# Operation manual for JTF-GDM-936E spot-type multisensor smoke and heat detector

**Before installation and use of the product, please read the product operation manual carefully**

## I. General

JTF-GDM-936E spot-type composite smoke-sensing and temperature-sensing fire detector (hereinafter referred to as the detector) is a multi-element composite detector constituted jointly by a smoke sensor and a semiconductor temperature sensor in respect of technological structure and circuit structure. It has not only the performance of photoelectric smoke-sensing fire detectors but also the performance of temperature-sensing fire detectors.

This detector uses a non-polarity two-wire bus system, and can be jointly used with the 9000 series alarm controllers produced by our company.

## II. Features

1. Electronic encoding, to offer simple and reliable engineering adjustment;
2. Non-polarity two-wire bus;
3. Key device self-diagnosis function;
4. Shift compensation function and contamination report function for dust accumulation.

## III. Technical indices

1. Operating voltage: 24 V (pulse modulation)
2. Operating current: Monitoring current ≤ 0.5 mA; alarm current ≤ 1.5 mA
3. Sensing technology: Double-sensing technology containing photoelectric sensor and temperature sensor with temperature sensing type: A2
4. Encoding mode: Electronic encoding with encoding range 1-324
5. Wiring mode: Non-polarity two-wire system
6. Indicator lamp: Red, flashing once per 12 seconds for polling, and constantly on for alarm
7. Installation height: ≤ 8 m
8. Protected area: For the specific protected area, see relevant provisions in the China national standard GB 50116 Code for design of automatic fire alarm systems
9. Operating environment: Temperature: -10 °C - +50 °C; relative humidity: ≤ 95%, non-condensing
10. Outside dimensions: Diameter: 100 mm; height: 55 mm (with base)
11. Weight: About 100 g
12. Housing material: ABS
13. Standards followed: GB 4715-2005, GB 4716-2005

## IV. Appearance and outside dimensions of product (as shown in Fig. 1)

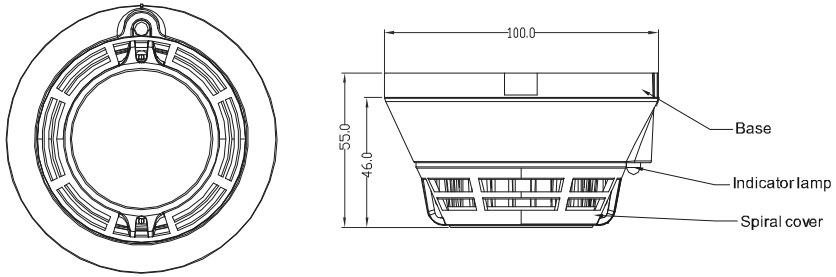
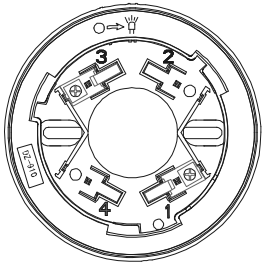



Fig. 1



## V. Product use and engineering application

1. Schematic diagram for installation of matched base, as shown in Fig. 2:




Terminal definitions (Non-polarity two-wire system):
1 - Signal terminal (L1)
2 - No pin
3 - Signal terminal (L2)
4 - No pin

Fig. 2

2. Wiring mode: The detector is connected into a compatible fire alarm controller via a two-wire bus system through non-polarity connection mode and the L1 and L2 of the two-wire bus system are connected with the terminals 1 and 3 of the matched base. The schematic diagram for connection of multiple detectors and a controller is shown in Fig. 3.

