

# PH3-B1 Phosphine Sensor



**PATENTED**

Figure 1 PH3-B1 Schematic Diagram



Technical Specification

<b>PERFORMANCE</b>	Sensitivity	nA/ppm in 5ppm PH <sub>3</sub>	650 to 1000
	Response time	t <sub>90</sub> (s) from zero	< 15
	Zero current	ppm equivalent in zero air	< $\pm 0.15$
	Resolution	RMS noise (ppm equivalent)	< 0.05
	Range	ppm limit of performance warranty	10
	Linearity	ppm PH <sub>3</sub> error at full scale, linear at zero, 4ppm PH <sub>3</sub>	-1 to -1.8
	Overgas limit	maximum ppm for stable response to gas pulse	150

<b>LIFETIME</b>	Zero drift	ppm equivalent change/year in lab air	< 0.05
	Sensitivity drift	% change/year in lab air, monthly test	< 4
	Operating life	months until 80% original signal (24 month warranted)	> 24

<b>ENVIRONMENTAL</b>	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 5ppm PH <sub>3</sub>	65 to 85
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 5ppm PH <sub>3</sub>	120 to 140
	Zero @ -20°C	ppm equivalent change from 20°C	< $\pm 0.4$
	Zero @ 50°C	ppm equivalent change from 20°C	0 to +0.2

<b>CROSS SENSITIVITY</b>	H <sub>2</sub> S sensitivity	% measured gas @ 20ppm	H <sub>2</sub> S	< 120
	NO <sub>2</sub> sensitivity	% measured gas @ 20ppm	NO <sub>2</sub>	< -40
	Cl <sub>2</sub> sensitivity	% measured gas @ 10ppm	Cl <sub>2</sub>	< -15
	NO sensitivity	% measured gas @ 50ppm	NO	< -8
	SO <sub>2</sub> sensitivity	% measured gas @ 20ppm	SO <sub>2</sub>	< -30
	H <sub>2</sub> sensitivity	% measured gas @ 400ppm	H <sub>2</sub> at 20°C	< 0.2
	C <sub>2</sub> H <sub>4</sub> sensitivity	% measured gas @ 400ppm	C <sub>2</sub> H <sub>4</sub>	< 10
	NH <sub>3</sub> sensitivity	% measured gas @ 20ppm	NH <sub>3</sub>	< 0.2
	CO <sub>2</sub> sensitivity	% measured gas @ 5%	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 sealed pot)	6
	Weight	g	< 13

**Important.** Connection should be made via PCB sockets only. Soldering to the pins could seriously damage your sensor.



**NOTE:** 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.

# PH3-B1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

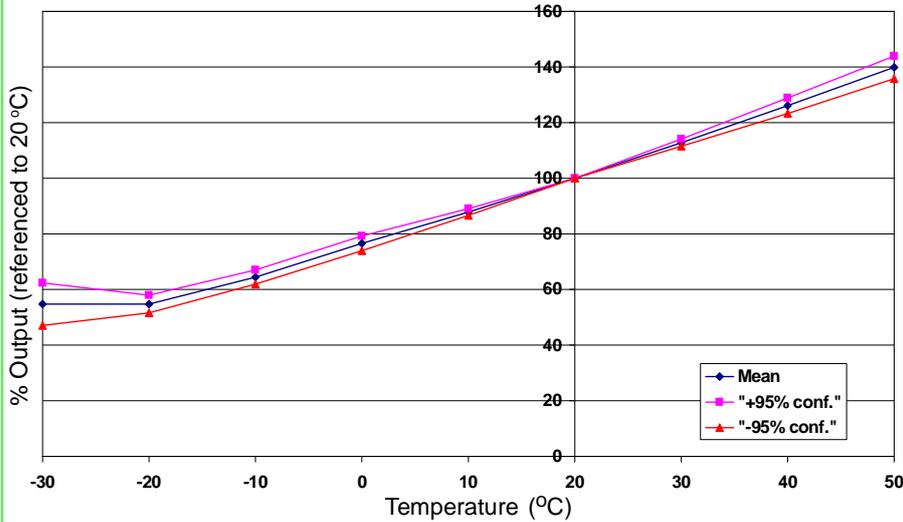


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Zero Temperature Dependence

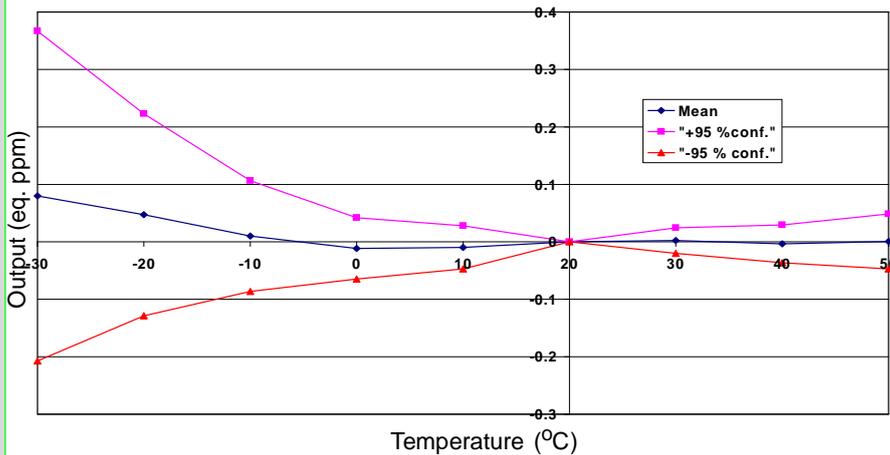
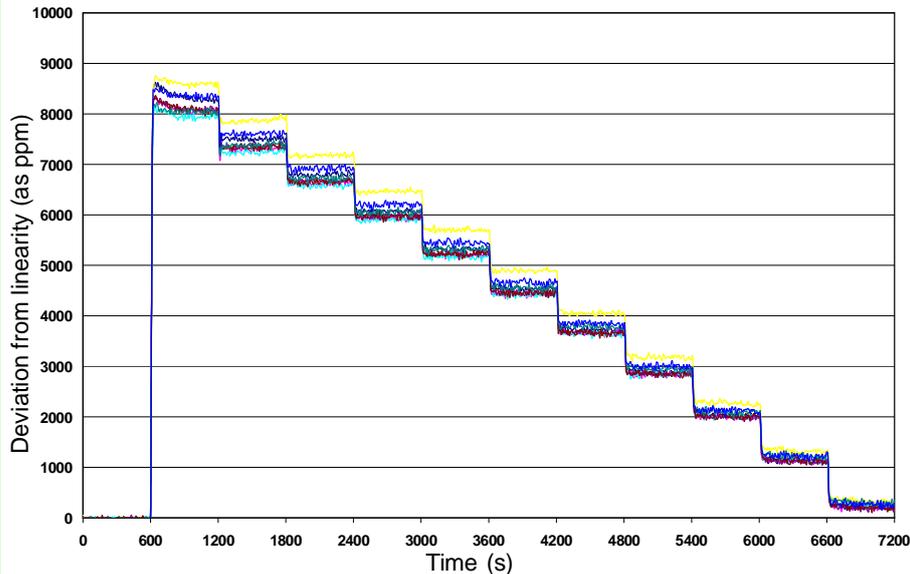


Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

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

Figure 4 Response from 10ppm PH<sub>3</sub> to Zero



Eight PH3-B1 were tested for response from 10 to 1ppm.

Fast response and stable readings are observed.