



SOH-A2

Dual Gas Sensor SO₂ / H₂ S



foreword

With the increasing demand for gas detection, we can now see personal safety gas detectors in almost every industry.

Most sulfur-containing gases are toxic and chemically complex. Simultaneous detection of sulfur dioxide and hydrogen sulfide can provide information on the separation of corrosive gases with different toxicological properties.

SO₂ channel specification description

Performance	sensitivity	Sensitivity ₂ in 10ppmSO ₂ nA/ppm	140~250
	reaction time	Time ₂ to 90% from zero to 10ppmSO ₂ (s)	< 15
	zero current	Equivalent ppm value in zero air	< ±0.2
	resolution ratio	RMS noise (equivalent ppm value)	< 0.2
	scope	SO measurement limit (ppm) to ensure product performance	20
	degree of linearity	The ppm value of the full scale error is linear ₂ from 0 to 10ppm	< ±2
	overload	Maximum ppm value of gas pulse stabilization reaction	50
Life	zero drift	Equivalent ppm values that change in the laboratory air from year to year	< 0.5
	sensitivity drift	Percentage change in laboratory air over the year, measured monthly	< 6
	working life	Number of months output drops to 80% of original signal (guaranteed 24 months)	> 24
Environmental	-sensitivity at 20°C	100ppmSO ₂ at (-20°C output/20°C output)%	80~100
	Sensitivity at 50°C	100ppmSO ₂ at(50°C output/20°C output)%	70~100
	-20°C when zero point	Change in equivalent ppm value, reference 20°C	-0.2~0.2
	50°C at the zero point	Change in equivalent ppm value, reference 20°C	0.2~0.8
Cross filtering capability		ppm- hour H ₂ S	nd
Sensitivity	H ₂ S	Gas sensitivity percentage at 20ppmH ₂ S	<15
	NO ₂	Gas sensitivity percentage ₂ measured at 10ppmNO	< -150
	Cl ₂	Gas sensitivity percentage measured ₂ at 10ppmCl	< -50
	NO	Gas sensitivity percentage measured at 50ppmNO	< 50
	CO	Gas sensitivity percentage measured at 400ppmCO	< 2
	H ₂	Gas sensitivity percentage measured ₂ at 400 ppmH(20°C)	< 1
	C ₂ H ₄	Gas sensitivity percentage measured at 400ppmC ₂ H ₄	< 40
	NH ₃	Gas sensitivity percentage ₃ at 20ppmNH	< ±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

Note: If the sensor is used in an environment with humidity above 85%rh and temperature above 40°C, the product performance can only be guaranteed for 10 days. If the above environment exists, please place the sensor in a low humidity and low temperature environment for several days, and then use it when the electrolyte quantity returns to normal state.

Figure 1 Response of SO₂ Channel to 20ppm SO₂

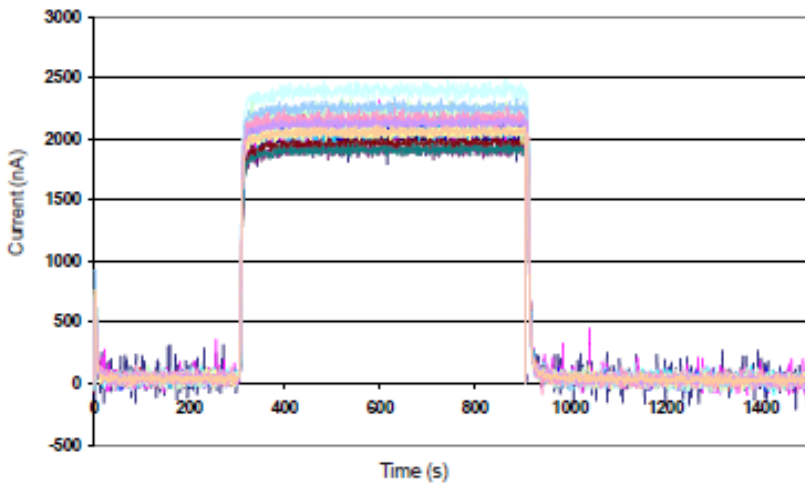


Figure 1 shows the characteristics of SOH-A2 sensor with fast response, stable output and fast return to baseline in the environment of 20ppm SO₂.

