

## SO<sub>2</sub>-BF Sulfur Dioxide Sensor

Figure 1 Schematic diagram of SO<sub>2</sub>-BF



function	sensitivity	Sensitivity <sub>2</sub> in 20 ppm (nA /ppm)	300~480
	reaction time	Time from zero to 20ppmSO <sub>2</sub> t <sub>90</sub> (s)	< 40
	zero current	Equivalent ppm value in zero air	< ±0.5
	resolution ratio	RMS noise (equivalent ppm value)	< 0.1
	range	Measuring limits (ppm) that guarantee product performance	100
	degree of linearity	The ppm value of the full scale error is linear between 0 and 20ppm	< ±2
	overload	Maximum ppm value of gas pulse stabilized reaction	1000
life span	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	< 4
	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	20ppmSO <sub>2</sub> at (-20°C output/20°C output)%	78~90
	Sensitivity at 50°C	20ppmSO <sub>2</sub> at(50°C output/20°C output)%	100~120
	-20°C when zero point	Change in equivalent ppm values with reference to 20°C zero	< 0~1
	50°C at zero point	Change in equivalent ppm values with reference to 20°C zero	< 0~2
cross sensitivity	filter capacity	ppm · hour	450
	H <sub>2</sub> S	Gas sensitivity percentage at 20ppmH <sub>2</sub> S	< 2
	NO <sub>2</sub>	Gas sensitivity percentage <sub>2</sub> measured at 10ppmNO	< -120
	Cl <sub>2</sub>	Sensitivity percentage of gas measured <sub>2</sub> at 10ppmCl	< -50
	NO	Gas sensitivity percentage measured at 50ppmNO	< -10
	CO	Gas sensitivity percentage measured at 400ppmCO	< 1.5
	H <sub>2</sub>	Gas sensitivity percentage measured at 400ppmH <sub>2</sub>	< 0.5
	C <sub>2</sub> H <sub>4</sub>	Gas sensitivity percentage measured at 400ppmC <sub>2</sub> H <sub>4</sub>	< 50
NH <sub>3</sub>	Percentage sensitivity of gas <sub>3</sub> at 20ppmNH	< 0.1	
Critical temperature range	°C	-30~50	
Parameter pressure range	kPa	80~120	
Humidity range	Percentage of continuous relative humidity (see below)	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	

**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 2 Sensitivity Temperature Characteristics

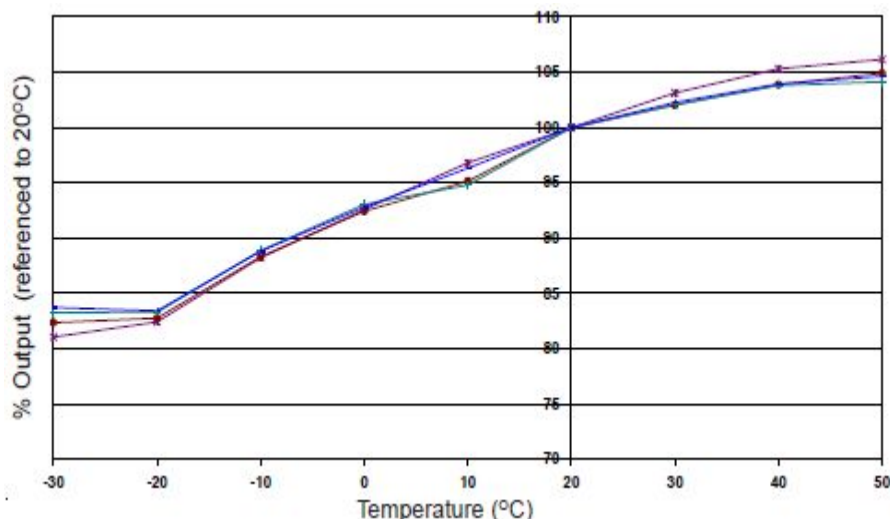


Figure 2 shows the change in sensor sensitivity caused by temperature changes.

