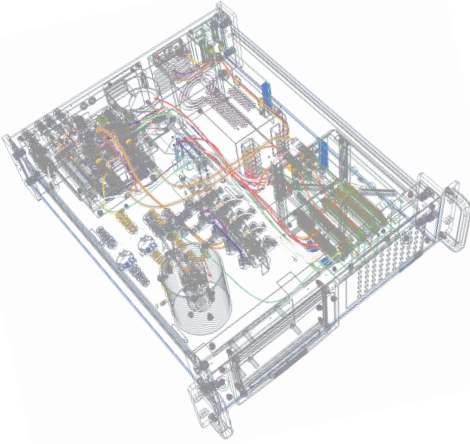




Series IV Technical Specifications

- Pulsar Multigas Infra-red Series



- Available in 1, 2, 3, 4 or 5 gas channel configurations
- New design for improved specifications
- Supplied with software suite for use over Ethernet or RS232
- Suitable for ultra-low measurement range applications
- Rotating Filter design for minimal cross sensitivity

The new Pulsar detector from Signal has been upgraded to provide our best ever performance specification. With the lowest drift on the market it is ideal for low range applications or high accuracy measurement. The GFC design of the detector prevents cross sensitivity to other gases and also removes the risk of contamination through a sample containing particulate matter. It provides a cost effective, low maintenance option for even low concentration measurement applications.

Ambient Operating and Storage Conditions

Operating temperature: 5°C to 40°C

Storage max humidity: ≤80% RH

Power requirements: 100-240VAC 50/60Hz

Storage temperature: -12°C to 40°C

Inlet pressure: Up to 2 bar

Sample dewpoint: below local ambient temperature

Max operating humidity: ≤80%RH

Sample temperature: maximum 40°C

Construction Materials

Wetted: stainless steel 316, PTFE, quartz in paramagnetic O₂ detector

Output Signals

Ethernet as standard. Optional 4-20mA and 0-10V DC. Onboard logging included with screen option.

Linearity

< ±0.5% of range or 2% reading

SEE ≤ 1.0% Range

Intercept ≤0.5% range.