Figure 2 Temperature Sensitivity Characteristics of the O₂ Channel

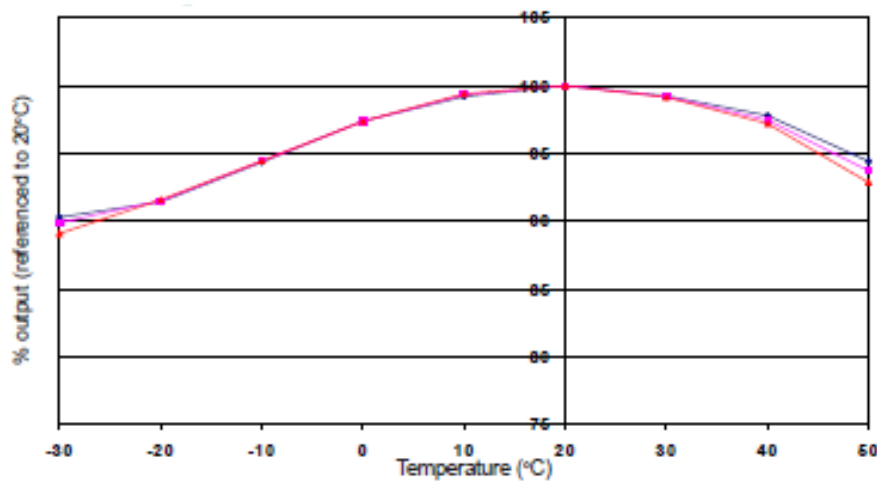


Figure 2 shows the change in sensitivity caused by temperature changes.

Data from typical batch sensors.

Figure 3 Zero Point Temperature Characteristics of Channels

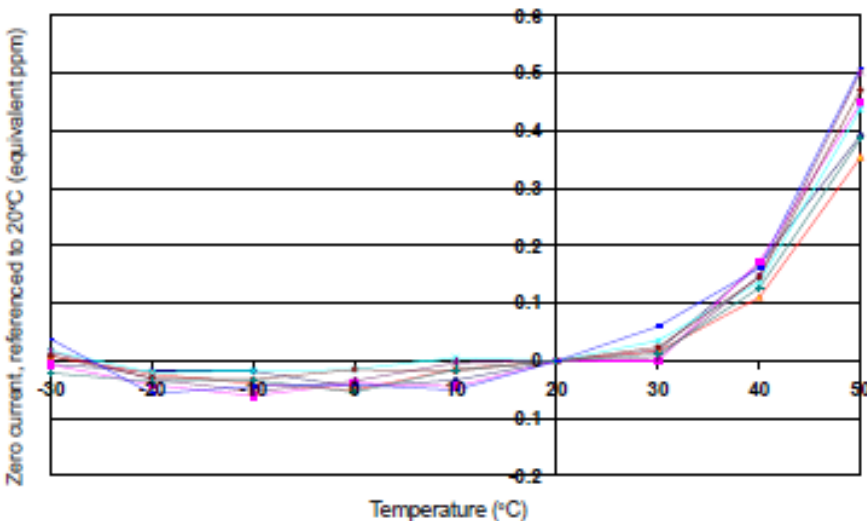
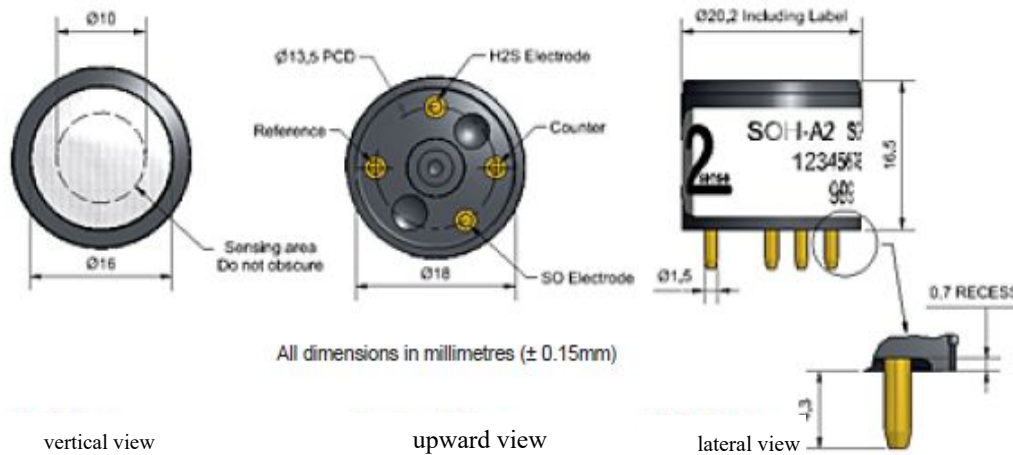


