

PRODUCT SELECTION BOOK



Shenzhen ESPE Technology Co.,Ltd

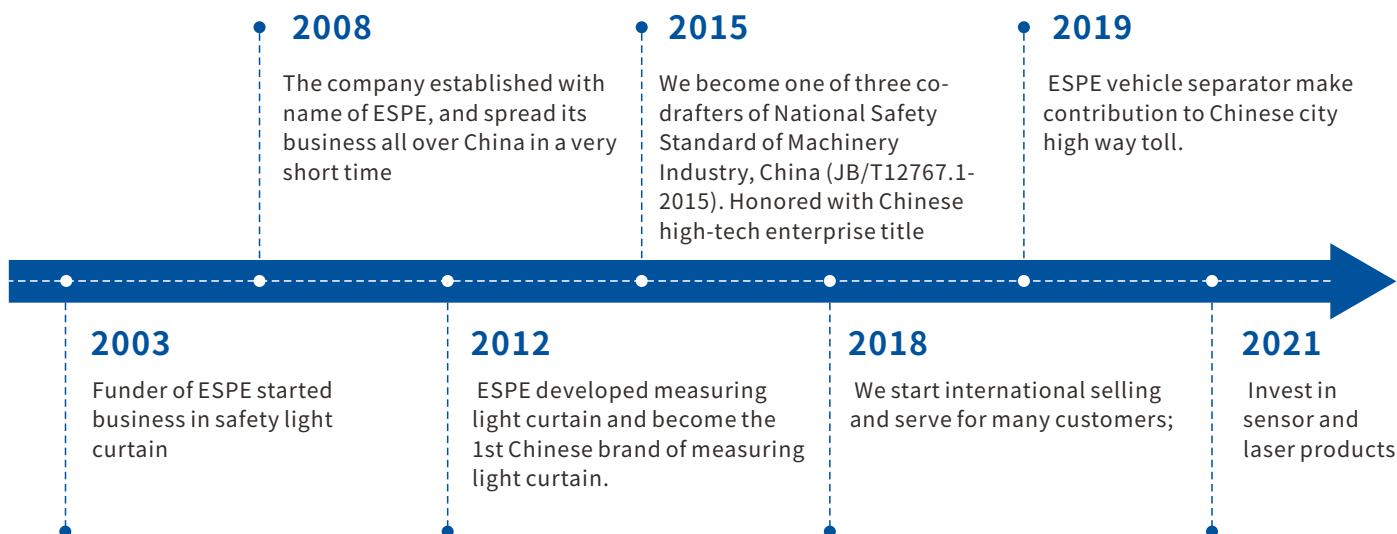
Company Profile

About ESPE

Shenzhen ESPE Technology Co., Ltd is a Hi-tech manufacturer, which specializes in R&D and production of infrared safety & measuring & detection light curtains. As China's pioneer since 2003, we became one of the three co-drafters of National Safety Standard of Machinery Industry, China , JB/T12767.1-2015. Our products are certificated with CE, CCC, FCC, Type 4 of European Norm, and widely applied in production safety protection and automated measuring, such as hand protection against dangerous machines, objects' automated volume and surface measuring & detection and vehicle detection, etc. Moreover, we are able to design and customize according to various application scenarios and requirements. Our ultimate goal is to produce the most safe, sensitive, accurate and lasting safety & measuring & detection light curtain in the world. With the spirit of innovation, entrepreneurship and win-win, we are ready to cooperate with customers from all over the world.



Development History



Company Culture

A solid red circle containing the word "Vision" in white text.

Vision

Being leading brand of industry to achieve a century-old enterprise.

A solid orange circle containing the words "Core value" in white text.

Core value

Integrity and pragmatism, innovation repay society.

A solid blue circle containing the word "Mission" in white text.

Mission

Aim to popularize industrial safety and lead the technology of sensor; Make machine more intelligent, production more automatic, and ensure safety of

Honor and certification

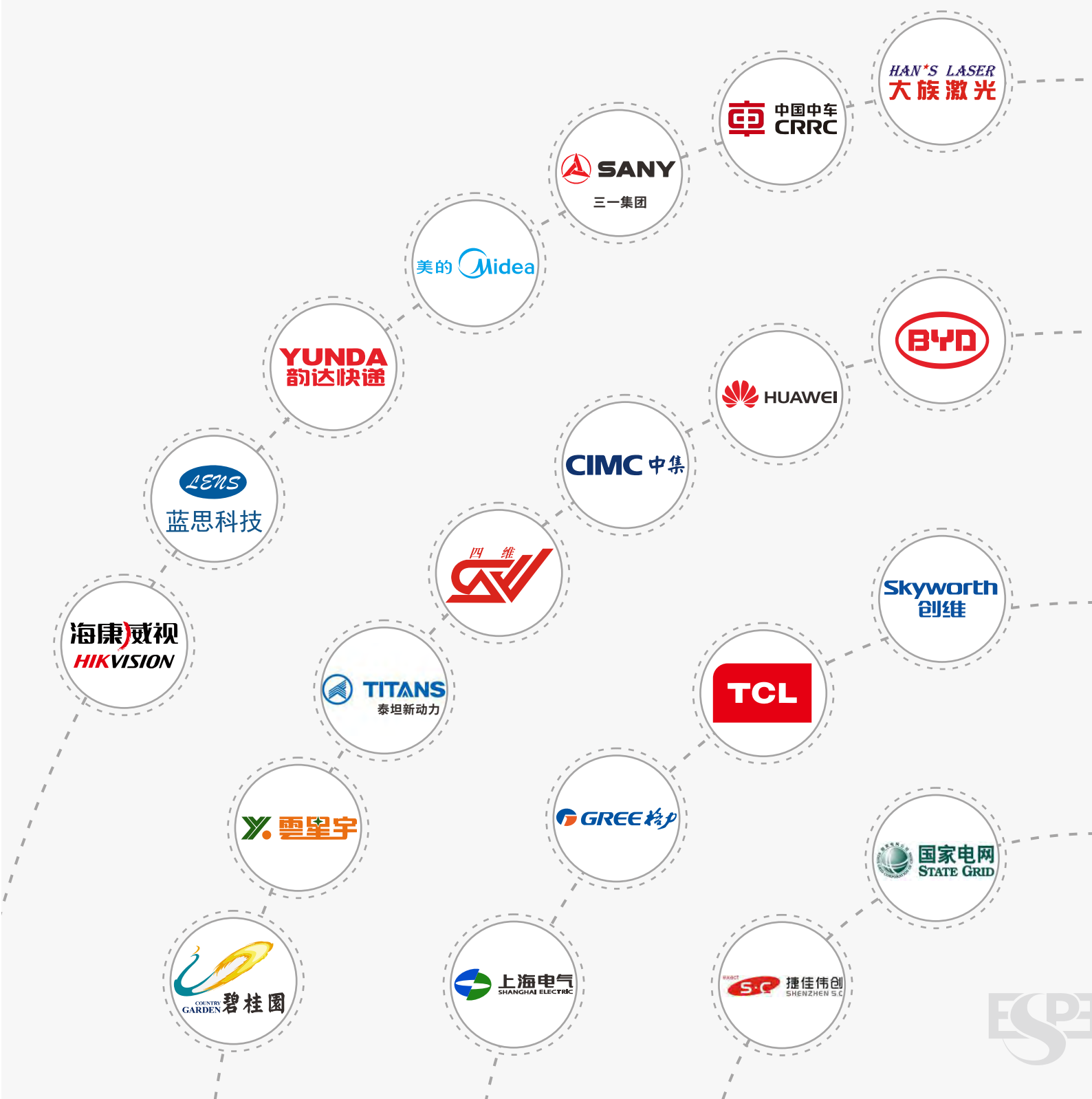
Shenzhen ESPE Technology Co., Ltd. become leading brand of Chinese safety light curtain. Now, we have own many certifications, such as ISO9001:2015, high technology enterprise, Type 4 of EU, CE (EU), GB4584-2007 and GBT4584-2022 etc.

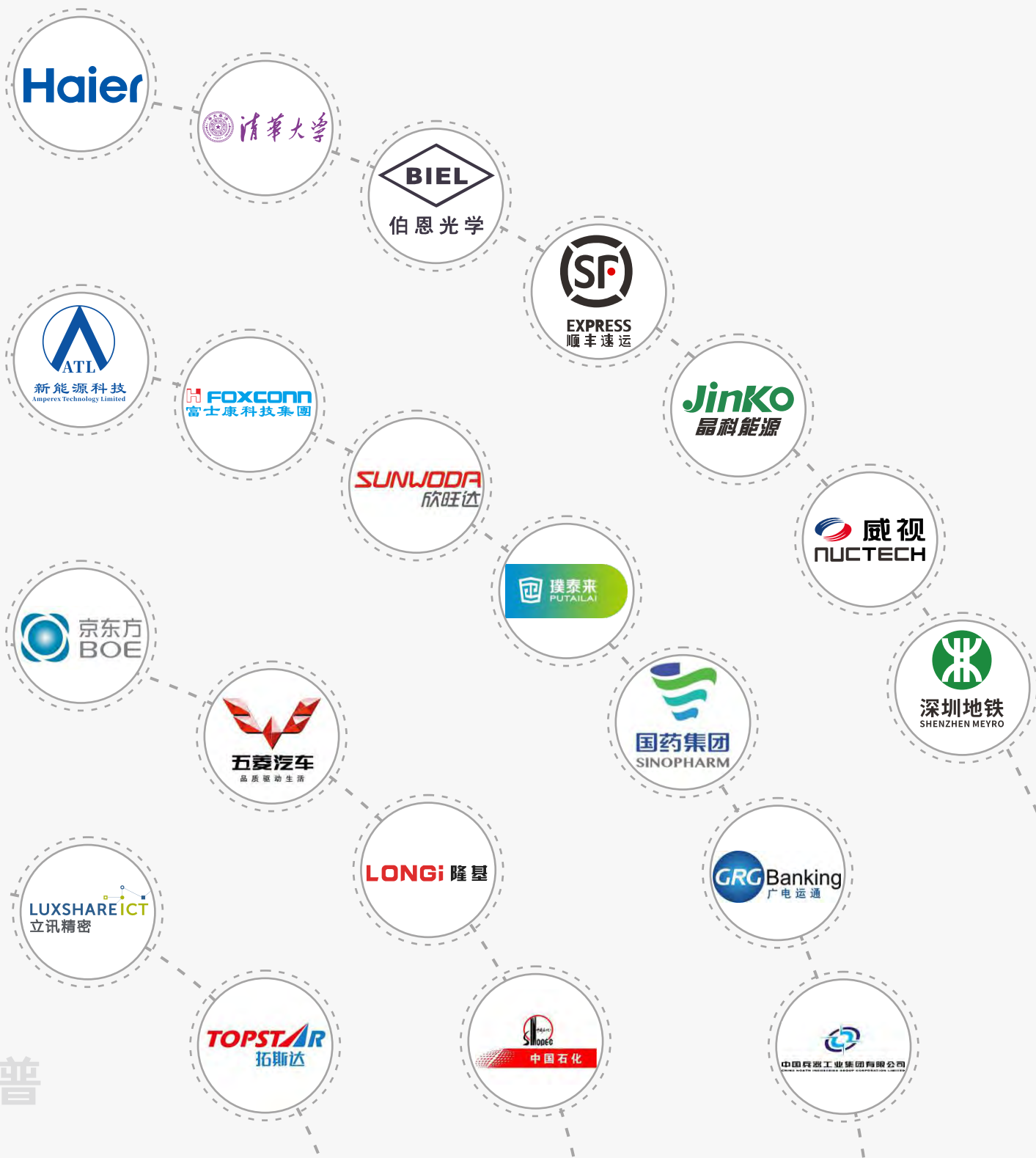
Besides, ESPE have become on of drafters of National Safety Standard of Machinery Industry, JB/T12767.1-2015) with their multi-patent.



Cooperative Partner

Setec (agent of SEYI), VT Automation, Компания АО НПК "ТЕКО"





ESE series

Type 4 safety light curtain

ESE safety light curtains are designed according to safety standards of European Type 4. It's high safety performance for internal MCU redundancy technology, periodic self-inspection and mutual-inspection functions, redundant and independent dual-loop output design.



Product characteristics

- Designed according to IEC61496 type 4 standard.
- With Type 4 certification.
- MCU redundancy design: adopt dual MCU technology
- Self-inspection and cross-inspection design: periodic double check to improve security.
- Independent and redundant dual-loop output: In case of risk caused by failure signal loop.
- Internal independent dual power supply: dual power supplies to supply power to the internal MCU respectively.
- Great performance in anti-electromagnetic interference: Above 4KV group pulse interference does not affect normal work.
- Wire synchronization technology: Avoid external infrared light interference effectively.



Technical parameter

Safety Light Curtain

Parameter of safety light curtain

Reference Standard	EN 61496-1 (Type 4 ESPE) EN 61496-2 (Type 4 AOPD) EN ISO 13849-1 (Category 4, PL e)
Safety level	Type 4
Supply voltage	DC10V~30V
Capacity	<5W
Beam space	10mm, 20mm
Resolution	15mm, 25mm
Beams	10mm Beam gap: 12, 16, 20.....72 20mm Beam gap: 8, 10.....72
Protective height	Protective height=(N-1)*beam gap, N is beam quantity.
Wave length	940nm
Response time	<10ms
Type of output (OSSD)	PNP/ NPN semiconductors, current<200mA, residual voltage: 1V max. leakage current: 1mA max. (Except voltage influenced by lengthen wire).
Protective circuit	Overload voltage protection, power supply reverse polarity protection, over current protection.
Sensing distance	0.1~5m, 0.1~10m
Anti-optical interference	10000Lux(I >5°)
Sensing method	Through-beam type
Synchronization	wire synchronization
Enclosure material	aluminum alloy
Enclosure rating	IP65
Housing cross-section	35*53mm
Vibration resistance	10 Hz ... 55 Hz, double amplitude each in X, Y and Z directions for 20times.
Ambient operating temperature	-10°C~55°C (with no freezing)
Storage temperature	-30°C~70°C (with no freezing)
Ambient operating humidity:	when temperature is 20°C, humidity max 85%

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

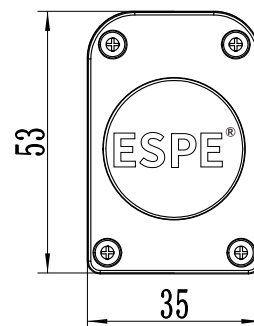
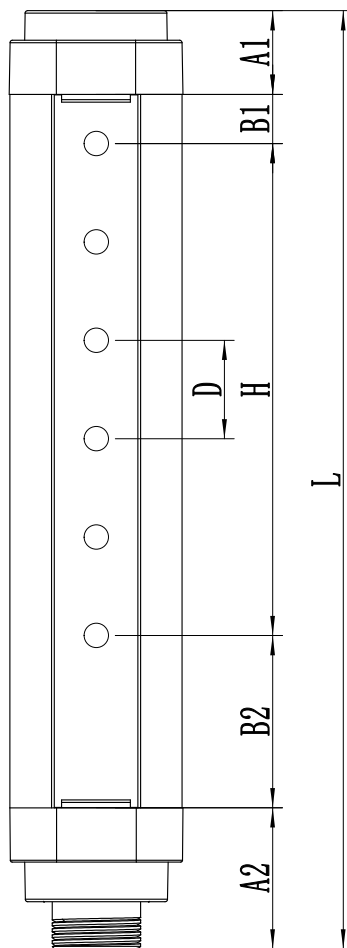
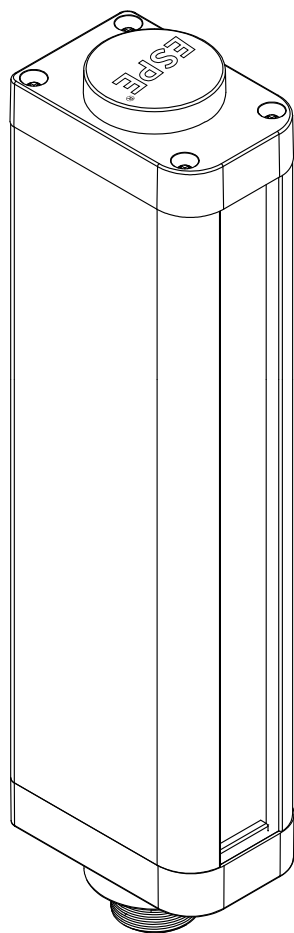
ESCL Series

ESR Series

Explanation of model number (For example: 20ESE300-16P-5)

20	ESE	300	—	16	L1	P	—	5
Beam gap	Model	Protective height		Beams	Mounting brackets	Output type		Sensing distance
10mm, 20mm	ESEModel	300mm		04, 06, 08, 10.....	L1 Bracket	N: NPN output P: PNP output		5: 0.1~5M 10: 0.1~10M

Size of product



ESE Series

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A1:Upper cap

A2:Bottom cap

B1: Upper stop-work range

B2: Bottom stop-work range

D:Beam gap (10mm/ 20mm)

H:Protective height

L:Total height

A1=17mm; A2=28mm

When D=10mm, B1=5mm; B2=30mm

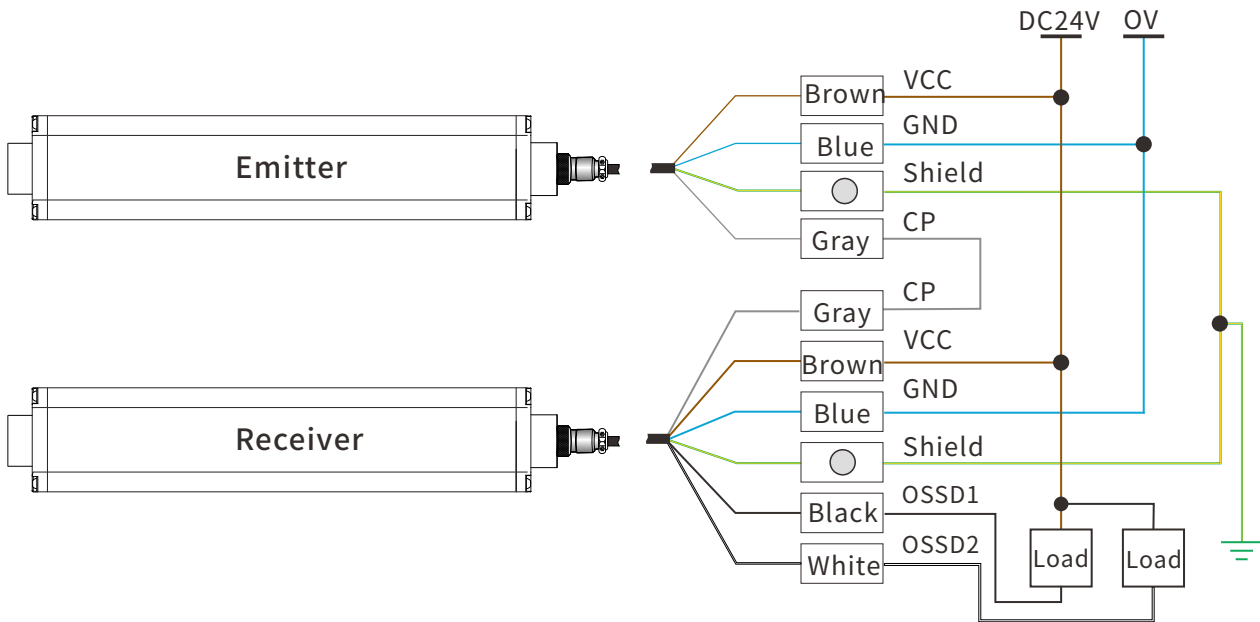
When D=20mm, B1=10mm; B2=35mm

$L(\text{total height})=A1+A2+B1+B2+H$

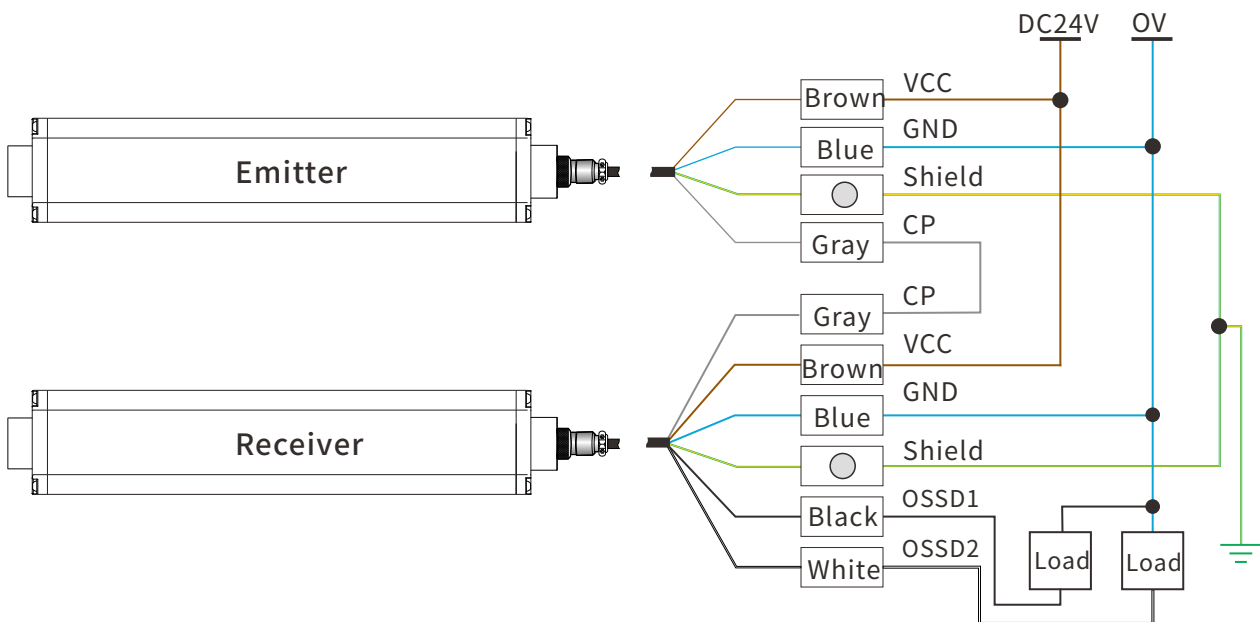
$H(\text{protective height})=(\text{beams}-1)*\text{beam space}$

Wire connection

NPN type



PNP type



ESE Series

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ELG Series

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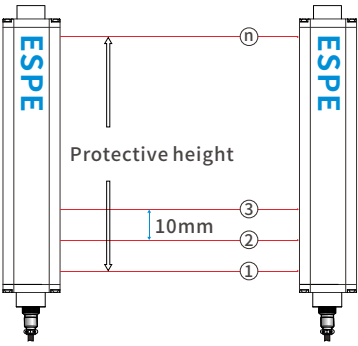
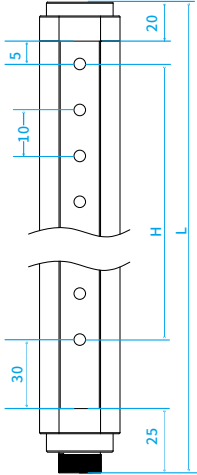
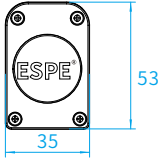
EFB Series

ESCL Series

ESR Series

ESE model selection sheet

- Beam space 10mm, resolution 20mm

Picture (2D)	Beams (n)	Protective height (mm)	Total height (mm)	NPN output	PNP output
   L(total height)=A1+A2+B1+B2+H H(protective height)=(beams-1)*beam space	16	150	230	10ESE150-16N	10ESE150-16P
	20	190	270	10ESE190-20N	10ESE190-20P
	24	230	310	10ESE230-24N	10ESE230-24P
	28	270	350	10ESE270-28N	10ESE270-28P
	32	310	390	10ESE310-32N	10ESE310-32P
	36	350	430	10ESE350-36N	10ESE350-36P
	40	390	470	10ESE390-40N	10ESE390-40P
	44	430	510	10ESE430-44N	10ESE430-44P
	48	470	550	10ESE470-48N	10ESE470-48P
	52	510	590	10ESE510-52N	10ESE510-52P
	56	550	630	10ESE550-56N	10ESE550-56P
	60	590	670	10ESE590-60N	10ESE590-60P
	64	630	710	10ESE630-64N	10ESE630-64P
	68	670	750	10ESE670-68N	10ESE670-68P
	72	710	790	10ESE710-72N	10ESE710-72P

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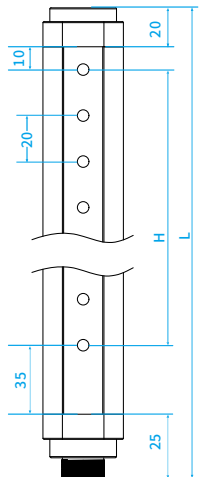
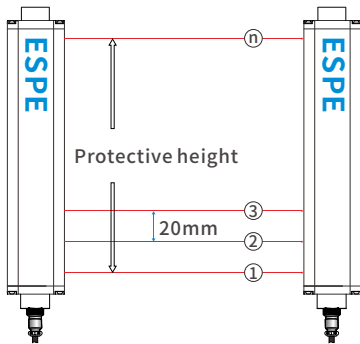
ESCL Series

ESR Series

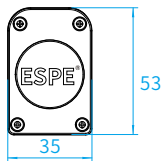
ESE model selection sheet

- Beam space 20mm, resolution 30mm

Picture (2D)



