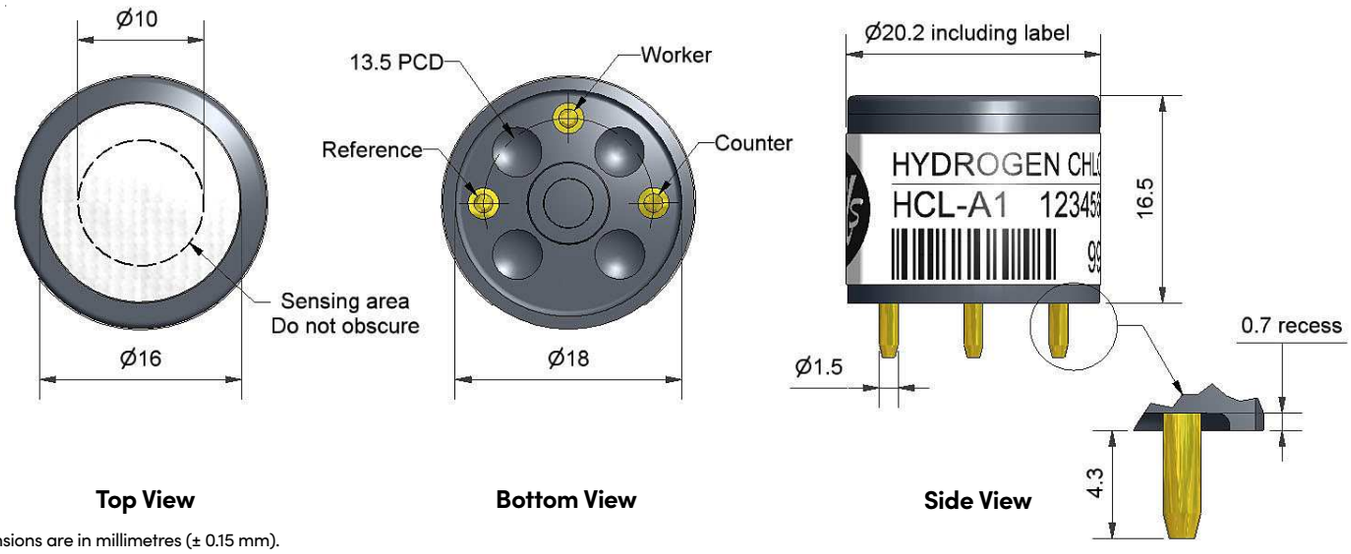
alphasense
AMETEK

Technical specifications Version 1.0

HCL-A1 Hydrogen Chloride Sensor



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

Dimensions are in millimetres (± 0.15 mm).

Performance	Sensitivity	nA/ppm in 25ppm HCl		50 to 140
	Response time	t90 (s) from zero to 25ppm HCl		< 300
	Zero current	ppm equivalent in zero air		< -3 to 10
	Resolution	RMS noise (ppm equivalent)		< 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		65 to 90
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 25ppm HCl		102 to 120
	Zero @ -20°C	ppm equivalent change from 20°C		< 0 to 4
	Zero @ 50°C	ppm equivalent change from 20°C		< +1 to -5
Cross Sensitivity	H_2S sensitivity	% measured gas @ 20ppm	H_2S	< 250
	NO_2 sensitivity	% measured gas @ 50ppm	NO_2	< -150
	Cl_2 sensitivity	% measured gas @ 10ppm	Cl_2	< -20
	NO sensitivity	% measured gas @ 50ppm	NO	< 2
	SO_2 sensitivity	% measured gas @ 20ppm	SO_2	< 0.1
	CO sensitivity	% measured gas @ 400ppm	CO	< 0.1
	H_2 sensitivity	% measured gas @ 400ppm	H_2	< 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%	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		< 6

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For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. or visit our website at "www.alphasense.com".

Figure 1 Response to 25ppm HCl

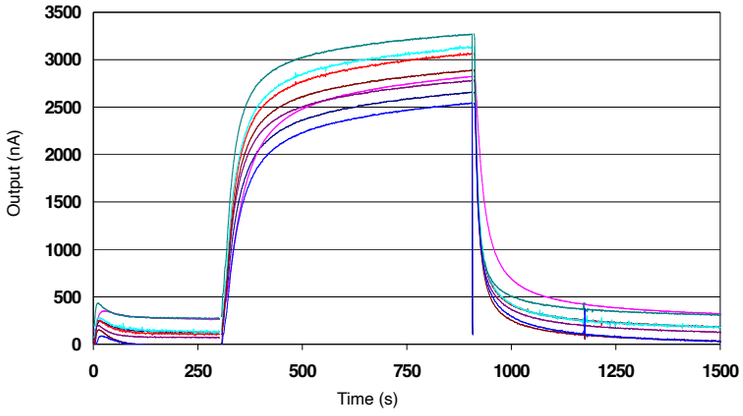

Figure 1 shows the typical response to 25ppm HCl at 20°C.

Figure 2 Sensitivity Temperature Dependence

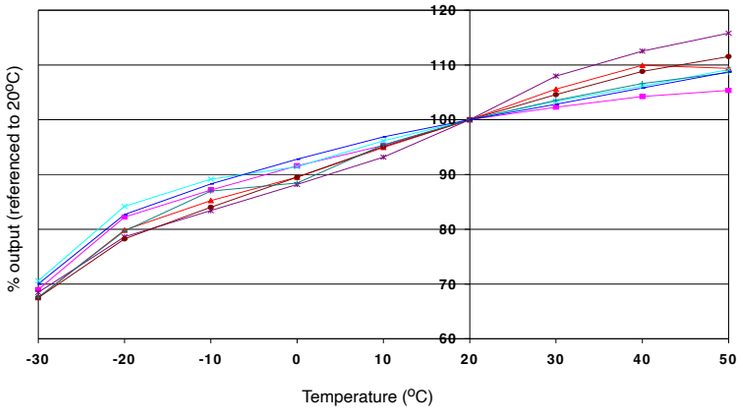

Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

Figure 3 Humidity Transient Response

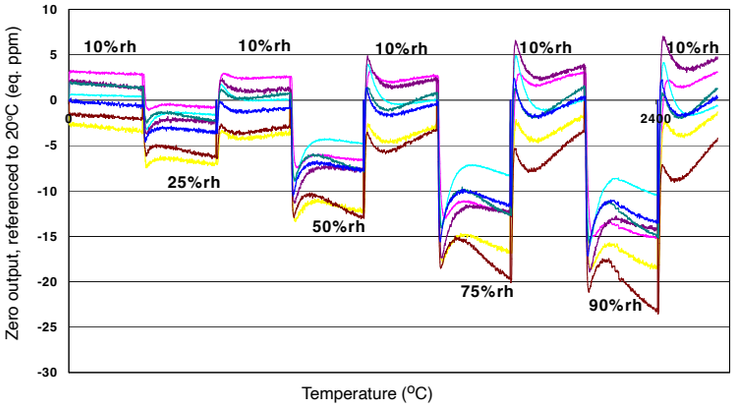

Figure 3 shows transient performance as sensors are subjected to step humidity changes from 10% to 90% rh.