Focus on Industial safety

Shenzhen Xaori Technology Co.,Ltd.


SWITCH
LOCK
SECURITY MODULE
SLIDE HANDLE
LIGHT CURTAIN
PHOTOEL-ECTRIC SENSOR
SLC
施 莱 格
Focus on Indust ial safety

COMPANY PROFILE

Shenzhen Xaori Technology Co.,Ltd., founded in 2006, is a national high-tech enterprises and high-tech enterprises in shenzhen, set research and development, design, production, sales in the integration of high-tech enterprises, all the research and development, production of products with independent intellectual property rights, the company focus on industrial security systems, research and development production safety grating, grating, grating measurement, safety relay module, security door locks and other products, for customers to provide professional security system solutions.

For the service and quality of the company's SLC® SLC series of products, the most important SLC® is to make customers feel safe to use. The company is committed to providing a safer workplace for every user. With a professional technology development team, the SLC® SLC series safety products (safety grating, general grating, measuring grating, safety relay module, safety door lock, etc.) developed and produced by the company have passed the national standard certification, CE certification and FCC certification.

SLC® SLC series of safety products have been widely used in the market for more than 10 years, and has been recognized by the market. Has been successfully applied to foxconn group, byd, galanz, huawei, gree group, haier group, midea group and other well-known enterprises at home and abroad.

Under the guidance of this goal, all employees of the company will make every effort to provide customers with satisfactory products and high-quality services, and look forward to creating a safe industrial production environment together with customers for a better future.

HONORARY
CERTIFICATE

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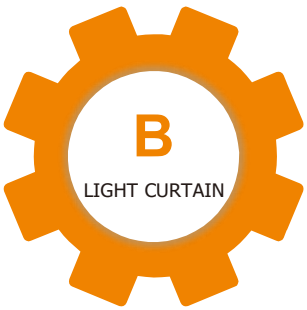

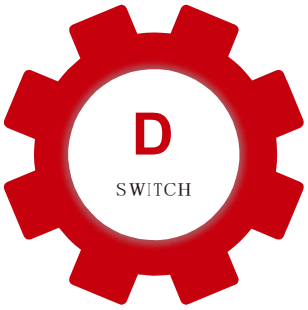

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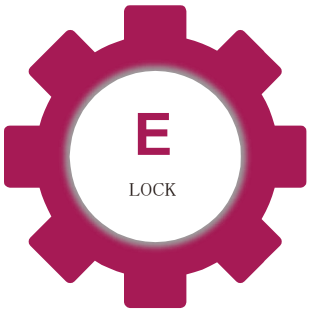
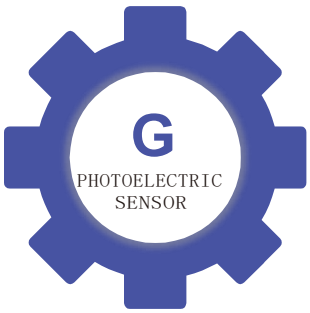




A

POPULARIZATION OF SAFETY KNOWLEDGE

Conception of Function Safety

In modern factories, humans and mechanical equipment work together. it is the possibility of injury to workers is increasing, as automation of mechanical equipment becomes more and more popular,To improve the safety of machinery and equipment, it is necessary to provide personal protection for the staff around the dangerous or potentially dangerous machine tools and equipment. The purpose is to reduce the possibility that the operator will be injured while working in the factory. The goal we are pursuing is to minimize the personal injury caused to people due to poor working environment, and strive to provide customers with a safe working.

Function safety standard devision

There are A、B、C type standard:

A Tybe

Cover aspects application all type of machines.

he standard lists some of the most basic concepts related to machine safety, the guiding principles of safety design and machine risk assessment e.g., for example : EN ISO 12100：Machine safety concepts (including basic safety concepts and design principles)；EN/ ISO 14121 Machine risk assessment;

B Tybe

B1 & B2

B1 standard addresses specific safety issues, such as:
EN 999（ISO 13855）：Calculation of safety distance;
EN / ISO 13849-1）：Machine safety protection equipment selection principle standard;
EN 60204（IEC 61508，IEC62061）:Machine electrical safety standards;
EN61508 is mainly for setting safety standards for programmable safety

B2 Standards are standards for related equipment for machine safety protection, such as:
EN574（ISO 13851）：Safety standards for two-hand control buttons;
EN61496（IEC 61496）：N / IEC 61496-1 / 2 safety standard for photoelectric protection equipment;
EN 61496-3 Safety standard of laser area scanner； EN 1088 （ ISO 14119 ）： safety door interlock switch;
EN 1760 （ ISO 13856 ）：Pressure safety protection equipment。

C Tybe

Standards related to hazardous equipment

This standard is higher than the A and B standards

EN775：Industrial robot;
EN693：Hydraulic press;
EN415：Packaging machine, etc.
EN692：Mechanical N12622：Hydraulic bending machine;

WARNIN

In order to make this product fully play the function of safety protection, please read the manual carefully before installing and using this product. If you are unclear when reading and using this manual, please contact our company in time.

Classification of safety control circuits

When the domestically produced machinery and equipment are exported to the European Union and we obtain the CE certification, we usually encounter the concept of "safety level" in the design of electrical control circuits. That How to distinguish the safety level of electrical control circuit? How to design a circuit to meet the requirements of safety certification? First, before designing a machine, a risk assessment must be carried out on the machine. From all aspects and parts, assess what kind of danger this machine will bring, and finally determine the danger level of this machine (or a part of it). According to the European machine safety standard EN / ISO 13849-1, the hazard level is divided into five categories: B, 1, 2, 3, and 4.

The determination of the danger level are shown in Figure 1.

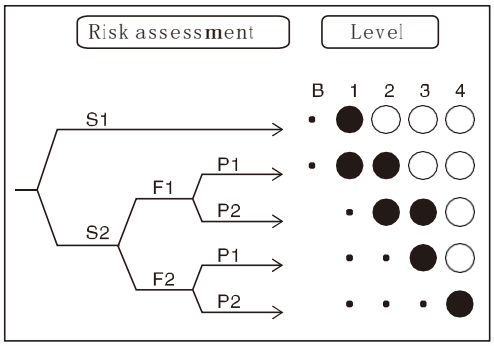


Figure 1

S_ Degree of injury:	1=Minor injurys 2= Serious injury or death
F_ Time and frequency of danger:	1= Occurs from nothing 2= frequent or continuous occurrence
P_ The possibility to avoid danger:	1= Under certain conditions 2= almost impossible

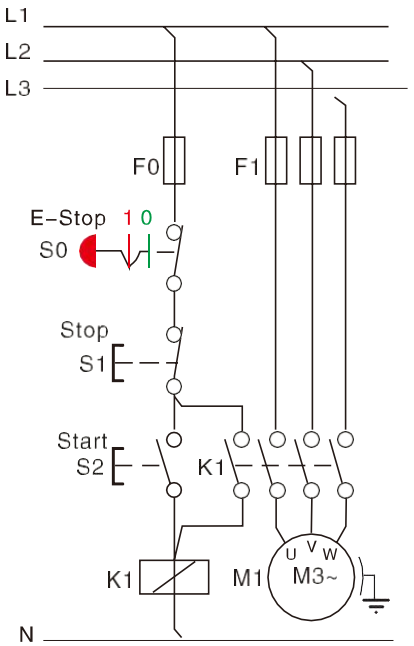


Figure 2

After completing the risk assessment of a machine (or a part of it) and determining its danger level. After that, a series of measures must be taken to reduce the risk. Such as design improvement on mechanical structure, increase of safety protection measures, use of safety control circuit, etc. The design of the safety control circuit must also meet the required safety level.

According to the European machine safety standard EN / ISO 13849-1, corresponding to the five levels of danger, the safety level of the control circuit is also divided into five levels of B, 1, 2, 3, and 4, and the safety level increases in turn, and the level 4 The highest security level. For example, if the hazard level of a machine (or a part of it) is determined to be level 4, then the security level of the corresponding safety control circuit must also be level 4. Class B requires that control circuits related to safety functions must use safety switching appliances that meet basic safety guidelines and related standards during the design, selection, and assembly process.

The safety control circuit must be able to withstand the electrical operating strength, the influence of the working medium during operation and the influence of the relevant external environment. Level B is the most basic level, other levels must meet the level B's request.

Compared with level B, level 1 requires the use of mature components, that is, components that have been widely and successfully used in similar application areas, or components manufactured according to reliable safety standards, and mature.

Stop

In level B and level 1, the safety control system's ability to withstand failures is mainly achieved through the use of appropriate components. As shown in the figure, fuse F0 and emergency stop.Button S0 is connected in series in the main control loop. If reasonable fuses and reliable emergency stop buttons are used, the risks in this circuit are acceptable. However, when any single fault occurs in the safety control circuit, such as the welding of the emergency stop button contact, it will cause the loss of the safety function. Therefore, the safety level of this control loop can only be level B or level 1.

In the design of hazardous machinery, Class B and Class 1 are rarely used. Generally, three grades 2, 3, 4 that meet EN61496-1 (IEC61496-1) of B2 photoelectric protection equipment are used.The specific descriptions of these security levels are as follows:

Level	Summary of requirements	Risk assessment	principles
2	Meet the requirements of levels B and 1, at the appropriate time, the control system must monitor the safety function	◆ During monitoring, a fault can cause theloss of the safety function. ◆ The fault can be detected by monito-ring	Through design
3	In accordance with the requirements of levels B and 1, the control system must be designed according to the following steps: a. A single fault will not cause the loss of the safety function. b. By using appropriate methods, a single fault can be detected (using the latest technolo-gy).	◆ If a single fault occurs, the safety fun-ction can still be maintained. ◆ but not all faults can be monitored. ◆ A cumulative failure that cannot be monitored canresult in the loss of the safety function.	
4	To meet the requirements of levels B and 1, the control system must be designed as follows: a. A single fault in the control system will not cause the loss of the safety function b. If possible, before the implementation of the next safety function, a single error can be detected c. If b is not possible, a cumulative fault will not result in the loss of the safety function	◆ Even when a fault occurs, the safety function always keeps ◆ the fault detected in time to prevent loss of the safety function	

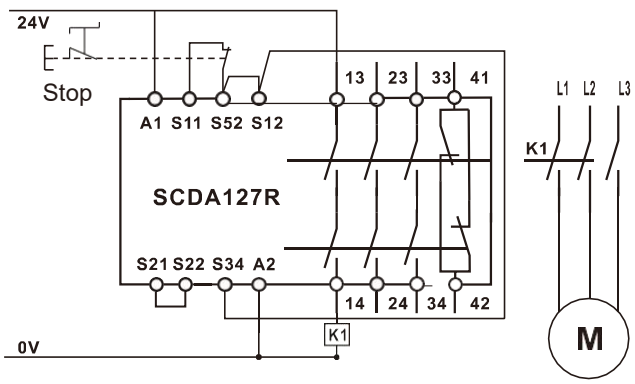


Figure 4

We can divide a simple control circuit into a signal input section Sub-section (such as emergency stop button, limit switch, light grid), control section (such as relay, PLC) and output section (such as AC contactor for motor control). According to the safety level described in EN / ISO 13849-1, to achieve safety level 2 and above, the control part must use safe components such as safety relays, safety PLCs, etc. On the basis that the safety relay used reaches the required safety level, we can usually judge the grades 2, 3, and 4 by the wiring of the signal input part. We now take the emergency stop button as an example to analyze the application wiring of these three safety levels.

If a single-channel signal input is used to enter the safety relay, the safety level of this control circuit is level 2, as shown in Figure 4.

If dual-channel signal input is used, enter the safety relay, and at the same time, short circuit between the two input contacts cannot be detected. Then the safety level of this control loop is at level 3, as shown in Figure 5

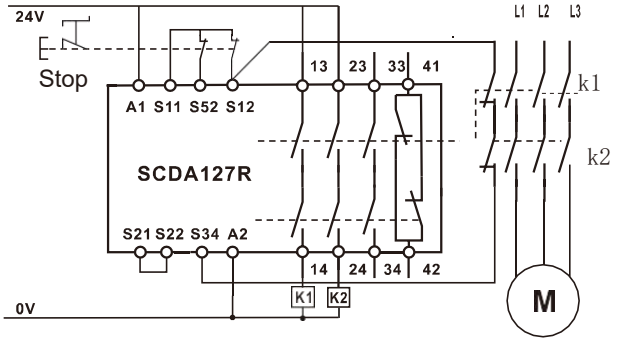


Figure 5

If a dual-channel signal input is used, it enters the safety relay and can detect a short circuit between two input contacts. Then the safety level of this control loop is at level 4, as shown in Figure 6.