Front view



Top-view

$$L(\text{total height})=A1+A2+B1+B2+H$$

$$H(\text{protective height})=(\text{beams}-1)*\text{beam space}$$

Beams (n)	Protective height (mm)	Total height (mm)	NPN output	PNP output
8	140	230	20ESE140-08N	20ESE140-08P
10	180	270	20ESE180-10N	20ESE180-10P
12	220	310	20ESE220-12N	20ESE220-12P
14	260	350	20ESE260-14N	20ESE260-14P
16	300	390	20ESE300-16N	20ESE300-16P
18	340	430	20ESE340-18N	20ESE340-18P
20	380	470	20ESE380-20N	20ESE380-20P
22	420	510	20ESE420-22N	20ESE420-22P
24	460	550	20ESE460-24N	20ESE460-24P
26	500	590	20ESE500-26N	20ESE500-26P
28	540	630	20ESE540-28N	20ESE540-28P
30	580	670	20ESE580-30N	20ESE580-30P
32	620	710	20ESE620-32N	20ESE620-32P
34	660	750	20ESE660-34N	20ESE660-34P
36	700	790	20ESE700-36N	20ESE700-36P
38	740	830	20ESE740-38N	20ESE740-38P
40	780	870	20ESE780-40N	20ESE780-40P
42	820	910	20ESE820-42N	20ESE820-42P
44	860	950	20ESE860-44N	20ESE860-44P
46	900	990	20ESE900-46N	20ESE900-46P
48	940	1030	20ESE940-48N	20ESE940-48P
50	980	1070	20ESE980-50N	20ESE980-50P
52	1020	1110	20ESE1020-52N	20ESE1020-52P
54	1060	1150	20ESE1060-54N	20ESE1060-54P
56	1100	1190	20ESE1100-56N	20ESE1100-56P
58	1140	1230	20ESE1140-58N	20ESE1140-58P
60	1180	1270	20ESE1180-60N	20ESE1180-60P
62	1220	1310	20ESE1220-62N	20ESE1220-62P
64	1260	1350	20ESE1260-64N	20ESE1260-64P
66	1300	1390	20ESE1300-66N	20ESE1300-66P
68	1340	1430	20ESE1340-68N	20ESE1340-68P
70	1380	1470	20ESE1380-70N	20ESE1380-70P
72	1420	1510	20ESE1420-72N	20ESE1420-72P

ESE Series

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EB13 Series

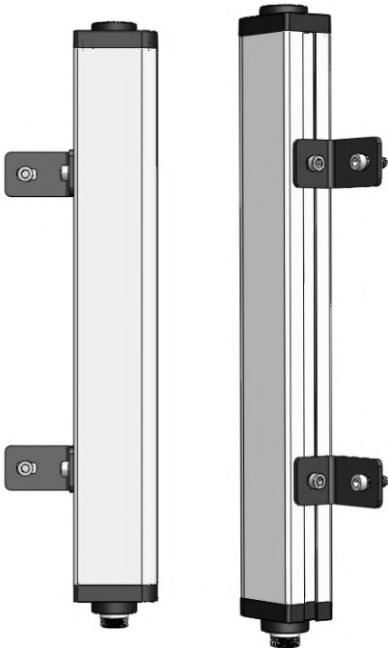
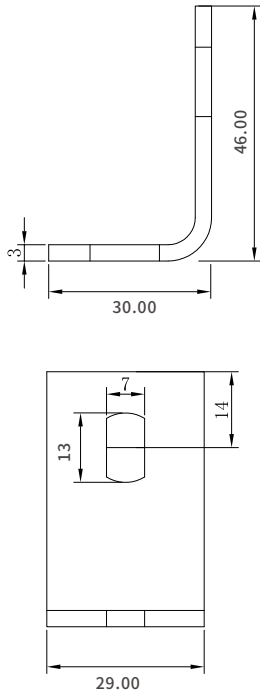
EFB Series

ESCL Series

ESR Series

Option for brackets

- L1 side-mounting type

Picture	Accessories	Size
	1. L1 brackets (4PCS); 2. Slide block (4PCS); 3. M6 pad (4PCS); 4. M6*16 screw (4PCS); 5. screw (4PCS);	

ESE Series

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ESQS Series

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ELG Series

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ESCL Series

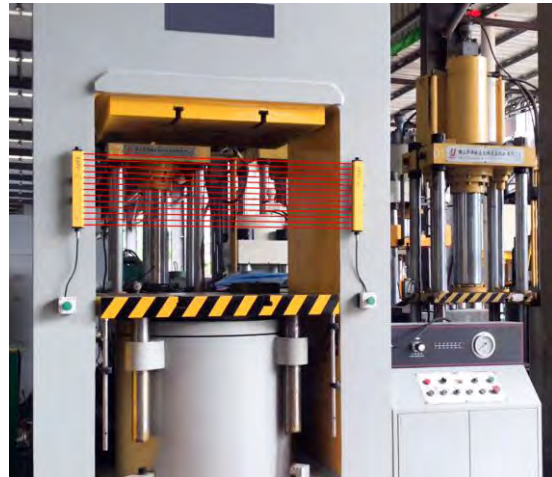
ESR Series

Certificate of products

- Products are passed Type 4, CE ect certificates.



Application case



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

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EB13 Series

EFB Series

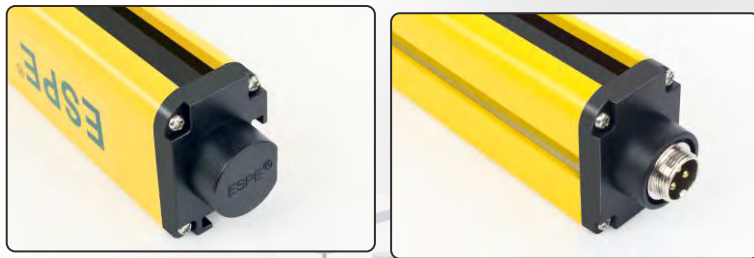
ESCL Series

ESR Series

ESN Series

General safety light curtain

ESN series are designed with independent dual OSSD output; Great ability in self-inspection and circuit protection when overcurrent output; Special optical lens ensure safety light curtain with long sensing distance over 30 meters; Working voltage is during DC10v~30v; Transistor output (curtains can be directly connect with the PLC); Enclosure with dual sliding slot is easy to install safety light curtain.



Product feature

- Low wide voltage power supply, working voltage rang between DC10v~30v;
- Sensing distance is long up to 30 meters;
- High safety performance cause of dual-loop self-inspection output design;
- Strong anti-electromagnetic interference ability can effectively resist various electromagnetic interference;
- Anti-vibration for shock-resistant structure and aluminum alloy shell;
- Wire synchronization technology to improve ability on anti-light interference;
- Multiple brackets ensure various installation methods to suitable for different application environment.

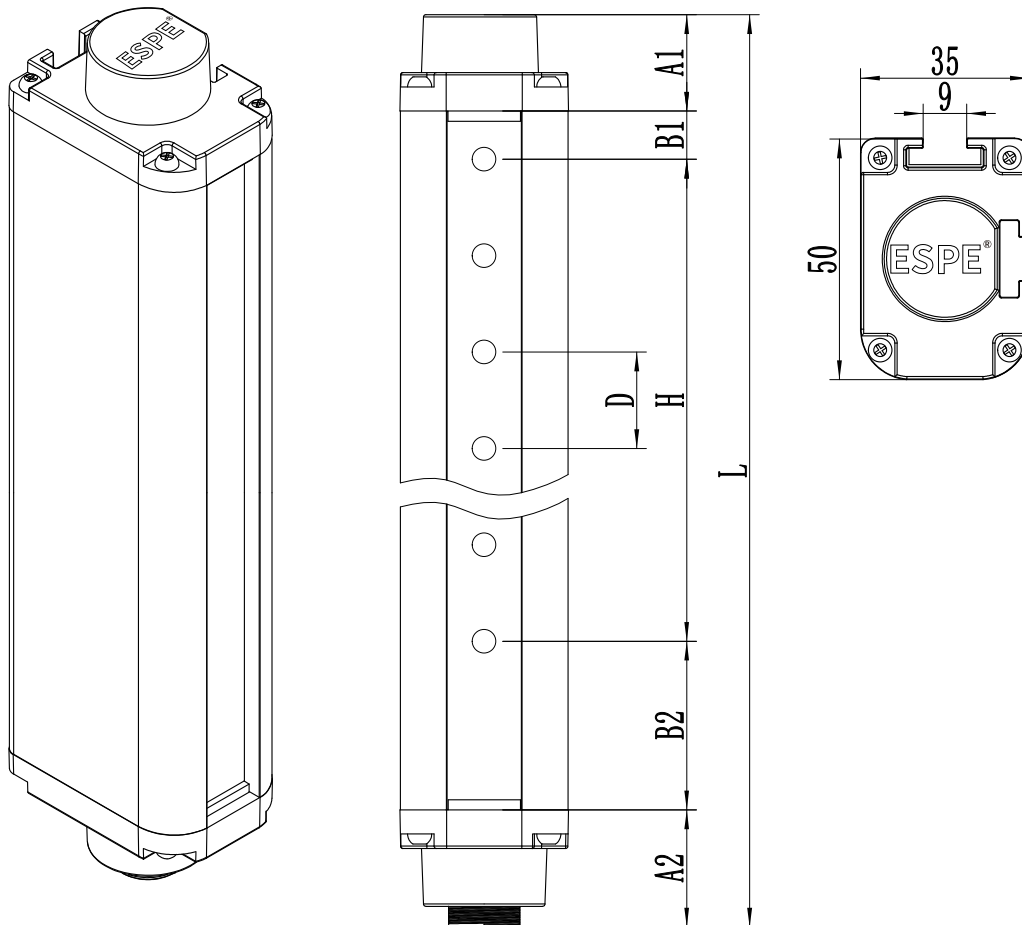


Technicalparameter

Parameterofsafetylightcurtain	
Supply voltage	DC10V~30V
Capacity	<5W
Beam space	10mm、20mm、40mm
Resolution	20mm、30mm、50mm
Beams	10mmBeam gap:08、12、16.....496
	20mmBeam gap:4、6、8.....160
	40mmBeam gap:4、6、8.....122
Protective height	Protective height=(N-1)*beamgap, N is beam quantity.
Wave length	940nm
Response time	Response time=(N*0.1ms) +0.4ms (N is beams)
Type of output (OSSD)	PNP/NPN semiconductors, current<200mA,residual voltage:1V max. leakage current: 1mA max. (Except voltage influenced by lengthen wire)
Protective circuit	Overload voltage protection,power supply reverse polarity protection,over current protection.
Sensing distance	0.1~0.5m、0.1~2m、0.1~5m、0.1~10m、0.1~20m、0.1~30m
Anti-optical interference	10000 Lux (angle>5°) 【ESP can be stronger anti-light interference, 100,000 Lux (angle>5°)】
Sensing method	Through-beam type
Synchronization	wire synchronization
Enclosure material	Aluminum alloy
Enclosure rating	IP65
Housing cross-section	35*50mm
Vibration resistance	10Hz...55Hz,double amplitude each inX, Y and Z directions for 20 times.
Ambient operating temperature	-10°C~55°C(with no freezing)
Storage temperature	-30°C~70°C(with no freezing)
Ambient operating humidity	when temperature is 20°C, humidity max85%

Explanation of model number(For example:ESN1020L1NCC-5)

ESN	10	20	L1	N	C	C	—	5
▼	▼	▼	▼	▼	▼	▼		▼
Model	Beams	Beam gap	Brackets	Output signal	Output contact	Scanning method		Sensing distance
ESN Series	04、06、08、10、12.....	10mm、20mm、40mm	L1Bracket H1Bracket	N:NPN Output P:PNP Output	C (normal close)	Parallel scanning C: cross scanning		0.5:0.1~0.5M 2:0.1~2M 5:0.1~5M 10:0.1~10M 20:0.1~20M 30:0.1~30M



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

A1:Upper cover

A2:Bottom cover

B1:Upper stop-work range

B2:Bottom stop-work range

D:Beam gap (10mm/ 20mm/40mm)

H: Protective height

L: Total height

A1=20mm; A2=25mm

When D=10mm, B1=5mm; B2=30mm

When D=20mm, B1=10mm; B2=35mm

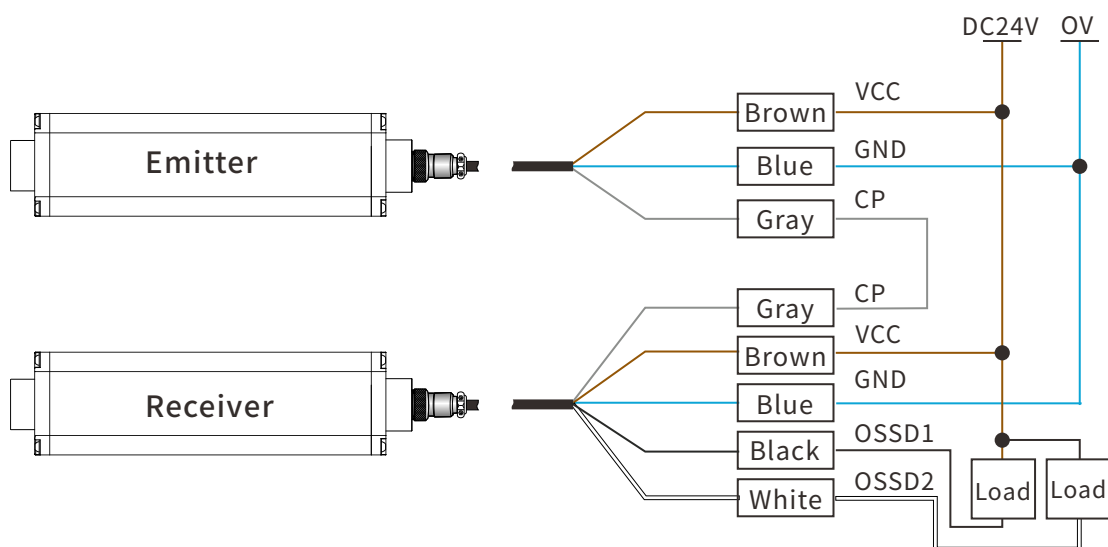
When D=40mm, B1=10mm; B2=35mm

L is total height: $L=A1+A2+B1+B2+H$

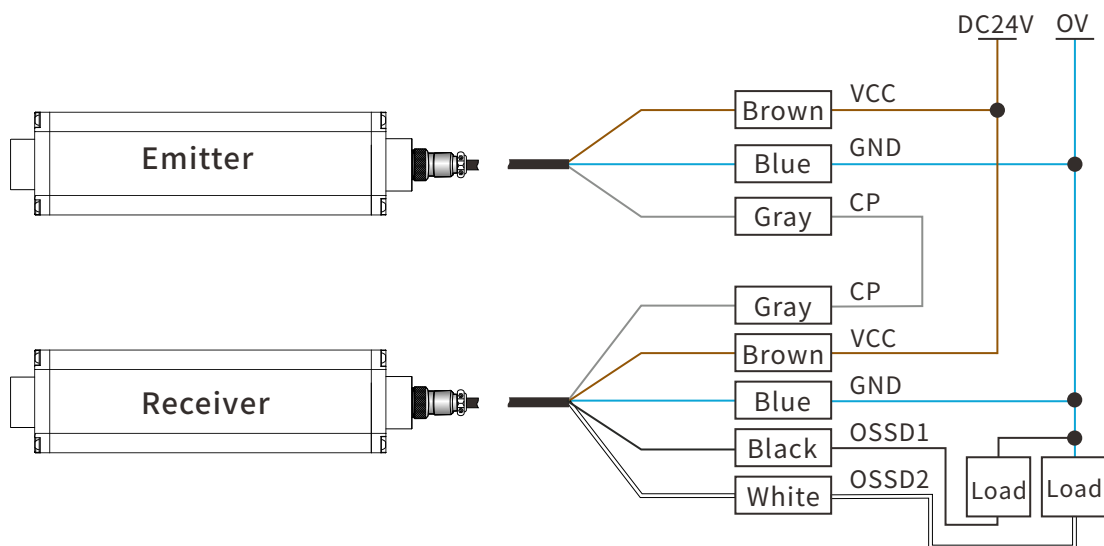
H is protective height: $H=(beams-1)*beam\ space$

Wire connection

NPN type



PNP type



ESE Series

ESN Series

ESQS Series

ESQC Series

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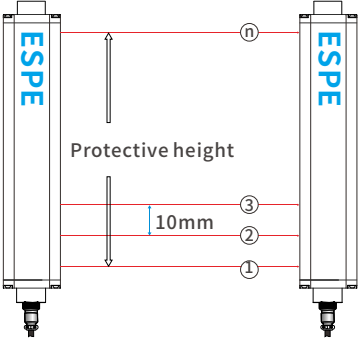
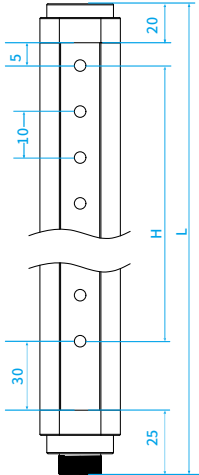
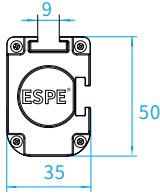
EFB Series

ESCL Series

ESR Series

ESN selection sheet

- Beam space 10mm, resolution 15mm

Picture	Beams (n)	Protective height (mm)	Total height (mm)	Mode	Size L*W*H (mm)
	08	70	150	ESN0810	35*50*150
	12	110	190	ESN1210	35*50*190
	16	150	230	ESN1610	35*50*230
	20	190	270	ESN2010	35*50*270
	24	230	310	ESN2410	35*50*310
	28	270	350	ESN2810	35*50*350
	32	310	390	ESN3210	35*50*390
	36	350	430	ESN3610	35*50*430
	40	390	470	ESN4010	35*50*470
	44	430	510	ESN4410	35*50*510
	48	470	550	ESN4810	35*50*550
	52	510	590	ESN5210	35*50*590
	56	550	630	ESN5610	35*50*630
	60	590	670	ESN6010	35*50*670
	64	630	710	ESN6410	35*50*710
	68	670	750	ESN6810	35*50*750
	72	710	790	ESN7210	35*50*790
	76	750	830	ESN7610	35*50*830
	80	790	870	ESN8010	35*50*870
	84	830	910	ESN8410	35*50*910
 Front view	88	870	950	ESN8810	35*50*950
	92	910	990	ESN9210	35*50*990
	96	950	1030	ESN9610	35*50*1030
	100	990	1070	ESN10010	35*50*1070
	104	1030	1110	ESN10410	35*50*1110
	108	1070	1150	ESN10810	35*50*1150
	112	1110	1190	ESN11210	35*50*1190
	116	1150	1230	ESN11610	35*50*1230
	120	1190	1270	ESN12010	35*50*1270
	124	1230	1310	ESN12410	35*50*1310
 Top-view	128	1270	1350	ESN12810	35*50*1350
					
	496	4950	5030	ESN49610	35*50*5030

L is total height: $L=A1+A2+B1+B2+H$

H is protective height: $H=(beams-1)*beam\ space$

ESE Series

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ESQC Series

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EB13 Series

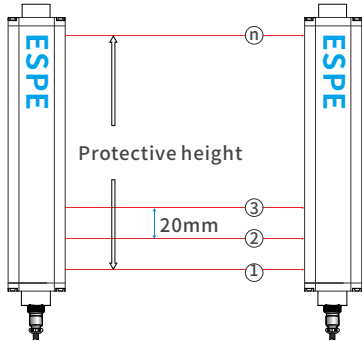
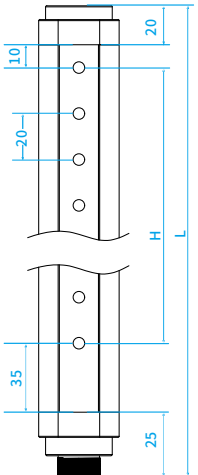
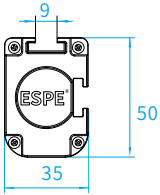
EFB Series

ESCL Series

ESR Series

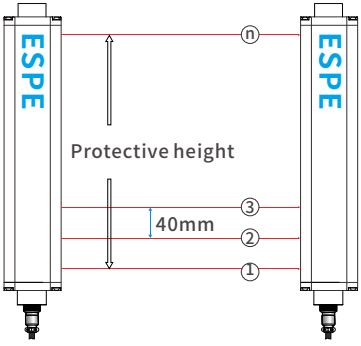
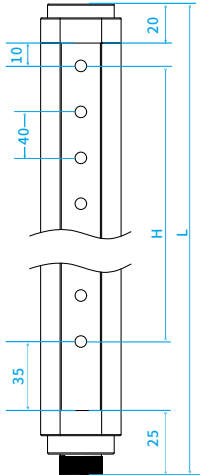
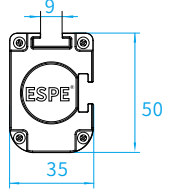
ESN selection sheet

- Beam space 20mm, resolution 25mm

Picture	Beams (n)	Protective height (mm)	Total height (mm)	Mode	Size L*W*H (mm)
   Front view Top-view L is total height: $L=A1+A2+B1+B2+H$ H is protective height: $H=(\text{beams}-1)*\text{beam space}$	04	60	125	ESN0420	35*50*125
	06	100	190	ESN0620	35*50*190
	08	140	230	ESN0820	35*50*230
	10	180	270	ESN1020	35*50*270
	12	220	310	ESN1220	35*50*310
	14	260	350	ESN1420	35*50*350
	16	300	390	ESN1620	35*50*390
	18	340	430	ESN1820	35*50*430
	20	380	470	ESN2020	35*50*470
	22	420	510	ESN2220	35*50*510
	24	460	550	ESN2420	35*50*550
	26	500	590	ESN2620	35*50*590
	28	540	630	ESN2820	35*50*630
	30	580	670	ESN3020	35*50*670
	32	620	710	ESN3220	35*50*710
	34	660	750	ESN3420	35*50*750
	36	700	790	ESN3620	35*50*790
	38	740	830	ESN3820	35*50*830
	40	780	870	ESN4020	35*50*870
	42	820	910	ESN4220	35*50*910
	44	860	950	ESN4420	35*50*950
	46	900	990	ESN4620	35*50*990
	48	940	1030	ESN4820	35*50*1030
	50	980	1070	ESN5020	35*50*1070
	52	1020	1110	ESN5220	35*50*1110
	54	1060	1150	ESN5420	35*50*1150
	56	1100	1190	ESN5620	35*50*1190
	58	1140	1230	ESN5820	35*50*1230
	60	1180	1270	ESN6020	35*50*1270
	62	1220	1310	ESN6220	35*50*1310
	64	1260	1350	ESN6420	35*50*1350
					
	160	3180	3270	ESN16020	35*50*3270

ESN selection sheet

- Beam space 40mm, resolution 45mm

Picture	Beams (n)	Protective height (mm)	Total height (mm)	Mode	Size L*W*H (mm)
	04	120	210	ESN0440	35*50*210
	06	200	290	ESN0640	35*50*290
	08	280	370	ESN0840	35*50*370
	10	360	450	ESN1040	35*50*450
	12	440	530	ESN1240	35*50*530
	14	520	610	ESN1440	35*50*610
	16	600	690	ESN1640	35*50*690
	18	680	770	ESN1840	35*50*770
	20	760	850	ESN2040	35*50*850
	22	840	930	ESN2240	35*50*930
	24	920	1010	ESN2440	35*50*1010
	26	1000	1090	ESN2640	35*50*1090
	28	1080	1170	ESN2840	35*50*1170
	30	1160	1250	ESN3040	35*50*1250
	32	1240	1330	ESN3240	35*50*1330
	34	1320	1410	ESN3440	35*50*1410
	36	1400	1490	ESN3640	35*50*1490
	38	1480	1570	ESN3840	35*50*1570
	40	1560	1650	ESN4040	35*50*1650
	42	1640	1730	ESN4240	35*50*1730
	44	1720	1810	ESN4440	35*50*1810
	46	1800	1890	ESN4640	35*50*1890
 	48	1880	1970	ESN4840	35*50*1970
	50	1960	2050	ESN5040	35*50*2050
	52	2040	2130	ESN5240	35*50*2130
	54	2120	2210	ESN5440	35*50*2210
	56	2200	2290	ESN5640	35*50*2290
	58	2280	2370	ESN5840	35*50*2370
	60	2360	2450	ESN6040	35*50*2450
	62	2440	2530	ESN6240	35*50*2530
	64	2520	2610	ESN6440	35*50*2610
					
	122	4840	4930	ESN12240	35*50*4930

L is total height: $L=A1+A2+B1+B2+H$

H is protective height: $H=(beams-1)*beam\ space$

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

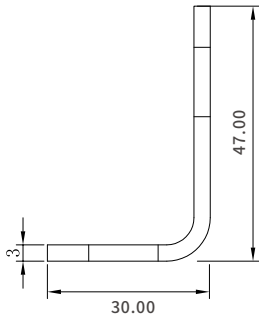
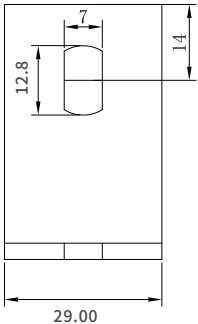
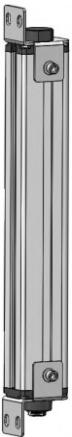
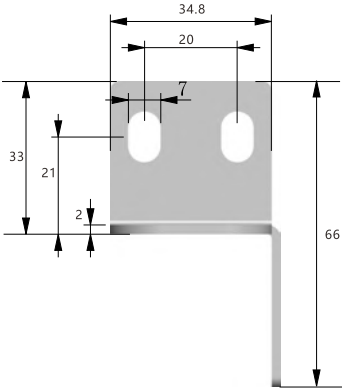
EB13 Series

EFB Series

ESCL Series

ESR Series

Option for brackets

Picture	Brackets	Accessories	Size brackets
	L1 back mounting	1. L brackets (4pcs) 2. Sliding pot (4pcs) 3. M6 grommet (4pcs) 4. M6 pad (4pcs) 5. M6*16 screw (4pcs) 6. M6*8 screw (4pcs)	
	L1 side mounting		
	H1 upper & bottom mounting		

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

Application case



Safety Light Curtain

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

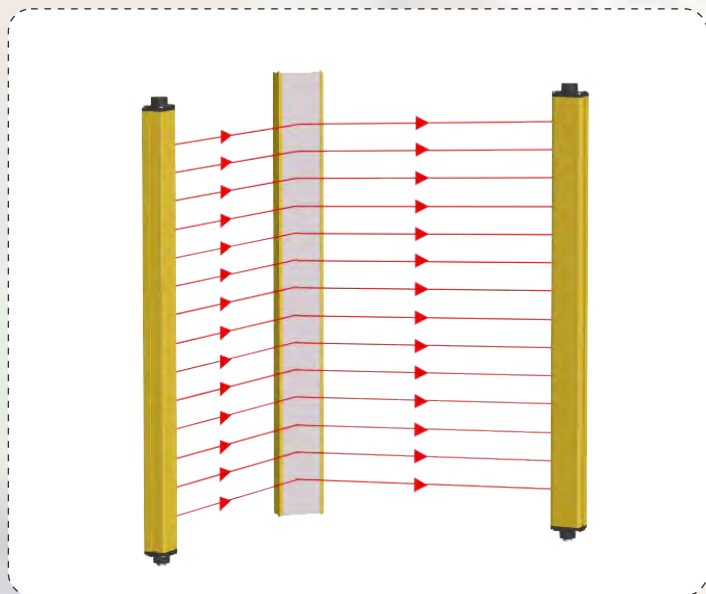
ESR Series

ESQS series

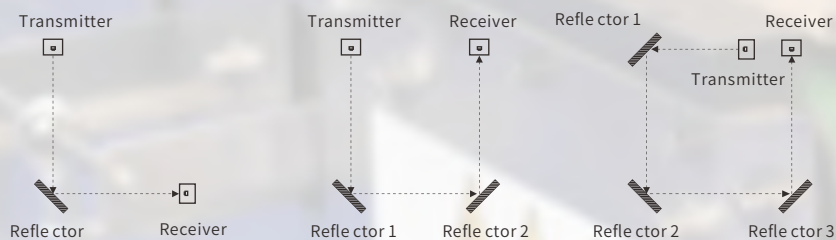
Reflector for area safety light curtain

Introduction of reflector

ESQS reflector can be work with ESN & ESE safety light curtain to form multi-side protection, which is mainly used for safety protection for automation equipment. The curtains and reflector of ESQS series can be installed on machine to protect safety of operators.



