

Features

- ◇ Address programmable in field.
- ◇ Built-in MCU stores up to 14 history data.
- ◇ Combined smoke and heat algorithm greatly improves optical sensitivity.
- ◇ Strong environmental adaptability due to drift compensation.
- ◇ Self-diagnostic.
- ◇ Reed switch testing.
- ◇ Removable innovative sensing chamber, easy for maintenance.
- ◇ Dirty chamber checking.
- ◇ Fire LED allows 360° viewing
- ◇ Remote indicator output available.
- ◇ 3 levels sensitivities programmable; fix temperature or rate of rise programmable.

Description

DI-9101 Digital Intelligent Multi Sensor designed according to UL 268/UL 521, integrates photoelectric detection and fixed temperature and rate of rise detection technology by combining smoke sensor and semi-conductor heat sensor in mechanism and circuitry structure. Just because of the combination of smoke detection and heat detection, it not only overcomes the disadvantage that detectors using common infrared scattering technology are insensitive to black smoke with small particles, but also can pick up fire with obvious rise of temperature such as alcohol flame, thus extending its application range.

Connection and Cabling

Fig. 1 shows the detector bottom and Fig. 2 the base.

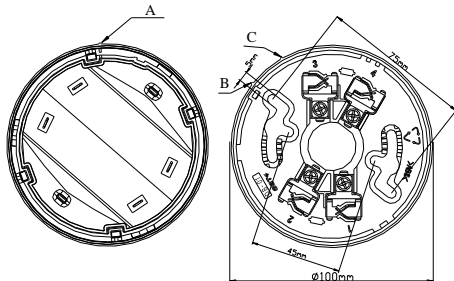


Fig. 1

Fig. 2

There are four terminals with numbers on the base.

- 1&3: Loop connection (polarity-insensitive)
- 2: Positive terminal of remote indicator
- 4: Negative terminal of remote indicator

Recommended Cabling

1.0mm² or above fire cable is recommended, laid through metal or flame-retardant conduit, but subject to local codes.

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

Installation

A fixed installation direction is ensured by the location elements on the detector and the base. Fix the base with two tapping screws, and then align mark A on the detector with B on the base, rotate the detector to align mark A with mark C (Refer to Fig. 1 and 2 for the position of the marks), the detector will be fitted to the base.



Fig. 3 shows the installation of the detector.

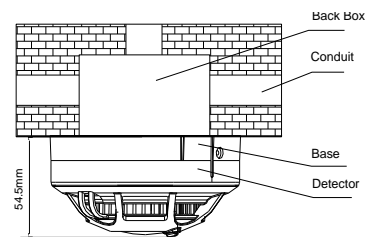


Fig. 3

Application

The detector can be addressed in field by using P-9910B programmer. Please refer to *P-9910B Hand Held Programmer Installation and Operation Manual* for details.

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.

Rate of rise and level 1 is defaulted.

Parameters set using programmer

Input Number	Smoke Sensitivity	Heat Sensitive
1	Level 1	Rate of rise
2	Level 2	Rate of rise
3	Level 3	Rate of rise
11	Level 1	Fixed temperature
12	Level 2	Fixed temperature
13	Level 3	Fixed temperature

Testing

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

1) The detector must be tested after installation and periodical maintenance.

2) Testing method

a) Reed Switch Testing

Magnetic test zone is shown in Fig. 4. Put the magnet of commission tool close to that of the detector and hold on for a few seconds until the detector generates alarm.

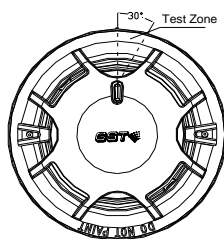


Fig. 4

b) Smoke test

Taking a smoldering cotton rope close to the detector, blow the smoke into the detector until the detector generates alarm.

c) Temperature test

Approach a heater (such as a hair drier) to the thermistor of the detector until it alarms.

3) After testing, disconnect the power to the detector for over 5 seconds to reset it. Notify the proper authorities that the system is back to normal operation.

If a detector fails in testing, clean it by the steps in *Maintenance*, and retest it. If it still fails, return it for repair.

Maintenance

- ✧ The detector should be installed just before commissioning and kept well before installation, taken corresponding measures for dust-proof, damp-proof and corrosion-proof.
- ✧ The dust-proof cover should not be removed until the project is plugged into usage. Otherwise it may not report alarm properly.
- ✧ Clean the detectors regularly, at least once a year to ensure normal operation of the system.
- ✧ If unwanted alarms are often found of the detector on site, the sensing chamber should be cleaned. Power must be removed from the detector before cleaning.

Steps for chamber cleaning:

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. 5.

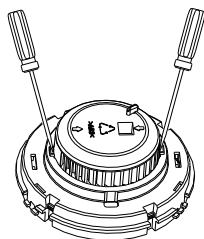


Fig. 5

b) Clean the internal of the chamber by alcohol cotton swab with tweezers or using clean water and brush. Make sure not to leave any fiber in the chamber.

c) Put back the chamber and the top cover.

- ✧ Before cleaning, notify the proper authorities that the system is under maintenance and will temporarily be out of service. Disable the automatic controls relating to the zone or system under maintenance to avoid unwanted actions.

- ✧ The detector should be tested after re-installed to ensure normal operation.
- ✧ Fire simulation test should be done to the detector at least every 6 months.

Specification

Operating Voltage	loop 24V
Standby Current	≤0.8mA
Alarm Current	≤ 1.8mA (without remote indicator) ≤ 3.8mA (with remote indicator)
Fire LED	Red. Flashes in polling, and illuminates in alarm
Remote Indicator Output	Directly connecting with indicator Quiet in normal condition; flashes in alarm.
Programming Method	Electronically programming
Code Range	one address within 1~242
Wiring	Non-polarized 2-core for loop. Polarized 2-core for remote indicator.
Heat Sensitivity	Response Temperature:135°F (57.2°C) Response Velocity:15°F/min (8.3°C/min)
Environment Temperature	32°F (0°C)~100°F (37.8°C)
Relative Humidity	≤95%, non condensing
Material of Enclosure	ABS
Ingress Protection Rating	IP23
Dimensions	Diameter: 100mm Height: 54.5mm (with base)
Mounting Hole Distance	45mm~75mm
Weight	About 110g

Accessories and Tools

Model	Name	Remark
P-9910B	Hand held programmer	Order separately
DB-01	Base	Order separately
JTY-HM-GST102	Commission Tool	Order separately

Limited Warranty

GST warrants that the product will be free of charge for repairing or replacing from defects in design, materials and workmanship during the warranty period. This warranty does not cover 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.

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