ECO-Sure® (2e)

Innovation, Quality and Expertise for Gas Detection.

The Eco-Sure® (2e) is a high quality, cost effective 2-electrode electromechanical cell designed for the detection of carbon monoxide in a range of applications but particularly for domestic carbon monoxide detection and industrial fire detection applications. The Eco-Sure (2e) is a recognised component under UL2075.

Operating Performance

Operating Principle	2-electrode electrochemical
Gas Detected	Carbon Monoxide
Measurement Range	0-500 ppm
Maximum Overload[2]	1000 ppm
Expected Operating Life*	>6 years in normal use from date of manufacture
Output Signal	0.045 ± 0.015µA per ppm
Temperature Range*	Continuous: -10˚C to +50˚C
	Intermittent: -20˚C to +50˚C
Pressure Range*	1 atm ±10%
Humidity Range* (non-condensing)	Continuous: 15 - 90%
	Intermittent: 0 - 99%
Response Time (T^5 90)	<50 seconds over complete temperature range
Baseline Offset (clean air)	<-2 to 4 ppm equivalent
Zero Shift* (-10°C to +50°C)	<±10 ppm
Long Term Output Drift	<5% per annum
Repeatability	<±5%
Linearity	Linearity <±5%
Recommended Load Resistor	5Ω
Bias Voltage	Not required

Intrinsic Safety Data*

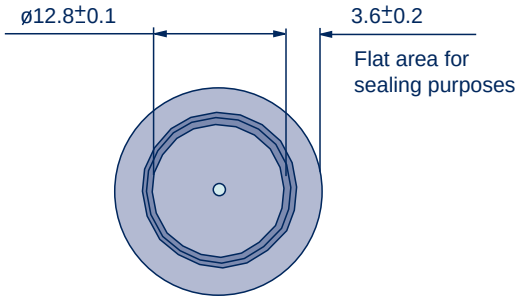
Maximum at 1000ppm	0.1mA
Maximum o/c Voltage	1.3V
Maximum s/c Current	<1.0A

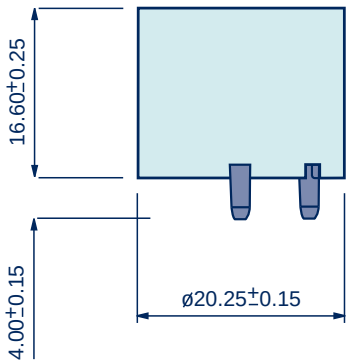
Physical Specification*

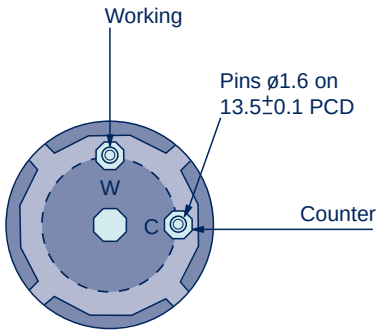
Weight	5g (approx)
Housing Material	Noryl 110
Storage Life	6 months in sealed container
Storage Conditions	+10˚C to +30˚C
Orientation	Any
Warranty Period	Up to 60 months

All measurements were taken at 20˚C and 505 rH at 1 atmosphere pressure unless otherwise indicated. The performance data detailed in this document refer to new sensors.

With the exception of items marked * the following parameters have been verified under the UL component recognition programme.