Figure 3 shows the change in zero point output caused by temperature changes, expressed as equivalent ppm values with reference to the zero point at 20°C.

Data is taken from a typical batch of sensors.



Figure 4 Sensor Diagram



H₂S channel specification

Performance	sensitivity	Sensitivity in ppmH ₂ S nA /ppm	450~900
	reaction time	Time of t90 from zero to 20ppmH ₂ S at 20°C (s)	< 25
	zero current	Equivalent ppm value at zero air level	±0.25
	resolution ratio	RMS noise (equivalent ppm value)	< 0.1
	scope	H ₂ S measurement limit (ppm) that guarantees product performance	100
	Linearly	The ppm value of the full scale error is linear at 0~ 20ppmH ₂ S and	< ± 5
	overload	shows the maximum value of stable reaction of gas pulse at 2ppm.	200

Life	zero drift	Equivalent ppm values that change in the laboratory air from year to year	< 0.1
	sensitivity drift	Percentage change in laboratory air over the year, measured monthly	< 2
	working life	Number of months output drops to 80% of original signal (guaranteed 24 months)	24

Environmental	sensitivity at 20°C	At 20ppmH ₂ S, (output at -20°C/ output at 20°C)%	75~90
	Sensitivity at 50°C	At 20ppmH ₂ S, (output at 50°C/ output at 20°C)%	100~112
	-20°C when zero point	Change in equivalent ppm value, reference 20°C	±0.5
	50°C at zero point	Change in equivalent ppm value, reference 20°C	0.2

cross connection	sensitivity	NO ₂	Gas sensitivity percentage ₂ measured at 10ppmNO	< -30
		Cl ₂	Gas sensitivity percentage measured at 10 ppmCl ₂	< -25
		NO	Gas sensitivity percentage measured at 50ppmNO	< 30
		SO ₂	Gas sensitivity percentage measured at 10ppmSO ₂	< 30
		CO	Gas sensitivity percentage measured at 400ppmCO	< 1.5
		H ₂	Gas sensitivity percentage ₂ at 400ppm HGas	< 0.3
		C ₂ H ₄	sensitivity percentage ₂ at 400ppm CH ₄	< 0.2
		NH ₃	HGas sensitivity percentage ₃ at 20ppmNH	< 2

Note: If the sensor is used in an environment with humidity above 85%rh and temperature above 40°C, the product performance can only be guaranteed for 10 days. If the above environment exists, please place the sensor in a low humidity and low temperature environment for several days, and then use it when the electrolyte quantity returns to normal state.