Planar graph



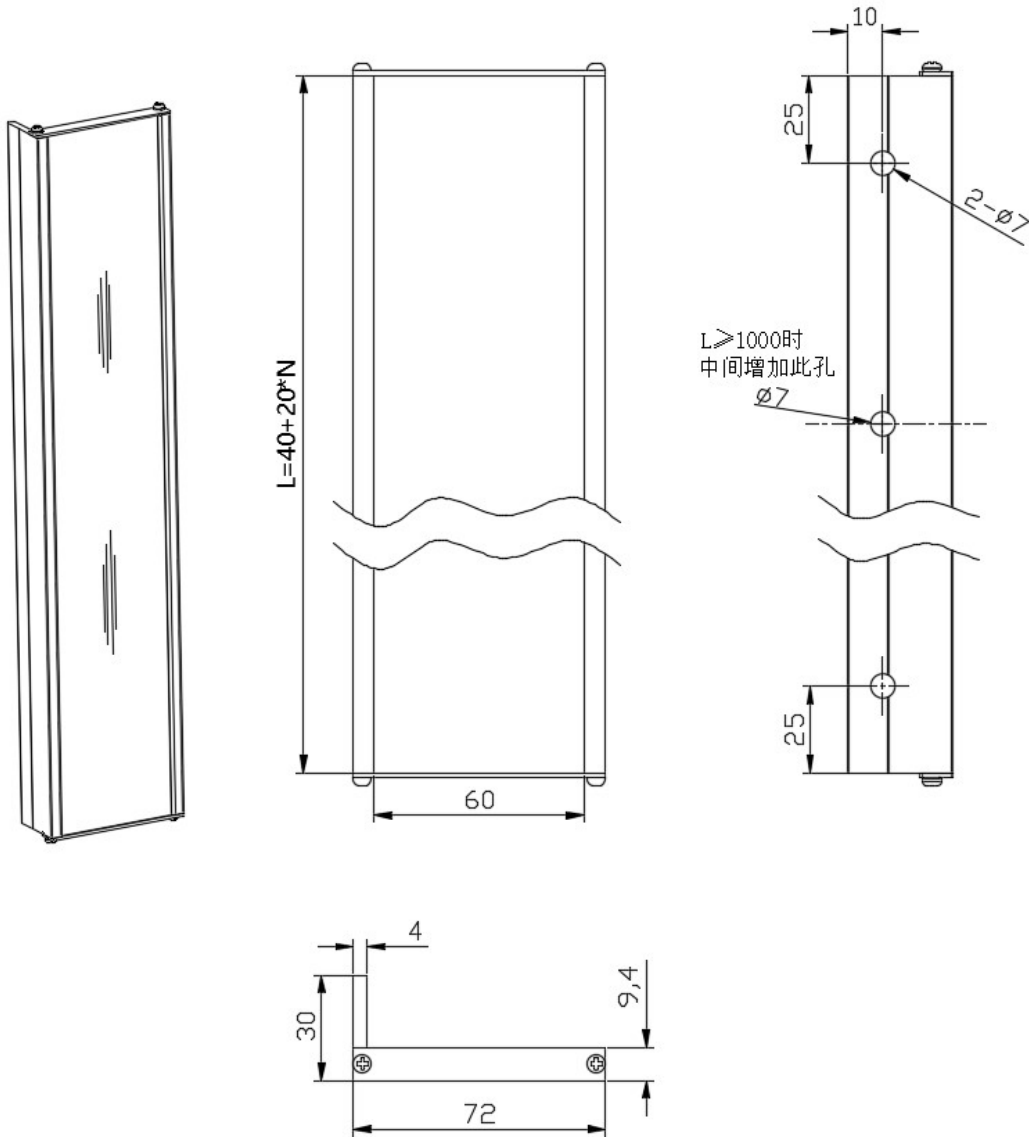
2 side protection

3 side protection

4 side protection



Size of product



L: the height of reflector

N: corresponding to beam number of 20mm beam gap of ESN/ESE series, 6, 8, 10...96

Explanation of model number (For example: ESQS-160)

ESQC — 160

Enclosure height: 160mm, 200mm, 240mm, ...1960mm

Model: ESQS reflector

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

ESQS selection sheet

- Corresponding to ESN model

Item	Total height of reflector	Model	Suitable for ESN curtain		
			10mm	20mm	40mm
01	160	ESQS-160	ESN1210	ESN0620	/
02	200	ESQS-200	ESN1610	ESN0820	ESN0440
03	240	ESQS-240	ESN2010	ESN1020	
04	280	ESQS-280	ESN2410	ESN1220	ESN0640
05	320	ESQS-320	ESN2810	ESN1420	/
06	360	ESQS-360	ESN3210	ESN1620	ESN0840
07	400	ESQS-400	ESN3610	ESN1820	/
08	440	ESQS-440	ESN4010	ESN2020	ESN1040
09	480	ESQS-480	ESN4410	ESN2220	/
10	520	ESQS-520	ESN4810	ESN2420	ESN1240
11	560	ESQS-560	ESN5210	ESN2620	/
12	600	ESQS-600	ESN5610	ESN2820	ESN1440
13	640	ESQS-640	ESN6010	ESN3020	/
14	680	ESQS-680	ESN6410	ESN3220	ESN1640
15	720	ESQS-720	ESN6810	ESN3420	/
16	760	ESQS-760	ESN7210	ESN3620	ESN1840
17	.....	.....	.....	.....	.....
18	1960	ESQS-1960	ESN19210	ESN9620	ESN4840

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

ESQS selection sheet

- Corresponding to ESE model

Item	Total height of reflector	Model	Suitable for ESE curtain		
			10mm	20mm	40mm
01	160	ESQS-160	10ESE110-12	20ESE100-6	/
02	200	ESQS-200	10ESE150-16	20ESE140-8	40ESE120-4
03	240	ESQS-240	10ESE190-20	20ESE180-10	/
04	280	ESQS-280	10ESE230-24	20ESE220-12	40ESE200-6
05	320	ESQS-320	10ESE270-28	20ESE260-14	/
06	360	ESQS-360	10ESE310-32	20ESE300-16	40ESE280-8
07	400	ESQS-400	10ESE350-36	20ESE340-18	/
08	440	ESQS-440	10ESE390-40	20ESE380-20	40ESE360-10
09	480	ESQS-480	10ESE430-44	20ESE420-22	/
10	520	ESQS-520	10ESE470-48	20ESE460-24	40ESE440-12
11	560	ESQS-560	10ESE510-52	20ESE50026	/
12	600	ESQS-600	10ESE550-58	20ESE540-28	40ESE520-14
13	640	ESQS-640	10ESE590-60	20ESE580-30	/
14	680	ESQS-680	10ESE630-64	20ESE620-32	40ESE600-16
15	720	ESQS-720	10ESE670-68	20ESE660-34	/
16	760	ESQS-760	10ESE710-72	20ESE700-36	40ESE680-18
17	.....	.....	.....	.....	.....
18	1800	ESQS-1800	10ESE1750-176	20ESE1740-88	40ESE1720-44

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESCF Series

ESCH Series

ESCC Series

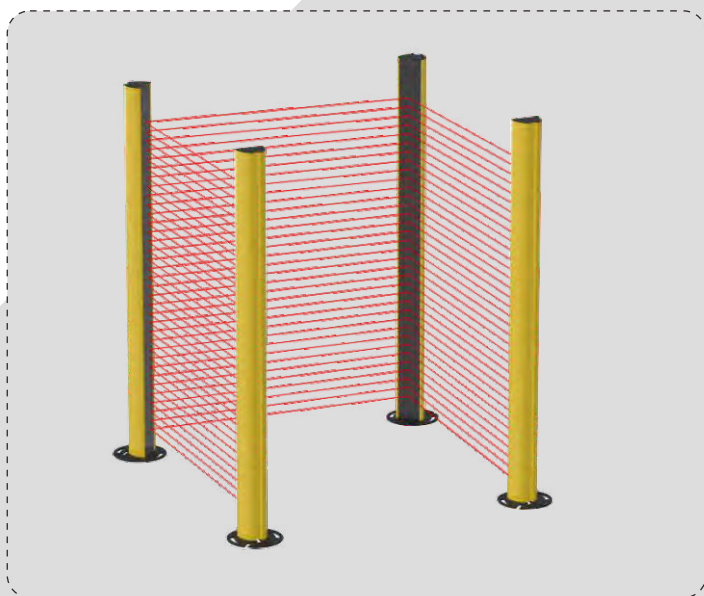
ESR Series

ESQC series

Area protection safety light curtain

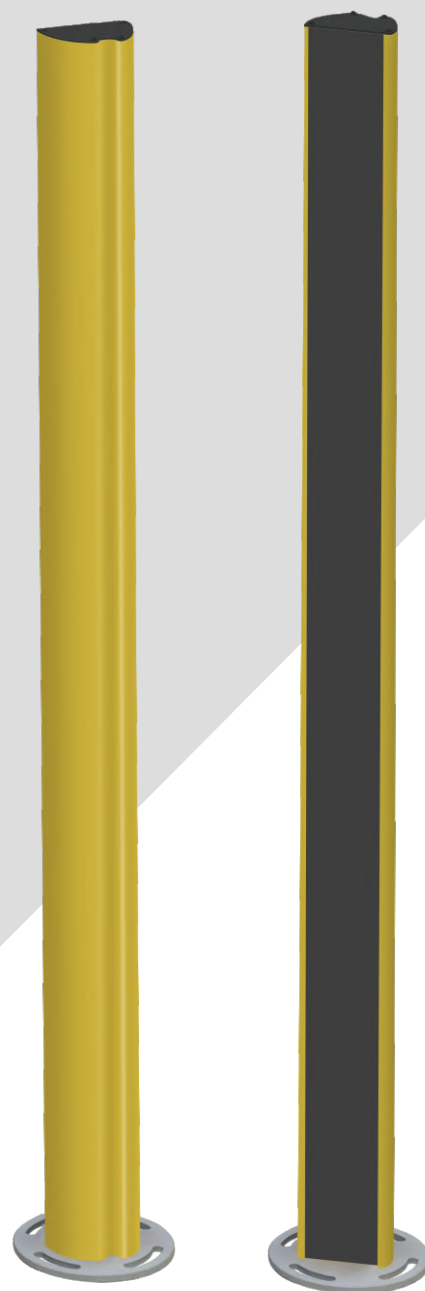
Product introduction

ESQC area protection safety light curtain, can work with ESN and ESE model to form a multi-side safety protection. Which is mainly used for automatic area safety protection. The standing column can be installed on ground directly. The safety barriers work with reflectors to form multi-side protection.



Product features

- Multi-side protection but only 1 pair of curtains;
- Long sensing distance, for single side, distance can reach 30 meters;
- High safety performance for dual-loop self-inspection design;
- It has strong anti-electromagnetic interference ability and can effectively resist various electromagnetic interference effects of equipment motors;
- The interior of curtains adopts a seismic structure and aluminum alloy shell, which is good at anti-shock;
- Wire synchronization technology, it has strong anti-light interference ability;
- Multiple installation methods, and a variety of installation rack options;

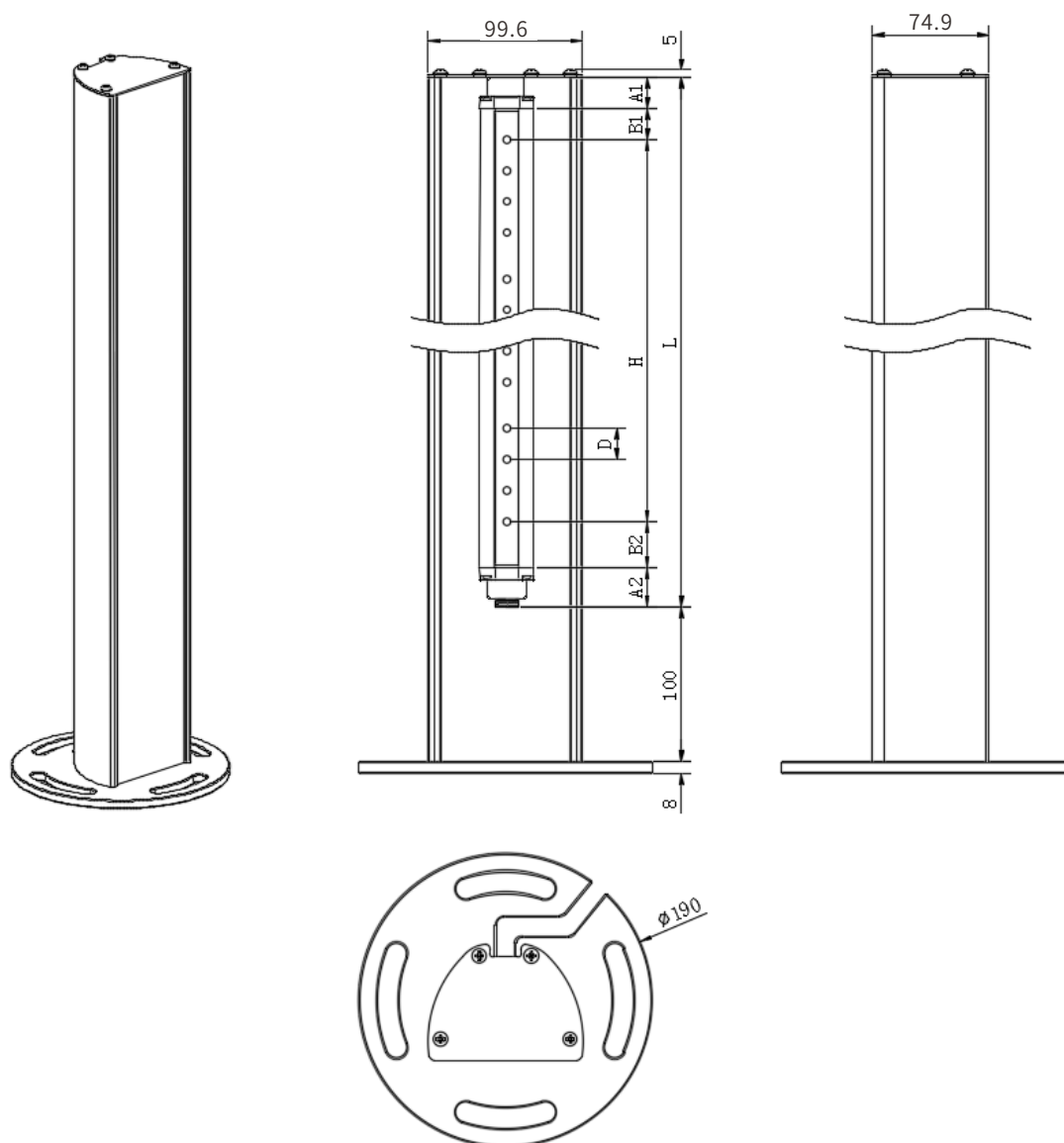


Technical parameter

Parameter of safety light curtain	
Power supply	DC10V~30V
Capacity	<5W
Beam gap	10mm, 20mm, 40mm
Resolution	20mm, 30mm, 50mm
Beams	10mm: 32, 36, 40.....176
	20mm: 16, 18, 20.....88
	40mm: 8, 10, 12.....44
Protective height	Protective height=(N-1)*beam gap, N is beam quantity.
Wave length	940nm
Response time	Response time=(N*0.1ms)+0.4ms (N is beams)
Type of output (OSSD)	PNP/NPN semiconductors, current<200mA, residual voltage: 1V max. leakage current: 1mA max. (Except voltage influenced by lengthen wire)
Protective circuit	Overload voltage protection, power supply reverse polarity protection, over current protection.
Sensing distance	0.1~5m, 0.1~10m, 0.1~20m, 0.1~30m
Anti-optical interference	10000Lux(I > 5°)
Sensing method	Through beam
Synchronizations	Wire Synchronizations
Enclosure material	Aluminum alloy
Enclosure rating	IP65
Housing cross-section	35*50mm
Vibration resistance	10 Hz ... 55 Hz, double amplitude each in X, Y and Z directions for 20times.
Ambient operating temperature	-10 ~55 (with no freezing)
Storage temperature	-30 ~70 (with no freezing)
Ambient operating humidity	when temperature is 20 , humidity max 85%

Explanation of model number (For example: ESQC-N1620NC2-5)

ESQC	—	N	16	20	N	C	2	—	5
▼		▼	▼	▼	▼	▼	▼		▼
Model	Series	Beams	Beam gap	Output type	Output contact	Side	Circumference		
ESQC series	N: ESNE curtain	08, 10, 12	10mm, 20mm, 40mm	N: NPN Output P: PNP Output	C (normal close)	2: 2 side protection, 3: 3 side protection, 4: 4 side protection	5: 0.1~5M 10: 0.1~10M 20: 0.1~20M 30: 0.1~30M		



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

A1: Upper cover

A2: Bottom cover + aviation cap

B1: Upper stop-work range

B2: Bottom stop-work range

D: Beam gap

H: Protective height

L: Total height

A1=17mm; A2=28mm

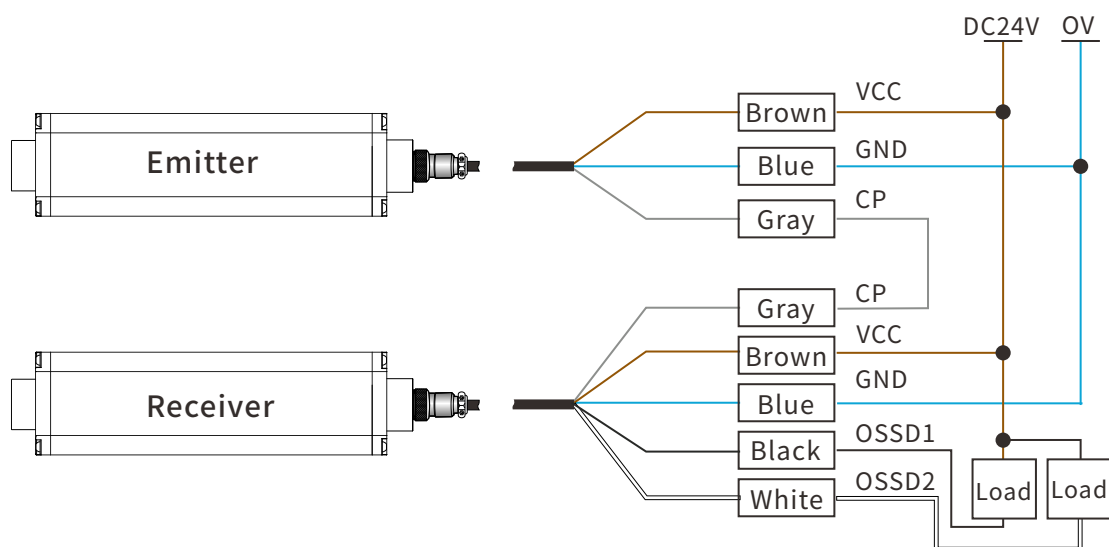
$L(\text{total height}) = A1 + A2 + B1 + B2 + H$

$H(\text{protective height}) = (\text{beams} - 1) * \text{beam space}$

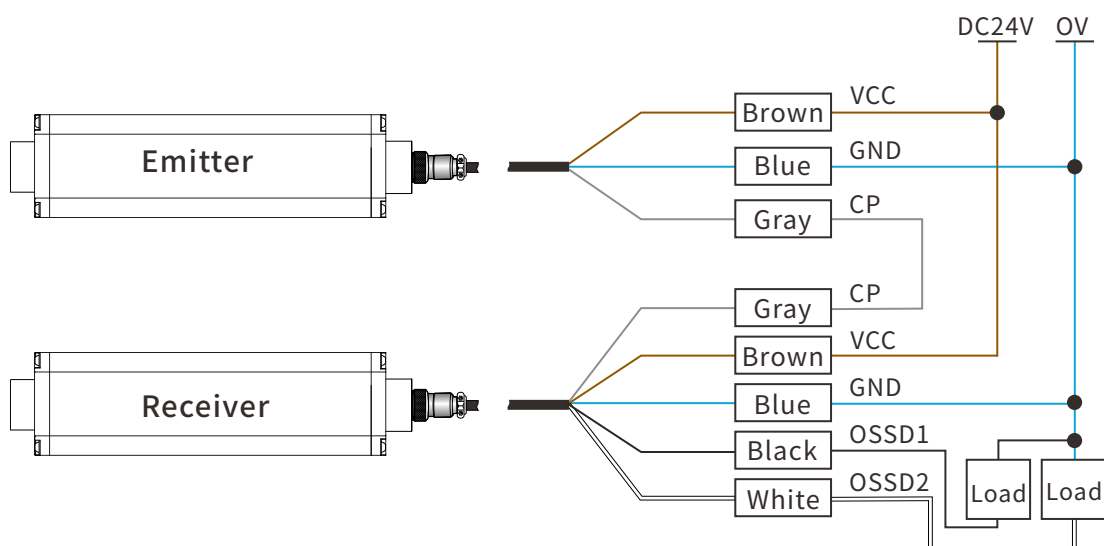
Height of column = $L + 100$

Wire connection

NPN type



PNP type



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

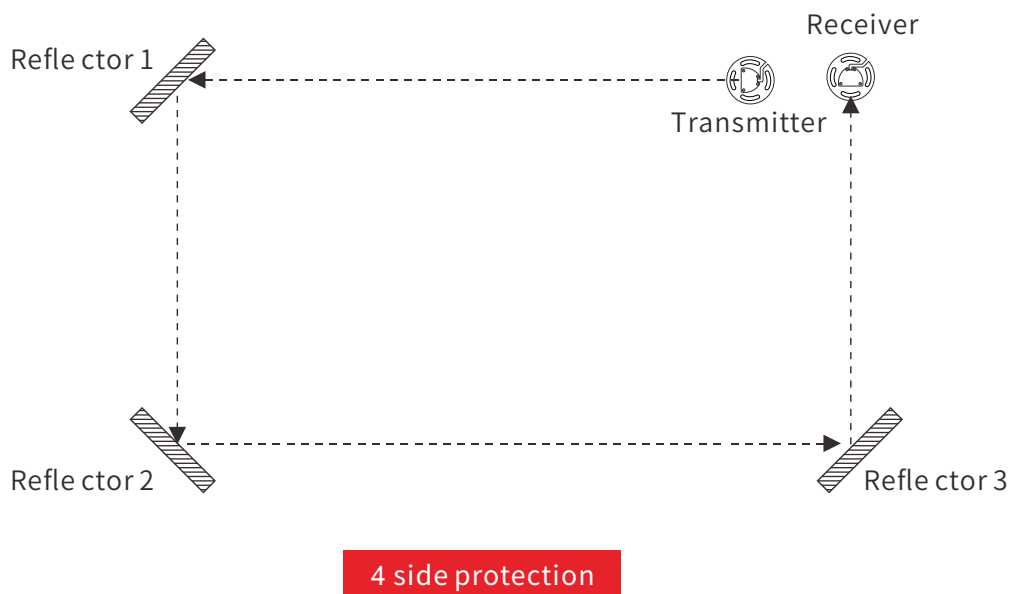
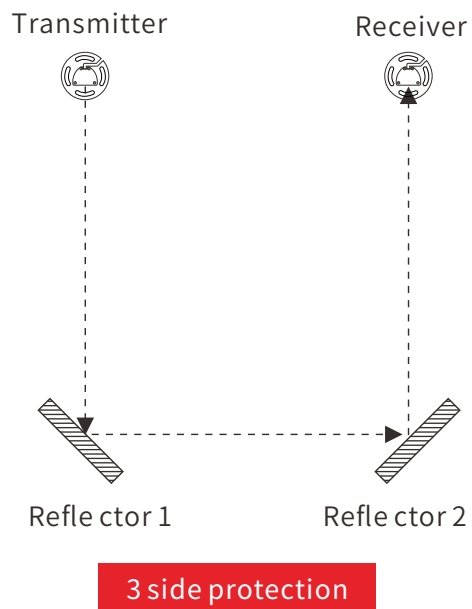
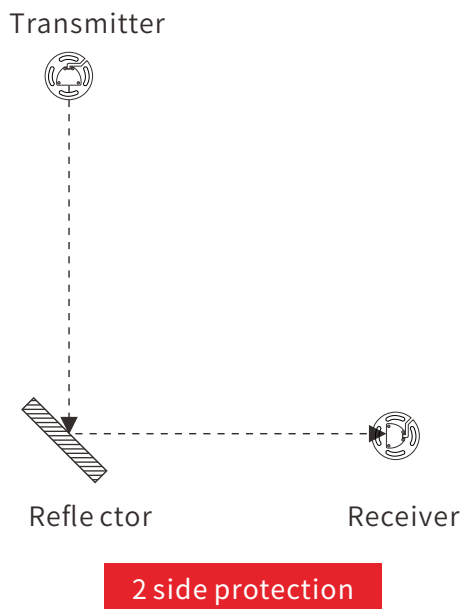
EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series



ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

- Model selection, please refer to ESN model selection

ESA series

Punching machine safety light curtain

Product introduction

ESA safety light curtain is mainly used for stamping machinery safety protection. The controller of ESA is used to detect the safety light curtain signal, and finally the safety circuit signals is output through the controller. Work voltage is AC110-220V, AC380V, output relay signal. Reference EU standard, the key component imported from abroad and have passed the domestic GB4584-2007 certification. Cause of perfect self-inspection, easy installation, strong shock resistance, various installation methods, ESA is powerful for different high-risk equipment, and can protect the safety of operators and equipment in harsh environments.

