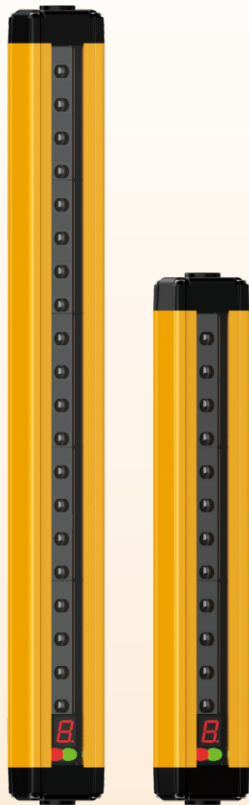




SLC-LP Series Safety Light Curtain



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 is with 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

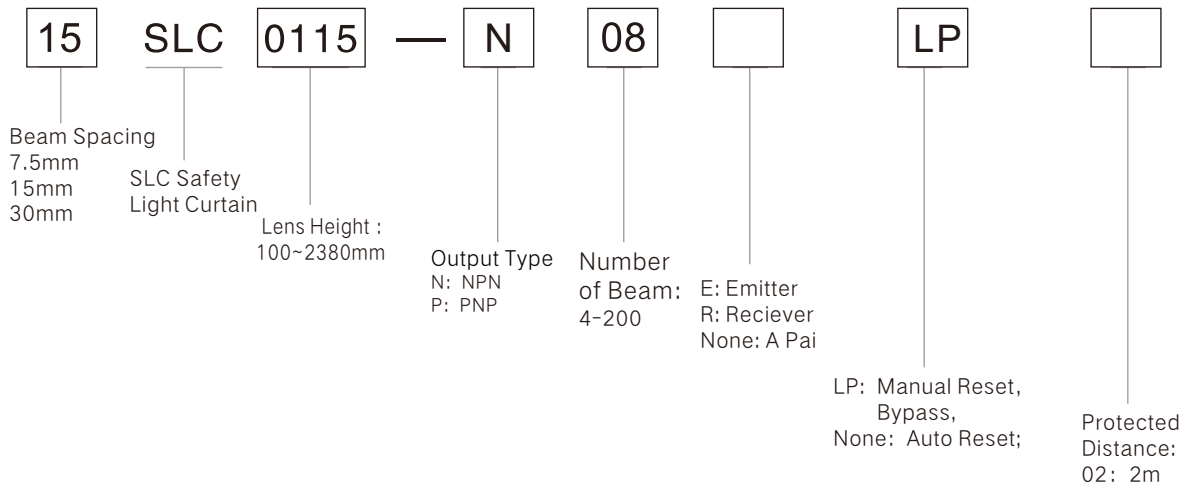
Easy to get the status or figure out the problem of the SLC safety light curtain by observing the indication of the 7-segment digital and LED lights.

◆ Self- diagnosis

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

LIGHT
CURTAIN

Ordering information



POPULAR
-IZATION
OF SAFETY
KNOWLEDGE

LIGHT
CURTAIN

SLIDE
HANDLE

SWITCH

LOCK

SLIDE
HANDLE

PHOTOEL
-ECTRIC

APPLICATION
CASE

Example of SLC Model Type

Emitter Unite

SLC® TYPE: **15SLC0115-N08ELP**
(EMITTER)

施莱格

- Protection height: 115mm
- Scanning range: 0.1~6mm
- Supply voltage: 24VDC ± 10%
- Protection class: IP65
- Sensible object: 20mm
- Response time: ≤ 23ms
- Power consumption: ≤ 3W
- Ambient temp: -10~+55°C

CE EN61496 FC SN:080001 S/N:XXXXXX

Receiver Unite

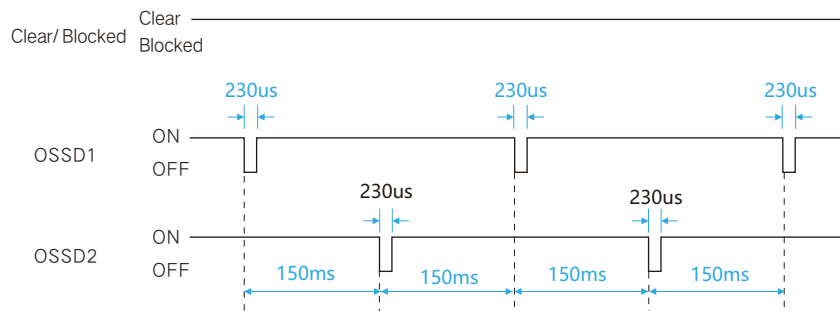
SLC® TYPE: **15SLC0115-N08RLP**
(RECEIVER)

施莱格

- Protection height: 115mm
- Scanning range: 0.1~6mm
- Supply voltage: 24VDC ± 10%
- Protection class: IP65
- Sensible object: 20mm
- Response time: ≤ 23ms
- Power consumption: ≤ 3W
- Ambient temp: -10~+55°C

CE EN61496 FC SN:080001

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.

