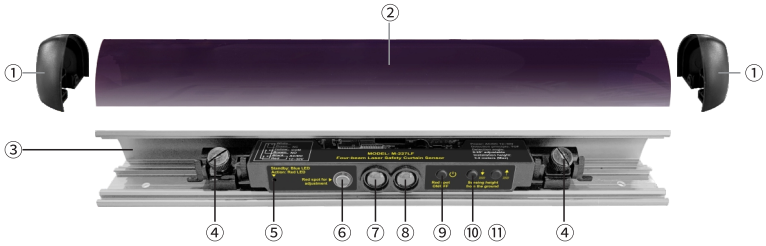
Operation Instructions

M-227LF Four-beam Laser Safety Curtain Sensor

1 Safety instruction

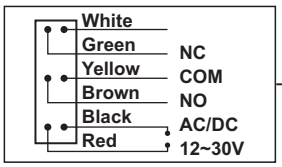
⚠ Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

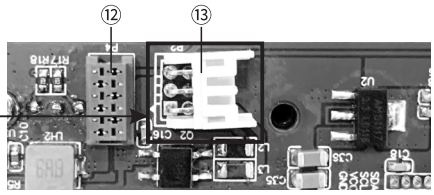
2 Product Overview



① End cover
② Filter front cover
③ Aluminum housing
④ Mounting Brackets
⑤ Indicator light
⑥ Positioning red dot
⑦ Transmitting cabin
⑧ Receiving cabin
⑨ Positioning red dot switch
⑩ Scan range close to ground switch
⑪ Scanning range away from ground switch
⑫ Wire interface x 2
⑬ Connection socket

Wiring Diagram ▶





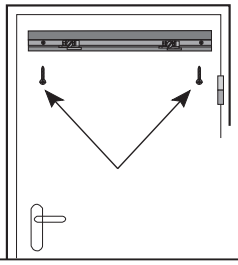
Remark: According to the usage, maybe you need to dismantle the left or right end cover. First loosen the screws, then removal teh end cover and front cover.

3 Installation and debugging

Installation

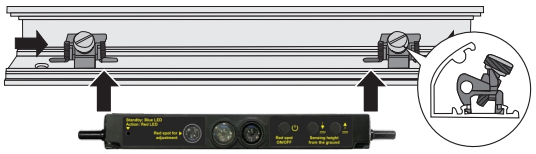
Option 1: Loosen the two screws from the mounting bracket, then push them to another side. **[1]**
Option 2: Loosen the screws. Then take the bracket holder and the sensor out from aluminum housing carefully.

[2]



Install the aluminum housing on the door leaf.

[3]



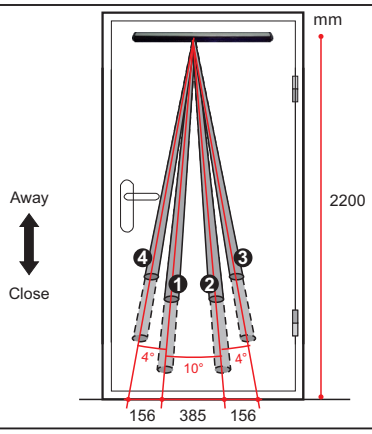
Loosen the screws before connect the mounting brackets to the housing. Put the sensors into the aluminum housing and tighten the two mounting brackets to the sensor.

Debugging

⚠ Each adjusted the position of laser beam, **please recover the filter cover, power-off then re-power on,** self-learning for 16s-30s (according to different occasions and climate conditions, the self-learning time will be changed).. When you hear a quick beep and a blue light flash, it's in the learning background. When you hear a long beep, the learning is complete, the blue light is always on, and the system can work normally. The factory default scanning range is about 50cm from the ground. If adjustment is required, the steps are as follows:

[1] Adjust the scanning range by button

The scanning range total 7 levels, push button once, one beep voice, scanning range increase or decrease about 5cm, if you hear two beep voice, it's mean the scanning range is to the limit.



[2] Working mode

Normally Mode

Push and hold the button for 5s, with a long beep voice, entering the normally state.

Stable Mode

Push and hold the button for 5 seconds, with a long beep voice, entering the stable state.

