



MC Series Light Curtain

Instruction and Manual

Please read this document carefully and thoroughly before installation and operation because the correct and optimum use of this product is important for the personal safety.

Please give the user this document with the photoelectric protector if you are an agent, a dealer or a machine manufacturer which forms a complete set, because this document is important to guide the user correctly to install and operate.

Content

1. Usage	1
2. Features	1
3. Tech Parameters	1
4. Specification	2
5. MC I/O	3
5.1.NPN Output I/O Wiring	3
5.2.NPN Output Wave	3
5.3.PNP Output I/O Wiring	4
5.4.PNP Output Wave	4
6. Controller Options.....	5
7. Reflection Influence of Ambient Objects	5
8. MC Light Curtain Mounting&Parts.....	6
8.1.Right-angle Bracket Installation 1	6
8.2.Right-angle Bracket Installation 2	6
9. Debugging	7
9.1.Device Debugging	7
9.2.Application,Check&Maintenance	8
10.Troubleshooting	9

Basic Instruction

1.Usage

1. MC light curtain is mainly used for mechanical processing equipment, hazardous work places, machinery and equipment to prevent injury to the operator and suffering injury or accident by into the dangerous region, to protect personal safety.
2. MC light curtain is to be used alone or matching with safety modules,such as the safety relay,emergency stop switch etc. to form more complex control system for the alarm intruding into the dangerous areas or equipments protection system interlock.

2. Features

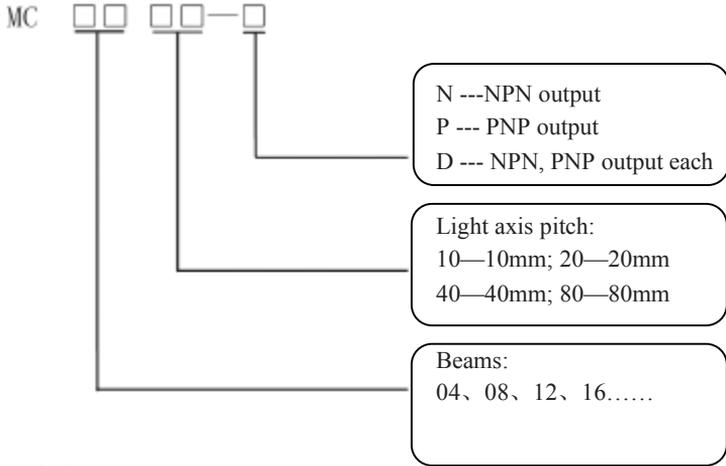
- 1.Slim and Exquisite profile,installation with ease
- 2.Max.Protection heigh:1740mm, protection range:400~3500mm
- 3.Perfect self-checking,redundancy design in the circuit to prevent sending wrong signal to the control system.
- 4.Selectable Models with different light pitch and detecting height for your actual application requirements
- 5.Perfect anti-interference ability to electromagnetic signal, flash light, weld arc light and peripheral light.
- 6.Long-lasting,high reliability
7. Strong light passing,easy to align
- 8.Perfect self-defense function,such as the electrode protection, output short protection etc.
- 9.Fast Response to avoid the danger at utmost.
- 10.Safety&Reliable NPN or PNP double output

3.Tech Parameters:

Operating Power	DC24V±15%
Output	Transistor output(100mA)
Max. Output Current	100mA(transistor)
Power Consumption	<3W
Ambient Temp.	-10℃～55℃
Humidity	20℃,RH≤95% (no condensated water)
Response Time	3ms~18ms
Insulation Resistance	>100MΩ
Dielectric Strength	AC1500V,60s
Anti-interference to Light	10000Lux(incidence angle≥5°)
Light Source	Infrared,940nm
Housing	Sensor:aluminum alloy
Sealing	Sensor:IP65
Resolution	19mm,29mm,49mm
Protection Range	400~3500mm
Protection Height	H=(xx-1)×pitch, xx : beams

