

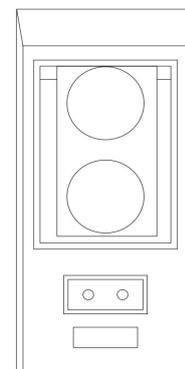


Please read this Manual carefully before installing and using the product .

JTY-GS-T8001 Linear Beam Smoke Detector

1 Product Overview

1.1 JTY-GS-T8001 linear beam smoke detector (hereinafter referred to as the detector) is a reflective linear beam smoke detector, the detector must be used in conjunction with the reflector. The detector has a built-in microprocessor, supports electrical coding, and is connected to a compatible fire alarm control system through a four-wire system. The detector is capable of real-time monitoring of on-site smoke concentration and transmitting data to the fire alarm control system when the on-site smoke concentration reaches the set threshold, as well as receiving and executing control commands given by the fire alarm control system.



1.2 The detector is suitable for use in historic buildings, warehouses, large storage areas, shopping malls, fitness centers, gymnasiums, exhibition halls, hotel lobbies, printing factories, garment factories, museums, prisons, etc. It can also be used in spaces where there is a slight amount of smoke.

2 Product Features

- 2.1** Full electronic coding, can be rewritten on site by an encoder.
- 2.2** Microcontroller real-time sampling and processing data, curve tracking site conditions.
- 2.3** With an automatic compensation function, for a certain degree of dust pollution, can be automatically compensated.
- 2.4** With a laser module to quickly locate the reflector installation position, LED indication of signal strength, simple commissioning.
- 2.5** With a self-diagnostic function, can monitor the internal failure of the detector.
- 2.6** The detector combines the transmitting part and receiving part into one, easy and convenient to install, with good collimation of the optical path.

3 Product Technical Parameters

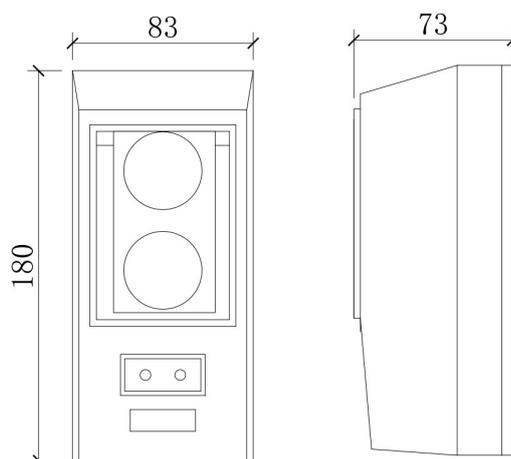
Item	Parameter
Standard	GB 14003-2005
Working mode	Four-wire system
Working current	Monitoring status < 13.5mA, alarm status < 14mA
Input Voltage	18V~32V
Response threshold	1.4dB
Optical path length	5~60m
Protection range	Distance between beams \leq 14m, distance between beams and walls \leq 7m



Weight	Approx. 560g
Overall Dimension	180mm×83mm×73mm
Installation height	0.5~1m from the top of the building
Optical path deviation	Maximum direction: $\pm 1^\circ$
Environment	Indoor, temperature $-10^\circ\text{C}\sim+55^\circ\text{C}$, relative humidity $\leq 95\%$ ($40^\circ\text{C}\pm 2^\circ\text{C}$ without condensation)
Encoding mode	On-site coding by an encoder, address code 1~324 optional.
Working instruction	Normal monitoring: The green light is always on, red light is flashing. Transmit fault: green light off, receive fault: red light off. Alarm: green light is always on, red light is always on.
Matching host	Fire alarm controller

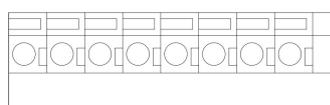
4 Product appearance and size

4.1 Unit: mm



5 Product use and engineering applications

5.1 Terminal Diagram



GND 24V GND 24V L2 L1 L2 L1

Terminal Definition

Note: 2 sets of bus input terminals and 2 sets of power input terminals.

