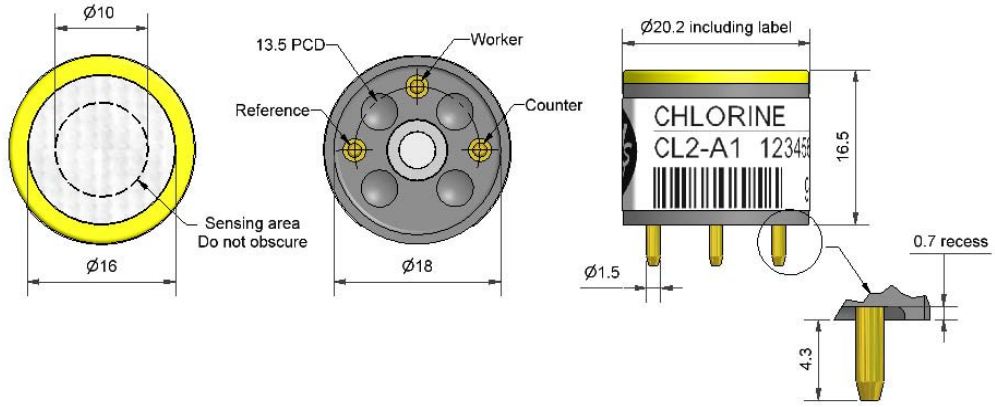
CL2-A1 Chlorine Sensor

PATENTED

Technical Specification

Figure 1 CL2-A1 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

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

PERFORMANCE	Sensitivity	nA/ppm in 10ppm Cl_2	-400 to -750
	Response time	t_{90} (s) from zero to 10ppm Cl_2 (33Ω load resistor)	< 40
	Zero current	ppm equivalent in zero air	± 0.2
	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 5ppm Cl_2	± 1.5
	Overgas range	maximum ppm for stable response to gas pulse	50
LIFETIME	Zero drift	ppm equivalent change/year in lab air, monthly test	< 0.2
	Sensitivity drift	% change/month in lab air, twice monthly test	< 4
	Operating life	months until 80% original signal (24 month warranted)	> 24
ENVIRONMENTAL	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm Cl_2	80 to 95
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm Cl_2	75 to 87
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 0.2
	Zero @ 50°C	ppm equivalent change from 20°C	< 0 to -0.4

CROSS SENSITIVITY	NO_2 sensitivity	% measured gas @ 10ppm	NO_2	100
	NO sensitivity	% measured gas @ 50ppm	NO	< 0.5
	SO_2 sensitivity	% measured gas @ 20ppm	SO_2	< -2.5
	H_2 sensitivity	% measured gas @ 400ppm	H_2	< 0.1
	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< -40
	CO sensitivity	% measured gas @ 400ppm	CO	< 0.1
	C_2H_4 sensitivity	% measured gas @ 400ppm	C_2H_4	< 0.1

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

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.

Alphasense Ltd, Sensor Technology House, 300 Avenue West, Skyline 120, Great Notley. CM77 7AA. UK
Telephone: +44 (0) 1376 556 700 Fax: +44 (0) 1376 335 899 E-mail: sensors@alphasense.com Website: www.alphasense.com

CL2-A1 Performance Data

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Figure 2 Sensitivity Temperature Dependence

