

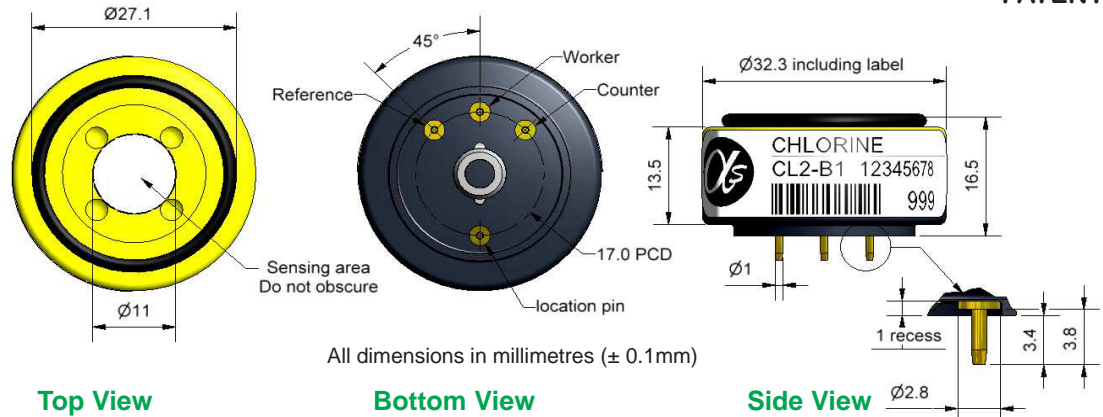


CL2-B1 Chlorine Sensor



Figure 1 CL2--B1 Schematic Diagram

PATENTED



All dimensions in millimetres ($\pm 0.1\text{mm}$)

PERFORMANCE	Parameter	Value	Range
	Sensitivity	nA/ppm in 10ppm Cl ₂	-600 to -1150
	Response time	t ₉₀ (s) from zero to 10ppm Cl ₂ (33Ω load resistor)	< 60
	Zero current	ppm equivalent in zero air	± 0.4
	Resolution	RMS noise (ppm equivalent) (33Ω load resistor)	< 0.02
	Range	ppm limit of performance warranty	20
	Linearity	ppm error at full scale, linear at zero and 10ppm Cl ₂	< ± 0.2
	Overgas limit	maximum ppm for stable response to gas pulse	60

LIFETIME	Parameter	Value	Range
	Zero drift	ppm equivalent change/year in lab air	< 0.03
	Sensitivity drift	% change/year in lab air, monthly test	< 6
	Operating life	months until 80% original signal (24 month warranted)	> 24

ENVIRONMENTAL	Parameter	Value	Range
	Sensitivity	@ -20°C% (output @ -20°C/output @ 20°C) @ 10ppm	70 to 90
	Sensitivity	@ 50°C% (output @ 50°C/output @ 20°C) @ 10ppm	90 to 105
	Zero @ -20°C	ppm equivalent change from 20°C	< 0 to 0.1
	Zero @ 50°C	ppm equivalent change from 20°C	< 0 to -1

CROSS SENSITIVITY	Gas	Sensitivity	% measured gas @	Gas	Value
	H ₂ S	sensitivity	20ppm	H ₂ S	< -300
	NO ₂	sensitivity	10ppm	NO ₂	< 120
	NO	sensitivity	50ppm	NO	< 1
	SO ₂	sensitivity	20ppm	SO ₂	< -1
	CO	sensitivity	400ppm	CO	< 0.1
	H ₂	sensitivity	400ppm	H ₂	< 0.1
	C ₂ H ₄	sensitivity	400ppm	C ₂ H ₄	< 0.1
	NH ₃	sensitivity	20ppm	NH ₃	< 0.1
	CO ₂	sensitivity	5% (Vol)	CO ₂	0

KEY SPECIFICATIONS	Parameter	Value	Range
	Temperature range	°C	-20 to 50
	Pressure range	kPa	80 to 120
	Humidity range	% rh continuous (see note below)	15 to 90
	Storage period	months @ 3 to 20°C (stored in sealed pot)	6
	Load resistor	Ω (for optimum performance)	33
	Weight	g	< 13

Note: Above 85% rh and 40°C a maximum continuous exposure period of 10 days is warranted. Where such exposure occurs the sensor will recover normal electrolyte volumes when allowed to rest at lower % rh and temperature levels for several days.



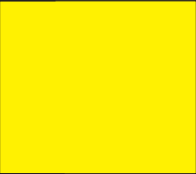
At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

NOTE: all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.

