

Features

- ✧ Reed switch testing
- ✧ Drift sensitivity, suit to environment extensively.
- ✧ Removable innovative sensing chamber, easy for maintenance.
- ✧ The fire LED allows 360° viewing.
- ✧ Providing alarm output terminal connecting with remote indicator.
- ✧ Complying with UL 268

Description

EDC-M9102 Conventional Photoelectric Smoke Detector (the detector) is a new-generation product by building in a microprocessor, embedding a solid fire analyzing program, and performing effectively and efficiently.

Checking a fire alarm signal, the detector will send it to a fire alarm control panel (FACP) or addressable zone monitor unit by means of current changes. The detector indicates its fire condition by turning on fire LED and keeping the LED on until it is reset.

Using infrared scattering technology, with an innovative chamber, the detector receives very weak infrared light under normal smokeless condition. If smoke particles enter the chamber, the received light signal will increase by scattering. When smoke density reaches certain density, the detector will output fire signal. In order to reduce interference and power consumption, the emitting circuit works in pulse mode to prolong the life of IR LED.

Connection and cabling

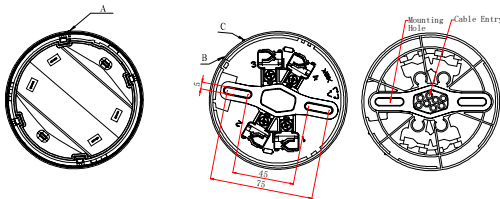


Fig. 1

Fig. 2

Please install the base according to the following steps:

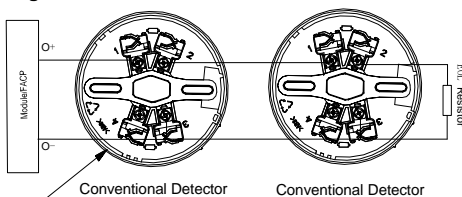
- 1) Locate the mounting holes on the rubber seal of the base according to the holes on the electrical junction box, and punch the holes with a screwdriver.
- 2) Count the number of cables needed and punch correct number of holes with a screwdriver on the rubber seal at the cable entry position. Thread the cables through the cable entry holes.
- 3) Install the base onto the junction box with screws.

Warning: Do not punch mounting holes and cable entry holes bigger than needed. Do not punch more holes than needed.

There are four terminals with numbers on the base.

- 1: Detection zone positive IN
- 2: Detection zone positive OUT
- 3: Detection zone negative IN and OUT
- 4: Positive terminal of alarm output
- 5: Negative terminal of alarm output

Refer to respective Module/FACP Installation sheets for the wiring connections



DO NOT USE LOOPED WIRE UNDER TERMINAL 3. BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS

Fig. 3



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.

Up to 25 conventional devices can be connected to a module/FACP. See next page, compatibility section, for detector capacity per circuit

Installation

Refer to *D Series Detector Application Bulletin* for additional installation instructions.

Fix the base with two tapping screws. Then align A (Fig.1) on the bottom of the detector to B (Fig.2) of the base, and rotate the detector clockwise to mark C.

Mounting of the detector is shown in Fig.4.

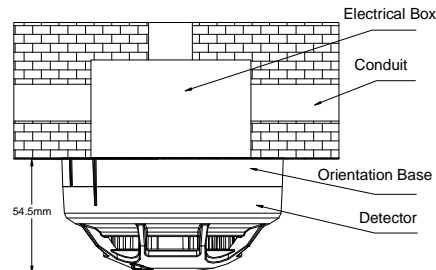


Fig. 4

Warning: 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.

Testing

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

Before testing, 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.

All detectors must be tested after installation and periodically thereafter. Testing methods must satisfy the Authority Having Jurisdiction (AHJ). Detectors offer maximum performance when tested and maintained in compliance with NFPA 72. The detector can be tested in the following way:

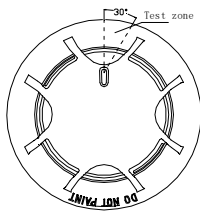


Fig. 5

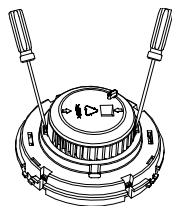


Fig. 6

1) Reed Switch Testing

Magnet test zone is shown in Fig.5. Put the magnet of commission tool close to the zone of the detector and hold on for a few seconds until the detector generates alarm.

