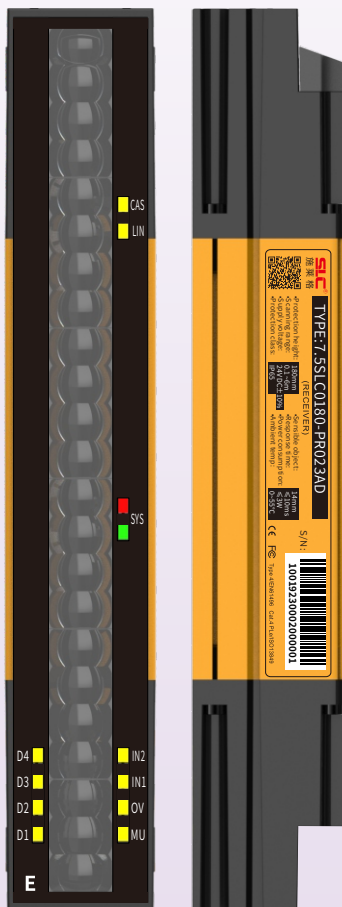




SLC-AD series safety light curtains



Performance characteristics

SLC-AD safety light curtain is designed with the most advanced international functional safety concepts and technologies to provide customers with a safe workplace, with the following advantages:

◆ TYPE4 security level

SLC-AD complies with ISO13849-1, Cat.4 category, and reaches PLe safety level; Complies with IEC/EN62061 and IEC/EN61508SIL3 safety levels; Complies with Type4 safety based on EN/IEC61496-1/-2 and GB/T19436-1/-2.

◆ No blind zone design

Suitable for structurally constrained applications, it's easy to build comprehensive blind zone protection area when applying multiple L or U-shaped combinations.

◆ Multiple sets of cascades

Three sets of light curtains cascade combinations can be realized. The cascade combination effectively prevents mutual optical interference between multiple sets of light curtains

◆ Optical/line synchronization optional design

Optical synchronization and line synchronization have their own advantages and disadvantages: when using optical synchronization, the transmission and reception can be independently powered, convenient wiring; When using line synchronization, it can effectively prevent the synchronization light from being interfered by other ambient light sources, and has high stability and reliability. SLC-AD optical synchronization and line synchronization are optional. Different synchronization modes can be selected according to the site conditions.

◆ Redundant OSSD output with self-diagnostics

In order to pursue better safety in terms of output, dual independent redundant outputs have been adopted to improve the safety performance of the system. They can directly drive safety relays or safety PLCs (to meet the requirements of safety level standards, please use the correct number of control outputs to form the system). The independent dual OSSD circuit has a circuit self-diagnosis function, which forcibly momentarily shuts down the output with a very short periodic pulse (not affecting operation). If a shutdown pulse occurs **and** the mainframe does not detect a certain feedback shutdown pulse within a certain period of time, the system will stop outputting.

◆ Multiple optional setting functions

SLC-AD safety light curtain can be easily configured with functions such as interlock reset, external EDM, bypass and override, and fixed shielding and floating shielding through PC software, and qualified user operators can easily configure functions according to site usage.

▲ External relay contact monitoring (EDM) function

In order to ensure the safety of the entire system when the output signal of the safety light curtain is connected to the customer's relay/contacting equipment, the SLC-AD safety light curtain monitors the "external relay contact status" to prevent the loss of safety protection function due to external relay bonding failure.

▲ Interlock and reset function

The light curtains has optional interlock and reset functions, which can be easily implemented for manual reset and automatic reset.

▲ Bypass and override functions

It is convenient to shield light curtain for short periods of time under specific conditions without affecting machine operation.

▲ Fixed and floating shielding

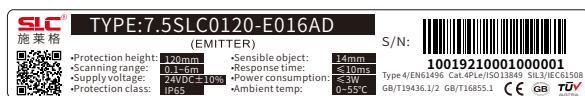
The raster has fixed shielding and floating shielding functions optional and set. Fixed shielding is convenient for application in special areas with shielding. Floating shielding can be easily applied to distinguish between large and small workpieces. Floating shielding can also be applied to the scene of continuous passage of the workpiece, the workpiece does not trigger the shutdown but only when the body part of the person is located in the protected area, which can effectively continue to work without reducing the protection of personal safety.

SLC-AD model description

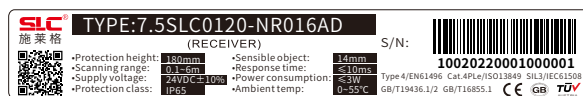
7.5	SLC	0180	—	E	023	A	D	
Optical Spasin: 7.5mm 15mm 30mm	SLC series safety light curtain	Protective height (7.5 pitch): (N+1)×spacing Lens height (15、30 pitch): (N-1)×spacing+10		Output mode: E:Emitting NR:NPN type output PR:PNP type output N:A pair of NPN type gratings P:A pair of PNP type gratings	Beam Number : 4~319	Cross-sectional: None:40×35mm A:30×30mm	Feature: D:Basic H:Interlock reset and EDM monitoring M:Advanced features	working distance: 06: 6m

SLC-AD series safety light curtain model example

Emitter unit



Receiver unit



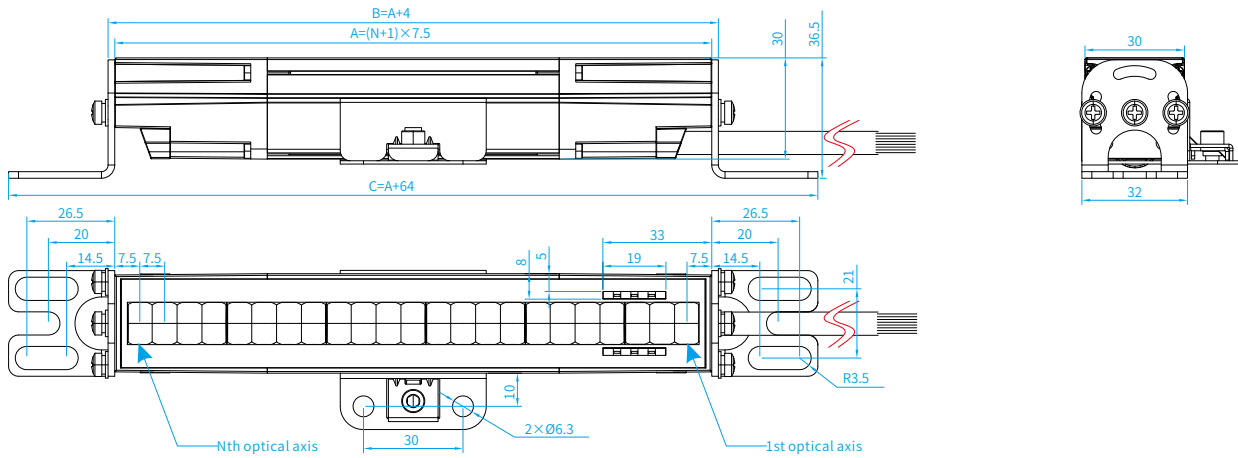
System composition

The safety system consisting of an SLC safety light curtain consists of a transmitting unit, a receiving unit and two cables. The transmitter unit and receiver unit each include one set of mounting accessories: L-shaped two-ended mounting bracket and its screws (mounting accessories sold separately).

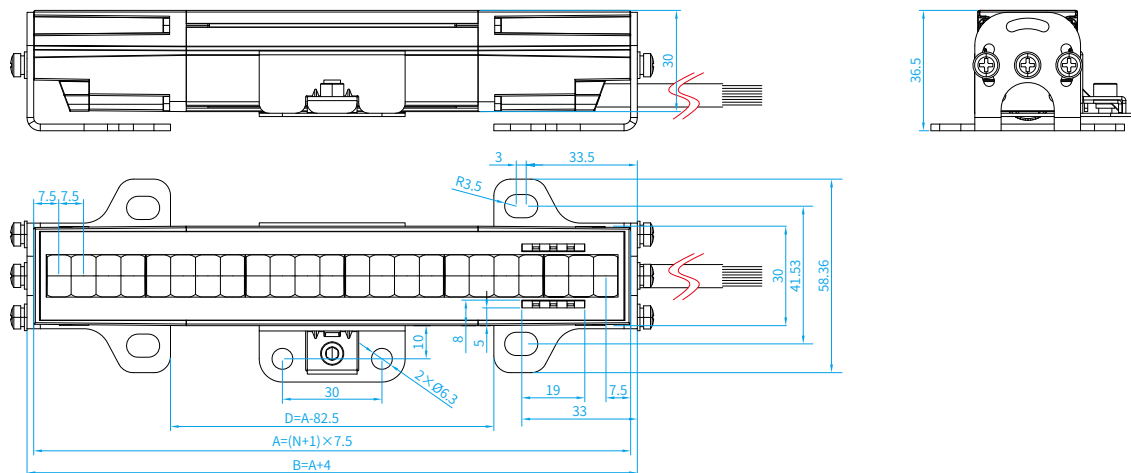


SLC-AD size specifications and selection guide

◆ 7.5SLC-AD series size (standard mounting brackets at both ends)



◆ 7.5SLC-AD series size specifications (back mounting brackets at both ends)



※Affected by product configuration and manufacturing process, the actual product size may be different, please refer to the actual product

◆ 7.5SLC-AD series (optical axis pitch: 7.5mm, resolution: 12.5mm)

Emitter	PNP type reception	NPN type reception	Number of optical axes	Response time (ms)	Protection height (mm)	Overall dimensions L×W×H (mm)
7.5SLC0120-E015AD	7.5SLC0120-PR015AD	7.5SLC0120-NR015AD	15	6.7	120	30×30×120
7.5SLC0180-E023AD	7.5SLC0180-PR023AD	7.5SLC0180-NR023AD	23	8.9	180	30×30×180
7.5SLC0240-E031AD	7.5SLC0240-PR031AD	7.5SLC0240-NR031AD	31	11.1	240	30×30×240
7.5SLC0300-E039AD	7.5SLC0300-PR039AD	7.5SLC0300-NR039AD	39	13.3	300	30×30×300
7.5SLC0360-E047AD	7.5SLC0360-PR047AD	7.5SLC0360-NR047AD	47	15.5	360	30×30×360
7.5SLC0420-E055AD	7.5SLC0420-PR055AD	7.5SLC0420-NR055AD	55	17.7	420	30×30×420
7.5SLC0480-E063AD	7.5SLC0480-PR063AD	7.5SLC0480-NR063AD	63	19.9	480	30×30×480
7.5SLC0540-E071AD	7.5SLC0540-PR071AD	7.5SLC0540-NR071AD	71	22.1	540	30×30×540
7.5SLC0600-E079AD	7.5SLC0600-PR079AD	7.5SLC0600-NR079AD	79	24.3	600	30×30×600
7.5SLC0660-E087AD	7.5SLC0660-PR087AD	7.5SLC0660-NR087AD	87	26.5	660	30×30×660
7.5SLC0720-E095AD	7.5SLC0720-PR095AD	7.5SLC0720-NR095AD	95	28.7	720	30×30×720
7.5SLC0780-E103AD	7.5SLC0780-PR103AD	7.5SLC0780-NR103AD	103	30.9	780	30×30×780
7.5SLC0840-E111AD	7.5SLC0840-PR111AD	7.5SLC0840-NR111AD	111	33.1	840	30×30×840
7.5SLC0900-E119AD	7.5SLC0900-PR119AD	7.5SLC0900-NR119AD	119	35.4	900	30×30×900
7.5SLC0960-E127AD	7.5SLC0960-PR127AD	7.5SLC0960-NR127AD	127	37.6	960	30×30×960
7.5SLC1020-E135AD	7.5SLC1020-PR135AD	7.5SLC1020-NR135AD	135	39.8	1020	30×30×1020
7.5SLC1080-E143AD	7.5SLC1080-PR143AD	7.5SLC1080-NR143AD	143	42.0	1080	30×30×1080
7.5SLC1140-E151AD	7.5SLC1140-PR151AD	7.5SLC1140-NR151AD	151	44.2	1140	30×30×1140
7.5SLC1200-E159AD	7.5SLC1200-PR159AD	7.5SLC1200-NR159AD	159	46.4	1200	30×30×1200
7.5SLC1260-E167AD	7.5SLC1260-PR167AD	7.5SLC1260-NR167AD	167	48.6	1260	30×30×1260
7.5SLC1320-E175AD	7.5SLC1320-PR175AD	7.5SLC1320-NR175AD	175	50.8	1320	30×30×1320
7.5SLC1380-E183AD	7.5SLC1380-PR183AD	7.5SLC1380-NR183AD	183	53.0	1380	30×30×1380
7.5SLC1440-E191AD	7.5SLC1440-PR191AD	7.5SLC1440-NR191AD	191	55.2	1440	30×30×1440
7.5SLC1500-E199AD	7.5SLC1500-PR199AD	7.5SLC1500-NR199AD	199	57.4	1500	30×30×1500
7.5SLC1560-E207AD	7.5SLC1560-PR207AD	7.5SLC1560-NR207AD	207	59.6	1560	30×30×1560
7.5SLC1620-E215AD	7.5SLC1620-PR215AD	7.5SLC1620-NR215AD	215	61.9	1620	30×30×1620
7.5SLC1680-E223AD	7.5SLC1680-PR223AD	7.5SLC1680-NR223AD	223	64.1	1680	30×30×1680
7.5SLC1740-E231AD	7.5SLC1740-PR231AD	7.5SLC1740-NR231AD	231	66.3	1740	30×30×1740
7.5SLC1800-E239AD	7.5SLC1800-PR239AD	7.5SLC1800-NR239AD	239	68.5	1800	30×30×1800
7.5SLC1860-E247AD	7.5SLC1860-PR247AD	7.5SLC1860-NR247AD	247	70.7	1860	30×30×1860
7.5SLC1920-E255AD	7.5SLC1920-PR255AD	7.5SLC1920-NR255AD	255	72.9	1920	30×30×1920
7.5SLC1980-E263AD	7.5SLC1980-PR263AD	7.5SLC1980-NR263AD	263	75.1	1980	30×30×1980
7.5SLC2040-E271AD	7.5SLC2040-PR271AD	7.5SLC2040-NR271AD	271	77.3	2040	30×30×2040
7.5SLC2100-E279AD	7.5SLC2100-PR279AD	7.5SLC2100-NR279AD	279	79.5	2100	30×30×2100
7.5SLC2160-E287AD	7.5SLC2160-PR287AD	7.5SLC2160-NR287AD	287	81.7	2160	30×30×2160
7.5SLC2220-E295AD	7.5SLC2220-PR295AD	7.5SLC2220-NR295AD	295	83.9	2220	30×30×2220
7.5SLC2280-E303AD	7.5SLC2280-PR303AD	7.5SLC2280-NR303AD	303	86.1	2280	30×30×2280
7.5SLC2340-E311AD	7.5SLC2340-PR311AD	7.5SLC2340-NR311AD	311	88.3	2340	30×30×2340
7.5SLC2400-E319AD	7.5SLC2400-PR319AD	7.5SLC2400-NR319AD	319	90.6	2400	30×30×2400

