C9021T Conventional Heat Detector

1 Product overview

(1)   C9021T point-type Conventional   Heat Detector (Detector hereunder) is a two-wire switch-type temperature-sensing detector. As a non-polar two-cables connection is adopted in the detector, it is compatible in conventional fire alarm control panel. The detector can also be connected with addressable fire alarm control systems via the zone module. The detector monitors the temperature of the site in real time. While monitoring, the red indicator blinks and the standby current is low. When the temperature exceeds the preset alarm threshold, the detector alarms and the red indicator lights up, while the loop current is increased. The detector's alarm signal can be locked and is displayed by changes in the loop current. The alarm can only be reset by the power disconnection.

(2)   The detector is applicable in places where fire might generate volume heat. e.g. in industrial and civil buildings such as in the kitchen, boiler room, generator room, drying plant, and smoking room. However, it is not suitable for places where volume smoke and low heat is generated during a fire, or a place where a smoldering fire might occur.

2 Product features

(1)   Designed with an upper cover and a lower cover, it can be installed, debugged and maintained conveniently.

(2)   Real-time monitoring to accurately determine ambient temperature conditions in protected areas.

(3)   The detector is non-addressable.

(4)   Non-polarity, two-bus connection that ensures convenient installation and maintenance.

3 Technical parameters

(1)

Item	Parameters
Executive standard:	EN 54-5
Working voltage:	DC24V (allowance: DC18V ~ 30V)
Working current:	Standby current: <50uA @ DC 24V Alarm current: 1mA~20mA @ DC 24V
Wiring method:	non-polar, two cables
Operating environment:	Indoor, temperature: －10℃～+50℃; Relative humidity: ≤95% (40℃±2℃, without condensation)
Weight:	about 70g without base; about 110g with base DZ-912
product category:	A2 (Static Response temperature: 54℃ to 70℃)
Ingress Protection Rating:	IP30
Overall dimensions:	diameter:100mm, height:47mm (without base)/height:60mm (with base)
Work indication:	The red indicator will blink in the monitoring status or remain lit in the alarm status

4　Appearance and dimensions

(1)

φ100　47

INDICATOR
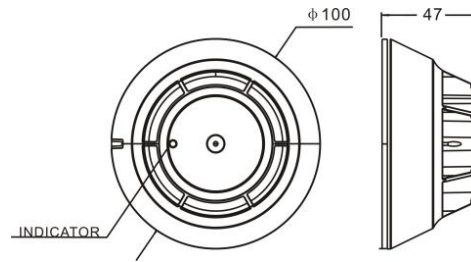
Fig.1 （Unit: mm）

5　Use and engineering application

(1)　Base Installation Diagram
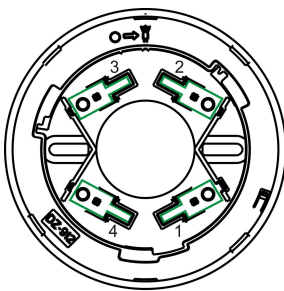
Definitions of terminals (non-polarity two-cables system):

1 – L2 Signal terminal

2 – L1 Signal terminal

3 – L1 Signal terminal

4 – Negative of remote indicator

Notes：

1)Terminal 2 and 3 are connected directly inside the detector. Connecting the detector with the controller as Fig.3, we can find the failures caused by dismounting any detector.

2)When it is necessary to connect a remote indicator, connect from the positive end of the output signal to the positive connector of the remote indicator (C9069L), and the negative connector of the remote indicator (C9069L) to pin 4 (see Figure 3).

Fig 2

(2)　Wiring mode 1: Fig.3 is a schematic diagram of the connection between multiple detectors with conventional fire alarm control panel:

