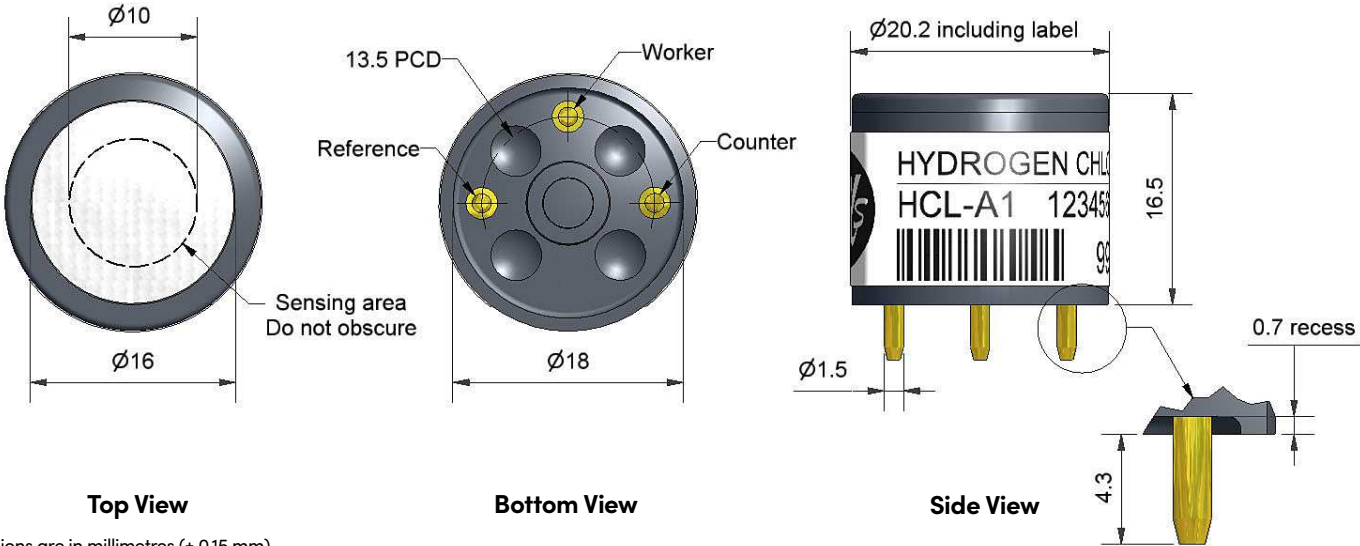


Technical specifications Version 1.0

HCL-A1 Hydrogen Chloride Sensor



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 <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S	< 250
	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>	< -20
	NO sensitivity	% measured gas @ 50ppm	NO	< 2
	SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub>	< 0.1
	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
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	



Figure 1 Response to 25ppm HCl

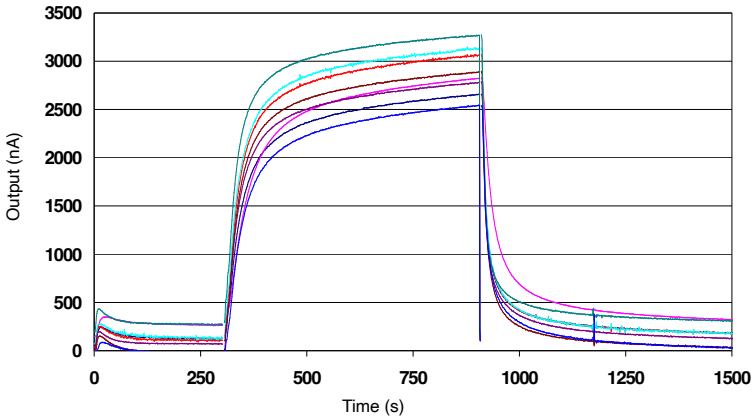


Figure 1 shows the typical response to 25ppm HCl at 20°C.

Figure 2 Sensitivity Temperature Dependence

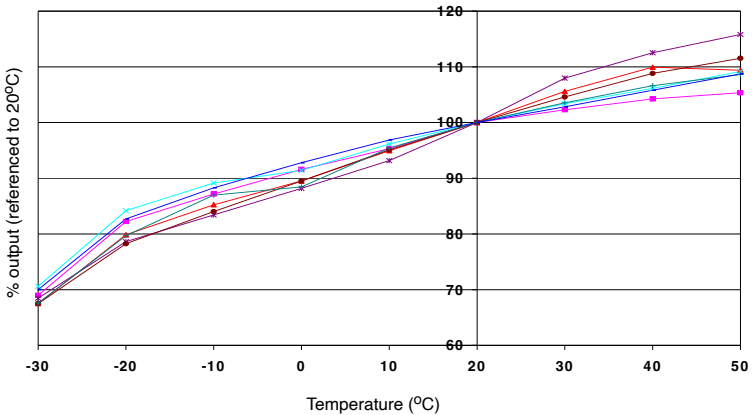


Figure 2 shows the variation in sensitivity caused by changes in temperature.  
This data is taken from a typical batch of sensors.

Figure 3 Humidity Transient Response

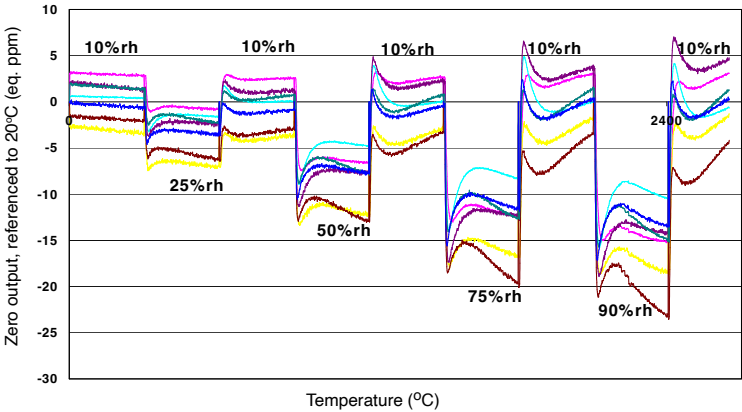


Figure 3 shows transient performance as sensors are subjected to step humidity changes from 10% to 90% rh.