※n:The number of light spots

※Protection height: can detect the effective height of the test rod = (n+1) × optical axis spacing

※Accessories: Except for the light curtain body, other accessories and cables need to be purchased separately

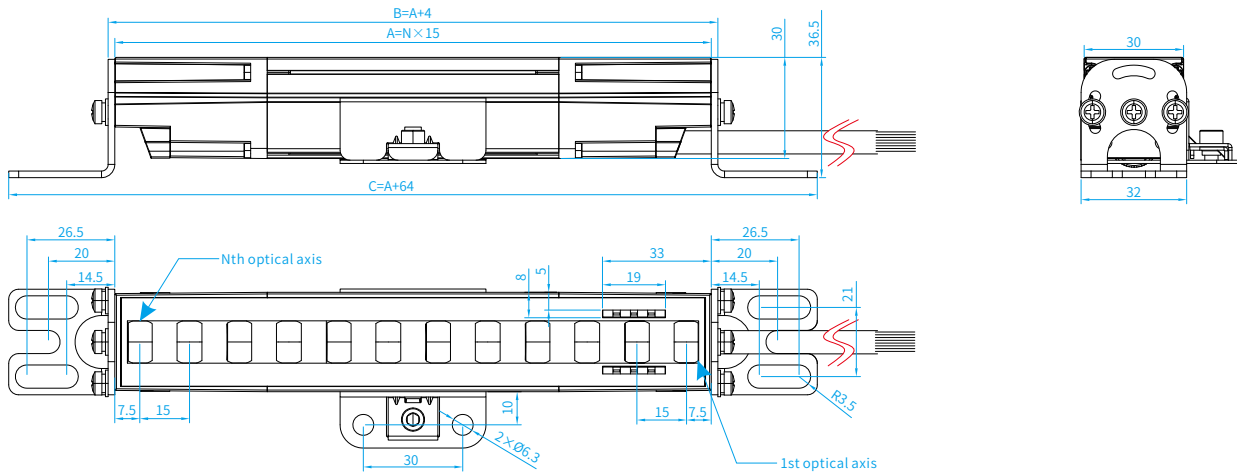
※Function description: (The last letter D of the model number in the above table can be replaced by the following notes)

D:Basic function (select 4-core main signal line)

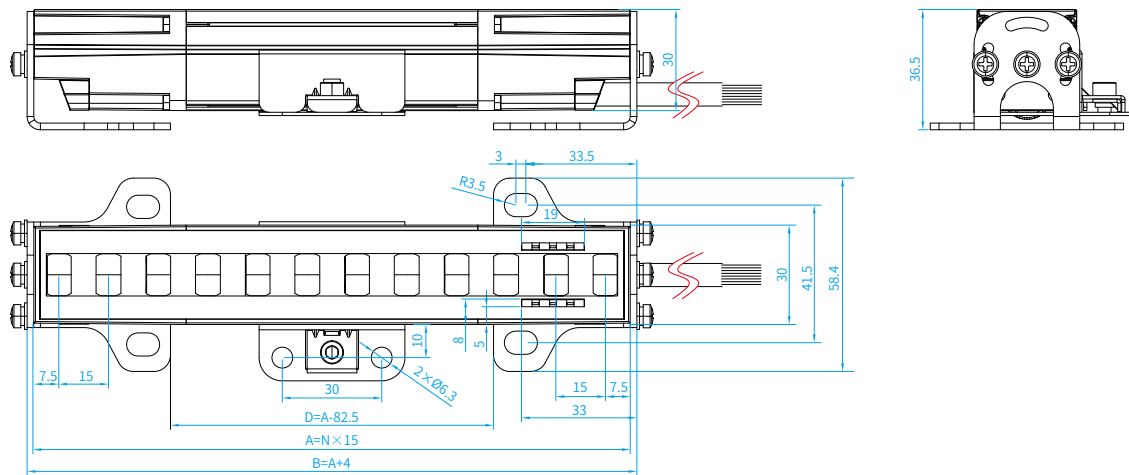
H:Interlock reset and EDM monitoring functions

M:Advanced features

◆ 15SLC-AD series size (standard mounting brackets at both ends)



◆ 15SLC-AD series size specifications (back mounting brackets at both ends)



※Affected by product configuration and manufacturing process, the actual product size may be different, please refer to the actual product

◆ 15SLC-AD series (optical axis pitch: 15mm, resolution: 20mm)

Emitter	PNP type reception	NPN type reception	Number of optical axes	Response time (ms)	Protection height (mm)	Overall dimensions L×W×H (mm)
15SLC0115-E008AD	15SLC0115-PR008AD	15SLC0115-NR008AD	8	4.8	135	30×30×120
15SLC0175-E012AD	15SLC0175-PR012AD	15SLC0175-NR012AD	12	5.9	195	30×30×180
15SLC0235-E016AD	15SLC0235-PR016AD	15SLC0235-NR016AD	16	7.0	255	30×30×240
15SLC0295-E020AD	15SLC0295-PR020AD	15SLC0295-NR020AD	20	8.1	315	30×30×300
15SLC0355-E024AD	15SLC0355-PR024AD	15SLC0355-NR024AD	24	9.2	375	30×30×360
15SLC0415-E028AD	15SLC0415-PR028AD	15SLC0415-NR028AD	28	10.3	435	30×30×420
15SLC0475-E032AD	15SLC0475-PR032AD	15SLC0475-NR032AD	32	11.4	495	30×30×480
15SLC0535-E036AD	15SLC0535-PR036AD	15SLC0535-NR036AD	36	12.5	555	30×30×540
15SLC0595-E040AD	15SLC0595-PR040AD	15SLC0595-NR040AD	40	13.6	615	30×30×600
15SLC0655-E044AD	15SLC0655-PR044AD	15SLC0655-NR044AD	44	14.7	675	30×30×660
15SLC0715-E048AD	15SLC0715-PR048AD	15SLC0715-NR048AD	48	15.8	735	30×30×720
15SLC0775-E052AD	15SLC0775-PR052AD	15SLC0775-NR052AD	52	16.9	795	30×30×780
15SLC0835-E056AD	15SLC0835-PR056AD	15SLC0835-NR056AD	56	18.0	855	30×30×840
15SLC0895-E060AD	15SLC0895-PR060AD	15SLC0895-NR060AD	60	19.1	915	30×30×900
15SLC0955-E064AD	15SLC0955-PR064AD	15SLC0955-NR064AD	64	20.2	975	30×30×960
15SLC1015-E068AD	15SLC1015-PR068AD	15SLC1015-NR068AD	68	21.3	1035	30×30×1020
15SLC1075-E072AD	15SLC1075-PR072AD	15SLC1075-NR072AD	72	22.4	1095	30×30×1080
15SLC1135-E076AD	15SLC1135-PR076AD	15SLC1135-NR076AD	76	23.5	1155	30×30×1140
15SLC1195-E080AD	15SLC1195-PR080AD	15SLC1195-NR080AD	80	24.6	1215	30×30×1200
15SLC1255-E084AD	15SLC1255-PR084AD	15SLC1255-NR084AD	84	25.7	1275	30×30×1260
15SLC1315-E088AD	15SLC1315-PR088AD	15SLC1315-NR088AD	88	26.8	1335	30×30×1320
15SLC1375-E092AD	15SLC1375-PR092AD	15SLC1375-NR092AD	92	27.9	1395	30×30×1380
15SLC1435-E096AD	15SLC1435-PR096AD	15SLC1435-NR096AD	96	29.0	1455	30×30×1440
15SLC1495-E100AD	15SLC1495-PR100AD	15SLC1495-NR100AD	100	30.1	1515	30×30×1500
15SLC1555-E104AD	15SLC1555-PR104AD	15SLC1555-NR104AD	104	31.3	1575	30×30×1560
15SLC1615-E108AD	15SLC1615-PR108AD	15SLC1615-NR108AD	108	32.4	1635	30×30×1620
15SLC1675-E112AD	15SLC1675-PR112AD	15SLC1675-NR112AD	112	33.5	1695	30×30×1680
15SLC1735-E116AD	15SLC1735-PR116AD	15SLC1735-NR116AD	116	34.6	1755	30×30×1740
15SLC1795-E120AD	15SLC1795-PR120AD	15SLC1795-NR120AD	120	35.7	1815	30×30×1800
15SLC1855-E124AD	15SLC1855-PR124AD	15SLC1855-NR124AD	124	36.8	1875	30×30×1860
15SLC1915-E128AD	15SLC1915-PR128AD	15SLC1915-NR128AD	128	37.9	1935	30×30×1920
15SLC1975-E132AD	15SLC1975-PR132AD	15SLC1975-NR132AD	132	39.0	1995	30×30×1980
15SLC2035-E136AD	15SLC2035-PR136AD	15SLC2035-NR136AD	136	40.1	2055	30×30×2040
15SLC2095-E140AD	15SLC2095-PR140AD	15SLC2095-NR140AD	140	41.2	2115	30×30×2100
15SLC2155-E144AD	15SLC2155-PR144AD	15SLC2155-NR144AD	144	42.3	2175	30×30×2160
15SLC2215-E148AD	15SLC2215-PR148AD	15SLC2215-NR148AD	148	43.4	2235	30×30×2220
15SLC2275-E152AD	15SLC2275-PR152AD	15SLC2275-NR152AD	152	44.5	2295	30×30×2280
15SLC2335-E156AD	15SLC2335-PR156AD	15SLC2335-NR156AD	156	45.6	2355	30×30×2340
15SLC2395-E160AD	15SLC2395-PR160AD	15SLC2395-NR160AD	160	46.7	2415	30×30×2400

※n:The number of light spots

※Protection height: can detect the effective height of the test rod = (n+1) × optical axis spacing

※Accessories: Except for the light curtain body, other accessories and cables need to be purchased separately