LIGHT
CURTAIN

POPULAR
-IZATION
OF SAFETY
KNOWLEDGE

LIGHT
CURTAIN

SLIDE
HANDLE

SWITCH

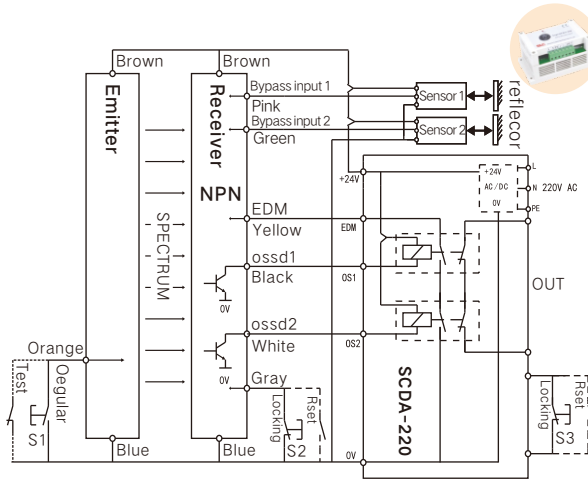
LOCK

SLIDE
HANDLE

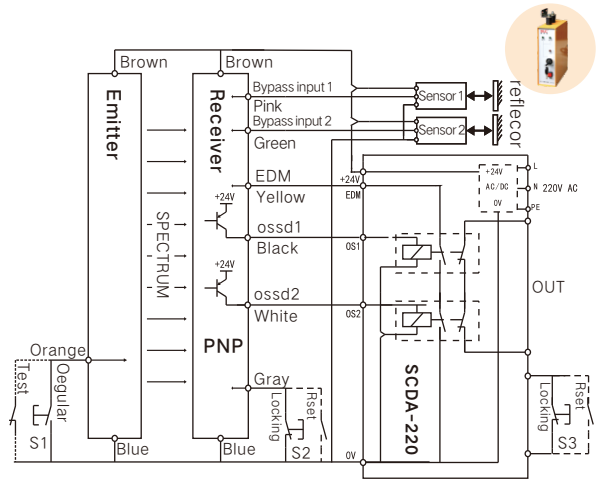
PHOTOEL
-ECTRIC

APPLICATION
CASE

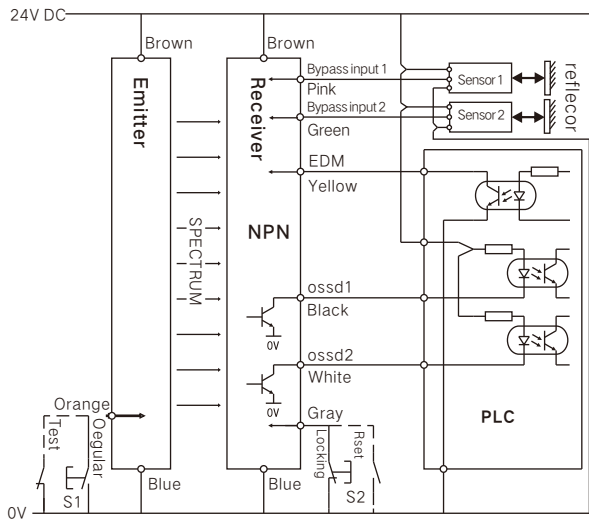
SLC-LP (NPN Type) Connection with Controller