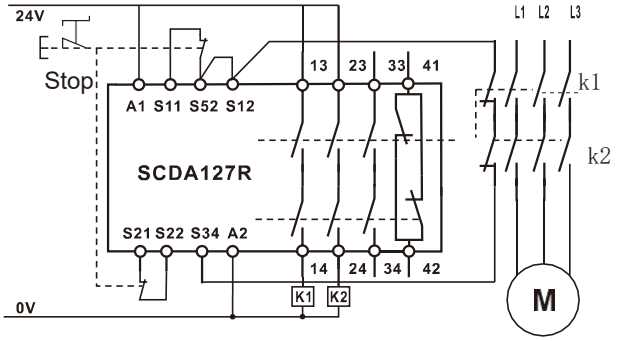
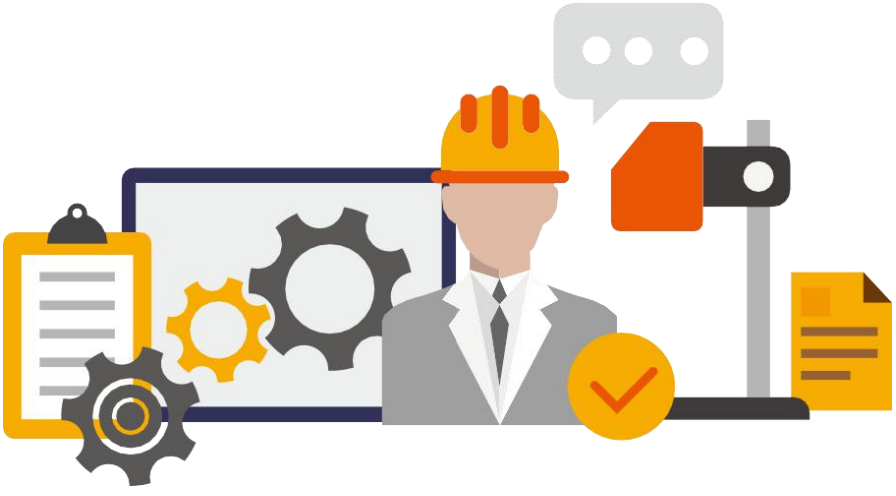


Figure 6

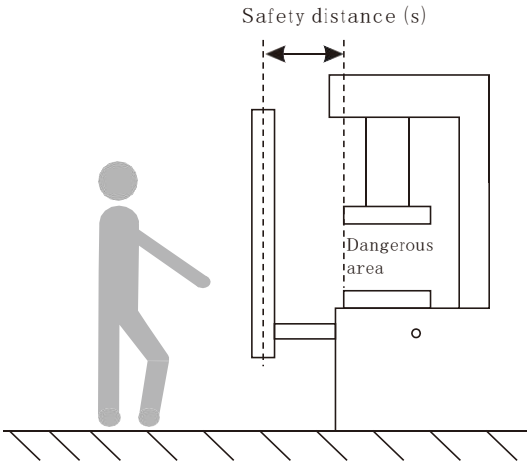
Note: The above example is a simple illustration. The core of security level 3 and level 4 is redundancy (duplicate technology) diversity (different technologies) monitoring (detecting the status of equipment and checking the results to take appropriate measures).



SLC safety light curtain installation distance

WARNIN

Please ensure a safe distance (S) between the light barrier and the hazardous area. Once the machine does not stop before reaching the danger zone of the machine, it may cause serious injury or even death. Calculate the safety distance correctly. The detection area and the dangerous part of the machine should always be kept at or greater than the safety distance.
Note: The response time of the machine refers to the time from when the machine receives the stop signal to when the dangerous area of the machine stops. Please measure the response time of the machine with a real machine. In addition Please check the response time of the machine regularly for changes



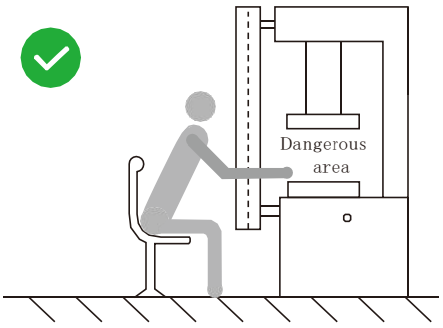
Calculation method of safety distance According to European standard EN999-1999 (reference)

When the human body vertically invades the detection area of the grating, the safety distance is calculated as follows
S = KxT + C ... (1) formula

◎ S: Safety distance (mm)
◎ K: speed of intrusion detection area (mm / s)
◎ T: Total response time of machine and grating (s)
◎ C: Additional distance (mm) calculated from the minimum detection object diameter of the grating

Note:
The system with the smallest detected object diameter less than 45mm is calculated by equation (1).
K = 2,000mm / s, C = 8 X (d-15mm)
S = 2,000mm / s x （Tm + Ts） + 8 X （d-15mm）
d: diameter (resolution) of the smallest detected object mm

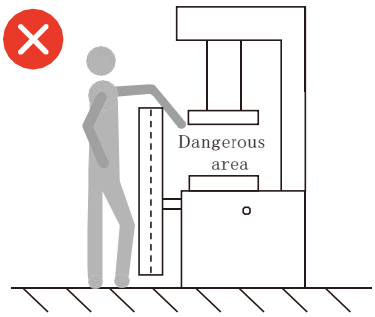
Precautions for installation and use of SLC safety Light Curtain



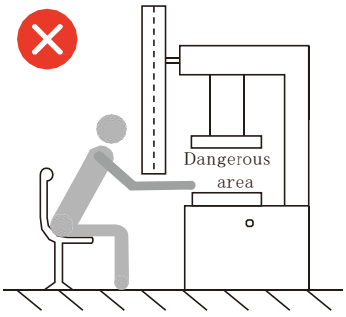
Right

WARNIN

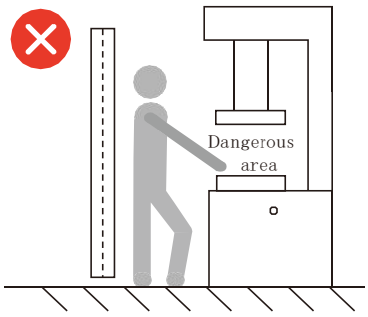
◆ It should be ensured that the hazardous location can only be reached through the protective area.
◆ In particular, it is not possible to reach dangerous locations from above or below and around.
◆ If you can stand behind the protective



Invade from above

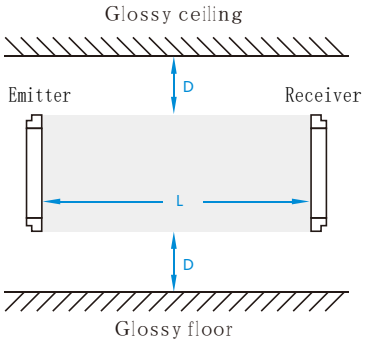


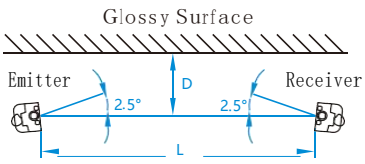
nvade from below



Invade from behine

nfluence of glossy surface





istance between transmitting unit and receiving unit(Detection distance L)	Set allowable distance D
0-5m时	0.16m
5m以上时	L/2×tan6=L×0.053(m)

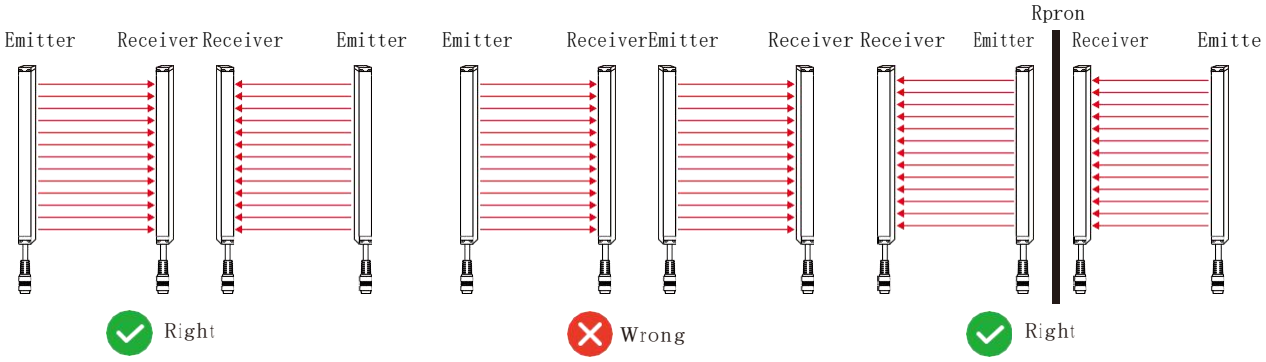
WARNIN

◆ Set the safety light curtain so that it will not be affected by reflections on the glossy surface. Once in an undetectable state, it is necessary to take measures such as irregular reflective surface, thickening, and blocking the reflective surface, otherwise it may cause serious injury.
◆ The distance from the metal surface or the glossy surface (surface with high reflectance) such as the floor, ceiling, workpiece, etc. should be set more than the distance D as shown in the figure on the left.,

SLC light curtain avoid mutual interference

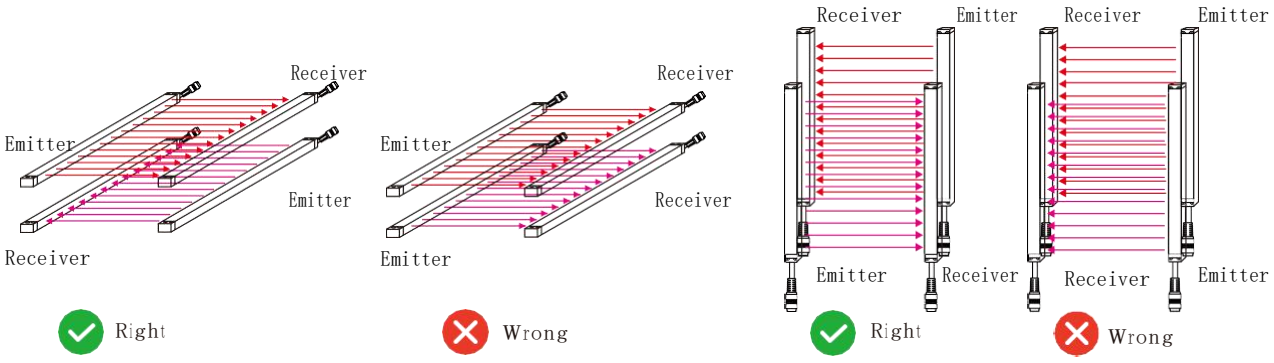
In some special use environments, multiple sets of safety gratings are closely spaced apart. In order to ensure the stable operation of the equipment and avoid mutual interference, please follow the installation method below installation.

Horizontal linear installation



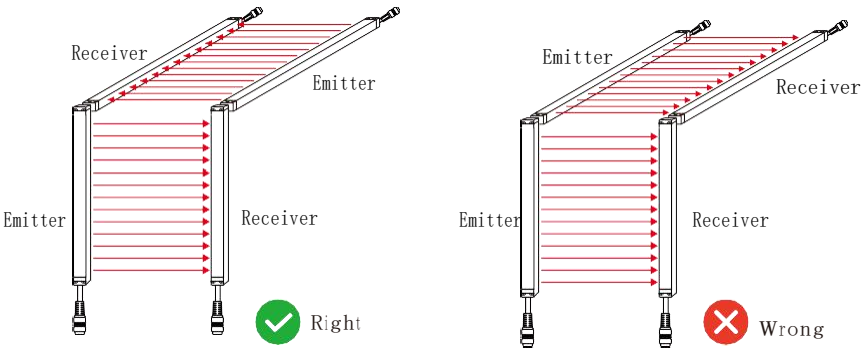
Note: If the distance between multiple sets exceeds the farthest distance of the safety grating, this installation scheme can be ignored.

Horizontal and vertical installation

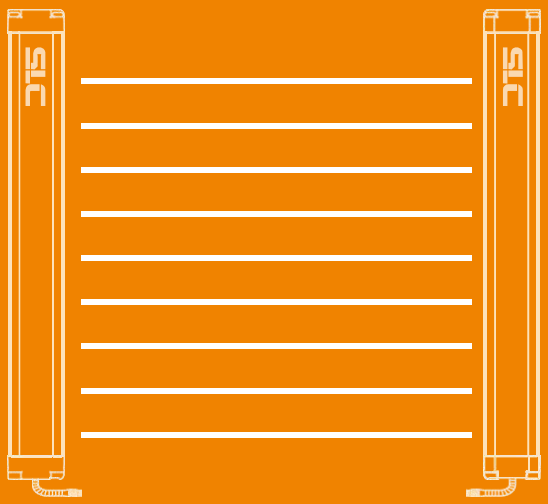


Note: Multiple sets are used to ensure that the adjacent two sets of safety gratings are installed cross-receiving and transmitting as far as possible from the same direction of the safety grating.

