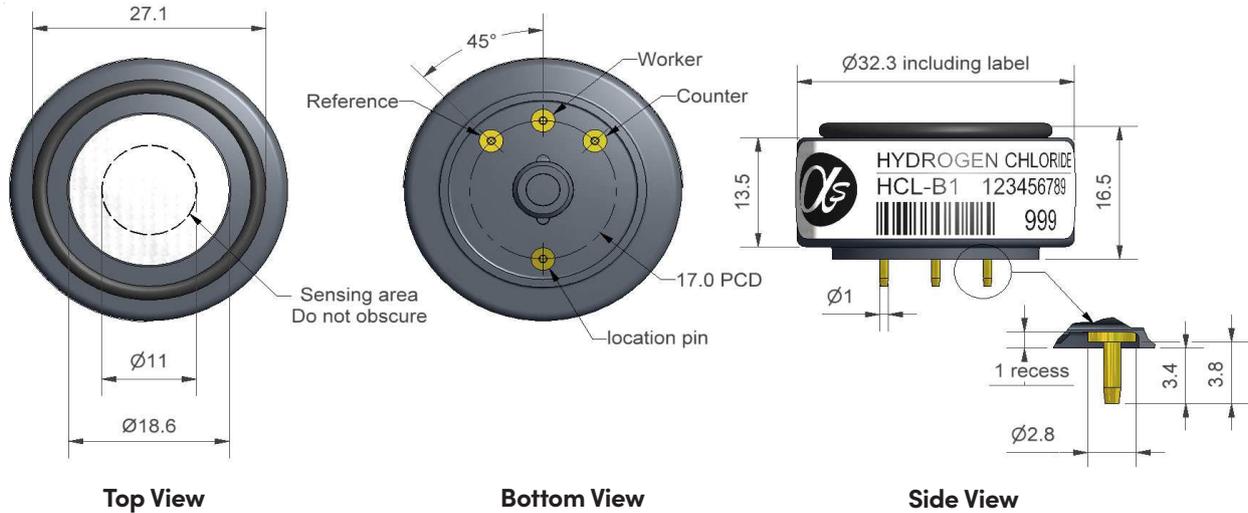




Technical specifications Version 1.0

HCL-B1 Hydrogen Chloride Sensor



Dimensions are in millimetres (± 0.1 mm).

Performance			
Sensitivity	nA/ppm in 25ppm HCl		120 to 250
Response time	t90 (s) from zero to 25ppm HCl		< 200
Zero current	ppm equivalent in zero air		-0.6 to 5
Resolution	RMS noise (ppm equivalent)		< 0.1
Range	ppm HCl limit of performance warranty		100
Linearity	ppm error at full scale, linear at zero, 40ppm HCl		0 to 6
Overgas limit	maximum ppm for stable response to gas pulse		200

Lifetime			
Zero drift	ppm equivalent change/year in lab air		nd
Sensitivity drift	% change/year in lab air, monthly test		nd
Operating life	months until 80% original signal (12-month warranted)		nd

Environmental			
Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 25ppm HCl		60 to 90
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 25ppm HCl		100 to 108
Zero @ -20°C	ppm equivalent change from 20°C		< +0 to -1.0
Zero @ 50°C	ppm equivalent change from 20°C		< +0.5 to +2.5

Cross-sensitivity			
H ₂ S sensitivity	% measured gas @ 20ppm	H ₂ S	< 280
NO ₂ sensitivity	% measured gas @ 50ppm	NO ₂	< -150
Cl ₂ sensitivity	% measured gas @ 10ppm	Cl ₂	< -100
NO sensitivity	% measured gas @ 50ppm	NO	< 2
SO ₂ sensitivity	% measured gas @ 20ppm	SO ₂ (transit peak)	< 1
CO sensitivity	% measured gas @ 400ppm	CO	< 0.1
H ₂ sensitivity	% measured gas @ 400ppm	H ₂	< 0.1
C ₂ H ₄ sensitivity	% measured gas @ 400ppm	C ₂ H ₄	< 0.1
NH ₃ sensitivity	% measured gas @ 20ppm	NH ₃	< 0.1
CO ₂ sensitivity	% measured gas @ 5%	CO ₂	< 0.1