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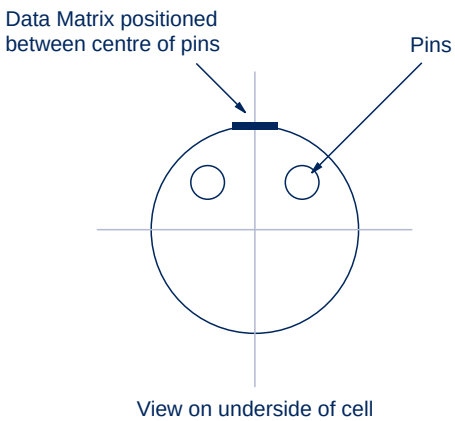
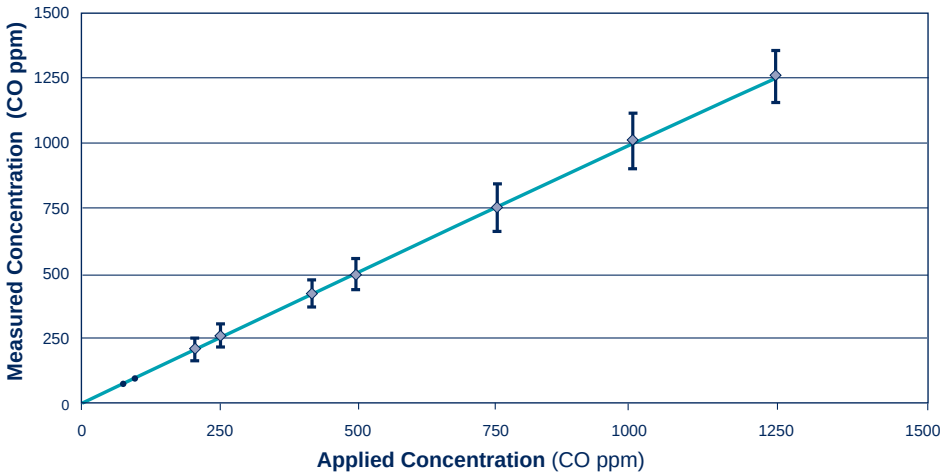
Customer Specification

Symbology	2D Data Matrix (ECC 200)
Format	12x12 dot array
Dot size	0.428mm
Dot colour	White dot on black substrate
Data contained in Data Matrix code	Date code and sensitivity in nA/ppm
Data contained in number printed below Data Matrix code	2 digit number with sensitivity in nA/ppm
Tolerance on sensitivity data	Typically ± 5% Better than ± 10%
Scanning recommendations	In order to achieve a reliable read rate, the installation of a fixed scanning device is recommended. Typically a Matrix 2000 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. A keyboard may be used to key in the 2-digit nA/ppm number displayed underneath the Data Matrix.

Part Number	2112B3000

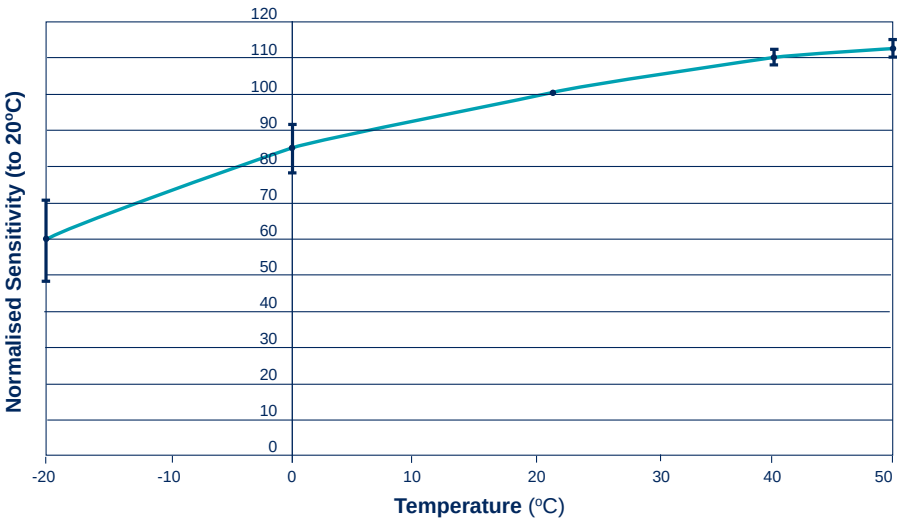


Linearity of ECO-Sure Cells (0 to 1250 ppm CO)



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

Temperature Coefficients of ECO-Sure Cells



Cross Sensitivity Table

Gas	Concentration Used (ppm)	Exposure Time (mins)	Reading (ppm CO)
Carbon Monoxide	100	5	100
Hydrogen Sulphide	25	5	0
Sulfur Dioxide	50	600	<0.5
Nitrogen Dioxide	50	900	-1.0
Nitric Oxide	50	5	8
Chlorine	2	5	0
Hydrogen	100	5	20
Carbon Dioxide	5000	5	0
Ammonia	100	5	0
Ethanol	2000	30	5
Iso-Propanol	200	120	0
Acetone	1000	5	0
Acetylene	40	5	80

***Note:** 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.