Option of controller



P type external controller
(Standard)



Q type inside controller
(Standard)

Product features

- Wide voltage is suitable for machine with different power supply ranges of AC110~220V and AC380V;
- Ultra-reliable signal detection, cause the controller detect the safety light curtain signal by using the pulse detection method, which can effectively ensure that the final signal will not be triggered by mistake when safety light curtain is inside short circuit;
- Great ability in anti-electromagnetic interference can avoid to be effected by electromagnetic of equipment motors;
- Good performance to resist vibration, as the interior of safety light curtain use a shock-resistant structure and an aluminum alloy shell;
- Wire synchronization technology to ensure safety light curtain work in workshop 10000 lux;
- Relay isolation output, controller adopts relay isolation output mode, and the external control signal is completely isolated from the internal circuit of the safety light curtain;
- The wire connection is simple, and the connection between the safety light curtain and controller use plug for quick connection, which is easy for installation;
- A variety of installation brackets options ensure safety light curtain suitable for many different application environments;
- One controller can control multiple safety light curtain to form multi-faceted protection;
- Long detection distance can reach up to 20 meters;



Technical parameters

Controller parameters		
Power supply	AC110V~220V 50/60Hz, AC380V	
Capacity	<15W	
Output type	Relay contact output	
Contact capacity	5A, AC250V/DC30V (Resistive load)	
Lifespan of relay	mechanical endurance, electrical life is related to the connected load, and can be changed.	
Response time	≤20ms	
Ambient temperature	-10~55°C	
Ambient humidity	20°C, RH≤85%	
Insulation resistance	≥100MΩ	
Safety rating	P type external controller:IP54	Q type inside controller:IP20

Safety light curtain parameter		
Beam gap	10mm、20mm、40mm	
Resolution	20mm、30mm、40mm	
Beams	10mm:8、12、16……492	
	20mm:4、6、8……160	
	40mm:4、6、8……122	
Protective height	Protective height=(N-1)*beam gap, N is beam quantity.	
Wave length	940nm	
Sensing distance	0.1~0.5m、0.1~2m、0.1~5m、0.1~10m、0.1~20m、0.1~30m	
Sensing method	Through beam	
Synchronization	Wire Synchronizations	
Anti-optical interference	10000Lux(I>5°)	
Enclosure material	Aluminum alloy	
Housing cross-section	35*50mm	
Enclosure rating	IP65	
Vibration resistance	10Hz...55Hz,double amplitude each inX, Y and Z directions for 20 times.	

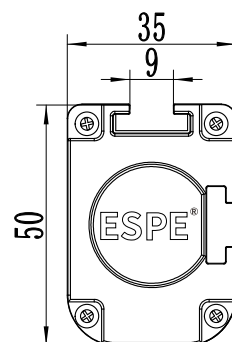
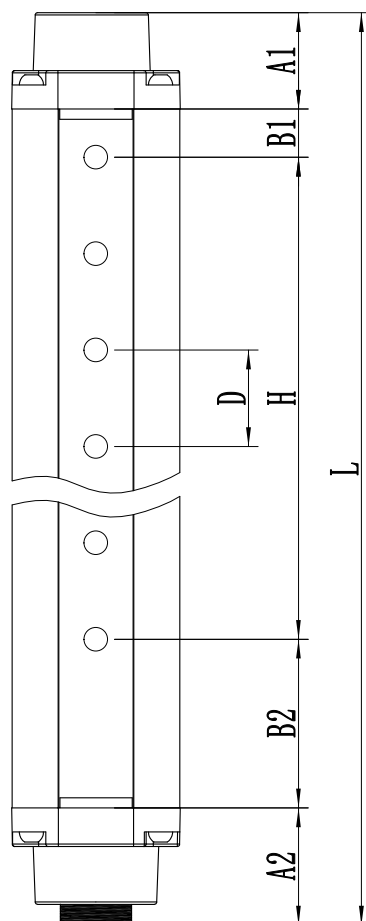
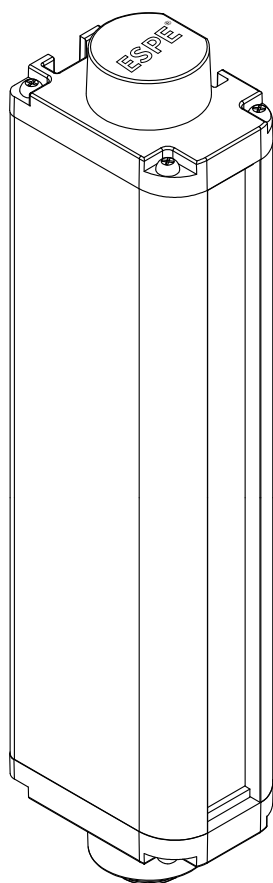
ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Explanation of model selection (For example: ESA1620PM-5)

ESA	16	20	P	N	—	5
▼	▼	▼	▼	▼		▼
Model	Beams	Beam gap	Output method	Brackets	Sensing distance	
ESA series	04、06、08、10、12.....	10mm、20mm、40mm	P type controller Q type controller	N: aluminum rotary brackets J: reinforce brackets L1: side-mounting brackets	05:0.1~0.5M 2:0.1~2M 5:0.1~5M 10:0.1~10M 20:0.1~20M 30:0.1~30M	

Size of Product

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

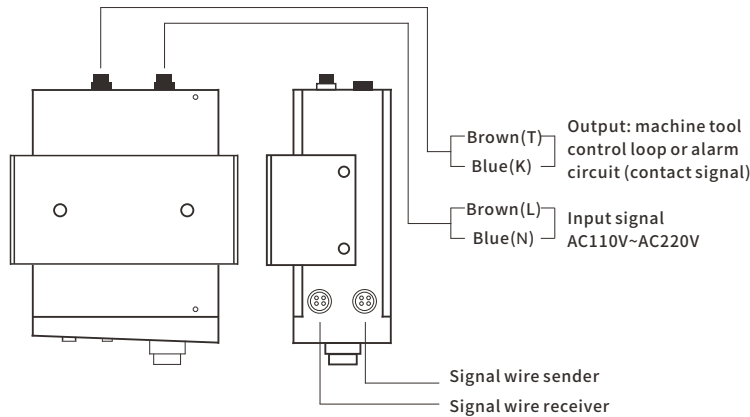


A1: Upper cover
A2: Bottom cover
B1: Upper stop-work range
B2: Bottom stop-work range
D: Beam gap (10mm/ 20mm/40mm)
H: Protective height
L: Total height

A1=20mm; A2=25mm
When D=10mm, B1=5mm; B2=30mm
When D=20mm, B1=10mm; B2=35mm
When D=40mm, B1=10mm; B2=35mm
L is total height: $L=A1+A2+B1+B2+H$
H is protective height: $H=(\text{beams}-1)*\text{beam space}$

Wire connection

External controller (P type)



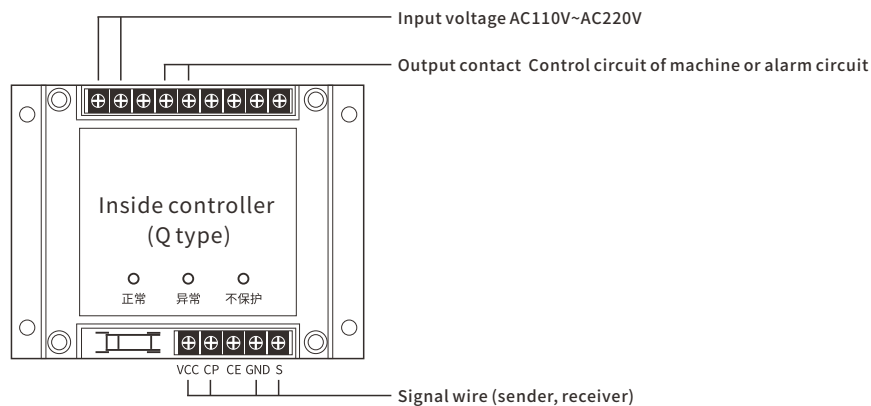
L (brown) and N (blue) is input wire of AC power supply, input voltage AC110V/220V, please check the wire of input power, and ensure right connection; T (brown) and K (blue) should be connect with control circuit of machine as below picture showed.

When light on, T/K connect can ensure machine operate normally; When beam blocked, T/K is disconnected, and machine stop.



In order to avoid danger, before wiring, operator need to cut off the power of the machine tool, and operate without any power. Please strictly follow the wiring diagram of the machine tool.
(For machine which circuit has been changed, operators should pay attention to observe the action of the electrical appliances inside the machine to ensure correct control), please don't change the circuit privately.
The rated voltage of controller is AC220V, the voltage much higher or lower may burn the photoelectric protection device.

Inside controller (Q type)



1.Connection of T, K wire (Return no protection is no need)

2.Connection of T,K (need return no protection), this function is achieved by the machine itself, no need to additional wire. When return without protection need to achieved by safety light curtain, the wire connection can adopt below method. A pair of normally open contacts of the cam switch are connected in parallel with T, K wire.

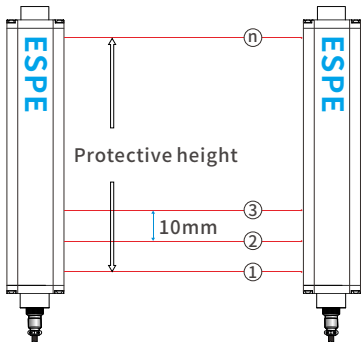
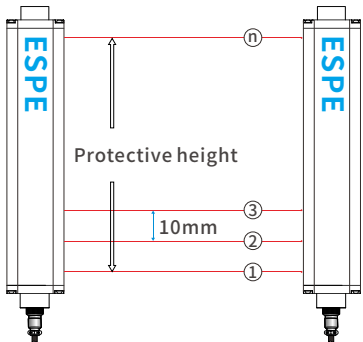
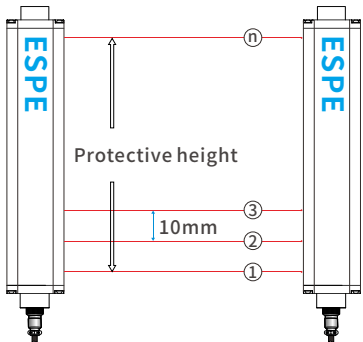
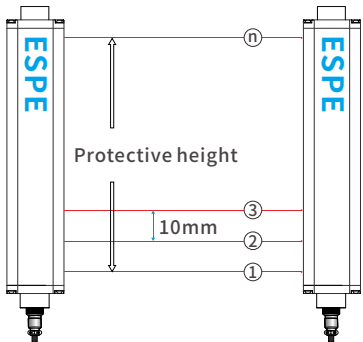
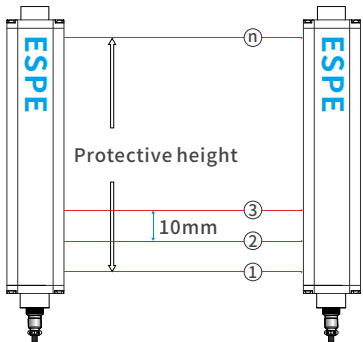
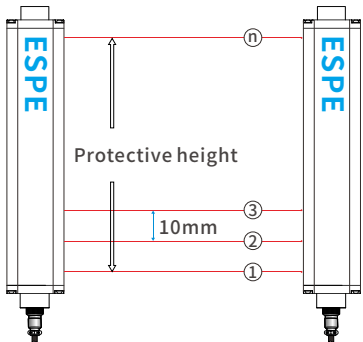
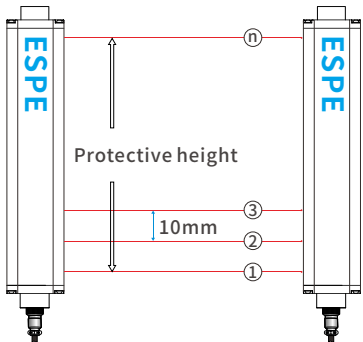
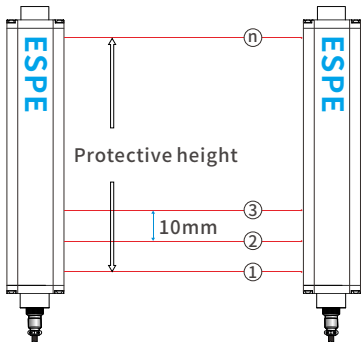
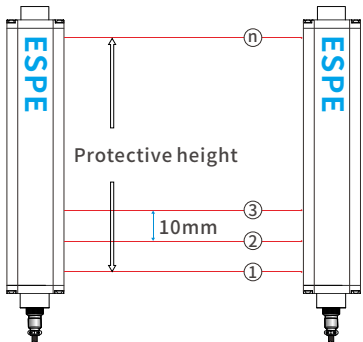
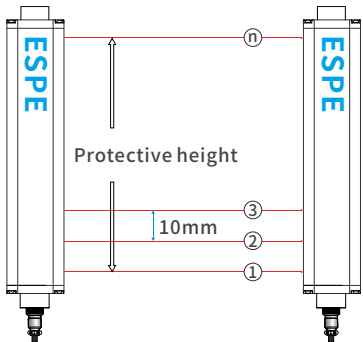
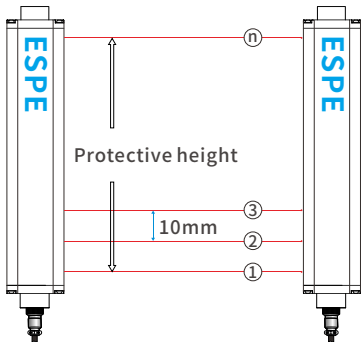


When the emergency button of machine is normally open, operators open the cover board of controller, and connect the original T/K wire respectively connect to T1/K2 (Q controller connect directly), and parallel connect with the emergency button of machine (T1,K1 normally open when light on, normally close when light off)

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Model Selection sheet

- Beam gap is 10mm, resolution 20mm

Picture (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Specification	Size L*W*H (mm)
	08	70	150	ESA0810	35*50*150
	12	110	190	ESA1210	35*50*190
	16	150	230	ESA1610	35*50*230
	20	190	270	ESA2010	35*50*270
	24	230	310	ESA2410	35*50*310
	28	270	350	ESA2810	35*50*350
	32	310	390	ESA3210	35*50*390
	36	350	430	ESA3610	35*50*430
	40	390	470	ESA4010	35*50*470
	44	430	510	ESA4410	35*50*510
	48	470	550	ESA4810	35*50*550
	52	510	590	ESA5210	35*50*590
	56	550	630	ESA5610	35*50*630
	60	590	670	ESA6010	35*50*670
	64	630	710	ESA6410	35*50*710
	68	670	750	ESA6810	35*50*750
	72	710	790	ESA7210	35*50*790
	76	750	830	ESA7610	35*50*830
	80	790	870	ESA8010	35*50*870
	84	830	910	ESA8410	35*50*910
	88	870	950	ESA8810	35*50*950
	92	910	990	ESA9210	35*50*990
	96	950	1030	ESA9610	35*50*1030
	100	990	1070	ESA10010	35*50*1070
	104	1030	1110	ESA10410	35*50*1110
	108	1070	1150	ESA10810	35*50*1150
	112	1110	1190	ESA11210	35*50*1190
	116	1150	1230	ESA11610	35*50*1230
	120	1190	1270	ESA12010	35*50*1270
	124	1230	1310	ESA12410	35*50*1310
	128	1270	1350	ESA12810	35*50*1350
					
	492	4910	4990	ESA49210	35*50*4990

Remark: If your request is out of range of above selection sheet, we can customize according to your request.

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

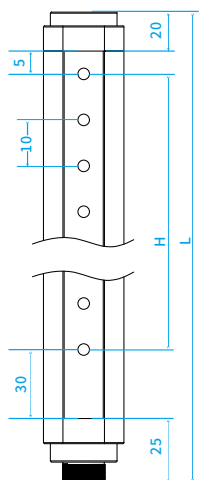
EB15 Series

EB13 Series

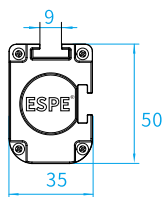
EFB Series

ESCL Series

ESR Series



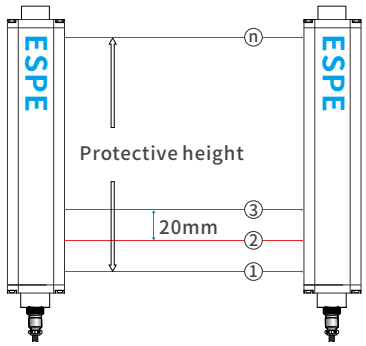
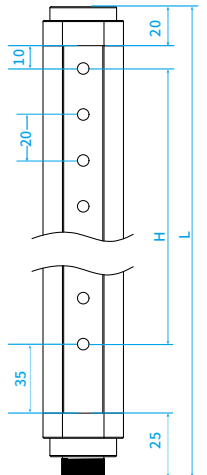
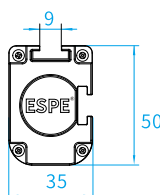
Front view



Top-view

Model Selection sheet

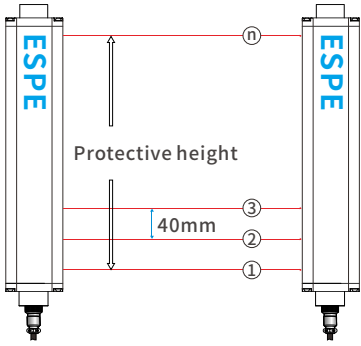
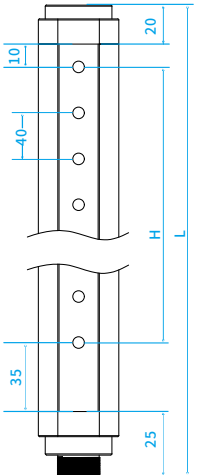
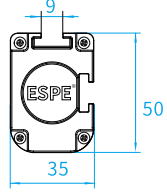
- Beam gap is 20mm, resolution 30mm

Picture (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Specification	Size L*W*H (mm)
   Front view Top-view	04	60	125	ESA0420	35*50*125
	06	100	190	ESA0620	35*50*190
	08	140	230	ESA0820	35*50*230
	10	180	270	ESA1020	35*50*270
	12	220	310	ESA1220	35*50*310
	14	260	350	ESA1420	35*50*350
	16	300	390	ESA1620	35*50*390
	18	340	430	ESA1820	35*50*430
	20	380	470	ESA2020	35*50*470
	22	420	510	ESA2220	35*50*510
	24	460	550	ESA2420	35*50*550
	26	500	590	ESA2620	35*50*590
	28	540	630	ESA2820	35*50*630
	30	580	670	ESA3020	35*50*670
	32	620	710	ESA3220	35*50*710
	34	660	750	ESA3420	35*50*750
	36	700	790	ESA3620	35*50*790
	38	740	830	ESA3820	35*50*830
	40	780	870	ESA4020	35*50*870
	42	820	910	ESA4220	35*50*910
	44	860	950	ESA4420	35*50*950
	46	900	990	ESA4620	35*50*990
	48	940	1030	ESA4820	35*50*1030
	50	980	1070	ESA5020	35*50*1070
	52	1020	1110	ESA5220	35*50*1110
	54	1060	1150	ESA5420	35*50*1150
	56	1100	1190	ESA5620	35*50*1190
	58	1140	1230	ESA5820	35*50*1230
	60	1180	1270	ESA6020	35*50*1270
	62	1220	1310	ESA6220	35*50*1310
	64	1260	1350	ESA6420	35*50*1350
					
	160	3180	3270	ESA16020	35*50*3270

Remark: If your request is out of range of above selection sheet, we can customize according to your request.

Model Selection sheet

- Beam gap is 40mm, resolution 50mm

Picture (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Specification	Size L*W*H(mm)
	04	120	210	ESA0440	35*50*210
	06	200	290	ESA0640	35*50*290
	08	280	370	ESA0840	35*50*370
	10	360	450	ESA1040	35*50*450
	12	440	530	ESA1240	35*50*530
	14	520	610	ESA1440	35*50*610
	16	600	690	ESA1640	35*50*690
	18	680	770	ESA1840	35*50*770
	20	760	850	ESA2040	35*50*850
	22	840	930	ESA2240	35*50*930
	24	920	1010	ESA2440	35*50*1010
	26	1000	1090	ESA2640	35*50*1090
	28	1080	1170	ESA2840	35*50*1170
	30	1160	1250	ESA3040	35*50*1250
	32	1240	1330	ESA3240	35*50*1330
	34	1320	1410	ESA3440	35*50*1410
	36	1400	1490	ESA3640	35*50*1490
	38	1480	1570	ESA3840	35*50*1570
	40	1560	1650	ESA4040	35*50*1650
	42	1640	1730	ESA4240	35*50*1730
	44	1720	1810	ESA4440	35*50*1810
	46	1800	1890	ESA4640	35*50*1890
	48	1880	1970	ESA4840	35*50*1970
	50	1960	2050	ESA5040	35*50*2050
	52	2040	2130	ESA5240	35*50*2130
	54	2120	2210	ESA5440	35*50*2210
	56	2200	2290	ESA5640	35*50*2290
	58	2280	2370	ESA5840	35*50*2370
	60	2360	2450	ESA6040	35*50*2450
	62	2440	2530	ESA6240	35*50*2530
	64	2520	2610	ESA6440	35*50*2610
					
	122	4840	4930	ESA12240	35*50*4930
					
					

Remark: If your request is out of range of above selection sheet, we can customize according to your request.

Option of brackets

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

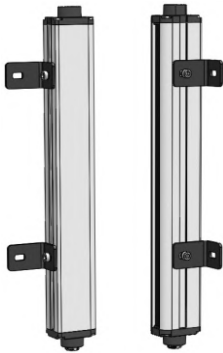
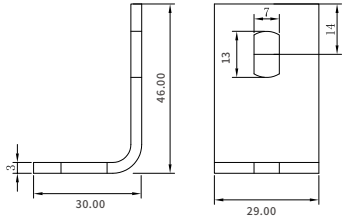
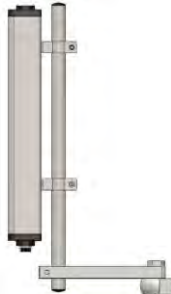
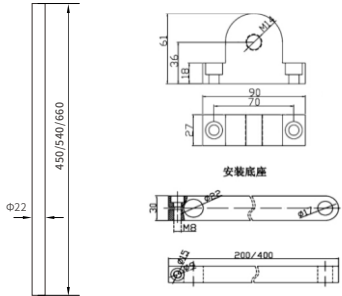
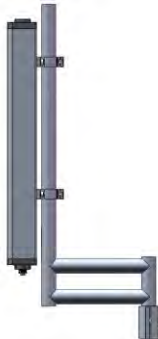
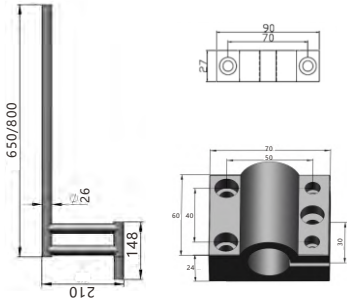
EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

Installation picture	Name	Brackets picture
	L1 type side-mounting brackets	
	Aluminum rotary bracket	
	Reinforce brackets	

Option for brackets

Installation picture	Name	Accessories
	L1 type side-mounting brackets	1. L brackets (4pcs) 2. Sliding pot (4pcs) 3. M6 grommet (4pcs)+M6 pad (4pcs) 4. M6*16 screw (4pcs) 5. M6*8 screw (4pcs)
	Aluminum rotary brackets	1. Steel pipe 2 pcs (450mm pipe is suitable for safety light curtain ≤180mm; 550mm pipe is suitable for safety light curtain >180mm but ≤300mm; 660mm pipe suitable for safety light curtain >300mm) 2. Rotary brackets 2 pcs 3. Base 2 pcs 4. Sliding pot 4 pcs 5. M8 pad 2pcs + M8 grommet 2pcs 6. M8 screw 2pcs 7. M6*8 screw 2pcs 8. M5 pad 4pcs + M5 grommet 4pcs 9. M5 screw nut 4pcs 10. M5*30 screw 4pcs 11. M40*40 screw 2pcs 12. M40 pad 2pcs+M40 grommet 2pcs 13. M8*25 screw 4pcs 14. M8 pad 4pcs
	J type reinforce brackets	1. Reinforce pipe 2pcs 2. Base 2pcs 3. O type 4pcs 4. Sliding pot 4pcs 5. M8 grommet 2pcs+M8 pad 10pcs 6. M8*16 screw 6pcs 7. M6*8 screw 4pcs 8. M5 pad 4pcs + M5 grommet 4pcs 9. M5 screw 4pcs 10. M5*30 screw 4pcs 11. M8*25 screw 6pcs 12. M8*12 screw 4pcs



1. Customer can choose brackets and controller according to their request, Standard controller of ESA model is P type external controller, N type brackets;
2. Standard length 2.5m emitter, 3.5m receiver;
3. Can customize according to request (include lengthen wire, or change brackets etc)
4. Voltage 380V can be customized

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

Picture	Name	Voltage	Size picture of brackets
	P type external controller (standard)	110-220V (customized)380v	M6*8 screw 4pcs M8*16 screw 2pcs M8 grommet 2pcs M8 pad 2pcs pallet 145 75 200
	Q type inside controller (option)	110-220V	下放置脚 弹簧卡子 电气导轨 191 89 19 35 79 89

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Remark

- ◆ Please check if safety light curtain control machine well, please refer to step 4 debugging;
- ◆ Avoid movement of safety light curtain casually;
- ◆ The key of controller should be kept by professional engineers;
- ◆ After changing model, the professional engineers should debug the sensing distance and position of safety light curtain;
- ◆ Dismounting or maintain safety light curtain, please cut off the power supply and operate by professional operators;
- ◆ Lifespan of the build-in relay inside controller >10 million times, after 3 years, please change it;
- ◆ During operation, please don't let workpiece, tool, waste etc touch the safety light curtain in case of any damage;
- ◆ For safety light curtain with re-start function, after restoring normal light-on, please remember touch the re-start button to ensure machine start to work again.



