

〔Before installation and application of the product, please read the Instruction Manual for
Installation and Application〕

Instruction Manual for Installation and Application of JTF-GOM-TC5163 Addressable Smoke and heat Multi Detector

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Instruction Manual for Installation and Application of JTF-GOM-TC5163 Addressable Smoke and heat Multi Detector
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I General

JTF-GOM-TC5163 Intelligent Heat and Photoelectric Smoke Combined Detector (herein after called as Detector) is consisted of smoke sensing and semi-conductor temperature sensing parts in processing and circuitry. The detector has the advantages of both photoelectric smoke detector and rate of rise and fixed temperature heat detector. Just because of the combination technology of smoke detector and heat detector, it can detect and alarm the combustion of SH3 (polyurethane plastic fire) and SH4 (n-heptane fire) in the national standard test. It can also pick up fire with obvious rise of temperature such as alcohol fire, thus extending the application range.

With novel structure and attractive appearance, the detector has stable and reliable performance and high damp-proof ability. It is suitable for restaurants, hotels, libraries, office buildings, school buildings, warehouses, power rooms, etc.

II Features

1. The detector can be addressed in field by using *Hand Held Programmer*, easy and reliable for commissioning.
2. Single chip uses real-time sampling and data processing system.
3. Temperature and humidity drift compensation, dust accumulation degree and fault detection function.
4. Self-diagnostic function.
5. Non-polarized signal 2-wire.

III Technical Specifications

1. Operating voltage
Rated voltage: DC24V Range allowed DC18V~DC28V
2. Operating current
Standby current: $\leq 0.3\text{mA}$
Alarm current: $\leq 0.9\text{mA}$
3. Indicator
Red. Flashes when polling, and illuminates in alarming.
4. Programming method
Electronically programming (encoding range: 1~255).
5. Monitoring protection area

The space height is 6~12 meters: 80m²

The space height is lower than 6 meters: 60m²

6. Wiring

Non-polarized signal 2-wire

7. Operating environment

Temperature: -10°C~+55°C

Relative Humidity: ≤95%, non-condensing

8. Dimension

Diameter: 100mm Height: 51mm (with base)

9. Ingress protection rating: IP23

10. Material and color of enclosure: ABS; milky white

11. Weight: about 110g

12. Mounting hole distance: 60mm

13. Standard: EN 54-29:2015

IV Structure and Operation Principle

1. Appearance of the detector is shown in Fig. 1.

2. Operation principle

The detector uses infrared scattering technology, the smoke density can be detected. 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 a pre-set level, the detector will alarm out. In order to reduce interference and power consumption, the emitting circuit works in pulse mode to prolong the life of IR LED. As for the non-sensitivity to dark smoke particles and fire with obvious rise of temperature, use combination of photoelectric smoke detector and heat detector, thus improving the sensitivity of photoelectric detection effectively, detecting dark smoke particles timely, and extending the application range. The detector is communicating with TC intelligent fire alarm control panels via Two-wire bus.

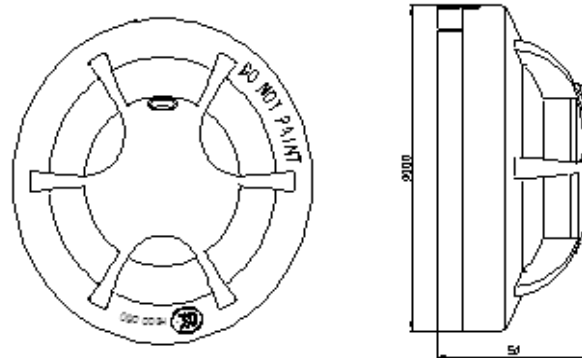


Fig. 1

V Mounting and Wiring

Before installing the detector, please cut off power and make sure all bases fixed firmly.

1. Mounting

Installation of the detector is shown in Fig. 2.

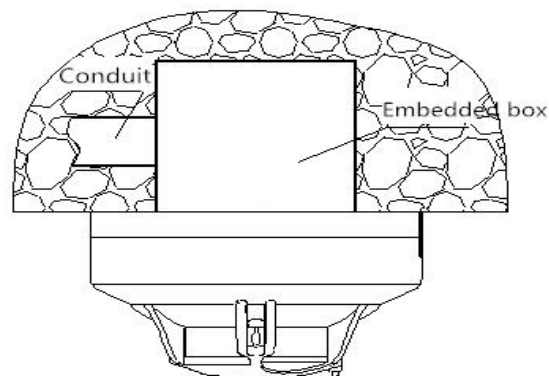


Fig. 2

Base of the detector is shown in Fig. 3. There are 2 conductor pieces with terminals on the base. Loop of the detector should be connected with two terminals (non-polarity).

