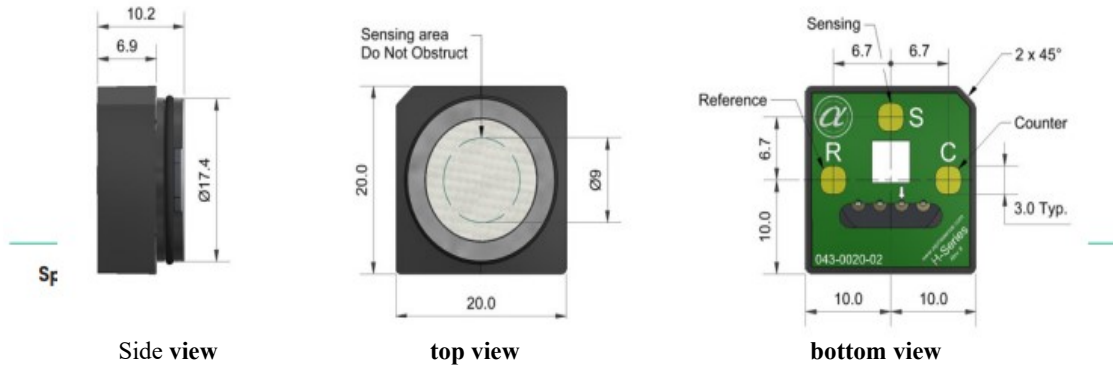


## COH-H2 carbon monoxide and hydrogen sulfide sensors



### CO channel specification

function	Sensitivity	Sensitivity in 400ppmCO nA/ppm	50~100
	response time	Time from zero to 400ppmCO t90 (s)	< 35
	Zero point current	Equivalent ppm value of zero air	-3~+3.5
	resolution	RMS noise (equivalent ppm value)	< 0.5
	range linearity overload	CO measurement limit (ppm) that guarantees product performance	1000
life span	Zero drift	The ppm value of the full range error is linear at 0~400 ppmCO and shows the maximum ppm value of stable gas pulse reaction	10~40
	sensitivity drift working life	Equivalent ppm values that change in the laboratory air from year to year	< 0.5
		Percentage change in laboratory air over the year, measured monthly	< 4
environment	-20°C sensitivity	Number of months output drops to 80% of original signal (guaranteed 24 months)	24
	50°C sensitivity	100ppmCO when, (-20°C output/20°C output)%	30~50
	-20°C is the zero point 50°C is the zero point	100ppmCO when, (50°C output/20°C output)%	120~145
		equivalent ppm value change, reference 20°C	0~5
cross sensitivity	Filter capacity H <sub>2</sub> S	Change in equivalent ppm value, reference 20°C	0~5
	H <sub>2</sub>	ppm- hour H <sub>2</sub> S	1200
	NO <sub>2</sub>	Gas sensitivity percentage at 20ppmH <sub>2</sub> S(400 ppmH <sub>2</sub> ) (20°C)	< 12
	Cl <sub>2</sub>	Gas sensitivity percentage at 10ppmNO <sub>2</sub>	< 8
	NO	Gas sensitivity percentage measured at 10 ppmCl <sub>2</sub>	3
	SO <sub>2</sub>	Gas sensitivity percentage measured at 50ppmNO	< 100
	C <sub>2</sub> H <sub>4</sub>	Gas sensitivity percentage measured at 20ppmSO <sub>2</sub>	< 2
	NH <sub>3</sub>	Gas sensitivity percentage measured at 400 ppm CH <sub>4</sub>	60
		Gas sensitivity percentage measured at 20ppmNH <sub>3</sub>	±0.5
key parameter	temperature range	°C	-30~50
	pressure limit	Kpa	80~120
	Humidity range	Percentage of continuous relative humidity (see below)	15~90
	Storage period	3~20°C Sealing storage period (months)	6
	load resistance	Ω ( recommend )	10~47
weight	can	< 6	

**Figure 1 Temperature Sensitivity Characteristics of CO Channel**

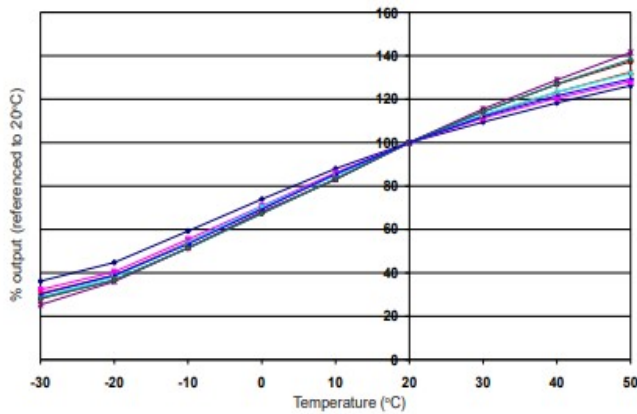


Figure 1 shows the sensitivity changes caused by temperature changes.

Data was taken from a typical batch of sensors.