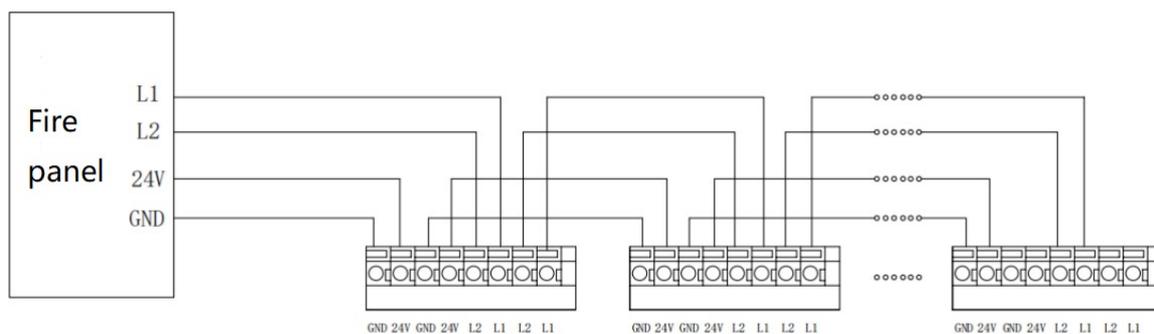
L1 Bus Signal Access Terminal L2 Bus signal access terminal

24V Power input + GND Power supply input -

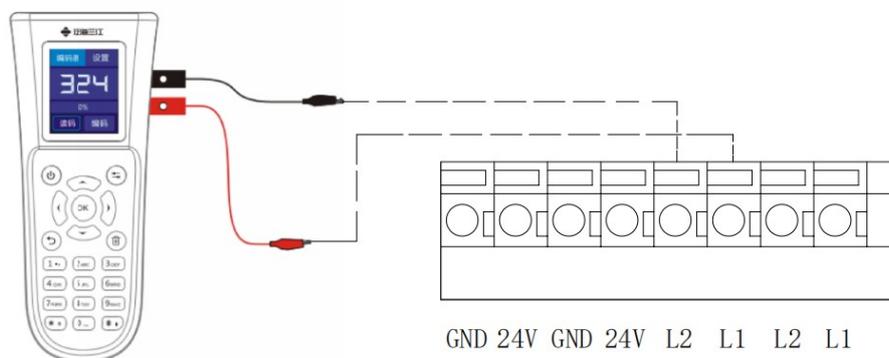
Power supply voltage range: 18V~32V

5.2 Wiring: The detector is connected to a compatible fire alarm control system through a four-wire bus (L1, L2) and power supply (24V, GND).

The connection method is as follows.

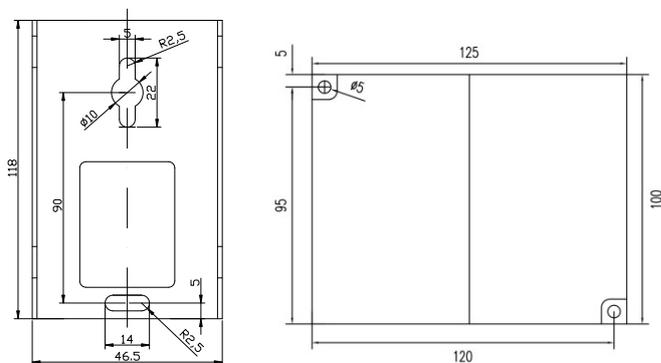


5.3 Address coding: As shown in the figure, the encoder will be connected to the detector terminal L1, L2 non-polar connection, the encoder is set to the encoding function, the preparation of the correct address code, press the “code” key to complete the address code setting. (Note: For detailed operation, please refer to the encoder manual)



6 Product installation and commissioning

- 6.1** Determine the installation position, spacing and number of detectors in the protected area in accordance with the national standards and the relevant provisions and requirements of the fire safety system rules.
- 6.2** The installation of the detectors requires the use of a matching base. The matching base as shown in the figure, has external dimensions of 180mm × 83mm × 73mm, fixed hole spacing of 90mm.