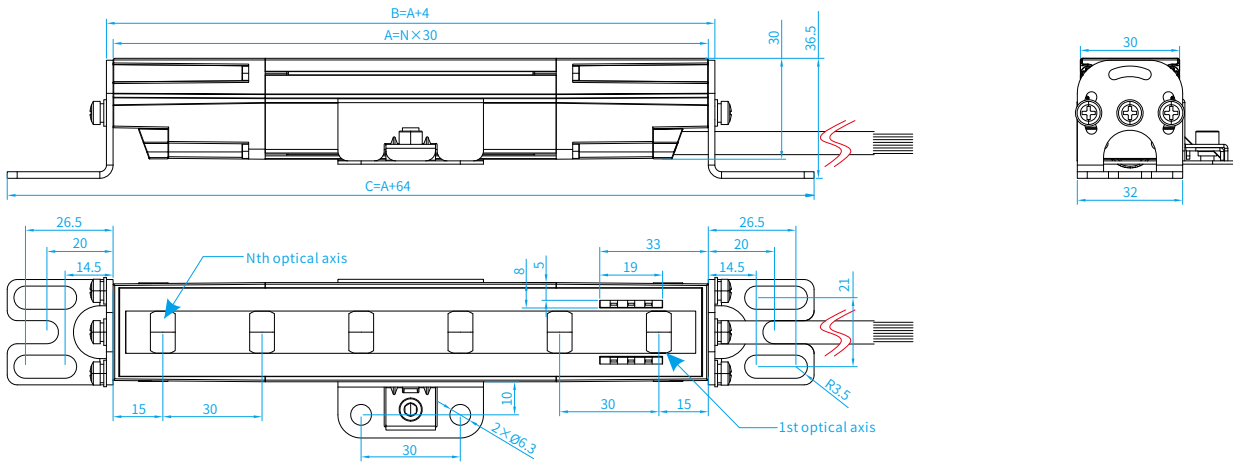
※Function description: (The last letter D of the model number in the above table can be replaced by the following notes)

D:Basic function (select 4-core main signal line)

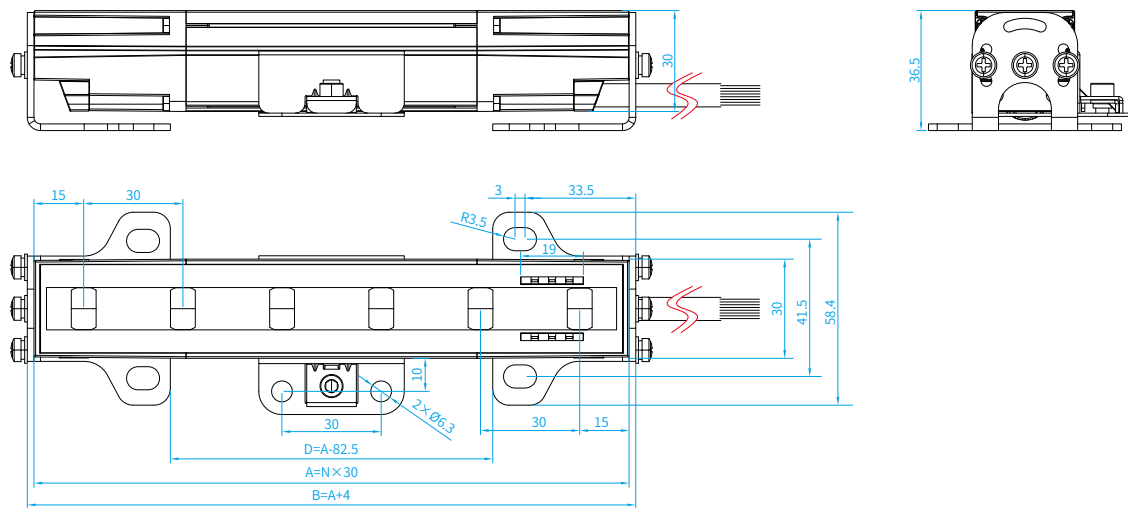
H:Interlock reset and EDM monitoring functions

M:Advanced features

◆ 30SLC-AD series size (standard mounting brackets at both ends)



◆ 30SLC-AD series size specifications (back mounting brackets at both ends)



※Affected by product configuration and manufacturing process, the actual product size may be different, please refer to the actual product

◆ 30SLC-AD series (optical axis pitch: 30mm, resolution: 35mm)

Emitter	PNP type reception	NPN type reception	Number of optical axes	Response time (ms)	Protection height (mm)	Overall dimensions L×W×H (mm)
30SLC0100-E004AD	30SLC0100-PR004AD	30SLC0100-NR004AD	4	3.7	150	30×30×120
30SLC0160-E006AD	30SLC0160-PR006AD	30SLC0160-NR006AD	6	4.2	210	30×30×180
30SLC0220-E008AD	30SLC0220-PR008AD	30SLC0220-NR008AD	8	4.8	270	30×30×240
30SLC0280-E010AD	30SLC0280-PR010AD	30SLC0280-NR010AD	10	5.3	330	30×30×300
30SLC0340-E012AD	30SLC0340-PR012AD	30SLC0340-NR012AD	12	5.9	390	30×30×360
30SLC0400-E014AD	30SLC0400-PR014AD	30SLC0400-NR014AD	14	6.4	450	30×30×420
30SLC0460-E016AD	30SLC0460-PR016AD	30SLC0460-NR016AD	16	7.0	510	30×30×480
30SLC0520-E018AD	30SLC0520-PR018AD	30SLC0520-NR018AD	18	7.5	570	30×30×540
30SLC0580-E020AD	30SLC0580-PR020AD	30SLC0580-NR020AD	20	8.1	630	30×30×600
30SLC0640-E022AD	30SLC0640-PR022AD	30SLC0640-NR022AD	22	8.6	690	30×30×660
30SLC0700-E024AD	30SLC0700-PR024AD	30SLC0700-NR024AD	24	9.2	750	30×30×720
30SLC0760-E026AD	30SLC0760-PR026AD	30SLC0760-NR026AD	26	9.7	810	30×30×780
30SLC0820-E028AD	30SLC0820-PR028AD	30SLC0820-NR028AD	28	10.3	870	30×30×840
30SLC0880-E030AD	30SLC0880-PR030AD	30SLC0880-NR030AD	30	10.8	930	30×30×900
30SLC0940-E032AD	30SLC0940-PR032AD	30SLC0940-NR032AD	32	11.4	990	30×30×960
30SLC1000-E034AD	30SLC1000-PR034AD	30SLC1000-NR034AD	34	11.9	1050	30×30×1020
30SLC1060-E036AD	30SLC1060-PR036AD	30SLC1060-NR036AD	36	12.5	1110	30×30×1080
30SLC1120-E038AD	30SLC1120-PR038AD	30SLC1120-NR038AD	38	13.0	1170	30×30×1140
30SLC1180-E040AD	30SLC1180-PR040AD	30SLC1180-NR040AD	40	13.6	1230	30×30×1200
30SLC1240-E042AD	30SLC1240-PR042AD	30SLC1240-NR042AD	42	14.1	1290	30×30×1260
30SLC1300-E044AD	30SLC1300-PR044AD	30SLC1300-NR044AD	44	14.7	1350	30×30×1320
30SLC1360-E046AD	30SLC1360-PR046AD	30SLC1360-NR046AD	46	15.2	1410	30×30×1380
30SLC1420-E048AD	30SLC1420-PR048AD	30SLC1420-NR048AD	48	15.8	1470	30×30×1440
30SLC1480-E050AD	30SLC1480-PR050AD	30SLC1480-NR050AD	50	16.3	1530	30×30×1500
30SLC1540-E052AD	30SLC1540-PR052AD	30SLC1540-NR052AD	52	16.9	1590	30×30×1560
30SLC1600-E054AD	30SLC1600-PR054AD	30SLC1600-NR054AD	54	17.4	1650	30×30×1620
30SLC1660-E056AD	30SLC1660-PR056AD	30SLC1660-NR056AD	56	18.0	1710	30×30×1680
30SLC1720-E058AD	30SLC1720-PR058AD	30SLC1720-NR058AD	58	18.5	1770	30×30×1740
30SLC1780-E060AD	30SLC1780-PR060AD	30SLC1780-NR060AD	60	19.1	1830	30×30×1800
30SLC1840-E062AD	30SLC1840-PR062AD	30SLC1840-NR062AD	62	19.6	1890	30×30×1860
30SLC1900-E064AD	30SLC1900-PR064AD	30SLC1900-NR064AD	64	20.2	1950	30×30×1920
30SLC1960-E066AD	30SLC1960-PR066AD	30SLC1960-NR066AD	66	20.7	2010	30×30×1980
30SLC2020-E068AD	30SLC2020-PR068AD	30SLC2020-NR068AD	68	21.3	2070	30×30×2040
30SLC2080-E070AD	30SLC2080-PR070AD	30SLC2080-NR070AD	70	21.8	2130	30×30×2100
30SLC2140-E072AD	30SLC2140-PR072AD	30SLC2140-NR072AD	72	22.4	2190	30×30×2160
30SLC2200-E074AD	30SLC2200-PR074AD	30SLC2200-NR074AD	74	22.9	2250	30×30×2220
30SLC2260-E076AD	30SLC2260-PR076AD	30SLC2260-NR076AD	76	23.5	2310	30×30×2280
30SLC2320-E078AD	30SLC2320-PR078AD	30SLC2320-NR078AD	78	24.1	2370	30×30×2340
30SLC2380-E080AD	30SLC2380-PR080AD	30SLC2380-NR080AD	80	24.6	2430	30×30×2400

※n:The number of light spots

※Protection height: can detect the effective height of the test rod = (n+1) × optical axis spacing

※Accessories: Except for the light curtain body, other accessories and cables need to be purchased separately

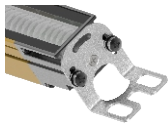
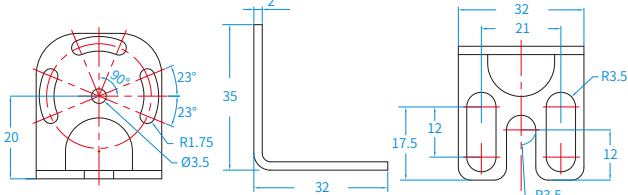
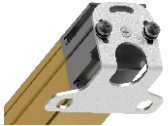
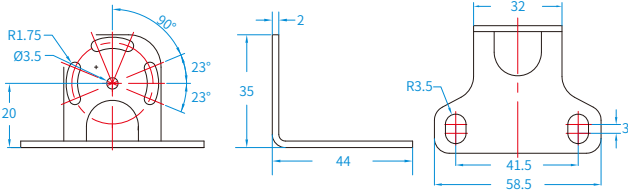
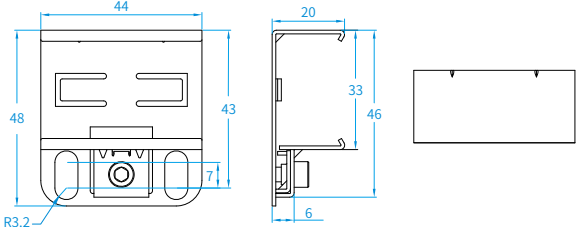
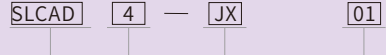
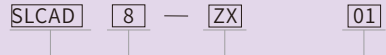
※Function description: (The last letter D of the model number in the above table can be replaced by the following notes)

D:Basic function (select 4-core main signal line)

H:Interlock reset and EDM monitoring functions

M:Advanced features

SLC-AD Series safety light curtain accessory selection guide

Sort	Name	Style + Model	Size	Order number	Qty
Mounting bracket	Standard at both ends	 Model: 05LCMF-ZJ01		LOT05LCMFZJ01	4
	Buckle at both ends	 Model: 05LCMF-ZJ02		LOT05LCMFZJ02	4
	Back mounting	 Model: 05LCMF-ZJ03		LOT05LCMFZJ03	4
Configuration tool	Configuration data cable	 Model: SLC-R4-U		LOTSLCADUSB15	1
Cable	4 core 3 m main signal cable (single end)	Model description  Cable series: SLCAD Cable cores: 4: 4 core Main signal cable: JX Length: 03: 3m	[01]	LOTSLCADJX03	2
	4 core 6 m main signal cable (single end)			LOTSLCADJX06	
	4 core 10 m main signal cable (single end)			LOTSLCADJX10	
	4 core 30 m main signal cable (single end)			LOTSLCADJX30	
	8 core 3 m main signal cable (single end)	Model description  Cable series: SLCAD Cable cores: 8: 8 core Type: ZX: Main signal Length: R15: 0.15m	[01]	LOTSLCADZX03	2
	8 core 6 m main signal cable (single end)			LOTSLCADZX06	
	8 core 10 m main signal cable (single end)			LOTSLCADZX10	
	8 core 30 m main signal cable (single end)			LOTSLCADZX30	
	0.12m direct link (Black head)	CJ: Cross cascade R5: 0.5m	[01]	LOTSLCADZJR12	2
	0.15m direct link (Black head)			LOTSLCADZJR15	
	0.5m direct link (Black head)			LOTSLCADZJR5	
	1m direct link (Black head)			LOTSLCADZJ01	
	0.12m cross cascade (yellow, black head)	Cable cable degree can be customized(Sold separately)	[01]	LOTSLCADCJR12	2
	0.15m cross cascade (yellow, black head)			LOTSLCADCJR15	
	0.5m cross cascade (yellow, black head)			LOTSLCADCJR5	
	1m cross cascade (yellow, black head)			LOTSLCADCJ01	
	Tail end connector			LOTSLCADCT01	2

※Affected by product configuration and manufacturing process, the actual product size may be different, please refer to the actual product