**FIG. 2 Zero Point Temperature Characteristics of CO Channel**

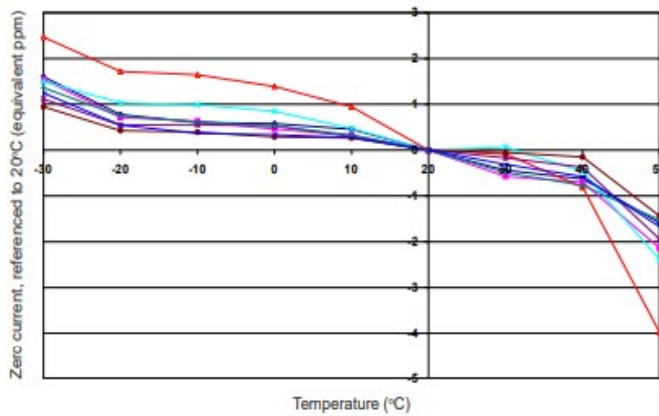


Figure 2 shows the change of zero point output caused by temperature change, expressed as equivalent ppm values with reference to the zero point at 20°C.

Data was taken from a typical batch of sensors.

**Figure 3 Reaction of CO Channel to 400ppm CO**

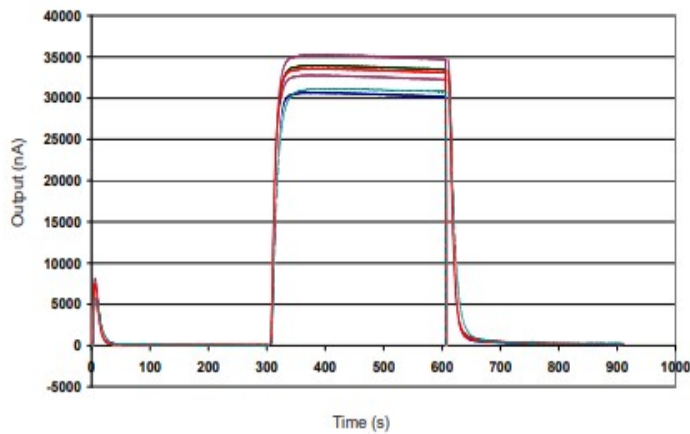
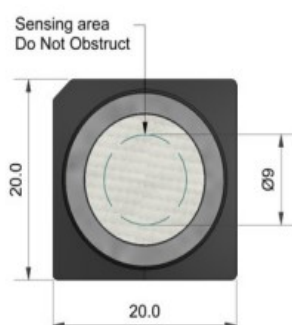


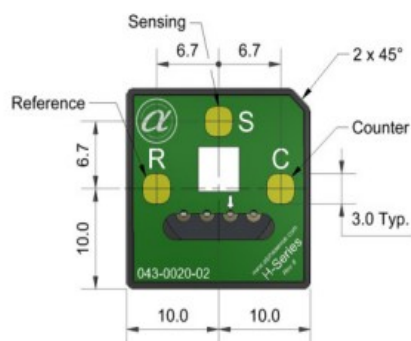
Figure 3 shows the reaction of a batch of sensors to 400 ppm CO. **The rapid and stable reaction is a reflection of the robust sensor running well within the parameters.**



Side view



top view



bottom view

H<sub>2</sub>S channel specification

function	sensitivity	<b>Sensitivity in ppmH<sub>2</sub>S nA /ppm</b>	650~1100
	reaction time	<b>Time of t90 from zero to 20ppmH<sub>2</sub>S at 20°C (s)</b>	< 30
	zero current	<b>Equivalent ppm value in zero air</b>	±0.25
	resolution ratio	<b>RMS noise (equivalent ppm value)</b>	< 0.1
	scope	<b>H<sub>2</sub>S measurement limit (ppm) that guarantees product performance</b>	100
	degree of linearity	<b>The ppm value of the full scale error is linear at 0~20ppmH<sub>2</sub>S</b>	< ±5
	overload	<b>Maximum ppm value of gas pulse stabilization reaction</b>	200
life span	zero drift	<b>Equivalent ppm values that change in the laboratory air from year to year</b>	< 0.1
	sensitivity drift	<b>Percentage change in laboratory air over the year, measured monthly</b>	< 2
	working life	<b>Number of months output drops to 80% of original signal (24 months guaranteed)</b>	24
environment	-20°C sensitivity	<b>20ppmH<sub>2</sub>S, (-20°C output/20°C output)%</b>	75~90
	Sensitivity at 50°C	<b>At 20ppmH<sub>2</sub>S, (output at 50°C/ output at 20°C)%</b>	100~112
	-20°C when zero point	<b>Change in equivalent ppm value, reference 20°C</b>	±0.05
	50°C at zero point	<b>Change in equivalent ppm value, reference 20°C</b>	< 0~0.2
cross sensitivity	NO <sub>2</sub>	<b>Gas sensitivity percentage<sub>2</sub> measured at 10ppmNO</b>	< -30
	Cl <sub>2</sub>	<b>Gas sensitivity percentage measured<sub>2</sub> at 10ppmCl</b>	< -25
	NO	<b>Gas sensitivity percentage measured at 50ppmNO</b>	< 30
	SO <sub>2</sub>	<b>Gas sensitivity percentage<sub>2</sub> measured at 20ppmSO</b>	< 30
	CO	<b>Gas sensitivity percentage measured at 400ppmCO</b>	< 1.5
	H <sub>2</sub>	<b>Gas sensitivity percentage<sub>2</sub> measured at 400ppmH</b>	< 0.3
	C <sub>2</sub> H <sub>4</sub>	<b>Gas sensitivity percentage measured at 400ppmC<sub>2</sub>H<sub>4</sub></b>	< 0.2
	NH <sub>3</sub>	<b>Gas sensitivity percentage<sub>3</sub> at 20ppmNH</b>	< 2