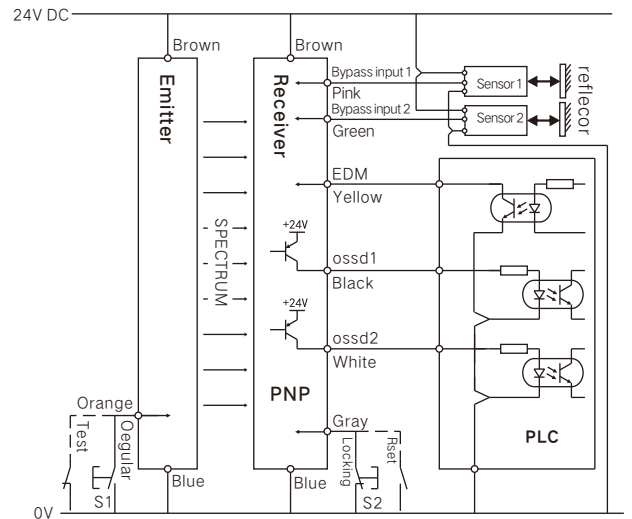
SLC-LP (PNP Type) Connection with Controller



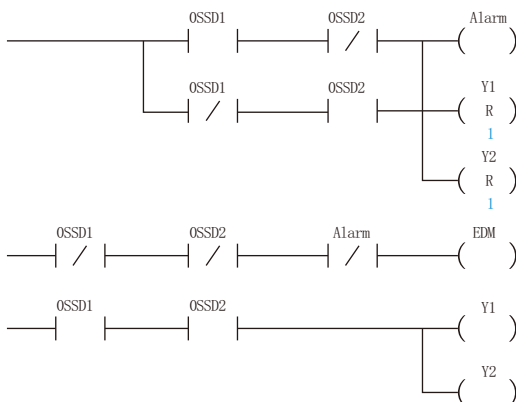
SLC-LP (NPN Type) Connection with PLC



SLC-LP (PNP Type) Connection with PLC



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



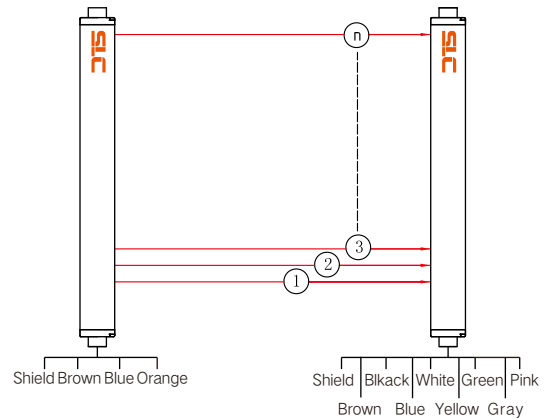
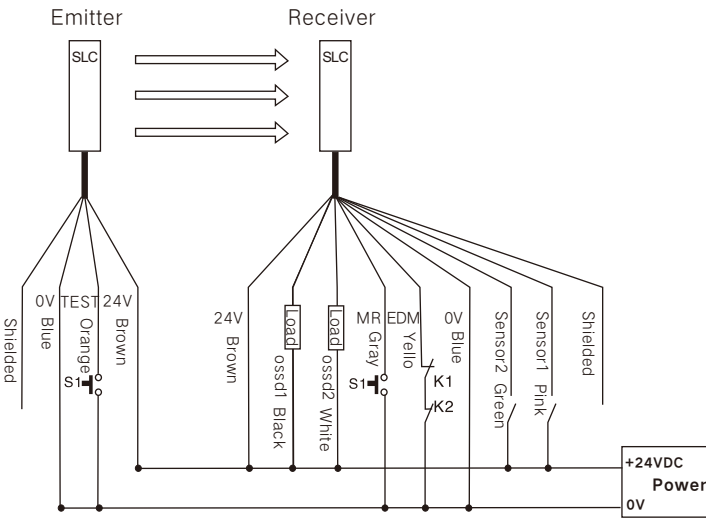
PLC Logical Truth Table

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.

