

In-situ Oxygen Gas Analyzer SITRANS SL

Remote sensing without cross interferences



With the new SITRANS SL, Siemens combines the benefits of the process proven tunable diode laser (TDL) technology – available from Siemens in a fiber optic-based system – with a direct operating mode as close as possible to the process. This technology evolution is enabled by a reference gas cell integrated in the sensor, which allows laser locking completely independent of process gas concentrations. This leads to utmost stable operation, negligible drift values and extended maintenance intervals. These features make SITRANS SL the best-performing in-situ laser gas analyzer. It is integrated in a unique compact and rugged design and provides enhanced communication capabilities. SITRANS SL is the perfect solution for single-point measurement applications in rough or hazardous environments.

SITRANS SL

Answers for industry.

SIEMENS

Mode of Operation

As a tunable diode laser-based technology this in-situ device enables high-performance measurements. The sensors (transmitter and receiver) are meant to be mounted directly on the process with no need of sampling systems. Laser light is sent from the transmitter, passing through the process gas, arriving at the detector on the receiver side. The measurements are carried out on-line with a very short response time permitting fast and effective cost-savings in process control.

The laser characteristics allow single-line spectroscopy free of interferences. Since the band width of the laser light is extremely narrow, only the gas component of interest will interact with it. Other process influences, such as dust and temperature, are easily eliminated due to the excellent inherent compensation capabilities of this technique.

An in-line reference cell filled with a non-interfering reference gas, a further development of the already established Siemens TDL technology, provides unique user benefit in terms of minimum need for maintenance and recalibration.

Applications

- Process control (chemical industry)
- Process optimization (steel industry)
- Safety monitoring, e.g. measuring minimum or maximum concentration limit for oxygen in explosive-proof environment
- Combustion control (boilers, municipal waste incinerators)

Benefits

- In-situ measurements – no gas sampling required
- In-line reference cell – stable instrument operation with outstanding performance
- Dynamic dust load compensation
- Fast response time
- Almost no cross interferences
- ATEX version for Ex zones I and II (ATEX II 2 G Ex de IIC T6 / II 2 D Ex tD A21 IP65 T85°C)
- Enhanced communication integrated in the "Totally Integrated Automation" (TIA) platform concept
- Unparalleled cost/performance ratio for single-point measurements
- Low maintenance
- Easy to align and service

Technical Specifications	
Gas	O ₂ ¹⁾
Measuring range	0–100%; lower ranges selectable
Resolution ²⁾	0.02 Vol%
Typical opt. path length	1–8 m
Process gas temperature	0–600 °C
Process gas pressure	0.7–5 bar absolute (T below 200°C) 0.9–1.1 bar absolute (T up to 600°C)
Response time	1–3 s
Electric connections	2 analog outputs, 2 binary outputs, 2 analog inputs, 2 binary inputs, PROFIBUS DP (optional)

1) For information about additional gases please contact your nearest Siemens representative.

2) Value at standard conditions. For application-specific data please contact your nearest Siemens representative.

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