Technical parameters

System parameters	
Project	Parameter
Safety standards	IEC61496-1, EN61496-1, GB/T19436-1(Type4 ESPE); IEC61496-2, EN61496-2, GB/T19436-2(Type4 AOPD); ISO13849-1 (PL _e , Cat.4); IEC62061, EN62061(SIL3) IEC61508, EN61508 (SIL3)
PHFd	3.17×10^8
MTTFd	312 years
Power protection	Power supply reverse/short circuit ground protection
Input/output protection	All inputs/outputs are shorted to power or ground protection
Optical axis spacing	7.5mm/15mm/30mm
Resolution	14mm/25mm/40mm
Synchronization mode	Optical/wire synchronization (optional depending on wiring method)
System startup time	5s
Response time	Reference selection table
Aperture degree (EAA)	$\pm 2.5^\circ$
Protection length	0.1~6m
Protection degree	IP65
Anti-interference	> 10, 000lxambient illumination
Temperature	Working temperature -10~55°C (no freezing)
Humidity	Maximum relative humidity 95% (no condensation)
Storage	Storage temperature -20~85°C, maximum relative humidity 95%
Vibration resistance	10-55Hz amplitude 0.7mm
Impact resistance	10g16ms 1000 times in the x,y,z direction

Emission parameters	
Project	Parameter
Supply voltage	24V $\pm$ 15%
Supply current	Max 150mA
Emit LED waves	Infrared LED (peak wave 940nm)

Receive parameters	
Project	Parameter
Supply voltage	24V $\pm$ 15%
Supply current	Max 150mA (excluding OSSD1 and OSSD2 load currents)
OSSD1 or OSSD2 Output type	2 NPN or 2 PNP
OSSD1 or OSSD2 Max load current	500mA
OSSD1 or OSSD2 Output residual voltage	Less than 3V
OSSD1 or OSSD2 Leakage current	Max 0.1mA
OSSD1 or OSSD2 Max capacitive load	0.1 μ F
Load connection resistance	Max 2.5 Ω
EDM input	Low level 0-3V, high level 10-30V
Reset input	Low level 0-3V, high level 10-30V

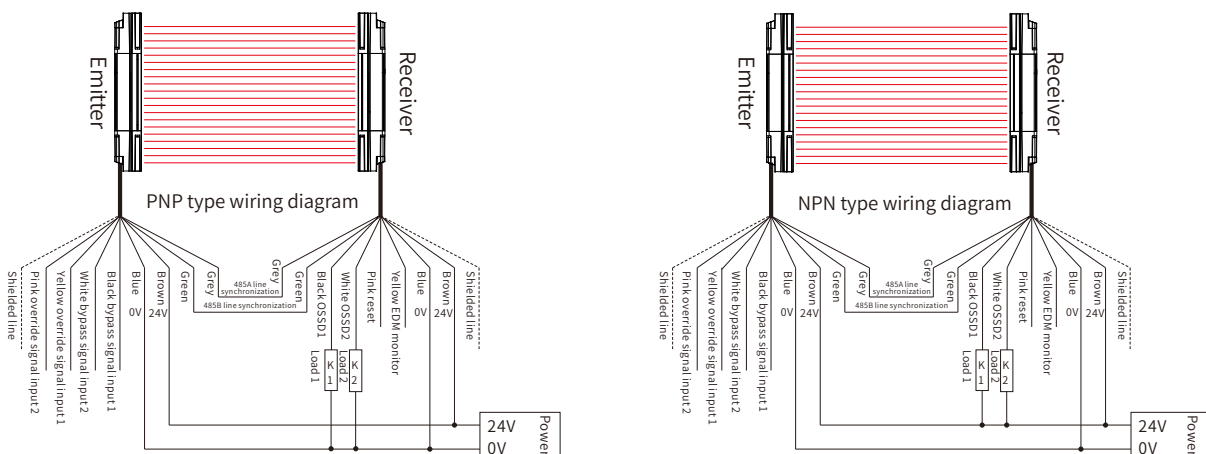
SLC-AD series safety light curtain interface definition

SLC safety light curtain adopts the direct appearance mode of fast connection 8 cores, and the transmission and reception signals are defined as follows:

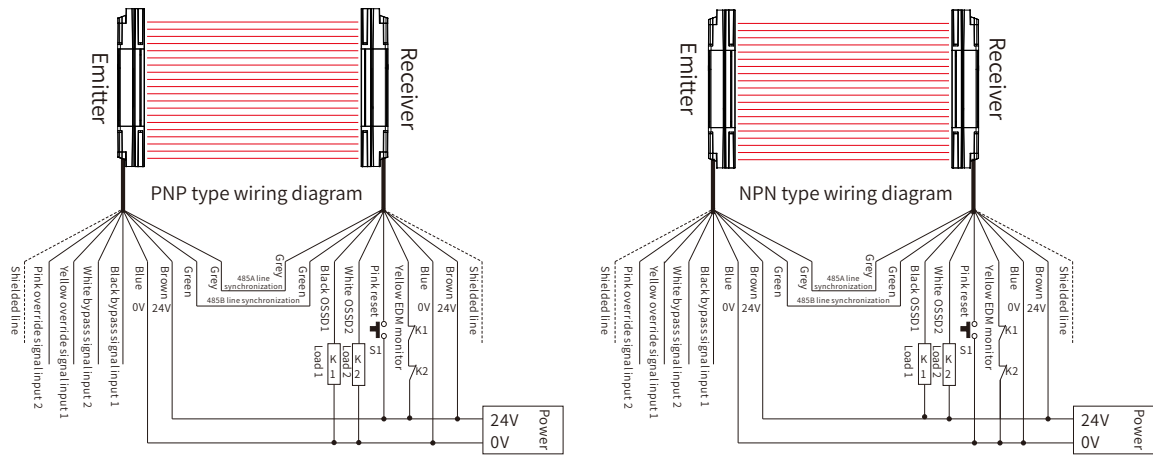
	Serial number	Cable color	Signal definition
Emitter	1	Brown	Direct current 24V
	2	Blue	0V
	3	Black	Enter 1 for the side communication number; When not in use, connect 0V
	4	White	Enter 2 for the side communication number; When not in use, connect 0V
	5	Yellow	Override signal input 1; When not in use, connect 0V
	6	Pink	Override signal input 2; When not in use, connect 0V
	7	Grey	485A line synchronization, RS485 signal A; When using line synchronization, it is connected to the received RS485 signal A (gray), and when not in use, it is suspended
	8	Green	485B line synchronization, RS485 signal B; When using line synchronization, it is connected to the received RS485 signal B (green), and when not in use, it is suspended
Receiver	1	Brown	Direct current 24V
	2	Blue	0V
	3	Black	OSSD1 light curtain safety output signal
	4	White	OSSD2 light curtain safety output signal
	5	Yellow	EDM external load monitoring signal, connected to the load NC contact (see application diagram for wiring diagram); When there is no EDM function, 0V is connected
	6	Pink	MR interlock reset, suspended when not in use or connected to 0V
	7	Grey	485A line synchronization, RS485 signal A; When using line synchronization, it is connected to the transmitted RS485 signal A (gray), and when not in use, it is suspended
	8	Green	485B line synchronization, RS485 signal B; When using line synchronization, it is connected to the received RS485 signal B (green), and when not in use, it is suspended

The SLC series light curtains are available in a variety of models: basic, with interlock reset and EDM monitoring and full-featured models. Each model can be optical or line synchronized. The wiring diagrams for various applications are as follows:

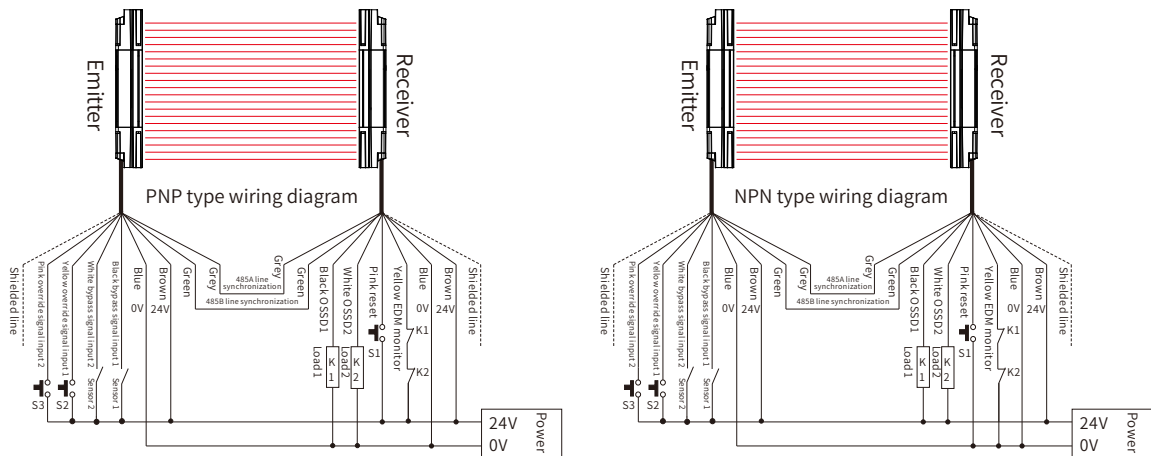
SLC basic light curtain line synchronous wiring diagram



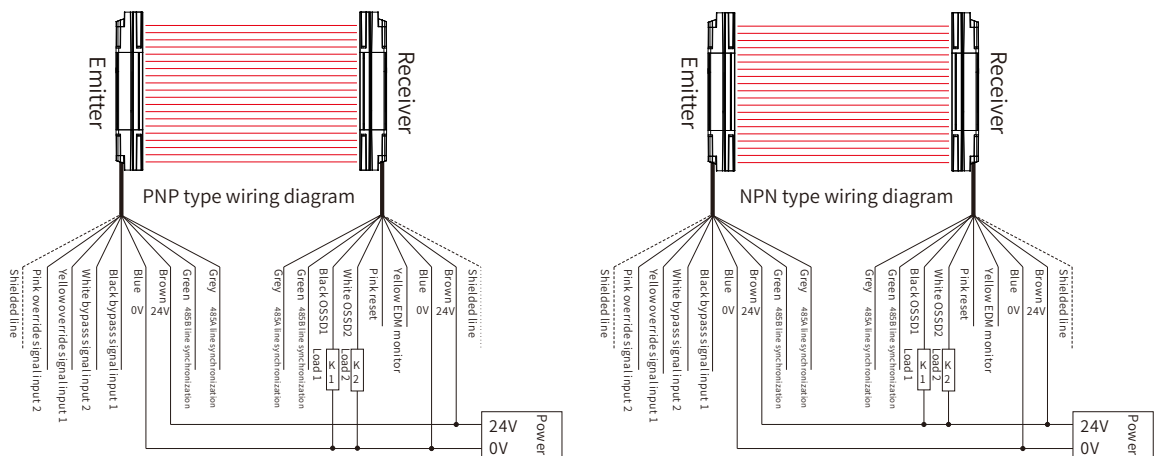
SLC enhanced light curtain line synchronous wiring diagram



SLC full-function raster wire synchronous wiring diagram



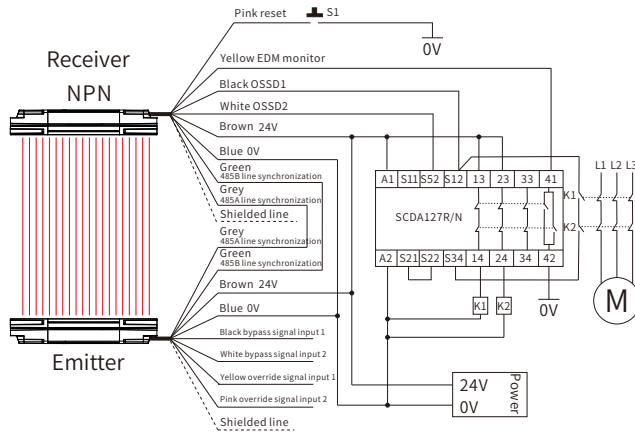
SLC basic light curtain optical synchronization wiring diagram



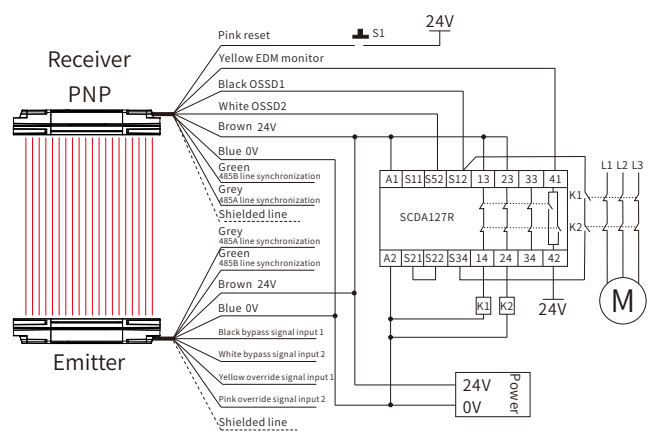
※Devices connected to OSSD, such as safety relays or contactors, should not react to these temporary, self-diagnostic shutdown signals.

