



Meridian

Sensor Specifications



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Combustible catalytic bead sensor

Meridian combustible catalytic bead sensor

| | | | |
|------------------------|--|------------|---------------|
| Part Number | 096-3473-55 | | |
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 100% LEL | 1% LEL | 2.5% v/v CH4‡ |
| Accuracy/Linearity* | ±3% LEL for conc < 50% LEL ±5% LEL for conc ≥ 50% LEL | | |
| Response Time* | t50 < 10 sec t90 < 20 sec | | |
| Operating Temperature | -40 to +75°C (-40 to +167 F) | | |
| Operating Humidity | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |

Recommendations

| | |
|---------------------------|---|
| calibration Gas | Target combustible gas (methane default) |
| Surrogate Calibration Gas | Methane or Propane |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |
| Notes | ‡A minimum of 10% oxygen is required for the sensor to operate properly *Sensor may be adversely affected by exposure to silicones, sulfur compounds, halogens or lead-containing compounds. |

Common k-factors (relative to methane)

see Common K-Factors on Page 4

Common k-factors (relative to methane)

Meridian combustible catalytic bead sensor

| Common k-factors (relative to methane) | | | | | |
|---|----------|-----------------|--|----------|------------------|
| K-Factor | k-factor | COMMON SYNONYMS | K-Factor | k-factor | COMMON SYNONYMS |
| Acetaldehyde (C ₂ H ₄ O) | 0.64 | | Heptane (C ₇ H ₁₆) | 0.42 | |
| Acetone ((CH ₃) ₂ CO) | 0.60 | | n-Hexane (C ₆ H ₁₄) | 0.40 | |
| Acetylene (C ₂ H ₂) | 0.63 | | Hydrogen (H ₂) | 0.81 | |
| Ammonia (NH ₃) | 1.43 | | Isopropyl Alcohol ((CH ₃) ₂ CHOH) | 0.44 | Isopropanol, IPA |
| Benzene (C ₆ H ₆) | 0.45 | | Methane (CH ₄) | 1.00 | |
| 1,3-Butadiene (C ₄ H ₆) | 0.45 | | Methyl Alcohol (CH ₃ OH) | 0.78 | Methanol |
| n-Butane (C ₄ H ₁₀) | 0.52 | | Methylene Chloride (CH ₂ Cl ₂) | 1.11 | |
| Isobutane (C ₄ H ₁₀) | 0.45 | | Methyl Chloride (CH ₃ Cl) | 0.88 | |
| Isobutylene (C ₄ H ₈) | 0.58 | | Methyl Ethyl Ketone (C ₄ H ₈ O) | 0.43 | MEK |
| Butyl Acetate (C ₆ H ₁₂ O ₂) | 0.40 | | n-Octane (C ₈ H ₁₈) | 0.32 | |
| n-Butyl Alcohol (C ₄ H ₉ OH) | 0.45 | Butanol | Pentane (C ₅ H ₁₂) | 0.51 | |
| Chlorobenzene (C ₆ H ₅ Cl) | 0.38 | | Isopentane (C ₅ H ₁₂) | 0.46 | |
| Cyclohexane (C ₆ H ₁₂) | 0.46 | | Propane (C ₃ H ₈) | 0.51 | |
| Diethyl ether ((C ₂ H ₅) ₂ O) | 0.50 | | Propylene (C ₃ H ₆) | 0.62 | Propene |
| n-Decane (C ₁₀ H ₂₂) | 0.29 | | Propylene Oxide (C ₃ H ₆ O) | 0.44 | |
| Ethane (C ₂ H ₆) | 0.68 | | Styrene (C ₈ H ₈) | 0.43 | |
| Ethyl Acetate (C ₄ H ₈ O ₂) | 0.46 | | Tetrahydrofuran ((CH ₂) ₄ O) | 0.47 | THF |
| Ethyl Alcohol (CH ₃ CH ₂ OH) | 0.63 | Ethanol | Toluene (C ₇ H ₈) | 0.42 | |
| Ethylbenzene (C ₆ H ₅ CH ₂ CH ₃) | 0.41 | | Vinyl Chloride (C ₂ H ₃ Cl) | 0.56 | VCM |
| Ethylene (C ₂ H ₄) | 0.63 | Ethene | o-Xylene (C ₃ H ₁₀) | 0.38 | Xylene, Xylenes |
| Ethylene Oxide (C ₂ H ₄ O) | 0.49 | | | | |

K-factors may be used two ways:

- for a sensor calibrated to read methane:
When a gas other than methane is known to be present, multiply the reading times the k-factor to get the concentration of the interfering gas.
- To use methane to calibrate an instrument to read another gas:
Divide the methane cal gas concentration by the k-factor and span the instrument to that value.
Example: to span for methanol, apply 32% LEL methane and 32/0.78 = 41% LEL (methanol)

Ammonia (NH₃) sensor

Meridian ammonia (NH₃) sensor

| Part Number | 096-3473-03 | | |
|---------------------------|---|----------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 100 ppm (default) | 1 ppm | 50 ppm NH ₃ |
| | 50 ppm | 0.1 ppm | 25 ppm NH ₃ |
| | 250 ppm | 1 ppm | 50 ppm NH ₃ |
| | 300 ppm | 1 ppm | 300 ppm NH ₃ |
| 500 ppm | 1 ppm | 300 ppm NH ₃ | |
| Accuracy/Linearity* | ±2 ppm or 2% applied gas | | |
| Response Time* | t50: < 30 sec | | |
| | t90: 3 min | | |
| Operating Temperature | -5 to +50°C (23 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0.7 | Hydrazine | |
| | 0.6 | Hydrogen (H ₂) | |
| | 0.5 | MMH (monomethyl hydrazine) | |

Ratio: 1 ppm of interference gas will appear as the value shown on an NH₃ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|--|
| calibration Gas | Ammonia (NH ₃) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | *For a new sensor operating at 25°C, 50%RH |
| | †Sensor includes all listed ranges. |

