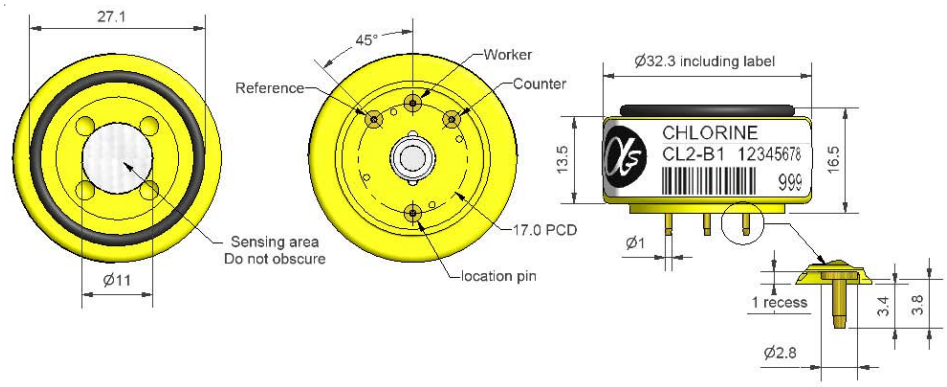
CL2-B1 Chlorine Sensor

PATENTED

Technical Specification

Figure 1 CL2--B1 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

Top View **Bottom View** **Side View**

PERFORMANCE	Sensitivity	nA/ppm in 10ppm Cl_2	-700 to -1100
	Response time	t_{90} (s) from zero to 10ppm Cl_2 (33W load resistor)	< 60
	Zero current	ppm equivalent in zero air	± 0.2
	Resolution	RMS noise (ppm equivalent) (33W 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 range	maximum ppm for stable response to gas pulse	100
LIFETIME	Zero drift	ppm equivalent change/year in lab air	< 0.1
	Sensitivitydrift	% change/year in lab air, monthly test	< 5
	Operating life	months until 80% original signal (24 month warranted)	> 24
ENVIRONMENTAL			
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm	85 to 97
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm	85 to 97
	Zero @ -20°C	ppm equivalent change from 20°C	± 0.15
	Zero @ 50°C	ppm equivalent change from 20°C	-0.1 to -0.25

CROSS SENSITIVITY	NO sensitivity	% measured gas @ 50ppm	NO	< 0.5
	SO_2 sensitivity	% measured gas @ 20ppm	SO_2	< -2
	NO_2 sensitivity	% measured gas @ 10ppm	NO_2	100
	H_2 sensitivity	% measured gas @ 400ppm	H_2	< 0.1
	H_2S sensitivity	% measured gas @ 20ppm	H_2S	-100
	CO sensitivity	% measured gas @ 400ppm	CO	< 0.1
	C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	< 0.1
	NH_3 sensitivity	% measured gas @ 20ppm	NH_3	< 0.1
	CO_2 sensitivity	% measured gas @ 5% (Vol)	CO_2	0

KEY SPECIFICATIONS	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	W (for optimum performance)	33
	Weight	g	< 13

Note: Above 85% rh and 40°C a miximum 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.

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.

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CL2-B1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

