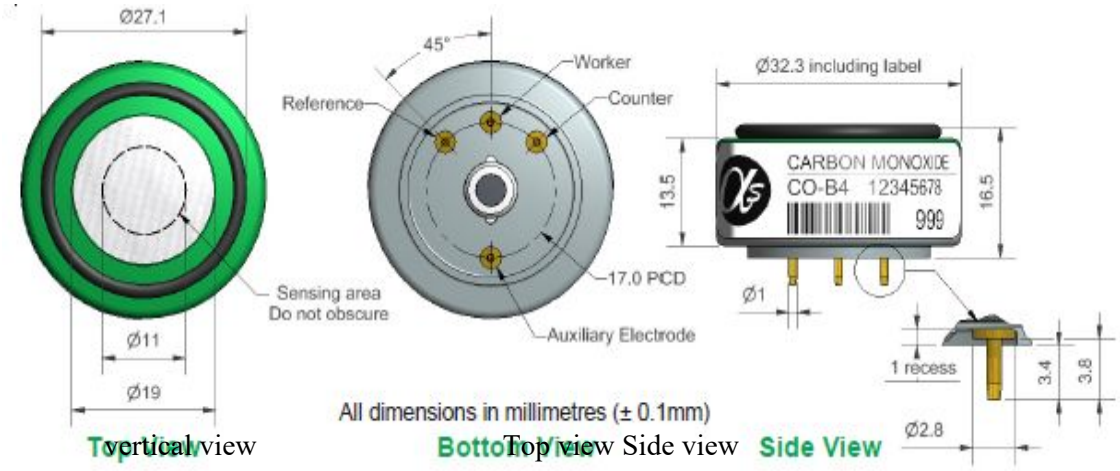
CO-B4 Four-Electrode Carbon Monoxide Sensor

Figure 1 Schematic Diagram of CO-B4



vertical view Top view Side view

function	sensitivity	Sensitivity in 2ppmCO (nA/ppm)	420~650
	reaction time	Time from zero to 10ppmCO (s)	< 30
	zero current	Output at 20°Cm in zero-level air (nA)	+30~-250
	noise *	Standard deviation ±2 (equivalent ppb)	4
	range	Measuring limits (ppm) that guarantee product performance	1000
	degree of linearity	The ppb value of the full scale error is linear from 0 to 500ppm	20~35
	overload	Maximum ppm value of gas pulse stabilized reaction	2000
	*** The test uses Alphasense ISB low noise circuit board**		
life span	zero drift	Equivalent ppb values that change in the laboratory air from year to year	< ±100
	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 50% of the original signal (24 months guaranteed)	> 36
environment	-20°C sensitivity	5ppm CO when, (output at-20°C/ output at 20°C)%	40~70
	Sensitivity at 50°C	At 5ppm CO, (output at 50°C/ output at 20°C)%	110~125
	-20°C when zero point	nA	-30~+30
	50°C at zero point	nA	-50~-200
cross sensitivity	filter capacity	ppm· hour H_2S	250,000
	H_2S	Gas sensitivity percentage measured at 5ppmH_2S	< 1
	NO_2	Gas sensitivity percentage $_2$ at 5ppmNO	< 1
	Cl_2	Gas sensitivity percentage $_2$ measured at 5ppmCl	< 1
	NO	Gas sensitivity percentage measured at 5ppmNO	< -3
	SO_2	Gas sensitivity percentage $_2$ at 5ppmSO	< 0.1
	H_2	Gas sensitivity percentage measured at 100ppmH_2 (20°C)	< 50
	C_2H_4	Sensitivity percentage of gas measured at 100ppmC_2H_4	< 1
	NH_3	Percentage sensitivity of gas $_3$ at 20ppmNH	< 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 (ISB circuit board is recommended)	33~100
	weight	g	< 13