Bromine, high RH (RS Br₂ HRH) Rock solid sensor

Meridian rock solid bromine, high RH (RS Br₂ HRH) sensor

| Part Number | 096-3473-24 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.01 ppm | 5 ppm Cl ₂ |
| | 1 ppm | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| Accuracy/Linearity* | ±0.5 ppm or 3% of applied gas | | |
| Response Time* | t50 ≤ 5 sec | | |
| | t90 ≤ 60 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | 1 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 0.9 | Fluorine (F ₂) | |
| | < 0.1 | Hydrogen Chloride (HCl) | |
| | < 0.1 | Ozone (O ₃) | |
| | < 0.01 | Sulfur Dioxide (SO ₂) | |
| | < 0.01 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS Br₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

RECOMMENDATIONS

| | |
|---------------------------|--|
| Calibration Gas | Bromine (Br ₂) |
| Surrogate Calibration Gas | Chlorine (Cl ₂) Span sensor to Cl ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | *For a new sensor operating at 25°C, 50%RH |
| | †Sensor includes all listed ranges. |
| | ‡Use Range-Invariant Calibration feature if < 1 ppm Cl ₂ calibration gas is unavailable. |
| | §This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%. |

NOTES:
Meridian

Carbon Monoxide (CO) Sensor

Meridian carbon monoxide (CO) sensor

| pN | 096-3473-01 | | |
|---------------------------|---|--|------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 100 ppm (default) | 1 ppm | 50 ppm CO |
| | 50 ppm | 0.1 ppm | 25 ppm CO |
| | 150 ppm | 1 ppm | 100 ppm CO |
| | 500 ppm | 1 ppm | 250 ppm CO |
| | 1000 ppm | 1 ppm | 500 ppm CO |
| Accuracy/Linearity* | ±5% of applied gas, or better | | |
| Response Time* | t50: < 5 sec | | |
| | t90: < 15 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) | | |
| Operating Humidity | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0.2 | Hydrogen (H ₂) | |
| | 0 | Hydrogen Sulfide (H ₂ S) | |
| | 0 | Isopropanol (IPA) ((CH ₃) ₂ CHOH) | |
| | 0.5 | Methanol (CH ₃ OH) | |
| | 0 | Methyl Mercaptan (CH ₃ SH) | |
| | 0 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a CO sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|--|
| Calibration Gas | Carbon Monoxide (CO) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |
| Notes | *For a new sensor operating at 25°C, 50%RH |
| | †Sensor includes all listed ranges. |

Chlorine, high RH (RS Cl₂ HRH) rock solid sensor

Meridian chlorine, high RH (RS Cl₂ HRH) rock solid sensor

| pN | | 096-3473-20 | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 5 ppm default | 0.01 ppm | 2 ppm Cl ₂ |
| | 1 ppm | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| | 10 ppm | 0.1 ppm | 5 ppm Cl ₂ |
| | 20 ppm | 0.1 ppm | 10 ppm Cl ₂ |
| Accuracy/Linearity* | ±0.5 ppm or 3% of applied gas | | |
| | Response Time* | t50 ≤ 5 sec | |
| Operating Temperature | t90 ≤ 60 sec | | |
| | -40 to +50°C (-40 to +122 F) | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1 | Bromine (Br ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 0.9 | Fluorine (F ₂) | |
| | < 0.1 | Hydrogen chloride (HCl) | |
| | < 0.1 | Ozone (O ₃) | |
| < 0.01 | Sulfur Dioxide (SO ₂) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS Cl₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|--|
| Calibration Gas | Chlorine (Cl ₂) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | *For a new sensor operating at 25°C, 50%RH |
| | †Sensor includes all listed ranges. |
| | ‡Use Range-Invariant Calibration feature if < 1 ppm Cl ₂ calibration gas is unavailable. |
| | §This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%. |

Chlorine, low RH (RS Cl₂ LRH) rock solid sensor

Meridian chlorine, low RH (RS Cl₂ LRH) rock solid sensor

| pN | 096-3473-21 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 5 ppm default | 0.01 ppm | 2 ppm Cl ₂ |
| | 1 ppm | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| | 10 ppm | 0.1 ppm | 5 ppm Cl ₂ |
| | 20 ppm | 0.1 ppm | 10 ppm Cl ₂ |
| | 30 ppm | 0.1 ppm | 10 ppm Cl ₂ |
| Accuracy/Linearity* | ±0.5 ppm or 3% of applied gas | | |
| Response Time* | t50 ≤ 5 sec | | |
| | t90 ≤ 60 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1 | Bromine (Br ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 0.9 | Fluorine (F ₂) | |
| | < 0.1 | Hydrogen Chloride (HCl) | |
| | < 0.1 | Ozone (O ₃) | |
| | < 0.01 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS Cl₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|--------------------------------------|
| Calibration Gas | Chlorine (Cl ₂) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |

Notes

*For a new sensor operating at 25°C, 50%RH

†Sensor includes all listed ranges.

‡Use Range-Invariant Calibration feature if < 1 ppm Cl₂ calibration gas is unavailable.

§This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 50% RH ± 15%.

