Instruction Manual of C9030T Conventional Optical Smoke Detector

----- Please read this Manual carefully before installing and using the product. -----

1. Product overview

C9030T Conventional Optical Smoke Detector (Detector hereunder) is a two-wire switch-type smoke-sensing detector. As a non-polar two-wire connection is adopted in the detector, it is compatible in conventional switch-type alarm control systems and monitoring alarm systems. The detector can also be connected with addressable fire alarm system via the zone module. The detector monitors smoke concentration in the workplace in real time. While monitoring, the red indicator blinks and the working current is low. When the work site smoke concentration has exceeded the preset alarm threshold, the alarm detectors and the red indicator remain on, 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 instant power disconnection.

The detector is applicable in places where fire might generate volume smoke, i.e. in industrial and civil buildings such as in the restaurant, hotel, teaching building, office building, computer room, archives and stack room.

2. Product features

- 1) Designed with an upper cover and a lower cover, it can be installed, debugged and maintained conveniently.
- 2) Within a single-chip microcomputer, it can process the sampling data in real-time, save the latest 144 historical data and realize a curve tracing for the field situation.
- 3) It has a temperature, humidity and dust accumulation drift compensation function.

3. Technical parameters

- 1) Executive standard: EN54-7
- 2) Operating voltage: DC24V ±20%
- 3) Operating current: During monitoring <50uA.
 - In alarm mode 1mA~20mA (depends on the loop current limiting resistance).
- 4) Working indicator: During monitoring, the red indicator blinks once per 6 seconds. In sensor failure alarm, the red indicator blinks twice per 6 seconds
 - In fire alarm mode, the red indicator remains on.
- 5) Weight: about 120g
- 6) External dimensions: diameter: 100mm, height: 58mm (with the base)
- 7) Wiring method: non-polarity two-bus system
- 8) Operating environment: Indoor, temperature: $-10^{\circ}C \sim +55^{\circ}C$; relative humidity: $\leq 95\%$ (40 $^{\circ}C \pm 2^{\circ}C$, without condensation)
- 9) Matched host machine: addressable fire alarm system via the zone module.

4. Appearance and dimensions (see Fig.1)





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5. Use and engineering application

1) Fig.2 is the schematic diagram of the matched mounting base.



Definitions of terminals(non-polarity two-wire system):

- 1 L2 Signal terminal
- 2 L1 Signal terminal
- 3 L1 Signal terminal
- 4 No Pin

Notes: 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 the detector.

2) Wiring method:

a. Fig.3 is a schematic diagram of the connection between multiple detectors with addressable fire alarm system via the zone module.



6. Installation and debugging

A self-contained complete base is necessary during the installation of a detector. As shown in Fig.4, the model, the external dimensions, the mounting hole diameter and the mounting hole spacing of the base are DZ-912K, Φ 100mm × 26.4mm (diameter × thickness), Φ 4.5mm and 44mm ~ 65mm respectively.

(Unit: mm Fig.1



Fig.4

Wiring requirement: It is proper to use RVS twisted pairs with a section area of equal to or larger than 1.0mm² for the signal buses L1 and L2.

Details of the installation and commissioning are as following:

- 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.
- 3) Insert the detector into the base and turn the detector clockwise until it is firmly locked.
- 4) After all the products are installed and checked, connect the power supply of the fire alarm control panel.
- 5) When the detector is powered up normally, the red indicator of the detector will blink once about every 3~6 seconds, which suggests that the detector has begun to operate normally.
- 6) Finally conduct an alarm test for the detector through some special tools or direct smoke blowing. After the detector gives a fire alarm, the indicator will remain lit and the fire alarm control panel will simultaneously show corresponding alarm prompt information. After the alarm test, reset the fire alarm control panel and restore to the monitoring status.

7. Precautions A

- When you test the detector separately, a 4.7K current limited resistance shall be connected to the test loop. Don't connect the 24V DC with the detector directly, otherwise, the alarm test will damage the detector.
- 2) The connected detectors shall be 30 units max when the C9030T is connected with addressable fire alarm system via the zone module.
- 3) Never dismount the protective cover delivered with the detector too early after the field installation and before the use of the detector, or else the detector may be contaminated.
- 4) It is not permitted to use open flames (such as lighters) to firing thermistor during alarm tests, so as to avoid damage to the detector.

8. Maintenance

- ▲ Warning: Before conducting maintenance for a detector, inform the related management department that the monitoring will be stopped temporarily when the system maintenance. 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.
 - 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.

- 2) If a detector fails due to a material defect or a manufacturing process defect under normal conditions of use in one 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.
- 3) 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

	Failures	Causes	Methods	Remarks
	Alarm after powered up	There is a great deal of smoke dust or steam in the room	Power up again after the smoke, dust or the steam is eliminated	
		Internal circuit is broken	Return to the manufacturer for repairs	
		The labyrinth is seriously contaminated	Clean the labyrinth of the detector	
	Cannot work after powered up	Internal circuit is broken	Return to the manufacturer for repairs	
		Bad contact to the base	Inspect and reinstall the base	
	The Indicator blinks twice per 6 seconds after powered up	The sensor has failed.	Return to the manufacturer for repairs	
	Cannot alarm during test	Internal circuit is broken	Return to the manufacturer for repairs	



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