at 1,000ppm:	0.1mA
Maximum o/c Voltage:	1.3V
Maximum s/c Current:	< 1.0A

LABEL DETAILS



All measurements were taken at 20°C and 50% rH at 1atm unless otherwise indicated. The performance data detailed in this document refer to new sensors. With the exception of items marked * the stated parameters have been verified under the UL component recognition programme.

Note: PCB sockets are recommended for the sensor pin connection. Soldering or using glue with the sensor should be avoided and will invalidate warranty.



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ECO-Sure X SENSOR



Physical Specification

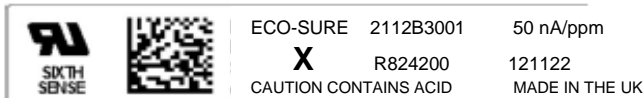
- Weight:** 5g (approx)
Orientation: Any
Housing Material: Noryl N110
Storage Life: 6 months in original sealed container
Storage Conditions: +10°C to +30°C
Warranty Period: 10 years from date of despatch
Part Number: 2112B3001
Diameter of pins: 1.55mm
Recommended sockets: Wears Cambion # 450-3326-01.

Note: PCB sockets are recommended for the sensor pin connection. Soldering or using glue with the sensor should be avoided and will invalidate warranty.

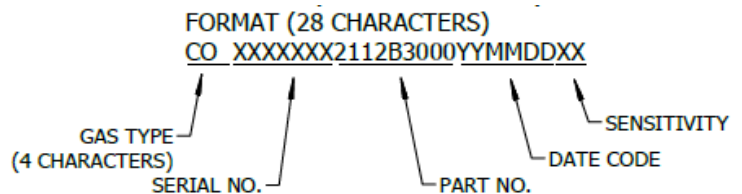
All measurements were taken at 20°C and 50% rH at 1atm unless otherwise indicated. The performance data detailed in this document refer to new sensors. With the exception of items marked * the stated parameters have been verified under the UL component recognition programme.

DATA MATRIX SPECIFICATION

LABEL DETAILS



DATAMATRIX CODE AT APPROX 4,5° OFFSET FROM CENTRELINE OF "C" PIN (TOWARDS "W" PIN)



DataMatrix Format: 28 CHARACTERS

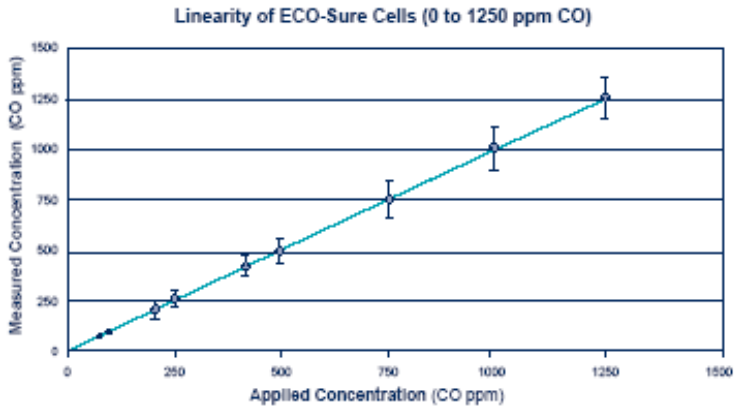
Data contained in Data Matrix code: 28 character encrypted number with gas type, sensor serial number, part number, date code (YYMMDD) and sensitivity in nA/ppm.

Scanning recommendations: In order to achieve a reliable read rate, the installation of a fixed scanning device is recommended, such as a fixed scanner from www.datalogic.com. The scanner should be set to dot matrix. A white ring light should be positioned above the cell to be scanned in preference to the scanners in-built light source. A hand held scanner can be used but a reduction in read rate may be experienced.

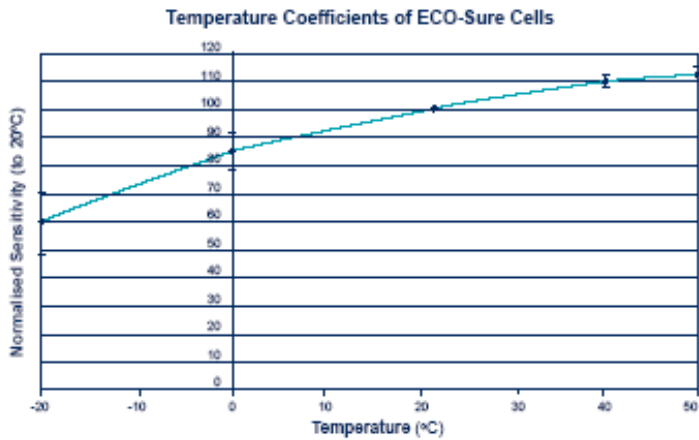
Encryption and software licence: Data contained in the Data Matrix code is encrypted. Encryption software and user licence are required to convert the data.



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Note: Temperature coefficients and cross-sensitivity are not verified under the UL component recognition programme



POISONING

Gas sensors are designed for operation in a wide range of environments and harsh conditions. However, it is important that exposure to high concentration of solvent vapours is avoided, during storage, fitting into instruments and in 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.



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CROSS SENSITIVITY

Whilst the ECO-Sure is designed to be highly specific to the gas it is intended to measure, it 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.

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.

The figures in this table are typical values and should not be used as a basis for cross calibration. Cross sensitivities may not be linear and should not be scaled. For some cross interference, break through will occur if gas is applied for a longer time period.

Gas	Concentration Used (ppm)	Exposure Time (mins)	Reading (ppm CO)
Carbon Monoxide CO	100	5	100
Hydrogen Sulphide H ₂ S	25	5	0
Sulphur Dioxide SO ₂	50	600	<0.5
Nitrogen Dioxide NO ₂	50	900	-1
Nitric Oxide NO	50	5	8
Chlorine Cl ₂	2	5	0
Hydrogen H ₂	100	5	20
Carbon Dioxide CO ₂	5000	5	0
Ammonia NH ₃	100	5	0
Ethanol C ₂ H ₅ OH	2000	30	5
Iso-Propanol	200	120	0
Acetone	1000	5	0
Acetylene	40	5	80