Chlorine Dioxide, high RH (RS ClO₂ HRH) rock solid sensor

Meridian chlorine Dioxide, high RH (RS ClO₂ HRH) rock solid sensor

| | | | |
|---------------------------|---|-------------------------------------|-------------------------|
| Part Number | 096-3473-37 | | |
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 5 ppm default | 0.01 ppm | 5 ppm Cl ₂ |
| | 1 ppm | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| Accuracy/Linearity* | 10% of full scale | | |
| Response Time* | t50 ≤ 5 sec | | |
| | t90 ≤ 75 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0 | Ammonia (NH ₃) | |
| | 0.6 | Chlorine (Cl ₂) | |
| | 0 | Hydrogen chloride (HCl) | |
| | < 0.001 | Hydrogen sulfide (H ₂ S) | |
| | < 0.01 | Nitric oxide (NO) | |
| | 0.2 | Nitrogen dioxide (NO ₂) | |
| | 0.3 | Ozone (O ₃) | |
| < 0.001 | Sulfur Dioxide (SO ₂) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS ClO₂ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional cross-sensitivity information

Recommendations

| | |
|---------------------------|---|
| Calibration Gas | Chlorine Dioxide (ClO ₂) |
| Surrogate Calibration Gas | Chlorine (Cl ₂) Span sensor to 0.6 × Cl ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |
| | ‡ Use Range-Invariant Calibration feature if < 1 ppm Cl ₂ calibration gas is unavailable. |
| | § This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%. |

Chlorine Dioxide, low RH (RS ClO₂ LRH) rock solid sensor

Meridian chlorine dioxide, low RH (RS ClO₂ LRH) rock solid sensor

| Part Number | 096-3473-28 | | |
|---------------------------|---|-------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 5 ppm default | 0.01 ppm | 5 ppm Cl ₂ |
| | 1 ppm | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| Accuracy/Linearity* | 10% of full scale | | |
| Response Time* | t50 ≤ 5 sec | | |
| | t90 ≤ 75 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0 | Ammonia (NH ₃) | |
| | 0.6 | Chlorine (Cl ₂) | |
| | 0 | Hydrogen Chloride (HCl) | |
| | < 0.001 | Hydrogen sulfide (H ₂ S) | |
| | < 0.01 | Nitric oxide (NO) | |
| | 0.2 | Nitrogen dioxide (NO ₂) | |
| | 0.3 | Ozone (O ₃) | |
| < 0.001 | Sulfur Dioxide (SO ₂) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS ClO₂ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional cross-sensitivity information

Recommendations

| | |
|---------------------------|---|
| Calibration Gas | Chlorine Dioxide (ClO ₂) |
| Surrogate Calibration Gas | Chlorine (Cl ₂) Span sensor to 0.6 × Cl ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |
| | ‡ Use Range-Invariant Calibration feature if < 1 ppm Cl ₂ calibration gas is unavailable. |
| | § This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 50% RH ± 15%. |

Fluorine, high RH (RS F₂ HRH) rock solid sensor

MERIDIAN ROCK SOLID FLUORINE, HIGH RH (RS F₂ HRH) SENSOR

| PN | 096-3473-22 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 5 ppm default | 0.01 ppm | 2 ppm Cl ₂ |
| | 1 ppm | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| Accuracy/Linearity* | ±0.5 ppm or 3% of applied gas | | |
| Response Time* | t50 ≤ 5 sec | | |
| | t90 ≤ 60 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.1 | Bromine (Br ₂) | |
| | 1.1 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | < 0.1 | Hydrogen Chloride (HCl) | |
| | < 0.1 | Ozone (O ₃) | |
| | < 0.01 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS F₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|--|
| calibration Gas | Fluorine (F ₂) |
| Surrogate Calibration Gas | Chlorine (Cl ₂) Span sensor to 1.1 × Cl ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | *For a new sensor operating at 25°C, 50%RH |
| | †Sensor includes all listed ranges. |
| | ‡Use Range-Invariant Calibration feature if < 1 ppm Cl ₂ calibration gas is unavailable. |
| | §This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%. |

Fluorine, low RH (RS F₂ LRH) rock solid sensor

Meridian rock solid fluorine, low RH (RS F₂ LRH) sensor

| pN | 096-3473-23 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 1 ppm default | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| | 5 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| Accuracy/Linearity* | ±0.5 ppm or 3% of applied gas | | |
| Response Time* | t50 ≤ 5 sec | | |
| | t90 ≤ 60 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.1 | Bromine (Br ₂) | |
| | 1.1 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | < 0.1 | Hydrogen Chloride (HCl) | |
| | < 0.1 | Ozone (O ₃) | |
| | < 0.01 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS F₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|--|
| calibration Gas | Fluorine (F ₂) |
| Surrogate Calibration Gas | Chlorine (Cl ₂) Span sensor to 1.1 × Cl ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |
| | ‡ Use Range-Invariant Calibration feature if < 1 ppm Cl ₂ calibration gas is unavailable. |

§ This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 50% RH ± 15%.

Hydrogen (H₂) Sensor

Meridian hydrogen (H₂) sensor

| | | | |
|---------------------------|---|-------------------------------------|-------------------|
| Part Number | 096-3473-12 | | |
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges † | Range | Resolution | Cal Gas |
| | 4% (default) | 0.01% | 2% H ₂ |
| | 1% | 0.01% | 1% H ₂ |
| Accuracy/Linearity* | ±3% full scale for conc < 50% full scale | | |
| | ±5% full scale for conc ≥ 50% full scale | | |
| Response Time* | t50 < 12 sec | | |
| | t90 < 110 min | | |
| Operating Temperature | -30 to +50°C (-22 to +122 F) | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0 | Ammonia (NH ₃) | |
| | 0 | Carbon Monoxide (CO) | |
| | 0 | Chlorine (Cl ₂) | |
| | 2.2 | Hydrogen Sulfide (H ₂ S) | |
| | 0 | Methane (CH ₄) | |
| | 0 | Nitric Oxide (NO) | |
| | 0 | Nitrogen Dioxide (NO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a H₂ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional crosssensitivity information

Recommendations

| | |
|-----------------------------|---|
| calibration Gas | Hydrogen (H ₂) |
| Surrogate Calibration Gas†† | none recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |