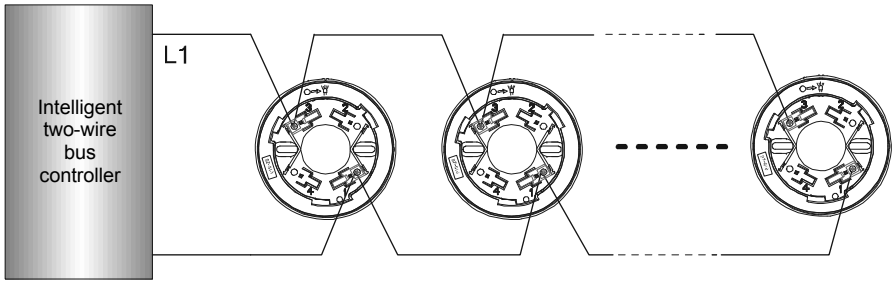



Fig. 3

3. Address encoding: As shown in Fig. 4, connect the detector through a detector base on the encoder with L1 and L2 connected in non-polarity mode; set the encoder to encoding function, compile a correct address code, and press the “Run” key to complete the address encoding setup.
(Note: For the detailed operations, please refer to the encoder operation manual.)

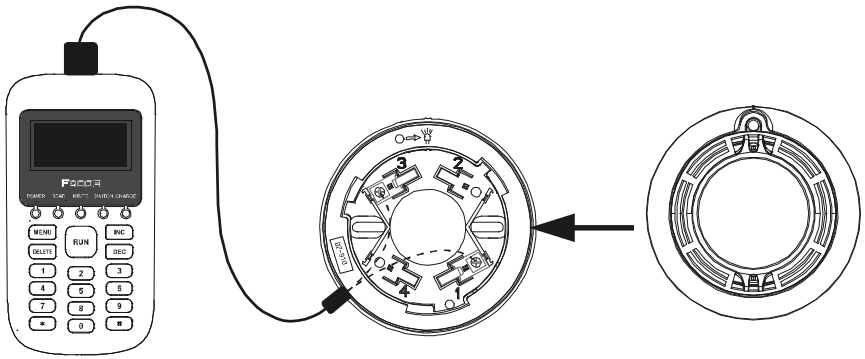



Fig. 4

## VI. Product installation and adjustment

According to relevant provisions and requirements in the China national standards GB 50116-2013 Code for design of automatic fire alarm systems and GB 50166-2007 Code for installation and acceptance of automatic fire alarm systems, ensure proper installation positions, spacing and quantity of detectors in the protected area.

Each detector shall be installed using a matched base. The matched base is shown in Fig. 5, its model number is DZ-910, its outside dimensions are Φ100 mm × 22 mm (diameter × thickness), its fixing hole diameter is Φ4.5 mm and its fixing hole spacing is 44-65 mm.

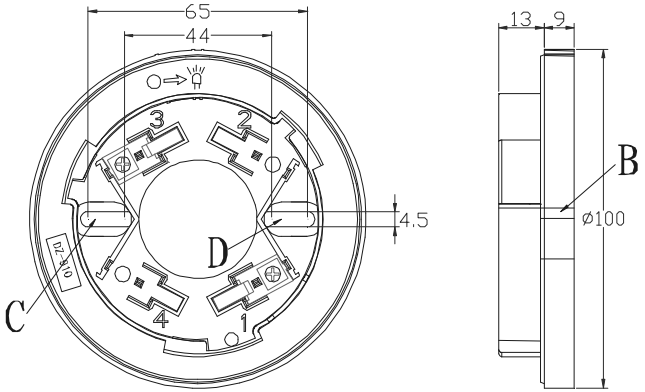



Fig. 5

Wiring requirements:

Signal wires L1 and L2 should use RVS-type double twisted wire, with a cross-section area ≥ 1.0 mm$^2$.