Wiring diagram for typical applications of SLC-AD series safety light curtain

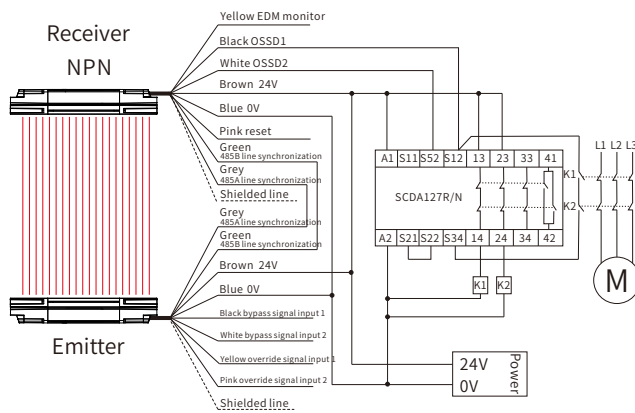
SLC□□-□□□□AH line synchronous connection safety relay



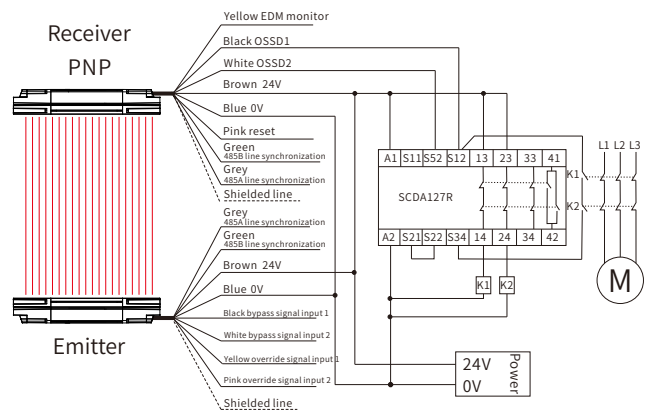
SLC□□-□□□□AH optical synchronous connection safety relay



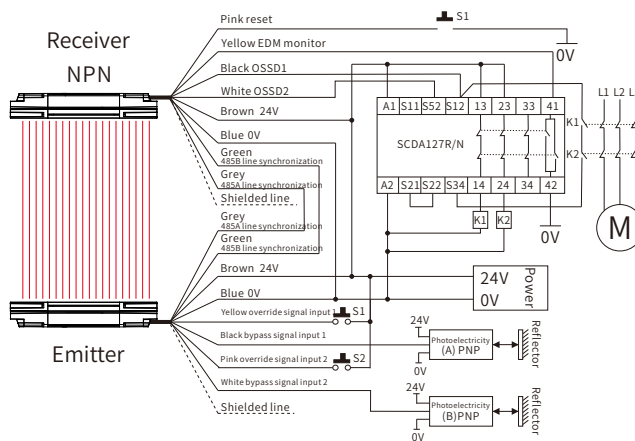
SLC□□-□□□□AD line synchronous connection safety relay



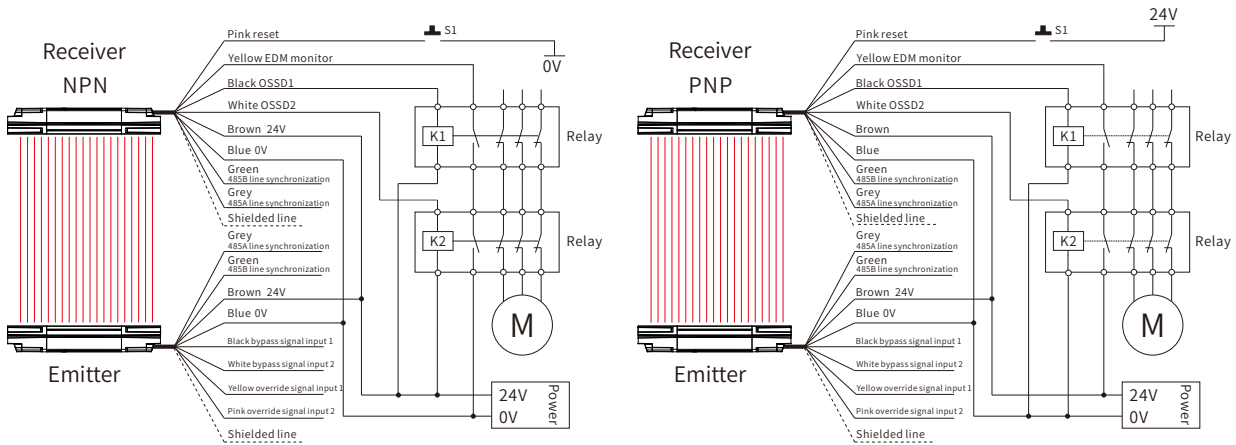
SLC□□-□□□□AD optical synchronous connection safety relay



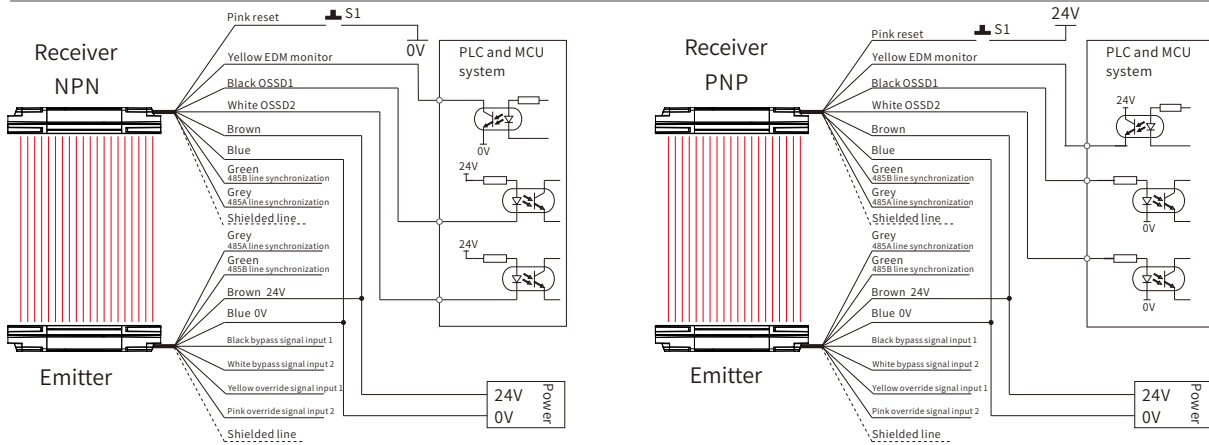
SLC□□-□□□□AM line synchronous connection safety relay



SLC□□-□□□□AH optical synchronization with dual relay

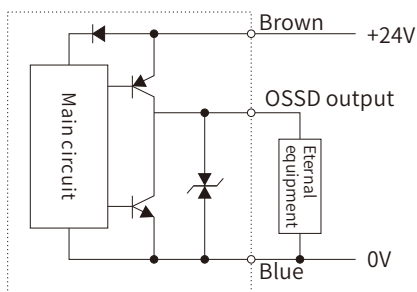


SLC□□-□□□□AH optical synchronization with PLC

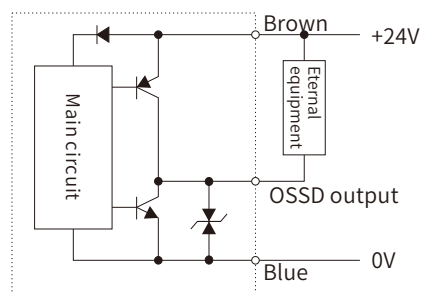


SLC-AD series security light curtain input and output diagram

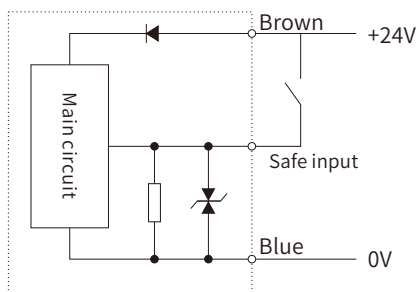
OSSD output circuit (PNP type)



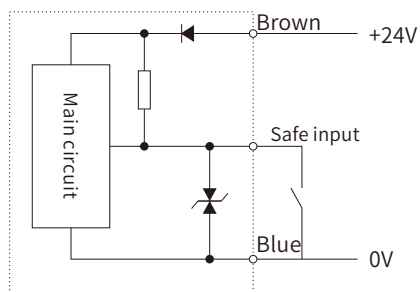
OSSD output circuit (NPN type)



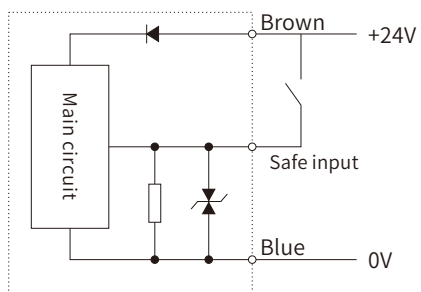
EDM and reset safety input circuits (PNP type)



EDM and reset safety input circuits (NPN type)



Bypass and override safety input circuits



Display and common troubleshooting

Shading or fault causes the SLC light curtain OSSD output to go from on to off and send a stop signal to the protected machine. Each sensor provides diagnostic error codes to assist in determining the cause of downtime. Fault codes make it easy to identify problems encountered in operation. During shutdown, the red indicator of the receiving unit flashes, and the 4-digit LED (D1-D4 as shown in the figure below) displays the corresponding shutdown fault cause.

Recovery process:

To recover from the locked state, all errors must be corrected and a single sensor reset must be performed following the following process.

Receiver reset:

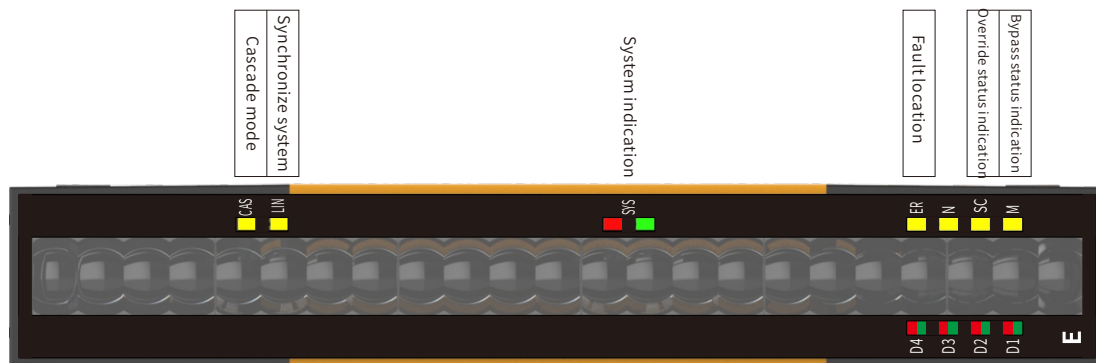
Power off the sensor and wait 30 seconds before turning it on.

Transmitter reset:

Power off the sensor and wait 30 seconds before turning it on.