Hydrogen Chloride, High RH (RS HCl HRH) Rock solid sensor

Meridian hydrogen chloride, high RH (RS HCl HRH) rock solid sensor

| pN | 096-3473-25 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.1 ppm | 5 ppm SO ₂ |
| | 1 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 25 ppm | 0.1 ppm | 9 ppm SO ₂ |
| Accuracy/Linearity* | ±4% of applied gas | | |
| Response Time* | t50 < 20 sec | | |
| | t90 < 60 sec | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.3 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 1.6 | Fluorine (F ₂) | |
| | 1 | Hydrogen Fluoride (HF) | |
| | < 0.5 | Hydrogen Sulfide (H ₂ S) | |
| | < 0.1 | Ozone (O ₃) | |
| 1.3 | Sulfur Dioxide (SO ₂) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS HCl sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|----------------------------|--|
| calibration Gas | Hydrogen Chloride (HCl) |
| Surrogate Calibration Gas¶ | Sulfur Dioxide (SO ₂) Span sensor to 1.3 × SO ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon for SO ₂ ; Teflon or other fluoropolymer tubing for HCl |

*For a new sensor operating at 25°C, 50%RH

†Sensor includes all listed ranges.

‡Use Range-Invariant Calibration feature if < 1 ppm HCl or SO₂ calibration gas is unavailable.

Notes

§This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%.

¶Cl₂ may be used to adjust the sensor output but must be followed with an acid-gas bump to ensure proper function. Acceptable bump gases include: HF, HCl, SO₂, acetic acid (vinegar).

Hydrogen Chloride, Low RH (RS HCl LRH) Rock solid sensor

Meridian hydrogen chloride, low RH (RS HCl LRH) rock solid sensor

| pN | 096-3473-26 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.1 ppm | 5 ppm SO ₂ |
| | 1 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 25 ppm | 0.1 ppm | 9 ppm SO ₂ |
| Accuracy/Linearity* | ±4% of applied gas | | |
| Response Time* | t50 < 20 sec | | |
| | t90 < 60 sec | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.3 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 1.6 | Fluorine (F ₂) | |
| | 1 | Hydrogen Fluoride (HF) | |
| | < 0.5 | Hydrogen Sulfide (H ₂ S) | |
| | < 0.1 | Ozone (O ₃) | |
| 1.3 | Sulfur Dioxide (SO ₂) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS HCl sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|----------------------------|--|
| calibration Gas | Hydrogen Chloride (HCl) |
| Surrogate Calibration Gas¶ | Sulfur Dioxide (SO ₂) Span sensor to 1.3 × SO ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon for SO ₂ ; Teflon or other fluoropolymer tubing for HCl |

| | |
|-------|--|
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |
| | ‡ Use Range-Invariant Calibration feature if < 1 ppm HCl or SO ₂ calibration gas is unavailable. |
| | § This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 50% RH ± 15%. |
| | ¶ Cl ₂ may be used to adjust the sensor output but must be followed with an acid-gas bump to ensure proper function. Acceptable bump gases include: HF, HCl, SO ₂ , acetic acid (vinegar). |

Hydrogen Cyanide (HCN) Sensor

Meridian hydrogen cyanide (HCN) sensor

| Part Number | 096-3473-11 | | |
|---|--|--|-------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 25 ppm default | 1 ppm | 10 ppm HCN |
| | 100 ppm | 1 ppm | 10 ppm HCN‡ |
| Accuracy/Linearity* | ±10% applied gas for conc ≥ 50% full scale | | |
| Response Time* | t50 < 15 sec | | |
| | t90 < 2.5 min | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0.25 | Acetylene (C ₂ H ₂) | |
| | 0.05 | Carbon Monoxide (CO) | |
| | 6 | Hydrogen Sulfide (H ₂ S) | |
| | -1 | Nitric Oxide (NO) | |
| | -3 | Nitrogen Dioxide (NO ₂) | |
| | 3 | Sulfur Dioxide (SO ₂) | |
| Ratio: 1 ppm of interference gas will appear as the value shown on a HCN sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional cross-sensitivity information | | | |
| Recommendations | | | |
| calibration Gas | Hydrogen Cyanide (HCN) | | |
| Surrogate Calibration Gas¶ | none recommended | | |
| Calibration Frequency | Quarterly | | |
| Calibration Tubing | Teflon or other fluoropolymer tubing | | |
| Notes | * For a new sensor operating at 25°C, 50%RH | | |
| | † Sensor includes all listed ranges. | | |
| | ‡ Use Range-Invariant Calibration feature if > 20 ppm HCN calibration gas is unavailable | | |

Hydrogen Fluoride, high RH (RS HF HRH) Rock solid sensor

Meridian hydrogen fluoride, high RH (RS HF HRH) rock solid sensor

| pN | 096-3473-27 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.1 ppm | 5 ppm SO ₂ |
| | 1 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 5 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 30 ppm | 0.1 ppm | 9 ppm SO ₂ |
| Accuracy/Linearity* | ±4% of applied gas | | |
| Response Time* | t50 < 20 sec | | |
| | t90 < 60 sec | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.3 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 1.6 | Fluorine (F ₂) | |
| | 1 | Hydrogen Fluoride (HF) | |
| | < 0.5 | Hydrogen Sulfide (H ₂ S) | |
| | < 0.1 | Ozone (O ₃) | |
| | 1.3 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS HF sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|----------------------------|--|
| calibration Gas | Hydrogen Chloride (HCl) |
| Surrogate Calibration Gas¶ | Sulfur dioxide (SO ₂) Span sensor to 1.3 × SO ₂ cal gas concentration |
| | Hydrogen Chloride (HCl) Span sensor to HCl cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon for SO ₂ ; Teflon or other fluoropolymer tubing for HCl |

*For a new sensor operating at 25°C, 50%RH

†Sensor includes all listed ranges.

‡Use Range-Invariant Calibration feature if < 1 ppm HF, HCl or SO₂ calibration gas is unavailable.

Notes

§This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%.

¶Cl₂ may be used to adjust the sensor output but must be followed with an acid-gas bump to ensure proper function. Acceptable bump gases include: HF, HCl, SO₂, acetic acid (vinegar).

