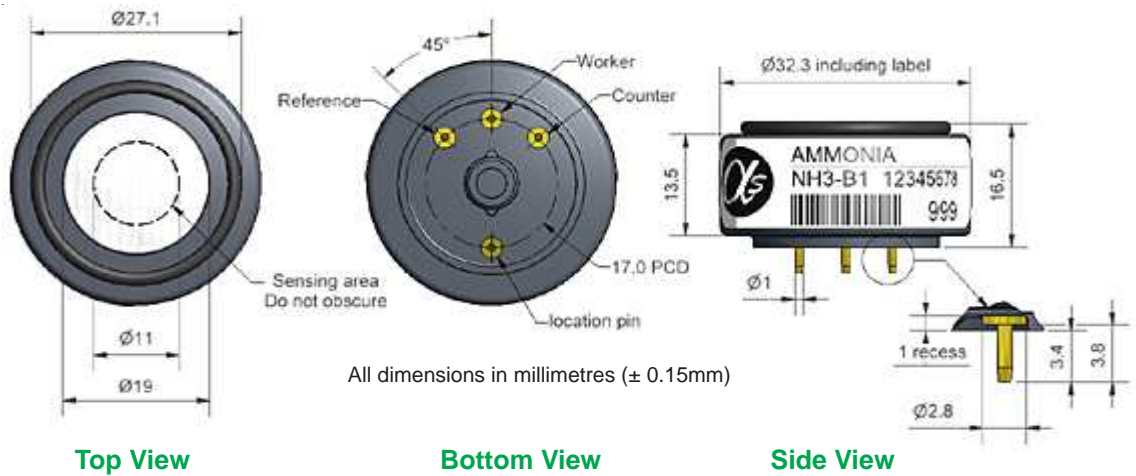




# NH3-B1 Ammonia Sensor



**Figure 1 NH3-B1 Schematic Diagram**



# Technical Specification

PERFORMANCE	Parameter	Specification	Range
	Sensitivity	nA/ppm in 50ppm NH <sub>3</sub>	20 to 60
	Response time	t <sub>90</sub> (s) from zero to 50ppm NH <sub>3</sub>	< 150
	Zero current	ppm equivalent in zero air	< ± 10
	Range	ppm NH <sub>3</sub> limit of performance warranty	100
	Linearity	ppm error at full scale, linear at zero and 70ppm NH <sub>3</sub>	+5 to -5
	Overgas limit	maximum ppm for stable response to gas pulse	200

LIFETIME	Parameter	Specification	Range
	Zero drift	ppm equivalent change/year in lab air	< 2
	Sensitivity drift	% change/year in lab air, monthly test	< 3
	Operating life	months until 80% original signal (12 month warranted)	> 24

ENVIRONMENTAL	Parameter	Specification	Range
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 20ppm	nd
	Sensitivity @ 40°C	% (output @ 40°C/output @ 20°C) @ 20ppm	nd
	Zero @ -20°C	ppm equivalent change from 20°C	nd
	Zero @ 40°C	ppm equivalent change from 20°C	nd

CROSS SENSITIVITY	Gas	Sensitivity	Specification	Range
	H <sub>2</sub> S	sensitivity	% measured gas @ 20ppm	< -200
	NO <sub>2</sub>	sensitivity	% measured gas @ 20ppm	< -200
	Cl <sub>2</sub>	sensitivity	% measured gas @ 10ppm	< -400
	NO	sensitivity	% measured gas @ 50ppm	< -300
	SO <sub>2</sub>	sensitivity	% measured gas @ 20ppm	< -300
	CO	sensitivity	% measured gas @ 400ppm	< 20
	H <sub>2</sub>	sensitivity	% measured gas @ 400ppm	< 15
	C <sub>2</sub> H <sub>4</sub>	sensitivity	% measured gas @ 400ppm	nd
CO <sub>2</sub>	sensitivity	% measured gas @ 5%	nd	

KEY SPECIFICATIONS	Parameter	Specification	Range
	Bias voltage	mV (Working Electrode potential is above ground)	+200
	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 sealed pot)	6
	Load resistor	Ω (recommended)	10 to 47
	Weight	g	< 13

**NOTE:** all sensors are tested at ambient environmental conditions, with 47 ohm load resistor, 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.