When stop to use safety light curtain, you can just keep the key of controller on “off” position. Then the safety light curtain will stop work, other safety protection measures should be taken.

Remark: Forbid to plug and un-plug the power.

Application case



- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series
- EB13 Series
- EFB Series
- ESCL Series
- ESR Series

ELG series

Non-standard automatic machine safety light curtain

Product introduction

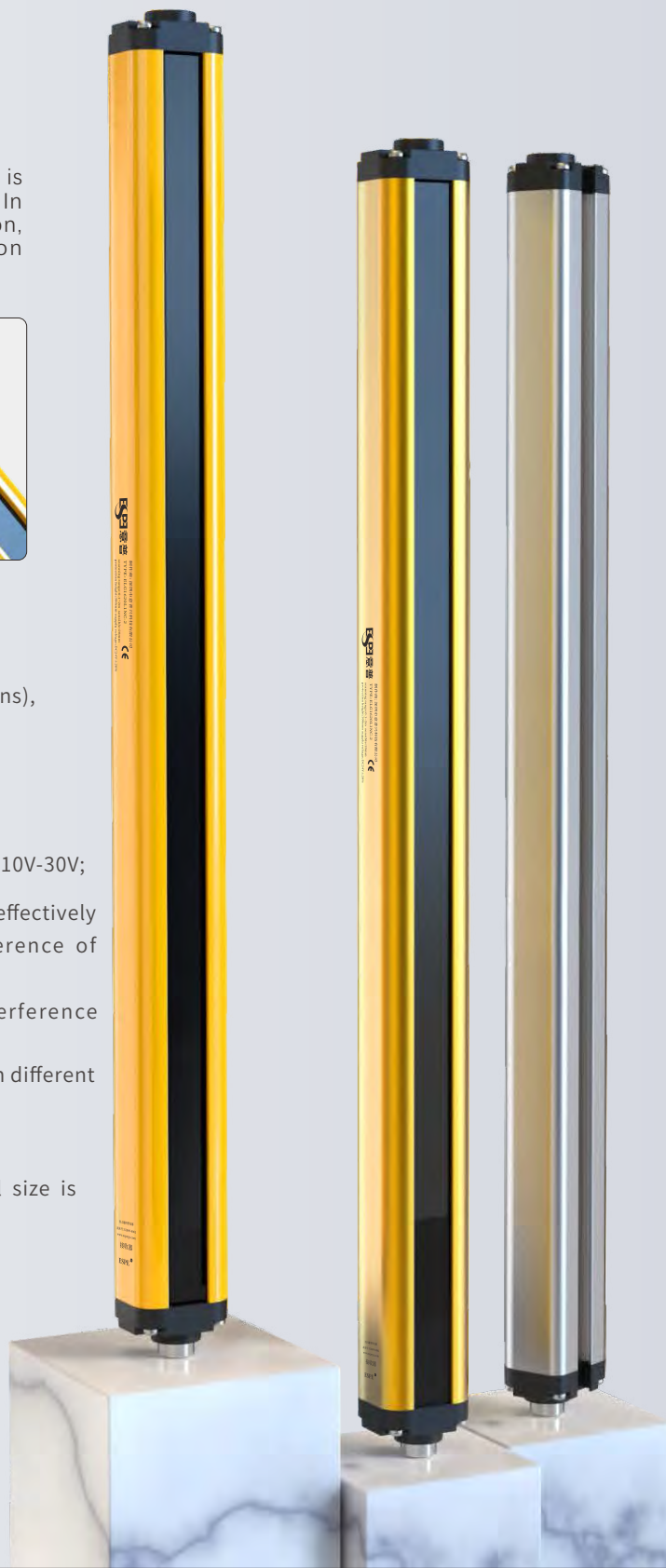
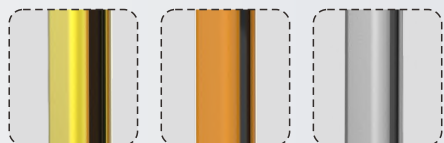
Cause of the compact size, ELG series safety light curtain is suitable for various non-standard automatic machine. In the meantime, it has great advantage like high resolution, long sensing distance, and self-inspection function (independent dual output loop).



Product feature:

- Long sensing distance (compare with small size curtains), can be over 5 meters;
- Self-inspection function is high safety and reliability;
- Quick response time, the fastest response time < 1ms;
- Low wide voltage power supply, the working voltage is DC10V-30V;
- Good ability in anti electromagnetic interference can effectively resist influence of various electromagnetic interference of equipment motors;
- Wire synchronization technology to anti light interference effectively;
- Multiple brackets support various installation methods in different installation environments;
- Proof dust and water well;
- The appearance size is small, and the cross-sectional size is 35*27mm.

Color option: Gold/ yellow/ silver



Technical parameter

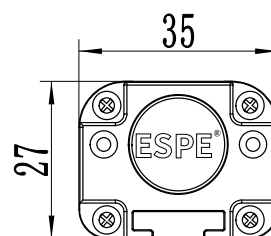
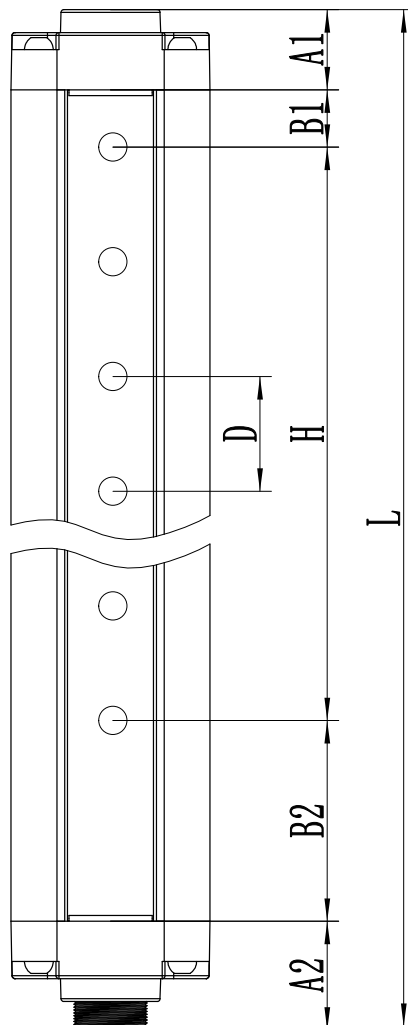
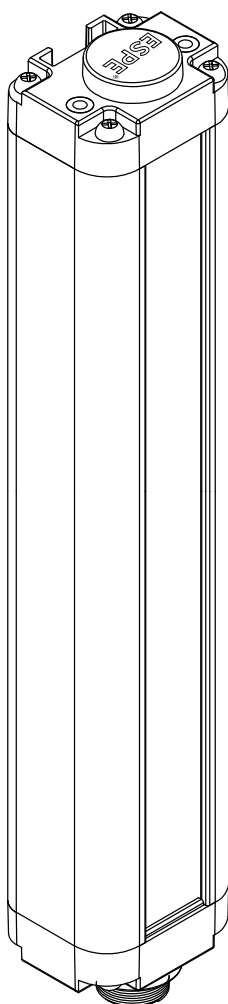
Safety Light Curtain

Parameter of safety light curtain	
Power supply	DC10V~30V
Capacity	<5W
Beam space	10mm, 20mm, 40mm
Resolution	15mm, 25mm, 45mm
Beams	10mm: 8, 12, 16, ..., 144 20mm: 4, 6, 8, ..., 72 40mm: 4, 6, 8, ..., 36
Protective height	Protective height = (N-1) * beam space, N is beam quantity
Wave length	940nm
Response time	Response time = N * 0.1ms + 0.4ms (N is beam quantity)
Type of output (OSSD)	PNP/NPN semiconductors, current <200mA, residual voltage: 1V max, leakage current: 1mA max. (Except voltage influenced by lengthen wire)
Protective circuit	Overvoltage protection, power supply reverse polarity protection, Overcurrent protection
Sensing distance	0.1~0.5m, 0.1~2m, 0.1~4m
Anti-optical interference	10000Lux (angle > 5°)
Sensing method	Through-beam type
Synchronization	Wire synchronization
Enclosure material	Aluminum alloy
Enclosure rating	IP65
Housing cross-section	35*27mm
Ambient operating temperature	-10°C~55°C (with no freezing)
Storage temperature	-30°C~70°C (with no freezing)
Ambient operating humidity	When temperature is 20°C, humidity max 85%

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Explanation of model number (For example: ELG1020L1NCGC-2)

ELG	10	20	L1	N	C	C	-	2
Model	Beams	Beam space	Brackets	Output signal	Output contact	Scanning method		Sensing distance
ELG series	04, 06, 08, 10, 12, ...	10mm 20mm 40mm	L1 Bracket L2 Bracket L7 Bracket	N: NPN output P: PNP output R: Relay (dual output)	C (normal close)	Parallel scanning C: cross scanning		05: 0.1~0.5M 2: 0.1~2M 4: 0.1~4M



ESE Series
ESN Series
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ESCL Series
ESR Series

A1: Uppercover

A2: Bottomcover + aviation cap

B1: Upper stop-work range

B2: Bottom stop-work range

D: Beam gap

H: Protective height

L: Total height

A1=14mm;A2=20mm

When D=10mm, B1=5mm; B2=25mm

When D=20mm, B1=5mm; B2=35mm

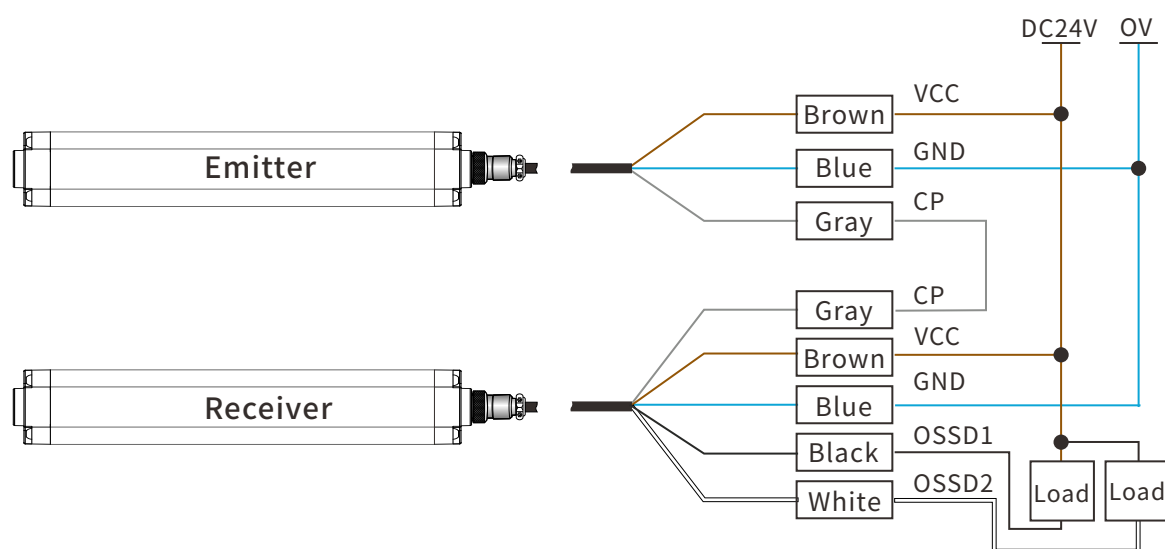
When D=40mm, B1=5mm; B2=35mm

L is total height: $L=A1+A2+B1+B2+H$

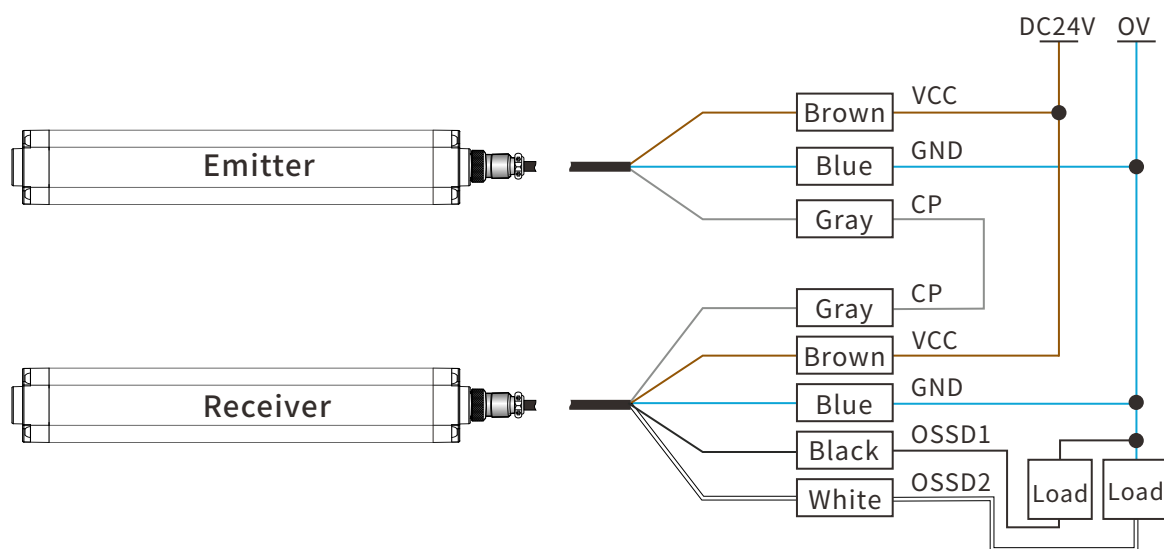
H is protective height: $H=(\text{beams}-1) * \text{beam space}$

Wire connection

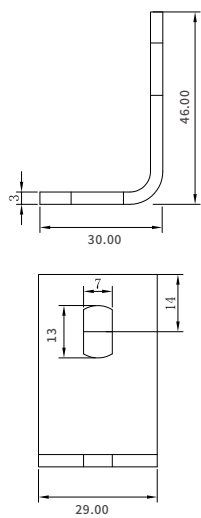
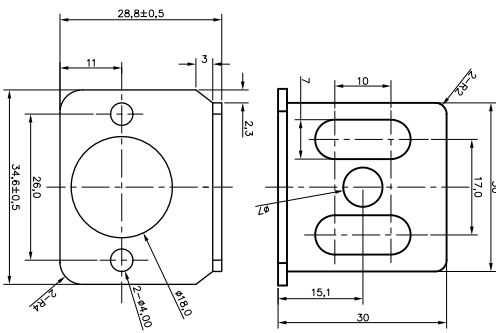
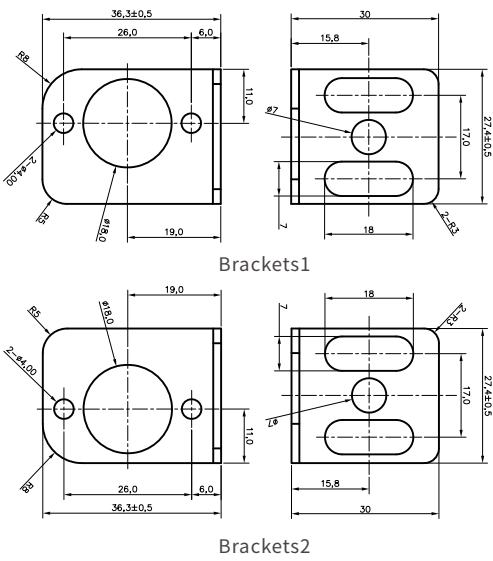
NPN type



PNP type



Option of brackets

Picture	Brackets	Accessories	Size picture
	L1 side mounting	1. L type brackets (4pcs) 2. Sliding pot (4pcs) 3. M6 grommet (4pcs) 4. M6 pad (4pcs) 5. M6*16 screw (4pcs) 6. M6*8 screw (4pcs)	
	L2 upper & bottom mounting	1. Brackets (4pcs) 2. M6*12 screw (4pcs) 3. M3*6 screw (8pcs)	
	L7 upper & bottom side mounting	1. Brackets (4pcs) 2. M6*12 screw (4pcs) 3. M3*6 screw (8pcs)	 Brackets1 Brackets2

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

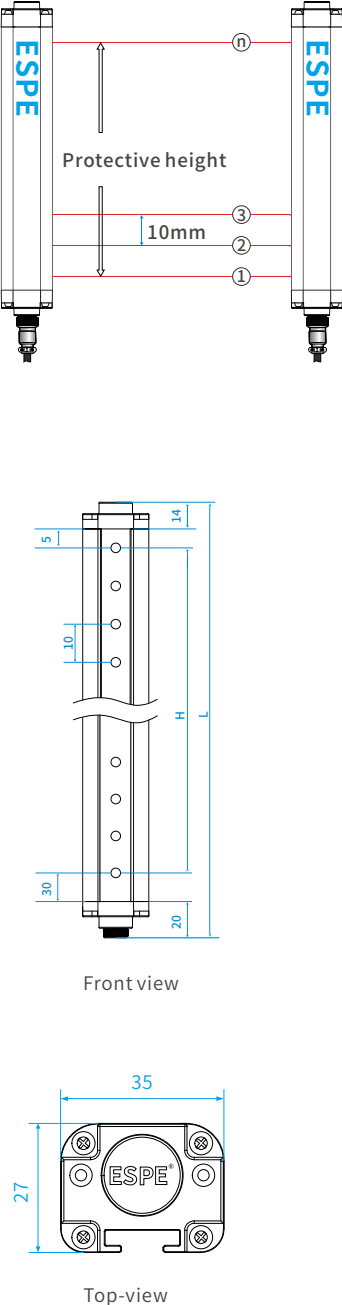
EFB Series

ESCL Series

ESR Series

ELG selection sheet

- Beam gap 10mm, resolution 15mm

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H(mm)
 Front view Top-view	08	70	139	ELG0810	27*35*139
	12	110	179	ELG1210	27*35*179
	16	150	219	ELG1610	27*35*219
	20	190	259	ELG2010	27*35*259
	24	230	299	ELG2410	27*35*299
	28	270	339	ELG2810	27*35*339
	32	310	379	ELG3210	27*35*379
	36	350	419	ELG3610	27*35*419
	40	390	459	ELG4010	27*35*459
	44	430	499	ELG4410	27*35*499
	48	470	539	ELG4810	27*35*539
	52	510	579	ELG5210	27*35*579
	56	550	619	ELG5610	27*35*619
	60	590	659	ELG6010	27*35*659
	64	630	699	ELG6410	27*35*699
	68	670	739	ELG6810	27*35*739
	72	710	779	ELG7210	27*35*779
	76	750	819	ELG7610	27*35*819
	80	790	859	ELG8010	27*35*859
	84	830	899	ELG8410	27*35*899
	88	870	939	ELG8810	27*35*939
	92	910	979	ELG9210	27*35*979
	96	950	1019	ELG9610	27*35*1019
	100	990	1059	ELG10010	27*35*1059
	104	1030	1099	ELG10410	27*35*1099
	108	1070	1139	ELG10810	27*35*1139
	112	1110	1179	ELG11210	27*35*1179
	116	1150	1219	ELG11610	27*35*1219
	120	1190	1259	ELG12010	27*35*1259
	124	1230	1299	ELG12410	27*35*1299
	128	1270	1339	ELG12810	27*35*1339
					
	144	1430	1499	ELG14410	27*35*1499

● Sensing distance: 0.5m, 2m, 4m

● Bracket: L1, L2, L7

H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$

L is total height: $L = A1 + A2 + B1 + B2 + H$

Besides of above mode, we can customize the protective height according to your request.

Safety Light Curtain

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

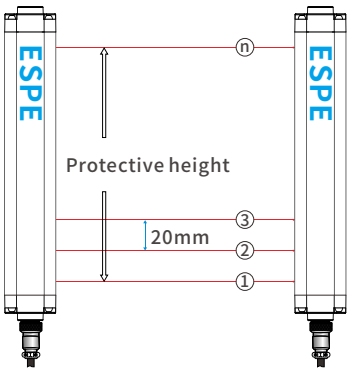
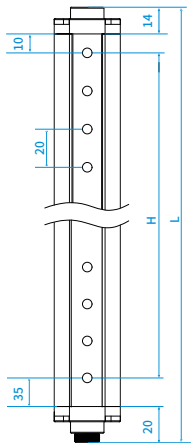
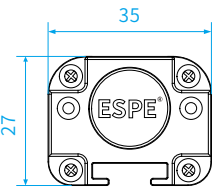
EFB Series

ESCL Series

ESR Series

ELG selection sheet

- Beam gap 20mm, resolution 25mm

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H (mm)
   Front view Top-view	04	60	114	ELG0420	27*35*114
	06	100	179	ELG0620	27*35*179
	08	140	219	ELG0820	27*35*219
	10	180	259	ELG1020	27*35*259
	12	220	299	ELG1220	27*35*299
	14	260	339	ELG1420	27*35*339
	16	300	379	ELG1620	27*35*379
	18	340	419	ELG1820	27*35*419
	20	380	459	ELG2020	27*35*459
	22	420	499	ELG2220	27*35*499
	24	460	539	ELG2420	27*35*539
	26	500	579	ELG2620	27*35*579
	28	540	619	ELG2820	27*35*619
	30	580	659	ELG3020	27*35*659
	32	620	699	ELG3220	27*35*699
	34	660	739	ELG3420	27*35*739
	36	700	779	ELG3620	27*35*779
	38	740	819	ELG3820	27*35*819
	40	780	859	ELG4020	27*35*859
	42	820	899	ELG4220	27*35*899
	44	860	939	ELG4420	27*35*939
	46	900	979	ELG4620	27*35*979
	48	940	1019	ELG4820	27*35*1019
	50	980	1059	ELG5020	27*35*1059
	52	1020	1099	ELG5220	27*35*1099
	54	1060	1139	ELG5420	27*35*1139
	56	1100	1179	ELG5620	27*35*1179
	58	1140	1219	ELG5820	27*35*1219
	60	1180	1259	ELG6020	27*35*1259
	62	1220	1299	ELG6220	27*35*1299
	64	1260	1339	ELG6420	27*35*1339
					
	72	1420	1499	ELG7220	27*35*1499

- Sensing distance: 0.5m, 2m, 4m

- Bracket: L1, L2, L7

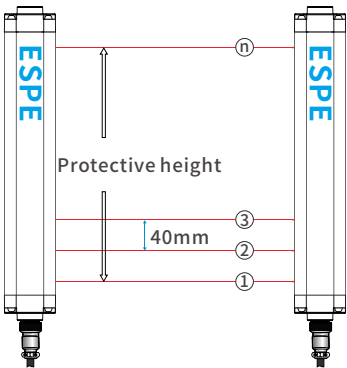
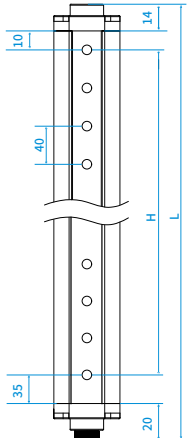
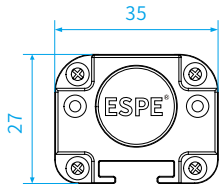
His protective height: $H = (\text{Beams} - 1) * \text{beam space}$

Lis total height: $L = A1 + A2 + B1 + B2 + H$

Besides of above mode, we can customize the protective height according to your request.

ELG selection sheet

- Beam gap 40mm, resolution 45mm

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H(mm)
  Front view  Top-view ● Sensing distance: 0.5m, 2m, 4m ● Bracket: L1, L2, L7 H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$ L is total height: $L = A1 + A2 + B1 + B2 + H$	04	120	199	ELG0440	27*35*199
	06	200	279	ELG0640	27*35*279
	08	280	359	ELG0840	27*35*359
	10	360	439	ELG1040	27*35*439
	12	440	519	ELG1240	27*35*519
	14	520	599	ELG1440	27*35*599
	16	600	679	ELG1640	27*35*679
	18	680	759	ELG1840	27*35*759
	20	760	839	ELG2040	27*35*839
	22	840	919	ELG2240	27*35*919
	24	920	999	ELG2440	27*35*999
	26	1000	1079	ELG2640	27*35*1079
	28	1080	1159	ELG2840	27*35*1159
	30	1160	1239	ELG3040	27*35*1239
	32	1240	1319	ELG3240	27*35*1319
	34	1320	1399	ELG3440	27*35*1399
	36	1400	1479	ELG3640	27*35*1479

Besides of above mode, we can customize the protective height according to your request.