Figure 4 Response of H<sub>2</sub>S Channel to 25ppm H<sub>2</sub>S

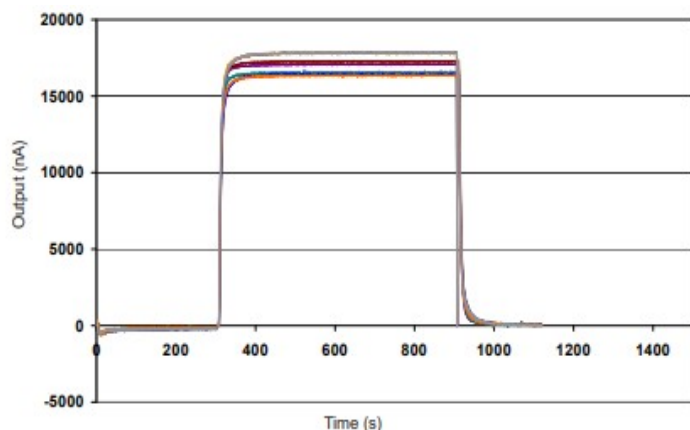


Figure 4 shows the sensor response to 25ppm H<sub>2</sub>S.

The sensor showed rapid response and recovery, stable output and repeatable sensitivity.

Figure 5 Temperature Characteristics of H<sub>2</sub>S Channel Sensitivity

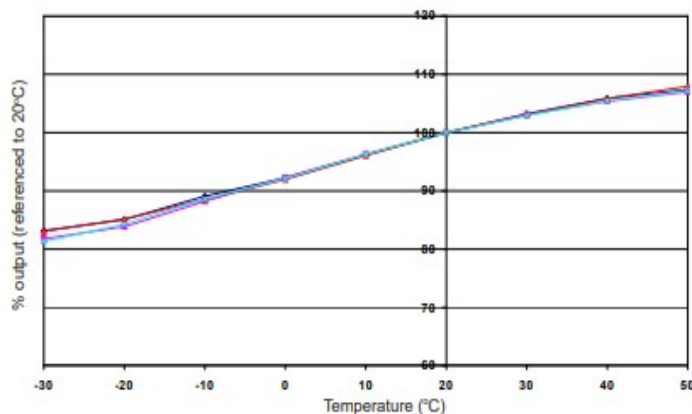


Figure 5 shows the sensitivity changes caused by temperature changes.

Data was taken from a typical batch of sensors.

Figure 6 Zero Temperature Characteristics of H<sub>2</sub>S Channel

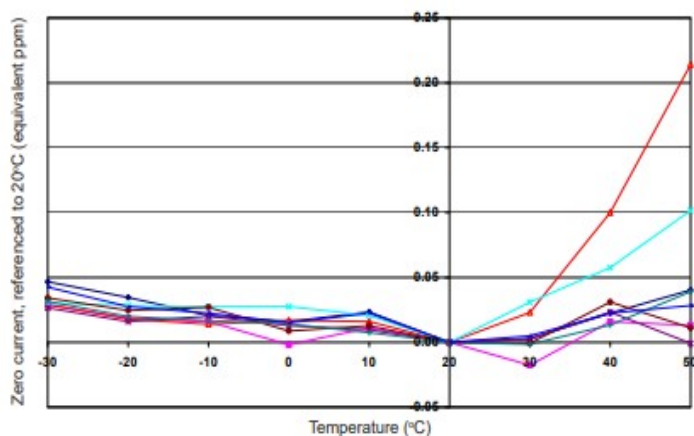


Figure 6 shows the zero point output variation caused by temperature changes. The ppm value of the effect represents the reference zero point at 20°C.

Data was taken from a typical batch of sensors.

Note: When operating sensors in environments exceeding 85% RH and 40°C C, the product performance can only be maintained for 10 days. If such conditions exist, temporarily store the sensor in low-humidity and low-temperature environments for several days until its electrolyte level returns to normal before reuse. After product service life ends, do not dispose of any electronic sensors, components, or instruments in household waste. For disposal instructions, contact the instrument manufacturer, Alphasense, or authorized dealers. Important: Unless otherwise specified, all sensors are tested under ambient conditions around 4°C. As application scenarios may exceed our control parameters, this information is provided without legal liability. Customers should conduct testing under their own conditions to ensure the sensor meets specific application requirements.

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