L-type vertical installation



Note: In the use environment of L-type or concave-type, the adjacent safety grating transmission and reception need to be installed crossly。



B

LIGHT CURTAIN

SLC Ser... Light Curtain

SLC-LP Series Sa... Light Curtain

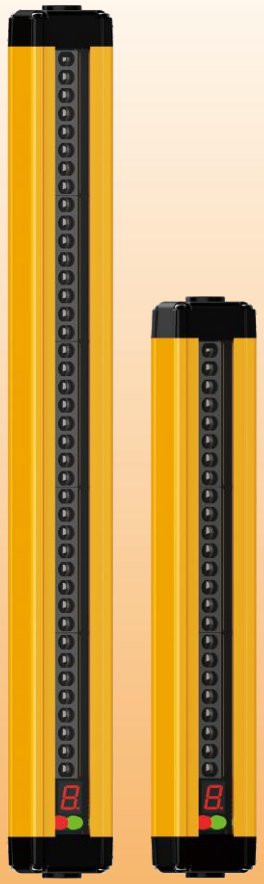
LC Series General Lig...

SLC Long-Range Safety Light C...

05LCMF Series Measuring Light Curtain

SLC Series

Safety Light Curtain



SLC Series Safety Light Curtain The Features and Advantage

SLC series light curtain is Type 4 safety light curtain which conformed to international safety standard EN61496-1/2. SLC safety light curtain builds a safe workplace to customers. It iswith the following advantages:

◆ System Failure detection
SLC series of safety light curtain is with CPU self-test function, when their own failure (such as the light is not synchronized, the light intensity is not enough, cast light drive circuit error, the main control circuit error, cable problems, and receive drive circuit error, CPU error) to ensure that the equipment is not issued to the wrong status, to ensure product safety.

◆ Independent double OSSD output
In order to meet the requirements of the safety standard, please use the two channel system (connects the two OSSD independently) connection (the dual redundant system will improve the safety performance). System can drive safety Relay or PLC directly.

◆ OSSD Self- diagnosis
The independent dual OSSD circuit has a self-diagnosis function, which system will close the OSSD output periodically in a very short time (does not affect the work) ,and simultaneously check the feedback signal, if it does not detect the feedback signal , will stop the output.

◆ External Device Monitor (EDM)
The SLC safety light curtain monitors the "external relay contact status" in case contact adhesion. System will stop OSSD when detect the error EDM signal, to prevent the external relay contact adhesion.

◆ Short Protection and Overload Protection
When the safety light curtain output will turn off the output due to overload or short circuit.

◆ Modulation Frequency
Adjacent light curtains can be set to different frequencies, thus preventing interference with the same frequency.

◆ Anti-light interference and environmental adaptability

◆ Fast Response
The response time of all safety light curtains is within 23ms.

◆ Easy Maintain
Easy to get the status or figure out the problem of the SLC safety light curtain by observing the indication of the 7-saegment digital and LED lights.

◆ Self- diagnosis
Self- diagnosis is performed on the power up (within 2 seconds) .Self- diagnosis (reaction time) is performed periodically during normal operation.

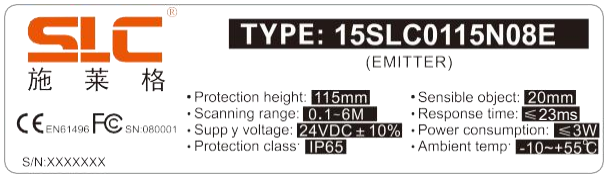
Ordering information

15 SLC 0115 — N 08 R

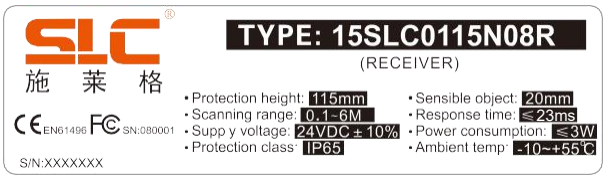
- 15: Beam Spacing 7.5 mm / 15mm / 30mm
- SLC: SLC Safety Light Curtain
- 0115: Lens Height : 100~2380mm
- N: Output Type N: NPN P: PNP
- 08: Number of Beam: 4-200
- R: E: Emitter / R: Reciever / None: A Pai
- Protected Distance: 02: 2m

Example of SLC Model Type

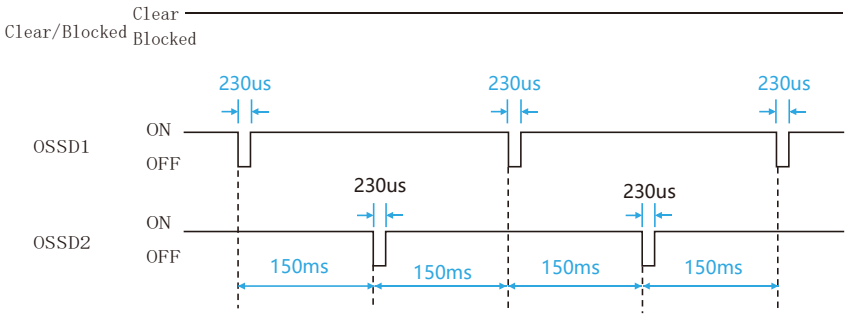
Emitter Unite



Receiver Unite



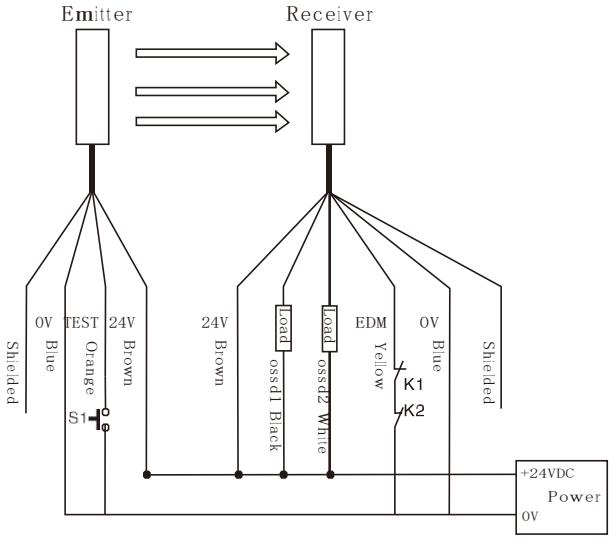
SLC safety light curtain OSDD



There are self-diagnosis in OSSDs output of SLC safety light curtain. OSSDs will be turn on when the protection area is clear. during OSSDs turned on period, the controller of SLC will periodically shuts down OSSD1 and OSSD2 in sequence.During the short period of shutdown of OSSD1 or OSSD2, the internal timing control unit of the SLC detects whether the level of OSSD1 or OSSD2 has flipped. If the flip occurs, the corresponding OSSD switch is in normal working state; If the OSSD fails, the system will immediately shut down the two channels of OSSD. At this time, the receiving SLC displays "d." Or "H." to ensure functional safety. Therefore, when the load connected to the SLC is a PLC or an MCU controlled fast intelligent device, it is necessary to filter the self-check pulse in the program.

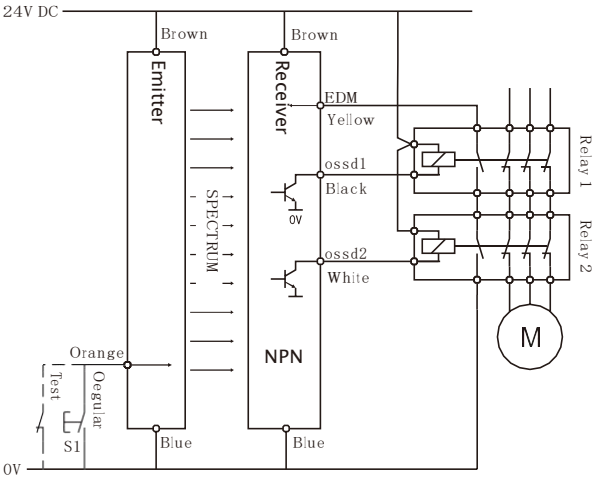
SLC Connection Diagram

NPN Output (Interlock,reset and Test)Function

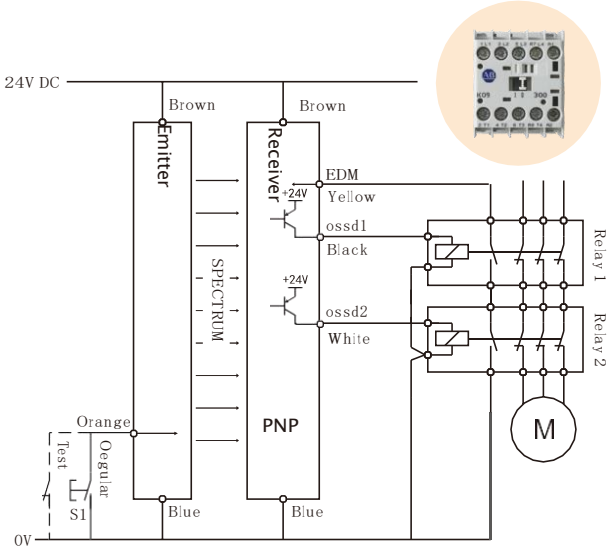


name	Colour	Ecplanation
Emitter	Brown	DC 24V
	Blue	0V
	Orange	Testing signal, Low level is valid; Normal working connects to 24V.
Receiver	Brown	DC 24V
	Blue	0V
	Black	OSSD1 Safety Output 1
	White	OSSD2 Safety Output 2
	Yellow	EDMExternal DeviceMonitor; Seria lize Relay's NC contacts and 0V; If it is not used, connect to 0V.

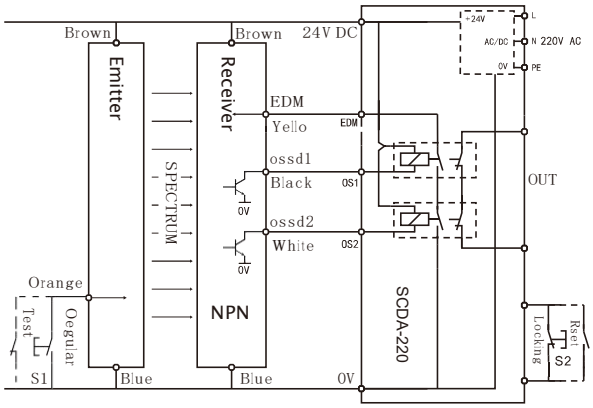
SLC (NPN Type) Connection with dual-Relay



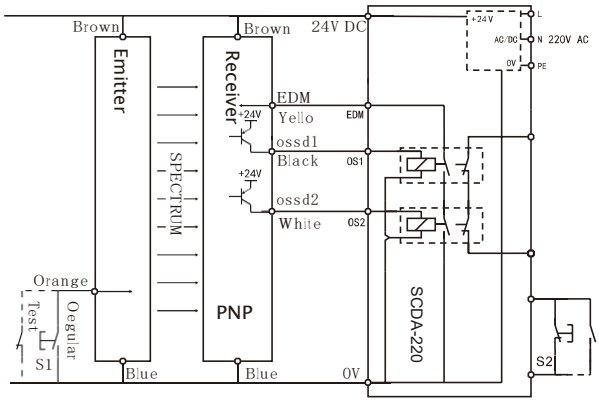
SLC (PNP Type) Connection with dual-Relay



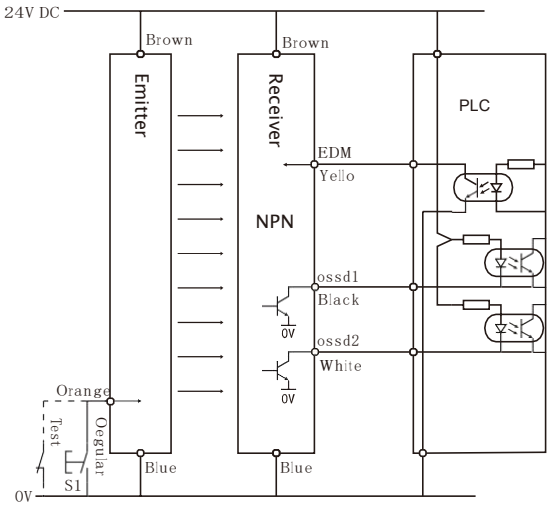
SLC（NPN Type ）Connection with Controller



