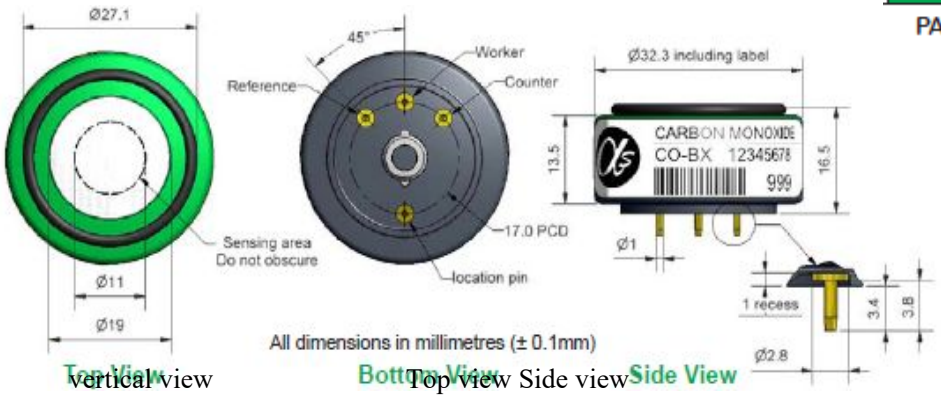
CO-BX Carbon Monoxide Sensor Low Hydrogen Cross Sensitivity

Figure 1 Schematic Diagram of CO-BX



vertical view Top view Side view

function	sensitivity	Sensitivity in 400ppmCO (nA/ppm)	70~130
	reaction time	Time from zero to 400ppmCO t90 (s)	< 25
	zero current	Equivalent ppm value in zero air	< ±3
	resolution ratio	RMS noise (equivalent ppm value)	< 0.5
	range	CO measurement limit (ppm) that guarantees product performance	2000
	degree of linearity	The ppm value of the full scale error is linear from 0 to 1000ppm	< ±20
	overload	Maximum ppm value of gas pulse stabilized reaction	5000
life span	zero drift	Equivalent ppm values that change in the laboratory air from year to year	< 0.2
	sensitivity drift	Percentage change in laboratory air over the year, measured monthly	< 3
	working life	Number of months to which the output is reduced to 80% of the original signal (24 months guaranteed)	> 24
environment	-20°C sensitivity	400ppm CO when, (output at-20°C/ output at 20°C)%	40~60
	Sensitivity at 0°C	400ppm CO when, (0°C output/20°C output)%	65~85
	Sensitivity at 50°C	400ppm CO when, (50°C output/20°C output)%	110~130
	-20°C when zero point	Change in equivalent ppm values with reference to 20°C zero	< 0~4
	0°C at the zero point	Change in equivalent ppm values with reference to 0°C 20	< 0~3
	50°C at zero point	Change in equivalent ppm values with reference to 0°C 20	< 0~-6
cross sensitivity	filter capacity	ppm· hour H_2S	160,000
	filter capacity	ppm· hour NO_2	120,000
	filter capacity	ppm· hour NO	120,000
	filter capacity	ppm· hour SO_2	160,000
	H_2S	Gas sensitivity percentage at 20ppmH_2S	< 0.1
	NO_2	Gas sensitivity percentage $_2$ measured at 10ppmNO	< -3
	Cl_2	Sensitivity percentage of gas measured $_2$ at 10ppmCl	< -0.1
	NO	Gas sensitivity percentage measured at 50ppmNO	< -5
	SO_2	Gas sensitivity percentage $_2$ at 20ppmSO	< 0.1
	H_2	Gas sensitivity percentage measured at 400ppmH_2 (20°C)	< 5
	C_2H_4	Gas sensitivity percentage measured at 400ppmC_2H_4	< 10
	NH_3	Percentage sensitivity of gas $_3$ at 20ppmNH	< 0.1
Critical temperature range		℃	-30~50
Parameter pressure range		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 （recommend）	10~47
	weight	g	< 13

Important note: CO-BX must ensure that there is no bias between the reference electrode and the working electrode during normal operation, otherwise the sensor will not be able to give full play to its low hydrogen cross sensitivity performance.

