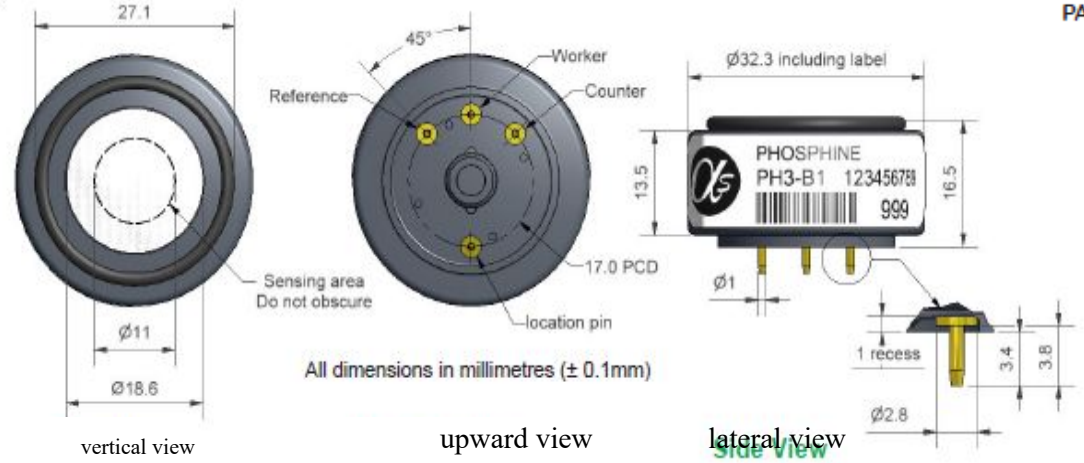
PH3-B1 Phosphine Sensor

Figure 1 Schematic Diagram of PH3-B1



function	sensitivity	Sensitivity $_3$ (nA /ppm) in 5ppmPH	600~1000
	reaction time	From zero to t90 time (s)	< 20
	zero current	Equivalent ppm value of zero air	< -0.3 ~ +0.3
	resolution ratio	RMS noise (equivalent ppm value)	< 0.03
	range	Measuring limits (ppm) that guarantee product performance	10
	degree of linearity	The ppm value of the full scale error is linear between 0 and 4ppm	-1~ -1.8
	overload	Maximum ppm value of gas pulse stabilized reaction	150
life span	zero drift	Equivalent ppm values that change in the laboratory air from year to year	< 0.05
	sensitivity drift	Percentage change in laboratory air over the year, measured monthly	< 4
	working life	Number of months to which the output has been reduced to 80% of the original signal (24-month guarantee)	> 24
environment	-20°C sensitivity	5ppmPH $_3$ at (-20°C output/20°C output)%	65~85
	Sensitivity at 50°C	5ppmPH $_3$ at(50°C output/20°C output)%	120~140
	-20°C when zero point	Change in equivalent ppm values with reference to 0°C 20	< ± 0.5
	50°C at zero point	Change in equivalent ppm values with reference to 0°C 20	< 0~0.2
cross sensitivity	CO	Gas sensitivity percentage measured at 400ppmCO	< 1
	H_2S	Gas sensitivity percentage at 20ppmH $_2$ S	< 170
	NO_2	Percentage sensitivity of gas $_{\text{measured at}}$ 20ppmNO	< -30
	Cl_2	Sensitivity percentage of gas measured $_2$ at 10ppmCl	< 0.1
	NO	Gas sensitivity percentage measured at 50ppmNO	< 30
	SO_2	Gas sensitivity percentage $_2$ at 20ppmSO	< 30
	H_2	Gas sensitivity percentage measured at 400ppmH $_2$ (20°C)	< 0.3
	C_2H_4	Gas sensitivity percentage measured at 400ppmC $_2$ H $_4$	< 20
	NH_3	Percentage sensitivity of gas $_3$ at 20ppmNH	< 0.2
	CO_2	Sensitivity percentage of gas measured at 5%Vol CO $_2$	< 0.1
key parameter	temperature range	℃	-30~50
	pressure limit	kPa	80~120
	Humidity range	Percentage of continuous relative humidity	15~90
	Storage period	Number of months for preservation from 3 to 20°C (to be kept in a sealed tank)	6
	load resistance	Ω	10~33
	weight	g	< 13