Hydrogen Fluoride, low RH (RS HF LRH) Rock solid sensor

Meridian hydrogen fluoride, low RH (RS HF LRH) rock solid sensor

| pN | 096-3473-28 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.1 ppm | 5 ppm SO ₂ |
| | 1 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 5 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 30 ppm | 0.1 ppm | 9 ppm SO ₂ |
| Accuracy/Linearity* | ±4% of applied gas | | |
| Response Time* | t50 < 20 sec | | |
| | t90 < 60 sec | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.3 | Chlorine (Cl ₂) | |
| | 0.4 | Chlorine Dioxide (ClO ₂) | |
| | 1.6 | Fluorine (F ₂) | |
| | 1 | Hydrogen Chloride (HCl) | |
| | < 0.5 | Hydrogen Sulfide (H ₂ S) | |
| | < 0.1 | Ozone (O ₃) | |
| | 1.3 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS HF sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|----------------------------|--|
| calibration Gas | Hydrogen Fluoride (HF) |
| Surrogate Calibration Gas¶ | Sulfur Dioxide (SO ₂) Span sensor to 1.3 × SO ₂ cal gas concentration |
| | Hydrogen Chloride (HCl) Span sensor to HCl cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon for SO ₂ ; Teflon or other fluoropolymer tubing for HCl |

| | |
|-------|--|
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |
| | ‡ Use Range-Invariant Calibration feature if < 1 ppm HF, HCl or SO ₂ calibration gas is unavailable. |
| | § This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 50% RH ± 15%. |
| | ¶ Cl ₂ may be used to adjust the sensor output but must be followed with an acid-gas bump to ensure proper function. Acceptable bump gases include: HF, HCl, SO ₂ , acetic acid (vinegar). |

Hydrogen Sulfide (low methanol) (H₂S-LM) sensor

Meridian hydrogen sulfide (low methanol) (H₂S-LM) sensor

| pN | 096-3473-02 | | |
|---------------------------|---|--|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 50 ppm (default) | 0.1 ppm | 25 ppm H ₂ S |
| | 10 ppm | 0.1 ppm | 10 ppm H ₂ S |
| | 25 ppm | 0.1 ppm | 10 ppm H ₂ S |
| | 100 ppm | 1 ppm | 50 ppm H ₂ S |
| Accuracy/Linearity* | ±1% of applied gas, or better | | |
| Response Time* | t50: < 15 sec | | |
| | t90: < 45 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) | | |
| Operating Humidity | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0 | Carbon Monoxide (CO) | |
| | 0 | Hydrogen (H ₂) | |
| | 0 | Isopropanol (IPA) ((CH ₃) ₂ CHOH) | |
| | 0 | Methanol (CH ₃ OH) | |
| | 0 | Methyl Mercaptan (CH ₃ SH) | |
| | < 0.2 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on an H₂S-LM sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|---|
| calibration Gas | Hydrogen Sulfide (H ₂ S) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |

Nitrogen Dioxide (NO₂) Sensor

Meridian nitrogen dioxide (NO₂) sensor

| Part Number | 096-3473-54 | | |
|---------------------------|---|-------------------------------------|-----------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm (default) | 0.1 ppm | 5 ppm NO ₂ |
| | 20 ppm | 0.1 ppm | 5 ppm NO ₂ |
| Accuracy/Linearity* | ±0.6% full scale for conc < 50% full scale | | |
| | ±10% applied gas for conc ≥ 50% full scale | | |
| Response Time* | t50 < 5 sec | | |
| | t90 < 75 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0 | Ammonia (NH ₃) | |
| | 0 | Carbon Monoxide (CO) | |
| | -1 | Chlorine (Cl ₂) | |
| | 0 | Hydrogen (H ₂) | |
| | 0.08 | Hydrogen Sulfide (H ₂ S) | |
| | 0 | Nitric Oxide (NO) | |
| | 1.4 | Ozone (O ₃) | |
| 0 | Sulfure Dioxide (SO ₂) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a NO₂ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional cross-sensitivity information

Recommendations

| | |
|---------------------------|---|
| calibration Gas | Nitrogen Dioxide (NO ₂) |
| Surrogate Calibration Gas | none recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |

Oxygen (O₂) Sensor

Meridian oxygen (O₂) sensor

| pN | 096-3473-19 | | |
|---------------------------|--|------------|--|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 25% V/V (default) | 0.1% V/V | 20.9% O ₂ and 100% N ₂ |
| | 10% V/V | 0.1% V/V | 20.9% O ₂ ‡ and 100% N ₂ |
| Accuracy/Linearity* | 0.25% V/V | | |
| Response Time* | t50: < 5 sec | | |
| | t90: < 20 sec | | |
| Operating Temperature | -30 to +50°C (-22 to +122 F) | | |
| Operating Humidity | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Recommendations | | | |
| calibration Gas | Nitrogen (N ₂) and Air | | |
| Surrogate Calibration Gas | None Recommended | | |
| Calibration Frequency | Quarterly | | |
| Calibration Tubing | Tygon | | |
| Notes | * For a new sensor operating at 25°C, 50%RH | | |
| | † Sensor includes all listed ranges. | | |
| | ‡ Use Range-Invariant Calibration feature if <10% O ₂ calibration gas is unavailable. | | |

Ozone, High RH (RS O₃ HRH) Rock solid sensor

Meridian hydrogen fluoride, low RH (RS O₃ HRH) rock solid sensor

| Part Number | 096-3473-39 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 1 ppm default | 0.01 ppm | 2 ppm Cl ₂ ‡ |
| | 3 ppm | 0.01 ppm | 2 ppm Cl ₂ |
| Accuracy/Linearity* | ±0.5 ppm or 3% of applied gas | | |
| Response Time* | t50 < 10 sec | | |
| | t90 < 2 min | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 08 | Chlorine (Cl ₂) | |
| | 0.6 | Chlorine Dioxide (ClO ₂) | |
| | 0.002 | Hydrogen Chloride (HCl) | |
| | < 0.001 | Hydrogen Sulfide (H ₂ S) | |
| | 0.001 | Nitric oxide (NO) | |
| | 0.06 | Nitrogen dioxide (NO ₂) | |
| | 0 | Sulfur Dioxide (SO ₂) | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS O₃ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional cross-sensitivity information