Safety Light Curtain

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

Application Cases

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

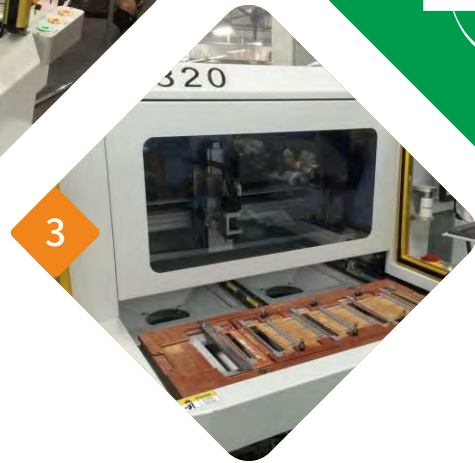
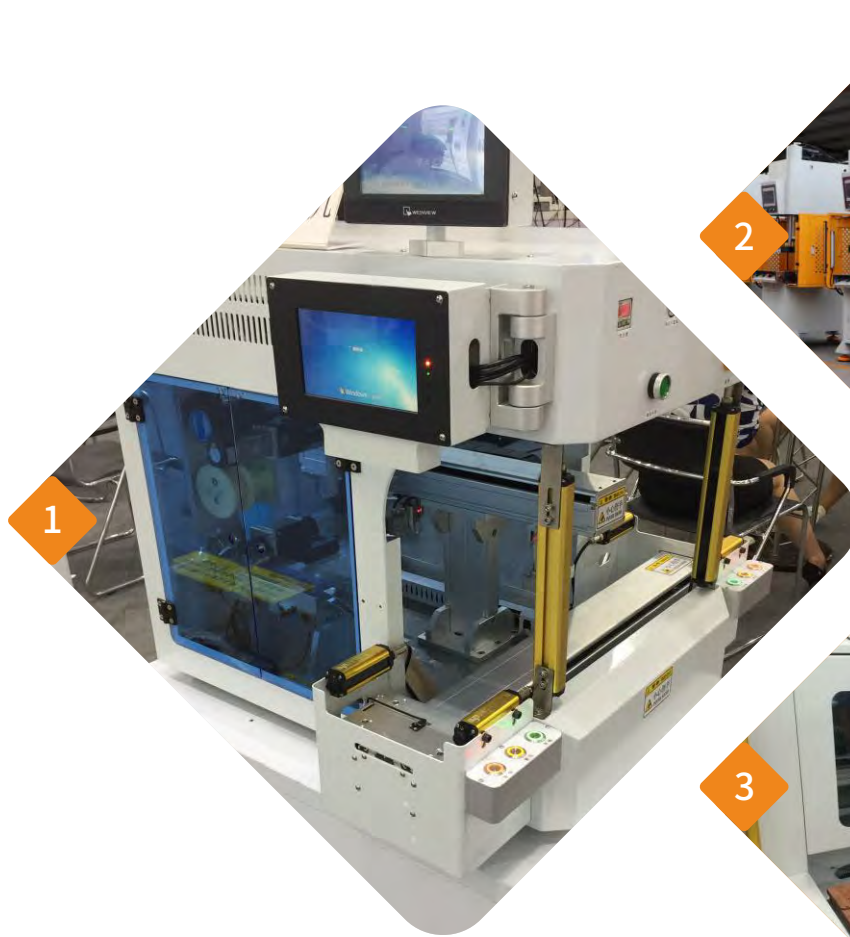
EB15 Series

EB13 Series

EFB Series

ESCL Series

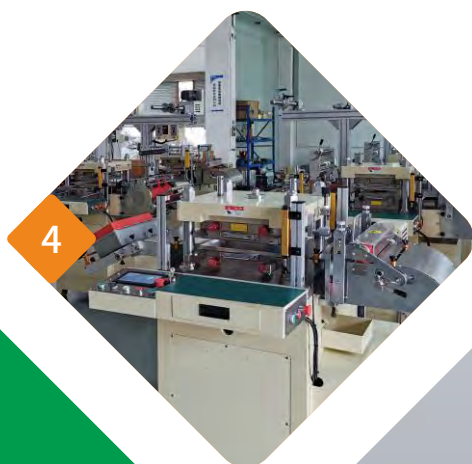
ESR Series



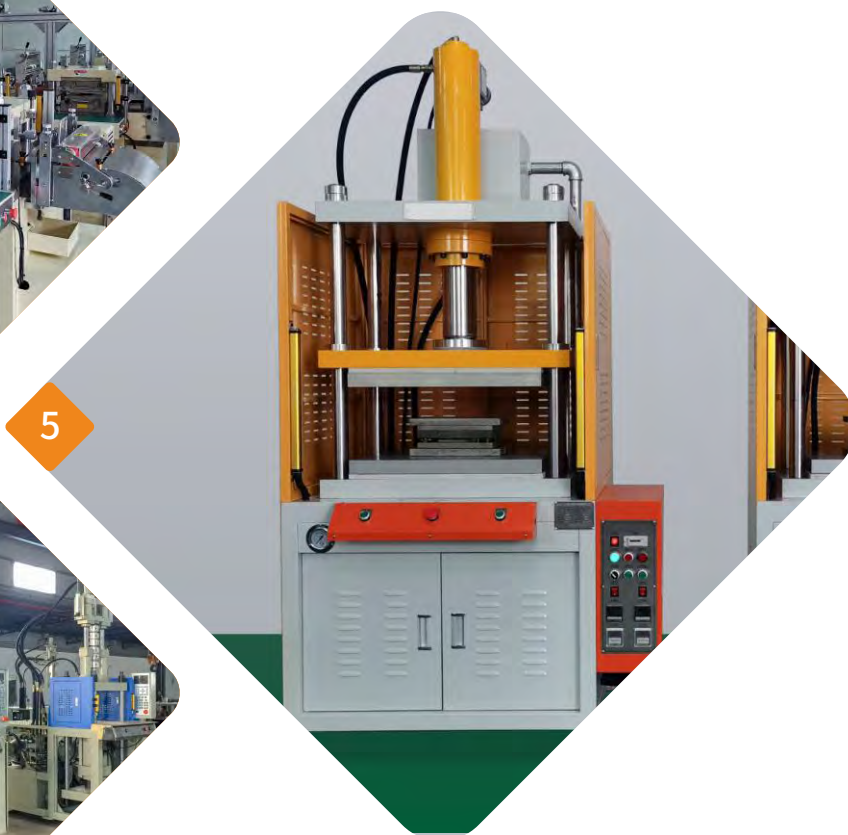
ESPE

- ① Automatic assemble machine
- ② Servo press machine
- ③ Customized machine (non-standard machine)

意普



4



5



6

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

4 Die Cutting Machine

5 Hydraulic press

6 Injection Molding Machine

EB15 Series

Ultra-thin safety light curtain

Product introduction

Eb15 safety light curtain has a unique structure - 15mm ultra-thin sectional size to emit infrared light. Multi signal output method, easy to install and connect wire; In the mean time, it respond quickly to ensure reliable performance.



Product feature

- Ultra-thin photosensitive surface, the size is 15mm
- Quick response, the fastest response time <1ms
- Low wide voltage power supply, the working voltage is DC10 V-30V
- Strong ability in anti-electromagnetic interference can resist various electromagnetic interference effectively;
- Wire synchronization technology to ensure good performance on anti-light interference
- Easy to install, the end-cover is fixed and installed
- The section size is 39*15mm



Parameter of safety light curtain	
Power supply	DC10V~30V
Capacity	<5W
Beam space	10mm, 20mm, 40mm
Resolution	15mm, 25mm, 45mm
Beams	10mm: 8, 12, 16.....160 20mm: 4, 6, 8.....80 40mm: 4, 6, 8.....40
Protective height	Protective height = (N-1) * beam space, N is beam quantity
Wave length	940nm
Response time	Response time = N * 0.1ms + 0.4ms (N is beam quantity)
Type of output (OSSD)	PNP/NPN semiconductors, current <200mA, residual voltage: 1V max, leakage current: 1mA max. (Except voltage influenced by lengthen wire)
Protective circuit	Overvoltage protection, power supply reverse polarity protection, Overcurrent protection
Sensing distance	0.1~0.5m, 0.1~2m, 0.1~4m
Anti-optical interference	10000Lux (angle > 5°)
Sensing method	Through-beam type
Synchronization	Wire synchronization
Enclosure material	Aluminum alloy
Enclosure rating	Ip54
Housing cross-section	39*15mm
Ambient operating temperature	-10°C~55°C (with no freezing)
Storage temperature	-30°C~70°C (with no freezing)
Ambient operating humidity	When temperature is 20°C, humidity max 85%

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

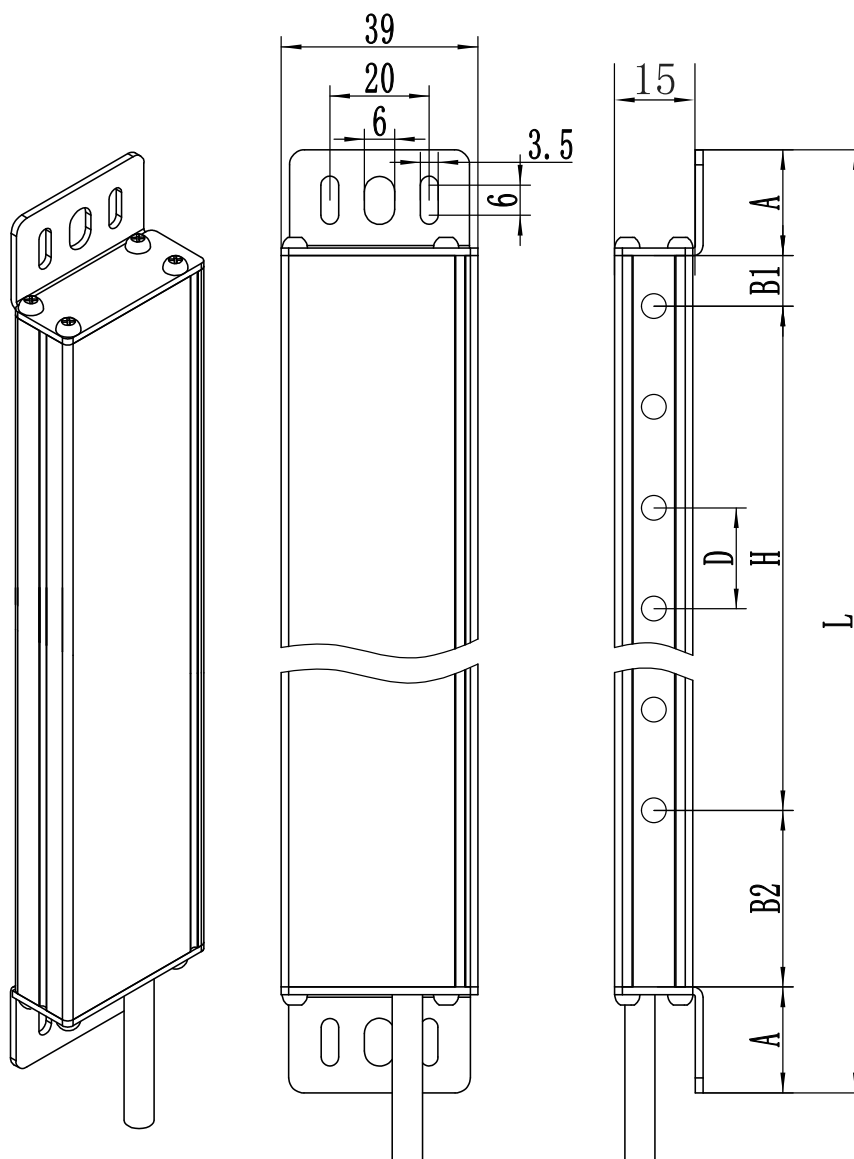
ESR Series

Explanation of model number (For example: EB15-1020NC-2)

EB15	—	10	20	N	C	—	2
▼		▼	▼	▼	▼		▼
Model		Beams	Beam space	Output signal	Scanning method		Sensing distance
EB15系列		04, 06, 08, 10, 12.....	10mm, 20mm, 40mm	N: NPN output P: PNP output	Parallel scanning C: cross scanning		0.5: 0.1~0.5M 2: 0.1~2M 4: 0.1~4M

Product size

- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series**
- EB13 Series
- EFB Series
- ESCL Series
- ESR Series

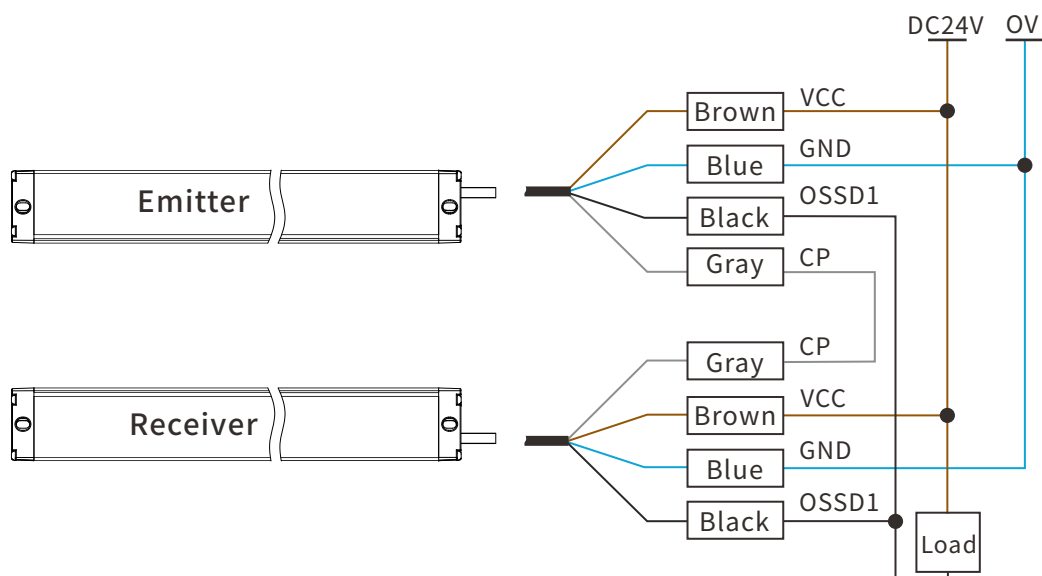


A: Upper and bottom cover
 B1: Upper stop-work range
 B2: Bottom stop-work range
 D: Beam gap
 H: Protective height
 L: Total height

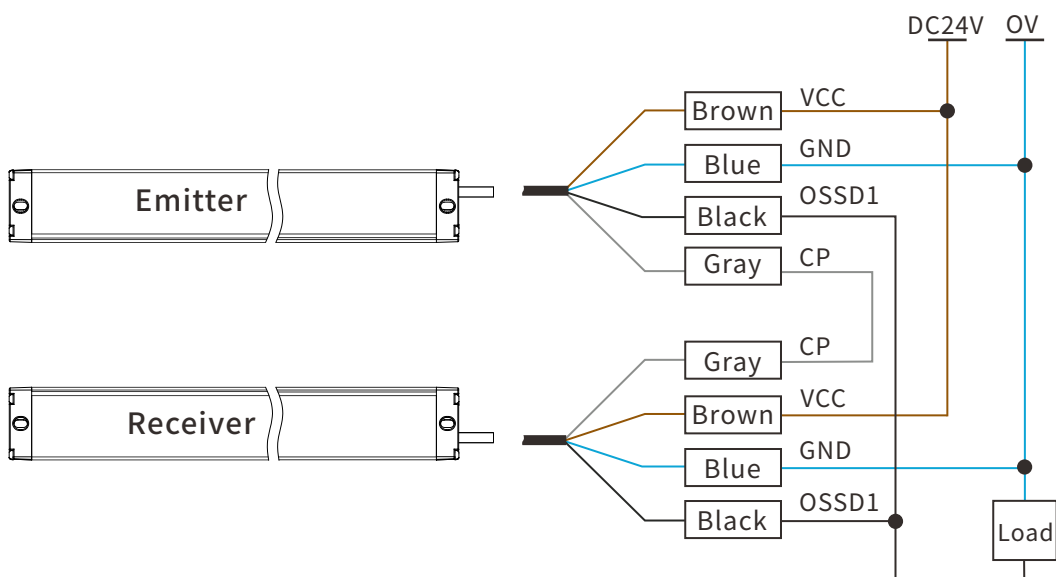
A=20mm;
 When D=10mm, B1=5mm; B2=25mm
 When D=20mm, B1=5mm; B2=15mm
 When D=40mm, B1=5mm; B2=15mm
 L is total height: $L=A1+A2+B1+B2+H$
 H is protective height: $H=(\text{beams}-1) \times \text{beam space}$

Wire connection

NPN type



NPN type



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

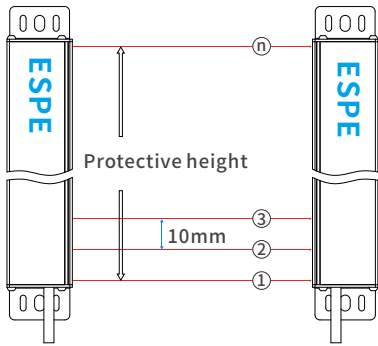
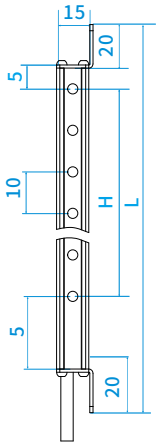
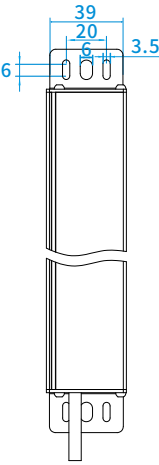
EFB Series

ESCL Series

ESR Series

ELG selection sheet

- Beam gap 10mm, resolution 15mm

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H (mm)
	08	70	120	EB15-0810	39*15*120
	12	110	160	EB15-1210	39*15*160
	16	150	200	EB15-1610	39*15*200
	20	190	240	EB15-2010	39*15*240
	24	230	280	EB15-2410	39*15*280
	28	270	320	EB15-2810	39*15*320
	32	310	360	EB15-3210	39*15*360
	36	350	400	EB15-3610	39*15*400
	40	390	440	EB15-4010	39*15*440
	44	430	480	EB15-4410	39*15*480
	48	470	520	EB15-4810	39*15*520
	52	510	560	EB15-5210	39*15*560
	56	550	600	EB15-5610	39*15*600
	60	590	640	EB15-6010	39*15*640
	64	630	680	EB15-6410	39*15*680
	68	670	720	EB15-6810	39*15*740
 Front view	72	710	760	EB15-7210	39*15*780
	76	750	800	EB15-7610	39*15*800
	80	790	840	EB15-8010	39*15*840
	84	830	880	EB15-8410	39*15*880
	88	870	920	EB15-8810	39*15*920
	92	910	960	EB15-9210	39*15*960
	96	950	1000	EB15-9610	39*15*1000
	100	990	1040	EB15-10010	39*15*1040
	104	1030	1080	EB15-10410	39*15*1080
	108	1070	1120	EB15-10810	39*15*1120
	112	1110	1160	EB15-11210	39*15*1160
	116	1150	1200	EB15-11610	39*15*1200
	120	1190	1240	EB15-12010	39*15*1240
	124	1230	1280	EB15-12410	39*15*1280
	128	1270	1320	EB15-12810	39*15*1320
					
 Top-view	160	1590	1640	EB15-16010	39*15*1640

H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$
 L is total height: $L = A1 + A2 + B1 + B2 + H$

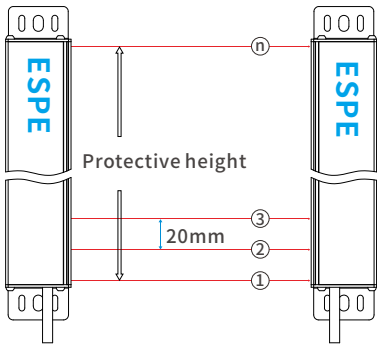
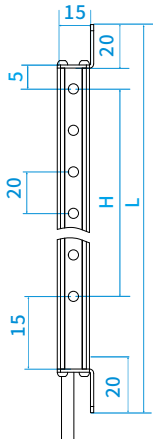
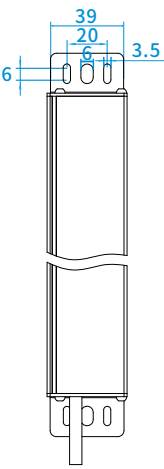
Besides of above mode, we can customize the protective height according to your request.

- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series**
- EB13 Series
- EFB Series
- ESCL Series
- ESR Series

ELG selection sheet

- Beam gap 20mm, resolution 25mm

Safety Light Curtain

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H (mm)
	04	60	120	EB15-0420	39*15*120
	06	100	160	EB15-0620	39*15*160
	08	140	200	EB15-0820	39*15*200
	10	180	240	EB15-1020	39*15*240
	12	220	280	EB15-1220	39*15*280
	14	260	320	EB15-1420	39*15*320
	16	300	360	EB15-1620	39*15*360
	18	340	400	EB15-1820	39*15*400
	20	380	440	EB15-2020	39*15*440
	22	420	480	EB15-2220	39*15*480
	24	460	520	EB15-2420	39*15*520
	26	500	560	EB15-2620	39*15*560
	28	540	600	EB15-2820	39*15*600
	30	580	640	EB15-3020	39*15*640
	32	620	680	EB15-3220	39*15*680
	34	660	720	EB15-3420	39*15*720
	36	700	760	EB15-3620	39*15*760
	38	740	800	EB15-3820	39*15*800
	40	780	840	EB15-4020	39*15*840
	42	820	880	EB15-4220	39*15*880
  Front view Top-view H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$ L is total height: $L = A1 + A2 + B1 + B2 + H$	44	860	920	EB15-4420	39*15*920
	46	900	960	EB15-4620	39*15*960
	48	940	1000	EB15-4820	39*15*1000
	50	980	1040	EB15-5020	39*15*1040
	52	1020	1080	EB15-5220	39*15*1080
	54	1060	1120	EB15-5420	39*15*1120
	56	1100	1160	EB15-5620	39*15*1160
	58	1140	1200	EB15-5820	39*15*1200
	60	1180	1240	EB15-6020	39*15*1240
	62	1220	1280	EB15-6220	39*15*1280
	64	1260	1320	EB15-6420	39*15*1320
					
	80	1580	1640	EB15-8020	39*15*1640

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

Besides of above mode, we can customize the protective height according to your request.

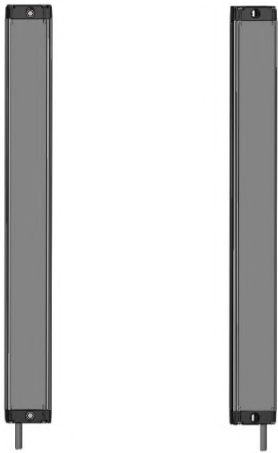
ELG selection sheet

- Beam gap 40mm, resolution 45mm

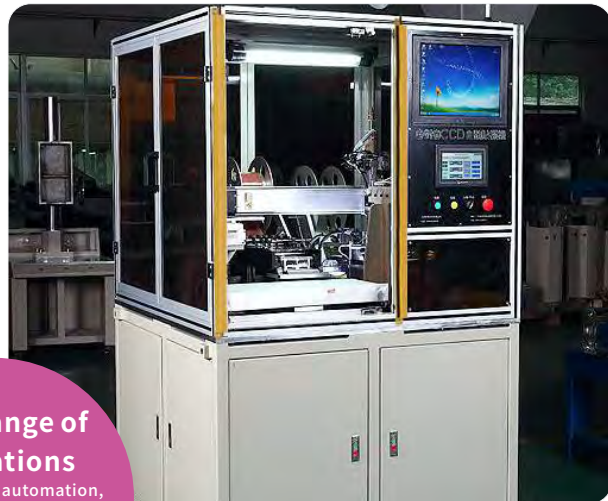
[illegible]

Besides of above mode, we can customize the protective height according to your request.

Installation picture

Picture	Installation Method	Accessorie
	End cap mounting hole position	M4*20Screws (4PCS)

Application case



Wide range of applications

Non-standard automation,
AOI optical inspection
equipment, etc.
Equipment with small
installation position



- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series**
- EB13 Series
- EFB Series
- ESCL Series
- ESR Series

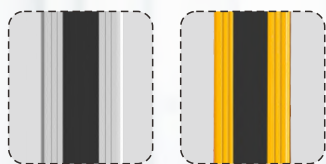
EB13 Series

Ultra-compact safety light curtain

Product introduction

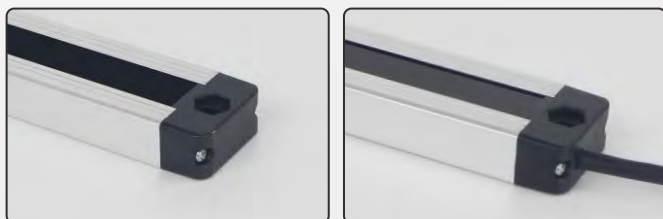
EB13 series ultra-compact safety light curtain, light is emitted from front, the thickness of product is only 13mm. When installed on machine, it save much space, and easy to align. Strong resistance to light and electromagnetic interference, low power to save electricity, short response time to ensure reliability.

Color option: silver/yellow



Product feature:

- Small and ultra-thin size, sectional size is only 28*13mm.
- Quick response time, the fastest response time < 1ms;
- Low wide voltage power supply, the working voltage is DC10V-30V;
- Good ability in anti electromagnetic interference can effectively resist influence of various electromagnetic interference of equipment motors;
- Wire synchronization technology to anti light interference effectively;
- Easy to install and operate.