Figure 2 Sensitivity Temperature Characteristics

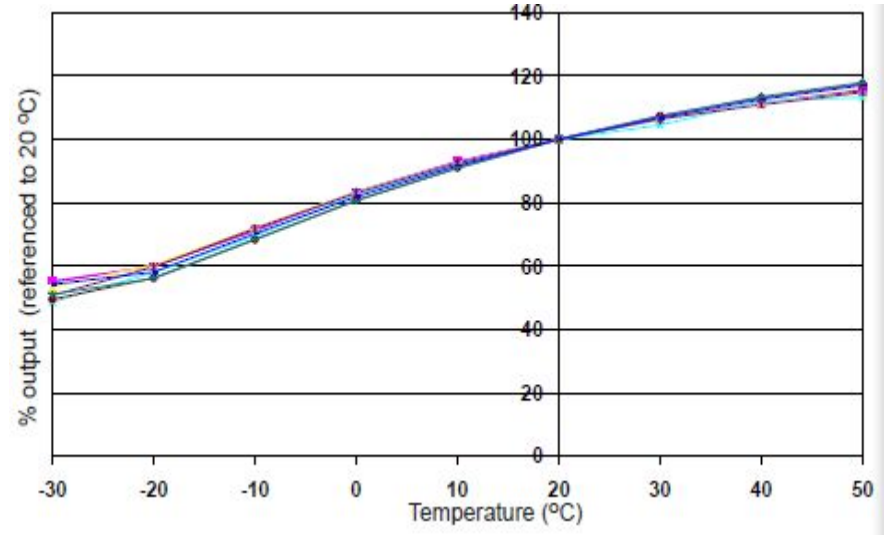


Figure 2 shows the temperature characteristics of sensitivity at 2ppm CO.

Data was collected from typical batch sensors.

Figure 3 Temperature Characteristics of Zero Current

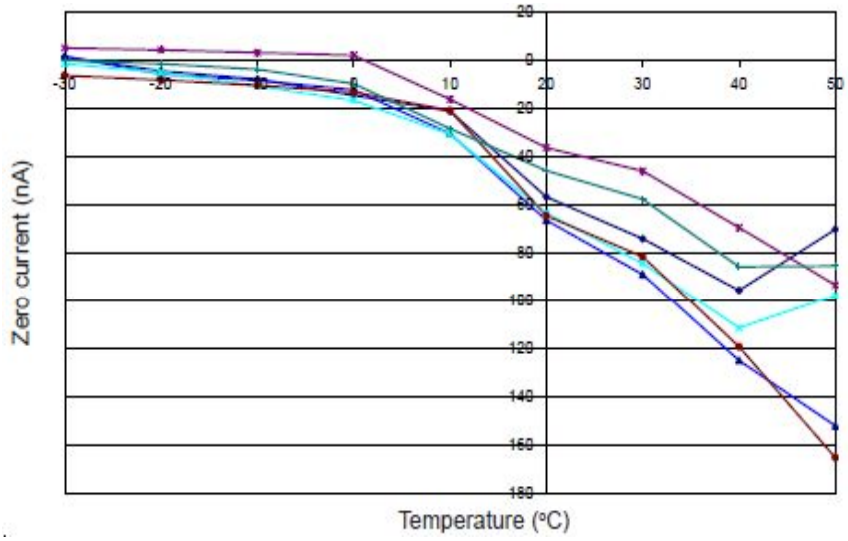


FIG. 3 shows the zero point output variation of the working electrode caused by temperature change, in units of nA.

Data was collected from typical batch sensors.

For more information about zero current correction, please contact Alphasense.

Figure 4 Reaction of 0-1ppm CO

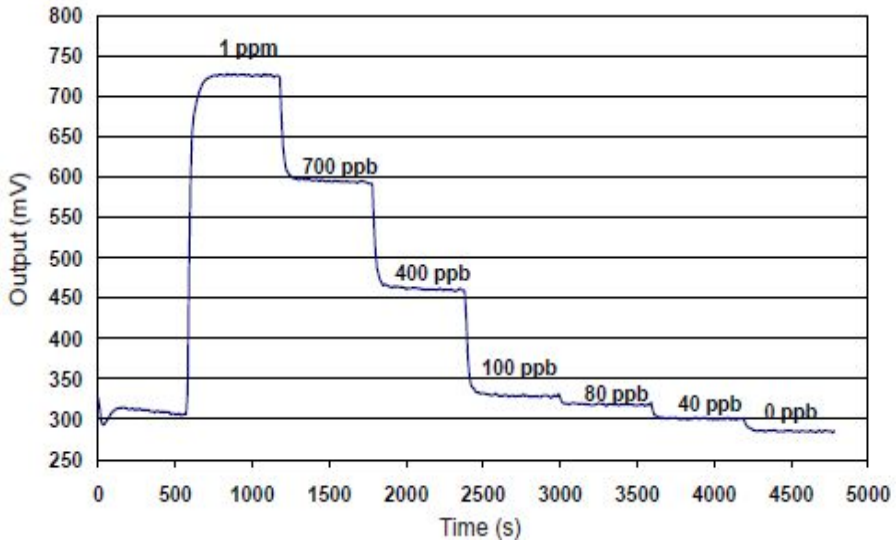


Figure 4 shows the reaction of the sensor in 0~1ppm CO.

The noise can be reduced to 4ppb using Alphasense ISB circuit board, and further noise reduction can be achieved using digital filtering.

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