After the base is fixed firmly, rotate the bottom of detector and base clockwise, and then the detector will be fitted to the base.

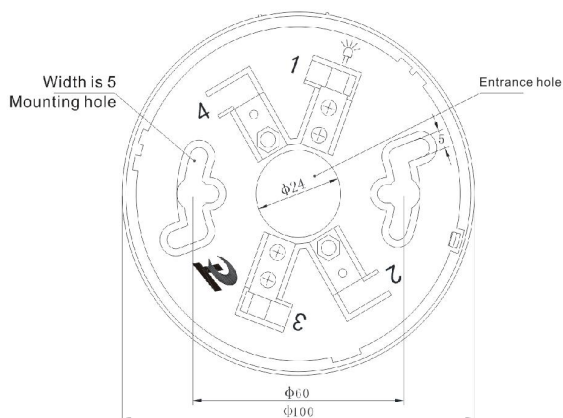


Fig. 3

2. Wiring

$\geq 1.0\text{mm}^2$ RVS twisted pair, laid out through metal conduit or flame-resistant conduit.

VI Testing

Warning: Please ensure that all detectors have been installed correctly and then powered up.

1. The detector must be tested after installation and periodical maintenance.
2. Testing content:
 - 1).Registration: After confirming the installation and wiring is correct, register devices to the fire alarm control panel, and check whether the numbers of installed detectors and registered detectors are consistent.
 - 2).Fire simulation test: After registration, choose one detector, and fit it to meet fire conditions to verify whether the detector generates fire alarm normally.
 - 3).After testing, the fire alarm control panel sends communication command to reset the detector. Notify the proper authorities that the system returns to normal state.
 - 4).Clean the failure detector in the test according to Maintenance, and test it again. If it still fails to pass, please return it to repair.

VII Application and operation

The programming method is electrically programming, which is easy and quick, the field encoding can be carried out by using TCBM5013 hand held programmer (encoder) produced by our company, when coding, the bus terminals of the programmer and the detector shall be connected well (regardless of polarity), then the address can be written and read out.

First of all, through the main "Operation Menu" of the encoder, press No. 2 key to select "(2) Mode Setting", enter the sub-menu to select "(1) TC5000", and press "(5), (6), (7)" to select increasing code, normal code and descending code, which is convenient to use (Note: Default is TC5000, normal code), after selecting, press the "clear key/page button " to enter addressing interface directly, also can press exit back to the main menu, press No. 1 key select " (1) read and write address", then connect the encoder with the detector through bus terminals L1 and L2, enter the address (1-255) when the encoder in standby mode, press "write address" key, successful coding displays as "success (S)", otherwise as "failure (F)".

VIII Fault and maintenance

When there is a fault, first check whether external connection is correct and fasten screw is loose, if normal, and then open the enclosure to observe whether circuit board has false welding, burning and other anomalies.

1. Wrong address

Check whether *Hand Held Programmer* works normally and whether battery discharges. Connection should be correct or there is a fault in circuit.

2. Cannot register

Check whether bus connection is right, and bus voltage is within 18-24V. Plug firmly or there is a fault in circuit.

3. Short circuit in loop

Check whether there is short circuit between loop terminal and ground, the resistance between two terminals is normal (more than 1M) or there is a fault in circuit.

4. False alarm

Check whether the chamber is too dirty, smoke dust is too much, or detector's circuit has a fault.

IX 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-proof cover should not be removed until the project plunged into usage. Otherwise it may not report alarm properly.
3. Clean the detectors regularly, at least once a year to ensure normal operation of the system.
4. Maintenance should be carried out for false alarm detectors, either clean or replace the chamber if necessary.

5. Steps for chamber cleaning:
 - a) Draw out the chamber slightly shaking by hand.
 - b) Clean the internal of the chamber by alcohol cotton or other clean liquid swab with tweezers.
Make sure not to leave any fiber in the chamber.
 - c) Put back the chamber and the top cover.
6. 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.
7. The detector should be tested after re-installed to ensure normal operation.
8. Fire simulation test should be done to the detector at least every 6 months.

X Cautions

1. Disassemble detector before construction, decoration and other activities that may produce dust, but notify the proper authorities.
2. During maintenance, personals should be careful to avoid damage to the detector.
3. There should be no barrier around the detector within 0.5m.
4. The horizontal distance between detector and the air conditioner's outlet should be at least 1.5 meters.
5. The horizontal distance between detector and wall, and edge beam should be at least 0.5 meters.
6. The detector shall be horizontally installed. If it has to be installed on an inclined plane, the inclination angle shall not be over 45°.
7. The detector's alarm indicator should face to the direction that easy for personnel to observe.
8. The base should be fixed firmly, and reliable wiring.

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