**The specific installation and adjustment methods are as follows:**

1. Confirm that the detector type matches with the controller main unit type;
2. Fix a matched base to the specified position through fixing holes C and D shown in Fig. 5 using two M4 screws according to the construction drawing and confirm that the base has been securely installed;
3. Encode a detector using the encoder according to the detector address number marked in the construction drawing;
4. Cut off the power supply for the controller and connect the detector correctly according to the construction drawing;
5. Align the indicator lamp of the detector (place A shown in Fig. 1) with the installation mark on the base (place B shown in Fig. 5) and then insert the detector into the base and rotate the detector clockwise until the detector is locked in position;
6. After all products are installed and they are confirmed to be properly fitted, turn on the power supply for the controller to carry out automatic login operation;
7. After normal automatic login, the red indicator lamp of each detector flashes once every 12 seconds, indicating that the detector has started operating normally;
8. Finally, conduct a detector alarm test using the method of directly blowing by the hot air cylinder and the direct smoke blowing method respectively. After the detector gives an alarm, the indicator lamp will remain on and the controller will give a corresponding alarm prompt message. (**Note: After the test of one kind of alarm is successful, only should the controller be reset is it possible to conduct a test of another kind of alarm.**) Therefore, once the test is complete, the controller must be recovered to ensure that the detector returns to the monitoring state.

## VII. Points for attention ⚠

1. In the same bus loop, a detector cannot use an address the same as that of another device to avoid a conflict of address.
2. Before use after the onsite installation is over, do not remove the protecting cover attached to a detector too early to prevent the detector from becoming contaminated.



3. The detector protected area and the quantity of installed detectors shall meet relevant provisions in the China national standards GB 50116-2013 Code for design of automatic fire alarm systems and GB 50166-2007 Code for installation and acceptance of automatic fire alarm systems.

## VIII. Maintenance and care

⚠ **Warning: Before maintenance of detectors, the relevant management department shall be notified that the system will be maintained, thus the monitoring will be stopped temporarily. In addition, the logic control function for the area or system to be maintained shall be cut off to avoid unnecessary alarm interlocking. Once the test is complete, the relevant management department shall be notified to recover the normal state of the system.**

1. According to the requirements in the China national standard GB 50166-2007 Code for installation and acceptance of automatic fire alarm systems, the detectors shall be tested at least once every six months; it is recommended that all detectors which have been installed and are under use should be cleaned and maintained once every two years.
2. Operating environment has a huge influence on the performance of a detector; for a detector installed and used in an environment where there is likely to be dust and high wind speeds, etc., which affect normal operation, its maintenance and care period shall be shortened.
3. If a detector normally used according to the specified requirements fails due to a defect of materials or manufacturing technique within one year from the day when the product leaves the factory, Shenzhen Fanhai Sanjiang Electronics Co., Ltd. will be responsible for free repair or replacement. Any failure caused by artificial damage, improper use or unauthorized adjustment, alteration or dismantling is not covered by the warranty scope, and our company will assume no responsibility for all consequences caused by it.
4. Our company is responsible for paid repair of products not covered by the warranty scope; if you need a repair service, please contact us. Moreover, we will need to obtain some important information about the product you need to be repaired, e.g., product failure status and possible causes, so that we can find the problem in the shortest time. We also hope that a reference will be provided to us for our future product development and improvement.

## IX. Troubleshooting

| Fault | Possible causes | Actions | Remarks |
|---|---|---|---|
| Cannot encode | Internal circuit damage | Need to return the product to the manufacturer for repair | |
| Cannot log in normally | Not encoded, or repetition of codes | Re-encode | |
| Fault alarm sounds after login | Sensor failure | Need to return the product to the manufacturer for repair | |
| | Serious contamination in labyrinth | Clean the labyrinth of detector | |
| Fire alarm sounds after login | There is smoke or steam in the room, or the indoor temperature is too high | Re-log in after the smoke or steam is eliminated or after the indoor temperature is returned to normal | |
| | Internal circuit issue | Need to return the product to the manufacturer for repair | |
| | Serious contamination in labyrinth | Clean the labyrinth of detector | |
| Will not operate after power is turned on | Indicator lamp damage or internal circuit damage | Need to return the product to the manufacturer for repair | |
| | Defective contact with base | Check and re-install | |
| No fire alarm sounds during test | Internal circuit damage | Need to return the product to the manufacturer for repair | |