Operation Instructions

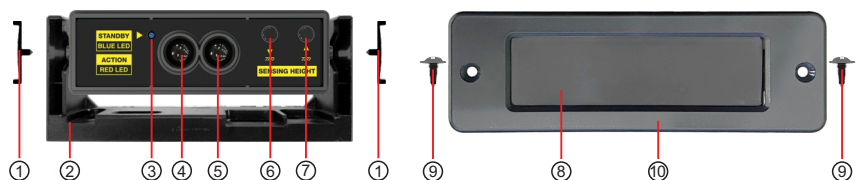## M-220L Vertical Safety Laser Sensor

1 Safety instruction

⚠ Thanks so much for your purchasing, please read this instruction before using

2 Product Overview & Wiring Diagram

① Mounting bracket fitting(use with ②)
② Rotating bracket (for exposed installation)
③ LED Indicator
④ Transmitting cabin
⑤ Receiving cabin

⑥ Scanning range close to ground switch
⑦ Scanning range away from ground switch
⑧ Filter front cover
⑨ Fixing screw(use with ⑩)
⑩ Decorative cover(for concealed installation)

Red	AC/DC	} Power input
Black	12~30V	
Blue	NO	} Signal output
Yellow	COM	
Green	NC	
White		

Wiring Diagram

3 Product Debugging

⚠ Each adjusted the position of laser beam, **please recover the filter cover, power-off then re-power on,** self-learning with 8 seconds. When you hear a quick beep and a blue light flash, it means that 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. Generally, no special adjustment is required. The factory default scanning range is about 35cm from the ground. If adjustment is required, the steps are as follows:
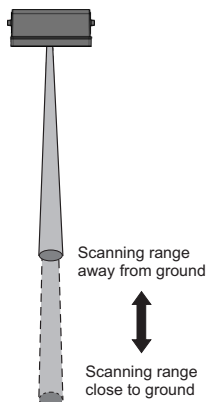
[1] Adjust the scanning range by button

Scanning range away from ground

Scanning range close to ground

Scanning range away from ground

Scanning range close to ground

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

Push and hold the button for 3s, with a long beep voice, entering the normal state.

Push and hold the button for 3 seconds, with a long beep voice, entering the stable state.
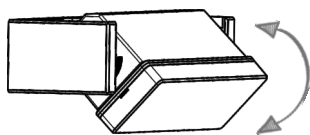
Normal Mode   **Stable Mode**

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.
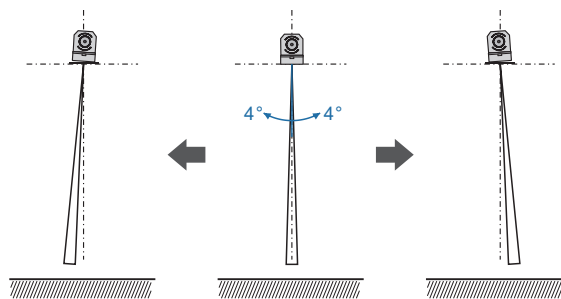
[3] Install tilt Angle Settings

In order to more accurately adjust the side detection range of the sensor, this device with front and rear scanning ranges fine-tuning settings.

◄ Flexible rotating angle by exposed installation

Front and rear 4° range ►
adjustable by concealed installation

4°　4°

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

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5　Sensor Dimension

Exposed Installation

102　45.5　48　118　33　30　90　(mm)

Concealed Installation

50　117　148　35　48　130　(mm)

6　Technical parameters

Detection principle: Time-of-Flight technology(TOF)	Working temperature: -20℃~60℃
Light medium: 890nm infrared laser	Working voltage: AC/DC 12-30V
Laser category: Class I eye-safe laser	Standby current: 50mA(12V power)
Detection diameter: 100mm light spots(2.8meters height)	Action current: 90mA(12V power)
Detection response time: normal mode 20ms, stable mode 100ms	Signal output: Relay NO or NC
Detection range: away from the ground large than 20CM	Trigger mode: Moving or stationary
Detection angle: ±4° adjustable when exposed installation	Function instruction: LED indicator, standby: BLUE, detection: RED
Installation height(max): 5m(fixed position), 3.5m(moving door leaf)	Shell material: ABS, PC

7　Packing List

No.	Parts	PCS	Remark
1	Sensor	1	
2	Instructions	1	
3	Bracket with expose installation	1	
4	Bracket with concealed installation	1	
5	Screws bag	1	Rubber plug*2，screws*4，Mounting bracket fitting*2