Positive | C9069L （Remote indicator） | Negative

Conventional Fire Alarm Control Panel

L+

L−
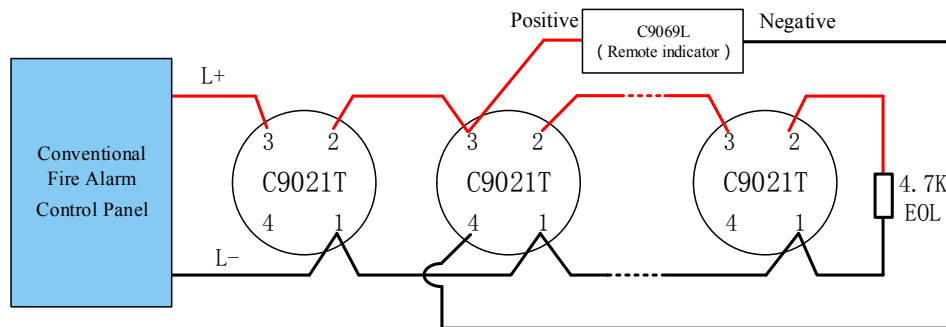
3　2 C9021T 4　1

3　2 C9021T 4　1

3　2 C9021T 4　1

4.7K EOL

Fig.3

(3)　Wiring mode 2:Fig.4 is a schematic diagram of the connection between multiple detectors with addressable fire alarm system via the zone module:
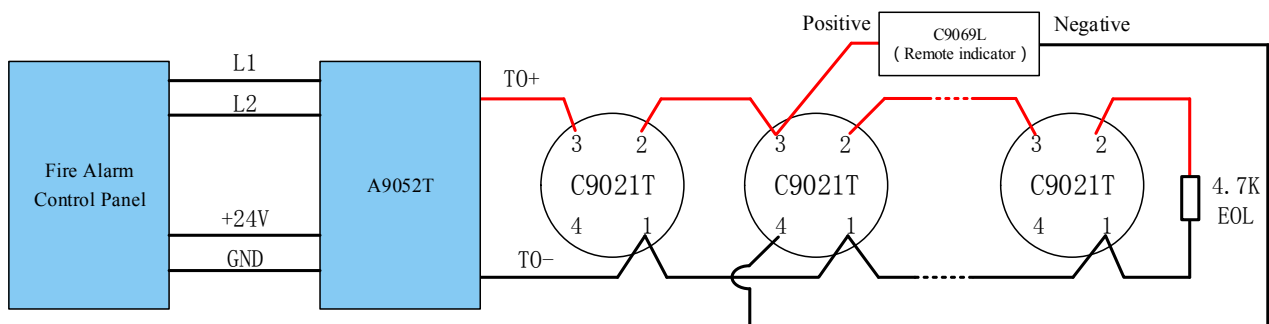
Positive | C9069L （Remote indicator） | Negative

Fire Alarm Control Panel

L1
L2

+24V
GND

A9052T

TO+

TO−

3　2 C9021T 4　1

3　2 C9021T 4　1

3　2 C9021T 4　1

4.7K EOL

Fig.4

6 Installation and debugging

(1) The installation of the detector requires the use of matching base. Supporting base as shown in Figure 5, the external dimensions of Φ 110mm × 26mm (diameter × thickness), the diameter of the fixed hole Φ4.5mm, the fixed hole spacing of 44mm ~ 64mm.
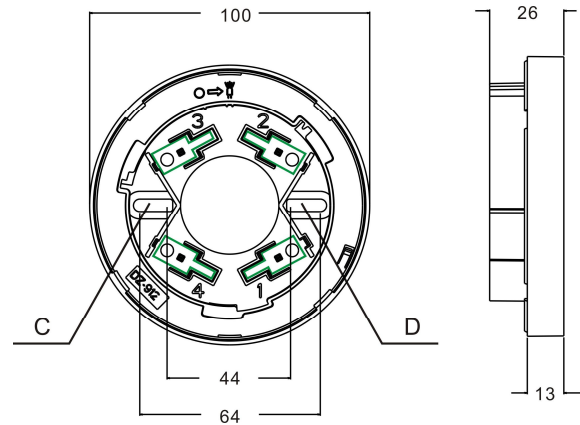
Fig.4

(2) Wiring requirement: It is advisable to use RVS twisted pair with a cross-sectional area of ≥ 1.0 mm². .

(3) **Installation and commissioning steps**

➢ Use two M4 screws to fix the matched mounting base on the designated position via the mounting holes C and D shown in Fig.4, as instructed in the construction drawing and make sure the matched mounting base has been firmly installed.

➢ Disconnect the power supply of the fire alarm control panel and connect the detector correctly according to the construction drawing.

➢ Insert the detector into the base and rotate the detector clockwise until it is firmly locked.

➢ After all the products are installed and checked, connect the power supply of the fire alarm control panel.

➢ When the detector is powered up, the red indicator of the detector will blink once about every 3~6 seconds, which suggests that the detector has begun to operate normally.

➢ Finally conduct an alarm test for the detector through some special tools or direct hot air gun blowing. After the detector gives a fire alarm, the indicator will remain lit and the fire alarm control panel will simultaneously give corresponding alarm prompt information. After the alarm test, please reset the fire alarm control panel.

7 Caveat⚠

(1) When the detector is tested individually, a 3K current limiting resistor should be connected in series in the test circuit. It is not allowed to connect 24V DC directly to the detector, otherwise the alarm test will cause damage to the detector.

(2) The protective cover supplied with the detector should not be removed prematurely to avoid contamination of the detector until it has been installed on site and is ready for use.

(3) Alarm test is strictly prohibited to use open flame (such as lighters, etc.) heating test, in order to avoid damage to the detector, it is recommended to use a hot air blower and other warming equipment to simulate the alarm test.

8 Maintenance

(1) ⚠**Warning: The detector should notify the relevant management that the system will be undergoing maintenance and that monitoring needs to be temporarily stopped before the maintenance is carried out.Meanwhile, disable the logic control function of the area or system to be maintained to avoid unnecessary alarm linkage. After the test, inform the management department to restore the normal functions of the system.**

(2) Detectors should be tested quarterly using special testing instruments to test the action and confirm the light display; for detectors already installed and in use, it is recommended that maintenance be carried out on the detectors once every two years.

(3)   Operating environment has a great influence on the performance of the detector. If the detector is installed and used in a place where its normal use is easily affected by dust, high wind speed and other factors, its maintenance period should be shortened.

(4)   If a detector fails due to a material defect or a manufacturing process defect under normal conditions of use in two year following the date of its delivery, we shall repair or replace it for free. However, the faults of the detector due to artificial damage, improper use, or authorized adjustment, reconstruction or disassembly are not covered in the guarantee and we shall assume no responsibilities for any the consequence thereby caused.

(5)   We may provide paid repair service for products with any faults beyond the guarantee range. If you have such products that need repair, please contact us. When sending such a product to us for repair, you are expected to provide some important information about the product, such as the phenomenon and possible cause of the product fault, so that we can find out the cause of the fault in the shortest time and so the information may be used as a reference in our future product development and improvement.

9   Fault analysis and troubleshooting

(1)

Failures	Causes	Methods	Remarks
Alarm after powered up	Internal circuit is broken	Return to the manufacturer for repairs	
Cannot work after powered up	Indicator is broken or Internal circuit is broken	Return to the manufacturer for repairs	
	Bad contact to the base	Inspect and reinstall the base	
Cannot alarm during test	Internal circuit is broken	Return to the manufacturer for repairs	

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