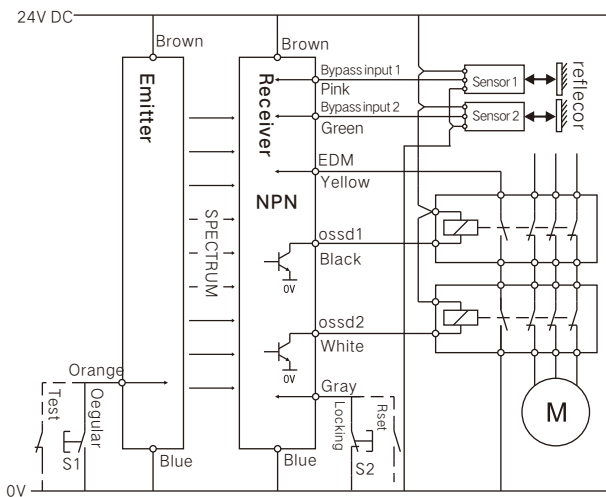
SLC -LP Connection Diagram

NPN Output (Interlock, reset and Test) Function

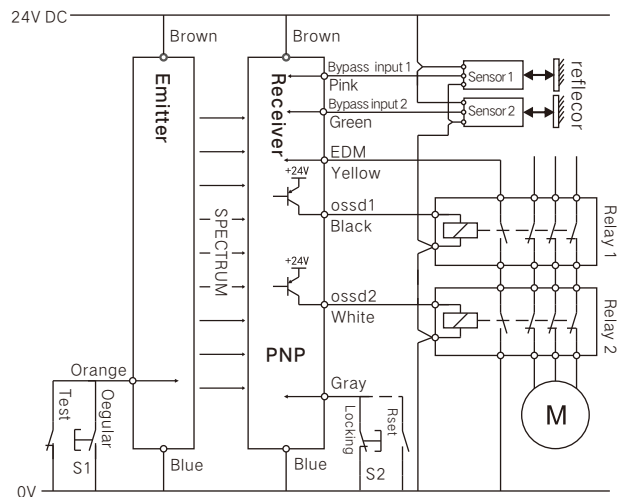


- Remarks:
- S1: external system test switch for grating (optional, if not directly suspended)
 - S2: start / restart interlock reset grating switch (optional, if no switch is required to connect to 0V)
 - ⊙: Shielded wire grounding ensures single-point grounding
 - Sensor 1: Bypass signal input 1
 -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

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



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



LIGHT CURTAIN

POPULARIZATION OF SAFETY KNOWLEDGE

LIGHT CURTAIN

SLIDE HANDLE

SWITCH

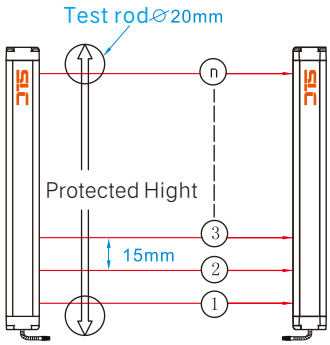
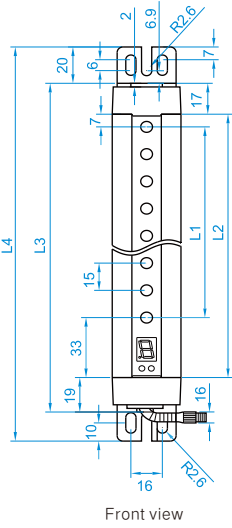
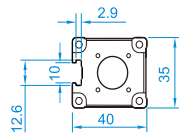
LOCK

SLIDE HANDLE

PHOTOELECTRIC

APPLICATION CASE

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

Type	Outline	Model (PNP)	Model (NPN)	Number	Protected Hight (mm)	Dimension (mm)
LIGHT CURTAIN	   <p>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</p> <p>Note:the cable length 225mm; call us for 3D Drawing;</p>	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		

- 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

LIGHT CURTAIN

POPULARIZATION OF SAFETY KNOWLEDGE

LIGHT CURTAIN

SLIDE HANDLE

SWITCH

LOCK

SLIDE HANDLE

PHOTOELECTRIC

APPLICATION CASE

Thumb type

Smallest Detectable Substance 20mm (15mm Optical Axis Space)

LIGHT CURTAIN

POPULARIZATION OF SAFETY KNOWLEDGE

LIGHT CURTAIN

SLIDE HANDLE

SWITCH

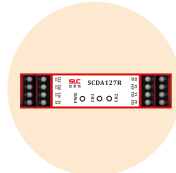
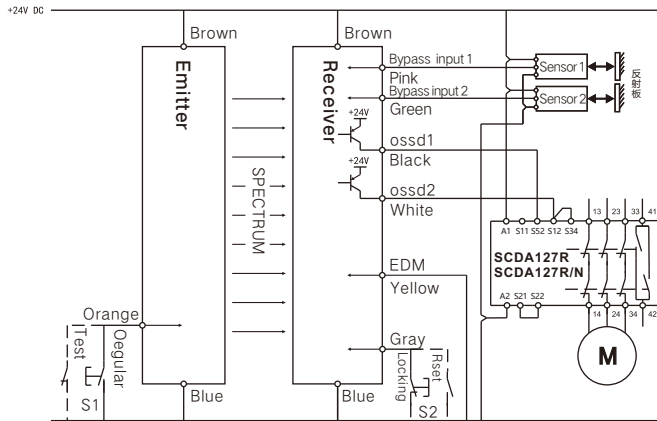
LOCK

