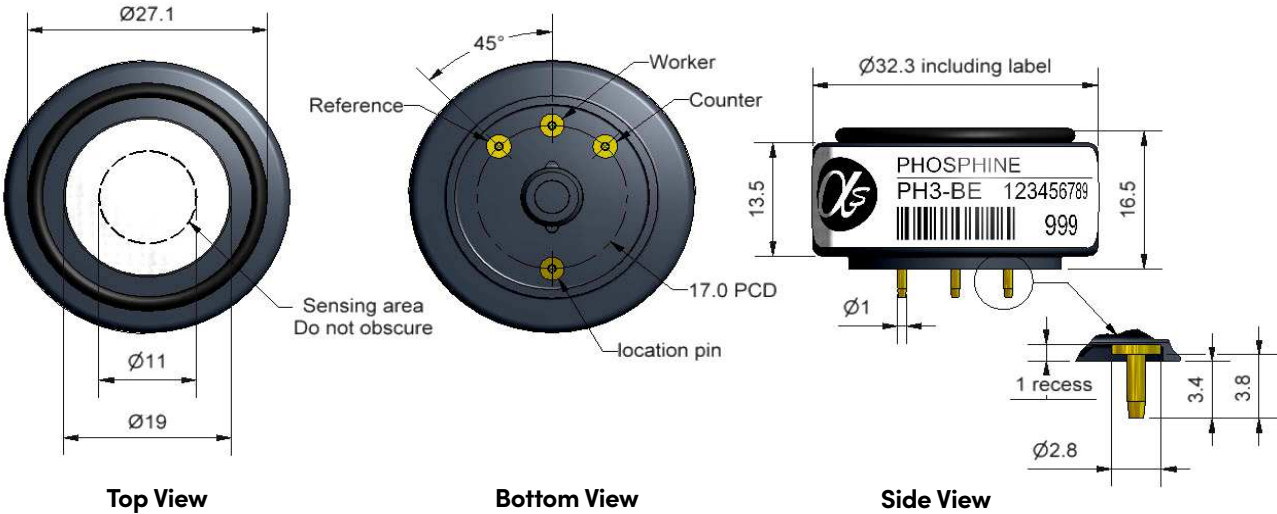


Technical specifications Version 1.0

PH3-BE Phosphine Sensor



Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity	nA/ppm in 800 PH ₃	15 to 35	
	Response time	t90 (s) from zero to 800 PH ₃	< 30	
	Zero current	ppm equivalent in zero air	< -6 to 20	
	Resolution	RMS noise (ppm equivalent)	< 2	
	Range	ppm PH ₃ limit of performance warranty	2,000	
	Linearity	ppm error at full scale, linear at zero, 800ppm PH ₃	-50 to -350	
	Overgas limit	maximum ppm for stable response to gas pulse	5,000	
Lifetime	Zero drift	ppm equivalent change/year in lab air	< 1.5	
	Sensitivity drift	% change/year in lab air, monthly test	< 4	
	Operating life	months until 80% original signal (24-month warranted)	> 24	
Environmental	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 800ppm PH ₃	65 to 85	
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 800ppm PH ₃	120 to 140	
	Zero @ -20°C	ppm equivalent change from 20°C	< ± 20	
	Zero @ 50°C	ppm equivalent change from 20°C	< ± 15	
Cross Sensitivity	H ₂ S sensitivity	% measured gas @ 20ppm	H ₂ S	< 110
	NO ₂ sensitivity	% measured gas @ 10ppm	NO ₂	< -35
	Cl ₂ sensitivity	% measured gas @ 10ppm	Cl ₂	< -30
	NO sensitivity	% measured gas @ 50ppm	NO	< 10
	SO ₂ sensitivity	% measured gas @ 20ppm	SO ₂	< 25
	CO sensitivity	% measured gas @ 400ppm	CO	< 11
	H ₂ sensitivity	% measured gas @ 400ppm	H ₂	< 2
	C ₂ H ₄ sensitivity	% measured gas @ 80ppm	C ₂ H ₄	< 60
	NH ₃ sensitivity	% measured gas @ 25ppm	NH ₃	< 0.1
CO ₂ sensitivity	% measured gas @ 5%	CO ₂	< 0.1	
Key Specifications	Temperature range	°C	-20 to 50	
	Pressure range	kPa	80 to 120	
	Humidity range	% rh continuous	20 to 90	
	Storage period	months @ 0 to 20°C (stored in original container)	6	
	Load resistor	Ω (recommended)	10 to 33	
	Bias voltage	mV above analogue ground	not required	
	Weight	g	< 13	