R² ≥ 0.998

0.990 ≤ Slope ≤ 1.01

Repeatability

< ±1% of range or ±0.5ppm, whichever is greater

Drift

Zero: <1% FS/24h, <2% of range per week

Span: <1% FS/24h, <4% of range per week

Cell Specifications

Dynamic Range: 10,000:1

Noise: 0.01%FS

Response Time T₉₀

<5s Dependent on gas and cell length. See page 2 for individual values

Warmup Time

Useable: 5 minutes

Operation to specification: 1 hour

Ambient Temperature Effect

Zero and Span: <0.2% of range per °C

Flow Sensitivity

0.1% of range per L/min

Sample Filter Pore Size

10 micron





Series IV Technical Specifications

- gas specific values

| Gas/Range | Zero Noise / LDL | Span Noise | Response Time*, T ₉₀ | Cross Sensitivities |
|---|------------------|------------|---------------------------------|---|
| Carbon Monoxide (CO) | | | | |
| 0-10ppm ~ 0-1000ppm | <0.3ppm / 0.6ppm | <1% range | < 3 seconds | 100% CO ₂ :<±1ppm 1% CH ₄ :<±1ppm 1% N ₂ O :<±3ppm 2.3%H ₂ O/N ₂ :<±2ppm |
| 0-50ppm ~ 0-5000ppm | <1ppm / 2ppm | <1% range | < 3 seconds | |
| 0-0.1% ~ 0-10% | <0.01% / 0.02% | <1% range | < 2 seconds | |
| 0-0.2% ~ 0-20% | <0.05% / 0.1% | <1% range | < 2 seconds | |
| 0-1% ~ 0-100% | <0.2% / 0.4% | <1% range | < 1 seconds | |
| Carbon Dioxide (CO₂) | | | | |
| 0-10ppm ~ 0-1000ppm | <0.5ppm / 1ppm | <1% range | < 2 seconds | 100% CO :<±2ppm 1% CH ₄ :<±1ppm 2.3%H ₂ O/N ₂ :<±10ppm |
| 0-100ppm ~ 0-10,000ppm | <10ppm / 20ppm | <1% range | < 2 seconds | |
| 0-0.1% ~ 0-10% | <0.01% / 0.02% | <1% range | < 1 seconds | |
| 0-0.2% ~ 0-20% | <0.05% / 0.1% | <1% range | < 1 seconds | |
| 0-1% ~ 0-100% | <0.2% / 0.4% | <1% range | < 1 seconds | |
| Nitrous Oxide (N₂O) | | | | |
| 0-10ppm ~ 0-1000ppm | <1.0ppm / 2ppm | <1% range | < 5 seconds | 1000ppm CO <±1ppm 10% CO <±36ppm 10% CO ₂ <±1ppm 20% CO ₂ <±3ppm 2.3%H ₂ O/N ₂ <±2ppm |
| 0-100ppm ~ 0-10,000ppm | <10ppm / 20ppm | <1% range | < 3 seconds | |
| 0-0.1% ~ 0-10% | <0.01% / 0.02% | <1% range | < 3 seconds | |
| 0-0.2% ~ 0-20% | <0.05% / 0.1% | <1% range | < 3 seconds | |
| 0-1% ~ 0-100% | <0.2% / 0.4% | <1% range | < 2 seconds | |
| Nitric Oxide (NO) | | | | |
| 0-10ppm ~ 0-1000ppm | <2.0ppm / 4ppm | <2% range | < 2 seconds | 10%CO <±2ppm 10%CO ₂ <±1ppm 500ppmCH ₄ <±1ppm 2.3%H ₂ O/N ₂ <±10ppm |
| 0-100ppm ~ 0-10,000ppm | <20ppm / 40ppm | <2% range | < 2 seconds | |
| 0-0.1% ~ 0-10% | <0.02% / 0.04% | <2% range | < 2 seconds | |
| 0-0.2% ~ 0-20% | <0.1% / 0.2% | <2% range | < 2 seconds | |
| 0-1% ~ 0-100% | <0.4% / 0.8% | <2% range | < 2 seconds | |
| Sulphur Dioxide (SO₂) | | | | |
| 0-10ppm ~ 0-1000ppm | <1.0ppm / 2ppm | <1% range | < 5 seconds | 5000ppm CO <±4ppm 10% CO ₂ <±5ppm 500ppmCH ₄ <±15ppm 2.3%H ₂ O/N ₂ <±15ppm |
| 0-100ppm ~ 0-10,000ppm | <10ppm / 20ppm | <1% range | < 3 seconds | |
| 0-0.1% ~ 0-10% | <0.01% / 0.02% | <1% range | < 3 seconds | |
| 0-0.2% ~ 0-20% | <0.05% / 0.1% | <1% range | < 2 seconds | |
| 0-1% ~ 0-100% | <0.2% / 0.4% | <1% range | < 1 seconds | |
| Methane (CH₄) | | | | |
| 0-10ppm ~ 0-1000ppm | <2ppm / 4ppm | <1% range | < 5 seconds | 100%CO <±5ppm 100%CO ₂ <±25ppm 2.3%H ₂ O/N ₂ <±5ppm |
| 0-100ppm ~ 0-10,000ppm | <20ppm / 40ppm | <1% range | < 4 seconds | |
| 0-0.1% ~ 0-10% | <0.1% / 0.2% | <1% range | < 2 seconds | |
| 0-0.2% ~ 0-20% | <0.2% / 0.4% | <1% range | < 2 seconds | |
| Hydrogen Chloride (HCl) | | | | |
| 0-10ppm ~ 0-1000ppm | <4ppm / 8ppm | <1ppm | < 5 seconds | 100%CO <±2ppm 10% CH ₄ <±150ppm 500ppmC ₆ H ₁₄ <±150ppm |
| 0-100ppm ~ 0-10,000ppm | <40ppm / 80ppm | <20ppm | < 5 seconds | |
| 0-0.1% ~ 0-10% | <0.2% / 0.4% | <0.1% | < 2 seconds | |
| 0-0.2% ~ 0-20% | <0.4% / 0.8% | <0.2% | < 2 seconds | |

*based on sample flow at 1 L/min