DC-M9103 Conventional Rate of Rise and Fixed Temperature Heat Detector

Features

✧ Reed switch testing.
✧ Output terminal for remote indicator available.
✧ Rate of rise and fixed temperature, and fixed temperature programmable.
✧ Complying with UL 521.

Description

DC-M9103 Conventional Rate of Rise and Fixed Temperature Heat Detector is a new generation product of GST. With built-in microprocessor, it works stably by being fixed with highly reliable fire judging program.

On detecting a fire signal, it can change its own current to transmit the signal to fire alarm control panel (FACP) or addressable zone monitor unit. The detector keeps illuminating fire LED until it is reset by power-down.

Connection and Wiring

The detector connects with UL-certified products such as modules and control panels. The detector bottom is shown in Fig. 1 and the base in Fig. 2.
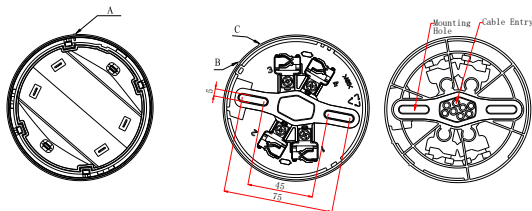

Fig. 1   Fig. 2

Please install the base according to following steps:
1) Locate mounting holes on the rubber layer of the base according to the holes on the back box, and punch the holes with a screwdriver.
2) Count the number of cables needed and punch correct quantity of holes with a screwdriver on the rubber layer. Thread the cables through the cable entry holes.
3) Install the base onto the back 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
  2: Positive terminal of remote indicator
  4: Negative terminal of remote indicator

It connects a 4.7k/1w resistor between number 2 and 3 at the end of the base. The system connection is shown in Fig. 3.
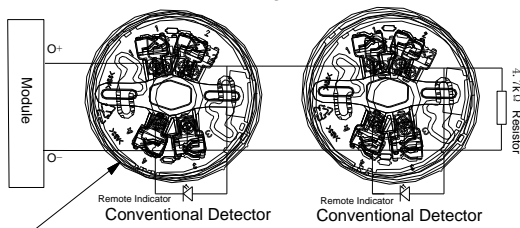
DO NOT USE LOOPED WIRE UNDER TERMINAL 3. BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS

Fig. 3

Recommended Wiring

1.0mm^2 or above fire cable for all terminals laid through metal conduit or flame retardant conduit, subject to local codes.

I-M9300 modules connect with 15 conventional devices at most.

Note: It's recommended to use cables of different colors to avoid incorrect wiring.

Installation

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

First fix the orientation 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.

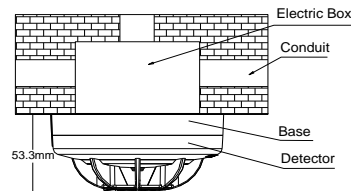Mounting of the detector is shown in Fig. 4.

Fig. 4

Application

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.

The default class 7 of the detector is rate of rise & fixed temperature, and polling LED status is "ON", which can be modified using GST handheld programmer.

When the programmer is in standby state, entering unlock password and pressing "Clear", it will be unlocked. Pressing *Function* followed by *4*, there will be a "-"at the last digit. Entering different number corresponding to the parameters (refer to Table 1) followed by "Program", there will be a "P" shown on the screen, indicating its class is programmed. Pressing "Clear" can clear the "P", and entering locking password followed by "Clear" will exit.

Table 1 Detector setting parameters

Parameters	Class	Polling LED Status
7	Rate of Rise and fixed temperature	ON
8	Fixed Temperature	ON
135	Rate of Rise and fixed temperature	OFF
136	Fixed Temperature	OFF

Read Heat Detector Class: When the programmer is in standby state, pressing "*Test", it will display address of the detector. Pressing "Up"*, it will display sensitivity level, device type and heat detector parameters in turn.

Testing

Note: Before testing, make sure the detector is properly installed and powered up. Testing can only begin after the detector is powered up for 10 seconds.

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

The detector must be tested after installation and regular maintenance. The methods should meet the requirements from local authority. The detector should meet NFPA72. The testing methods are as follows:

(1) Reed switch testing

The testing area of the detector is shown in Fig. 5. Approach the commission tool to the testing area of the detector and hold for several seconds until the detector alarms.
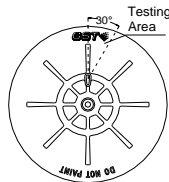

Fig. 5

(2) Temperature test

Approach a heater (such as a hair drier of 1000w-1500w) to the thermistor of the detector until it alarms. It is 12 inches between the hair drier and the thermistor to avoid damaging on the plastic enclosure of the detector

After testing, disconnect power of the detector for over 10 seconds and then reset it. Notify the proper authorities that the system is back to normal operation.

Maintenance

- ✧ The detector should be installed just before commission and kept well before installation, taken corresponding measures for dust-proof, damp-proof and corrosion-proof.
- ✧ The dust cover cannot be removed until the project has been plunged into usage.
- ✧ Do fire simulation test at least once every 6 months.
- ✧ Before fire simulation test, 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.
- ✧ Protect the metal component on the PCB against damp and improper distortion.

Cautions

1. Detector should be firmly installed and the wire be reliable.
2. LED on the detector should face the main entrance for people to see it.
3. Be careful not to damage the detector in maintenance.
4. Heat detector is not suitable for detecting smoldering fire.

Accessories and Tools

Module	Name	Remarks
P-9910B	Handheld programmer	Order separately
DB-M01	Base	Order separately
T-MT	Commission Tool	Order separately
C-9314P	Passive Remote Indicator	Order separately
BP-9314P	Back Plate for Remote Indicator	Order separately

Specification

Operating Voltage	24VDC(16VDC - 28VDC)
Standby Current	≤ 60µA
Alarm Current	≤ 55mA
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; illuminate in alarming.
Sensitivity	Action Temperature:135°F (57.2°C) Response rate of rise:15°F /min (8.3°C /min)
Maximum spacing	50 ft. (15.2 m)
Remote Indication Output	Polarity-sensitive output ,Directly connecting with remote indicator (built in 10k resistor in series, maximum output current is 2.0mA); The remote indicator does not illuminate in normal and flashes in alarm.
Class and Setup	Rate of rise and fixed temperature (default), and fixed temperature programmable.
Maximum Ripple Voltage	2V (peak-to-peak)
Alarm Reset	Instantaneous cut-out (10s Min, 1.0VDCMax.)
Power-up Time	≤ 10s
Wiring	Polarized 2-core for loop.
Ingress Protection Rating	IP2X
UL Temperature Range	32°F (0°C) - 100°F (37.8°C) 0 - 95%, non-condensing
Operating Temperature	14°F (-10°C) - 122°F (+50°C) 0 - 95%, non-condensing
Mounting Hole Spacing	45mm - 75mm
Weight	About 110g (with base)

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.