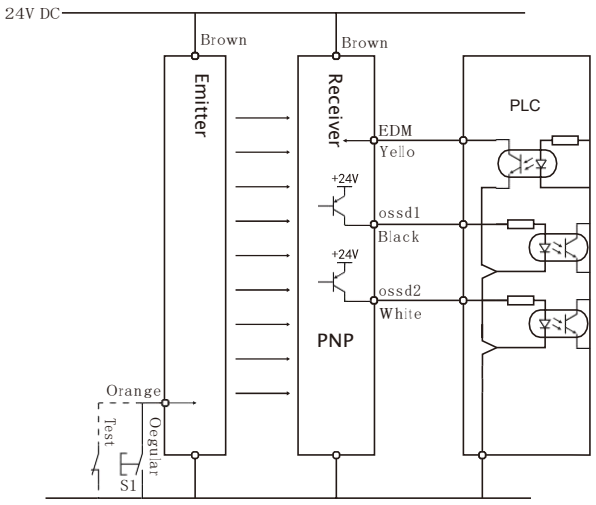
SLC（PNP Type ）Connection with Controller



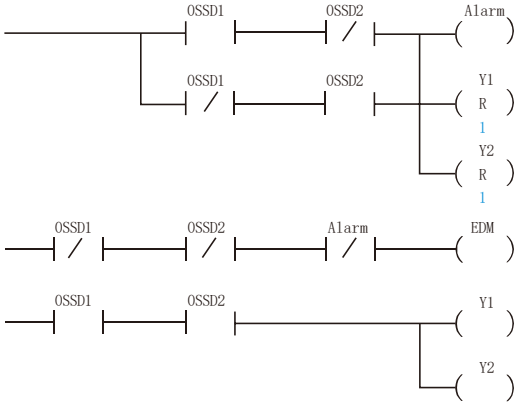
SLC（NPN Type ）Connection with PLC



SLC（PNP Type ）Connection with PLC



The Reference Program of SLC（NPN Type ）Connection with PLC

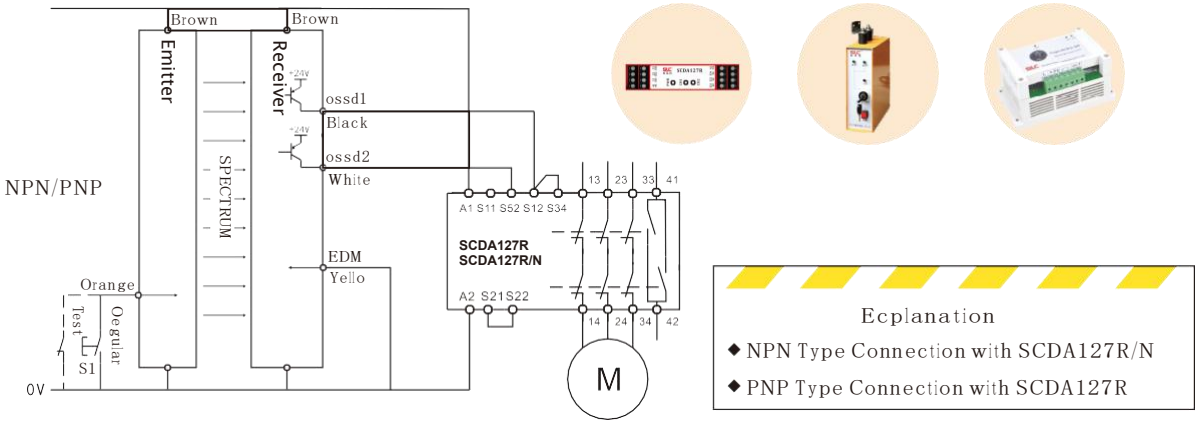


PLC Logical Truth Table

OSSD1	OSSD2	EDM	Y1	Y2	SLC Work State
0	0	1	0	0	SLC blocked, normal State
0	1	0	0	0	Failure
1	0	0	0	0	Failure
1	1	0	1	1	SLC Clear, Normal State

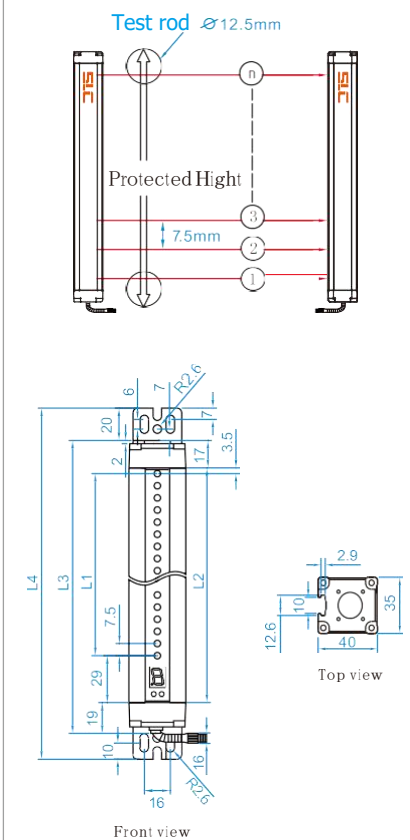
Note: OSSD1/2 input signal from SLC Output;
EDM Output signal that feed back to SLC from PLC ;
Y1/Y2 Output from PLC,
“0” OFF, “1” ON.

SLC（PNP/NPN Type ）Connection with Safety Relay



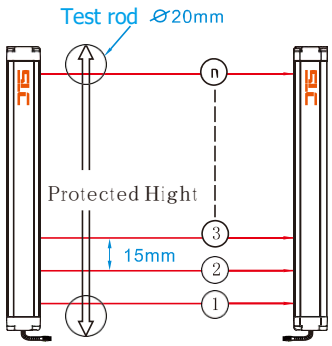
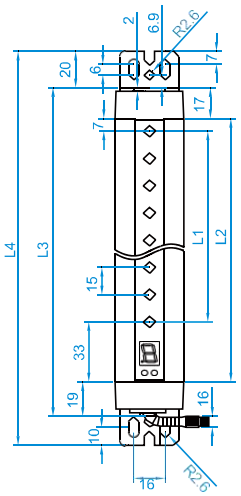
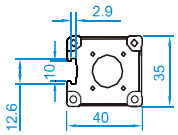
SLC Model and Selection Guide

◆ SLC safety Light Curtain（Optical Axis Space：7.5mm，Resolution：12.5mm，Standard）

Type	Outline	Model（PNP）	Model（NPN）	Number	Protected Hight（mm）	Dimension（mm）
Pinky Type r Smallest Detectable Substance 12.5mm (7.5mm Optical Axis Space)		7.5SLC0120-P16	7.5SLC0120-N16	16	127.5	40*35*181
		7.5SLC0180-P24	7.5SLC0180-N24	24	187.5	40*35*241
		7.5SLC0240-P32	7.5SLC0240-N32	32	247.5	40*35*301
		7.5SLC0300-P40	7.5SLC0300-N40	40	307.5	40*35*361
		7.5SLC0360-P48	7.5SLC0360-N48	48	267.5	40*35*421
		7.5SLC0420-P56	7.5SLC0420-N56	56	427.5	40*35*481
		7.5SLC0480-P64	7.5SLC0480-N64	64	487.5	40*35*541
		7.5SLC0540-P72	7.5SLC0540-N72	72	547.5	40*35*601
		7.5SLC0600-P80	7.5SLC0600-N80	80	607.5	40*35*661
		7.5SLC0660-P88	7.5SLC0660-N88	88	667.5	40*35*721
		7.5SLC0720-P96	7.5SLC0720-N96	96	727.5	40*35*781
		7.5SLC0780-P104	7.5SLC0780-N104	104	787.5	40*35*841
		7.5SLC0840-P112	7.5SLC0840-N112	112	847.5	40*35*901
		7.5SLC0900-P120	7.5SLC0900-N120	120	907.5	40*35*961
		7.5SLC0960-P128	7.5SLC0960-N128	128	967.5	40*35*1021
		7.5SLC1020-P136	7.5SLC1020-N136	136	1027.5	40*35*1081
		7.5SLC1080-P144	7.5SLC1080-N144	144	1087.5	40*35*1141
		7.5SLC1140-P152	7.5SLC1140-N152	152	1147.5	40*35*1201
		7.5SLC1200-P160	7.5SLC1200-N160	160	1207.5	40*35*1261
		7.5SLC1260-P168	7.5SLC1260-N168	168	1267.5	40*35*1321
		7.5SLC1320-P176	7.5SLC1320-N176	176	1327.5	40*35*1381
		7.5SLC1380-P184	7.5SLC1380-N184	184	1387.5	40*35*1441
		7.5SLC1440-P192	7.5SLC1440-N192	192	1447.5	40*35*1501
		7.5SLC1500-P200	7.5SLC1500-N200	200	1507.5	40*35*1561

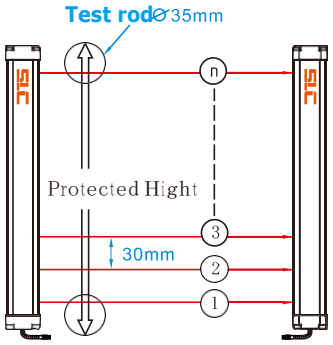
Notes: ◎Protected Hight：The Detectable Effective Hight of Rod=（n+1）×Optical Axis space -0.5mm
◎A Set of Light curtian include：A pair of Cable，A pair of mounting brackets at both ends，4 Sliders
◎The Standard Protect Distance is 0.1~4M（Can be）. ◎n：Number of Optical Axis

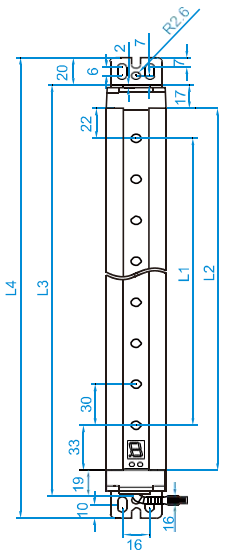
◆SLC safety Light Curtain（Optical Axis Space：15mm，Resolution：20mm，Standard）

Type	Outline	Model（PNP）	Model（NPN）	Number	Protected Hight（mm）	Dimension（mm）
Thumb type (Smallest Detectable Substance 20mm (15mm Optical Axis Space))	  Front view  Top view L1：Detection A=（Axis Number-1）*15mm L2: length of Shell L2= Axis Number*15+25mm L3: Total Length L3=L2+36mm L4：Total Length including Mounting Bracket : L4=L3+74mm Note:the cable length 225mm; call us for 3D Drawing;	15SLC0115-P08	15SLC0115-N08	8	135	40*35*181
		15SLC0175-P12	15SLC0175-N12	12	195	40*35*241
		15SLC0235-P16	15SLC0235-N16	16	255	40*35*301
		15SLC0295-P20	15SLC0295-N20	20	315	40*35*361
		15SLC0355-P24	15SLC0355-N24	24	375	40*35*421
		15SLC0415-P28	15SLC0415-N28	28	435	40*35*481
		15SLC0475-P32	15SLC0475-N32	32	495	40*35*541
		15SLC0535-P36	15SLC0535-N36	36	555	40*35*601
		15SLC0595-P40	15SLC0595-N40	40	615	40*35*661
		15SLC0655-P44	15SLC0655-N44	44	675	40*35*721
		15SLC0715-P48	15SLC0715-N48	48	735	40*35*781
		15SLC0775-P52	15SLC0775-N52	52	795	40*35*841
		15SLC0835-P56	15SLC0835-N56	56	855	40*35*901
		15SLC0895-P60	15SLC0895-N60	60	915	40*35*961
		15SLC0955-P64	15SLC0955-N64	64	975	40*35*1021
		15SLC1015-P68	15SLC1015-N68	68	1035	40*35*1081
		15SLC1075-P72	15SLC1075-N72	72	1095	40*35*1141
		15SLC1135-P76	15SLC1135-N76	76	1155	40*35*1201
		15SLC1195-P80	15SLC1195-N80	80	1215	40*35*1261

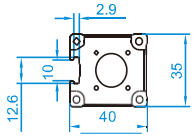
Notes：◎Protected Hight：The Detectable Effective Hight of Rod=（n+1）×0ptical Axis space
◎The Standard Protect Distance is 0.1~6M（Can be Customized）
◎n：Number of Optical Axis
◎A Set of Light curtain include：A pair of Cable，A pair of mounting brackets at both ends，4 Sliders

