

PH3-A1 Phosphine Sensor



PATENTED

Figure 1 PH3-A1 Schematic Diagram



function	sensitivity	Sensitivity $_3$ in 11ppmPH (nA/ppm)	550~900
	reaction time	Time to $_3$ t90(s) from zero to 5ppmPH	< 25
	zero current	Equivalent ppm value of zero air	< ± 0.5
	resolution ratio	RMS noise (equivalent ppm value)	< 0.1
	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 20ppm	< -0.6
	overload	Maximum ppm value of gas pulse stabilized reaction	75
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	< 10
	working life	Number of months to which the output is reduced to 80% of the original signal (24 months guaranteed)	> 24
environment	-20°C when sensitivity	(Output at -20°C/Output at 20°C)% $_3$ at 11ppmPH	20~70
	Sensitivity at 50°C	5ppmPH $_3$ at(50°C output/20°C output)%	130~160
	-20°C when zero point	Change in equivalent ppm values with reference to 20°C zero	< ± 0.04
	50°C at zero point	Change in equivalent ppm values with reference to 0°C 20	< ± 0.04
cross sensitivity	H ₂ S	Gas sensitivity percentage at 20ppmH ₂ S	< 15
	NO ₂	Gas sensitivity percentage $_2$ measured at 10ppmNO	< -30
	Cl ₂	Sensitivity percentage of gas measured $_2$ at 10ppmCl	< -30
	NO	Gas sensitivity percentage measured at 50ppmNO	< 1
	SO ₂	Gas sensitivity percentage $_2$ at 20ppmSO	< 60
	CO	Gas sensitivity percentage measured at 400ppmCO	< 0.7
	H ₂	Gas sensitivity percentage measured at 400ppmH ₂	< 0.2
	C ₂ H ₄	Gas sensitivity percentage measured at 80ppmC ₂ H ₄	< 10
	NH ₃	Gas sensitivity percentage $_3$ at 25ppmNH	< 0.2
CO ₂	Sensitivity percentage of gas measured at 5%Vol CO ₂	< 0.1	
key parameter	temperature range	°C	-30~50
	pressure limit	kPa	80~120
	Humidity range	Percentage of continuous relative humidity	20~90
	Storage period	Number of months for preservation at 0~20°C (must be preserved in the original container)	6
	load resistance	Ω	10~33
	bias voltage	mV	non-essential
	weight	g	< 6

Figure 2 Sensitivity Temperature Characteristics

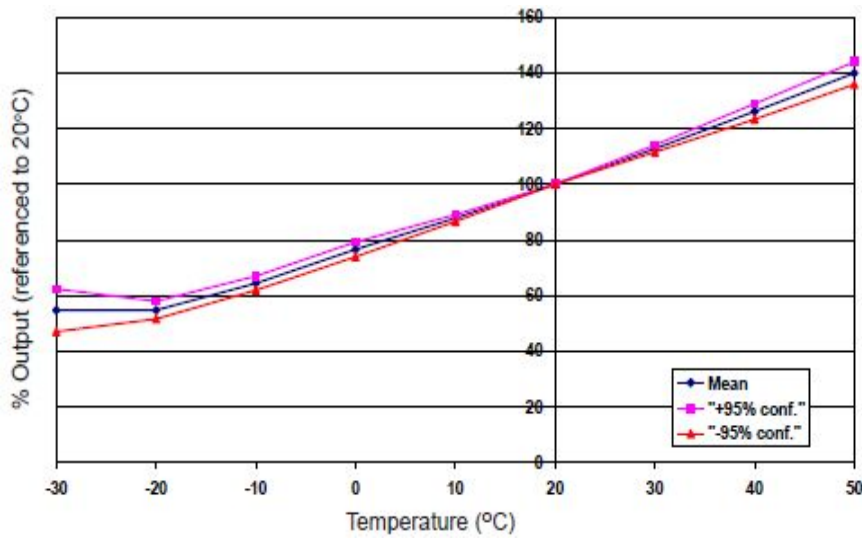


Figure 2 shows the change in sensitivity caused by temperature changes.

The data are taken from a typical batch of sensors. Figure 2 shows the percentage of output (reference 20°C) mean and $\pm 95\%$ confidence interval.

Figure 3 Zero Temperature Characteristics

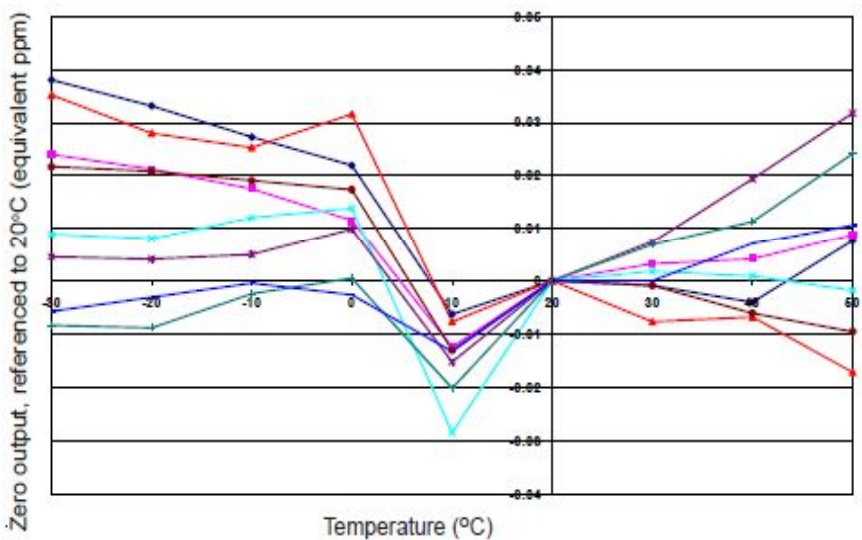


Figure 3 shows the change in zero output caused by temperature changes, expressed as equivalent ppm values, with reference to the zero at 20°C.

Data is taken from a typical batch of sensors.

Figure 4 Linearity

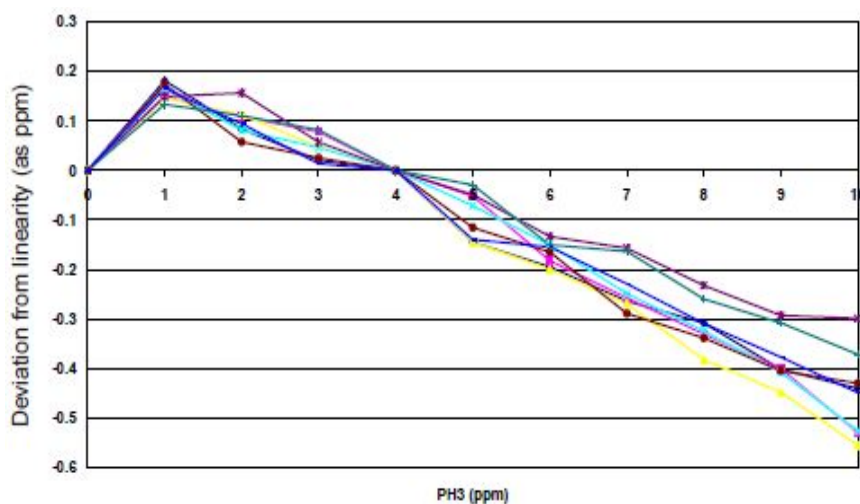


Figure 4 shows the sensor's variation from linear to 10ppm, with software corrections made during 0~0.5ppm this period to improve overall linearity.

Repeatability of performance means that linearity can be corrected in the software.

深圳市杰晟兴电子有限公司 JM Components Limited