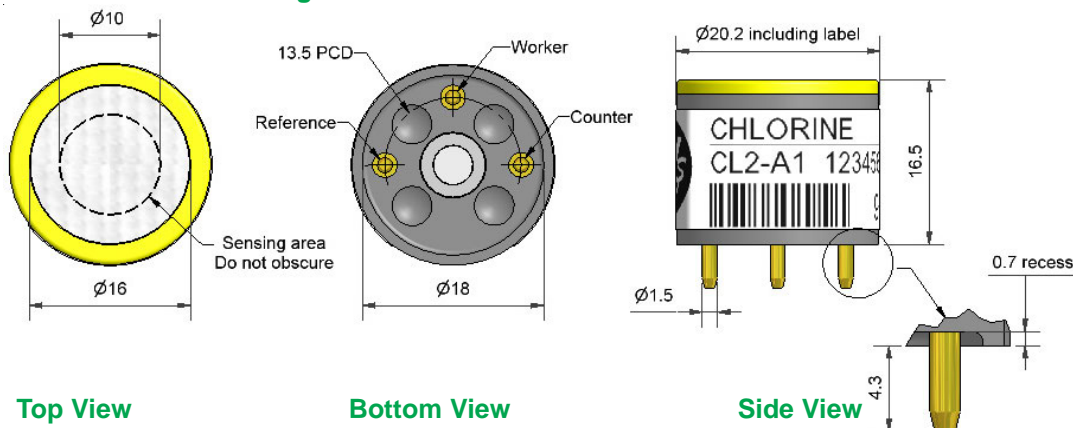


CL2-A1 Chlorine Sensor



Figure 1 CL2-A1 Schematic Diagram

PATENTED



Technical Specification

PERFORMANCE	Parameter	Value	Unit
	Sensitivity	nA/ppm in 10ppm Cl ₂	-350 to -650
	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 limit	maximum ppm for stable response to gas pulse	50

LIFETIME	Parameter	Value	Unit
	Zero drift	ppm equivalent change/year in lab air, monthly test	< 0.05
	Sensitivity drift	% change/year in lab air, monthly test	< 10
	Operating life	months until 80% original signal (24 month warranted)	> 24

ENVIRONMENTAL	Parameter	Value	Unit
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 10ppm Cl ₂	70 to 90
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 10ppm Cl ₂	101 to 120
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 0.2
	Zero @ 50°C	ppm equivalent change from 20°C	< 0 to -0.5
	Zero slope	equivalent ppm/K	-0.005

CROSS SENSITIVITY	Gas	Sensitivity	Value	Unit
	H ₂ S	% measured gas @ 20ppm	< -40	
	NO ₂	% measured gas @ 10ppm	100	
	NO	% measured gas @ 50ppm	< 0.5	
	SO ₂	% measured gas @ 20ppm	< -2.5	
	CO	% measured gas @ 400ppm	< 0.1	
	H ₂	% measured gas @ 400ppm	< 0.1	
	C ₂ H ₄	% measured gas @ 400ppm	< 0.1	

KEY SPECIFICATIONS	Parameter	Value	Unit
	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 tested and stored at ambient environments 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.

CL2-A1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

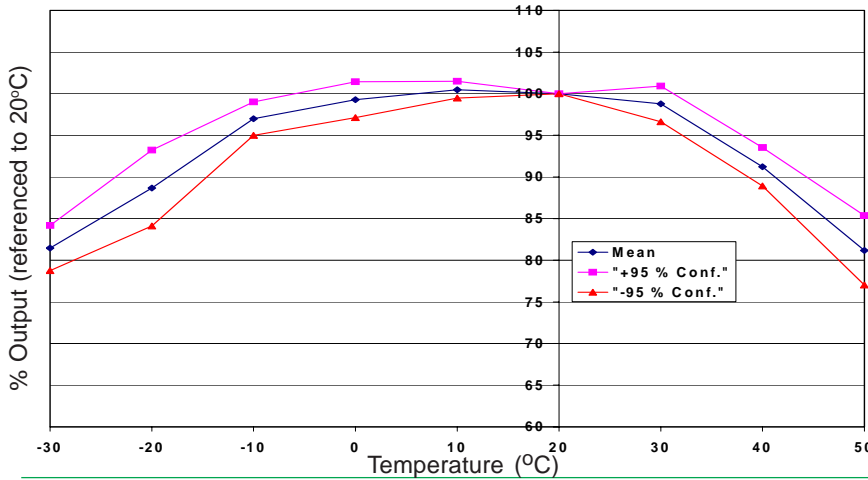


Figure 2 shows the variation in sensitivity caused by changes in temperature.

