

Features

- ◇ Integrated algorithm of analyzing fire, recognize black smoke quickly.
- ◇ Drift sensitivity, suit to environment extensively.
- ◇ Removable innovative sensing chamber, easy for maintenance.
- ◇ The fire LED allows 360° viewing.
- ◇ Providing remote terminals connect with remote indicator.
- ◇ Featuring magnetic test.
- ◇ 2-level sensitivities (complying with EN 54-7 just when sensitivity is level 1).

Description

DC-9102E Conventional Photoelectric Smoke Detector is a new-generation product. With built-in microprocessor, the detector is highly fixed with reliable fire judging program, which make it stable and reliable performance.

When the detector checks fire signal, it will send fire information to the control panel or addressable zone monitor unit by means of current changing. The detector keeps turning on the LED to indicate alarm state until it is reset.

The detector is developed from sensing chamber by scattering theory. It has the ability to resist dust contamination and environmental light.

The detector utilizes drift compensation algorithm: When the environment is changing, such as dust accumulation, humidity and temperature changing, the detector can figure out these drift variation to make up for sensitivity, thus the amount of smoke needed to generate an alarm remains constant, irrespective of environmental conditions. The principle diagram is shown as Fig. 1.

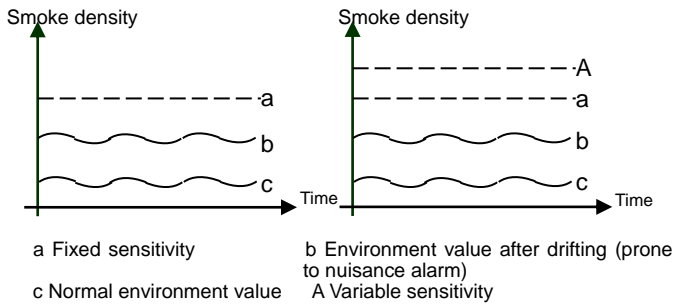


Fig. 1

Connection and cabling

The orientation base is shown in Fig. 3.

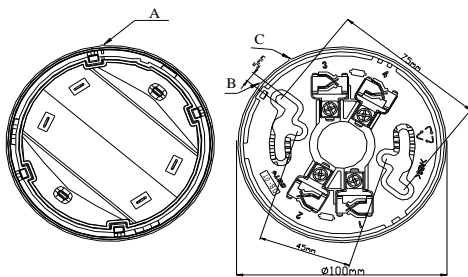


Fig. 2

Fig. 3

There are four terminals with number on the base. "1" is connected with output anode of addressable zone monitor unit or the anode of the power supply; "2" is used as output, connected with anode of next detector (Terminal 1) and also connected with anode of remote indicator; "3" is connected with output cathode of addressable zone monitor unit or the cathode of the power supply as well as the cathode of next detector; "4" connects with the cathode of remote indicator.

Recommended Wiring

1.0mm² or above fire cable for all terminals laid through metal conduit or flame proof conduit, subject to local codes.

Note: Different color cables are used to avoid wiring mistake.



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Installation

Fix the base with two tapping screws. Then align A (Fig.2) on the bottom of the detector to B (Fig.3) of the base, and rotate the detector clockwise to mark C.

Mounting of the detector is shown in Fig.4.

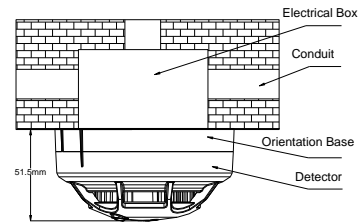


Fig. 4

Application

Notes: The alarm current depends on the current limit of the control panel. 24VDC cannot power the detector directly. Otherwise the detector will be blown up for lack of current limit resistor.

The sensitivity level 1 and polling LED status is "ON" are default, which can be modified by P-9910B programmer.