Figure 1 Zero Temperature Dependence

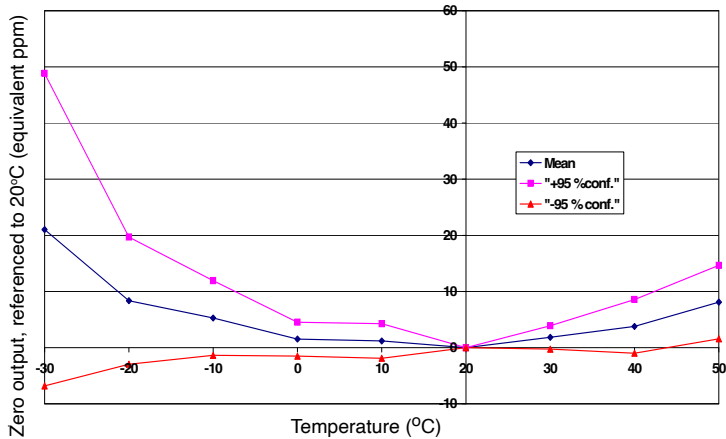
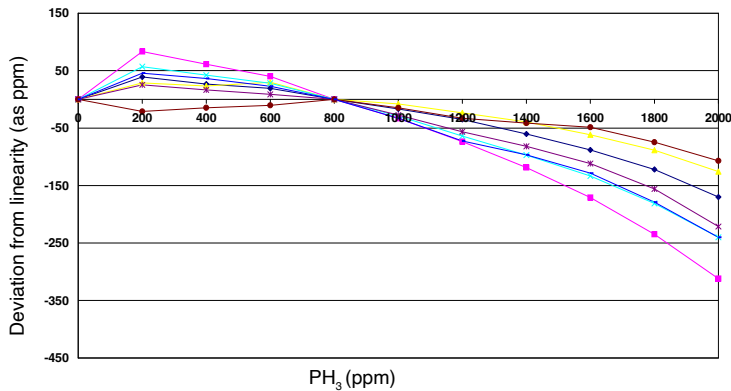


Figure 1 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

The mean and ± 95% confidence intervals are shown.

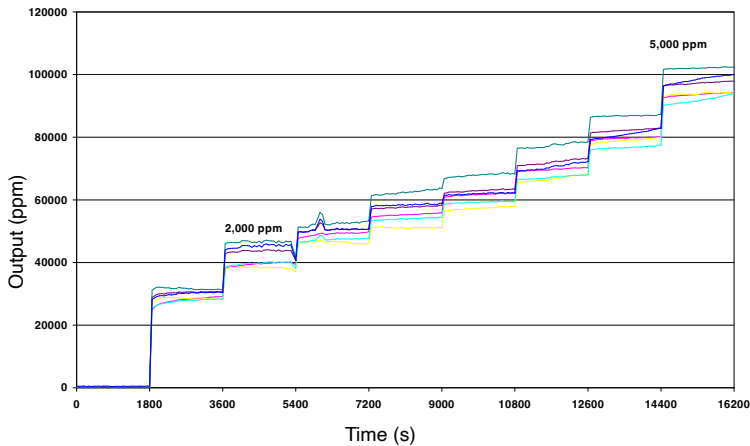
Figure 2 Deviation up to 2,000 ppm



Sensor linearity is repeatable between sensors, allowing for software correction if required.

Data is from a typical batch of sensors.

Figure 3 Overgas Linearity



Sensors respond rapidly and are stable even at 5,000ppm PH₃.

Sensors recover after short high concentration exposure without change to performance.

NOTE: Tested with surrogate gas. All sensors are tested at ambient environmental conditions, with 10 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. PH3-BE/SEP22