

## OH720-CN Multi-sensor detector Product manual

### Overview

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The multi-sensor detector OH720-CN is a multiple criteria fire detector featuring an optical and a thermal sensor. The combination of optical and thermal sensor signals optimizes detection reliability:

- The transmitter lights up the smoke particles. The scattered light then hits the receiver and generates a measurable electric signal.
- In addition, the heat sensor makes it possible to detect fires without smoke generation.

### Characteristics

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- Compliance with EN 54-7, EN 54-17 and EN 54-29
- Early detection of all types of fire, whether they generate light or dark smoke, or no smoke at all
- Resistant to environment and interference factors such as dust, fibers, insects, humidity, extreme temperatures, electro-magnetic interference, corrosive vapors, vibration, synthetic aerosols and atypical fire phenomena
- Integrated short-circuit isolator
- Communication via C-NET
- Sticker method is easy for commissioning
- Adopt environmentally friendly material and production process to fulfill RoHS standard

### Application

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Like all optical smoke detectors, the multi-sensor detector OH720-CN is able to detect slow-burning fires that generate smoke.

However, when compared to standard optical smoke detectors, the multi-sensor detector OH720-CN also offers improved response behavior in the event of open fires and increased resistance to misleading sources of false alarms.

The multi-sensor detector OH720-CN has two parameter sets available for selection.

#### **Robust (1/Default):**

The parameter set 'Robust' offers improved resistance to false alarms in areas where misleading sources, such as cigarette smoke or exhaust fumes, may cause these to be triggered.

## Sensitive (2):

This parameter set is particularly suitable for areas where few misleading sources of false alarms are present, and where priority is given to detecting open fires as early as possible.

The following table shows the properties of the parameter sets for the multi-sensor detector OH720-CN:

No.	Name	Optical		Thermal	
		Sensitivity [%/m]	Static activation temperature [°C]	Differential activation temperature <sup>1</sup> ΔT [K]	Differential activation possible from: [°C]
1	Robust	3.5	60	29 <sup>2</sup>	10
2	Sensitive	2.5	60	29 <sup>2</sup>	10

<sup>1</sup> Applicable with fast temperature increases >10 K/min.

<sup>2</sup> Between 1 K/min and 10 K/min, this value increases by a few degrees.

## Internal alarm indicator

The detectors are provided with an internal alarm indicator. The internal alarm indicator shows the operating condition of the detector (see table).

Operating condition	Flashing mode of the AI
Normal	Off
Locate	Red light flashes every 1 second
Alarm	Red light steady on

## Installation

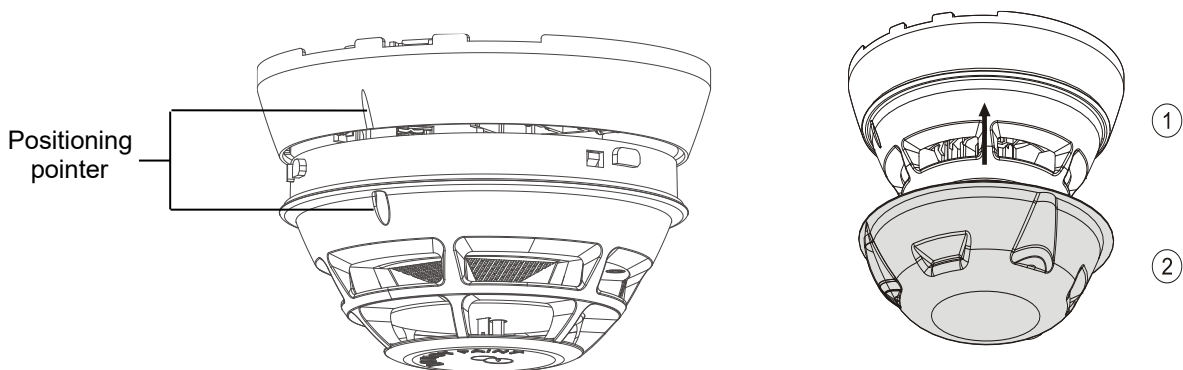


Fig. 1

Alarm indicator (AI) centered in the detector; no alignment required.

Fig. 2

1 - Detector  
2 - Detector dust cap

- **Easy, time-saving and high-quality mounting (Fig. 1)**

To install a detector, a detector base DB721-CN is always required. After installing the detector base, simply insert the detector into the base and turn it, until the positioning pointer of the detector is align with the positioning pointer of the base. When disassembly, turn the detector counter-clockwise until it is released from the base.