◆ SLC safety Light Curtain（Optical Axis Space 30mm，Resolution：35mm，Standard）

Type	Outline	Model（PNP）	Model（NPN）	Number	Protected Hight（mm）	Dimension（mm）
Palm Type Smallest Detectable Substance 35mm (30mm Optical Axis Space)		30SLC0100-P04	30SLC0100-N04	4	150	40*35*181
		30SLC0160-P06	30SLC0160-N06	6	210	40*35*241
		30SLC0220-P08	30SLC0220-N08	8	270	40*35*301
		30SLC0280-P10	30SLC0280-N10	10	330	40*35*361
		30SLC0340-P12	30SLC0340-N12	12	390	40*35*421
		30SLC0400-P14	30SLC0400-N14	14	450	40*35*481
		30SLC0460-P16	30SLC0460-N16	16	510	40*35*541
		30SLC0520-P18	30SLC0520-N18	18	570	40*35*601
		30SLC0580-P20	30SLC0580-N20	20	630	40*35*661
		30SLC0640-P22	30SLC0640-N22	22	690	40*35*721
		30SLC0700-P24	30SLC0700-N24	24	750	40*35*781
		30SLC0760-P26	30SLC0760-N26	26	810	40*35*841
		30SLC0820-P28	30SLC0820-N28	28	870	40*35*901
		30SLC0880-P30	30SLC0880-N30	30	930	40*35*961
		30SLC0940-P32	30SLC0940-N32	32	990	40*35*1021
		30SLC1000-P34	30SLC1000-N34	34	1050	40*35*1081
		30SLC1060-P36	30SLC1060-N36	36	1110	40*35*1141
		30SLC1120-P38	30SLC1120-N38	38	1170	40*35*1201
		30SLC1180-P40P	30SLC1180-N40	40	1230	40*35*1261
		30SLC1240-P42	30SLC1240-N42	72	1290	40*35*1321
		30SLC1300-P44	30SLC1300-N44	44	1350	40*35*1381
		30SLC1360-P46	30SLC1360-N46	46	1410	40*35*1441
		30SLC1420-P48	30SLC1420-N48	48	1470	40*35*1501
		30SLC1480-P50	30SLC1480-N50	50	1530	40*35*1561
		30SLC1540-P52	30SLC1540-N52	52	1590	40*35*1621
		30SLC1600-P54	30SLC1600-N54	54	1650	40*35*1681
		30SLC1660-P56	30SLC1660-N56	56	1710	40*35*1741
		30SLC1720-P58	30SLC1720-N58	58	1770	40*35*1801
		30SLC1780-P60	30SLC1780-N60	60	1730	40*35*1861
		30SLC1840-P62	30SLC1840-N62	62	1890	40*35*1921
		30SLC1900-P64	30SLC1900-N64	64	1950	40*35*1981
		30SLC1960-P66	30SLC1960-N66	66	2010	40*35*2041
		30SLC2020P68	30SLC2020N68	68	2070	40*35*2101
		30SLC2080-P70	30SLC2080-N70	70	2130	40*35*2161
		30SLC2140-P72	30SLC2140-N72	72	2190	40*35*2221
		30SLC2200-P74	30SLC2200-N74	74	2250	40*35*2281
		30SLC2260-P76	30SLC2260-N76	76	2310	40*35*2341
		30SLC2320-P78	30SLC2320-N78	78	2370	40*35*2401
		30SLC2380-P80	30SLC2380-N80	80	2430	40*35*2461



Front view



Top view

L1：Detection Height A=（Axis Number-1）*30mm
L2：Length of Shell L2= Axis Number*30+25mm
L3：Total Length L3=L2+36mm
L4：Total Length including Mounting Bracket : L4=L3+74mm

Note:
the cable length 225mm; call us for 3D Drawing;

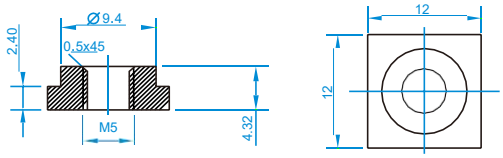
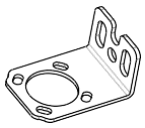
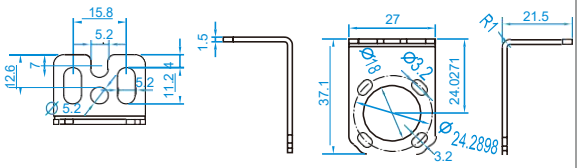
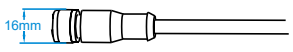
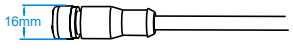
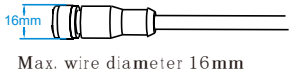
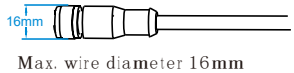
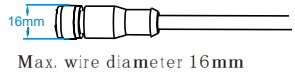
Notes：◎Protected Hight：The Detectable Effective Hight of Rod=（n+1）×Optical Axis space
◎The Standard Protect Distance is 0.1~6M（Can be Customized）
◎n：Number of Optical Axis
◎A Set of Light curtain include：A pair of Cable，A pair of mounting brackets at both ends，4 Sliders

The selection Guide of Controller

Name	Shapel	Model	Description
Internal Controller		SCDA-220-NC	OUT is connection when work state; Load Capacity 5A，220VAC; Power: 220VAC
		SCDA-220-NO	OUT is Open when work state; Load Capacity 5A，220VAC; Power: 220VAC
		SCDA-224NC	Two set Light Curtin input; OUT is connection when work state; Load Capacity 5A,
		SCDA-224-NO	Two set Light Curtin input; OUT is Open when work state; Load Capacity 5A，220VAC;
External Controller		SCD-24-SRA (Pumping Only	One safety Output that can only be setting to Open or Connection state when system is work properly , Load Capacity 10A，220VAC; One Auxiliary no safety output ,load capacity 500mA ;r: 24VDC
		SCD-220-SRA (Pumping Only	One safety Output that can only be setting to Open or Connection state when system is work properly , Load Capacity 10A，220VAC; One Auxiliary no safety output ,load capacity 500mA ; Power: 220VAC
Safety Relay		SCDA127R	Use with SLC，SLC-LP，SC Serials Safety PNP Output (See safety relay module information for details)
		SCDA127R/N	Use with SLC，SLC-LP，SC Serials Safety NPN Output (See safety relay module information for details)

Notes：The model controller must be purchased separately

Accessories selection Guide (Order Separately)

Name	Shapel	Model	Description	Outline	Number
T-shape Bloc		SLCT-01	For Slider		4
Two-end Mounting Bracket		SLCD-01	For SLC safety light Curtain Two-end		4
5core 6-pin Cable		SCA5030	6-pin 3m cable, for SLC Receiver	 Max. wire diameter 16mm	1
3 core 4-pin cable		SCA3050	4-Pin ,5m cable; for SLC emitter Unit or LCM	 Max. wire diameter 16mm	1
8 core 8-pin cable		SLC8060	8-Pin ,6m shielded cable;for SLC-LP	 Max. wire diameter 16mm	2
3core 4 -pin cable		SCB4035	5-Pin ,3.5m shielded cable; For SCB LC safety light curtain	 Max. wire diameter 16mm	1
2core 3 -pin cable		SCB3025	3-Pin ,3.5m shielded cable; For SCB LC safety light curtain	 Max. wire diameter 16mm	1

Cable ordering information

SLC 5 0 30

Product series

Numer of core 3:3core 5:5core

Length 030:3m 060:6m 100:10m

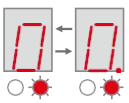
Customizable for the length of

SLC Technical Specification

SLC Safety Light Curtain（7.5/15/30mm）			
Standard	Compliance IEC61496-1,2	Electrical Parameters	
authenticate	TUV，EN61496-1/2,FCC	Power Supply	24VDC±10%
Optical Parameters		Power Consumption	5W
Protected Hight	127-2370mm	Response time	Less than 23m
Protection Distance	0.1-6m(2-20m)	Safety Output	2 NPN or 2 PNP redundant outputs, short circuit protection, overload protection, pulse test
Optical Axis	4-80(7.5mm beaming space16-200)	Manual Reset or Interlock	Provide Manual Reset or Interlock function at the receiving end, apply on the automatic line or large area position protection to ensure safe start
Resolution	12.5/20/35mm	Muting function	0.1-3S Trigger time and Customizable recovery time
Wavelength	940nm	Optional Scan	Two scan code to choose from
Synchronizati	Light Synchronization	CodeOutput feedback	EDM Signal of Relay Feedback
Physical Character		Enclosure	IP65（Customizable IP67、IP69）
Cross-sectional Dimension	35mm*40mm	Operation Temp.	-10-55℃
Installation	L-shaped two-end installation; back slot installation	Storage Temp.	-20-70℃
Weight	Change With Altitude	Humidity	15%-95%
Connection Type	Aviation Plug-in; Direction Outlet	Shocking	10g/20ms
		Scan Time	Less than 12ms

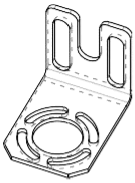
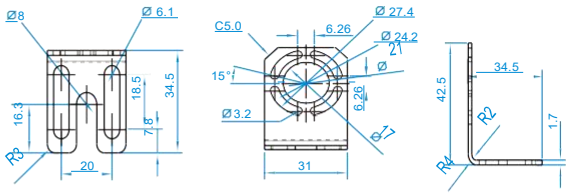
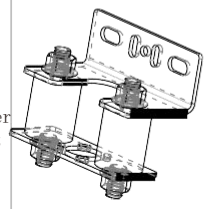
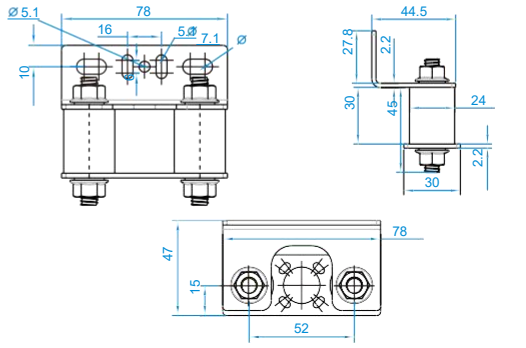
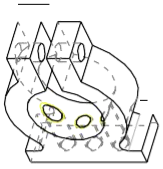
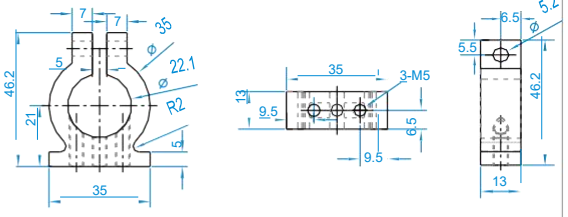
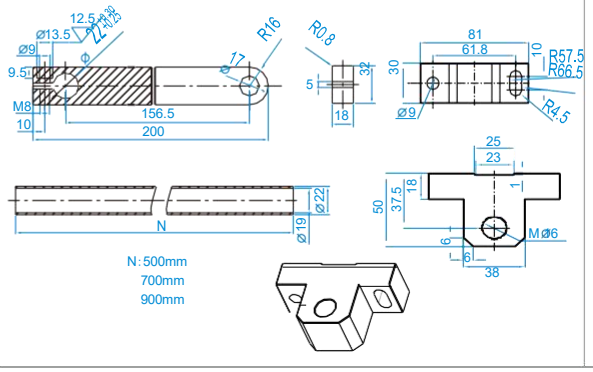
SLC Safety Light Curtain Display

Emitter Display

Display	State	Description
	Power-up Self test	Green LED ON;
	Test State	Green LED ON; 7-Seg LED Display 1-A;
	Power Supply Failure	Red LED ON; 7-Seg LED Display P
	Selection Circuits Failure	Red LED ON; 7-Seg LED Display C
	Output circuits Failure	Red LED ON; 7-Seg LED Display H
	Emitter LED Failure	Red LED ON; 7-Seg LED Alternate Display Tens 0-8, Ones 0-9;

Reciever Display Description:

Display	State	Description
	Normal State	Green LED ON; 7-Seg LED Display 9
	Synchronize Failure	Red LED ON; 7-Seg LED Display 0
	Blocked or Receive LED failure	Red LED ON; 7-Seg LED Display 1
	Power Supply Failure	Red LED ON; 7-Seg LED Display P
	Selection Circuits Failure	Red LED ON; 7-Seg LED Display C
	External Device Failure	Red LED ON; 7-Seg LED Display H
	Failure of Output Overload or Short	Red LED ON; 7-Seg LED Display d.
	Bus is disturbed	Red LED ON; 7-Seg LED Display F
	OSSD self-diagnosis; Page12th for detail	Red LED ON; 7-Seg LED Display H