Technical parameter

Parameter of safety light curtain	
Power supply	DC10V~30V
Capacity	<5W
Beam space	10mm, 20mm, 40mm
Resolution	15mm, 25mm, 45mm
Beams	10mm: 8, 12, 16.....128
	20mm: 4, 6, 8.....64
	40mm: 4, 6, 8.....32
Protective height	Protective height = (N-1) * beam space, N is beam quantity
Wave length	940nm
Response time	Response time = N*0.1ms + 0.4ms (N is beam quantity)
Type of output (OSSD)	PNP/NPN semiconductors, current <200mA, residual voltage: 1V max, leakage current: 1mA max. (Except voltage influenced by lengthen wire)
Protective circuit	Overvoltage protection, power supply reverse polarity protection, Overcurrent protection
Sensing distance	0.1~0.5m, 0.1~1m, 0.1~2m
Anti-optical interference	10000Lux (angle > 5°)
Sensing method	Through-beam type
Synchronization	Wire synchronization
Enclosure material	Aluminum alloy
Enclosure rating	IP54
Housing cross-section	28*13mm
Ambient operating temperature	-10°C~55°C (with no freezing)
Storage temperature	-30°C~70°C (with no freezing)
Ambient operating humidity	When temperature is 20°C, humidity max 85%

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

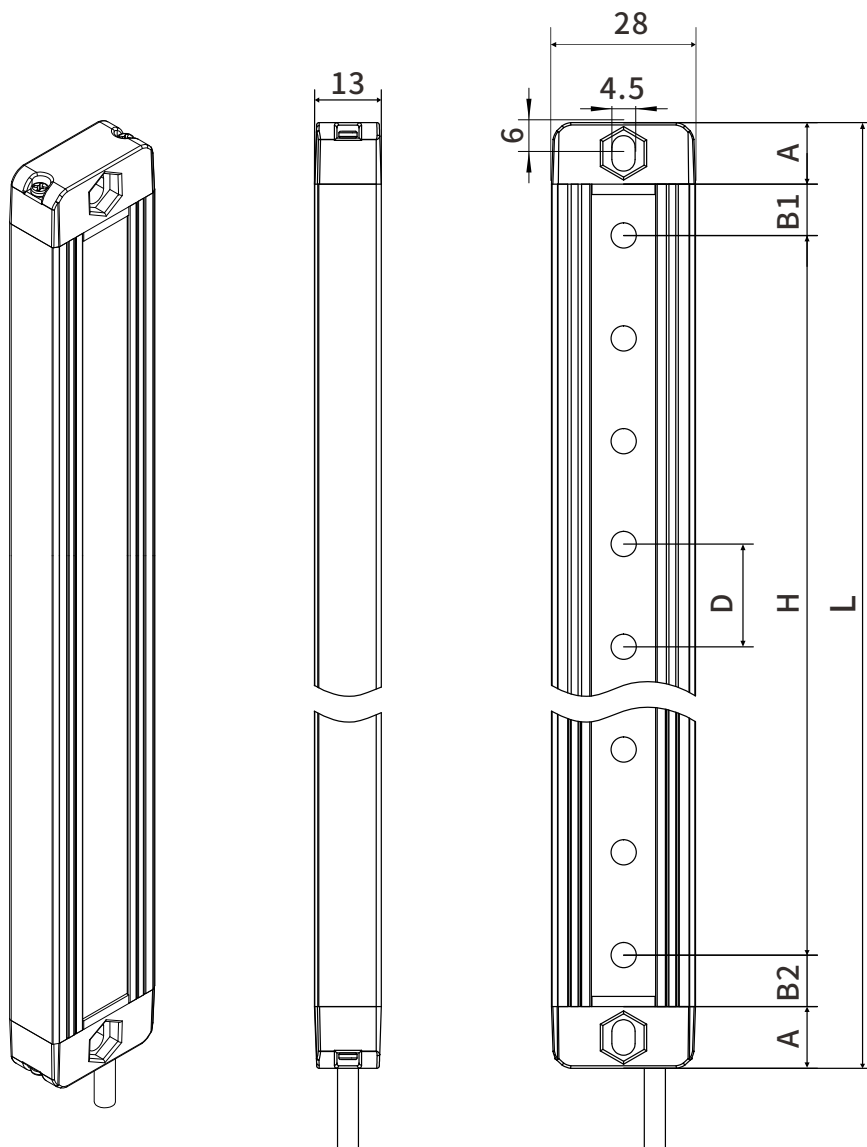
ESR Series

Explanation of model number (For example: EB13-1020NSC-2)

EB13	—	10		20		N		C		S		C	—	2
▼		▼		▼		▼		▼		▼		▼		▼
Model		Beams		Beam space		Output signal		Output contact		Color		Scanning method		Sensing distance
Eb13 series		04, 06, 08, 10, 12, ...		10mm 20mm 40mm		N: NPN output P: PNP output		C: normal close		S: Silver Y: Yellow		Parallel scanning C: cross scanning		0.5: 0.1~0.5M 1: 0.1~1M 2: 0.1~2M

Product size

- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series
- EB13 Series**
- EFB Series
- ESCL Series
- ESR Series

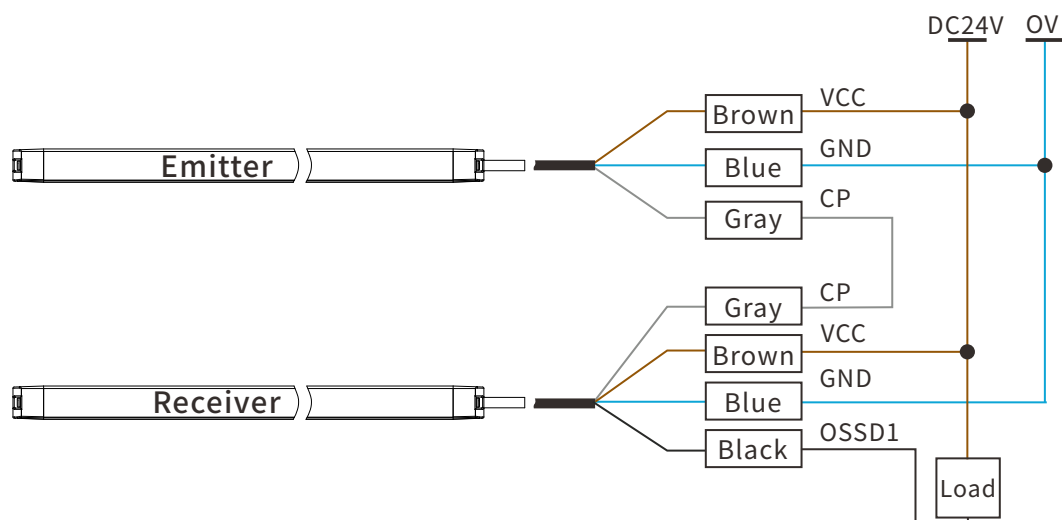


A: Upper and bottom cover
 B1: Upper stop-work range
 B2: Bottom stop-work range
 D: Beam gap
 H: Protective height
 L: Total height

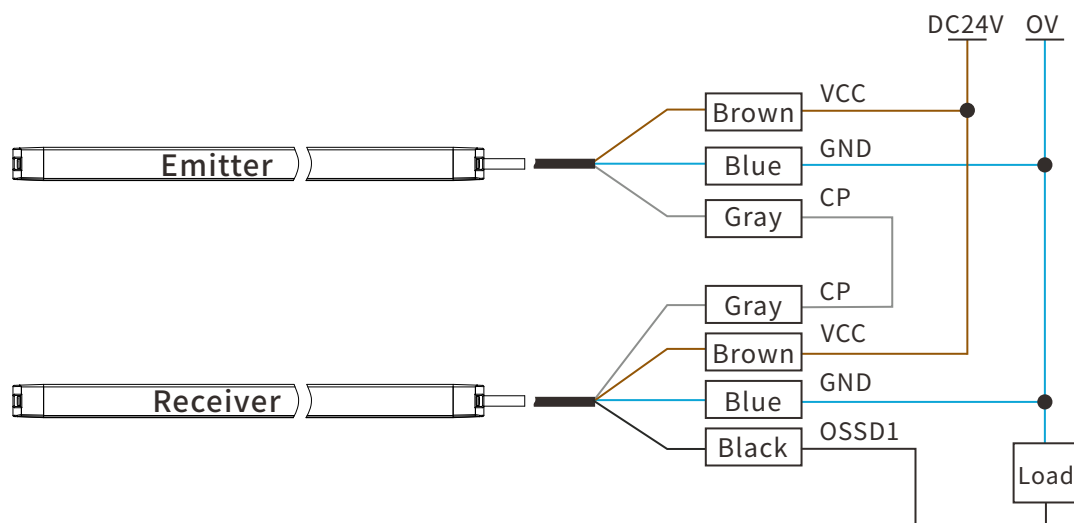
A=14mm;
 When D=10mm, B1=5mm; B2=5mm
 When D=20mm, B1=10mm; B2=10mm
 When D=40mm, B1=10mm; B2=30mm
 L is total height: $L=A1+A2+B1+B2+H$
 H is protective height: $H=(\text{beams}-1) \times \text{beam space}$

Wire connection

NPN type

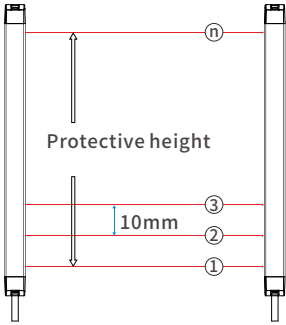
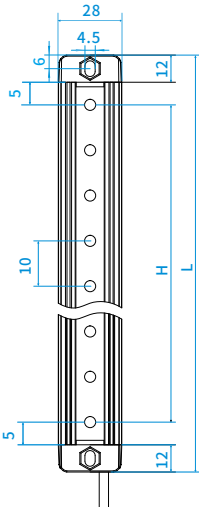
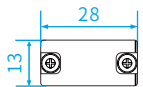


PNP type



EB13 selection sheet

- Beam gap 10mm, resolution 15mm

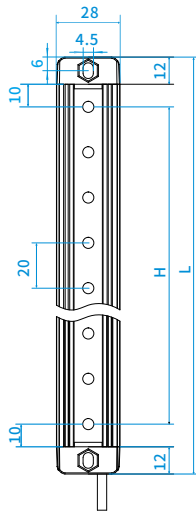
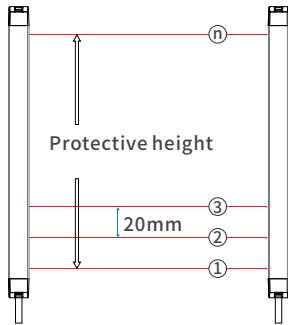
Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H (mm)
	08	70	104	EB13-0810	28*13*104
	12	110	144	EB13-1210	28*13*144
	16	150	184	EB13-1610	28*13*184
	20	190	224	EB13-2010	28*13*224
	24	230	264	EB13-2410	28*13*264
	28	270	304	EB13-2810	28*13*304
	32	310	344	EB13-3210	28*13*344
	36	350	384	EB13-3610	28*13*384
	40	390	424	EB13-4010	28*13*424
	44	430	464	EB13-4410	28*13*464
	48	470	504	EB13-4810	28*13*504
	52	510	544	EB13-5210	28*13*544
	56	550	584	EB13-5610	28*13*584
	60	590	624	EB13-6010	28*13*624
	64	630	664	EB13-6410	28*13*664
	68	670	704	EB13-6810	28*13*704
	72	710	744	EB13-7210	28*13*744
	76	750	784	EB13-7610	28*13*784
	80	790	824	EB13-8010	28*13*824
	84	830	864	EB13-8410	28*13*864
	88	870	904	EB13-8810	28*13*904
	92	910	944	EB13-9210	28*13*944
	96	950	984	EB13-9610	28*13*984
	100	990	1024	EB13-10010	28*13*1024
	104	1030	1064	EB13-10410	28*13*1064
	108	1070	1104	EB13-10810	28*13*1104
	112	1110	1144	EB13-11210	28*13*1144
	116	1150	1184	EB13-11610	28*13*1184
	120	1190	1224	EB13-12010	28*13*1224
	124	1230	1264	EB13-12410	28*13*1264
	128	1270	1304	EB13-12810	28*13*1304

H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$
 L is total height: $L = A1 + A2 + B1 + B2 + H$

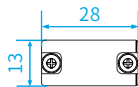
Besides of above mode, we can customize the protective height according to your request.

EB13 selection sheet

- Beam gap 20mm, resolution 25mm



Front view



Top-view

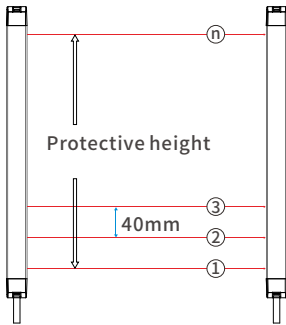
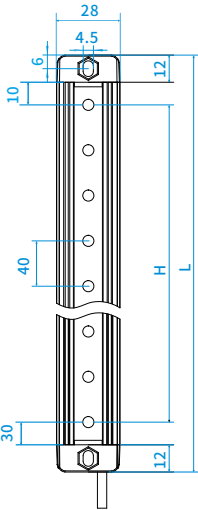
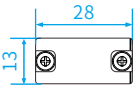
H is protective height: $H = (\text{Beams} - 1) \times \text{beam space}$
 L is total height: $L = A1 + A2 + B1 + B2 + H$

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H (mm)
	04	60	104	EB13-0420	28*13*104
	06	100	144	EB13-0620	28*13*144
	08	140	184	EB13-0820	28*13*184
	10	180	224	EB13-1020	28*13*224
	12	220	264	EB13-1220	28*13*264
	14	260	304	EB13-1420	28*13*304
	16	300	344	EB13-1620	28*13*344
	18	340	384	EB13-1820	28*13*384
	20	380	424	EB13-2020	28*13*424
	22	420	464	EB13-2220	28*13*464
	24	460	504	EB13-2420	28*13*504
	26	500	544	EB13-2620	28*13*544
	28	540	584	EB13-2820	28*13*584
	30	580	624	EB13-3020	28*13*624
	32	620	664	EB13-3220	28*13*664
	34	660	704	EB13-3420	28*13*704
	36	700	744	EB13-3620	28*13*744
	38	740	784	EB13-3820	28*13*784
	40	780	824	EB13-4020	28*13*824
	42	820	864	EB13-4220	28*13*864
	44	860	904	EB13-4420	28*13*904
	46	900	944	EB13-4620	28*13*944
	48	940	984	EB13-4820	28*13*944
	50	980	1024	EB13-5020	28*13*1024
	52	1020	1064	EB13-5220	28*13*1064
	54	1060	1104	EB13-5420	28*13*1104
	56	1100	1144	EB13-5620	28*13*1144
	58	1140	1184	EB13-5820	28*13*1184
	60	1180	1224	EB13-6020	28*13*1224
	62	1220	1264	EB13-6220	28*13*1264
	64	1260	1304	EB13-6420	28*13*1304

Besides of above mode, we can customize the protective height according to your request.

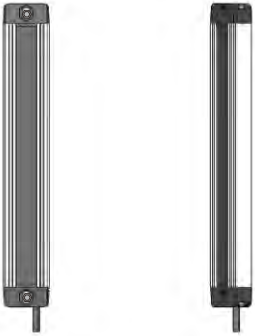
EB13 selection sheet

- Beam gap 40mm, resolution 45mm

Shape (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Model	Size L*W*H (mm)
	04	120	184	EB13-0440	28*13*184
	06	200	264	EB13-0640	28*13*264
	08	280	344	EB13-0840	28*13*344
	10	360	424	EB13-1040	28*13*424
	12	440	504	EB13-1240	28*13*504
	14	520	584	EB13-1440	28*13*584
	16	600	664	EB13-1640	28*13*664
	18	680	744	EB13-1840	28*13*744
	20	760	824	EB13-2040	28*13*824
	22	840	904	EB13-2240	28*13*904
	24	920	984	EB13-2440	28*13*984
	26	1000	1064	EB13-2640	28*13*1064
	28	1080	1144	EB13-2840	28*13*1144
	30	1160	1224	EB13-3040	28*13*1224
	32	1240	1304	EB13-3240	28*13*1304
 Front view  Top-view					
H is protective height: $H = (\text{Beams} - 1) * \text{beam space}$ L is total height: $L = A1 + A2 + B1 + B2 + H$					

Besides of above mode, we can customize the protective height according to your request.

Installation picture

Picture	Installation Method	Accessorie
	End cap mounting hole position	M4*16Screws (4PCS)

Application case



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series

EFB Series

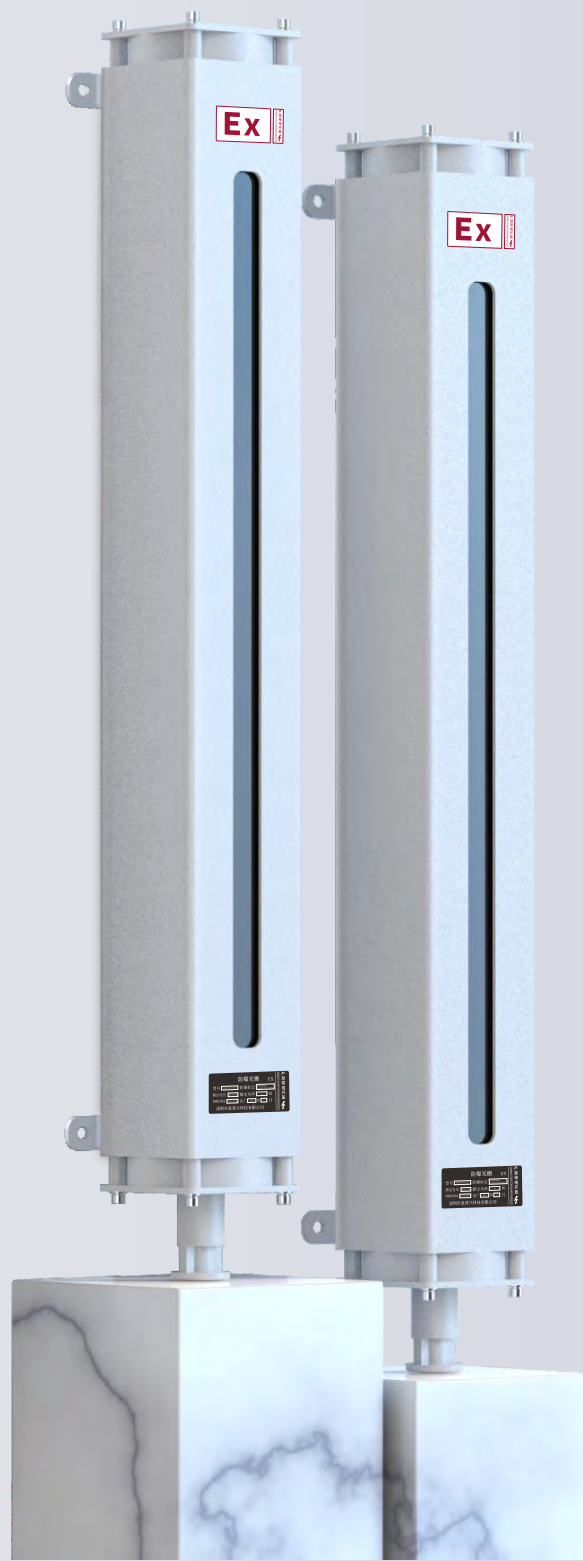
Anti-explosion safety light curtain

EFB Series Anti-explosion safety light curtain

EFB series anti-explosion safety light curtain, is mainly used to isolate safety light curtain from explosion environment. It is suitable for explosive gas environment zone 1 and zone 2 hazardous locations, IIA, IIB, IIC level explosive gas environment, and combustible dust environment in zone 20, zone 21 and zone 22, the temperature group is T1-T6 environment, petrochemical, offshore drilling platforms, metallurgy, medicine, light industry, textile, wine, paint, coatings, food, biological engineering and military and so on factories.

Product feature

- Long sensing distance up to 30 meters;
- Adopt dual but independent output loop and can do self-inspection, with high reliability;
- Strong ability in anti-electromagnetic interference can resist various electromagnetic interference effectively;
- Wire synchronization technology to ensure good performance to resist optical interference;
- External enclosure is made of high quality steel plates or stainless steel which surface is electrostatically sprayed with powder after high-speed shot blasting.
- It can be easily installed on upper end and bottom end.
- Size can be customized according to customer request.
- The wire method can use steel pipe or cable, explosion-proof hose.



Technical parameter

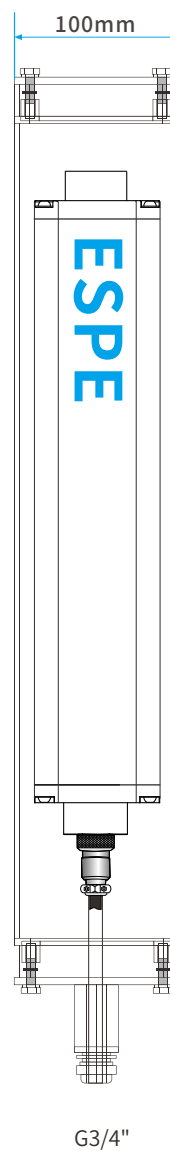
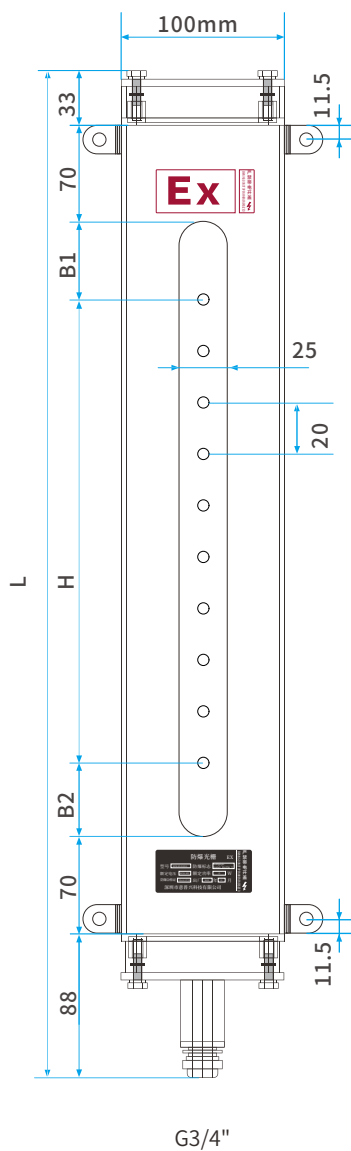
Parameter of safety light curtain	
Power supply	DC10V~30V
Capacity	<5W
Beam space	10mm, 20mm, 40mm
Resolution	20mm, 30mm, 50mm
Beams	10mm: 32, 36, 40.....176
	20mm: 16, 18, 20.....88
	40mm: 8, 10, 12.....44
Protective height	Protective height = (N-1) * beam space, N is beam quantity
Wave length	940nm
Response time	Response time = N * 0.1ms + 0.4ms (N is beam quantity)
Type of output (OSSD)	PNP/NPN semiconductors, current <200mA, residual voltage: 1V max, leakage current: 1mA max. (Except voltage influenced by lengthen wire)
Protective circuit	Overvoltage protection, power supply reverse polarity protection, Overcurrent protection
Sensing distance	0.1~5m, 0.1~10m, 0.1~20m
Anti-optical interference	10000Lux (angle > 5°)
Sensing method	Through-beam type
Synchronization	Wire synchronization
Enclosure material	Aluminum alloy
Enclosure rating	IP65
Housing cross-section	35*50mm
Vibration resistance	10Hz...55Hz frequency, amplitude 0.35±0.05mm, each in X, Y and Z directions for 20 times.
Ambient operating temperature	-10°C~55°C (with no freezing)
Storage temperature	-30°C~70°C (with no freezing)
Ambient operating humidity	When temperature is 20°C, humidity max 85%

ESE Series
 ESN Series
 ESQS Series
 ESQC Series
 ESA Series
 ELG Series
 EB15 Series
 EB13 Series
EFB Series
 ESCL Series
 ESR Series

Explanation of model number (For example: EFB-EX-N1620NC5)

EFB	—	EX	—	N	16	20	N	C	—	5
▼		▼		▼	▼	▼	▼	▼		▼
Model	Ex explosion marks	Corresponding series	Beams	Beam space	Output signal	Output contact	Sensing distance			
EFB series	Ex explosion marks	N: ESN series	08, 10, 12	10mm, 20mm, 40mm	N: NPN output P: PNP output	Parallel scanning C: cross scanning	5: 0.1~5M 10: 0.1~10M 20: 0.1~20M			

ESE Series
ESN Series
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ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

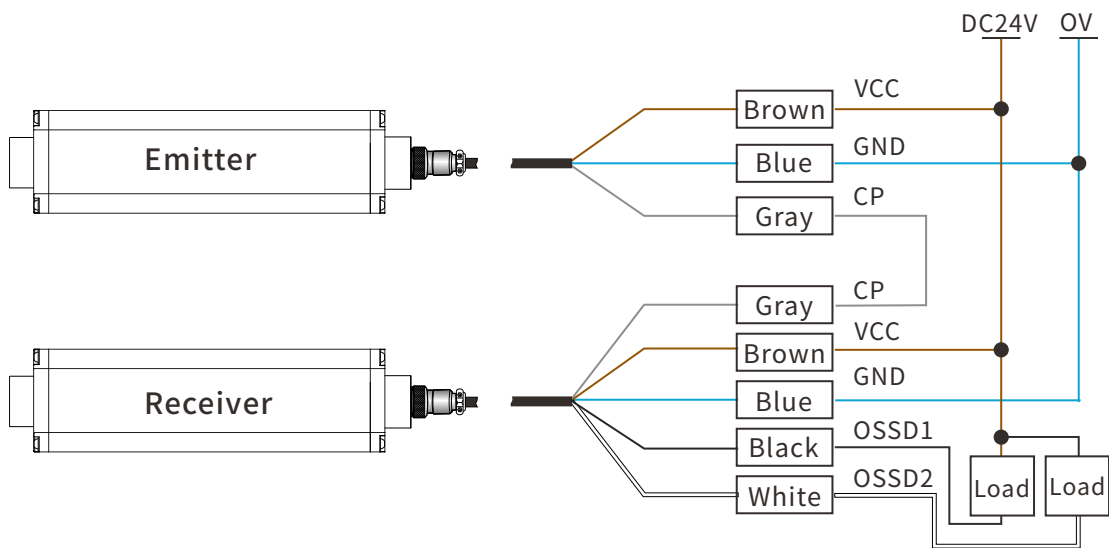


B1: Upper stop-work range for sensing side
 B2: Bottom stop-work range for sensing side
 D: Beam gap
 H: Protective height
 L: Total height