Figure 5 Response of H₂S Channel to 25ppm H₂S

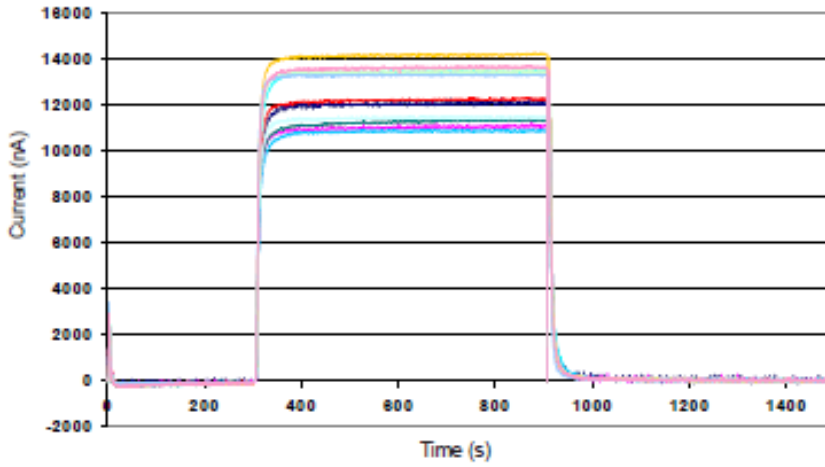


Figure 5 shows the characteristics of SOH-A2 sensor with fast response, stable output and fast return to baseline in the environment of 20ppm H₂S.

Figure 6 Temperature Characteristics of H₂S Channel Sensitivity

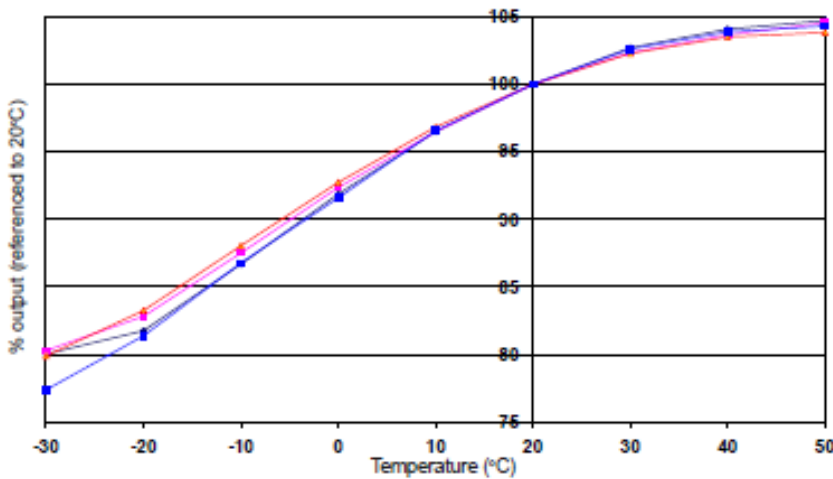


Figure 6 shows the sensitivity changes caused by temperature changes.

Data is taken from a typical batch of sensors.

Figure 7 Zero Temperature Characteristics of H₂S Channel

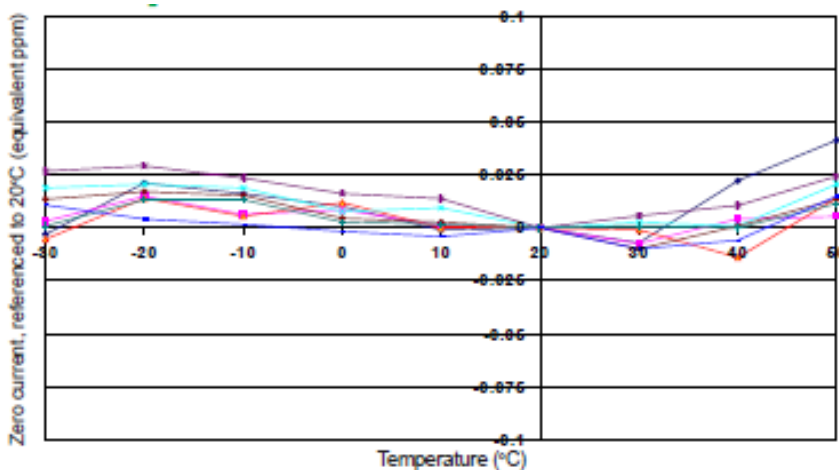


Figure 7 shows the change in zero point output caused by temperature changes, expressed as equivalent ppm values, with reference to the zero point at 20°C.

Data is taken from a typical batch of sensors.

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