Figure 2 Sensitivity Temperature Characteristics

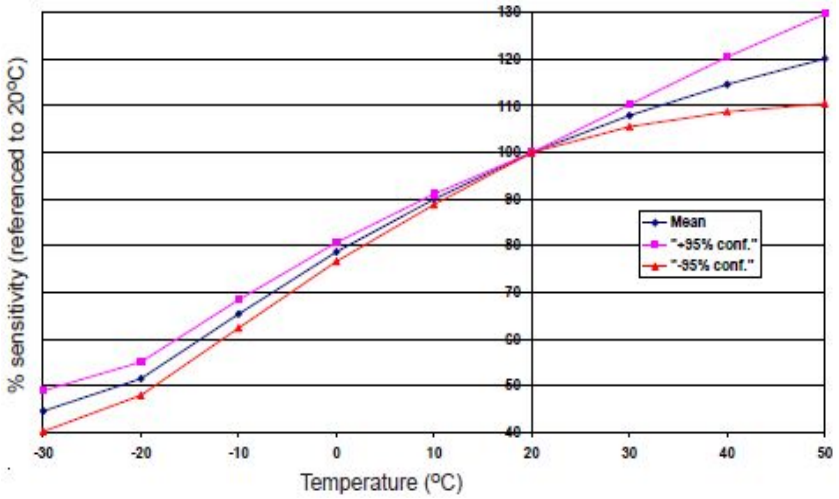


Figure 2 shows the change in sensor sensitivity caused by temperature changes.

Data are collected from typical batch sensors. Figure 2 shows the mean and ±95% confidence interval of sensitivity percentage (reference 20℃).

Figure 3 Zero Temperature Characteristics

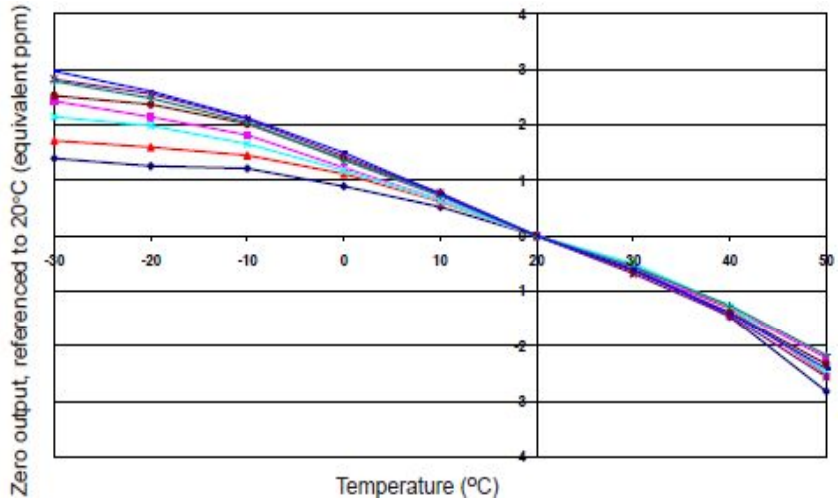
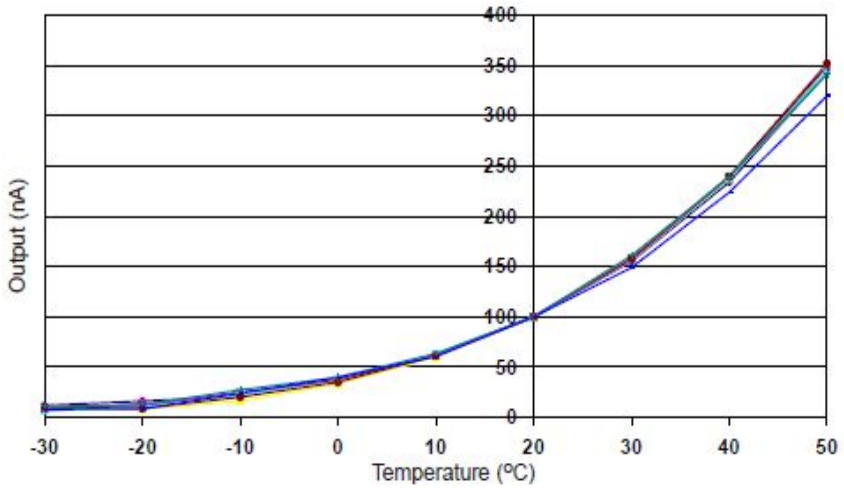


Figure 3 shows the change in zero point output caused by temperature changes, expressed as equivalent ppm values, with reference to the zero point at 20℃.

Data was taken from a typical batch of sensors.

Figure 4 Temperature Characteristics of Hydrogen



Hydrogen sensitivity is greatly affected by temperature.

The sensitivity of hydrogen is negligible at low temperature, but it should be paid attention to when the temperature is higher than 30 ℃.

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