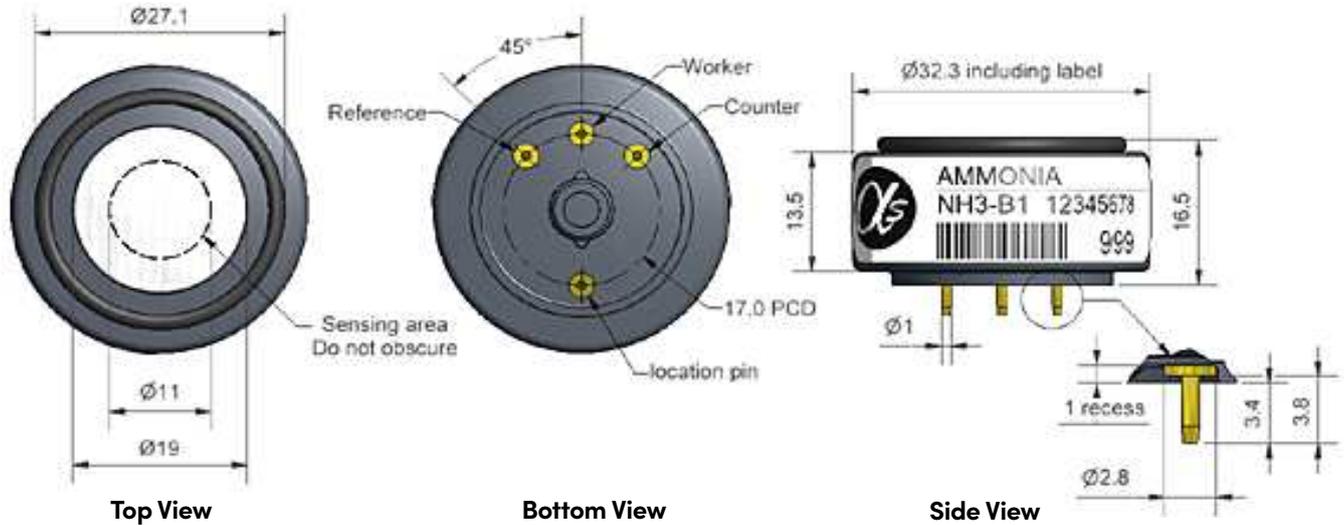




Technical specifications Version 1.0

## NH3-B1 Ammonia Sensor


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

### Performance

Sensitivity	nA/ppm in 50ppm NH <sub>3</sub>	20 to 60
Response time	t90 (s) from zero to 50ppm NH <sub>3</sub>	< 150
Zero current	ppm equivalent in zero air	< $\pm 10$
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

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

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

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

### Key Specifications

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	$\Omega$ (recommended)	10 to 47
Weight	g	< 13



**Figure 1 Response to Gas**

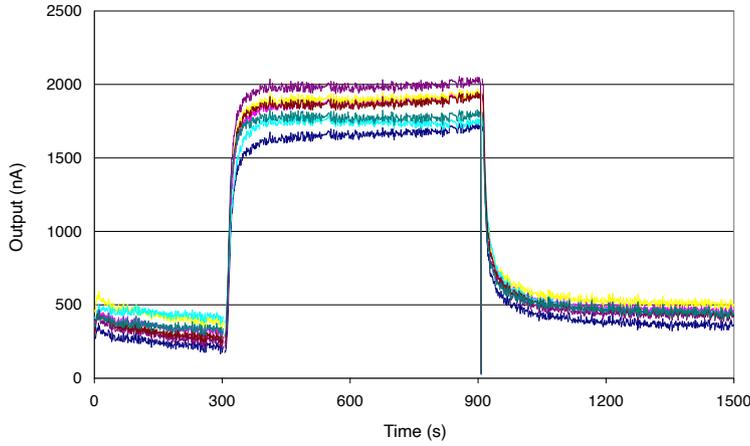


Figure 1 shows the typical response to 50ppm NH<sub>3</sub> at 20°C

$t_{50}$  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 2 Linearity**

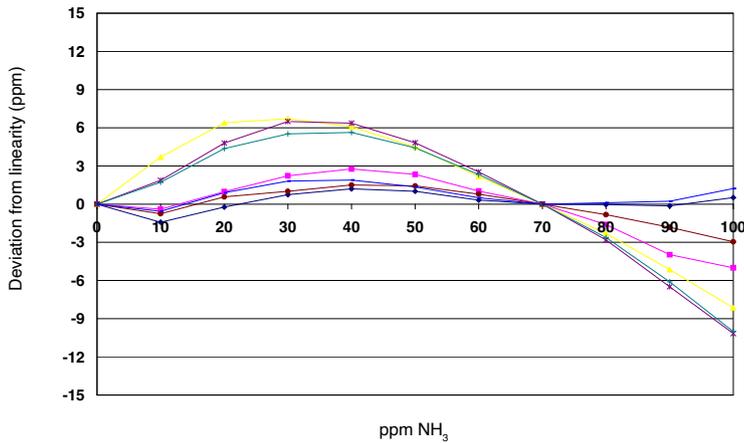


Figure 2 shows the deviation from linear response from 0 to 100ppm NH<sub>3</sub>, with 0 and 70ppm reference concentrations.

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.

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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