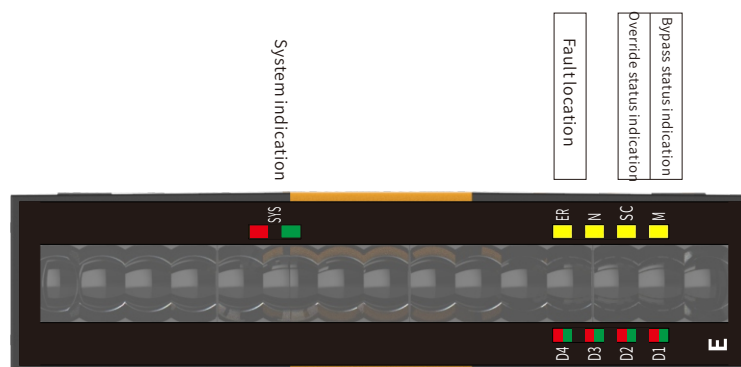
◆ Launch display and fault indication

The emission section panel displays three components: system indication, function indication, and illuminated status or fault indication. The following illustration is displayed:



Combined use
Green light is a glowing indicator
Red light indicates a fault

7.5mm pitch 15 optical axes, 15mm pitch 8 optical axes, 30mm pitch 4 optical axis light curtain panels are shown below, and other models of light curtain panels are circled above



Combined use
Green light is a glowing indicator
Red light indicates a fault

Emission function status indication			
LED position	Working mode	LED status	Status description
CAS	Cascade mode	Off	Raster operating in stand-alone mode
		On	Raster operating in cascade mode
LIN	Synchronous mode	Off	Raster operating in optical synchronization mode
		On	Raster work online synchronous mode
		Flash	Raster work online synchronous mode, line synchronization signal loss
M	Bypass status indication	Off	Bypass input condition not met
		On	Bypass input conditions met
SC	Override status indication	Off	Override input condition not satisfied
		On	Override input condition satisfied
N	N/A	Off	N/A
		On	N/A
ER	Fault location	Off	Transmitter indication
		On	Receiver indication

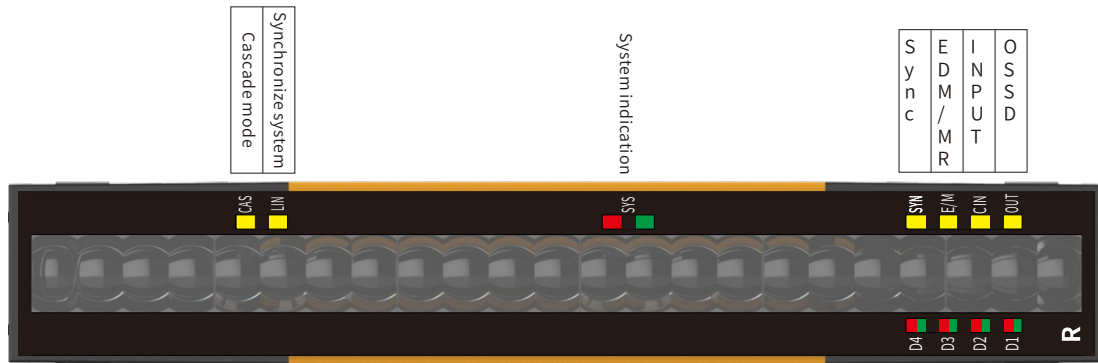
Emission fault indication and troubleshooting				
System Indicator Lights		Fault indicating area (red light)	Fault cause and troubleshooting method	
SYS(red)	SYS(green)	D4 D3 D2 D1		
Off	On	Off Off Off Off	Works fine	
On	Off	Off Off Off Off	Check receiver working status	
On	Off	Off Off Off On	Hardware failure, return to factory repair	
On	Off	Off Off On Off	Hardware failure, return to factory repair	
On	Off	Off Off On On	Hardware failure, return to factory repair	
On	Off	Off On Off Off	Hardware failure, return to factory repair	
On	Off	Off Off Off On	Voltage error, check the supply voltage	
On	Off	Off Off On Off	Line sync signal loss, check line sync line connection	
On	Off	Off Off On On	Cascade error, check the cascade line connection	
On	Off	Off On Off Off	Cascaded channels exceeds 320, re-cascading	
On	Off	On On On On	When using the host computer to set parameters, exit abnormal, parameters set again	

Legend:

- Light off
- ◐ Light flashing
- Light on

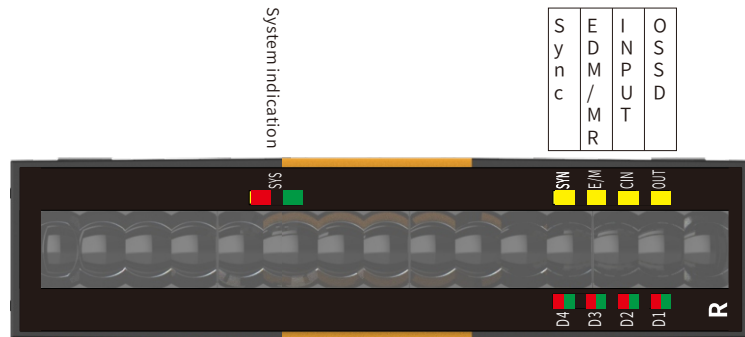
◆ Receiver display and fault indication

The receiver section panel displays three components: system indication, function indication, and illuminated status or fault indication. The following illustration is displayed:



Combined use
Green light is the light receiving indicator
Red light indicates a fault

7.5mm pitch 15 optical axes, 15mm pitch 8 optical axes, 30mm pitch 4 optical axis light curtain panels are shown below, and other models of light curtain panels are circled above



Combined use
Green light is the light receiving indicator
Red light indicates a fault

Receiver the feature status indication			
LED position	Working mode	LED status	Status description
CAS	Cascade mode	Off	Raster operating in stand-alone mode
		On	Raster operating in cascade mode
LIN	Synchronous mode	Off	Raster operating in optical synchronization mode
		On	Raster work online synchronous mode
		Flash	Raster work online synchronous mode, line synchronization signal loss
OUT	Output indication	Off	Raster no output
		On	Raster with output
		Flash	Output fault
CIN	Cascading input indications	Off	Cascade No Input
		On	Cascading with input
		Flash	Inconsistent cascading inputs

Receiver the feature status indication			
LED position	Working mode	LED status	Status description
E/M	EDM/MR	Off	EDM error
		On	EDM normal
		Flash	Wait for the reset signal input
SYN	Sync header indication	Off	Sync header identifies the exception
		On	Sync header recognition is normal
		Flash	Operates in bypass/override mode

Receiver fault indication and troubleshooting			
System Indicator Lights		Fault indicating area (red light)	Fault cause and troubleshooting method
SYS(red)	SYS(green)	D4 D3 D2 D1	
On	Off		Works fine, obscured
Off	On		Works fine, light contact normally
Off	Flash		Works fine, light contact normally, fixed screen mode
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Hardware failure, return to factory repair
On	Off		Voltage error, check the supply voltage
On	Off		Line sync signal loss, check line sync line connection
On	Off		Cascade error, check the cascade line connection
On	Off		Cascaded channels exceeds 320, re-cascading the light curtain
On	Off		Output 1 overload error, check the output load, and power off to restart
On	Off		Output 1 terminal voltage error, check the output wiring, and power off to restart
On	Off		Output 1 error, check the output wiring, and power off and restart
On	Off		Output 2 overload error, check the output load, and power off to restart
On	Off		Output 2 terminal voltage error, check the output wiring, and power off to restart
On	Off		Output 2 error, check the output wiring, and power off to restart
On	Off		Output error, check the output wiring, and power off to restart
On	Off		EDM error, check the output wiring, and power off to restart
On	Off		Fixed the light contact at the shield and check the light curtain working environment
On	Off		Light interference, check the light curtain working environment
On	Off		When using the host computer to set parameters, exit abnormal, parameters set

Legend:

- Light off
- Light flashing
- Light on

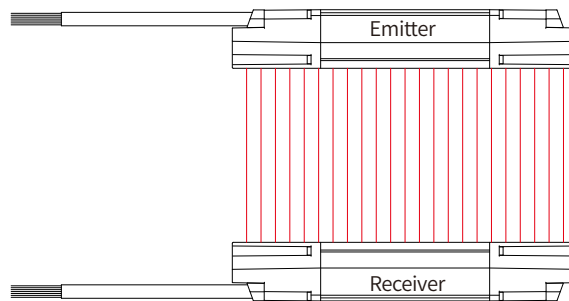
Feature selection and configuration

◆ Line synchronization and optical synchronization are configured

SLC series light curtain can be automatically identified according to the wiring method using optical synchronization mode or line synchronization mode. If the communication line between the transmitter and receiver is connected correctly, the light curtain works in line synchronization mode, otherwise the operation is in optical synchronization mode.

Light synchronization

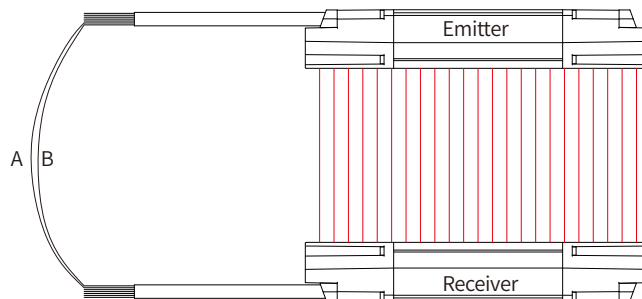
By default, the optical synchronization method is used for the light curtain power-on. The transmitter emits light according to its own timing sequence, and after the receiver recognizes the optical signal of a specific frequency of the transmitter, it starts to judge the optical reception signal of other channels.



Advantages of optical synchronization: simple wiring, transmitter and receiver can be independently connected for power supply, no wiring is required.

Line synchronization

In line synchronization mode, the timing is controlled by the receiver, and the receiver sends the sync head signal to the transmitter through the sync line, and after the transmitter detects the sync head signal, it starts to emit light according to a specific timing. Advantages of line synchronization: strong anti-optical interference ability.



◆ Interlock and reset

The interlock function is a function that prevents OSSD from automatically changing from the off state to the on state. If the SLC applies an interlock function, it can prevent unintentional start-up or restart of the machine.

You can decide whether to enable the interlock function when the machine is started or restarted, or during these two periods.

Initiating mode	
Start	☒ Manual ☐ Automatic
Restart	☒ Manual ☐ Automatic

"Startup" and "Restart" refer to the following:

Start-up: The light curtain powers on for the first time

Reboot: OSSD returns from the shutdown state to the open state (except startup)

Startup mode

Auto-start mode: The interlock function is invalid, and the SLC automatically starts operation without resetting. At startup, if the SLC detects that there is no disturbance in the detection area, OSSD automatically enters the on state.

This mode can only be used on machines that can only be selected or approached by a protected area, or on control systems where safety-related parts other than SLC, such as safety relay modules, can be otherwise ensured.

Manual start mode: The interlock function is active, and the SLC does not start operation until it receives the reset operation. At startup, OSSD remains shut down (interlocked). When the SLC detects that there is no interference in the detection area, a reset operation must be performed to get the machine started. Because after performing the reset operation, OSSD enters the open state and the interlock state is aborted. This prevents accidental/unintentional start-up of the machine or mechanism.

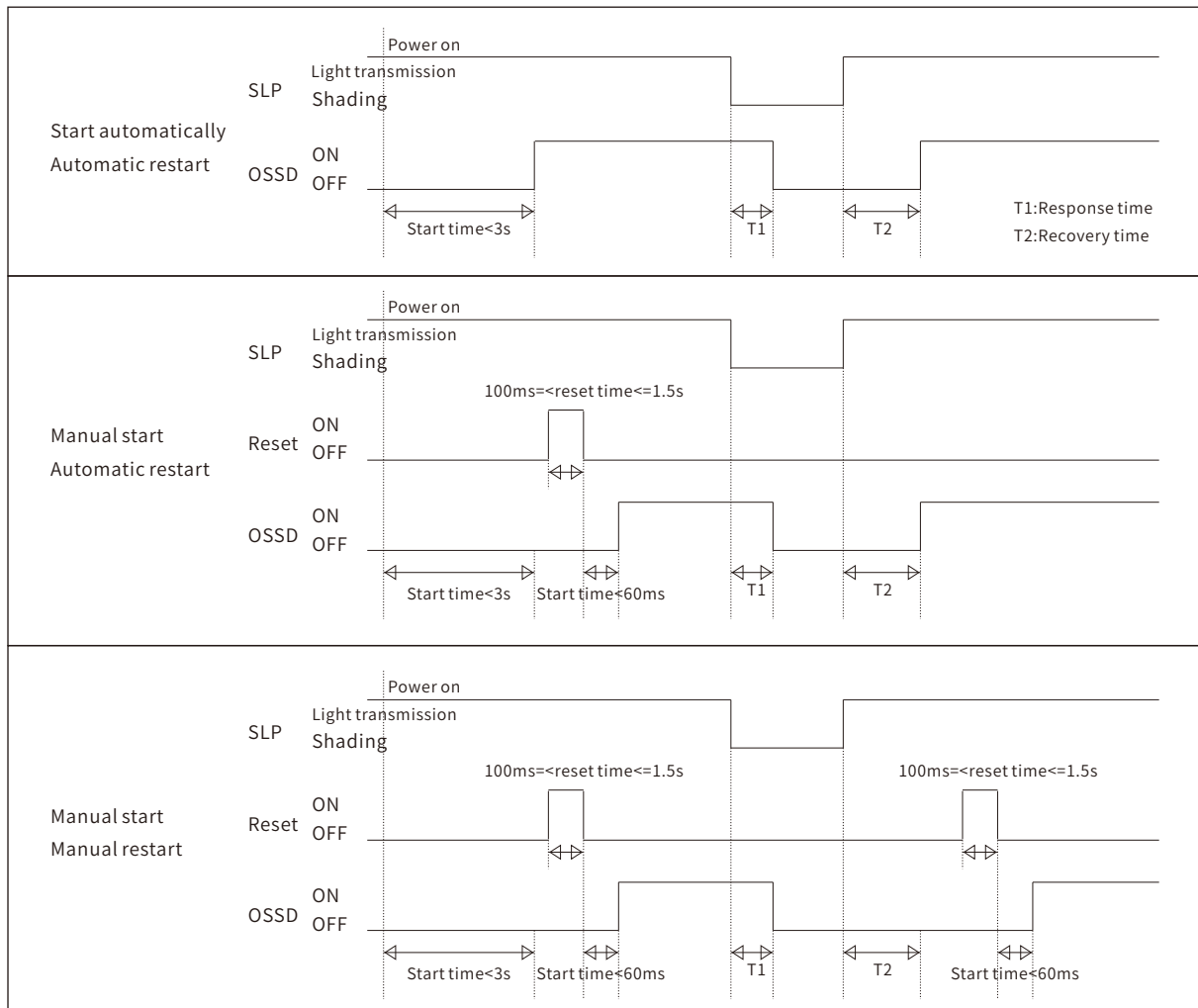
Restart mode

Auto reset mode: The interlock function is invalid, and the SLC automatically starts operation without reset. During restart, if an obstacle detected by SLC is removed from the detection area, OSSD automatically enters the enabled state.