SLIDE HANDLE

PHOTOELECTRIC

APPLICATION CASE

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

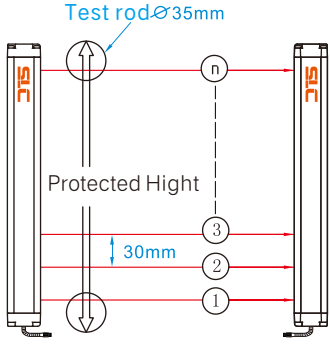
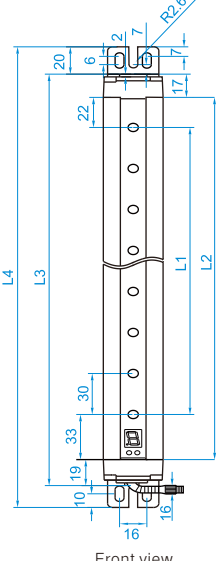
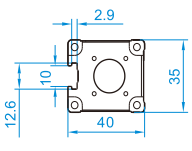
SLC-LP Model and Selection Guide

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

Type	Outline	Model (PNP)	Model (NPN)	Number	Protected Height (mm)	Dimension (mm)
Smallest Detectable Substance 12.5mm (7.5mm Optical Axis Space) Pinky Type r	<p>Test rod $\phi 12.5\text{mm}$</p> <p>Protected Height</p> <p>7.5mm</p> <p>Top view</p> <p>Front view</p> <p>L1: Detection Height A = (Axis Number - 1) * 7.5mm L2: Length of Shell L2 = Axis Number * 7.5 + 25mm L3: Total Length L3 = L2 + 36mm L4: Total Length including Mounting Bracket : L4 = L3 + 37mm</p> <p>Note: the cable length 225mm; call us for 3D Drawing;</p>	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 Height: The Detectable Effective Height of Rod = (n+1) × Optical Axis space - 0.5mm
 ◎A Set of Light curtain 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)**

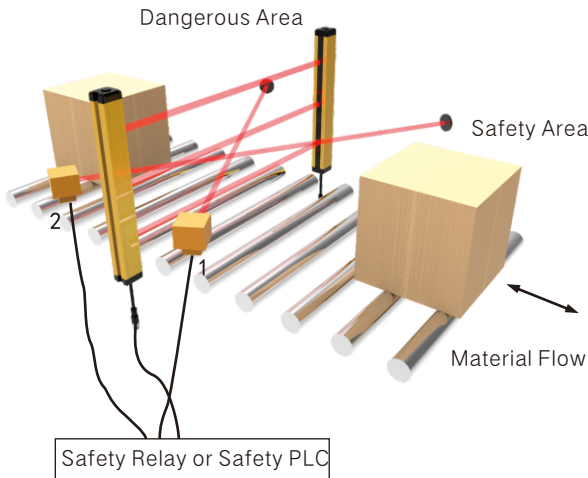
Type	Outline	Model (PNP)	Model (NPN)	Number	Protected Height (mm)	Dimension (mm)
LIGHT CURTAIN POPULARIZATION OF SAFETY KNOWLEDGE LIGHT CURTAIN SLIDE HANDLE SWITCH LOCK SLIDE HANDLE PHOTOELECTRIC APPLICATION CASE	   <p>L1: Detection Height A= (Axis Number-1) *30mm L2: Length of Shell L2= Axis Number *30+25mm L3: Total Length L3=L2+36mm L4: Total Length including Mounting Bracket : L4=L3+74mm</p> <p>Note: the cable length 225mm; call us for 3D Drawing;</p>	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	42	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
		30SLC2020-P68LP	30SLC2020-N68LP	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

- Notes: ◎Protected Height: The Detectable Effective Height 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