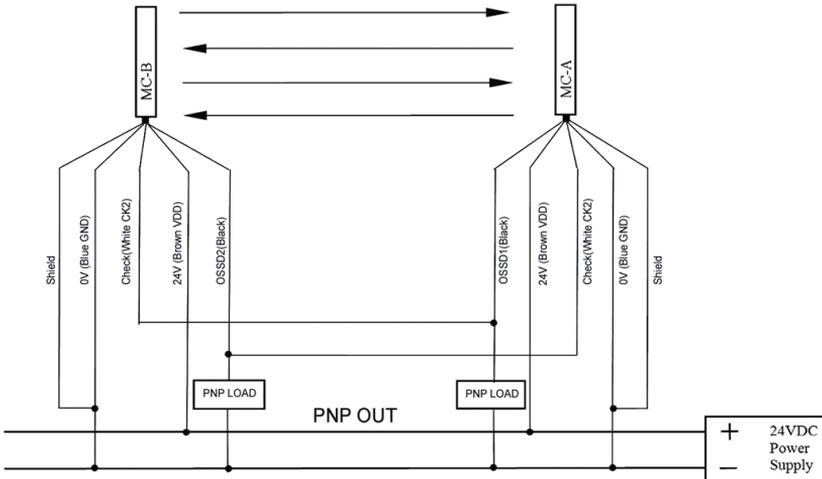
4.Specification

It consists of three parts which separated by "-",the first part means the NO. of light beams,the second means light pitch,third part means the output type,please remark it in order if the special controller required.

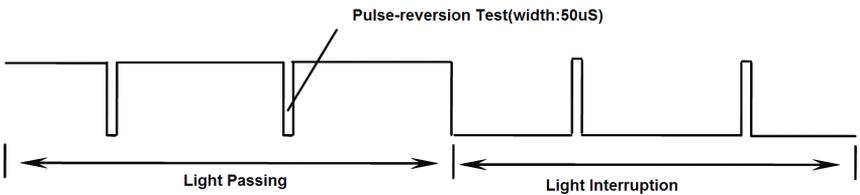


5. MC light curtain I/O

1. PNP Output I/O Wiring

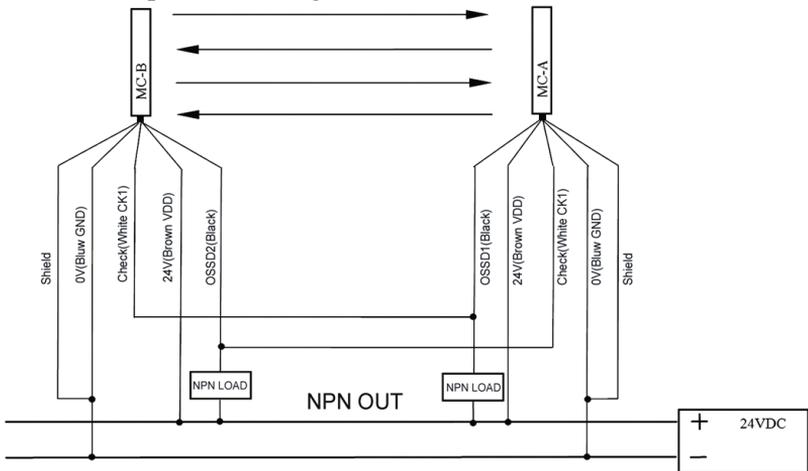


2. PNP Output Wave Type

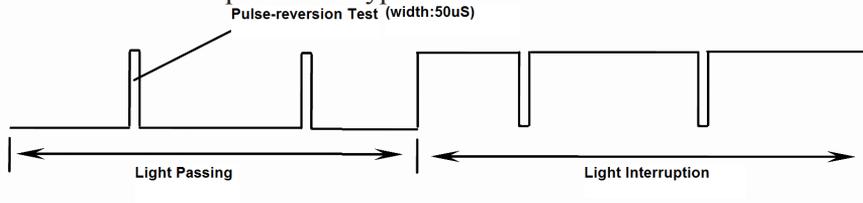


Mark: the adjustable pulse-inversion test to meet special loading requirements from customer.

3. NPN output I/O Wiring



4. NPN Output Wave Type



Mark: the adjustable pulse-inversion test to meet special loading requirements from customer.

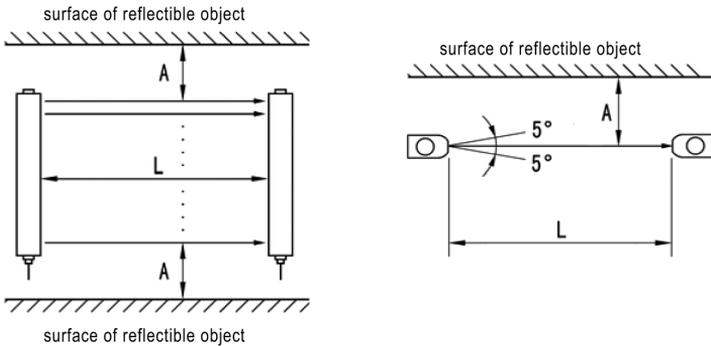
6. Controller Specification

There are 4 kinds of controller as below for your options

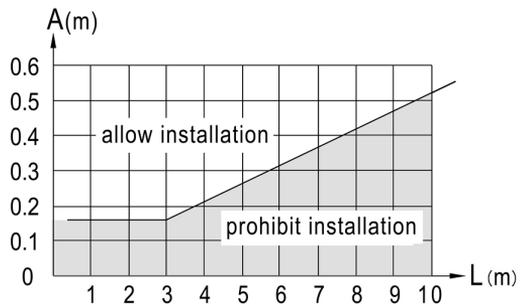
SR4P2A1B24N、SR4P2A1B24P、SR4P3A1B24、ND controller,the detailed usage and wiring in the corresponding instruction manual. Please contact us for more information.