Recommendations

| | |
|----------------------------|--|
| calibration Gas | Ozone (O ₃) |
| Surrogate Calibration Gas¶ | Sulfur Dioxide (SO ₂) Span sensor to 1.3 × SO ₂ cal gas concentration |
| | Chlorine (Cl ₂) Span sensor to 0.8 × Cl ₂ cal gas concentration |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Teflon or other fluoropolymer tubing |
| Notes | *For a new sensor operating at 25°C, 50%RH |
| | †Sensor includes all listed ranges. |
| | ‡Use Range-Invariant Calibration feature if < 2 ppm Cl ₂ calibration gas is unavailable |
| | §This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 70% RH ± 15%. |

Silane (SiH₄) Sensor

Meridian Silane (SiH₄) Senore

| Part Number | 096-3473-09 | | |
|---------------------------|---|--|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm (default) | 0.1 ppm | 16 ppm PH ₃ |
| | 1 ppm | 0.01 ppm | 500 ppb PH ₃ |
| Accuracy/Linearity* | ±5% full scale for conc < 50% full scale | | |
| | ±10% applied gas for conc ≥ 50% full scale | | |
| Response Time* | t50 < 10 sec | | |
| | t90 < 45 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0 | Ammonia (NH ₃) | |
| | 1.6 | Arsine (AsH ₃) | |
| | 0 | Diborane (B ₂ H ₆) | |
| | 1.6 | Germane (GeH ₄) | |
| | 0.01 | Hydrogen Cyanide (HCN) | |
| | < 0.001 | Isopropanol (IPA) ((CH ₃) ₂ CHOH) | |
| 1.7 | Phosphine (PH ₃) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a SiH₄ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional crosssensitivity information

Recommendations

| | |
|---------------------------|---|
| calibration Gas | Silane (SiH ₄) |
| Surrogate Calibration Gas | Phosphine (PH ₃) Span sensor to 1.7 × PH ₃ cal gas |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |

Sulfur Dioxide, high RH (SO₂ HRH) sensor

Meridian sulfur dioxide, high RH (SO₂ HRH) sensor

| Part Number | 096-3473-05 | | |
|---------------------------|---|-------------------------------------|--------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 50 ppm (default) | 0.1 ppm | 16 ppm SO ₂ |
| | 10 ppm | 0.1 ppm | 5 ppm SO ₂ |
| | 100 ppm | 1 ppm | 16 ppm SO ₂ ‡ |
| | 500 ppm | 1 ppm | 16 ppm SO ₂ |
| Accuracy/Linearity* | ±5% full scale for conc < 50% full scale | | |
| | ±10% applied gas for conc ≥ 50% full scale | | |
| Response Time* | t50 < 5 sec | | |
| | t90 < 60 sec | | |
| Operating Temperature | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 0.04 | Chlorine (Cl ₂) | |
| | < 0.01 | Hydrogen (H ₂) | |
| | 0 | Hydrogen Fluoride (HF) | |
| | 0.06 | Hydrogen Sulfide (H ₂ S) | |
| | 0.4 | Nitric Oxide (NO) | |
| | -0.07 | Nitrogen Dioxide (NO ₂) | |
| | 2 | Phosphine (PH ₃) | |

Ratio: 1 ppm of interference gas will appear as the value shown on an SO₂ sensor. Other gases may influence sensor; refer to controlled document 062-0064 for additional crosssensitivity information

Recommendations

| | |
|---------------------------|-----------------------------------|
| calibration Gas | Sulfur Dioxide (SO ₂) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |

* For a new sensor operating at 25°C, 50%RH

† Sensor includes all listed ranges.

Notes

‡ Use Range-Invariant Calibration feature if > 20 ppm SO₂ calibration gas is unavailable.

§ This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%.

Sulfur Dioxide, high RH (RS SO₂ HRH) Rock Solid sensor

Meridian sulfur dioxide, high RH (RS SO₂ HRH) rock solid sensor

| pN | 096-3473-31 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.1 ppm | 5 ppm SO ₂ |
| | 1 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 3 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 25 ppm | 0.1 ppm | 9 ppm SO ₂ |
| Accuracy/Linearity* | ±5% reading | | |
| Response Time* | t50 < 5 sec | | |
| | t90 < 75 sec | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.6 | Chlorine (Cl ₂) | |
| | 0.5 | Chlorine Dioxide (ClO ₂) | |
| | 1.5 | Fluorine (F ₂) | |
| | 0.8 | Hydrogen Chloride (HCl) | |
| | 0.8 | Hydrogen Fluoride (HF) | |
| | < 0.5 | Hydrogen Sulfide (H ₂ S) | |
| < 0.1 | Ozone (O ₃) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS SO₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information

Recommendations

| | |
|---------------------------|-----------------------------------|
| calibration Gas | Sulfur Dioxide (SO ₂) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |

| | |
|-------|---|
| Notes | * For a new sensor operating at 25°C, 50%RH |
| | † Sensor includes all listed ranges. |
| | ‡ Use Range-Invariant Calibration feature if < 3 ppm SO ₂ calibration gas is unavailable. |
| | § This sensor is optimized for best performance and longevity in relatively humid conditions. Recommend 70% RH ± 15%. |