The stable mode is recommended when there are unstable environmental factors such as floating blades, complex ground, and rainy days. The factory default is normal mode.

Sensitive mode

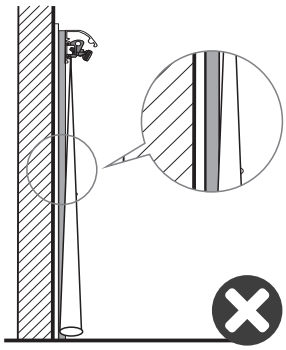
Push the two buttons of "⏻" and "⇣" for 3 seconds, you will hear a long beep, entering the Sensitive mode.

Push the two buttons of "⏻" and "⇡" for 3 seconds, you will hear a long beep, entering the Sensitive mode.

Off sensitive mode

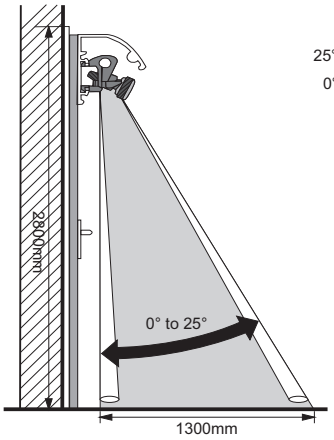
In the operating conditions, when the ground material scanned by the sensor does not change much during the process of opening and closing the door, if you want the sensing height closer to the ground, you can use the hypersensitive mode. Or error triggers will occur. The factory default is Off sensitive mode.

[3]



When install it on the door leaf, recommended that the tilt angle of sensor will be ≥15°, ensure laser beam doesn't scan the door leaf, sensor detection will be more stable.

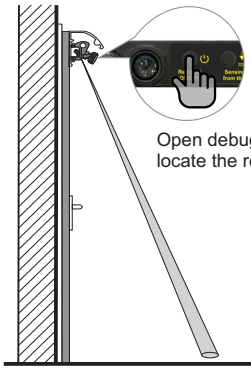
[4]



Adjust the angle of two sides to be same(can be read by scale), or the sensor in the case will incline.

Use the ratchet pawl in mounting bracket to set tilt angle.

[5]



Open debugging, locate the red dots

Open the debugging positioning red dots, confirm the general position of the sensing beam(Red dots isn't laser beam, laser beam is invisible light)

[6]

After finish all settings, tighten the screws of mounting bracket to stabilize the sensor

[7]

Close the filter front cover, tighten the screws of the end cover.

Complete the installation, power them on so they can relearn the background.

4 Troubleshooting

Symbol	Reason	Methods
Sensor indicator light don't work, no beep voice	Power supply isn't connect	Check the power supply and wiring
When door open, red light flashes, door run unstable	Scanning range is too close to ground	Adjust the scanning range height
Sensor indicator light is normal, door is always open	Signal cable NO NC connection error	Reconnect the signal cable correctly
Sensor red indicator is always on, door is always open	Background learning don't complete	Power off then power on and learn background

5 Technical parameters

Detection principle: Time-of-Flight technology(TOF)	Working voltage: AC/DC 12-30V
Light medium: 890nm infrared laser, Class I eye-safe laser	Standby current: 50mA(12V power)
Laser beams: 4 beams	Action current: 90mA(12V power)
Detection diameter: 100mm light spots each beam(2.8meters height)	Signal output: Relay NO or NC
Detection reaction time: ≤50ms	Trigger mode: Moving or stationary
Detection range: away from the ground ≥ 30cm(1, 2)/60cm(3,4)	Function instruction: LED indicator, standby: BLUE, detection: RED
Detection angle: 0-25° adjustable	Shell material: Aluminum alloy, ABS, PC
Installation height(max): 3.2m	Sensor dimension: 310x31x20mm, 620x31x20mm, 750x31x20mm,
Working temperature: -20℃~60℃	900x31x20mm, 1200x31x20mm(optional)

6 Packing List

NO.	NAME	QUANTITY	REMARK
1	Laser safety curtain sensor	1 pc	
2	Operation instructions	1 pc	
3	Cable	1 pc	65cm
4	Installing bracket	1 pc	
5	Screw bag	1 bag	