Mounting plate Reflector

Wiring requirements: the bus signal line should be RVS type twisted-pair cable, cross-sectional area $\geq 1.0\text{mm}^2$ The power line should be ZR-RVV cross-sectional area $\geq 1.5\text{mm}^2$ 。

6.3 Installation method is as follows

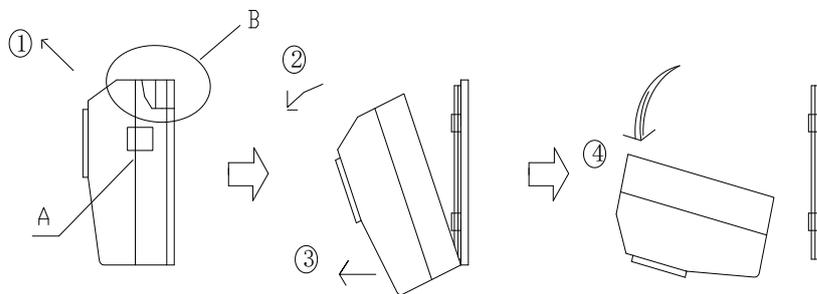
- Confirm that the detector type matches the controller host type;



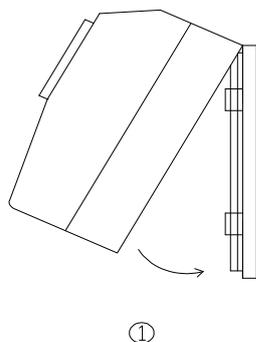
- According to the construction drawings, use 2 M4 screws to fix the matching base on the specified position through the diagram, and confirm that the base has been installed securely;
- Use the encoder to encode the detector according to the address number of the detector marked on the construction drawings;
- Correctly connect the detector with the corresponding controller bus and power cable according to the construction drawings;
- Hook the detector into the base and press the detector from top to bottom until it locks into place.
- Install the expansion screws on the wall according to the position of the 2 mounting holes of the reflector, and then fix the reflector tightly on the wall as shown in the picture, and the mounting holes on the reflector are set on the expansion screws and fixed with nuts.
- When all the products are installed, confirm that there is no error, turn on the controller power supply, and debugging operation;

6.4 Specific methods of debugging are as follows

- Open the detector shell: use a screwdriver to pry open the detector above or below the bottom plate and the shell of the opening slot to open the shell, in the absence of tools, hold the shell on both sides of the A part, to the top of the slant ① pull to the shell of the upper part of a small gap. Then shake the side left and right to pull to the bottom of the slant as shown in ②, the top two sides detached, hold the lower part of the shell ③, pull to the bottom of the slant to ④ to open the shell.



- Close the detector housing: Close the detector housing as shown in the figure below, and then close the housing in the direction of ①.

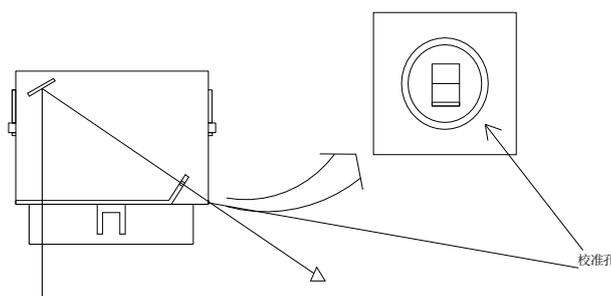


- Open the transmitter receiver housing.
- Stand on the right side of the transmitting receiver and observe the image in the reflection



glass through the calibration hole. Adjust the vertical light path adjustment knob and the horizontal left/right adjustment mirror box until the reflector mounted on the opposite side is in the center of the calibration hole.

- If the transmitting receiver is mounted in a place with blurred light, observing the reflector is difficult. An auxiliary light source should be used for adjustment.
- Energizing the transmitter receiver and pressing the reset button on the bottom of the transmitter receiver will emit a red laser line, which can aid in light path adjustment by horizontally adjusting the mirror box left and right to bring the point of light formed on the opposite side closer to the reflector. The red laser line will go out automatically after 5 minutes. Press the reset button again to relight it.
- 1 of the 6 light level indicators on the bottom of the transmitting receiver (bottom side, 6 small SMD LEDs) will illuminate to indicate the level of light being received by the detector.
- On either side of the top of the transmitter receiver are two light level amplification knobs. The left side is the fine adjustment knob and the right side is the coarse adjustment knob, which turns upward to decrease the signal and downward to increase the signal.
- After adjusting the vertical light path adjustment knob and the horizontal left and right adjustment mirror box is completed, if the yellow light quantity indicator is lit, it means that the amount of light received is too small, you can turn down the left side of the fine adjustment knob, and then turn down the right side of the coarse adjustment knob, until the green light quantity indicator is lit. If the red light indicator is on, it means that the received light is too large, you can turn the right coarse adjustment knob upward, and then turn the left fine adjustment knob upward until the green light indicator is on. If the green light indicator is on, it means the received light is normal and the detector can work normally. During commissioning, try to make the two green light volume indicators in the middle light up (indicating that the detector's receiving signal is in the best state).