Chlorine gas tests are difficult, especially at higher temperatures.

This data is taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence

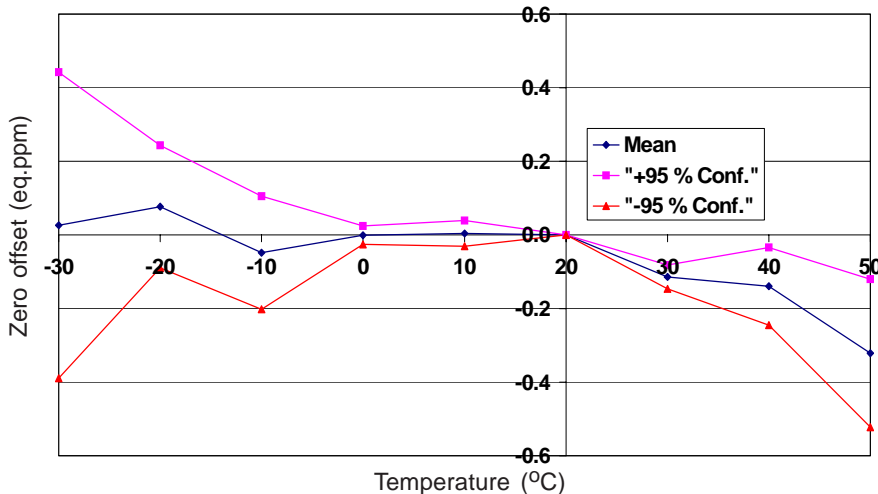


Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

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

Figure 4 Response to Changes in Relative Humidity

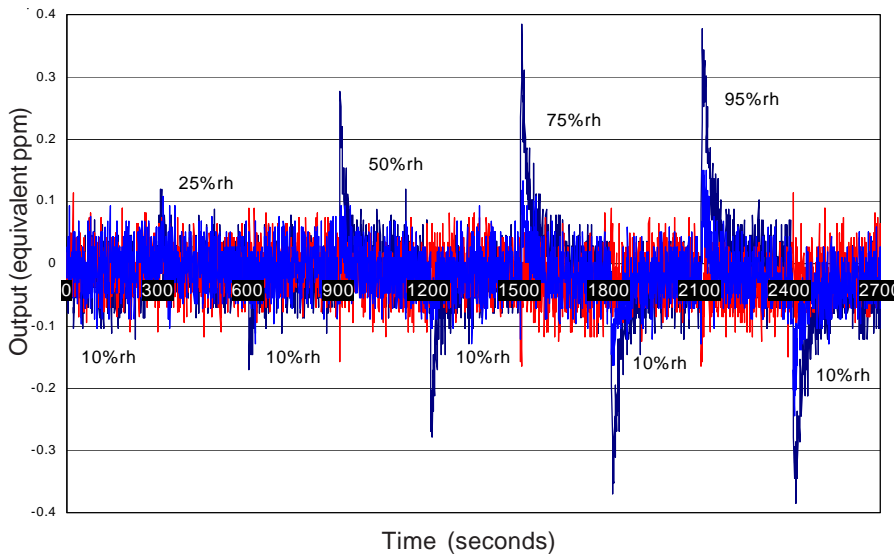


Figure 4 shows the effect on zero output with increasing step changes of relative humidity from 10% rh in steps to 25% rh, 50% rh, 75% rh and 95% rh.

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

This sensors provide a low transient response to large step changes in relative humidity when ambient and storage conditions are at least 35%rh. Transients are larger in drier conditions