

/ LaserGas™ III Ultra SP NH3/H2O PS-18 Emissions



All Rights Reserved, Copyright © March 2024, NEO Monitors AS

NEO Monitors LaserGas™ III Ultra SP NH3 /H2O PS-18 Emissions TDLAS analyzer is specifically designed for autonomous operation in hazardous areas. It provides fast, in-situ, hot/wet NH3 measurements with dynamic water compensation by actively measuring both NH3 and H2O concentrations, making it possible to compensate for water-broadening effects. This allows the operator to subtract the water channel in their SCADA or PLC systems and report dry NH3 measurements in real time. Our 30+ years of experience with NH3 emissions has made it possible to design this **EPA Performance Specification (PS-18) compliant** NH3 analyzer with market-leading performance, reliability, and robustness.

Features

- In-situ hot/wet measurements
0 – 5 ppmv NH3 min. range
- Dynamic H2O compensation
- Fast response time
- Low power consumption (<10 W)
- Life-time calibration
- Linear concentration response
with up to six orders of magnitude
- IROSS™ signal processing
suppresses H2O interference
- Simultaneous measurement of NH3
and H2O
- Dynamic compensation of the NH3
concentrations based on H2O
measurements
- Correct NH3 measurements at any
moisture level in the gas

Applications

- PS-18 compliant emission monitoring
- In:
- Refineries
 - Powerplants
 - Chemical industries
 - Petrochemical industries
 - and more

Customer benefits

- Reliable in-situ NH3 measurements in
real time
- Process optimization
- Minimize emission
- Simple installation, ease of use
- Low maintenance cost
- No consumables
- No sampling systems
- Compressed air purge (no need for
Nitrogen)
- No regular calibrations needed
- On-line measurement validation

Technical data

Specifications

Detection limit (NH3):	0.1 ppmv-m
Min/Max range:	0-5 ppmv/ 0-250 ppmv
Range H2O:	0 - 65% vol
Max process gas temperature:	300 °C
Max process gas temperature:	1.5 barA
Optical path length:	Typically 0.5 - 20m
Linearity:	< 1 % of range
Response time:	<15 s

Environmental conditions

Operating temperature:	-40 °C to +65 °C
Storage temperature:	-40 °C to +70 °C
Protection classification:	IP65

Inputs / Outputs

Analog output (3):	4 - 20 mA current loop (concentration NH3, transmission, concentration H2O)
Digital output:	10/100 Base T Ethernet (Modbus TCP)
Relay output (2):	High gas, warning and fault (normally closed)
Analog input:	4 - 20 mA process temperature and pressure reading

Ratings

Power supply:	24VDC range 18-32 VDC
Power consumption :	Max. 10 W
4 – 20 mA output:	500 Ohm max. load impedance, not isolated
Relay output:	1 A at 30 V DC/AC

Safety

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

Approvals

IECEX/ATEX zone 1 (TU/RU)	II 2 G Ex d [op is] IIC T4 Gb II 2 D Ex tb IIIC T78°C Db II 2 D Ex tb IIIC T88°C Db (LaserGas III Ext)
CSA:	Class I Div. 2, Groups B, C and D
ATEX rating connection box:	II 2 GD Ex e IIC T5 Gb -40°C ≤TA≤65°C

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:	Compressed dry and oil-free air or gas, or air blower
Purge flow:	5 -100 l/min (application dependent)

Maintenance

Calibration: every 12 months	Check recommended
Validation:	In-situ span check with optional in-line cell Optional Beam kit
intensity verification	kit

Dimension and weight

Transmitter and receiver unit (TU/RU):	215 mm (length, add 50 mm for purge unit) x 125 mm (diameter), 3.5 kg each
TU/RU connection box:	260 mm x 160 mm x 90 mm, 2.5kg
Special process conditions	on request

* NEO Monitors reserve the right to change specifications without prior notice

PERFORMANCE YOU CAN TRUST

