

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

Instruction Manual for Installation and Application of JTY-GM-TC5161 Addressable Photoelectric Smoke Detector

(Ver 2.0)

 **YINGKOU TIANCHENG FIRE PROTECTION EQUIPMENT CO., LTD.**

I General

JTY-GM-TC5161 Addressable Photoelectric Smoke Detector (Detector) uses infrared scattering technology. With novel structure and attractive appearance, the detector has stable and reliable performance and high damp-proof ability. It is suitable for restaurants, hotels, office buildings, school buildings, warehouses, power plants, 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.
4. Non-polarized signal 2-wire.

III Technical Specifications

1. Operating voltage

Signal bus voltage: loop 24V (18.5V~26V)

2. Operating current

Standby current: $\leq 0.3\text{mA}$

Alarm current: $\leq 0.8\text{mA}$

3. Indicator

Red. Flashes when polling, and illuminates in alarming.

4. Programming method

Electronically programming (code range: one address within 1~255)

5. Wiring

Non-polarized signal 2-wire

6. Operating environment

Temperature: $-10^{\circ}\text{C}\sim+55^{\circ}\text{C}$

Relative Humidity: $\leq 95\%$, non-condensing

7. Dimension

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

8. Ingress protection rating: IP23

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

10. Weight: about 110g
11. Mounting hole distance: 60mm
12. Standard: EN54-7: 2018

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. It is cooperating with TC addressable fire alarm control panels to build a fire detection system.

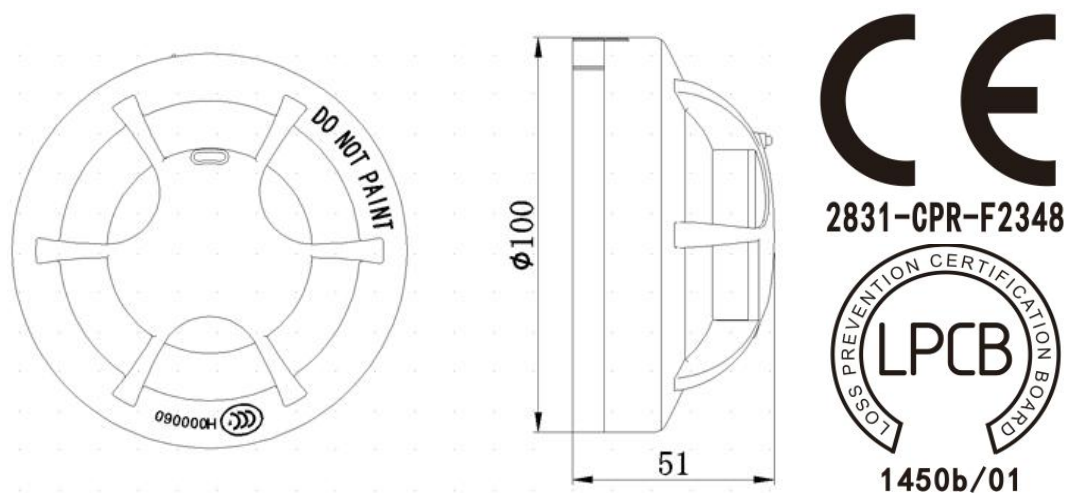


Fig.1

V Mounting and Wiring

1. Mounting

Installation of the detector is shown in Fig. 2.

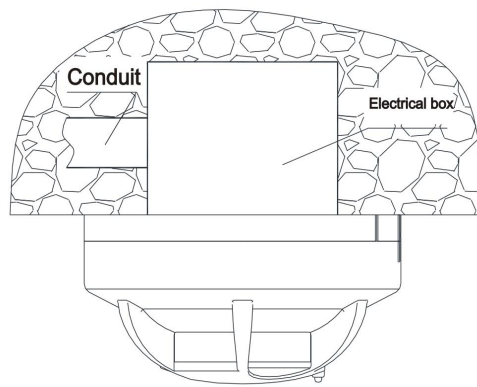


Fig. 2

2. Base of the detector is shown in Fig. 3. There are 2 conductor pieces with terminals on the base. Detector's loop should be respectively connected with two terminals (polarity-insensitive). After the base is fixed firmly, rotate the bottom of detector and base clockwise, and then the detector will be fitted to the base.

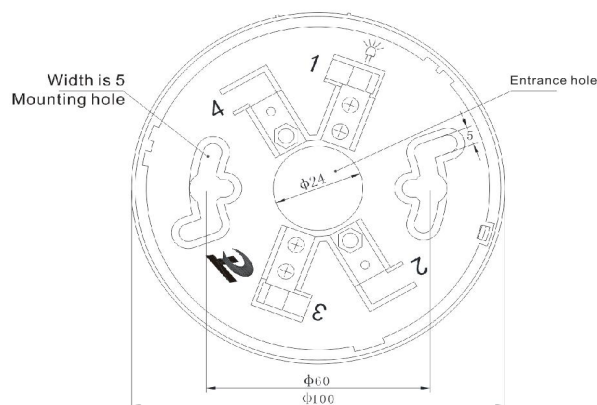


Fig. 3

3. Recommended Wiring

1.0mm² or above fire cable, subject to local codes.

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

VI Testing

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 arbitrarily, and fit it to meet fire

conditions to check whether the detector generates fire normally.

3). After testing, 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 is still fail to pass, please return it to repair.

3. Warning: Before testing, please ensure that the detector has been installed correctly and powered up.

VII Usage and Operation

1. The detector is using the electrical code which is saving time and convenience for users. TCBM5013 Hand Hold Programmer (Programmer) produced by our company can be used when coding on field. Connect the bus terminals of the detector and the Programmer together (polarity free) and the addressable code can be keyed in or read by the Programmer.

2. First, press button 2 to choose “(2) Module set” on the main “Operation menu” and we will go into the submenu to choose “(1) TC5000”. We can also choose “(5), (6), (7)” for Progressing coding, Coding and Decreasing coding (Note: TC5000 and Coding are the default setting). After the setting, press “Clear/Next page” into the coding interface and press Exit back to the main menu is also allowed. In the coding interface, press button 1 to choose “(1) Read and Write” and connect the Programmer and the bus terminal L1, L2 of the detector. Key in the address (1-255) of the detector and then press “Write”. Then the Programmer will show “Success”, if not you will see “Fail”.

VIII Fault and Maintenance

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

2. The following faults may be found in the usage of this detector. Now the maintenance is shown as follow.

a. Wrong address

Check whether *Hand Held Programmer* works normally, and whether battery discharge. Check whether connection is correct, or there is a fault in circuit.

b. Cannot register

Check whether loop connection is correct, and loop voltage is 18-24V in normal. Plug firmly or there is a fault in circuit.

c. There is short circuit in loop

Check whether there is short circuit between loop and ground, the resistance between two terminals is

normal (more than 1M), or there is a fault in circuit.

d. False alarm

Check whether the chamber is too dirty, smoke dust is too much, or there is a fault in circuit.

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) Open the top cover of detector.
 - b) Draw out the chamber slightly shaking by hand.
 - c) 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.
 - d) 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.

XI Random Documents

1. Packing Documents: Packing List: 1 pcs

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.

XII Limited Warranty

1. Tiancheng 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 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.

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