Technical Specification



CL2-B1 Performance Data



Technical Specification

Figure 2 Sensitivity Temperature Dependence

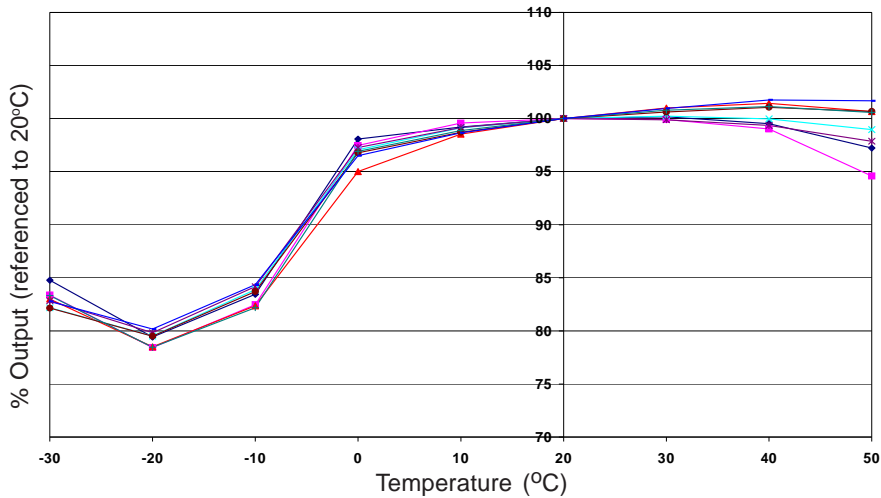


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and $\pm 95\%$ confidence intervals are shown.

Chlorine gas tests can be difficult and non-repeatable, especially at high temperatures.

Figure 3 Zero Temperature Dependence

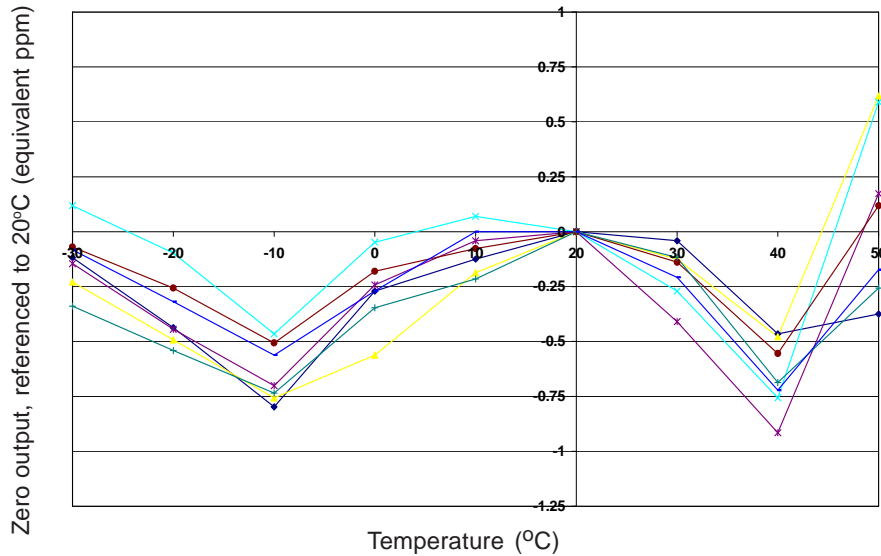


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 4 Response to high gas concentrations

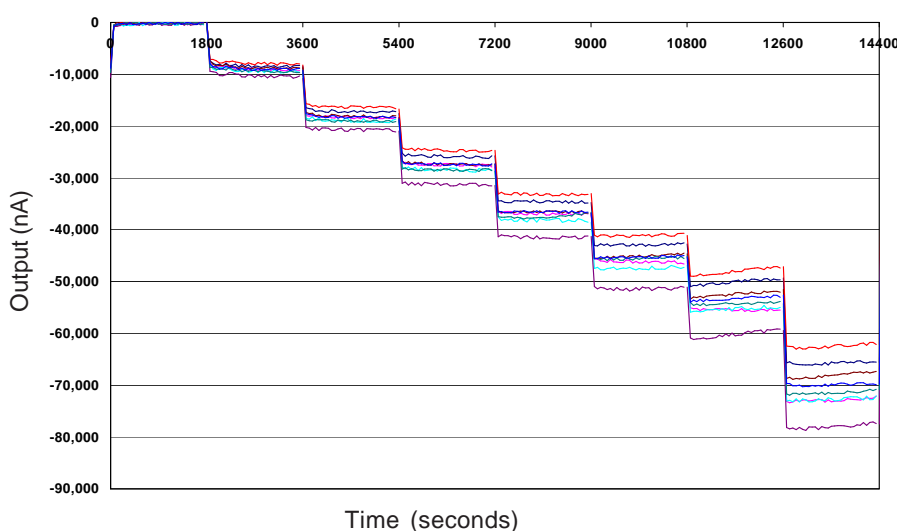


Figure 4 shows the CL2-B1 stable response to chlorine gas, up to 80ppm. Sensors recover without any performance change when exposed to high gas concentrations for short periods.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "www.alphasense.com".

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