

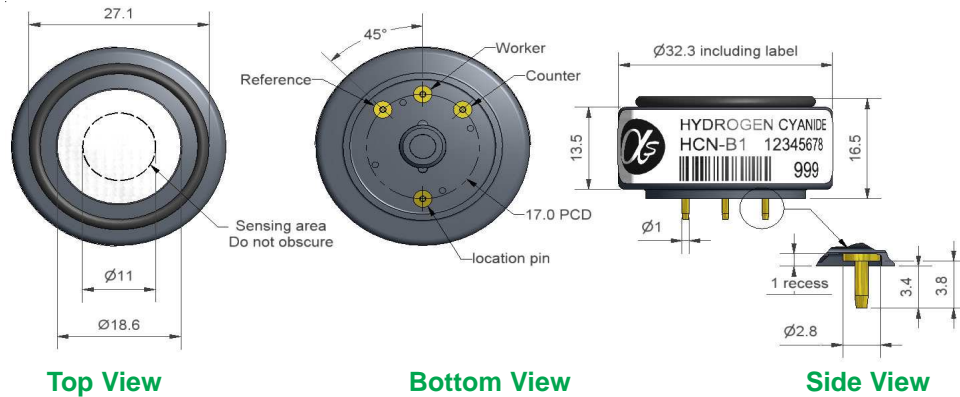


# HCN-B1 Hydrogen Cyanide Sensor



**PATENTED**

**Figure 1 HCN-B1 Schematic Diagram**



**Technical Specification**

<b>PERFORMANCE</b>			
Sensitivity	nA/ppm in 30ppm HCN		80 to 140
Response time	t <sub>90</sub> (s) from zero to 30ppm HCN		< 120
Zero current	ppm equivalent in zero air		< ±2.5
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		0 to 4
Overgas limit	maximum ppm for stable response to gas pulse		200

<b>LIFETIME</b>			
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

<b>ENVIRONMENTAL</b>			
Sensitivity @ -10°C	% (output @ -10°C/output @ 20°C) @ 30ppm HCN		75 to 95
Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 30ppm HCN		100 to 115
Zero @ -20°C	ppm equivalent change from 20°C		< 0 to -2
Zero @ 50°C	ppm equivalent change from 20°C		< 0 to 2

<b>CROSS SENSITIVITY</b>					
H <sub>2</sub> S	sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S		< 400
NO <sub>2</sub>	sensitivity	% measured gas @ 10ppm	NO <sub>2</sub>		< -120
Cl <sub>2</sub>	sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub>		< 25
NO	sensitivity	% measured gas @ 50ppm	NO		< 1
SO <sub>2</sub>	sensitivity	% measured gas @ 20ppm	SO <sub>2</sub>		< 3 (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 @ 80ppm	C <sub>2</sub> H <sub>4</sub>		< 0.1
NH <sub>3</sub>	sensitivity	% measured gas @ 20ppm	NH <sub>3</sub>		< 2
CO <sub>2</sub>	sensitivity	% measured gas @ 5% volume	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		< 6



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.