# NH<sub>3</sub>-B1 Performance Data

# Technical Specification

**Figure 2 Response to Gas**

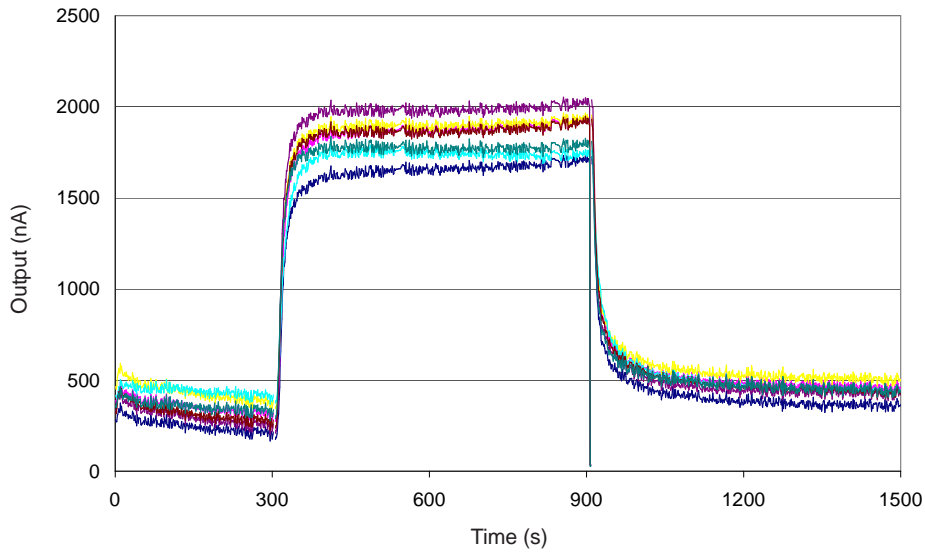


Figure 2 shows the typical response to 50ppm NH<sub>3</sub> at 20°C

$t_{50}$  is significantly faster than  $t_{90}$  (30 vs. 150 seconds) and shows the sensor's ability to respond quickly to NH<sub>3</sub>.

**Figure 3 Linearity**

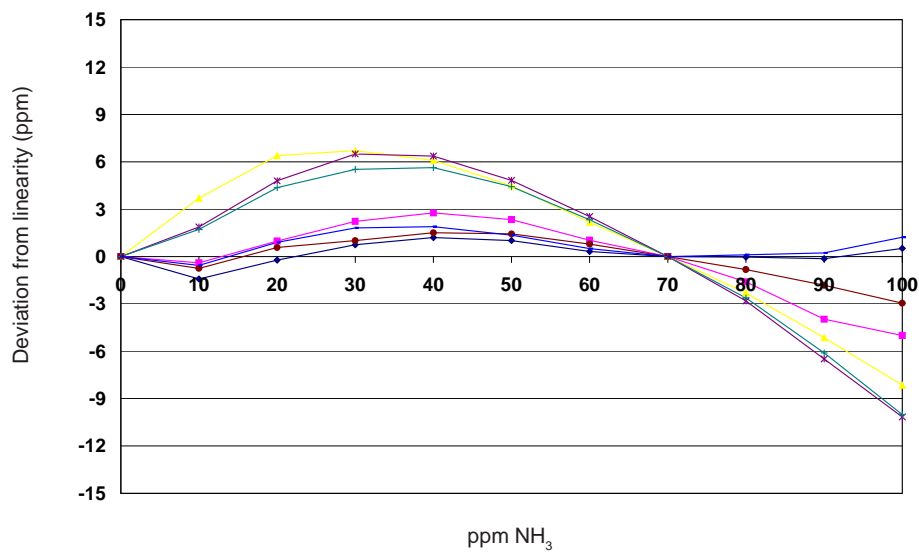


Figure 3 shows the deviation from linear response from 0 to 100ppm NH<sub>3</sub>, with 0 and 70ppm reference concentrations.



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.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "[www.alphasense.com](http://www.alphasense.com)".

*In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within. (©ALPHASENSE LTD) Doc. Ref. NH3-B1/MAY21*