

# Sulfur Dioxide (SO<sub>2</sub>) Sensor

Technical Data Sheet



Performance Specifications	
<b>RANGE</b>	0-25 ppm
<b>GAS CODE</b>	
X5000	50
S5000	D50
<b>DEFAULT SPAN VALUE</b>	10 ppm
<b>DEFAULT ALARMS</b>	
ALARM 1	2 ppm
ALARM 2	5 ppm
<b>SENSOR DESIGN</b>	Non-consuming electrochemical sensor
<b>SAFESWAP</b>	Sensor can be changed under power
<b>WARRANTY/SHELF LIFE</b>	3 years
<b>SENSOR LIFE<sup>2</sup></b>	>5 years
<b>CALIBRATION</b>	For greatest accuracy and zero stability, allow powered sensor 24 hours to acclimate before performing first calibration.
<b>REGULATOR</b>	1 LPM
<b>ZERO GAS</b>	Recommended
<b>CYLINDER BALANCE</b>	N <sub>2</sub> or air
<b>CAUTION</b>	Calibration gas expires faster than other gases. Check expiration date before use.
<b>ACCURACY<sup>1,4</sup></b>	< ±1% of measured value
<b>LINEARITY<sup>1</sup></b>	< ±2% of measured value
<b>OPERATING TEMPERATURE RANGE</b>	-40°C to 60° C (-40°F to 140° F)
<b>OPERATING HUMIDITY RANGE</b>	
INTERMITTENT	0% to 100 % relative humidity
CONTINUOUS	10% to 95% relative humidity, non-condensing
<b>TEMPERATURE EFFECTS</b>	
ZERO	< 0.01 ppm / °C
SENSITIVITY	< 0.1% of measured value / °C
<b>HUMIDITY EFFECTS</b>	
ZERO	No effect
SENSITIVITY	No effect
<b>ZERO DRIFT<sup>1</sup></b>	<1% FS/mo
<b>SPAN DRIFT<sup>1</sup></b>	<2% FS/mo
<b>RESPONSE TIME</b>	
T <sub>50</sub> <sup>1</sup>	< 3 seconds
T <sub>90</sub> <sup>1</sup>	< 6 seconds
RECOVERY T <sub>90</sub> <sup>1</sup>	< 25 seconds
<b>GAS EXPOSURE LIMITATION</b>	None
<b>WARM-UP TIME (X5000, S5000)<sup>1</sup></b>	2 minutes
<b>ADDITIONAL CONSIDERATIONS</b>	None

Cross Sensitivity Data		
Gas Applied	Concentration Applied	Cross Sensitivity
ACETONE	1,000 ppm	0 ppm
ACETYLENE	100 ppm	0.5 ppm
ACRYLONITRILE	1,000 ppm	0 ppm
METHYL ALCOHOL	100 ppm	0 ppm
ETHYL ALCOHOL	100 ppm	0 ppm
AMMONIA	300 ppm	0 ppm
BENZENE	50 ppm	0 ppm
BUTADIENE	2,000 ppm	6 ppm
CARBON DIOXIDE	10,000 ppm	0 ppm
CARBON MONOXIDE	100 ppm	0 ppm
CARBONYL SULFIDE	50 ppm	0 ppm
CHLORINE	10 ppm	0 ppm
ETHYLENE	20 ppm	0 ppm
ETHYLENE OXIDE	100 ppm	0 ppm
ETHYL ETHER	—	—
HEXANE	10,000 ppm	0 ppm
HYDROGEN	500 ppm	0 ppm
HYDROGEN CHLORIDE	40 ppm	0 ppm
HYDROGEN CYANIDE	35 ppm	6 ppm
HYDROGEN SULFIDE	40 ppm	0 ppm
ISOBUTANE	100 ppm	0 ppm
ISOBUTYLENE	100 ppm	0 ppm
METHANE	—	0 ppm
METHYL MERCAPTAN	50 ppm	0 ppm
ETHYL MERCAPTAN	30 ppm	0 ppm
NITROGEN OXIDE	50 ppm	0.3 ppm
NITROGEN DIOXIDE	60 ppm	-4 ppm
NITRIC OXIDE	100 ppm	0 ppm
R-22	1,000 ppm	0 ppm
R-404A	2,000 ppm	0 ppm
SULFUR DIOXIDE	10 ppm	10 ppm

<sup>1</sup> All performance values are typical as applied to new sensors in ambient laboratory conditions

<sup>2</sup> Individual results may vary based on individual sensor environmental exposure conditions

<sup>3</sup> As tested per ISA standards

<sup>4</sup> Does not account for variations in calibration gas accuracy

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice.

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