Program parameters: In power-on state, input unlocking password and press *Clear* to unlock. Press *Function*, then press "3", the screen shows "." at the last digit. Input corresponding sensitivity or parameter and press *Program*, the screen will show a "P", the corresponding sensitivity or parameter is programmed. Press *Clear* to clear the "P". Input locking password and press *Clear* to return.

Table 1 Parameters Setup

Parameter	Smoke Sensitivity	Polling LED Status
1	1	ON
2	2	ON
129	1	OFF
130	2	OFF

Read sensitivity: On power-on time, press *Test*, the LCD screen shows the address of the detector; Press *Up*, it shows in turn the sensitivity, device type, initial sensitivity.

The detector is suitable for hotels, restaurants, office buildings, teaching buildings, banks, warehouses, libraries, computer rooms and switch rooms, etc.

◇ When the detector connects with conventional fire alarm control panel or addressable zone monitor unit from GST, and if DP-9907 Active End of Line Unit is connected to the end of output loop, DB-01D base should be used.

➤ Used as the detector base, DP-9907 Active End of Line is used to be installed a conventional detector on it. The system connection is shown in Fig. 5.

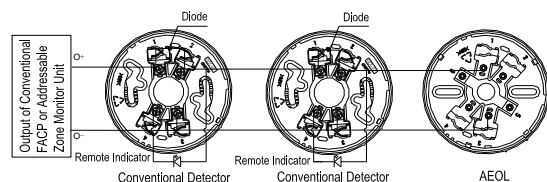


Fig. 5

➤ When DP-9907 Active End of Line Unit is not used as the detector base, a cover should be added to it. The system connection is shown in Fig.6.

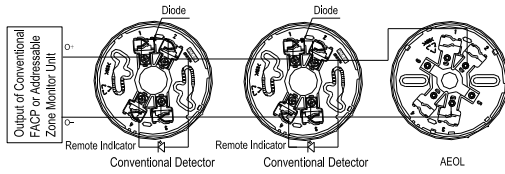


Fig. 6

✧ When the detector is connected with conventional fire alarm control panel or the addressable zone monitor unit from GST, if a 4.7K Ω terminal resistor is connected to the end of output loop, then DB-01 base is used. The system connection is shown in Fig. 7.

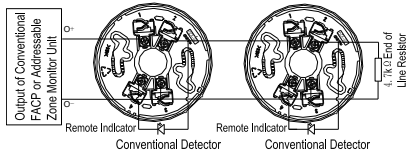


Fig. 7

✧ When a remote indicator connects with a few of detectors, a diode 1N5819 needs connecting with Terminal 4 of the orientation base in series and with anode of the remote indicator. Either DB-01 or DB-01D is used depends on which DP-9907 Active End of Line Unit or 4.7K Ω terminal resistor is connected. The system composition is shown in Fig. 8.

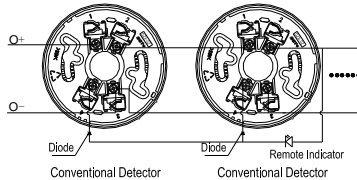


Fig. 8

Output loop of the addressable zone monitor unit can be connected with up to 15 conventional field devices. The addressable zone monitor unit features loop checking. When the loop is broken, the addressable zone monitor unit will send fault signal to fire alarm control panel. When any field device in the output loop is removed, the addressable zone monitor unit reports fault. If a DP-9907 Active End of Line Unit is connected, it will not affect the normal operation of other field devices.

Testing

Before testing, please ensure that the detector has been installed correctly and powered up. After 10 seconds, testing can begin.

1. The detector must be tested after installation and periodical maintenance.
2. Testing method

1) Magnetic test

Magnetic test zone is shown in Fig. 9. Put the magnet of commission tool close to that of the detector and hold on for a few seconds until the detector generates alarm.

