

FireGuard Integral

The most ingenious smoke detector: simple – safe – reliable



Applications

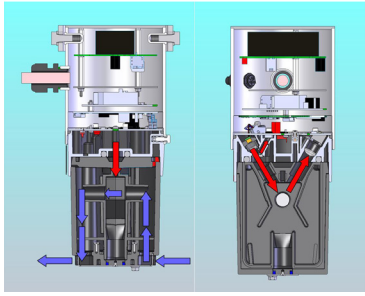
- Fire/smoke detection in road and rail tunnels

Advantages

- Connection box is integrated in the detector
- Rapid, reliable smoke detection without false alarms
- Fog elimination by optional heating elements
- Compact design, no moving parts
- Flexible system integration

- LED light source, very low power consumption
- Permanent instrument monitoring in the background
- Simple recalibration with checking rod
- Extremely low maintenance costs

Innovations with tangible benefits



Ingenious design

The sensor uses the available natural air stream in the tunnel. It is very compact and has neither moving parts nor wear parts nor does it need consumables. As a light source, an economical LED is used:

- No risk of failure due to wear.
- Guaranteed operational reliability for years.
- Extremely low operating costs.

Rapid, reliable reaction without false alarms

The sensor detects emerging fires already at their early stages (cold smoke) and thus reacts faster than a fire alarm cable. Any influence caused by fog will be eliminated by optional heating elements. The measurement is not affected by extraneous light, reflexes or other influences as is the case for video detection. Individual setting of parameters allows an optimal object and location related setting of alarms:

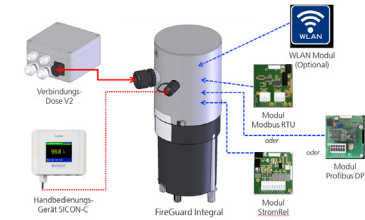
- More time for self-rescue.
- No false alarms.
- Reduction of a possible damage to the object and of subsequent costs.



Flexible mounting – Simple system integration

An adjustable bracket allows mounting at the wall, in the arched section or at the ceiling. The connection box with the various communication interfaces is integrated in the smoke detector:

- Installation is simple and not dependent on the tunnel profile.
- Fast, flexible system integration.



Minimum maintenance and upkeep

Maintenance is limited to occasional cleaning and the automatic adjustment with a checking rod. Soiling monitoring provides information on the state of the instrument:

- Maintenance is only necessary when required, from experience only about every 5 years.
- No special tools required.



The time required per instrument is normally between 15 and 25 minutes at the most.

Main technical details

Measuring principle	Scattered light measurement
Nominal range	0 .. 3000 mE/m
Resolution	0.1 mE/m
Conformity:	FEDRO «Guideline fire detection in road tunnels (2007)», RABT (2006)
Ambient temperature	-30 .. +55 °C
Ambient humidity	0 .. 100 % rel. humidity
Protection degree	IP66 (only electronic part)
Service voltage	100 .. 240 VAC; 47 .. 63 Hz
Power consumption	Sample heater OFF: 5 W / 14 VA Sample heater ON: 19 W / 33 VA
Interfaces (optional)	Profibus-DP, Modbus, RTU with Repeater, StromRelModul, WLAN-Modul

Full details and technical data:



FireGuard Integral

Technical data

Sensor

Measuring principle	Scattered light measurement
Wavelength	670 nm
Nominal range	0 .. 3000 mE/m
Resolution	0.1 mE/m
Conformity:	FEDRO «Guideline fire detection in road tunnels (2007)», RABT (2006)
Reproducibility	0.001 E/m resp. 2% of measuring range
Response time	5s (at wind speed of 1.5m/s)
Measuring angle	120°
Measuring cell material	PC / ABS
Material housing	Stainless steel 1.4571 (316L)
Ambient temperature	-30 .. +55 °C
Ambient humidity	0 .. 100 % rel. humidity
Protection degree	IP66 (only electronic part) (protection class in IM)
Service voltage	100 .. 240 VAC; 47 .. 63 Hz
Power consumption	Sample heater OFF: 5 W / 14 VA
Sample heater ON	19 W / 33 VA
Weight	2.1 kg (2.3 kg with sample heater)
Dimensions	Approx. Ø 150 × 186 × 247 mm
Interfaces (optional)	Profibus-DP, Modbus, RTU with Repeater, StromRelModul, WLAN-Modul

Connection box V2

Protection degree:	IP66
Weight	1.6 kg
Dimensions	Approx. 160 x 198 x 91 mm
Material housing	Polyester, fibre glass reinforced

SICON-C portable control unit

Service voltage	24 VDC
Power consumption	1.3 W
Display	1/4 VGA with touchscreen
Resolution	320 x 240 pixels with 3.5» diagonal
Weight	0.6 kg
Dimensions	160 x 152 x 60 mm
Material housing	ABS
Protection degree	IP66