7. Peripheral Reflecting Surface Influence

If it has the smooth reflecting surface around the light curtain, like the metal plate, the floor, the ceiling, the work piece, the cover, the partition board, the glass plate and so on, the protector placement position must be away from the reflecting surface farther than value A (m), value A can be calculated by the formula in form, or be consulted from the coordinates chart



Protection range L	Permitted distance A
0.3 to 3m	0.16m
>3m	$L \times \tan\theta = L \times 0.087 (\theta=5^\circ)$



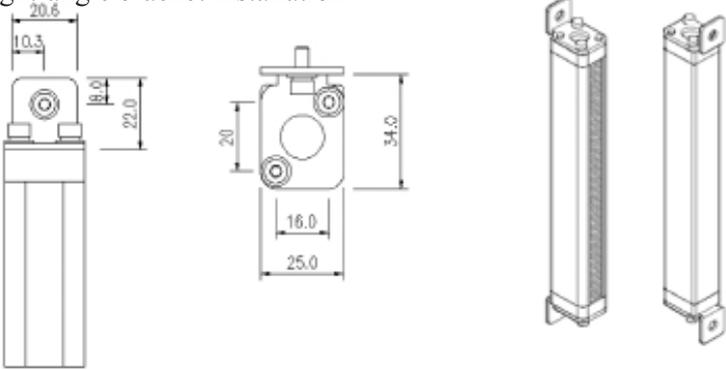
The placement position schematic drawing of prevented the influence from the reflecting surface around the light curtain

! Warning

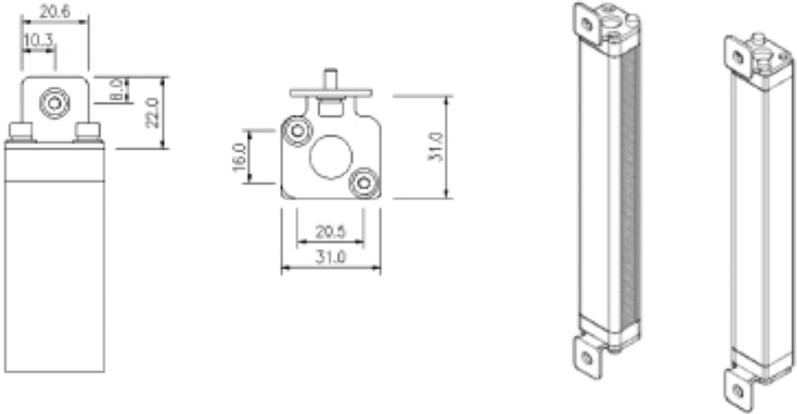
- A. The smooth reflecting surface around the light curtain, can cause the protector to lose the normal function, further to lose the protective function.
- B. The placement position of the protector, must be as far as possible away from the reflecting object, or cover up the reflecting object, eliminates the disturbance around the light curtain, guarantee the security.

8.MC light curtain installation&parts(unit:mm)