Name	Shapel	Model	Description	Ooutline	Number
Bracket		SLCD-02	Apply to SL SLC safety Light Curtain		4
Shock absorber Bracket		SLCW-02	For Vibratory equipment		4
luminum round clip bra		SLCW-04	with the two-end bracket or shock absorber and the external bracket for installation		4
External Bracket		SLCW-05	With aluminum round clamp bracket, two-end bracket or shock absorption		2

Note: order separately for mounting

SLC intallation

1 Two-end Mounting installation

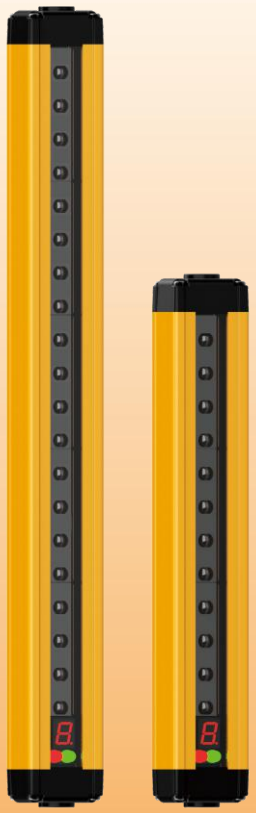
2 Shock absorber bracket installation

3 External two-end bracket installation

4 Installation of external bracket shock absorber bracket

SLC-LP Series

Safety Light Curtain



SLC-LP Series Safety Light Curtain The Features and Advantage

SLC series light curtain is Type 4 safety light curtain which conformed to international safety standard EN61496-1/2. SLC safety light curtain builds a safe workplace to customers. It iswith the following advantages:

◆ System Failure detection
SLC series of safety light curtain is with CPU self-test function, when their own failure (such as the light is not synchronized, the light intensity is not enough, cast light drive circuit error, the main control circuit error, cable problems, and receive drive circuit error, CPU error) to ensure that the equipment is not issued to the wrong status, to ensure product safety.

◆ Independent double OSSD output
In order to meet the requirements of the safety standard, please use the two channel system (connects the two OSSD independently) connection (the dual redundant system will improve the safety performance). System can drive safety Relay or PLC directly.

◆ OSSD Self- diagnosis
The independent dual OSSD circuit has a self-diagnosis function, which system will close the OSSD output periodically in a very short time (does not affect the work) ,and simultaneously check the feedback signal, if it does not detect the feedback signal , will stop the output.

◆ External Device Monitor (EDM)
The SLC safety light curtain monitors the "external relay contact status" in case contact adhesion. System will stop OSSD when detect the error EDM signal, to prevent the external relay contact adhesion.

◆ Manual Reset/Interlock Function

◆ Floating Shield Function
Preventing the material from moving and blocking the light beam allows small objects to pass smoothly under the condition of ensuring safety, improving production efficiency and production safety at the same time. (Set via software).

◆ Fixed Shield Function
For the material staying in the beam for a long time or the optical axis blocked by the workbench is invalid, the optical axis other than the material blocking works normally. (Set via software)

◆ By Pass (Muting) function;
This function cooperates with two external input signals to pass the difference between people and materials. It can make the material on the line pass through the grating smoothly, while the person passing through is protected.

◆ Short Protection and Overload Protection
When the safety light curtain output will turn off the output due to overload or short circuit.

◆ Modulation Frequency
Adjacent light curtains can be set to different frequencies, thus preventing interference with the same frequency.

◆ Anti-light interference and environmental adaptability

◆ Fast Response
The response time of all safety light curtains is within 23ms.

◆ Easy Maintain
Easy to get the status or figure out the problem of the SLC safety light curtain by observing the indication of the 7-saegment digital and LED lights.

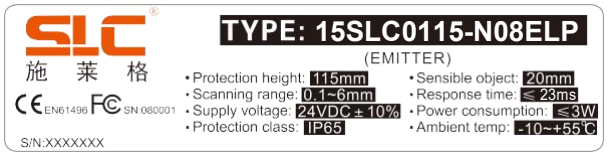
◆ Self- diagnosis
Self- diagnosis is performed on the power up (within 2 seconds) .Self-diagnosis (reaction time) is performed periodically during normal operation.

Ordering information

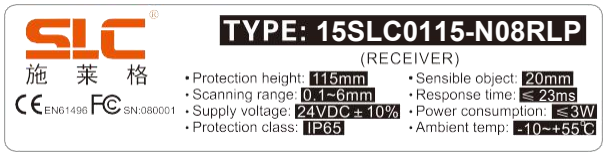
15	SLC	0115	—	N	08		LP	
Beam Spacing 7.5mm 15mm 30mm	SLC Safety Light Curtain	Lens Height： 100~2380mm		Output Type N：NPN P：PNP	Number of Beam： 4-200	E: Emitter R: Reciever None: A Pai	LP: Manual Reset, Bypass, None：Auto Reset;	Protected Distance: 02：2m

Example of SLC Model Type

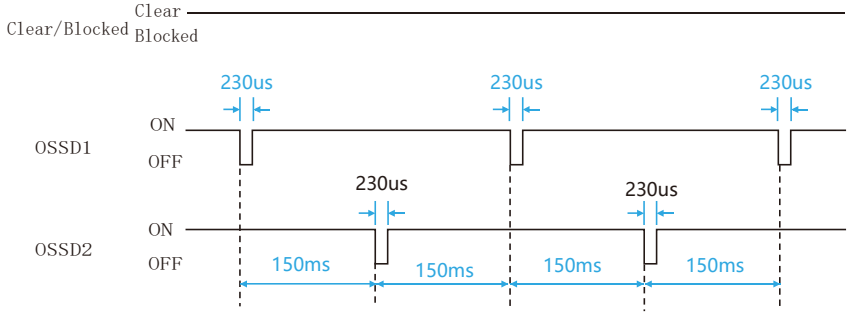
Emitter Unite



Receiver Unite

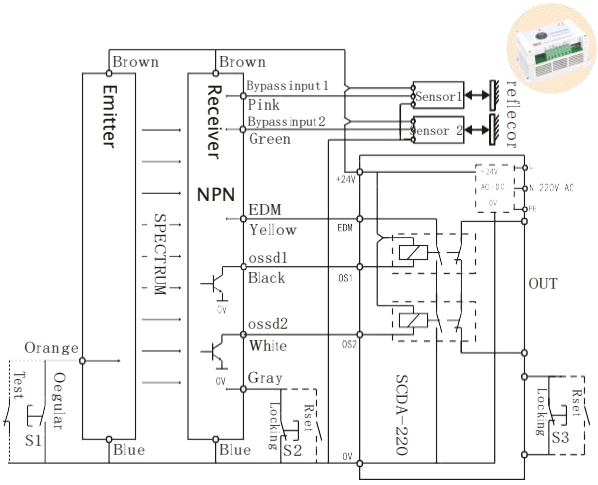


SLC-LP safety light curtain OSDD

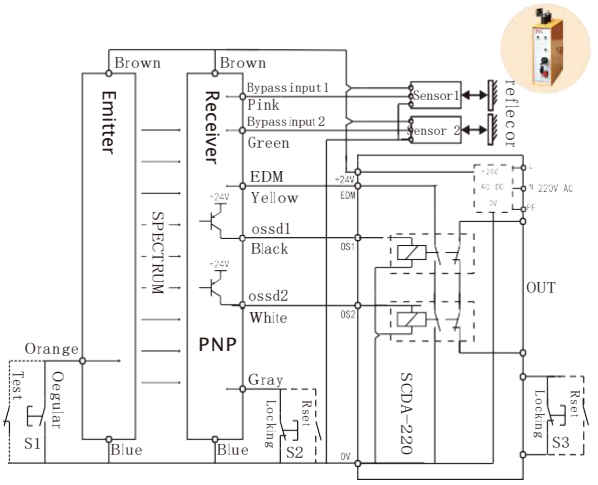


There are self-diagnosis in OSSDs output of SLC safety light curtain. OSSDs will be turn on when the protection area is clear. during OSSDs turned on period, the controller of SLC will periodically shuts down OSSD1 and OSSD2 in sequence.During the short period of shutdown of OSSD1 or OSSD2, the internal timing control unit of the SLC detects whether the level of OSSD1 or OSSD2 has flipped. If the flip occurs, the corresponding OSSD switch is in normal working state; If the OSSD fails, the system will immediately shut down the two channels of OSSD. At this time, the receiving SLC displays "d." Or "H." to ensure functional safety. Therefore, when the load connected to the SLC is a PLC or an MCU controlled fast intelligent device, it is necessary to filter the self-check pulse in the program. The figure above is the timing diagram of the output waveform of the PNP type grating self-diagnosis.

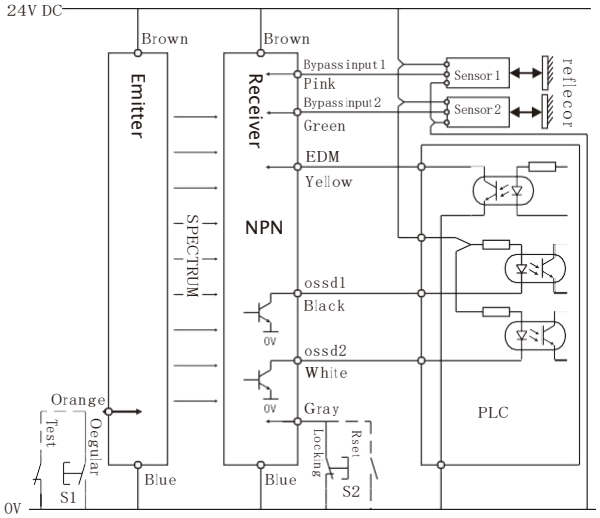
SLC-LP（NPN Type ）Connection with Controller



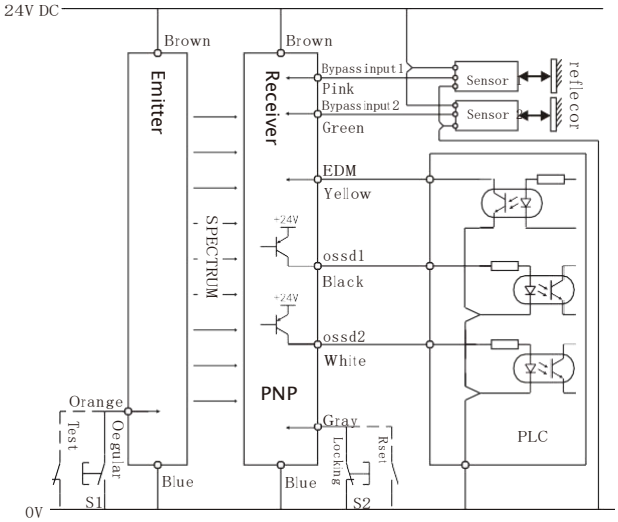
SLC-LP（PNP Type ）Connection with Controller



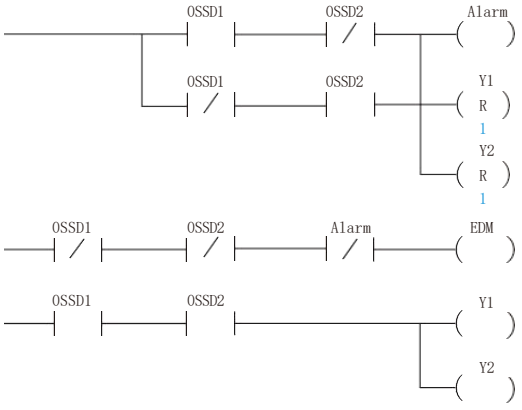
SLC-LP（NPN Type ）Connection with PLC



SLC-LP（PNP Type ）Connection with PLC



The Reference Program of SLC-LP（NPN Type ）Connection with PLC



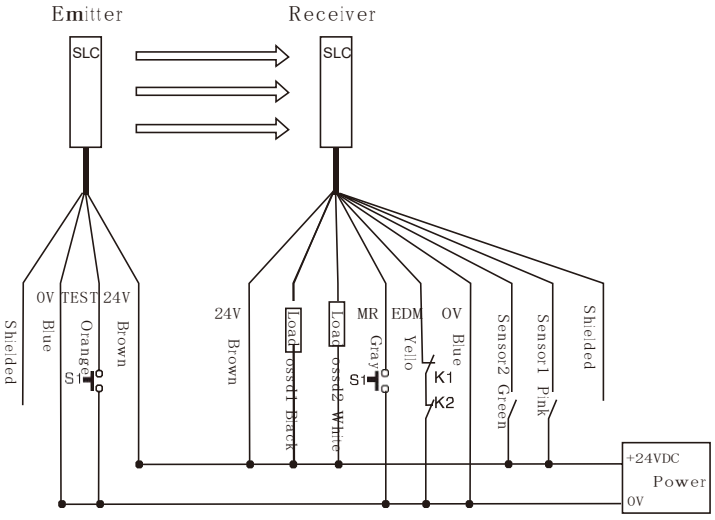
PLC Logical Truth Table

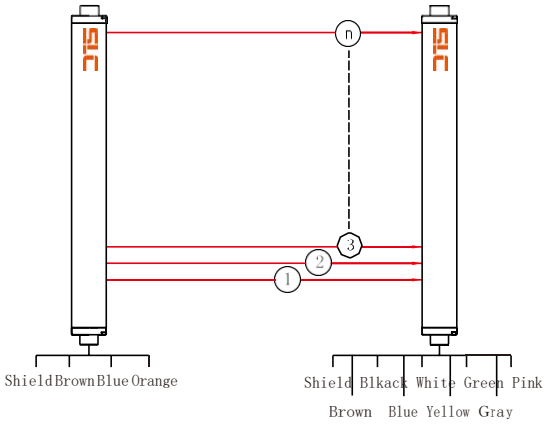
OSSD1	OSSD2	EDM	Y1	Y2	SLC Work State
0	0	1	0	0	SLC blocked, normal State
0	1	0	0	0	Failure
1	0	0	0	0	Failure
1	1	0	1	1	SLC Clear, Normal State

Note: OSSD1/2 input signal from SLC Output;
EDM Output signal that feed back to SLC from PLC ;
Y1/Y2 Output from PLC,
“0” OFF, “1” ON.

