



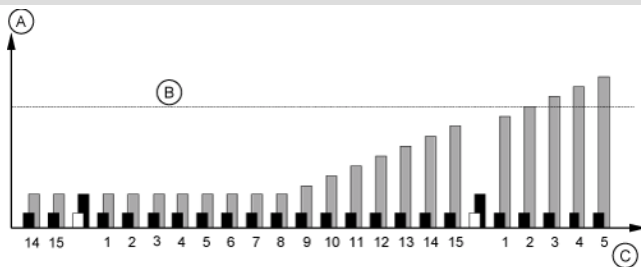
NOM K 100 LSN Optical smoke detector for ventilation ducts



- ▶ **Separate measurement of smoke and detector contamination**
- ▶ **Automatic adjustment of thresholds**
- ▶ **Active self-monitoring of sensor technology with corresponding evaluation electronics**
- ▶ **Individual detector identification**
- ▶ **Remote diagnosis**

The NOM K100 LSN optical smoke detector is used in ventilation ducts and permits wind speed of up to 20 m/s.

Functions

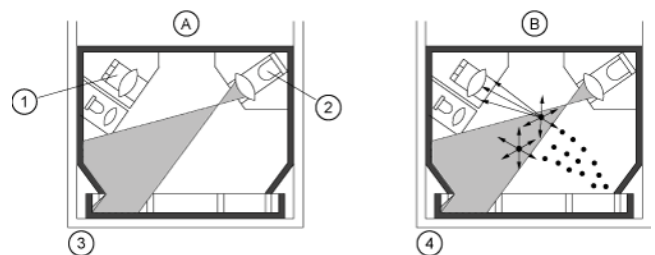


Pos.	Description
A	Volume of scattered light
B	Threshold (alarm)
C	Number of light flashes
black, 1-15	Light flashes for smoke measurement
gray, 1-15	Scattered light when there is smoke
white, after 15	Light flashes for contamination measurement
black, after 15	Reflection light if there is contamination

15 light pulses are transmitted by an infrared light emitting diode (IR LED) through the measuring chamber at one-second intervals. If there is no smoke, only a small quantity

of light passes through the collecting lens onto the photo diode.

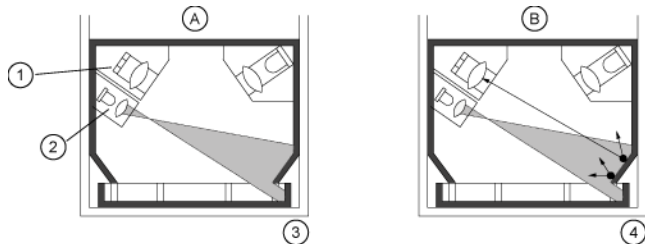
The analysis of this low quantity of light is used for monitoring proper detector function. When smoke enters the measuring chamber, the light pulses are deflected by the smoke particles. Alarm triggering takes place if the threshold defined in the detector is reached with three successive scattered light pulses.



Pos.	Description
A	Measurement during smoke-free operation
B	Measurement with smoke penetration
1	Photo diode
2	Transmitting diode
3	no reflection of ray of light
4	Ray of light scattered by smoke particles

A light pulse is then sent from a second LED to the opposite measurement chamber wall to measure contamination. In uncontaminated detectors, the light beam is almost completely absorbed by the black inner wall.

Even the presence of a low volume of smoke does not lead to a major change. The analysis of this low quantity of light is used for monitoring detector function. In contaminated detectors, the dirt particles reflect the light beam.



Pos.	Description
A	Measurement when detector is not contaminated
B	Measurement when detector is contaminated
1	Photo diode
2	Transmission diode to measure contamination
3	no reflection of ray of light
4	Ray of light scattered by dirt particles

The contamination measurement is analyzed using the measured reflected light and the resulting stream.

If the thresholds defined in the detector are exceeded, a message is triggered.

- At 30%: service message to the central unit and compensation of the alarm threshold
- At 60%: request for detector replacement
- At 80%: automatic detector switch-off.

If the measurement falls short of the 0% threshold by around 20%, a malfunction message is triggered.

A two-color LED provides a differentiated detector display:

- Red = Alarm
- Yellow = Malfunction

Detector query routines and analysis with multiple transmission regarding:

- Deviation from basic value
- Detector fault due to risk of false alarm
- Contamination
- Detector replacement request (test)
- Pre alarm (change of application)
- Alarm

It is possible to activate a remote external detector alarm display.

Installation/Configuration Notes

- There is a special base for using the detector in a ventilation duct. The scope of delivery of the detector base comprises a detector base NMS 100 V with detector lock, a distance pipe and an installation housing.
- As current consumption from the LSN data line is variable, the maximum number of LSN elements (LSN interface and LSN detectors) that can be connected must be observed. The limiting values should be taken from the product information supplied with the fire panel used.
- Further standards, guidelines and planning recommendations regarding the installation location etc., should also be taken into consideration (see Fire Detection manual).
- Can be connected to the following fire panels:
 - BZ 500 LSN
 - UEZ 1000 LSN
 - UEZ 2000 LSN
 - UGM 2020 LSN
 - Plus other control panels including modules with identical connection conditions.

Installation/configuration notes in accordance with VdS/VDE

- The energy balance, according to VDE 0833 Part 2, is determined using the "UEZPRO" configuration and current calculation program.

Parts Included

Qty.	Components
1	NOM K 100 LSN detector module, white,
1	Gauze fleece for protection from dust, with mounting materials

Certifications and Approvals

VdS approval No.: G 293 004

Technical Specifications

Electrical

Operating voltage	12.5 V DC . . . 33 V DC
Current consumption (LSN)	0.7 mA
Alarm transmission	Per data word by two-wire LSN line
Indicator output	maximum 15 mA (0V is switched through when activated)

Mechanics

Individual display	Two-color LED Red = Alarm, Yellow = Malfunction
Dimensions	Ø 64 mm x 66 mm
Weight (incl. standard base)	Approx. 145 g
Housing material	Plastic, PC Macrolon
Housing color	White, RAL 9001

Environmental conditions

Protection category as per EN 60529	IP 43
Permissible operating temperature	-10 °C . . . +60 °C
Permissible storage temperature	-30 °C . . . +80 °C
Permissible relative humidity	98% (non-condensing)
Permissible wind speed	Up to 20 m/s
Permissible radioactive effects	1 mSv/h (0.1 R/h)

Planning

Monitoring area	Up to 120 m ² (Heed local guidelines!)
Installation height	Up to 16 m (Heed local guidelines!)

Special features

Detection principle	Scattered light principle, automatic contamination detection with separate measuring light bridge
Response sensitivity	0.2 db/m (as per EN 54 T7)

Ordering Information

NOM K 100 LSN Optical smoke detector for ventilation ducts	NOM K 100
Accessories	
MPA External detector alarm display according to DIN14623	MPA
FAA-420-RI Remote Indicator	FAA-420-RI

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