1) Smoke test

The Trutest model 300 Aerosol Smoke Detector Tester can be used for smoke entry testing. Set the generator to represent 4%/ft to 5%/ft obscuration as described in the Trutest manual. Using the bowl shaped applicator, apply aerosol until the panel alarms.

Additionally, canned aerosol simulated smoke (canned smoke agent) may be used for smoke entry testing of the smoke detector. Recommended aerosol smoke products are:

Manufacturer	Model
Trutest	AERO400

When used properly, the canned smoke agent will cause the smoke detector to go into alarm. Refer to the manufacturer's published instructions for proper use of the canned smoke agent.

2) After testing, cut off the power above 10 seconds and reset the detector and then notify the proper authorities that the system is back in operation.

Warning: Canned aerosol simulated smoke (canned smoke agent) formulas will vary by manufacturer. Misuse or overuse of these products may have long term adverse effects on the smoke detector. Consult the canned smoke agent manufacturer's published instructions for any further warnings or caution statements.

When testing is complete, restore the system to normal operation and notify the proper authorities that the system is back in operation.

Maintenance

1. The detector must be cleaned once a year to ensure normal operation of the system.
2. 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.

Chamber Clearing Steps:

- 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. 6.
- b) Use a vacuum cleaner or cleaned, compressed air to remove dust and debris from the insect guard and the sensing chamber. The sensing chamber can also be cleaned by clear water and brush. Put the sensing chamber in clean water to brush the dust inside and take out to dry it.
- c) Install the sensing chamber and the top cover back.

Cautions

1. Dust covers can't be removed until the project is put into use formally. Take well care of dust covers for future use.
2. Dust covers effectively but not absolutely prevent dust particles from going into detectors. So, we recommend that detectors should be removed prior to construction, decoration, or other activities producing dust. The proper authority should be informed of detectors removing.
3. Be careful not to damage the detector in maintenance. The smoke detector may not sense fire that where smoke cannot reach it, such as in chimneys, in walls, on roofs, or on the other side of closed doors.
4. The detector cannot monitor the place beyond protection area.
5. The detector may not warn you about fires caused by insufficient safety measures, violent explosions, leaking gas, improper storage of flammable materials like diluents and other

safety hazards, arson or children playing with fire.

6. The alarm of a smoke detector used in high velocity environment will be delayed due to dilution of smoke by frequent and fast airflow.

7. Smoke detectors have their own service life. In order to keep the detector working in good condition, please maintain them according to recommendations from manufacturers and relative state standards.

8. The detectors must be tested regularly, at least once a year.

9. Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

Specification

Operating Voltage	16VDC~28VDC
Standby Current	≤60μA
Alarm Current	≤55mA
Fire LED	Red, periodically flash once in polling, Periodically flash twice in fault or sensing chamber dirty; illuminate in alarming.
Alarm Output	Polarized output. Cycle 0.25S, duty ratio 1/2, Voltage range 13V~24V(built in 10k resistor in series, maximum output current is 2.0mA);
Max. ripple voltage	2V(peak to peak value)
Alarm reset	Instant power down (10s Min, 1.0VDC Max)
Wiring	Two-wire, polarity sensitive.
Sensitivity Range	1.23%~3.20% per ft
Environment Temperature	32°F (0°C) ~100°F (+37.8°C)
Relative Humidity	≤95%, non condensing
Material and color	ABS, white (RAL 9016)
Ingress Protection Rating	IP2X
Dimension	Diameter:100mm Height: 44.5mm (without base)
Mounting Hole Spacing	45mm-75mm
Weight	About 110g
Compatibility	EST3/3x IDC (detector capacity:19) SIGA-UM/MAB(detector capacity:10) RZ116-2 (detector capacity:25) Fireshield Plus(detector capacity:25)
Listing	UL268

Accessories and Tools

Model	Name	Remark
EDB-M01	Base	Supplied separately
T-MT	Commission tool	Supplied separately