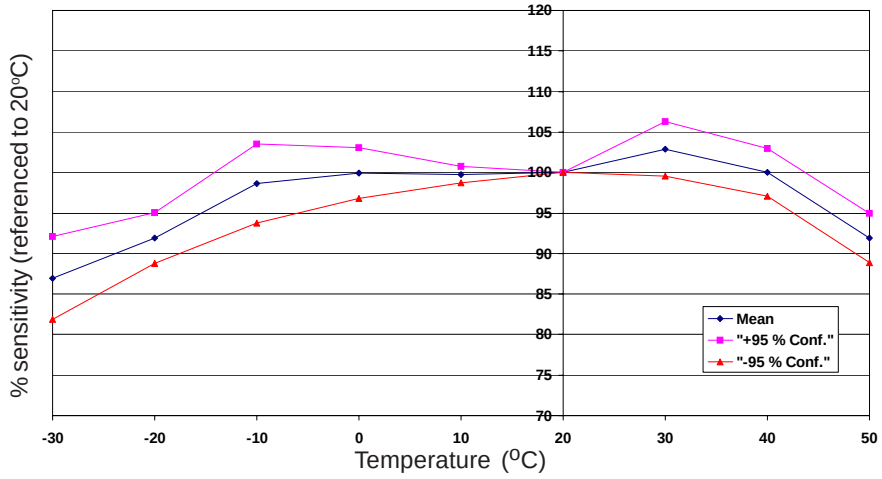

Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Zero Temperature Dependence

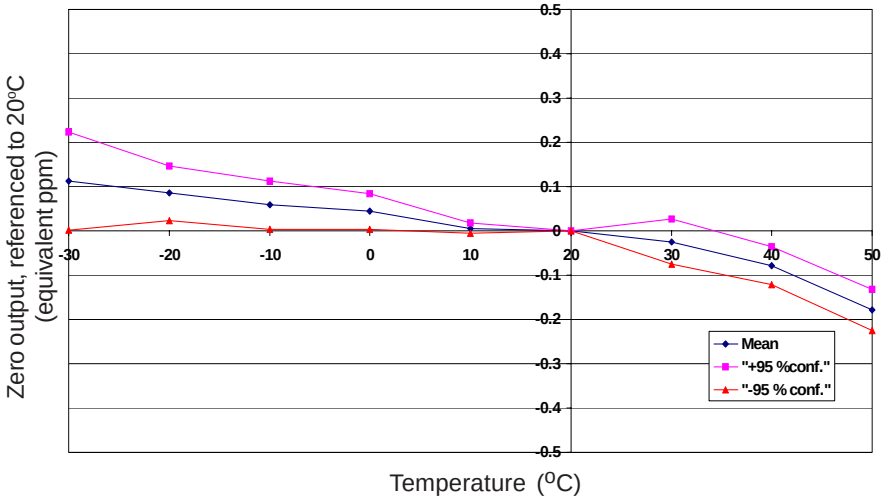

Figure 3 shows the variation in zero output caused by changes in temperature expressed at ppm gas equivalent.

This data is taken from a typical batch of sensors. The mean and +/- 95% confidence intervals are shown.

Figure 4 Effects of Changes in Relative Humidity (rh)

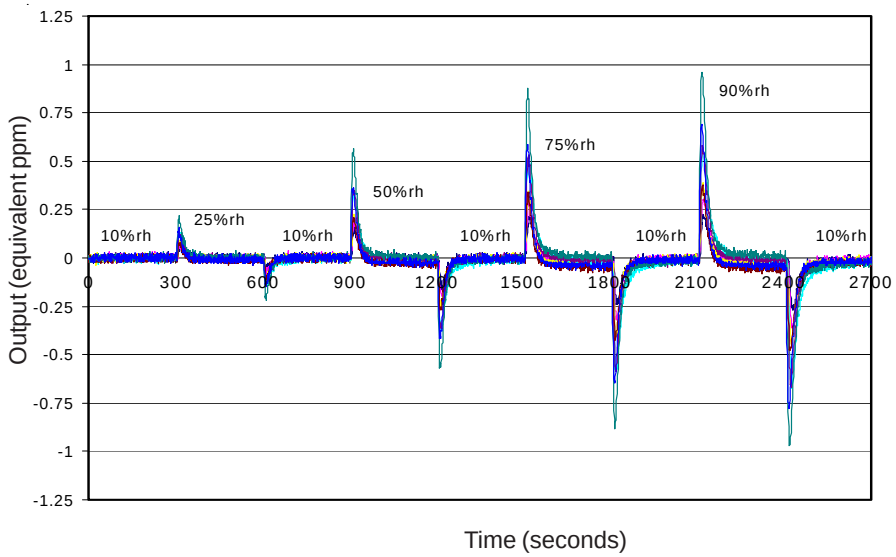

Figure 4 shows the effect on zero with increasing step changes of relative humidity of 25%rh,50%rh,75%rh and 95%rh.

The relative humidity level is returned to 10% between each upward going exposure.

This sensor provides an exceptionally low transient response to large step changes in relative humidity.

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".