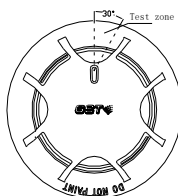


Fig. 9

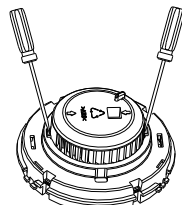


Fig. 10

2) Smoke test

Taking a cotton rope burning without flame close to the detector, blow the smoke into the detector until the detector generates alarm.

3. After testing, cut power for 10 seconds at least and reset the detector. Notify the proper authorities that the system returns to normal state.

Clean the failure detector in the test according to *Maintenance*, and test it again. If it is still fail to pass, please return it to repair.

Maintenance

1. The detector should be installed just before commission and kept well before installation, taken corresponding measures for dust-proof, damp-proof and corrosion-proof.

2. The dust cover cannot be removed until the project has been plunged into usage. Otherwise it can't alarm normally.

3. Clean the detector at least once a year to ensure normal operation of the system.

4. If nuisance alarms are often found of the detector on site, the sensing chamber should be cleaned and replaced when necessary.

a) Open the top cover of detector, and draw out the sensing chamber by slightly lifting its two sides using a straight screwdriver, as shown in Fig. 10.

b) Clean the sensing chamber by alcohol cotton swab clipped by tweezers, and also by clear water and brush. Please note not to leave any cotton in the chamber.

c) Install the sensing chamber and top cover back.

5. Before cleaning, notify the proper authorities that the system is undergoing maintenance and will temporarily be out of service. Disable the zone or system undergoing maintenance to avoid unwanted alarms.

6. The detector should be tested again after cleaning and re-installing.

7. Protect the metal component on the PCB against damp and improper distortion.

8. Fire simulation test should be made to the detector at least once half a year.

Specification

Operating Voltage	24VDC(16VDC~28VDC)
Standby Current	$\leq 60\mu\text{A}$
Alarm Current	$\leq 55\text{mA}$
Fire LED	Red, periodically flash once in polling when the status is set to "ON"; don't illuminate when the status is set to "OFF". Periodically flash twice in fault or sensing chamber dirty; illuminate in alarming.
Remote indication output	Polarity-sensitive output, directly connecting with remote indicator (built in 10k resistor in series, max. output current is 2mA); don't illuminate when in normal; flash in alarming.
Max. ripple voltage	2V(peak to peak value)
Alarm reset	Instant power down (10s Min, 1.0VDC Max)
Sensitivity setting	The sensitivity can be set by hand held programmer. There are two sensitivity levels: level 1 (default), level 2.
Wiring	Two-wire, polarity sensitive.
Environment Temperature	$-10^{\circ}\text{C}\sim+50^{\circ}\text{C}$
Relative Humidity	$\leq 95\%$, non condensing
Material	ABS
Ingress Protection Rating	IP2X
Dimension	Diameter:100mm Height: 44.5mm (without base)
Mounting Hole Spacing	45mm~75mm
Weight	About 110g

Accessories and Tools

Model	Name	Remark
P-9910B	Hand held programmer	Supplied separately
DB-01	Base	Supplied separately
DB-01D	Base	Supplied separately
DP-9907	Active End of Line Unit	Supplied separately
T-MT	Commission tool	Supplied separately

WEEE Information



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

Limited Warranty

GST warrants that the product will be free from defects in design, materials and workmanship during the warranty period. This warranty shall not apply to any product that is found to have been improperly installed or used in any way not in accordance with the instructions supplied with the product. Anybody, including the agents, distributors or employees, is not in the position to amend the contents of this warranty. Please contact your local distributor for products not covered by this warranty.

This Data Sheet is subject to change without notice. Please contact GST for more information or questions.

Gulf Security Technology Co., Ltd.

No. 80, Changjiang East Road, QETDZ, Qinhuangdao, Hebei, P. R. China 066004

Tel: +86 (0) 335 8502434 Fax: +86 (0) 335 8502532

service.gst@fs.utc.com www.gst.com.cn