

MIDAS[®]-M

SULPHUR DIOXIDE

(SO₂)

Smart Sensor Specifications

Bringing new visibility, reliability, and ease-of-use to gas detection in semiconductor processing and industrial manufacturing.



| GAS MEASURED | SULPHUR DIOXIDE (SO ₂) |
|--|---|
| Cartridge Part Number | MMS-S2 |
| Sensor Technology | 3 electrode electrochemical cell |
| Measuring Range | SO ₂ 0 ppm to 8 ppm |
| Default Alarm 1 | 1 ppm (rising) |
| Default Alarm 2 | 2 ppm (rising) |
| Accuracy | <±5% of measured value Exposure to SO ₂ 4 ppm for 5 minutes |
| Response Time (t ^{62.5}) | Typical 7 seconds |
| Sensor Cartridge Life Expectancy | 24 months under typical application conditions |
| Operating Temperature | 0°C to 40°C (32°F to 104°F) |
| Effect of Temperature Zero Sensitivity | < ± 0.01 ppm/°C < ± 0.4% of measured value/°C |
| Operating Humidity (continuous) | 15% RH to 90% RH |
| Effect of Humidity Zero Sensitivity | No effect < ± 0.5% of measured value/% RH |
| Operating Pressure | 90 kPa to 110 kPa |
| Effect of Position | No effect in typical application |
| Long Term Drift Zero Sensitivity | TBA <10% of measured value/year |
| Calibration Gas | Sulphur Dioxide (2 ppm to 6 ppm, default 4 ppm) |
| Challenge Gas (Bump Test) | Sulphur Dioxide (4 ppm) |
| Warm Up Time | <10 minutes |
| Storage Temperature | 5°C to 25°C (41°F to 77°F) |

The sensor data listed is based on the test data under normal lab test conditions (20°C to 25°C, 0% RH to 60% RH, normal atmosphere pressure); observed performance may vary based on the actual monitoring system and the sampling conditions employed.

NOTE: The SO₂ sensor should not be used with O₃ or HF sensor in the same Midas[®]-M unit.

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OTHER DETECTABLE GASES

The following additional gases can be detected with this sensor cartridge. Sensor performance and characteristics will be representative of the data as tabulated above. Consult the technical manual to set up the Midas[®]-M transmitter with the designated identification code for each of the following gas types:

CROSS SENSITIVITIES

Each Midas-M sensor is potentially cross sensitive to other gases and this may cause a gas reading when exposed to other gases than those originally designated. The table below presents typical readings that will be observed when a new sensor cartridge is exposed to the cross sensitive gas (or a mixture of gases containing the cross sensitive species).

NOTE: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation.

| GAS/VAPOR | CHEMICAL FORMULA | CONCENTRATION APPLIED (ppm) | READING (ppm SO ₂) |
|-------------------|----------------------------------|-----------------------------|--------------------------------|
| Acetylene | C ₂ H ₂ | 10 | <30 |
| Ammonia | NH ₃ | 20 | 0 |
| Carbon Monoxide | CO | 300 | <1 |
| Chlorine | Cl ₂ | 5 | <-2 |
| Ethene | C ₂ H ₄ | 50 | <45 |
| Hydrogen | H ₂ | 400 | <1 |
| Hydrogen Cyanide | HCN | 10 | <5 |
| Hydrogen Sulphide | H ₂ S | 25 | <0.1 |
| Iso Propanol | C ₃ H ₇ OH | 3500 | 1.65 |
| Nitric Oxide | NO | 50 | 0 - 5 |
| Nitrogen Dioxide | NO ₂ | 6 | <-10 |
| Phosphine | PH ₃ | 0.6 | 1.5 |
| Silane | SiH ₄ | 10 | 8 (Overrange) |

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Manuals and other information about this product are available at:
www.honeywellanalytics.com/en/products/Midas-M



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