1.Right-angle bracket installation 1

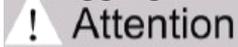


2. Right-angle bracket installation 2



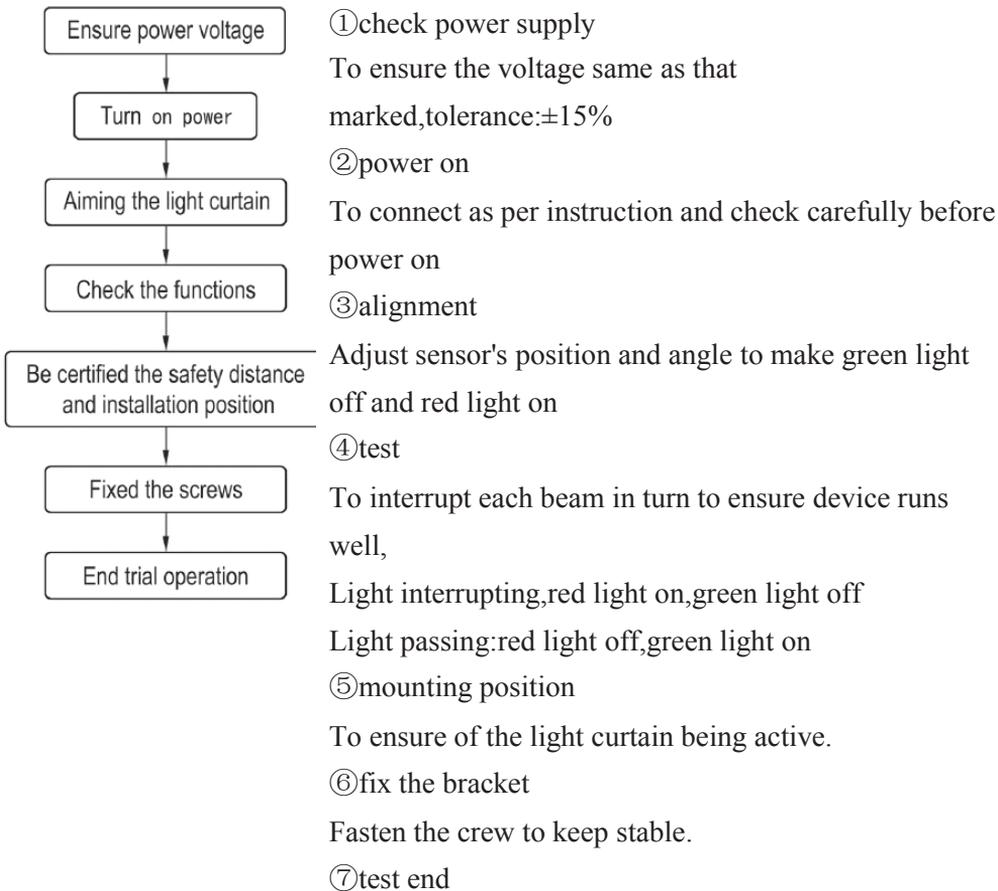
Mark: If any special bracket,please contact us.

9. Debugging



Should do check carefully the same after finishing wiring to ensure of correct connection. Don't provide power till everything is going well.

1. Debugging



2.Operation,Check and Maintenance

①.Notice

- 1.Before put into operation ,check the protector to ensure that it runs normally.
- 2.During operation, do not change the position of light curtain.
- 3.When a malfunction happened, only professional technicians are allowed for repairing.
- 4.Before replacing or installing protector and transmitting wires cables, power to protector should be switched off. It is operated only by professional technicians.
- 5.During operation, do not let work pieces, tools or waste matters hit the protector.

②.Check and Maintenance

It is important to check and make maintenance for protector so as to ensure operators' safety. Periodical check and maintenance shall be made.

Item	Contents	Means	Time
Check	Check for light curtain face	Confirmation of all passing, reflecting face clean and no broken	Before operating
	Confirmation of incepting light (test every beams)	Block one by one beam of light curtain; check if indication states are normal	Before operating
	Check for protection function	In entire protected slide travel (or onward strokes between 30 to 180 degrees, is set cam switch for "no protection" in back-way), block light curtain, the slide of press should stop immediately	Before operating
	Check for screws	Confirmation of all screws tightly fixed	Six months
	Check for wiring terminates	Confirmation of all screws tightly fixed, and all wiring well connected	Six months
	Check for relay	Confirmation of relays tightly installed, well contacts and normal operation	Six months

10. Troubleshooting

Phenomenon	Reason	Solution
The protector does not work, various indicators are not light up.	Power is not supplied.	Inspect the power source and the wiring, provide the correct power source.
The protector works intermittently, indicators flicker.	The wiring of control cable is not good;	Fix tight the screws of the terminal.
	The light curtain is not aiming correctly	Adjust the light curtain again.
The protector indicators display normally, but the press can not run normally.	The protector output control wire OSSD1 and OSSD2 are broken with the press control unit.	Wiring again and right.
	The press control unit has a fault.	Examine the press control unit.
	Controller has a fault	Consult form 8.2 simple troubles of controller 2.
The protector indicators display normally, but the press can not stop when the light curtain is blocked.	Short circuit OSSD1, Short circuit OSSD2	Examine the control unit.

LNTECH[®]

SHANDONG LAIEN OPTIC-ELECTRONIC TECHNOLOGY CO., LTD.
West Shanbo Road, RenCheng Economic Development Zone, Jining,
Shandong, 272000, China
Tel: +86-537-3926517 Fax: +86-537-3926519
Http: //www.laien.cn E-mail: laientech@laien.cn