SLC -LP Connection Diagram

NPN Output (Interlock,reset and Test)Function





Remarks:

S1: external system test switch for grating (optional, if not directly suspended)

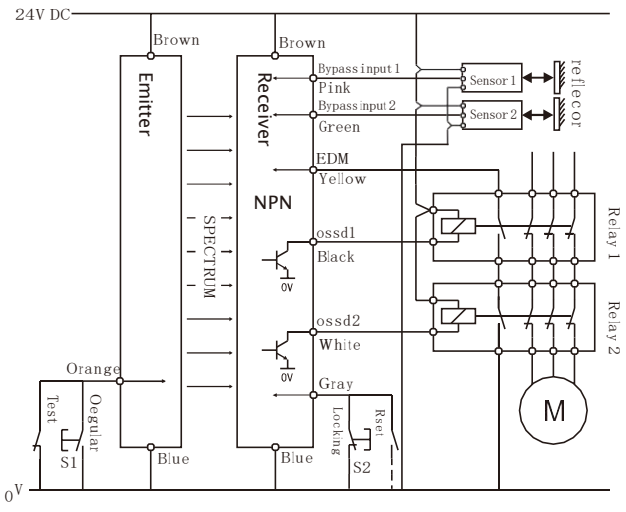
S2: start / restart interlock reset grating switch (optional, if no switch is required to connect to 0V)

◎: Shielded wire grounding ensures single-point grounding

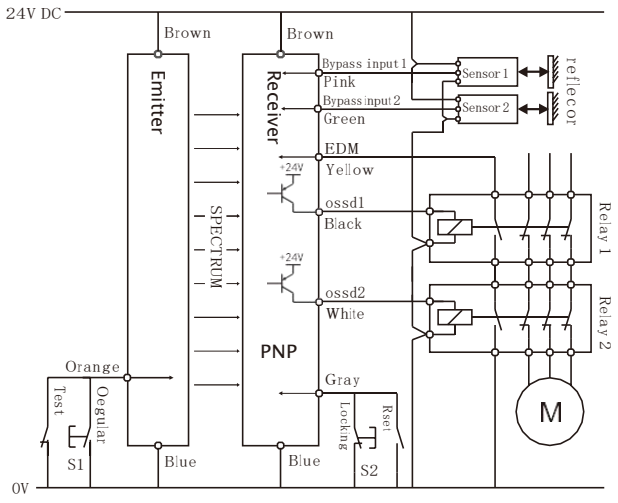
Sensor 1: Bypass signal input 1

Sensor 2: Bypass signal input 2

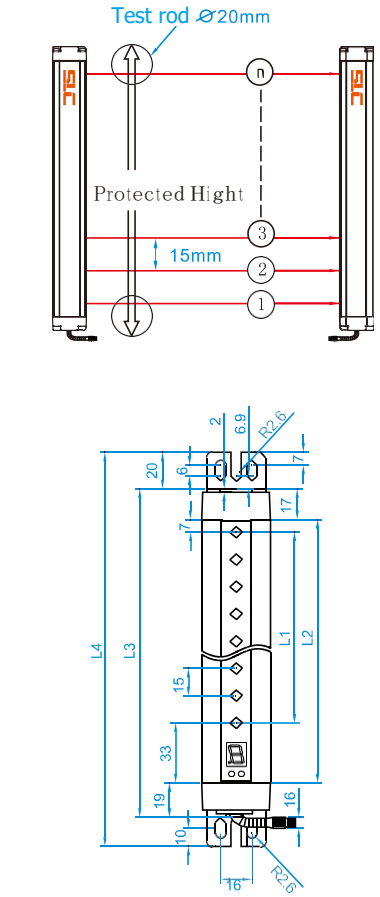
SLC-LP (NPN Type) Connection with dual-Relay



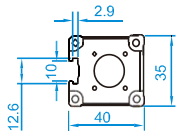
SLC-LP (PNP Type) Connection with dual-Relay



◆ SLC-LP safety Light Curtain（Optical Axis Space：15mm，Resolution：20mm，Standard）

Type	Outline	Model（PNP）	Model（NPN）	Number	Protected Hight（mm）	Dimension（mm）
Thumb type (Smallest Detectable Substance 20mm (15mm Optical Axis Space)		15SLC0115-P08LP	15SLC0115-N08LP	8	135	40*35*181
		15SLC0175-P12LP	15SLC0175-N12LP	12	195	40*35*241
		15SLC0235-P16LP	15SLC0235-N16LP	16	255	40*35*301
		15SLC0295-P20LP	15SLC0295-N20LP	20	315	40*35*361
		15SLC0355-P24LP	15SLC0355-N24LP	24	375	40*35*421
		15SLC0415-P28LP	15SLC0415-N28LP	28	435	40*35*481
		15SLC0475-P32LP	15SLC0475-N32LP	32	495	40*35*541
		15SLC0535-P36LP	15SLC0535-N36LP	36	555	40*35*601
		15SLC0595-P40LP	15SLC0595-N40LP	40	615	40*35*661
		15SLC0655-P44LP	15SLC0655-N44LP	44	675	40*35*721
		15SLC0715-P48LP	15SLC0715-N48LP	48	735	40*35*781
		15SLC0775-P52LP	15SLC0775-N52LP	52	795	40*35*841
		15SLC0835-P56LP	15SLC0835-N56LP	56	855	40*35*901
		15SLC0895-P60LP	15SLC0895-N60LP	60	915	40*35*961
		15SLC0955-P64LP	15SLC0955-N64LP	64	975	40*35*1021
		15SLC1015-P68LP	15SLC1015-N68LP	68	1035	40*35*1081
		15SLC1075-P72LP	15SLC1075-N72LP	72	1095	40*35*1141
		15SLC1135-P76LP	15SLC1135-N76LP	76	1155	40*35*1201
		15SLC1195-P80LP	15SLC1195-N80LP	80	1215	40*35*1261

Front view



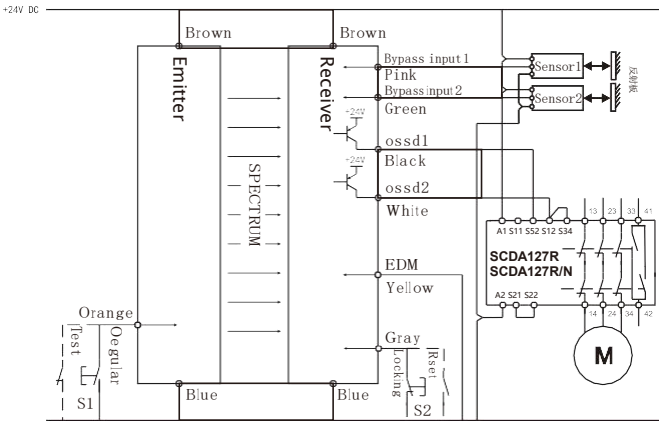
Top view L1：

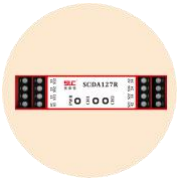
Detection A=（Axis Number -1）*15mm
L2：length of Shell L2= Axis Number *15+25mm
L3：Total Length L3=L2+36mm
L4：Total Length including Mounting Bracket : L4=L3+74mm

Note:the cable length 225mm; call us for 3D Drawing;

Notes：◎Protected Hight：The Detectable Effective Hight of Rod=（n+1）×0ptical Axis space
◎The Standard Protect Distance is 0.1~6M（Can be Customized）
◎n：Number of Optical Axis
◎A Set of Light curtain include：A pair of Cable，A pair of mounting brackets at both ends，4 Sliders

SLC-LP (PNP/NPN Type) Connection with Safety Relay

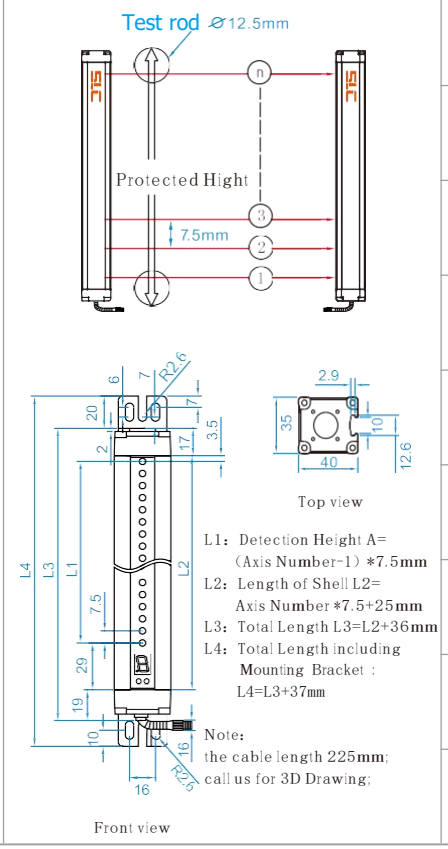




Remarks:
S1: external system test switch for grating (optional, if not directly suspended)
S2: start / restart interlock reset grating switch (optional, if no switch is required to connect to 0V)
◎: Shielded wire grounding ensures single-point grounding
Sensor 1: Bypass signal input 1
Sensor 2: Bypass signal input 2
NPN Type Connection with SCDA127R/N
PNP Type Connection with SCDA127R

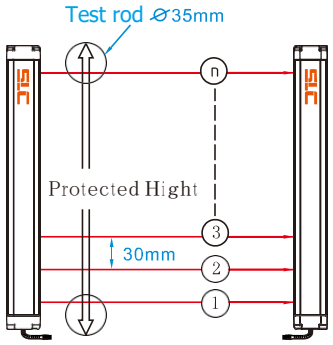
SLC-LP Model and Selection Guide

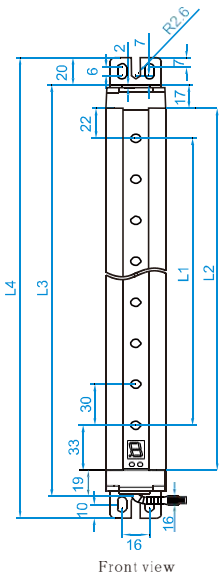
◆ SLC-LP safety Light Curtain (Optical Axis Space: 7.5mm, Resolution: 12.5mm, Standard)

Type	Outline	Model (PNP)	Model (NPN)	Number	Protected Hight (mm)	Dimension (mm)
Pinky Type r Smallest Detectable Substance 12.5mm (7.5mm Optical Axis Space)		7.5SLC0120-P16LP	7.5SLC0120-N16LP	120	127.5	40*35*181
		7.5SLC0180-P24LP	7.5SLC0180-N24LP	180	187.5	40*35*241
		7.5SLC0240-P32LP	7.5SLC0240-N32LP	240	247.5	40*35*301
		7.5SLC0300-P40LP	7.5SLC0300-N40LP	300	307.5	40*35*361
		7.5SLC0360-P48LP	7.5SLC0360-N48LP	360	367.5	40*35*421
		7.5SLC0420-P56LP	7.5SLC0420-N56LP	420	427.5	40*35*481
		7.5SLC0480-P64LP	7.5SLC0480-N64LP	480	487.5	40*35*541
		7.5SLC0540-P72LP	7.5SLC0540-N72LP	540	547.5	40*35*601
		7.5SLC0600-P80LP	7.5SLC0600-N80LP	600	607.5	40*35*661

