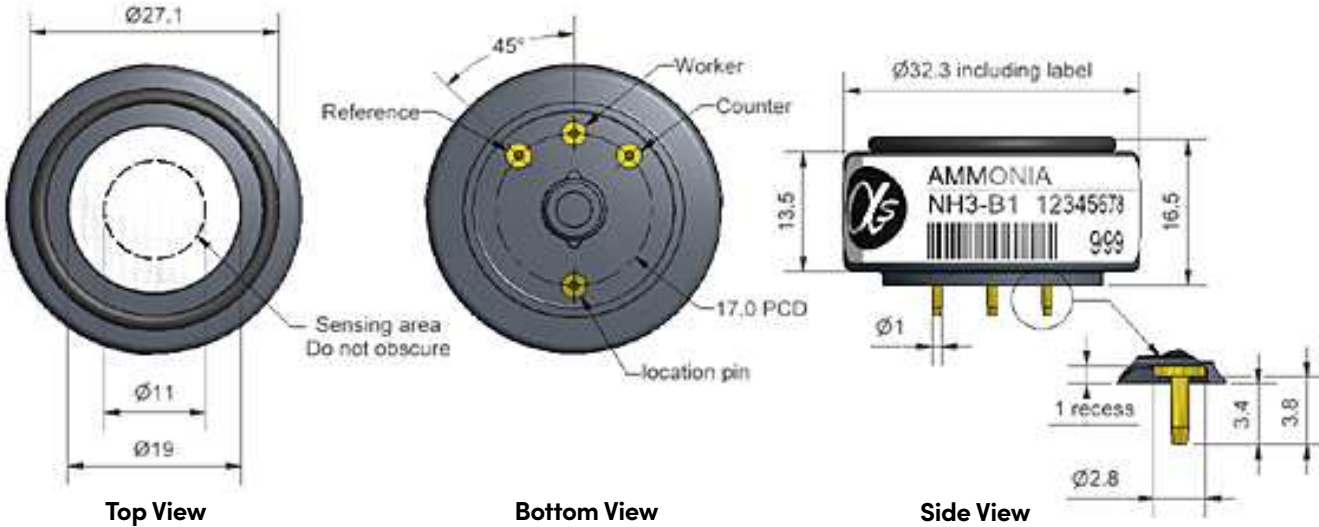


Technical specifications Version 1.0

NH3-B1 Ammonia Sensor



Dimensions are in millimetres (± 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	< ± 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	Ω (recommended)	10 to 47	
	Weight	g	< 13	

Figure 1 Response to Gas

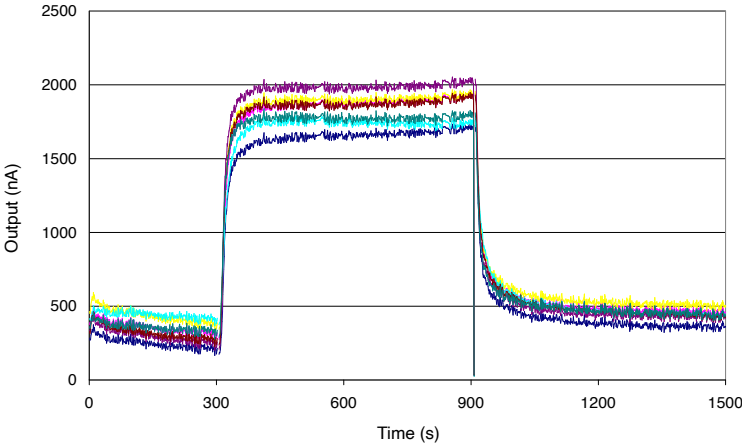


Figure 1 shows the typical response to 50ppm NH<sub>3</sub> at 20°C

$t_{50}$  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

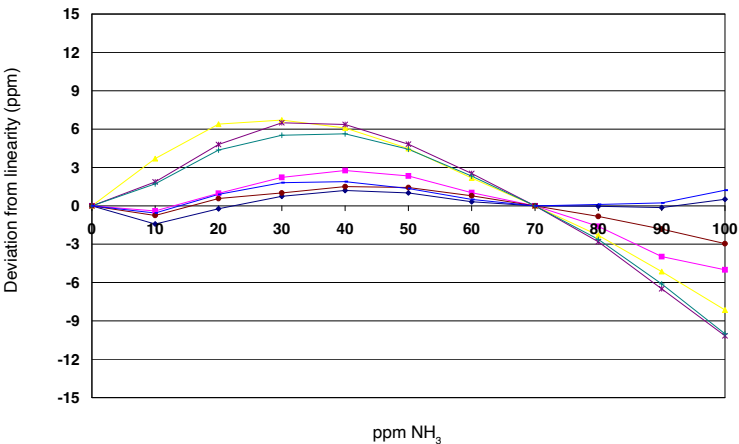


Figure 2 shows the deviation from linear response from 0 to 100ppm NH<sub>3</sub>, with 0 and 70ppm reference concentrations.

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.

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/SEP22