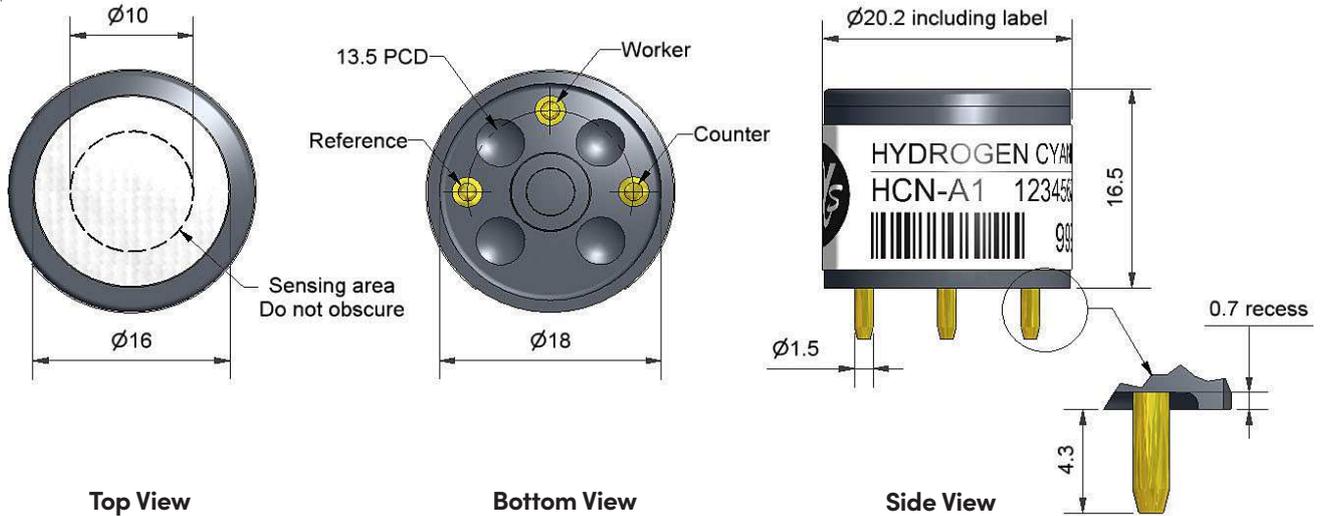




Technical specifications Version 1.0

## HCN-A1 Hydrogen Cyanide Sensor


 Dimensions are in millimetres ( $\pm 0.15$  mm).

Performance			
Sensitivity	nA/ppm in 30ppm HCN		45 to 85
Response time	t90 (s) from zero to 30ppm HCN		< 70
Zero current	ppm equivalent in zero air		-2 to 10
Resolution	RMS noise (ppm equivalent)		< 0.05
Range	ppm HCN limit of performance warranty		100
Linearity	ppm error at full scale, linear at zero, 40ppm HCN		4 to 8
Overgas limit	maximum ppm for stable response to gas pulse		150

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)		> 12

Environmental			
Sensitivity @ -10°C	% (output @ -10°C/output @ 20°C) @ 30ppm HCH		75 to 95
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 30ppm HCH		105 to 120
Zero @ -20°C	ppm equivalent change from 20°C		< 0 to 1
Zero @ 50°C	ppm equivalent change from 20°C		< $\pm 1$

Cross-sensitivity				
H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S		< 300
NO <sub>2</sub> sensitivity	% measured gas @ 10ppm	NO <sub>2</sub>		< -180
Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub>		< -12
NO sensitivity	% measured gas @ 50ppm	NO		< 1
SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub> (transient peak)		< 10 (transient)
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>		< 1
CO <sub>2</sub> sensitivity	% measured gas @ 5% volume	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	$\Omega$ (recommended)		10 to 33
Bias voltage	mV		not required
Weight	g		< 6



**Figure 1 Sensitivity Temperature Dependence**

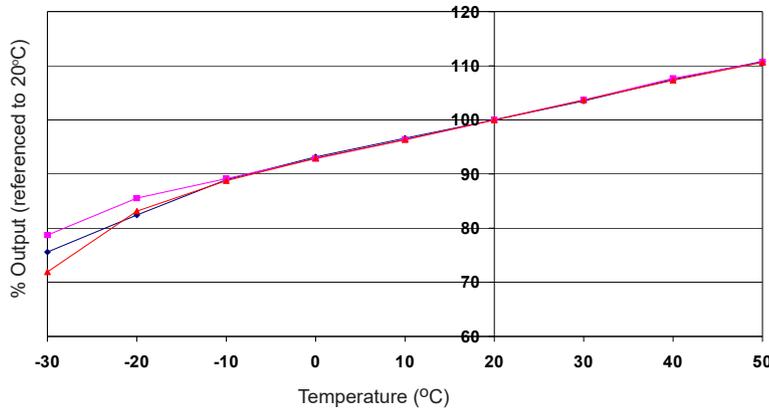


Figure 1 shows the variation in sensitivity caused by changes in temperature.

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

**Figure 2 Zero Temperature Dependence**

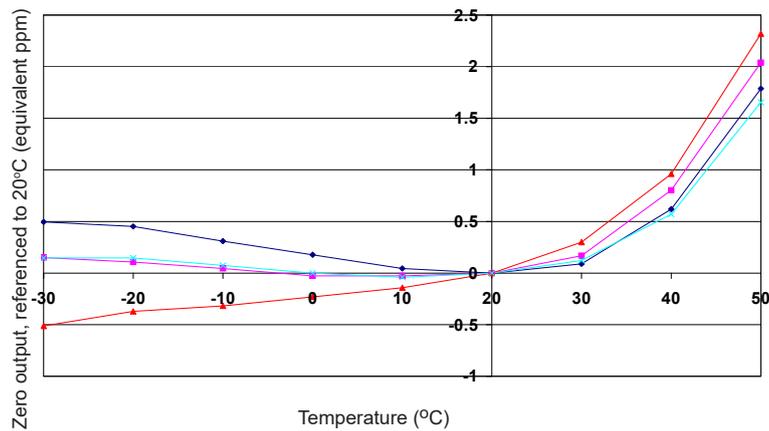
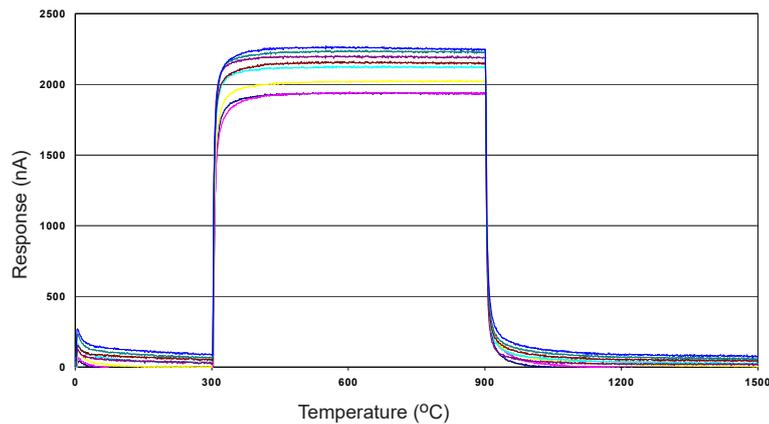


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

**Figure 3 Response to 30ppm HCN**



The HCN-A1 shows fast response and stable output when exposed to 30ppm HCN.

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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