

## OP720-CN Smoke detector Product Manual

### Overview

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The OP720-CN wide-spectrum smoke detector is an optical smoke detector with an optical sensor. It works according to the principle of forward scattering. This detector reacts extremely sensitive on light aerosols caused by fire. The increased sensitivity makes the early detection of smoldering and open fires possible.

### Characteristics

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- Fulfill Chinese standard GB4715-2005 "Smoke detectors-Point detectors using scattered light, transmitted light or ionization"
- Particularly suited for the early detection of smoke-generating flaming and smoldering fires
- 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
- Automatic drift compensation. When the detector is contaminated badly and drift compensation can not work, it will send fault message to controller
- Adopt environmental protected material and production process to fulfill RoHS standard

## Application

The optical smoke detector OP720-CN demonstrates quick response behavior in the event of slow-burning fires that generate smoke. It is extremely well suited to general-purpose applications.

The optical smoke detector OP720-CN has two parameter sets available for selection.

### Standard (1/Default):

For standard applications, such as corridors, bedrooms, offices, and living rooms.

### Sensitive (2):

For areas with few misleading sources of false alarms, such as cigarette smoke, exhaust fumes, and steam.

The following table shows the properties of the parameter sets for the smoke detector OP720-CN:

No.	Name	Sensitivity [% / m]
1	Standard	2.5
2	Sensitive	1.8

## Internal alarm indicator

The detector is 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
Test	AI lights up every second
Alarm	Continuous light on AI
Locate	AI lights up every second

## Installation

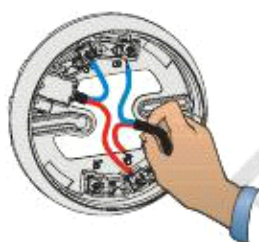


Fig. 1  
- Alarm indicator (AI) centered in the detector; no alignment required

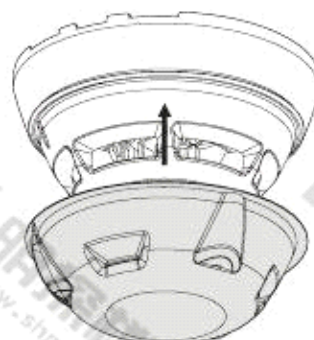
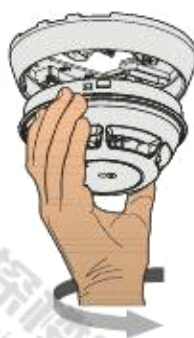


Fig. 2  
1 - Detector  
2 - Detector dust cap

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

To install a point detector, a detector base DB720-CN is always required. After installing the detector base, simply insert the point detector in the base and turn it, either manually or using the detector exchanger, until you hear and feel it snap in.

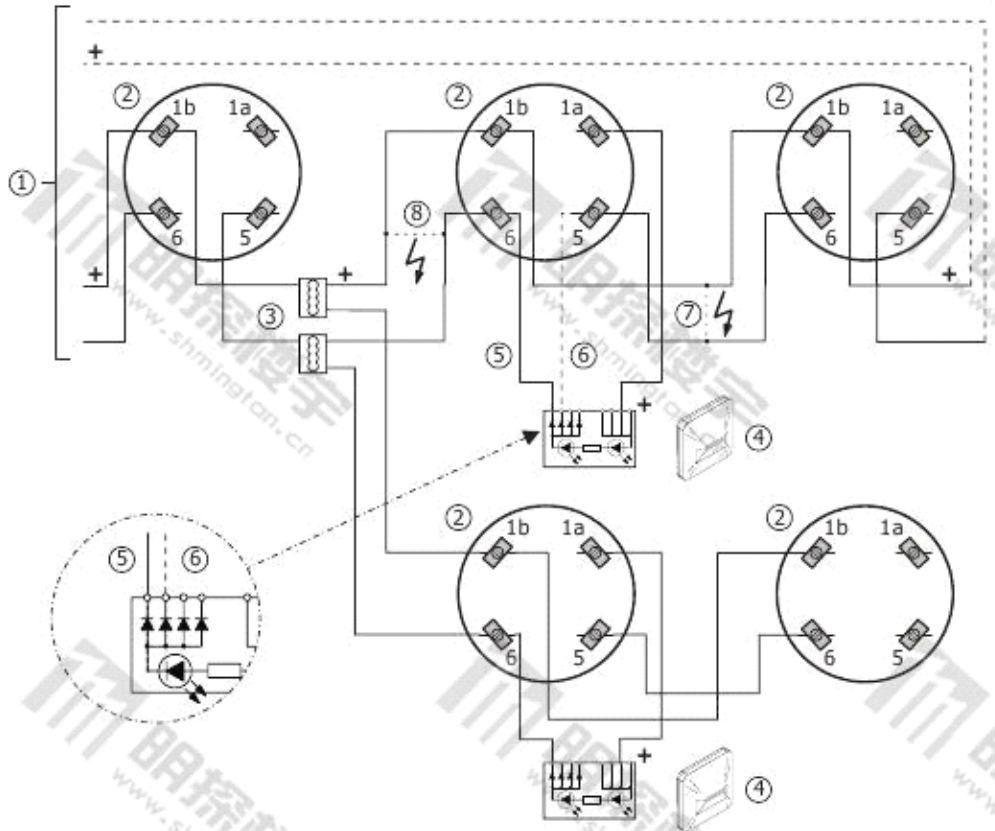
● **Detector dust cap (Fig. 2)**

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 DB720-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.



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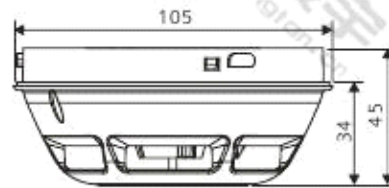
The option described is only possible in a loop line.

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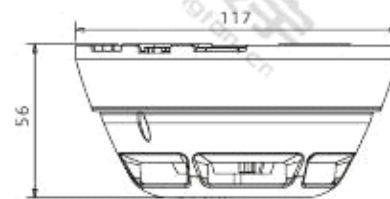
## Dimensions

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.

Recommendation:

- Submit all detectors to an annual visual check. Detectors that are strongly soiled or mechanically damaged must be replaced.
- Any detectors should be replaced after 6 to 8 years of service, independent from the environmental conditions.

## Technical data

Operating voltage (modulated)	12 ... 33 VDC
Operating current (quiescent)	220 µA
Connectable ext. alarm indicator	2
Current for ext. alarm indicator	10 ... 16 mA
Voltage for ext. alarm indicator	9 ... 33 VDC
Operating temperature	-10 ... +50 °C
Storage temperature	-30 ... +70 °C
Humidity (short-term moisture condensation permitted)	≤95 % rel.
Communication protocol	C-NET
Color	pure white, RAL 9010
Protection category EN60529 / IEC529	
- Detector base DB720-CN	IP40
- Detector base DB720-CN with detector base seal RS720	IP42

## Details for ordering

Type	Material no	Part no	Designation	Weight
OP720-CN	S54310-F1-A101	100681354	Smoke detector	0.086 Kg
DB720-CN	S54319-F4-A101	100700917	Detector base, addressable	0.052 Kg

Beijing Siemens Cerberus Electronics Ltd.  
No. 18 Xixi Road Shangdi Information Industry Base,  
Haidian District, Beijing 100085 China  
Tel.: +10 6296 2255  
Fax: +10 6298 7387

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