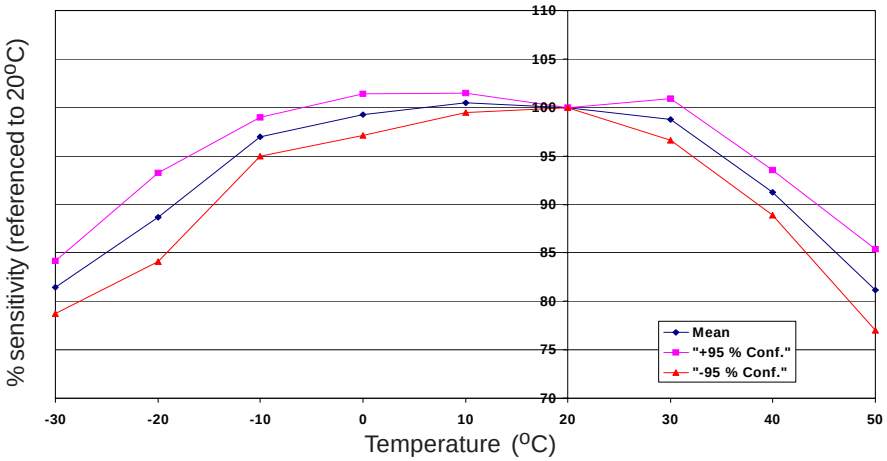

Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Zero Temperature Dependence

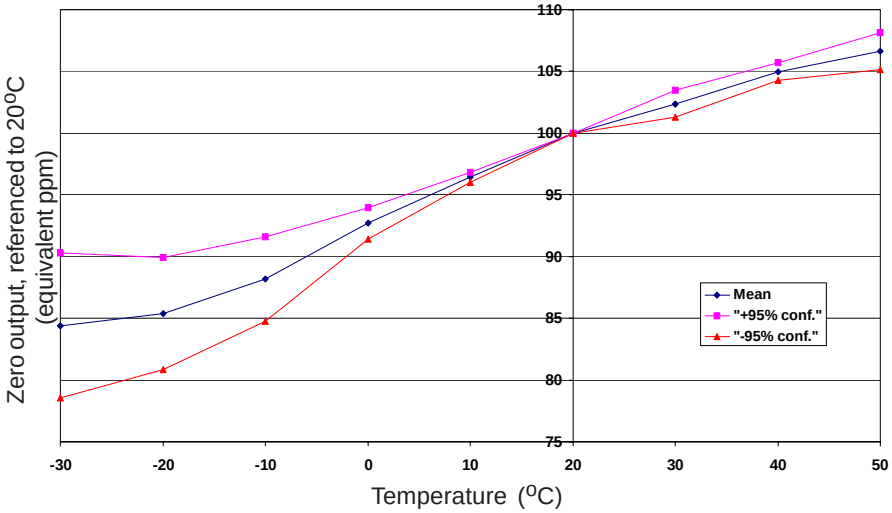

Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

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

Figure 4 Response to Changes in Relative Humidity

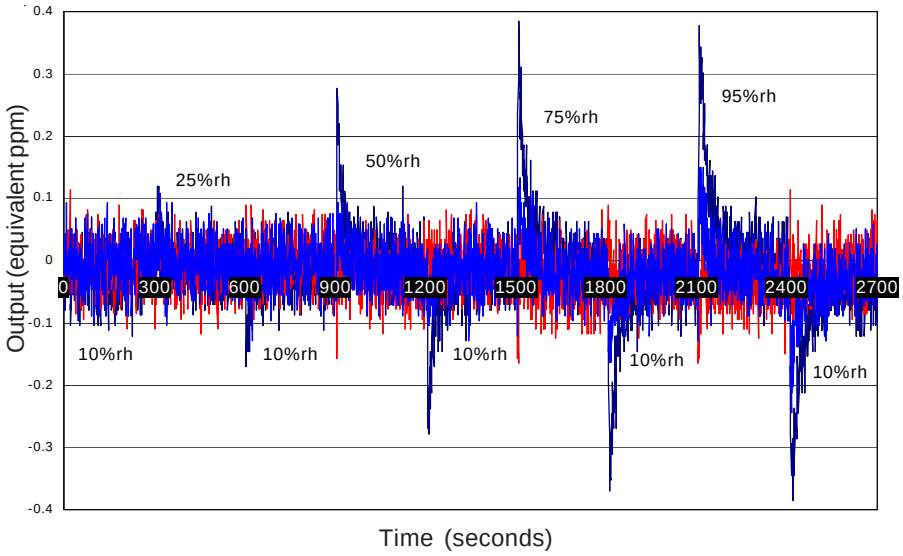

Figure 4 shows the effect on zero output with increasing step changes of relative humidity from 10% rh in steps to 25% rh, 50% rh, 75% rh and 95% rh.

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

This sensors 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".