**ApolloSense Ltd**



# HCN-B1 Performance Data

**Technical Specification**

**Figure 2 Sensitivity Temperature Dependence**

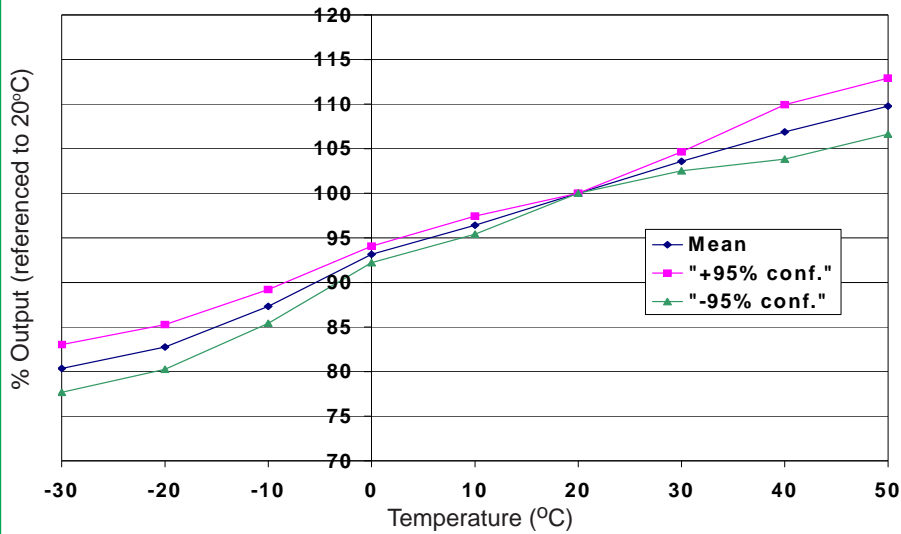


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

**Figure 3 Zero Temperature Dependence**

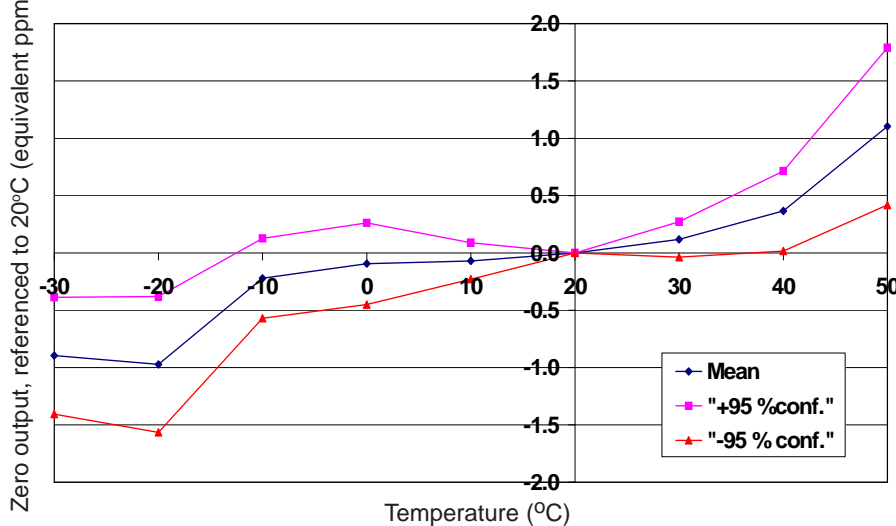
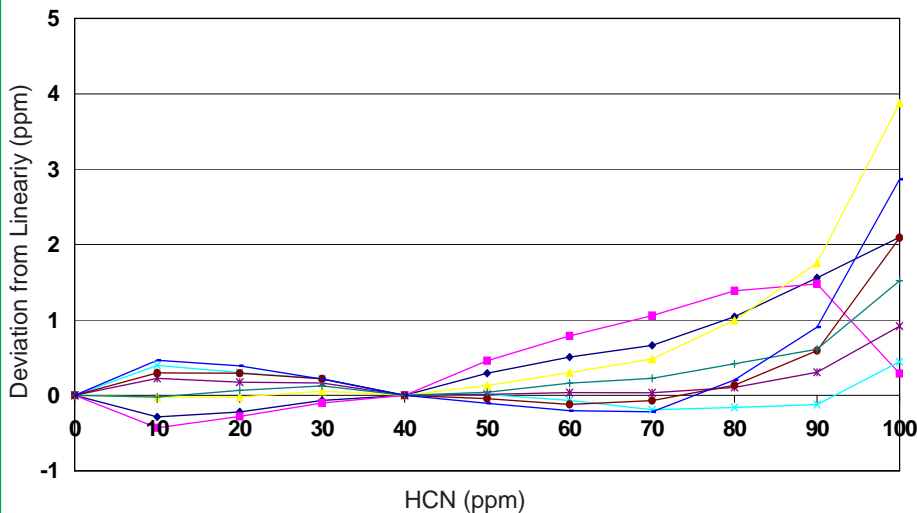


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

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

**Figure 4 Deviation from Linearity**



The HCN-B1 shows linear performance to 100ppm HCN.