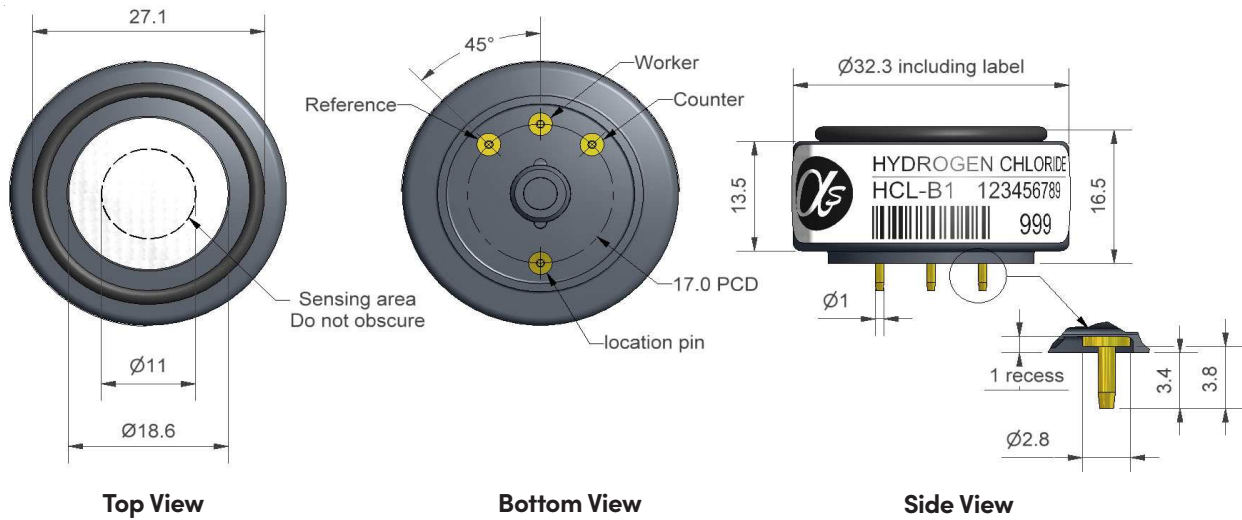


# HCL-B1 Hydrogen Chloride Sensor



Dimensions are in millimetres (± 0.1 mm).

<b>Performance</b>	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
	<b>Lifetime</b>	Zero drift	ppm equivalent change/year in lab air
Sensitivity drift		% change/year in lab air, monthly test	nd
Operating life		months until 80% original signal (12-month warranted)	nd
<b>Environmental</b>	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
<b>Cross-sensitivity</b>	H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S < 280
	NO <sub>2</sub> sensitivity	% measured gas @ 50ppm	NO <sub>2</sub> < -150
	Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub> < -100
	NO sensitivity	% measured gas @ 50ppm	NO < 2
	SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub> (transit peak) < 1
	CO sensitivity	% measured gas @ 400ppm	CO < 0.1
	H <sub>2</sub> sensitivity	% measured gas @ 400ppm	H <sub>2</sub> < 0.1
	C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub> < 0.1
	NH <sub>3</sub> sensitivity	% measured gas @ 20ppm	NH <sub>3</sub> < 0.1
CO <sub>2</sub> sensitivity	% measured gas @ 5%	CO <sub>2</sub> < 0.1	
<b>Key Specifications</b>	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

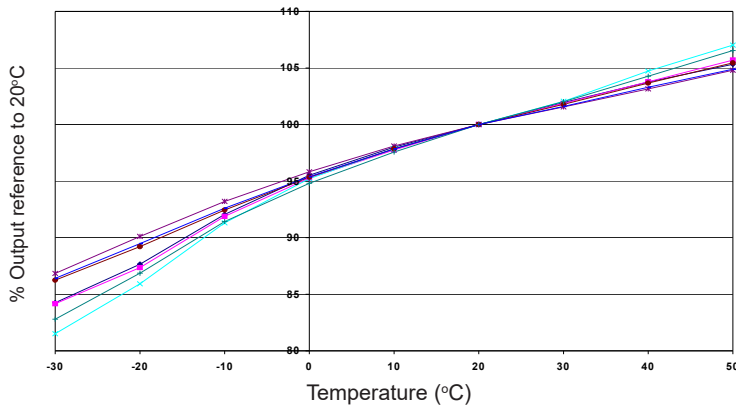


Figure 1 shows the variation of sensitivity at 25ppm HCl caused by changes in temperature.

Figure 2 Zero Temperature Dependence

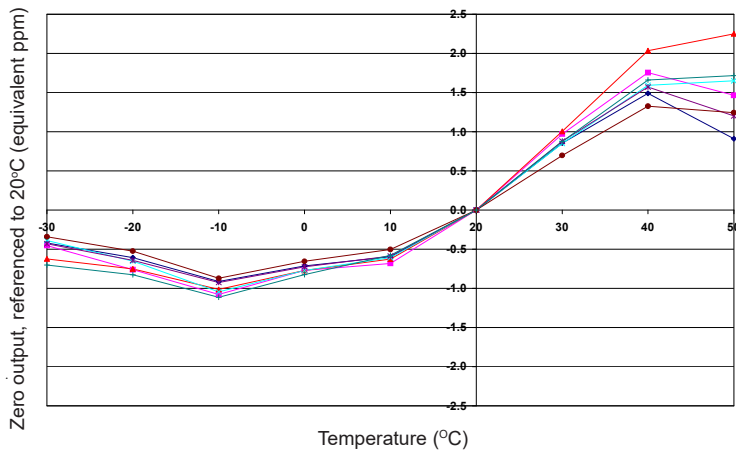
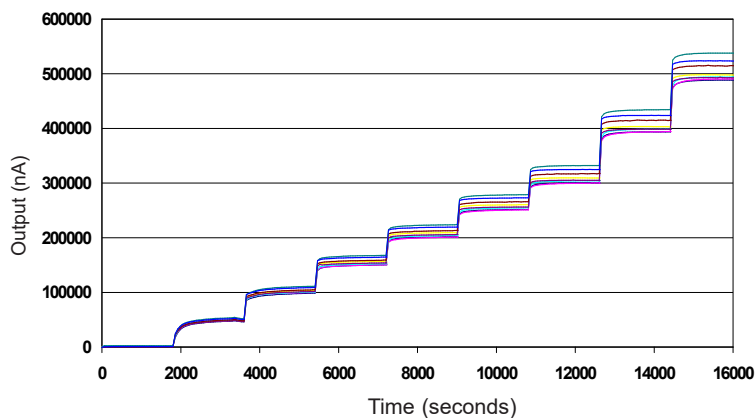


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C. This data is taken from a typical batch of sensors.

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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