

/ LaserGas™ II SP



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NEO Monitors LaserGas™ is using Tunable Diode Laser Absorption Spectroscopy (TDLAS) i.e a non-contact optical measurement method employing solid-state laser sources. The sensor remains unaffected by contaminants corrosives and does not require regular maintenance. The absence of extractive conditioning systems further improves availability of the measurements and eliminates errors related to sample handling. The monitor is mounted directly onto flanges, which include purge gas connections and a tilting mechanism for easy alignment. Continuous purge flow prevents dust and other contamination from settling on the optical windows. Once power and data lines are connected, measurements are performed in real-time.

Features

- Response time down to 1 second
- No gas sampling: In-situ measurement
- Non contact measurement
- No interference from background gases
- Applicable for many process conditions:
 - high/low temperature
 - high dust
 - corrosive gases
- Line measurement, integral concentration over the full stack diameter
- ATEX and CSA certified
- TÜV, MCERTS, GOST approved technology
- Integrated span check option available
- Suitable for harsh environment
- No zero drift
- Stable calibration
- Long Path lengths

Applications

LaserGas™ II SP is designed for reliable and fast measurement of all kinds of gases in any environment, most typically:

- Chemical industry
- Petrochemical industry
- Metal industry
- Power plants
- Waste incinerators
- Cement industry
- Automotive industry
- Scrubber technology
- Glass industry
- PVC production
- Pulp and paper
- and more

Customer benefits

- In-situ monitoring
- Highly reliable real time analyzer
- Low maintenance cost
- Reduce emission to the environment
- Easy to install and operate
- Reduce daily operation costs
- Optimize process
- Well proven measurement technique

Technical data

Specifications

Optical path length:	Typically 0.5-20m**
Response time:	1 – 2 sec
Accuracy:	Application dependent
Repeatability:	1% of range (gas & application specific)

Environmental conditions

*Certified operating temperature:	-20 °C to +55 °C
Storage temperature:	-20 °C to +55 °C
Protection classification:	IP66

Inputs / Outputs

Analog output (1-3):	4 - 20 mA current loop (concentration, transmission)
Digital output(Optional):	TCP/IP, MODBUS, fibre optic
Relay output (3):	High gas, Maintenance Warning and Fault
Analog input (2):	4 – 20 mA process temperature and pressure reading
Input power supply unit:	100 – 240 VAC, 50/60 Hz, 0.36 – 0.26 A
Output power supply unit:	24 VDC, 900 – 1000 mA

Ratings

Input transmitter unit:	18 – 36 VDC, max. 20W
4 – 20 mA output:	500 Ohm max. isolated
Relay output:	1 A at 30 V DC/AC

Safety

Laser class:	Class 1 according to IEC 60825-1
CE:	Certified.
EMC:	Conformant with directive 2014/30/EU

Approvals

IECEX/ATEX zone 1:	II 2 G Ex px IIC T5 Gb II 2 D Ex p IIIC T64°C Db
IECEX/ATEX zone 2:	II 3 G Ex nA nC op is IIC T4 Gb II 3 D Ex td A22 T100°C
CSA:	Class I, Div. 2, Groups A, B, C and D; Temp. Code T4; non-incendive
TÜV and MCERTS, GOST approval available for some gases.	

Installation and Operation

Flange dimension alignment:	DN50/PN10 or ANSI 2"/150lbs (other dimensions on request)
Alignment tolerances:	Flanges parallel within 1.5°
Purge flow:	Dry and oil-free pressurised air or nitrogen 10 - 50 l/min (application dependent)

Maintenance

Calibration:	Check recommended every 12 months
Validation:	In-situ span check with optional internal cell (application dependent)

Dimension and weight

Transmitter unit:	405 mm x 270 mm x 170 mm, 6.2 kg
Transmitter unit: (Ex version)	405 mm x 270 mm x 310 mm, 7.9 kg
Receiver unit:	355 mm x 125 mm x 125 mm, 3.9 kg
Power supply unit:	180 mm x 85 mm x 70 mm, 1.6 kg

* Certified operating temperature range -20 °C to +55 °C

Extended operating temperature ranges; -30 °C to +55 °C or -20 °C to +65 °C (non-certified) available upon request, subject to application.

Gas	Detection limit (ppm)	Min. temp (°C)	Max temp (°C)	Min. pressure (BarA)	Max pressure (BarA)
NH ₃	0,15	-20	600	0.7	2
HCl	0,05	-20	600	0.7	2
HF	0,015	-20	400	0.7	2
H ₂ S	3	-20	300	0.7	2
O ₂	100	-20	1500	0.7	20
% H ₂ O	50	-20	1500	0.7	2
ppm H ₂ O	0,1	-20	1000	0.7	2
% CO	30	-20	1500	0.7	2
% CO ₂	100	-20	1500	0.7	2
ppm CO	0,3	-20	1500	0.7	2
ppm CO ₂	1	-20	300	0.7	2
NO	10	-20	350	0.7	2
N ₂ O	1	-20	200	0.7	2
ppm CH ₄	0,2	-20	300	0.7	3
% CH ₄	100	-20	1000	0.7	3
NO ₂	5	-20	200	0.7	1,5
HCN	0,3	-20	300	0.7	2

NOTE: Detection limits are specified as the 95% confidence interval for 1m optical path and gas temperature / pressure = 25 °C / 1 BarA. Measured in N₂.

Other gases available on request.

Dual Gas: NH₃+H₂O, HCl+H₂O, CO+CO₂, CO+H₂O, CO+CH₄, O₂+temp, CO+temp.

Higher pressure available on request for certain gases.

** Longer OPL's available upon request (Application dependent)

Please contact us for details.

NEO Monitors reserve the right to change specifications without prior notice

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