This mode can only be used on machines that can only enter or approach the hazardous area through protected areas, or on control systems where safety-related parts other than SLCs (e.g. safety relay modules) can be ensured in an official way.

Manual reset mode: The interlock function is active, and the SLC does not start operation until it receives the reset operation. Even if obstacles detected by SLC are removed from the detection area, OSSD remains closed (interlocked). When the SLC detects that there is no interference in the detection area, a reset operation must be performed to get the machine started. Because after performing the reset operation, the OSSD enters the open state and the interlock state stops.

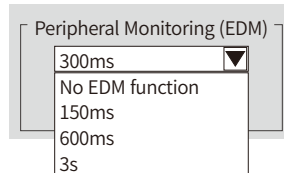
Start and restart interlock combinable modes:



◆ External Device Monitoring (EDM) function configuration

External Device Monitoring (EDM) is used to monitor whether the actuator connected to the OSSD output of the SLC is performing the appropriate operation, and this function can detect if a relay or contactor contact has a sticking failure.

The parameters related to the EDM function can be set by the host computer software.



◆ Fixed shielding and floating shielding

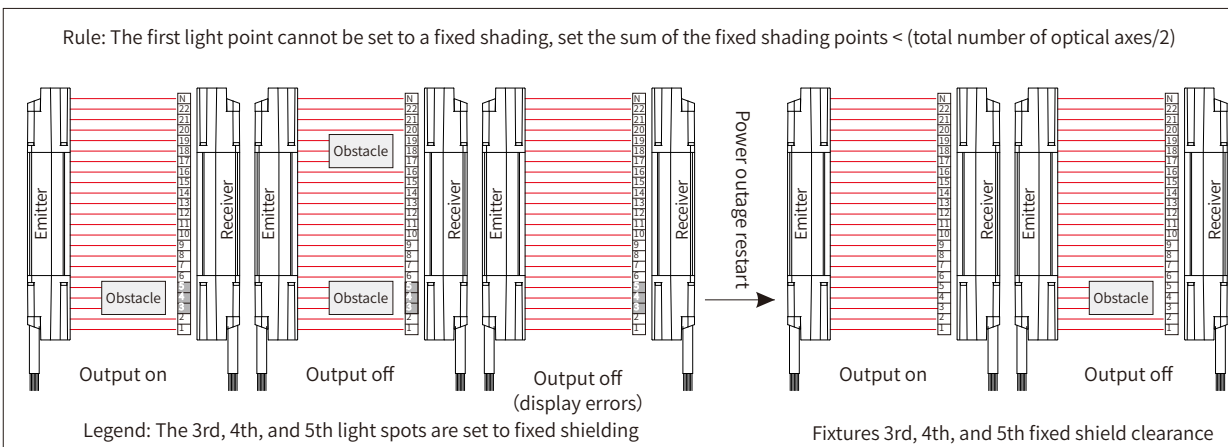
Fixed shielding

Under normal operating conditions, OSSD remains on when SLC does not detect occlusion in the detection area, and OSSD enters the off state when SLC detects occlusion in the detection area.

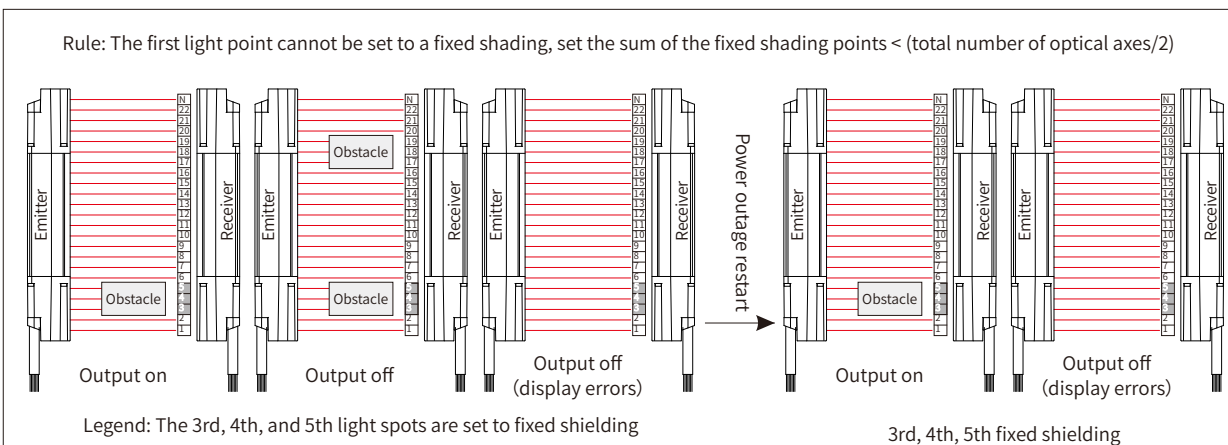
On the other hand, if fixed shielding is enabled for one or more optical axes, OSSD remains on when SLC detects occlusion on that optical axis or occlusion is not detected in the detection area outside that optical axis.

Fixed masking has two modes:

Automatic clearing: If all the shielded areas are light contacted, the shielded area is cleared after the power is turned off and the normal light mode is restored.



Do not clear: The shielded area is always in effect.



The selection of fixed shielding optical axes can be set by the host computer software.

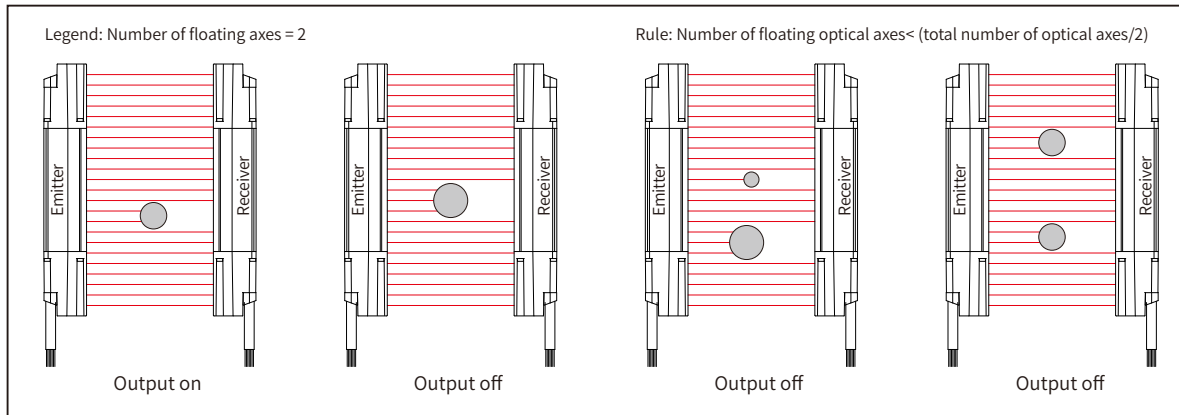


Floating shielding

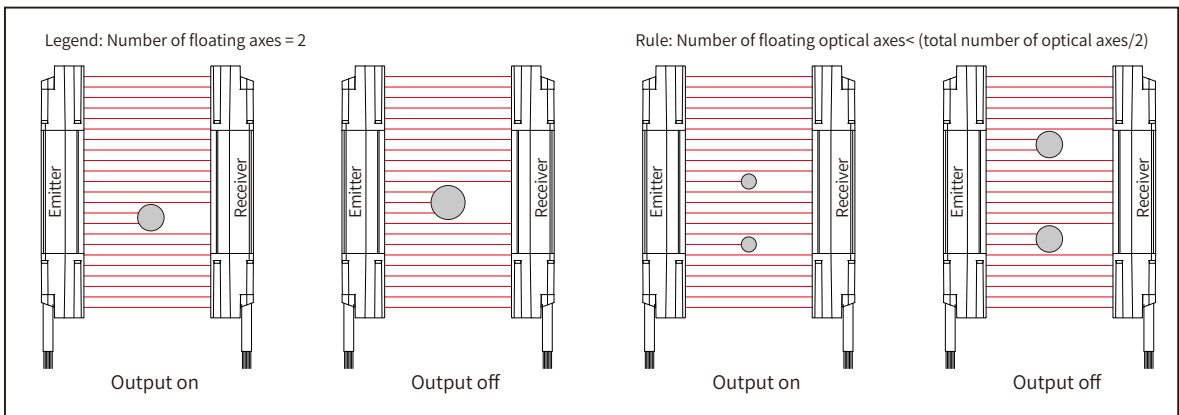
Under normal operating conditions, when the SLC detects occlusion in the detection area, the OSSD bursts into the off state. In reduced resolution mode, OSSD will only enter the off state when the number of optical axes occluded meets certain conditions.

There are two modes for reducing resolution:

Single object mode: the total number of optical axes in the occlusion area in the detection area is greater than or equal to the number of floating optical axes, or there are discontinuous shading areas, and the output is off.

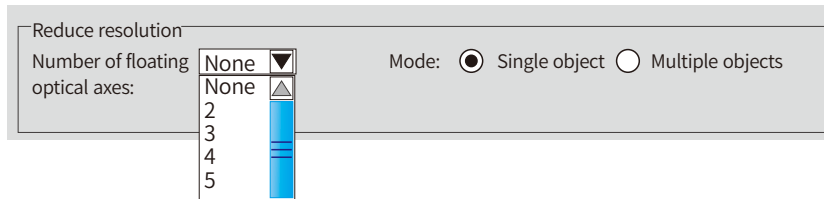


Multiple object mode: When the total number of occlusion optical axes in the detection area is greater than or equal to the number of floating optical axes, the output will turn off.



※Under the condition of shading to restore output, the detection area must be completely contacted.

The resolution reduction function can be set by the host computer software.



◆ Bypass function configuration

Bypass function is a function used to temporarily pause the SLC safety function when the SLC receives a signal from a bypass device, such as a sensor or switch. Before using this feature, the output of the bypass device must be connected to the bypass input terminal on the SLC.

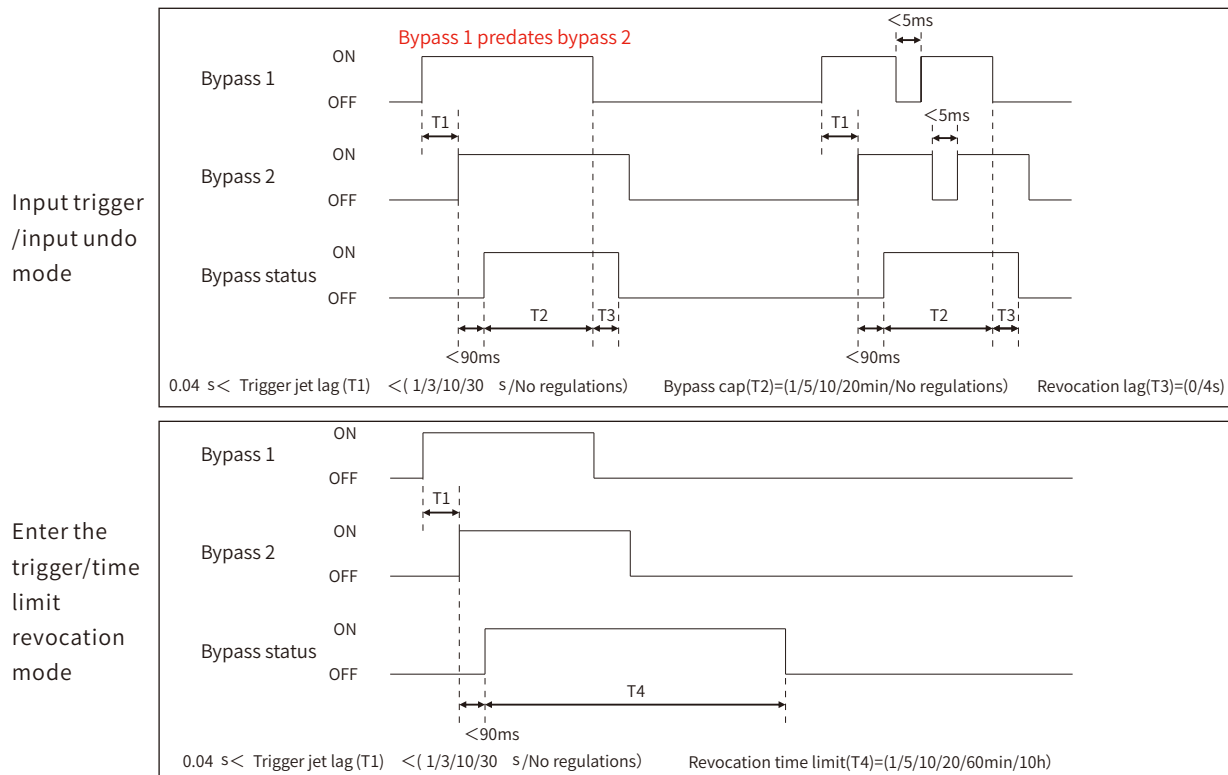
Bypass function input terminal is located on the transmitter. The SLC operates in "line synchronization" mode to use the bypass function.