Figure 2 Sensitivity Temperature Characteristics

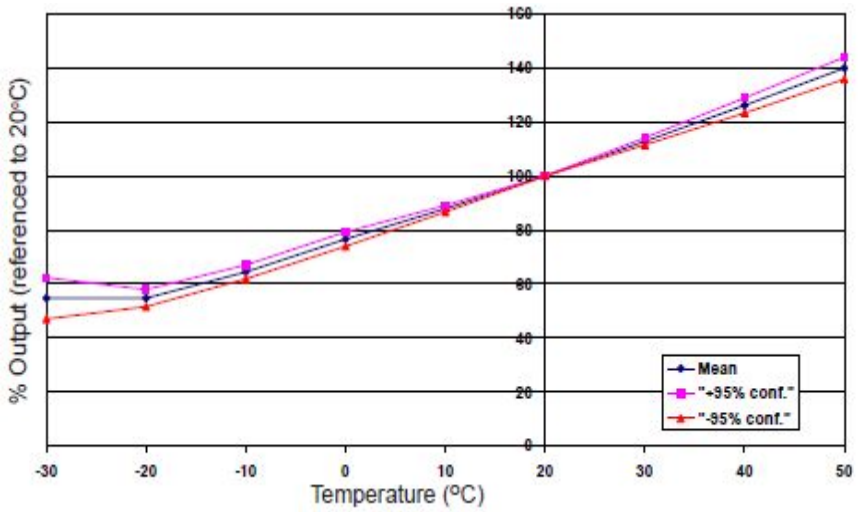


Figure 2 shows the sensitivity changes caused by temperature variations.

The data are taken from the typical batch transducer. Figure 2 shows the average of the output percentage (see reference 20℃) and the ± 95% confidence interval.

Figure 3 Zero Temperature Characteristics

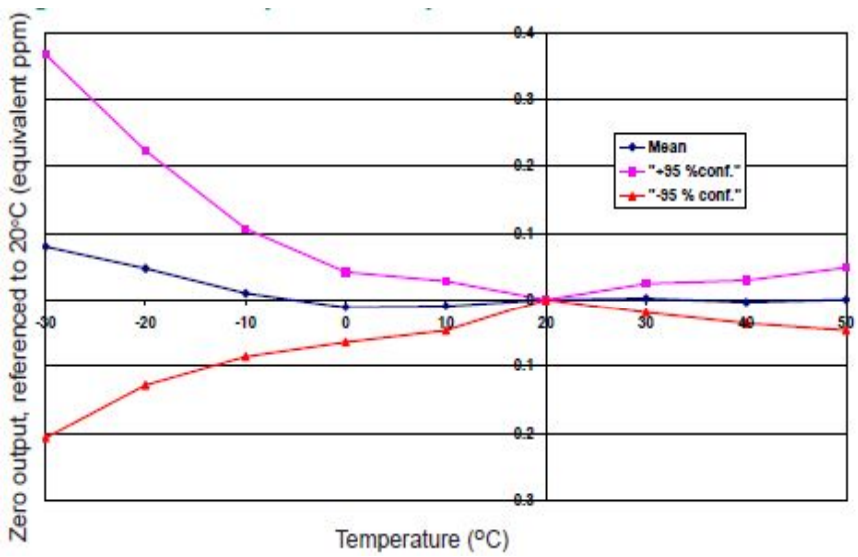


Figure 3 shows the change in zero point output caused by temperature variation, expressed as equivalent ppm values, with reference to the zero point at 20℃.

The data is taken from a typical batch sensor. Figure 3 shows the mean and± 95% confidence interval of the zero output percentage (reference 20 ℃).

Figure 4. Response of the Sensor to 10-0ppm PH_3

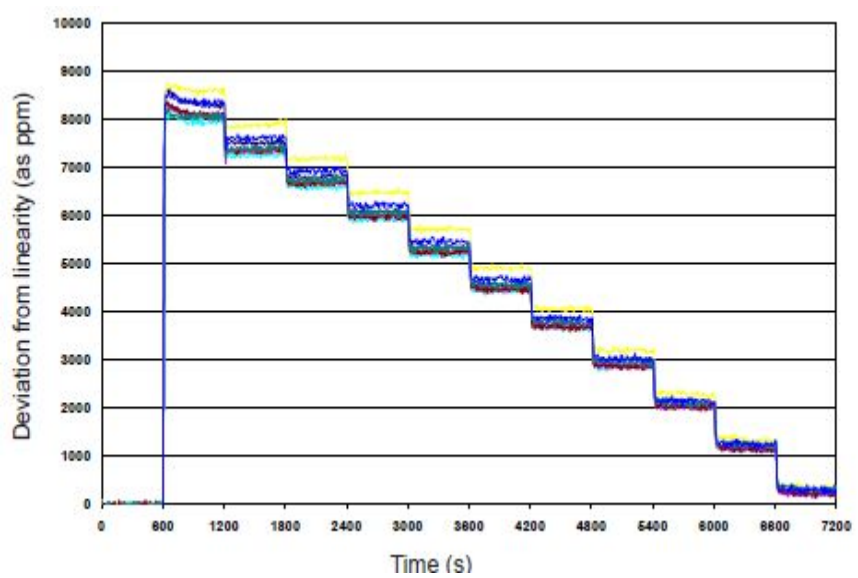


Figure 4 shows the reaction of 8 PH3-B 1 sensors to 10~1 ppm PH_3.

From FIG. 4, it is not difficult to find that the transducer responds quickly and the reading is stable.

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