Key Specifications			
Temperature range	°C		-30 to 50
Pressure range	kPa		80 to 120
Humidity range	% rh continuous		15 to 90
Storage period	months @ 3 to 20°C (stored in original container)		6
Load resistor	Ω (recommended)		10 to 33
Bias voltage	mV		not required
Weight	g		< 13



Figure 1 Sensitivity Temperature Dependence

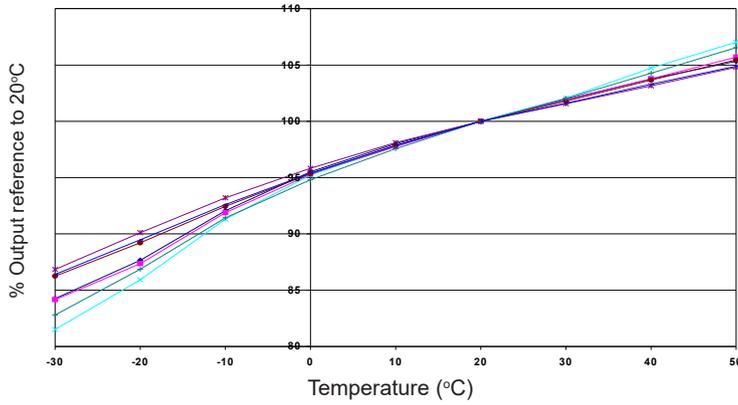


Figure 1 shows the variation of sensitivity at 25ppm HCl caused by changes in temperature.

Figure 2 Zero Temperature Dependence

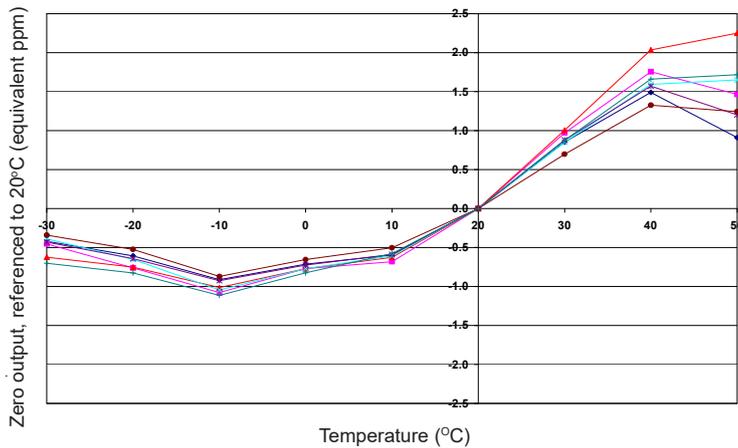
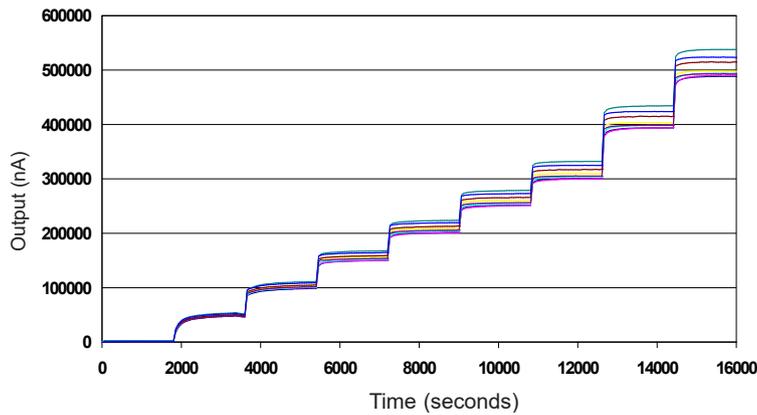


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C. This data is taken from a typical batch of sensors.

Figure 3 Response to 200ppm HCl



Sensor shows good response to 200ppm HCl.

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 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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