Sulfur dioxide, low RH (RS SO₂ LRH) Rock solid sensor

Meridian sulfur dioxide, low RH (RS SO₂ LRH) rock solid sensor

| pN | 096-3473-32 | | |
|---------------------------|---|--------------------------------------|-------------------------|
| Compatible Instruments | Meridian Universal Gas Detector | | |
| Ranges† | Range | Resolution | Cal Gas |
| | 10 ppm default | 0.1 ppm | 5 ppm SO ₂ |
| | 1 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 3 ppm | 0.01 ppm | 5 ppm SO ₂ ‡ |
| | 25 ppm | 0.1 ppm | 9 ppm SO ₂ |
| Accuracy/Linearity* | ±5% reading | | |
| Response Time* | t50 < 5 sec | | |
| | t90 < 75 sec | | |
| Operating Temperature | -20 to +50°C (-4 to +122 F) | | |
| | -40 to +50°C (-40 to +122 F) non-condensing | | |
| Operating Humidity § | 5-95% RH, non-condensing | | |
| Operating Pressure | 100 kPa ± 20 kPa (29.5 in Hg ± 5.9 in Hg) | | |
| Common Interference Gases | Ratio | Interference Gas | |
| | 1.6 | Chlorine (Cl ₂) | |
| | 0.5 | Chlorine Dioxide (ClO ₂) | |
| | 1.5 | Fluorine (F ₂) | |
| | 0.8 | Hydrogen Chloride (HCl) | |
| | 0.8 | Hydrogen Fluoride (HF) | |
| | < 0.5 | Hydrogen Sulfide (H ₂ S) | |
| < 0.1 | Ozone (O ₃) | | |

Ratio: 1 ppm of interference gas will appear as the value shown on a RS SO₂ sensor. Other gases may influence sensor; refer to Appendix A on page 24 for additional cross-sensitivity information.

Recommendations

| | |
|---------------------------|-----------------------------------|
| calibration Gas | Sulfur Dioxide (SO ₂) |
| Surrogate Calibration Gas | None Recommended |
| Calibration Frequency | Quarterly |
| Calibration Tubing | Tygon |

*For a new sensor operating at 25°C, 50%RH

†Sensor includes all listed ranges.

Notes

‡Use Range-Invariant Calibration feature if < 3 ppm SO₂ calibration gas is unavailable.

§This sensor is optimized for best performance and longevity in relatively dry conditions. Recommend 50% RH ± 15%.

NOTES:
Meridian

Guidelines for using the Meridian interference table

- The gas interference table does not show, nor should it be implied that no additional interferences may occur. These selectivity ratios are used as guides only. The gas species' actual cross-sensitivities may vary from the values shown.
- It is always best practice to use the target gas to calibrate any sensor. In some cases, however, the target gas is not practically available in a known or stable concentration. In these instances, a surrogate calibration gas may be used. Selectivity ratios for acceptable surrogates are indicated with grey cell highlights.
- For each sensor type, the table shows how 1 ppm of an Interference Gas appears on that specific sensor type. For example, 1 ppm chlorine dioxide (ClO₂) will appear as 0.4 ppm chlorine on a Rock Solid Cl₂ sensor (096-3473-20 or 096-3473-21).

Key for table

| | |
|----------------------|--|
| Zero | Indicates tested and confirmed no interferences |
| Blank | Indicates not tested |
| Neg | Indicates gas produces a negative signal but a stable Ratio has not been defined |
| Yes | Indicates gas produces a positive signal but a stable Ratio has not been defined |
| Two values in a cell | Indicates initial peak (in parentheses) and final offset |
| Dark grey highlight | Indicates target calibration gas or acceptable Surrogate calibration gas |

Meridian sensor interference table

SENSORS

| SENSORS | SENSORS | | | | | | | | | | | | | | | | | |
|--------------------|--|---|---|----------------------------|--|----------------------|---|--|---|---|---|--|---|---------------------------------------|--|-------------------------------------|---|--|
| | Meridian Sensor: Part Number: Target Gas: | Ammonia (NH ₃) 096-3473-03 | Rock Solid Br ₂ Hi RH (NH ₃) 096-3473-24 | Bromine (Br ₂) | Carbon Monoxide (CO) 096-3473-01 | Carbon Monoxide (CO) | Rock Solid Cl ₂ / Hi RH Rock Solid Cl ₂ / Lo RH 096-3473-20 | Chlorine (Cl ₂) 096-3473-21 | Rock Solid F ₂ / Hi RH Rock Solid F ₂ / Lo RH 096-3473-22 | Fluorine (F ₂) 096-3473-23 | Rock Solid HCl, Hi RH Rock Solid HCl, Lo RH 096-3473-25 | Hydrogen Chloride (HCl) 096-3473-26 | Rock Solid HF, Hi RH Rock Solid HF, Lo RH 096-3473-27 | Hydrogen Fluoride (HF) 096-3473-28 | H ₂ Low Methanol 096-3473-02 | Hydrogen Sulfide (H ₂ S) | Rock Solid SO ₂ / Hi RH Rock Solid SO ₂ / Lo RH 096-3473-31 | Sulfur Dioxide (SO ₂) 096-3473-32 |
| INTERFERENCE GASES | Acetylene (C ₂ H ₂) | (0.07) 0.04 | | | 0.3 | | | | | | | | | | 0 | | | |
| | Ammonia (NH ₃) | 1 | 0 | | 0 | | 0 | | 0 | | | | | | 0 | | | |
| | Arsine (AsH ₃) | (2.7) 1.6 | | | 0 | | | | | | | | | | 0.8 | | | |
| | Boron Trichloride (BCl ₃) | | | | | | | | | | 0.5 | | 0.5 | | | | | 0.4 |
| | Boron Trifluoride (BF ₃) | | | | | | | | | | 0.4 | | 0.4 | | | | | 0.3 |
| | Bromine (Br ₂) | NEG | 1 | | | | 1 | | 1.1 | | YES | | YES | | | | | YES |
| | Carbon Monoxide (CO) | 0.4 | | | 1 | | | | | | | | | | 0 | | | |
| | Chlorine (Cl ₂) | (-0.2) -0.09 | 1 | | 0 | | 1 | | 1.1 | | 1.3 | | 1.3 | | -0.2 | | | 1.7 |
| | Chlorine Dioxide (ClO ₂) | | | 0.4 | | | 0.4 | | 0.4 | | 0.4 | | 0.4 | | | | | 0.5 |
| | Diborane (B ₂ H ₆) | | | | | | | | | | 1 | | 1 | | | | | 0.9 |
| | Dichloro-silane (SiH ₂ Cl ₂) | 0.2 | | | 0 | | | | | | | | | | 0 | | | |
| | Disilane (Si ₂ H ₆) | 0 | | | 0.5 | | | | | | | | | | 0 | | | |
| | Ethanol (C ₂ H ₅ OH) | 0.2 | | | 0 | | | | | | | | | | 0 | | | |
| | Ethylene Oxide (EtO) (C ₂ H ₄ O) | 0 | | | 0.5 | | | | | | | | | | 0 | | | |
| | Fluorine (F ₂) | YES | 0.9 | | | | 0.9 | | 1 | | 1.6 | | 1.6 | | | | | 1.5 |
| | Germane (GeH ₄) | | | | | | | | | | | | | | | | | |
| | Hydrogen (H ₂) | (1) 0.6 | 0 | | 0.19 | | 0 | | 0 | | 0 | | 0 | | 0 | | | 0 |
| | Hydrogen Bromide (HBr) | NEG | | | | | | | | | | | 0.6 | | 0.6 | | | 0.6 |
| | Hydrogen Chloride (HCl) | (-0.2) -0.1 | (0.1) 0.01 | | 0 | | (0.1) 0.01 | | (0.1) 0.01 | | 1 | | 1 | | 0.01 | | | 0.8 |
| | Hydrogen Cyanide (HCN) | -0.067 | | | 0 | | | | | | | | | | 0 | | | |

