/ LaserGas™ III SP Gas Analyzer

NEO Monitors LaserGas™ III SP gas analyzer is a optical based Tunable Diode Laser Absorption Spectrometer (TDLAS), specifically designed for operation in certified hazardous areas and has been independently assessed as compatible for use in SIL2 installations. The analyzer consists of a transmitter and receiver unit that mount diametrically across the stack, duct, pipe or reactor vessel, eliminating the need for high maintenance sample conditioning systems. The analyzer provides near instantaneous on-line analysis with no cross interference to background gases.

Features

- Zone 1 Exd certified for operation in hazardous areas
- Suitable for use in SIL 2 systems
- Compact footprint
- Automatic continuous system health check
- Low power requirements <15 watts
- Factory calibrated with no zero drift
- No interference from other background gases
- Low maintenance TDLAS measurement technique

Applications

- Process Safety
- Inertization control
- FCC units
- Coke oven gas
- Combustion control
- Selective catalytic reduction (SCR)
- Selective non-catalytic reduction (SNCR)
- DeNOx
- Emission monitoring

Customer benefits

- Reliable and proven non-contact optical laser measurement technique
- NEO Monitors measurement algorithm ensures no cross-interference
- High measurement reliability
- Low ongoing cost of ownership and high return on investment (ROI)
- Very low maintenance

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Technical data

Specifications

Response time: 1 second or longer
Precision (Repeatability): +/- LDL or 1% of reading, which ever is greater
Linearity: 1% rel.

Environmental conditions

Operating temperature:
ATEX: -40 ˚C to +65 ˚C
CSA: -40 ˚C to +60 ˚C
Storage temperature: -40 ˚C to +70 ˚C
Protection classification: IP65

Inputs / Outputs

Analog output (3): 4 - 20 mA current loop (concentration and transmission)
Digital output: 10/100 Base T Ethernet (Modbus TCP)
Relay output: High gas, warning/ fault (normally closed)
Analog input: 4 - 20 mA process temperature and pressure reading

Ratings

Power supply: 18-32 VDC
CSA rating: Class 2 supply
Power consumption : Max. 20 W
4 – 20 mA output: 500 Ohm max. load impedance, not isolated
Relay output: 1 A at 30 VDC

Safety

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

Approvals

ATEX zone 1: Ex db [op is Ga] IIC T4 Gb
Ex tb [op is Da] IIIC T100°C Db
CSA: Class I Div. 2, Groups B, C and D, T4
ATEX rating connection box: II 2 GD Ex e IIC T5
II 2 D Ex e tb IIIC T85°C Db
Functional safety: IEC 61508 certified SIL2 capability

Installation and Operation

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

Maintenance

Calibration: Check recommended every 12 months

Dimension and weight

Transmitter and recevier unit (TU/RU): 215 mm (length, add 50 mm for purge unit) x 125 mm (diameter), 3,5 kg each
Window unit (optional): Wu 60 (length) Wu 100 (length)
TU/RU connection box: 260 mm x 160 mm x 90 mm, 2,5kg

Gas	Detection limit (LDL)	Min process Temp	Max process Temp	Min process Pressure	Max process pressure	Min Range	Max Range	Default Range
O2	100ppm	-40 °C (-40 °F)	1500 °C (2732 °F)	0.7 BarA	10 BarA	-	0-100%	-
CO (Process temp <500 ˚C)	0.5ppm	-40 °C (-40 °F)	500 °C (932 °F)	0.7 BarA	1.5 BarA	0-50ppm	0-10000 ppm*m	-
CH4 Add-on	0.01%	-40 °C (-40 °F)	500 °C (932 °F)	0.7 BarA	1.5 BarA	0.1% * m	0-10% * m	_
CO (Process temp >500 ˚C	3ppm	-40 °C (-40 °F)	1300 °C (2372 °F)	0.7 BarA	1.5 BarA	0-200ppm	0-20000 ppm*m	_
CH4 Add-on	0.05%	500 °C (932 °F)	1300 °C (2372 °F)	0.7 bara	1.5 BarA	0-5%*m	0-10%*m	_
H2O Add- on	2%	500 °C (932 °F)	1300 °C (2372 °F)	0.7 BarA	1.5 BarA	_	0-40%	0-40%
NH3	0.2ppm	-40 °C (-40 °F)	500 °C (932 °F)	0.7 BarA	1.5 BarA	On request	On request	0-50ppm
Optional H2O	tbc	-40 °C (-40 °F)	500 °C (932 °F)	0.7 BarA	1.5 BarA	_	40%	0-40%
H2	0.1 % vol	-50 C (-58 °F)	250 °C (482 °F)	0.5 BarA	10 BarA	5%	100%	-
CO2	10ppm	-40 °C (-40 °F)	1300 °C (2372 °F)	0.7 BarA	1.5 BarA	0-100ppm	0-10%*m	-

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