Bypass device restrictions:

Bypass device output must be N.O. (normally on)

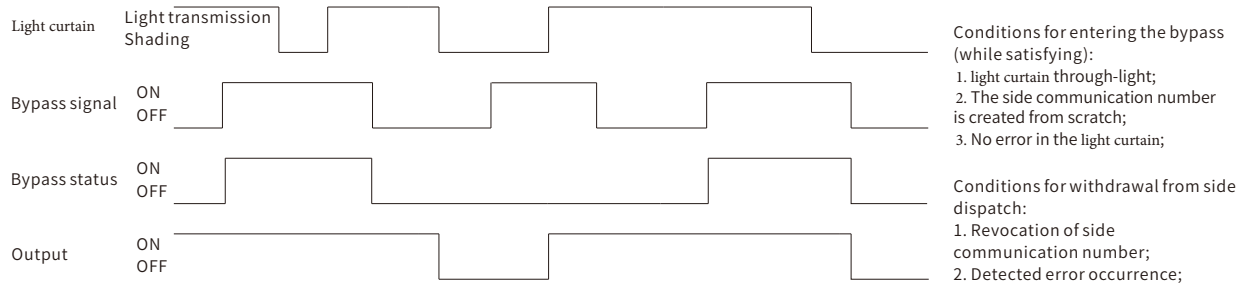
Bypass device output type is PNP and must have a drive current capability of 2 to 3mA

Bypass detection timing diagram



- ※1. If the bypass input 2 is turned on outside the T_1 range after the bypass input 1 is turned on, the SLC will not enter the bypass state and remain in normal operation.
- 2. If only bypass input 1 or bypass input 2 is turned off and turned on, SLC will not return to the bypass state. To return to the bypass state, the bypass inputs 1 and 2 must be turned off and qualified again.
- 3. If the SLC power is turned on at the same time as the bypass input 1 or 2 is turned on, the SLC cannot enter the bypass state. In this case, both bypass inputs must be turned off and the bypass condition must be met again.

Bypass function timing diagram



The parameters related to the bypass function can be set by the host computer software. For more information, see configuration software manual.

Bypass function

Mode: ☒ Enter Departure/Enter Revoke ☐ Enter Departure/Time limit withdrawal

Trigger jet lag(T1): ▼

Bypass cap(T2): ▼

Revocation lag(T3): ▼

Time limit for revocation(T4): ▼

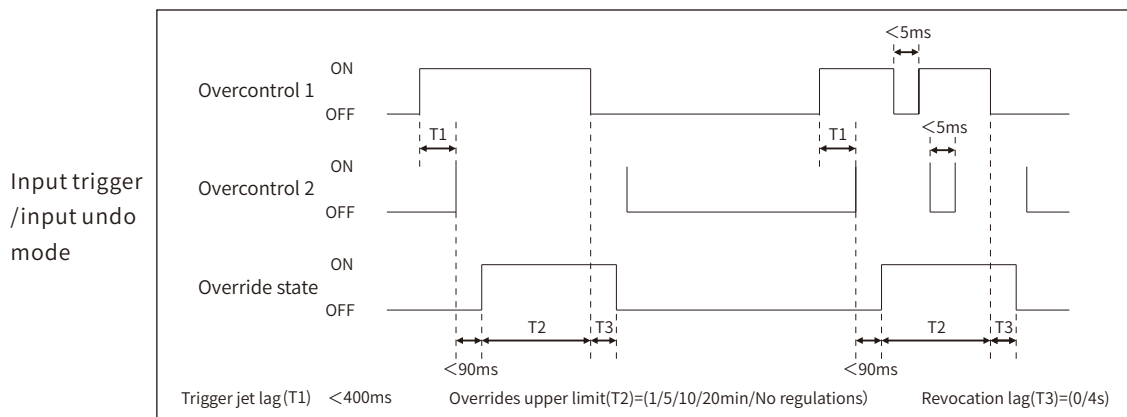
◆ Override feature configuration

If the bypass function is not active and there is flat disturbance in the SLC detection area, OSSD enters the shutdown state. The OSSD shutdown state will remain until the obstruction is removed.

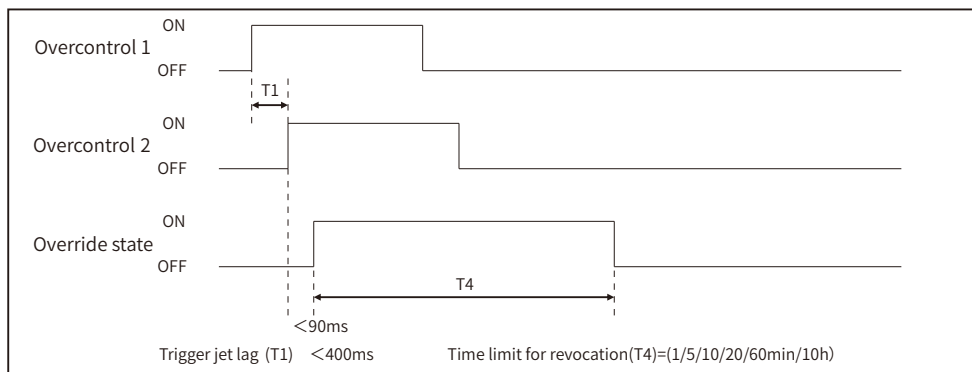
The start control function allows a temporary manual stop of the SLC safety function.

This function removes obstacles in the SLC detection area, (because the safety function of the SLC is temporarily disabled, the machine can be temporarily operated manually), the overload function input terminal is located on the transmitter, and the SLC works in "line synchronization" mode to have the override function.

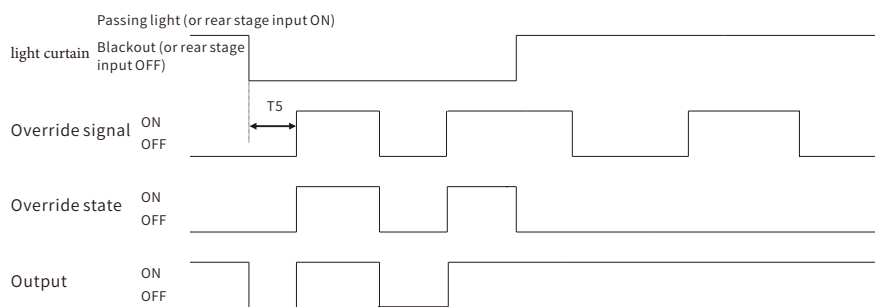
Overcontrol detection timing chart



Enter the
trigger/time
limit
revocation
mode



Sequence diagram of override function



Conditions for entering the

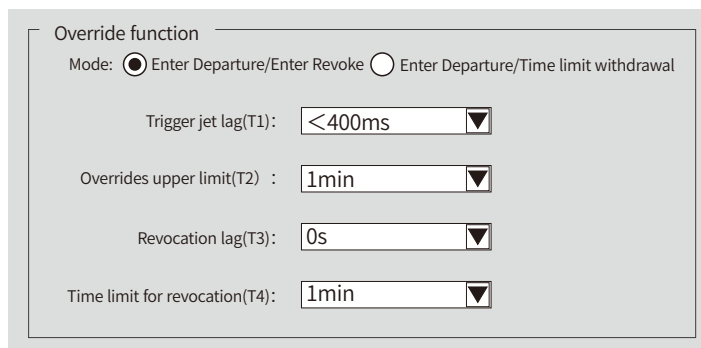
override (while satisfying):

1. light curtain shading or post-stage no input time > T5;
2. The override signal is created from scratch;
3. No error in the light curtain;

Conditions for exiting override:

1. Override signal revocation;
2. light curtain night transmission and post-stage input are required;
3. Detected error occurrence;

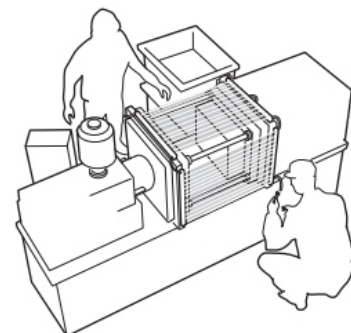
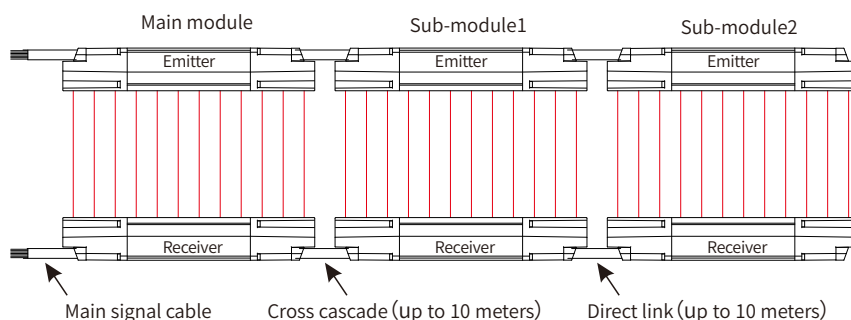
The parameters related to the override function can be set through the upper computer software. Please refer to the configuration software manual for detailed override parameter settings.



◆ Multiple sets of light curtain cascades

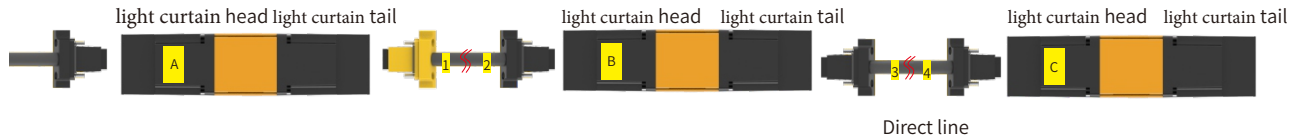
SLC series light curtain can be used individually or in cascade serials. Up to 3 sets of light curtain cascades can be used. When used cascade, it is necessary to use a special connecting line connection,

The first gate is powered on to automatically identify the cascade mode.

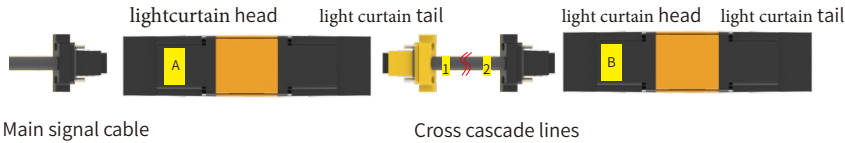


SLC-AD SERIES SAFETY LIGHT CURTAINS

◆ Three groups of cascading methods



◆ Two sets of cascading methods



※The position of the cable relative to the cascade combination cannot be replaced; The positions of the A, B, and C gratings are interchangeable, but the light curtain head and tail direction needs to be the same as the figure above. The main signal line is black at only one end; The cross cascade is a yellow head at the end and a black head at the other end; The straight line has black ends at both ends.

Merit:

Prevents optical interference between connected SLC gratings

Simplify wiring, use special cables; cascade light curtain can be connected end to end Limit:

Up to 3 sets of light curtain cascade use;

The total number of optical axes of cascaded gratings cannot exceed 320 optical axes;

The length of a serial cable must be less than 10m. When connecting three modules in series, the total length of the two cables must be less than 20m.

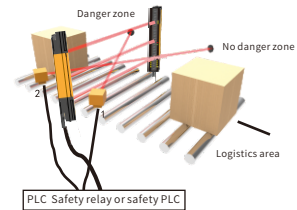
◆ Feature settings

For more information about the function settings, see Configuration Software Manual.

SLC-AD Safety Light Curtain Application Guide

Transmitter 2 sensor shielding

Conveyor material handling bypass arrangement using two sensors, the sensor layout is "X" like (the intersection point must be on the hazardous side), and some logic units require blocking the sensors in a characteristic order. This "X" style must be asymmetrical when order is important. For pairwise use of sensor reflections that cause the bypass function to be incorrectly activated or cause useless offline, other sensing techniques, such as inductive sensors, may also be used.



The conveyor is shielded by 4 sensors

The conveyor material handling bypass arrangement uses four sensors, with two sensors mounted on the hazardous side and two on the non-hazardous side. The orientation 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.

※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 set using the software.

