

# OPTICAL SMOKE DETECTOR WITH FLASH AE/SA-OPF

## Description

Optical smoke detector indicated to detect fires in their first smoke phase, before flames form or dangerous increases in temperature occur. Formed by a camera obscura that incorporates an emitter and a receiver that detect the presence of particles inside and provided by a microcontroller where the operating parameters are set.

It operates according to the scattered light principle (Tyndall effect), incorporates a type A visual alarm device (VAD) (for indoor use) with C-3-7 coverage, and can also control an acoustic alarm device placed on the connection base.

Both the detector and the visual alarm device (VAD) are managed independently, occupying 2 consecutive positions in the algorithmic loop (n detector, n+1 VAD). This allows total flexibility in its management for control and activation.

# Operation

The detector works by measuring the relative decrease in visibility in the environment.

1. When connected, it adjusts to environmental conditions, within maximum and minimum limits.

2. Measurements are made every 1 s, which are compared with the rest reference measurement. When the difference exceeds the programmed level, the detector goes into pre-alarm or alarm status.

3. The variations with respect to the rest value are analyzed to make their compensation, if necessary, adapting to the new environmental conditions.

4. It controls the degree of contamination of its surroundings or the parameters of dirt inside it, if they exceed the programmed levels and are maintained for a certain time, it enters a maintenance state.

### Controls two alarm levels:

1. It enters the pre-alarm state when the increase in darkening in the environment exceeds the programmed level, without having reached the alarm level.

2. It enters alarm status when the detected level reaches the set level during the set time for alarm confirmation.

### Visual alarm device operation

The visual alarm device (VAD) is activated upon receiving the activation order from the Fire Control Panel.

- Individual identification, in the algorithmic loop it occupies the next consecutive number to the one programmed in the optical detector.
- VAD activation is independent of the state of the optical detector.
- Controls the supply voltage before and after the flash.

• Adapts the flash frequency to the supply voltage to keep the luminous intensity coverage constant.

• If the voltage is insufficient, it does not flash and reports a failure to the Fire Panel.

• Supports auxiliary supply of +24V DC through the +C contact of the connection base.

• The R output will activate at the same time as the visual alarm device, allowing the control of an AE/SA-SBE acoustic alarm device at the base of the detector.

### Maintenance level:

1. Warns when the degree of contamination of its surroundings or the parameters of dirt inside it exceed the programmed levels and are maintained for a certain time.

2. Controls the detector adjustment level within maximum and minimum limits. These values can be affected by height, pressure, humidity, etc., checking that it is within the correct operating range, reporting any anomaly.

## Includes:

• Operation indicator: It has two indicator lights located at 180°, which indicate its correct operation by flashing green on the alarm led. If the flashes are annoying in specific cases, they can be inhibited individually from the detector itself, or globally from the Algorithmic Fire Control Center.

• Alarm and maintenance levels: These levels are programmed from the control panel, individually, by sectors or collectively for each type. They always take a default value to ensure their correct operation.

• Individual identification: Each detector is individually identified with a number within the installation loop. This number is stored in EEPROM memory so it is maintained, even if the detector is without power for a long time.

#### Visual alarm device coverage area

The visual alarm device is Type A (for indoor use) with category C-3-7, indicated for ceiling mounting, with a maximum installation height of 3 meters, a cylindrical coverage volume diameter of 7 meters, and a minimum illumination of 0.4 lux/m2 of white flashing light.







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## Wiring diagram



#### Mounting

The detector base can be mounted directly to drop ceiling surfaces, or to octagonal (75mm, 90mm or 100mm), round (75mm) or square (100mm) electrical junction boxes, without the need for a mechanical adapter.

#### Cabling

Disconnect the power supply to the detection loop before installing the detector base.

• Connect the detection loop input positive to the + terminal (detection loop input positive).

• Connect the detection loop input negative to the - terminal (detection loop input negative).

• If it is necessary to use auxiliary 24 V DC supply, connect the positive to the +C terminal. The negative of the auxiliary supply must be unified with the negative of the algorithmic loop.

TECHNICAL CHARACTERISTICS		CERTIFICATIONS
Supply voltage:	18 ~ 27 V (Algorithmic Loop AE/SA-CTL card).	0370-CPR-7041
VAD minimum operating voltage:	21V	DPR-DUII
Standby consumption:	1.7 mA	
Alarm consumption:	4 mA	
Consumption with VAD activated:	14 mA	
Wiring:	2-wire algorithmic loop. Recommended section 1.5mm2	
Auxiliary supply	24V DC (optional)	
Temperature range:	-10º - +50º C (room temperature)	
Humidity range:	Relative humidity 10% - 90% non-condensing.	
Housing material:	ABS, flammability V2	
Color:	RAL 1013	
VAD lens material:	Optical polycarbonate, V2 flammability	
Protection enclosure:	IP21C (minimum)	
Luminous indicator:	2, located at 180º	
Operation indicator light:	green flash (can be disabled).	
Detector in alarm:	steady red	
Dimensions:	Ø 99 mm.	
Height:	54 mm with low plinth.	
Output for acoustic device:	max 100 mA.	
Compatible sockets:	AE/SA-ZB2 low socket	
	AE/SA-ZBA socket with insulator.	2