Data was collected from typical batch sensors.

Figure 3 Zero Temperature Characteristics

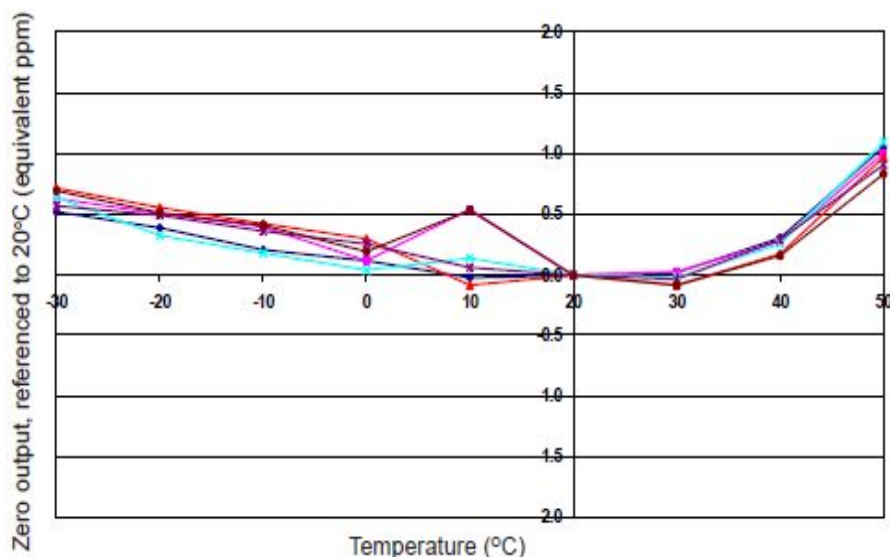


Figure 3 shows the change in zero point output caused by temperature changes, expressed as equivalent ppm values, with reference to the zero point at 20°C.

Data is taken from a typical batch of sensors.

Figure 4 Reaction  $SO_2$  at 1000ppm  $SO_2$

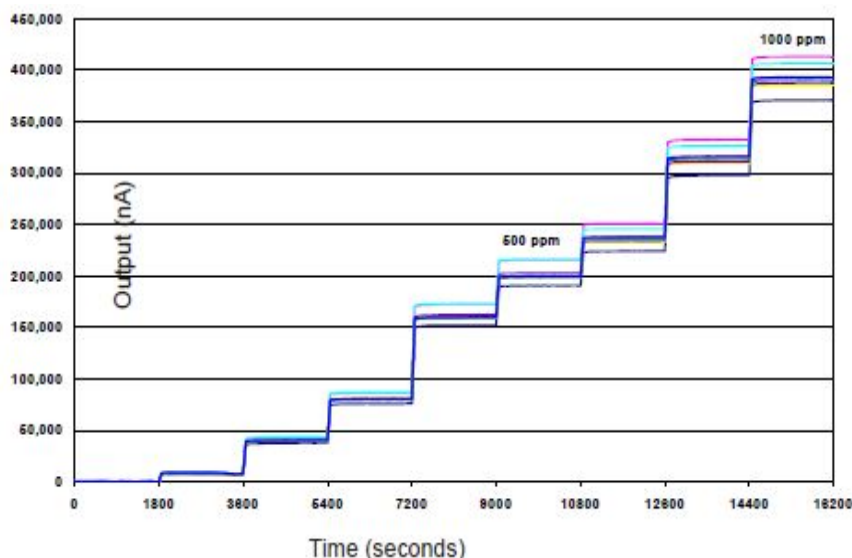


Figure 4 shows the reaction condition of  $SO_2$ -BF detection at 0~1000 ppm  $SO_2$ .

Data taken from a typical batch sensor.

The sensor maintains a stable linear output in the range of 0~1000ppm. At the same time, the performance of the sensor is not changed when it is restored from the overloaded gas.