



neoMONITORS

LaserDust™ MP, LP and XLP Monitors



NEO Monitors LaserDust™ Medium Path (MP), Long Path (LP), and Extra Long Path (XLP) Monitors are compact, optical dust monitors for true continuous in-situ measurement of dust concentration or opacity. The monitors are designed for measurement across pipes, stacks, and ducts with typical path lengths of 0.5 – 10 m. LaserDust™ Monitors use a transmitter/ receiver configuration to measure the dust concentration along the optical line of sight. Our true non-contact approach is superior to point type dust meters.

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 technics

Features

- Response time down to one second
- Suitable for high temperatures
- Cross stack measurement up to 10 m
- High dynamic range (mg or g with one instrument)
- Scattered light detection for high sensitivity
- Non-contact measurement
- No moving parts

Applications

LaserDust™ the ideal choice for obtaining the best measurement data. Monitors are most typically used in:

- Aluminium smelters and steel works
- Waste incinerators, power plants or cement kilns
- Scrubber and filter optimization
- Bag house filter surveillance
- Dust explosion prevention

LaserDust™ MP, LP and XLP



Technical Data

Specifications

Process temperature	Above dew point up to 700 °C
Process pressure	0.1 – 1.5 bar abs (optional windows for up to 5 bar)
Detection limit	< 0.5 mg/Nm ³ (in scattered mode),
Measurement range	min. 0 – 15 mg/Nm ³ (scattered mode), particle size >1micron max. 0 – 10.000 mg/Nm ³ (transmission mode) , particle size >1micron
Resolution	0.05 mg/Nm ³
Optical path length	MP: 0.5 – 3 m LP: 3 – 6 m XLP: 6 – 10 m
Response time	1 – 2 sec Pulse mode: 50 ms

Environmental conditions

Operating temperature	-20 °C to +55 °C
Storage temperature	-20 °C to +55 °C
Protection classification	IP66

Inputs / Outputs

Analogue output	4 – 20 mA current loop (concentration, transmission)
Digital output	TCP/IP, MODBUS, Optional fibre optic
Relay output	High dust-, Warning - and Fault relays (normally closed-circuit relays)
Analogue input	4 – 20 mA process temperature and pressure reading

Ratings

Input power supply unit	100 – 240 VAC, 50/60 Hz, 0.36 – 0.26 A
Output power supply unit	24 VDC, 900 – 1000 mA
Input transmitter unit	18 – 36 VDC, max. 20 W
4 – 20 mA output	500 Ohm max. isolated
Relay output	1 A at 30 V DC/AC

Installation and Operation

Flange dimension	MP: DN50/PN10 LP: DN80/PN10 XLP: DN150/PN10 Optional ANSI or other sizes on request
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Alignment tolerances	Flanges parallel within 1.5°
Purging of windows	Dry and oil-free pressurised air or gas, or by fan
Purge flow	50 – 100 l/min (application dependent)

Maintenance

Visual inspection	Recommended every 6 – 12 months (no consumables needed) Remote instrument check by Ethernet connection or external modem possible
Calibration	Recommended every year (against gravimetric analysis)
Validation	Integrated zero and span check

Safety

Laser class	Class IIIb according to IEC 60825-1
CE	Certified, conformant with LVD 73/23/EEC, including 93/68/EEC
EMC	Conformant with directive 2004/108/EC

Explosion protection (optinal)

ATEX Cat 3 (zone 2)	II 3 GD T100 °C Ex nA nC II T5
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Dimensions and weight

Transmitter unit (MP, LP, XLP)	200 (plus 100 for purge unit) x 270 x 170 mm, 6.2 kg
Transmitter unit (Ex version)	200 (plus 100 for purge unit) x 270 x 310 mm, 7.9 kg
Receiver unit (MP)	300 (plus 100 for purge unit) x 120 x 120 mm, 3.9 kg
Receiver unit (LP)	380 (plus 100 for purge unit) x 120 x 120 mm, 5 kg
Receiver unit (XLP)	410 (plus 100 for purge unit) x 270 x 170 mm, 8 kg
Power supply unit	180 x 85 x 70 mm, 1.6 kg

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