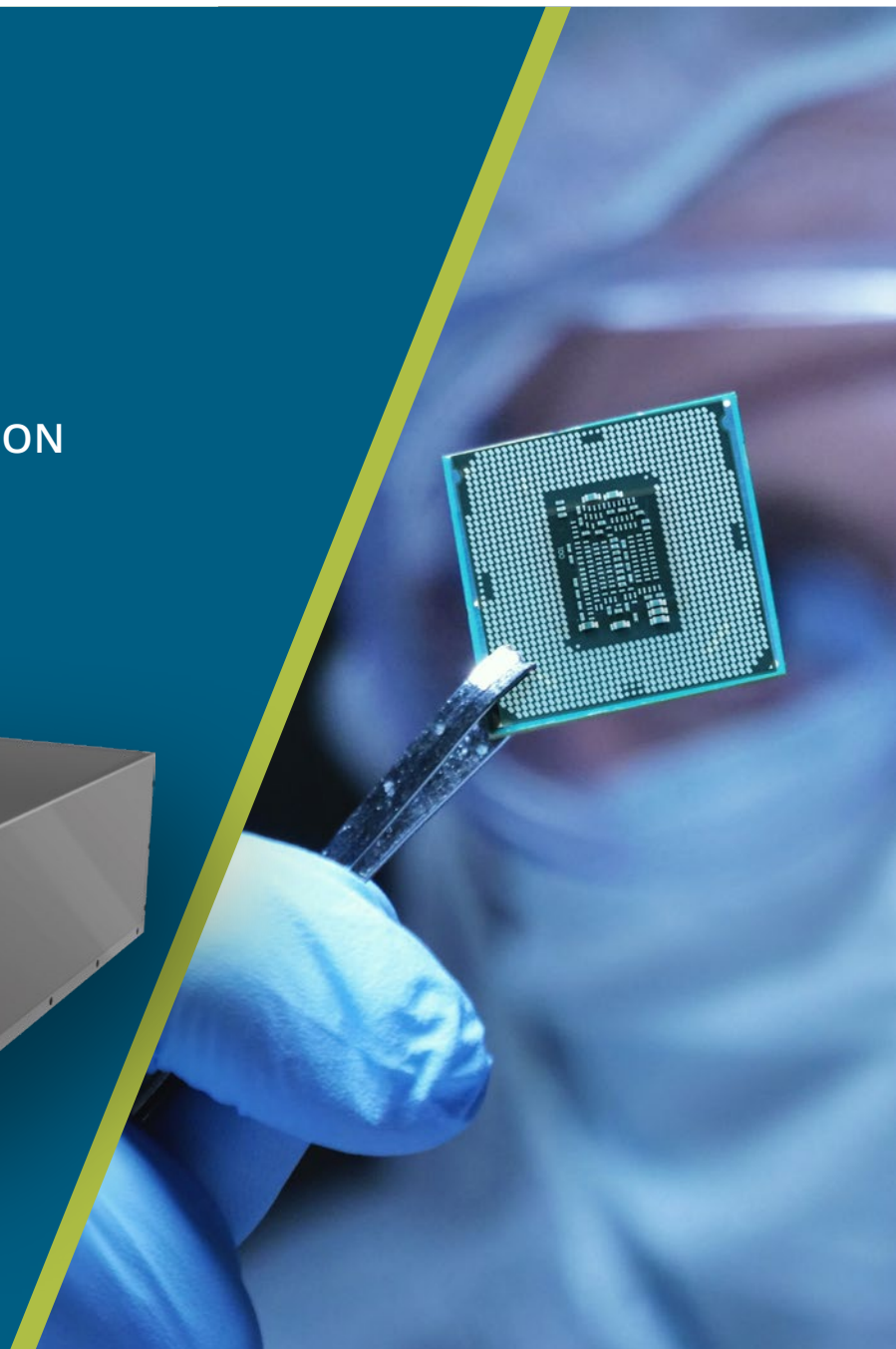


PRODUCT DATASHEET

HALO H2™

PPB-LEVEL HYDROGEN DETECTION



HALO H2 offers

- Low single-digit parts per billion (ppb) detection capability
- Low parts-per-billion (ppb) detection capability
- Extremely fast speed of response
- Wide dynamic range
- Absolute measurement (freedom from need for calibration gases)
- Low maintenance and cost of ownership
- Compact, portable package, ideal for both fixed and mobile cart installation
- Direct measurement in many matrices, including oxygen

Specifications

Performance

| | |
|---|---|
| Operating range: | See gas performance table below |
| Detection limit (LDL, 3σ/24h): | See gas performance table below |
| Precision (1σ, greater of): | \pm 0.75% or 1/3 of LDL |
| Accuracy (greater of): | \pm 4% or LDL |
| Speed of response: | < 3 minutes to 95% |
| Environmental conditions: | 10°C to 40°C 30% to 80% RH (non-condensing) |
| Storage temperature: | -10°C to 50°C |

Gas Handling System and Conditions

| | |
|-------------------------------|---|
| Wetted materials: | 316L stainless steel, 10 Ra surface finish |
| Gas connections: | 1/4" male VCR |
| Leak tested to: | 1 x 10 ⁻⁹ mbar l / sec |
| Sample inlet pressure: | 10 – 125 psig (1.7 – 9.6 bara) |
| Sample flow rate: | 0.5 slpm (\pm 20%) |
| Sample gases: | Most inert matrices |
| Gas temperature: | Up to 60°C |
| Utility gas supply* | see below for required gas ~15 sccm, 20 – 125 psig |

Dimensions & Weight

| | |
|--------------------------------|------------------|
| Standard sensor weight: | 45 lbs (20.4 kg) |
|--------------------------------|------------------|

Electrical and Interfaces

| | |
|----------------------------|--|
| Platform: | Max Series analyzer |
| Alarm indicators: | 2 user programmable 1 system fault Form C relays |
| Power requirements: | 100 – 240 VAC, 50/60 Hz |
| Power consumption: | 450 Watts max. |
| Signal output: | Isolated 4–20 mA |
| User interfaces: | 5.7" LCD touchscreen. 10/100 Base-T Ethernet. USB, RS-232, RS-485. Modbus TCP (optional) |
| Data storage: | Internal or external flash drive |
| Certification: | CE Mark |

Standard Model (requires 1% O₂, 99% N₂ mixture or CDA utility gas)

| Performance, H₂ | Range | LDL (3σ) | Precision (1σ) @ zero |
|-----------------------------------|--------------|-----------------------------------|--|
| In Nitrogen: | 0 – 500 ppm | 8.0 ppb | 3.0 ppb |
| In Clean Dry Air (CDA): | 0 – 200 ppm | 6.0 ppb | 2.0 ppb |
| In Hydrogen: | 0 – 125 ppm | 4.0 ppb | 1.5 ppb |

CDA Model (requires pure N₂ utility gas)

| Performance, H₂ | Range | LDL (3σ) | Precision (1σ) @ zero |
|-----------------------------------|--------------|-----------------------------------|--|
| In Clean Dry Air (CDA): | 0 – 5000 ppm | 80 ppb | 30 ppb |

*Utility gas supply purity requirements: <10 ppm H₂O and H₂ impurities. Contact us for additional analytes and matrices.
U.S. Patent # 7,277,177 • U.S. Patent # 7,255,836

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