MULTISENSOR ALGORITHMIC OPTICAL / HEAT DETECTOR
AE/SA-OPT

Description

Optical and heat multi-sensor detector designed to provide the best answer to a wide range of fire types.

Formed by a dark chamber incorporating a transmitter and a receiver that detect the presence of smoke particles in the interior, and fitted with a temperature sensor.

Fabricated according to the standards UNE EN 54-7:2001 and UNE EN 54-5:2001. Class A2 thermal response. Certified according to UNE EN 54-7.

Due to the detection method of this type of detector it is recommended for installation in clean surroundings.

Operation

The detector works by measuring the combination of signals produced by the smoke and temperature sensors.

1. When it is connected, it adapts to the surrounding conditions, inside maximum and minimum limits.
2. Readings are taken every second and compared with the reference measurements when idle. When the difference exceeds the programmed level, the detector goes to the pre-alarm or alarm state.
3. The smoke and temperature variations are analysed with regard to the idle value in order to provide compensation, if necessary, and adapt to the new environmental conditions.
4. It monitors the degree of pollution in its environment or the fouling parameters in its interior, if they surpass the programmed levels and are maintained for a certain time, it passes to the maintenance state.

It monitors three alarm levels:

1. It goes to the pre-alarm state when the environmental darkening surpasses the programmed level, but without reaching the alarm level.
2. It goes to the alarm state when the smoke and temperature variations exceed the limits programmed by means of the working algorithms.
3. It goes to the alarm state when a slow rise in temperature that has not been accompanied by an increase in the smoke, reaches a preset temperature.

Maintenance level, smoke sensor:

1. It warns when the pollution level in its environment or the fouling parameters in its interior, surpass the programmed values and are maintained for a certain time.
2. It monitors the detector adjustment level inside maximum and minimum limits. These values can be affected by height, pressure, humidity, etc. It checks they are inside the correct operating range of and reports any anomaly.

It includes:

* Operation pilot: It indicates it is operating correctly, giving green-colored flashes through the alarm LED. If the flashes are a nuisance in specific cases, they can be inhibited on an individual basis from the detector itself, or in general from the Algorithmic Fire Control Panel.
* Maintenance and alarm levels: These levels are programmed from the panel, individually, by sectors or collectively for each type. They always take a default value to assure their correct operation.
* Remote alarm output: There is a remote alarm output for connection of action indicators, etc, which is activated when the detector reaches the programmed alarm level.
* Individual identification: Each detector is identified individually with a number inside the installation loop. This number is stored in EEPROM memory whereby it is kept even though the detector is without power for a long period.

TECHNICAL CHARACTERISTICS		CERTIFICATIONS
Power supply voltage:	18 ~- 27 V (AE/SA-CTL Algorithmic loop card).	0099/CPD/A74/00019
Consumption when idle:	1.7 mA	
Consumption in alarm state:	4.2 mA	
Wiring	2-wire. Recommended cross-section 1.5 mm2	
Temperature range:	-10º - +50º C (ambient temperature)	
Humidity range:	Relative humidity 10% - 90% without condensation.	
Casing material:	ABS	
Luminous indicator:	Operation pilot: green flash (can be inhibited).	
Alarm:	red permanent	
Size:	Ø 106 mm.	
Height:	58 mm with low base.	
Remote alarm output:	80 mA max.	
Compatible bases:	AE/SA-ZB2 low base	
	AE/SA-ZBA base with insulator	

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Wiring schematic
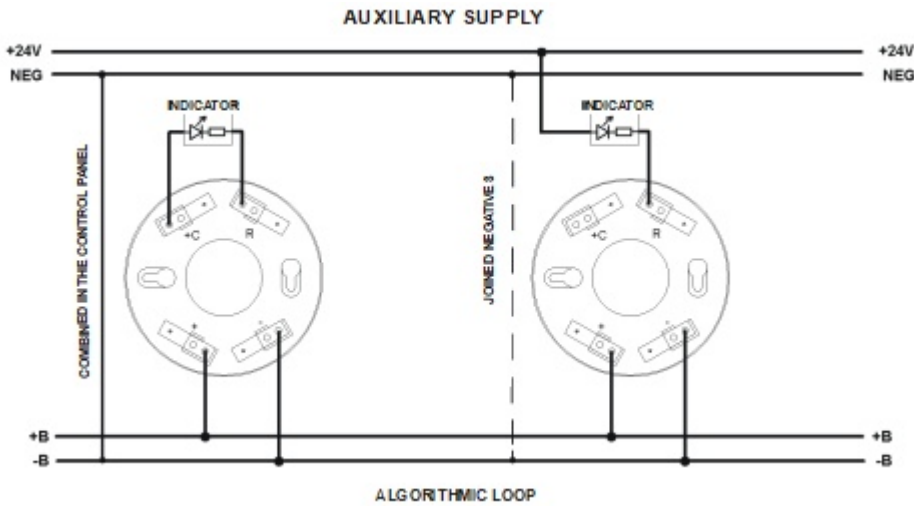
Assembly

The base of the detector can be mounted directly on false ceiling surfaces, or on electric connection boxes shaped octagonally (75mm, 90mm or 100mm), round (75mm) or square (100mm), with no need for a mechanical adapter.

Wiring

Disconnect the supply voltage of the detection loop before installing the detector base.

- Connect the positive input of the detection loop to the + terminal (positive input of the detection loop).
- Connect the negative input of the detection loop to the - terminal (negative input of the detection loop).
- If a remote action indicator is to be installed, connect the positive of the indicator to the +C terminal or positive of auxiliary supply and the negative to the R terminal.

The action indicator can be fed from the detector itself, taking into account the total consumption of the loop, or by means of an auxiliary supply.

If an auxiliary supply is used, the negative of the auxiliary supply should be joined to the negative of the algorithmic loop.

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