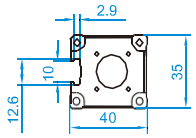
Notes: ◎Protected Hight: The Detectable Effective Hight of Rod= (n+1) XOptical Axis space -0.5mm
◎A Set of Light curtian include: A pair of Cable, A pair of mounting brackets at both ends, 4 Sliders
◎The Standard Protect Distance is 0.1~4M (Can be). ◎n: Number of Optical Axis

◆ SLC-LP safety Light Curtain（Optical Axis Space 30mm，Resolution：35mm，Standard）

Type	Outline	Model（PNP）	Model（NPN）	Number	Protected Hight（mm）	Dimension（mm）
Palm Type Smallest Detectable Substance 35mm (30mm Optical Axis Space)		30SLC0100-P04LP	30SLC0100-N04LP	4	150	40*35*181
		30SLC0160-P06LP	30SLC0160-N06LP	6	210	40*35*241
		30SLC0220-P08LP	30SLC0220-N08LP	8	270	40*35*301
		30SLC0280-P10LP	30SLC0280-N10LP	10	330	40*35*361
		30SLC0340-P12LP	30SLC0340-N12LP	12	390	40*35*421
		30SLC0400-P14LP	30SLC0400-N14LP	14	450	40*35*481
		30SLC0460-P16LP	30SLC0460-N16LP	16	510	40*35*541
		30SLC0520-P18LP	30SLC0520-N18LP	18	570	40*35*601
		30SLC0580-P20LP	30SLC0580-N20LP	20	630	40*35*661
		30SLC0640-P22LP	30SLC0640-N22LP	22	690	40*35*721
		30SLC0700-P24LP	30SLC0700-N24LP	24	750	40*35*781
		30SLC0760-P26LP	30SLC0760-N26LP	26	810	40*35*841
		30SLC0820-P28LP	30SLC0820-N28LP	28	870	40*35*901
		30SLC0880-P30LP	30SLC0880-N30LP	30	930	40*35*961
		30SLC0940-P32LP	30SLC0940-N32LP	32	990	40*35*1021
		30SLC1000-P34LP	30SLC1000-N34LP	34	1050	40*35*1081
		30SLC1060-P36LP	30SLC1060-N36LP	36	1110	40*35*1141
		30SLC1120-P38LP	30SLC1120-N38LP	38	1170	40*35*1201
		30SLC1180-P40LP	30SLC1180-N40LP	40	1230	40*35*1261
		30SLC1240-P42LP	30SLC1240-N42LP	72	1290	40*35*1321
		30SLC1300-P44LP	30SLC1300-N44LP	44	1350	40*35*1381
		30SLC1360-P46LP	30SLC1360-N46LP	46	1410	40*35*1441
		30SLC1420-P48LP	30SLC1420-N48LP	48	1470	40*35*1501
		30SLC1480-P50LP	30SLC1480-N50LP	50	1530	40*35*1561
		30SLC1540-P52LP	30SLC1540-N52LP	52	1590	40*35*1621
		30SLC1600-P54LP	30SLC1600-N54LP	54	1650	40*35*1681
		30SLC1660-P56LP	30SLC1660-N56LP	56	1710	40*35*1741
		30SLC1720-P58LP	30SLC1720-N58LP	58	1770	40*35*1801
		30SLC1780-P60LP	30SLC1780-N60LP	60	1730	40*35*1861
		30SLC1840-P62LP	30SLC1840-N62LP	62	1890	40*35*1921
		30SLC1900-P64LP	30SLC1900-N64LP	64	1950	40*35*1981
		30SLC1960-P66LP	30SLC1960-N66LP	66	2010	40*35*2041
		30SLC2020P68LP	30SLC2020N68LP	68	2070	40*35*2101
		30SLC2080-P70LP	30SLC2080-N70LP	70	2130	40*35*2161
		30SLC2140-P72LP	30SLC2140-N72LP	72	2190	40*35*2221
		30SLC2200-P74LP	30SLC2200-N74LP	74	2250	40*35*2281
		30SLC2260-P76LP	30SLC2260-N76LP	76	2310	40*35*2341
		30SLC2320-P78LP	30SLC2320-N78LP	78	2370	40*35*2401
		30SLC2380-P80LP	30SLC2380-N80LP	80	2430	40*35*2461



Front view



Top view

L1：Detection Height A=（Axis Number-1）*30mm
L2：Length of Shell L2= Axis Number *30+25mm
L3：Total Length L3=L2+36mm
L4：Total Length including Mounting Bracket：
L4=L3+74mm

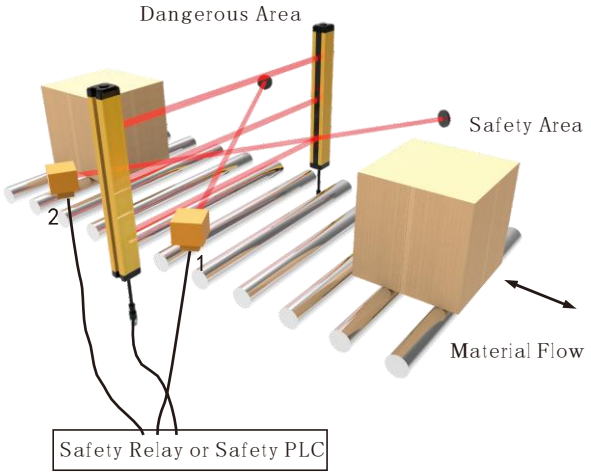
Note:
the cable length 225mm; call us for 3D Drawing;

Notes：◎Protected Hight：The Detectable Effective Hight of Rod=（n+1）×0ptical Axis space
◎The Standard Protect Distance is 0.1~6M（Can be Customized）
◎n：Number of Optical Axis
◎A Set of Light curtain include：A pair of Cable，A pair of mounting brackets at both ends，4 Sliders

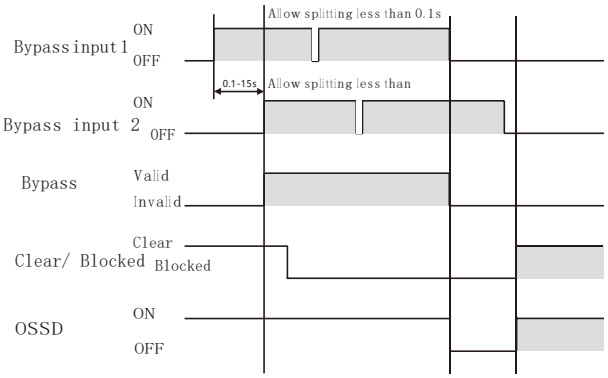
SLC-LPSafety light curtain application

The material handling bypass arrangement of the conveyor using two sensors, the sensor layout process is "X" (intersection must be on the dangerous side), and some logic units require blocking the sensors in the order of characteristics. When order is more important, this "X" pattern must be asymmetrical. For the use of sensor reflection in pairs, the reflection may cause the bypass function to be activated erroneously or cause useless off-line. Other sensing technologies may be used, such as inductive sensors.

Conveyor 2 sensor shield

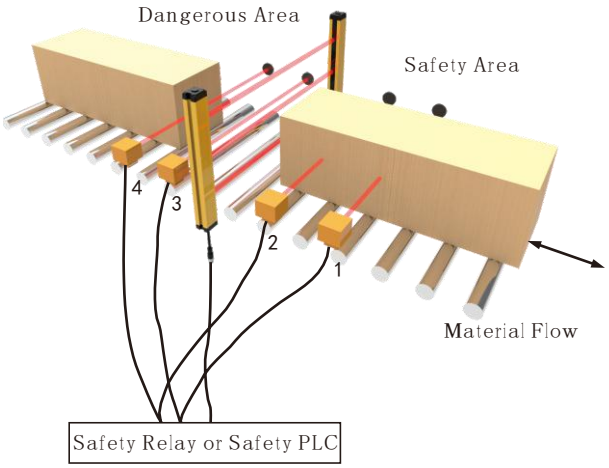


Receiving Bypass mode timing diagram

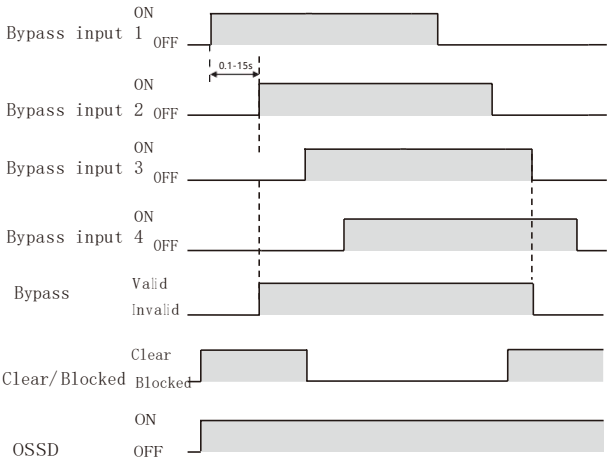


The material handling bypass arrangement of the conveyor using four sensors, two of which are installed on the dangerous side and the other two are installed on the non-hazardous side. The direction of the sensor is perpendicular to the conveyor. In this method, the shape and position of the object are not important, what matters is the length of the object. Because the object must block all three adjacent sensors.

Conveyor 4 sensor shield



Receiving Bypass mode timing diagram



Note: ◎ In use, sensor 1 and sensor 3 are connected in parallel, and sensor 2 and sensor 4 are connected in parallel.
◎ The time between bypass input 1 and bypass input 2 can be customized according to customer requirements.

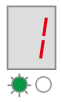
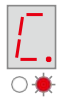
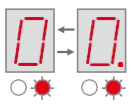
SLC-LP Technical Specification

SLC-LP Safety Light Curtain（7.5/15/30mm）	
Standard	Compliance IEC61496-1,2
authenticate	TUV，EN61496-1/2,FCC
Optical Parameters	
Protected Hight	127-2370mm
Protection Distance	0.1-6m(2-20m)
Optical Axis	4-80(7.5mm beaming space16-200)
Resolution	12.5/20/35mm
Wavelength	940nm
Synchronizati	Light Synchronization
Physical Character	
Cross-sectional Dimension	35mm*40mm
Installation	L-shaped two-end installation; back slot installation
Weight	Change With Altitude
Connection Type	Aviation Plug-in; Direction Outlet

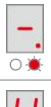
Electrical Parameters	
Power Supply	24VDC±10%
Power Consumption	5W
Response time	Less than 23m
Safety Output	2 NPN or 2 PNP redundant outputs, short circuit protection, overload protection, pulse test
Manual Reset or Interlock	Provide Manual Reset or Interlock function at the receiving end, apply on the automatic line or large area position protection to ensure safe start
Muting function	0.1-3S Trigger time and Customizable recovery time
Optional Scan	Two scan code to choose from
CodeOutput feedback	EDM Signal of Relay Feedback
Enclosure	IP65（Customizable IP67、IP69）
Operation Temp.	-10-55℃
Storage Temp.	-20-70℃
Humidity	15%-95%
Shocking	10g/20ms
Scan Time	Less than 12ms

SLC-LP Safety Light Curtain Display

Emitter Display

Display	State	Description
	Power-up Self test	Green LED ON;
	Test State	Green LED ON; 7-Seg LED Display 1-A;
	Power Supply Failure	Red LED ON; 7-Seg LED Display P
	Selection Circuits Failure	Red LED ON; 7-Seg LED Display C
	Output circuits Failure	Red LED ON; 7-Seg LED Display H
	Emitter LED Failure	Red LED ON; 7-Seg LED Alternate Display Tens 0-8, Ones 0-9;

Reciever Display Description:

Display	State	Description
	Normal State	Green LED ON; 7-Seg LED Display 9
	Synchronize Failure	Red LED ON; 7-Seg LED Display 0
	Blocked or Receive LED failure	Red LED ON; 7-Seg LED Display 1
	Power Supply Failure	Red LED ON; 7-Seg LED Display P
	Selection Circuits Failure	Red LED ON; 7-Seg LED Display C
	External Device Failure	Red LED ON; 7-Seg LED Display E
	Failure of Output Overload or Short	Red LED ON; 7-Seg LED Display d.
	Bus is disturbed	Red LED ON; 7-Seg LED Display F
	Bypass state	Red LED ON; 7-Seg LED Display -
	OSSD self-diagnosis; Page12th for detail	Red LED ON; 7-Seg LED Display H