- **Detector dust cap (Fig. 2)**

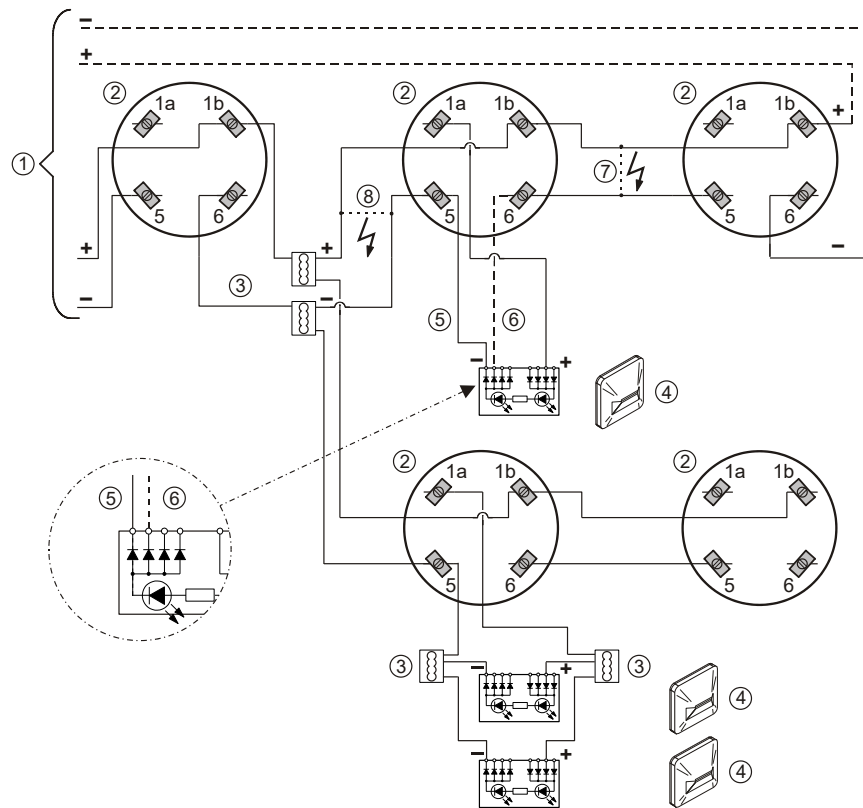
A detector dust cap is provided as part of the scope of supply for each detector.

During the construction phase, the detector may be covered with the detector dust cap to protect it from dust and dirt.



**After all construction is finished completely, the dust cap must be taken away!**

## Connection diagram



### Legend

- |                                 |                           |
|---------------------------------|---------------------------|
| 1 Control panel                 | 5 Cable –E AI6            |
| 2 Detector base DB721-CN        | 6 Cable –E_AI5 (optional) |
| 3 Auxiliary terminal DBZ1190-XX | 7 Short circuit (error)   |
| 4 Ext. alarm indicator          | 8 Short circuit (error)   |

### Comments

- If a shielded cable is used for connecting the external alarm indicator, its shield must be connected to the shield for the detector bus.
- The alarm indicator connected will continue to function correctly in the event of a short circuit occurring at position 7 on the connection diagram. The alarm indicator is triggered by cable –E\_AI6.  
If the short circuit occurs at position 8 on the connection diagram, the alarm indicator will no longer be triggered.  
As an option, the alarm indicator may also be connected using cable –E\_AI5.  
In this case, the alarm indicator will correctly indicate an alarm even if a short circuit occurs at position 8.  
Therefore, this ensures that the alarm indicator will always function correctly.



The option described is possible in loops and stub lines.

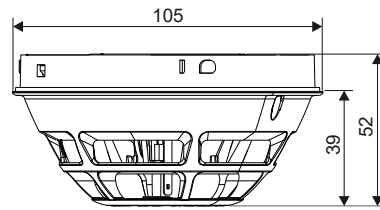


**In order to guarantee product safety, DO NOT reassemble the product!**

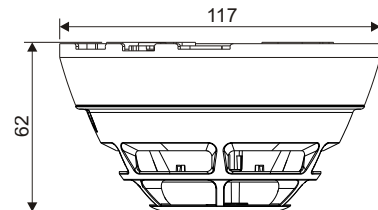
## Dimensions

In: mm

Without base



With base



## Maintenance/Repair

Regular performance checks of the detectors are required. These can be carried out using a test gas and hot air fan.

Recommendation:

- Submit all detectors to an annual visual check. Detectors that are heavily soiled or mechanically damaged must be replaced.
- Any detectors should be replaced after 6 to 8 years of service, depending on the ambient conditions.

## Technical data

Operating voltage (modulated)	12 ... 33 VDC
Operating current (quiescent)	230 $\mu$ A
Connectable ext. alarm indicator	2
Current for ext. alarm indicator	10 ... 16 mA
Voltage for ext. alarm indicator	9 ... 30 VDC
Electromagnetic compatibility at	
– 100 kHz ... 1.8 GHz	50 V/M
– 1.8 GHz ... 2.5 GHz	20 V/M
Operating temperature	–10 ... +55 °C
Storage temperature	–30 ... +70 °C
Humidity	$\leq$ 95 % rel.
Communication protocol	C-NET
Color	pure white, RAL9010
Permissible air speed	Max. 5 m/s

## Details for ordering

Type	Material no	Designation	Weight
OH720-CN	S54310-F3-A102	Multi-sensor detector	0.096 kg
DB721-CN	S54319-F12-A101	Detector base (with loop contact)	0.050 kg