- After the automatic login is normal, the detector red indicator light flashes about once a second, indicating that the detector has begun to work normally.
- Finally, use the special tool or the receiving window full cover way to test the detector for alarm. After the detector alarm, the red indicator light will be always on, and the controller will give the corresponding alarm message. After the test is finished, restore the controller and return the detector to the monitoring state.

7 ⚠ Attention

- 7.1** In the same bus circuit, the detector can not use the same address with other devices to avoid address conflict.
- 7.2** The detector protection area and the number of installations should be in accordance with the national standards and the relevant provisions in the rules of the fire safety system.

8 Maintenance and upkeep

- 8.1**  Warning: Before carrying out maintenance, the detector should notify the relevant management department that the system will be maintained and monitoring will be temporarily stopped as a result. The logical control function of the area or system that will be maintained should also be cut off to avoid unnecessary alarm linkage. Upon completion of the test, notify management to return the system to normal.
- 8.2** It should be ensured that the fire alarm function is verified at least once a year for each detector.
- 8.3** The good or bad working environment has a great influence on the performance of the detector. For the detectors installed and used in environments that are prone to dust affecting the normal use, the cycle of their maintenance should be shortened.
- 8.4** During the warranty period agreed in the contract, if the detector used normally according to the specified requirements fails due to defects in material or manufacturing process, the Company will be responsible for free repair or replacement. If the detector fails due to man-made damage, improper use or self-adjustment, alteration or dismantling, it does not belong to the warranty scope, and the Company will not be responsible for all the consequences caused by it.
- 8.5** We are responsible for paid repairs of products not covered by warranty, please contact us if you need to return them for repair. At the same time, we would like to get some important information about the product you want to return for repair, such as the circumstances and possible causes of product failure, so that we can find the problem in the shortest possible time, but also to give us a reference for future product development and improvement.

9 Failure Analysis and Troubleshooting

9.1	Failure phenomenon	Possible cause analysis	Method of elimination	Remarks
	Cannot be coded	Damaged internal circuit	Need to return to the manufacturer for repair	
	Cannot log in normally	Not coded or recoded	Recode	
	Fault reported after logging in	Sensor not working	Need to return to factory for repair	
		Heavy dust buildup on detector window	Clean detector window	
	Fire alarm after login	There is smoke or water vapor in the room	Wait until the smoke or water vapor is eliminated, then log in again.	
		Problems with internal circuitry	Need to return to the manufacturer for repair	



Doesn't work after powering up	Indicator light is broken or internal circuit is damaged	Need to return to the manufacturer for repair	
	Poor contact with terminals	Check and rewire	
Test does not report fire alarm	Damaged internal circuitry	Return to manufacturer for repair	

10 Transportation and Storage

- 10.1** In compliance with the packaging requirements and steady condition, it is allowed to be transported by any means such as automobile, train, ship, airplane and so on.
- 10.2** In the ambient temperature of $-10\text{ }^{\circ}\text{C} \sim +55\text{ }^{\circ}\text{C}$, relative humidity $\leq 95\%$ ($40\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ without condensation), no corrosive gases, well ventilated conditions of storage.



SHENZHEN HTI SANJIANG ELECTRONICS CO., LTD.

Address: 3rd Floor, Guangcai Xintiandi Apartment, Nanshan Avenue, Nanshan District, Shenzhen, China
(for office only)

Postcode: 518054

Telephone: +86(755)86226969

Fax: +86(755)86223939

Service Hotline: 400-7700-119

Website: www.sz-sanjiang.com