AVENAR detector 4000

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Invented for life

- Highly reliable and accurate thanks to Intelligent Signal Processing (ISP)
- Earliest detection of lightest smoke with dual-optical versions (Dual-Ray technology)
- Monitors environment for electromagnetic influence for fast root-cause analysis
- Automatic and manual addressing

AVENAR detector 4000 is a new range of automatic fire detectors featuring a superb accuracy and swiftness in detection. The versions with two optical sensors (dual-optical) are able to detect the lightest smoke. The range includes versions with rotaries, manually and automatically addressable, and versions without rotaries for automatic address setting.

Functions

Sensor technology and signal processing
The individual sensors can be configured manually, or timer-based via the LSN network.
All sensor signals are analysed continuously by the internal evaluation electronics (ISP - Intelligent Signal Processing) and are linked with each other via an inbuilt microprocessor. The link between the sensors means that the combined detectors can also be used where light smoke, steam or dust must be expected during the course of normal operation.
Only if the signal combination corresponds to the characteristics of the application site, selected during the programming, the alarm is triggered automatically. This results in less false alarms.
In addition, the time of the sensor signals on fire and fault detection is analysed, which leads to high detection reliability for each individual sensor.

In the case of the optical and chemical sensor, the response threshold (drift compensation) is actively adjusted. Manual or time-controlled switch-off of individual sensors is required for adjustment to extreme interference factors.

Optical sensor (smoke sensor)
The optical sensor uses the scattered-light method. An LED transmits light to the measuring chamber, where it is absorbed by the labyrinth structure. In the event of a fire, smoke enters the measuring chamber and the smoke particles scatter the light from the LED. The amount of light hitting the photo diode is converted into a proportional electrical signal.
The dual-optical versions use two optical sensors with different wavelengths. The Dual-Ray technology works with an infrared and a blue LED so that lightest smoke is detected fast and reliably (TF1 and TF9 detection).

Thermal sensor (temperature sensor)
A thermistor in a resistance network is used as a thermal sensor from which an analog-digital converter measures the temperature-dependent voltage at regular intervals.
Depending on the specified detector class, the temperature sensor triggers the alarm status when the maximum temperature of 54 °C or 69 °C is exceeded

- In LSN classic mode connectable to the LSN fire panels BZ 500 LSN, UEZ 2000 LSN, UGM 2020 and to other panels or their receiver modules with identical connection conditions, although with the previous LSN system parameters
- During planning works, it is essential to adhere to national standards and guidelines.
- The detector can be painted (cap and base) and thereby adapted to the surrounding colour scheme. Note the information in the Painting Instructions.
- Detectors of the 420 series can be replaced by all versions of the AVENAR detector 4000 without re-configuring the panel.

Installation/configuration notes in accordance with VdS/VDE

- The FAP-425-DOTC-R, FAP-425-DOT-R, FAP-425-OT-R, and FAP-425-OT versions are planned in accordance with the guidelines for optical detectors if operated as optical detectors or as combined optical/thermal detectors (see DIN VDE 0833 Part 2 and VDS 2095)
- If occasional deactivation of the optical unit (scattered light sensor) is required, planning must be based on the guidelines for heat detectors (see DIN VDE 0833 Part 2 and VDS 2095)
- When planning fire barriers according to DIBt, note that the heat detector (FAH-425-T-R) must be configured in accordance with class A1R.

Parts included

Detector version	Qty.	Components
FAP-425-O-R	1	Optical smoke detector with rotaries
FAP-425-OT-R	1	Multisensor detector optical / thermal with rotaries
FAH-425-T-R	1	Heat detector (thermal differential / thermal maximum) with rotaries
FAP-425-DO-R	1	Dual-optical smoke detector with rotaries
FAP-425-DOT-R	1	Multisensor detector dual-optical / thermal with rotaries
FAP-425-DOTC-R	1	Multisensor detector dual-optical / thermal / chemical with rotaries
FAP-425-O	1	Optical smoke detector without rotaries
FAP-425-OT	1	Multisensor detector optical / thermal without rotaries

Technical specifications

Electrical

Operating voltage	15 V DC to 33 V DC
Current consumption	< 0.55 mA
Alarm output	Per data word by two-wire signal line
Indicator output	Open collector connects 0 V over 1.5 kΩ through, max. 15 mA

Mechanics

Dimensions	
• Without base	Ø 99.5 x 52 mm
• With base	Ø 120 x 63.5 mm
Housing	
• Material	Plastic, ABS (Novodur)
• Color	White, similar to RAL 9010, matt finish
Weight	Without / With packaging
• FAP-425-DOTC-R	Approx. 85 g / Approx. 130 g
• FAP-425-DO-R, FAP-425-DOT-R	Approx. 80 g / Approx. 120 g
• FAP-O-425-R / FAP-425-OT-R / FAH-425-T-R	Approx. 80 g / Approx. 120 g
• FAP-425-O / FAP-425-OT	Approx. . 75 g / Approx. 115 g

Environmental conditions

Permissible operating temperature	
• FAP-425-DOTC-R	-10 °C to +50 °C
• FAP-425-DOT-R / FAP-425-OT-R / FAH-425-T-R / FAP-425-OT	-20 °C to +50 °C
• FAP-425-DO-R / FAP-425-O-R / FAP-425-O	-20 °C to +65 °C
Permissible storage temperature	
• FAP-425-DOTC-R	-20 °C to +50 °C
• All versions (except for FAP-425-DOTC-R)	-25 °C to +80 °C
Permissible relative humidity	95% (non-condensing)
Permissible air speed	20 m/s.
Protection class as per EN 60529	IP 40, IP 43 detector base with damp room seal

Further characteristics

Response sensitivity	
• Optical part	In accordance with EN54-7 (programmable)