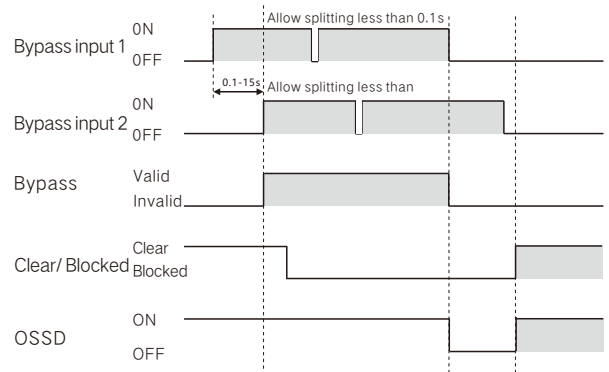
SLC-LP Safety light curtain application

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

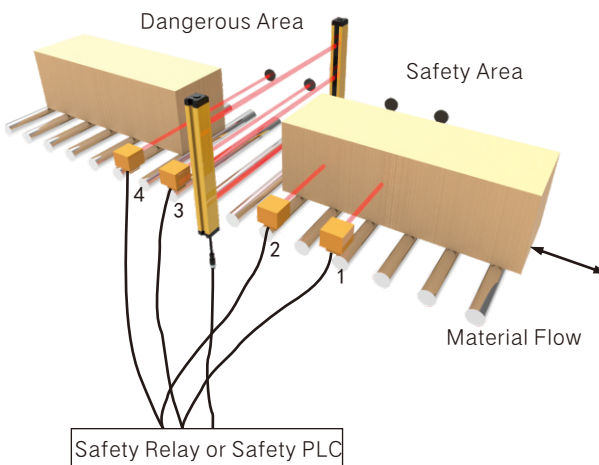


Receiving Bypass mode timing diagram

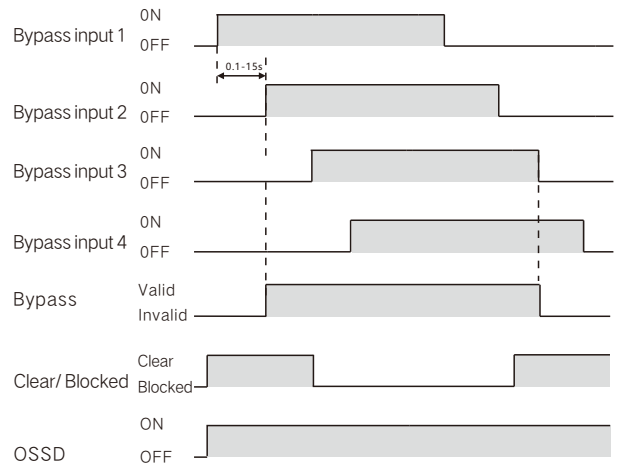


The material handling bypass arrangement of the conveyor using four sensors, two of which are installed on the dangerous side and the other two are installed on the non-hazardous side. The direction of the sensor is perpendicular to the conveyor. In this method, the shape and position of the object are 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.

LIGHT
CURTAIN

POPULAR
-IZATION
OF SAFETY
KNOWLEDGE

LIGHT
CURTAIN

SLIDE
HANDLE

SWITCH

LOCK

SLIDE
HANDLE

PHOTOEL
-ECTRIC

APPLICATION
CASE

SLC-LP Technical Specification

SLC-LP Safety Light Curtain (7.5/15/30mm)		
Standard	Compliance IEC61496-1,2	Electrical Parameters
authenticate	TUV, EN61496-1/2,FCC	
Optical Parameters		Power Supply
Protected Height	127-2370mm	24VDC±10%
Protection Distance	0.1-6m(2-20m)	Power Consumption
Optical Axis	4-80(7.5mm beaming space16-200)	5W
Resolution	12.5/20/35mm	Response time
Wavelength	940nm	Less than 23m
Synchronization	Light Synchronization	Safety Output
Physical Character		2 NPN or 2 PNP redundant outputs, short circuit protection, overload protection, pulse test
Cross-sectional Dimension	35mm*40mm	Manual Reset or Interlock
Installation	L-shaped two-end installation; back slot installation	Provide Manual Reset or Interlock function at the receiving end, apply on the automatic line or large area position protection to ensure safe start
Weight	Change With Altitude	Muting function
Connection Type	Aviation Plug-in; Direction Outlet	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°C
		Storage Temp.
		-20-70°C
		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;

Receiver 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;	Red LED ON; 7-Seg LED Display H
	Page12th for detail	

LIGHT CURTAIN

POPULARIZATION OF SAFETY KNOWLEDGE

LIGHT CURTAIN

SLIDE HANDLE

SWITCH

LOCK

SLIDE HANDLE

PHOTOELECTRIC

APPLICATION CASE