Meridian sensor interference table

SENSORS

SENSORS

| Meridian Sensor: Part Number: Target Gas: | Ammonia (NH ₃) 096-3473-03 Ammonia (NH ₃) | Rock Solid Br, Hi RH (NH ₃) 096-3473-24 Bromine (Br ₂) | Carbon Monoxide (CO) 096-3473-01 Carbon Monoxide (CO) | Rock Solid Cl ₂ , Hi RH Rock Solid Cl ₂ , Lo RH 096-3473-20 096-3473-21 Chlorine (Cl ₂) | Rock Solid F, Hi RH Rock Solid F, Lo RH 096-3473-22 096-3473-23 Fluorine (F ₂) | Rock Solid HCl, Hi RH Rock Solid HCl, Lo RH 096-3473-25 096-3473-26 Hydrogen Chloride (HCl) | Rock Solid HF, Hi RH Rock Solid HF, Lo RH 096-3473-27 096-3473-28 Hydrogen Fluoride (HF) | H ₂ S Low Methanol 096-3473-02 Hydrogen Sulfide (H ₂ S) | Rock Solid SO ₂ , Hi RH Rock Solid SO ₂ , Lo RH 096-3473-31 096-3473-32 Sulfur Dioxide (SO ₂) |
|---|---|---|---|--|--|--|--|---|---|
|---|---|---|---|--|--|--|--|---|---|

INTERFERENCE GASES

| | | | | | | | | | |
|--|-----------------|-----------------|-------|--------------|-----------------|-----------------|-----------------|--------|-----------------|
| Hydrogen Fluoride (HF) | NEG | | | | | 1 | 1 | | |
| Hydrogen Sulfide (H ₂ S) | (0.05) 0.01 | 0 | 0 | 0 | 0 | (-0.001) 0.4 | (-0.001) 0.4 | 1 | (-0.002) 0.5 |
| Iodine (I ₂) | | 0.2 | | 0.2 | 0.2 | | | | |
| Isopropanol (CH ₃) ₂ CHOH | 0.3 | | 0 | | | | | 0 | |
| Methanol (CH ₃ OH) | 0.4 | | 0.5 | | | | | 0 | |
| Methyl Iodide (CH ₃ I) | | | | | | | | | |
| Methyl Mercaptan (CH ₃ SH) | 0 | | 0 | | | | | 0 | |
| Monomethyl Hydrazine (MMH) CH ₃ NHNH ₂ | 0.5 | | | | | | | | |
| Nitric Oxide (NO) | (-0.1) -0.09 | <0.001 | -0.03 | <0.001 | <0.001 | 0.002 | 0.002 | -0.005 | 0.003 |
| Nitrogen Dioxide (NO ₂) | -0.6 | 0.02 | 0 | 0.02 | 0.02 | 0.02 | 0.02 | -0.2 | 0.03 |
| Ozone (O ₃) | 0.7 | 0.07 | 0.5 | 0.07 | 0.08 | 0.06 | 0.06 | -0.2 | 0.08 |
| Phosphine (PH ₃) | (2.8) 1.3 | | 0 | | | | | 0.6 | |
| Silane (SiH ₄) | (3.4) 1.3 | | 0.1 | | | | | 0.1 | |
| Silicon Tetrafluoride (SiF ₄) | | | | | | 2.7 | 2.7 | | 2 |
| Sulfur Dioxide (SO ₂) | (-0.04) -0.02 | (0.01) 0.001 | 0 | (0.01) 0.001 | (0.01) 0.001 | 1.3 | 1.3 | 0.1 | 1 |
| Tetraethyl Orthosilicate (TEOS) Si(OC ₂ H ₅) ₄ | | | | | | | | | |
| Trimethyl Silane (CH ₃) ₃ SiH | | | | | | | | | |
| Tungsten Hexafluoride (WF ₆) | | | | | | 3.4 | 3.4 | | 2.6 |
| Vinyl Chloride Monomer (VCM) (C ₂ H ₃ Cl) | | | | | | | | | |