Honeywell

Midas® sensor cartridge specifications

Silane Group (SiH₄ Si₂H₆) MIDAS-S-SHX, MIDAS-E-SHX



| GAS MEASURED | Silane (SiH4) | |
|---|--|--|
| CARTRIDGE PART NUMBER | MIDAS-S-SHX 1 year standard warranty MIDAS-E-SHX 2 year extended warranty | |
| SENSOR TECHNOLOGY | 3 electrode electrochemical cell | |
| MEASURING RANGE (PPM) | SiH ₄ 0 – 20 ppm | |
| MINIMUM ALARM 1 SET POINT | 2.50 ppm | |
| REPEATABILITY | < ± 5% of measured value | |
| LINEARITY | < ± 5% of measured value | |
| RESPONSE TIME T62.5 | < 3 seconds | |
| SENSOR CARTRIDGE LIFE EXPECTANCY | ≥ 24 months under typical application conditions | |
| OPERATING TEMPERATURE EFFECT OF TEMPERATURE ZERO SENSITIVITY | 0° to + 40°C (32° to 104°F) <± 0.01 ppm / °C (0° to 20°C) <± 0.04 ppm / °C (20° to 40°C) <± 0.8% of measured value / °C | |
| OPERATING HUMIDITY (CONTINUOUS) EFFECT OF HUMIDITY 7FRO | 10 – 90 % rH | |
| SENSITIVITY | < 0.005 ppm / % rH < + 2% of measured value / % rH | |
| OPERATING PRESSURE | 90 - 110kPa | |
| EFFECT OF POSITION | No effect in typical application | |
| LONG TERM DRIFT ZERO SENSITIVITY | <pre>< 2 ppm / year < ± 10% of measured value / year</pre> | |
| CALIBRATION GAS | Silane (SiH ₄) | |
| CHALLENGE GAS (BUMP TEST) | Hydrogen Sulfide (H ₂ S) | |
| WARM UP TIME | < 20 minutes | |
| STORAGE TEMPERATURE | +5° to + 25°C (+41° to +77°F) | |

The sensor data listed is based on ideal test environment; observed performance may vary based on the actual monitoring system and the sampling conditions employed

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® transmitter with the designated identification code for each of the following gas types.

| DETECTABLE GAS | CHEMICAL FORMULA | MEASURING RANGE |
|----------------|--------------------------------|-----------------|
| Disilane | Si ₂ H ₆ | 0 – 2 ppm |

Cross Sensitivities

Each Midas® 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).

| GAS / VAPOR | CHEMICAL FORMULA | CONCENTRATION APPLIED (PPM) | READING (PPM HF) |
|-------------------|----------------------------------|--------------------------------|---------------------|
| Ammonia | NH ₃ | 100 | 0 |
| Arsine | AsH ₃ | 1 | 0.54 |
| Carbon Monoxide | CO | 2000 | 0.56 |
| Chlorine | Cl2 | 5 | -0.86 |
| Diborane | B ₂ H ₆ | 1 | 0.75 |
| Ethanol | C ₂ H ₅ OH | 500 | 0 |
| Hydrogen | H ₂ | 5000 | 0.45 |
| Hydrogen Chloride | HCl | 12.5 | 2.1 |
| Hydrogen Fluoride | HF | 10 | 0 |
| Hydrogen Sulfide | H ₂ S | 10 | 2.7 |
| Iso Propanol | СзН7ОН | 2000 | 0 |
| Nitrogen Dioxide | NO ₂ | 6 | -0.89 |
| Phosphine | PH ₃ | 1 | 1.13 |
| Sulfur Dioxide | SO ₂ | 50 | 3.5 |

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