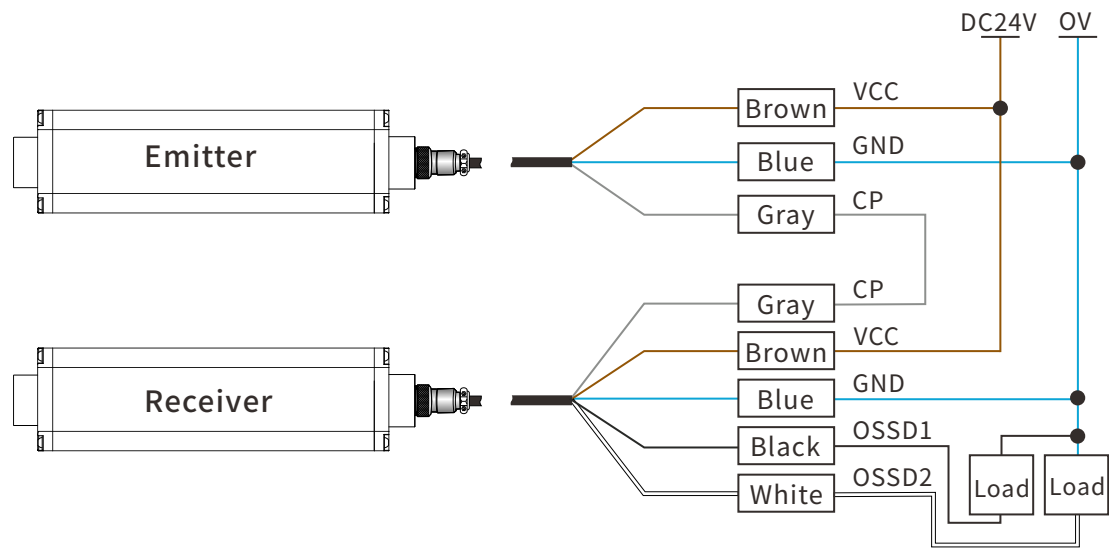
When D=10mm, B1=10mm; B2=35mm
 When D=20mm, B1=15mm; B2=45mm
 When D=40mm, B1=15mm; B2=40mm
 L is total height: $L=A1+A2+B1+B2+H$
 H is protective height: $H=(\text{beams}-1) \times \text{beam space}$

Wire connection

NPN type

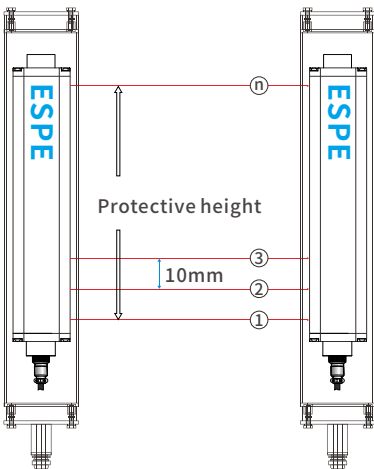
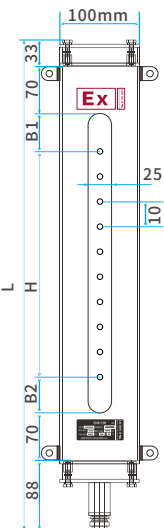
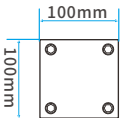


PNP type



EFB selection sheet

- Beam gap is 10mm, resolution 20mm

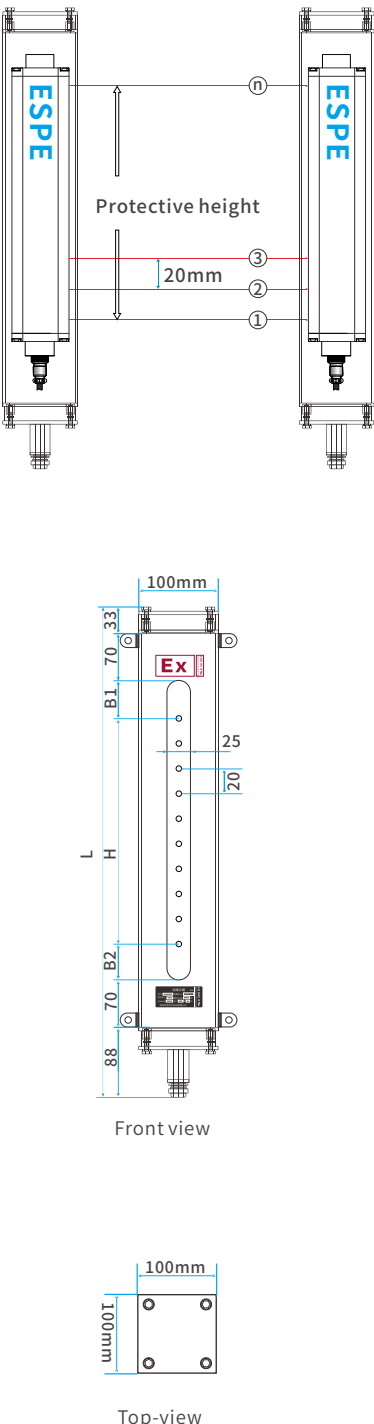
Picture (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Specification	Size L*W*H (mm)
  Front view  Top-view	32	310	616	EFB-EX-N3210	100*100*616
	36	350	656	EFB-EX-N3610	100*100*656
	40	390	696	EFB-EX-N4010	100*100*696
	44	430	736	EFB-EX-N4410	100*100*736
	48	470	776	EFB-EX-N4810	100*100*776
	52	510	816	EFB-EX-N5210	100*100*816
	56	550	856	EFB-EX-N5610	100*100*856
	60	590	896	EFB-EX-N6010	100*100*896
	64	630	936	EFB-EX-N6410	100*100*936
	68	670	976	EFB-EX-N6810	100*100*976
	72	710	1016	EFB-EX-N7210	100*100*1016
	76	750	1056	EFB-EX-N7610	100*100*1056
	80	790	1096	EFB-EX-N8010	100*100*1096
	84	830	1136	EFB-EX-N8410	100*100*1136
	88	870	1176	EFB-EX-N8810	100*100*1176
	92	910	1216	EFB-EX-N9210	100*100*1216
	96	950	1256	EFB-EX-N9610	100*100*1256
	100	990	1296	EFB-EX-N10010	100*100*1296
	104	1030	1336	EFB-EX-N10410	100*100*1336
	108	1070	1376	EFB-EX-N10810	100*100*1376
112	1110	1416	EFB-EX-N11210	100*100*1416	
116	1150	1456	EFB-EX-N11610	100*100*1456	
120	1190	1496	EFB-EX-N12010	100*100*1496	
124	1230	1536	EFB-EX-N12410	100*100*1536	
128	1270	1576	EFB-EX-N12810	100*100*1576	
132	1310	1616	EFB-EX-N13210	100*100*1616	
136	1350	1656	EFB-EX-N13610	100*100*1656	
140	1390	1696	EFB-EX-N14010	100*100*1696	
144	1430	1736	EFB-EX-N14410	100*100*1736	
148	1470	1776	EFB-EX-N14810	100*100*1776	
152	1510	1816	EFB-EX-N15210	100*100*1816	
.....					
176	1750	2056	EFB-EX-N17610	100*100*2056	

Remark: If your request is out of range of above selection sheet, we can customize according to your request.

EFB selection sheet

- Beam gap is 20mm, resolution 30mm

Safety Light Curtain

Picture(mm)	Beams(n)	Protective height (mm)	Total height (mm)	Specification	Size L*W*H(mm)
	16	300	616	EFB-EX-N1620	100*100*616
	18	340	656	EFB-EX-N1820	100*100*656
	20	380	696	EFB-EX-N2020	100*100*696
	22	420	736	EFB-EX-N2220	100*100*736
	24	460	776	EFB-EX-N2420	100*100*776
	26	500	816	EFB-EX-N2620	100*100*816
	28	540	856	EFB-EX-N2820	100*100*856
	30	580	896	EFB-EX-N3020	100*100*896
	32	620	936	EFB-EX-N3220	100*100*936
	34	660	976	EFB-EX-N3420	100*100*976
	36	700	1016	EFB-EX-N3620	100*100*1016
	38	740	1056	EFB-EX-N3820	100*100*1056
	40	780	1096	EFB-EX-N4020	100*100*1096
	42	820	1136	EFB-EX-N4220	100*100*1136
	44	860	1176	EFB-EX-N4420	100*100*1176
	46	900	1216	EFB-EX-N4620	100*100*1216
	48	940	1256	EFB-EX-N4820	100*100*1256
	50	980	1296	EFB-EX-N5020	100*100*1296
	52	1020	1336	EFB-EX-N5220	100*100*1336
	54	1060	1376	EFB-EX-N5420	100*100*1376
	56	1100	1416	EFB-EX-N5620	100*100*1416
	58	1140	1456	EFB-EX-N5820	100*100*1456
	60	1180	1496	EFB-EX-N6020	100*100*1496
	62	1220	1536	EFB-EX-N6220	100*100*1536
	64	1260	1576	EFB-EX-N6420	100*100*1576
	66	1300	1616	EFB-EX-N6620	100*100*1616
	68	1340	1656	EFB-EX-N6820	100*100*1656
	70	1380	1696	EFB-EX-N7020	100*100*1696
	72	1420	1736	EFB-EX-N7220	100*100*1736
	74	1460	1776	EFB-EX-N7420	100*100*1776
	76	1500	1816	EFB-EX-N7620	100*100*1816
					
	88	1740	2056	EFB-EX-N8820	100*100*2056

ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

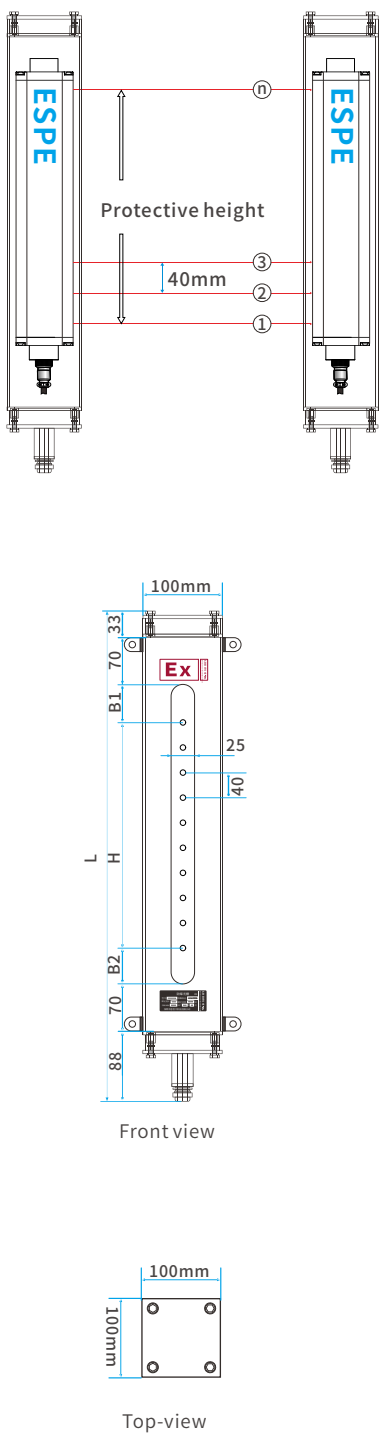
ESCL Series

ESR Series

Remark: If your request is out of range of above selection sheet, we can customize according to your request.

EFB selection sheet

- Beam gap is 40mm, resolution 50mm

Picture (mm)	Beams (n)	Protective height (mm)	Total height (mm)	Specification	Size L*W*H(mm)
 Front view Top-view	08	280	616	EFB-EX-N0840	100*100*616
	10	360	696	EFB-EX-N1040	100*100*696
	12	440	776	EFB-EX-N1240	100*100*776
	14	520	856	EFB-EX-N1440	100*100*856
	16	600	936	EFB-EX-N1640	100*100*936
	18	680	1016	EFB-EX-N1840	100*100*1016
	20	760	1096	EFB-EX-N2040	100*100*1096
	22	840	1176	EFB-EX-N2240	100*100*1176
	24	920	1256	EFB-EX-N2440	100*100*1256
	26	1000	1336	EFB-EX-N2640	100*100*1336
	28	1080	1416	EFB-EX-N2840	100*100*1416
	30	1160	1496	EFB-EX-N3040	100*100*1496
	32	1240	1576	EFB-EX-N3240	100*100*1576
	34	1320	1656	EFB-EX-N3440	100*100*1656
	36	1400	1736	EFB-EX-N3640	100*100*1736
	38	1480	1816	EFB-EX-N3840	100*100*1816
	40	1560	1896	EFB-EX-N4040	100*100*1896
	42	1640	1976	EFB-EX-N4240	100*100*1976
	44	1720	2056	EFB-EX-N4440	100*100*2056

Remark: If your request is out of range of above selection sheet, we can customize according to your request.

Application case



Wide range
of applications



ESE Series

ESN Series

ESQS Series

ESQC Series

ESA Series

ELG Series

EB15 Series

EB13 Series

EFB Series

ESCL Series

ESR Series



Mainly used to isolate the grating for explosion-proof, suitable for explosive gas environment Zone 1, Zone 2 hazardous places, IIA, IIB, IIC class explosive gas environment, combustible dust environment Zone 20, Zone 21, Zone 22 environment, temperature group T1 a T6 environment, petrochemical, offshore drilling platform, metallurgy, medicine, light industry, textile, brewing, paint, coating, food, biological engineering and military facilities and other factories. Translated with www.DeepL.com/Translator (free version)

ESCL series

Detection/ Measurement Light Curtain

Product introduction

ESCL series measuring light curtain is mainly used for detecting the shape or size of object, detecting hole, measuring volume of object etc. As it can also detect the detailed position of object passing through the light curtain, also widely used for education (measuring the distance of long jump or shot-throwing), spraying detection of workpiece, coordinate positioning detection and so on. The light curtain has high accuracy. Even 2.5mm size product can be detected; With RS485/ 232, analog quantity (voltage, current), switch quantity and so on output method, stable performance. As strong anti-electromagnetic interference ability, it can work in various servo motors and environments with large interference.

Product feature

- High accuracy to detect project even 2.5mm size;
- Quick response time, adopt special algorithm to shorten the entire scan cycle;
- Multiple output method, RS485, Rs232
- Standard communication protocol, using Modbus-RTU communication protocol.
- Strong ability in resisting electromagnetic interference can effectively resist influence of various electromagnetic interference of motor equipment;
- Wire synchronization technology to resist light interference effectively;



Technical parameter

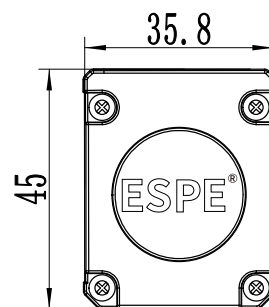
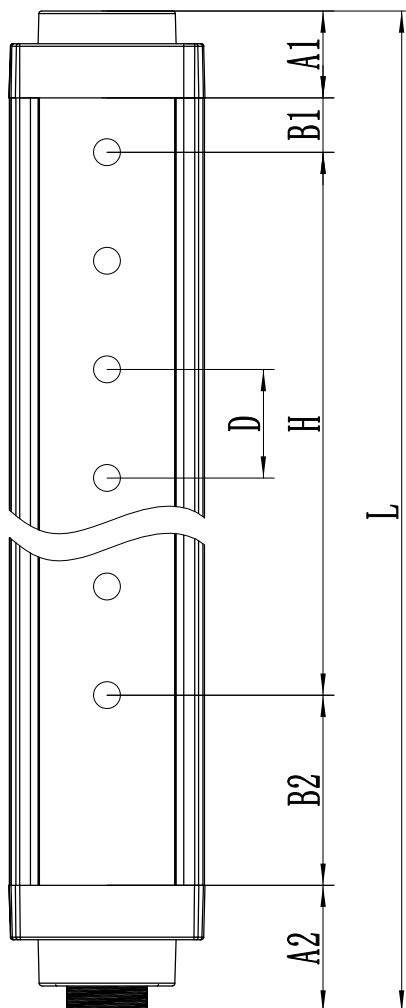
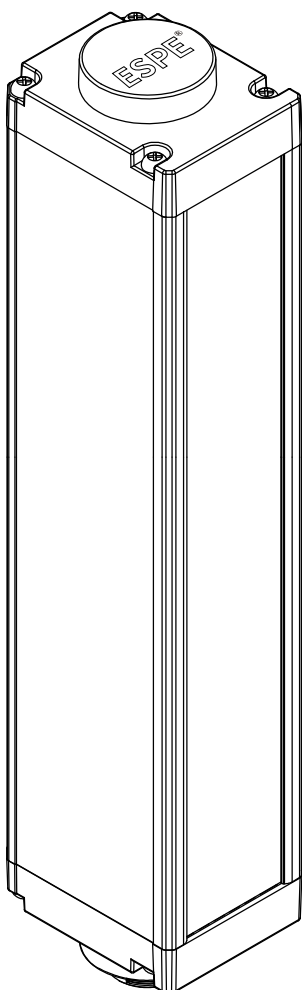
Parameter of safety light curtain	
Power supply	DC12V~30V
Capacity	<5W
Beam space	2.5mm:32、64、96……480
	5mm:16、24、32……640
	10mm:16、24、32……400
	20mm:16、24、32……240
	40mm:8、16、24……120
Detection precision	2.5mm、5mm、10mm、20mm、40mm
Detection height	Detection height= (N-1) * beam space, N is beam quantity
Wave length	940nm
Wave length	Switch quantity: NPN, PNP;
	0-5V, 0-10V, 4-20mA
Anti-optical interference	10000Lux(angle>5°)
Communication	Baud Rate:9600bps、19200bps、38400bps、57600bps、115200bps
	Protocol:Modbus-RTU
	Data mode Active mode/ passive mode
Light screen form	Through-beam type
Sensing distance	2.5mm space:0.1~2m
	5mm space:0.1~4m
	10mm space:0.1~20m
	20mm space:0.1~20m
	40mm space:0.1~20m
Synchronization	Wire synchronization
Enclosure material	Aluminum alloy
Enclosure rating	IP65
Sectional size	35.8*45mm
Ambient operating temperature	-10°C~55°C(with no freezing)
Storage temperature	-30°C~70°C(with no freezing)
Ambient operating humidity	When temperature is 20°C, humidity max 85%

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Explanation of model number (For example: ESCL-16 20 L1 RY NL-2)

ESCL	16	20	L1	N	RY	N	2
▼	▼	▼	▼	▼	▼	▼	▼
Model	Beams	Beam space	Bracket	Output signal	Communication method	Output data	Sensing distance
ESCL series	08、16、24、32、……	2.5mm、5mm、10mm、20mm、40mm	L1 side mounting bracket, L2 upper-bottom mounting bracket	N:NPN P:PNP	Digital quantity: RY: RS485 active mode RZ: RS485 passive mode SY: RS232 active mode SZ: RS232 passive mode Analog quantity: U: 0-10V voltage U1: 0-5V voltage I: 4-20mA current	N:NO of beams S:Initial blocked beam E:Last blocked beam	2:0.1~2M 4:0.1~4M 20:0.1~20M

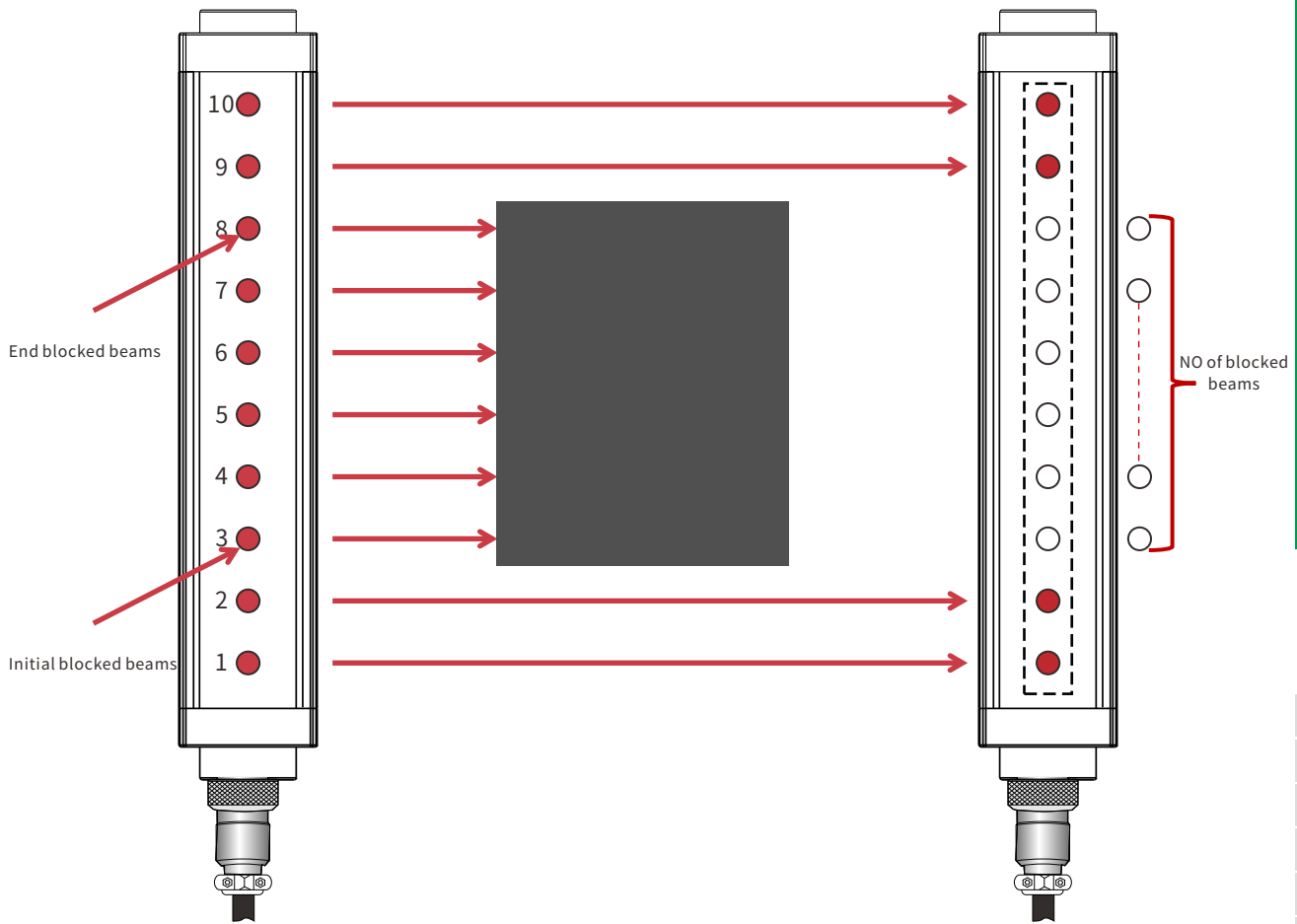
Product size



- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series
- EB13 Series
- EFB Series
- ESCL Series**
- ESR Series

A1: Upper cover
 A2: Bottom cover
 B1: Upper stop-work range
 B2: Bottom stop-work range
 D: Beam gap
 H: Protective height
 L: Total height

A1=16mm; A2=24mm
 When D=2.5mm, B1=6.25mm; B2=81.25mm
 When D=5mm, B1=7.5mm; B2=42.5mm
 When D=10mm, B1=5mm; B2=30mm
 When D=20/40mm, B1=5mm; B2=30mm
 L is total height: $L=A1+A2+B1+B2+H$
 H is protective height: $H=(\text{beams}-1) * \text{beam space}$



Light curtain output data description

- Number of blocked light: The total number of light beams that are blocked.
- Initial light blocking position: The position where the light curtain is initially blocked by the object.
- End blocking position: The position where the last beam of the light curtain is blocked.

ESE Series
ESN Series
ESQS Series
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ESCL Series
ESR Series

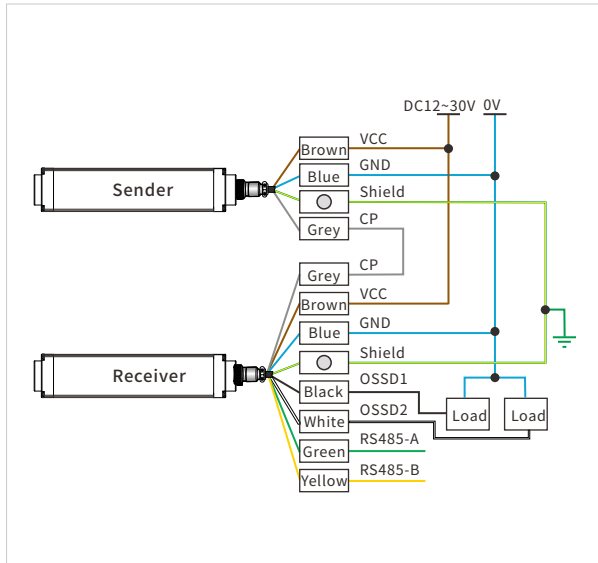
The beam space is related the minimum size of detected object.

- 2.5mm size: minimum object $\geq 2.5\text{mm}$
- 5mm size: minimum object $\geq 5\text{mm}$
- 10mm size: minimum object $\geq 10\text{mm}$
- 20mm size: minimum object $\geq 20\text{mm}$
- 40mm size: minimum object $\geq 40\text{mm}$

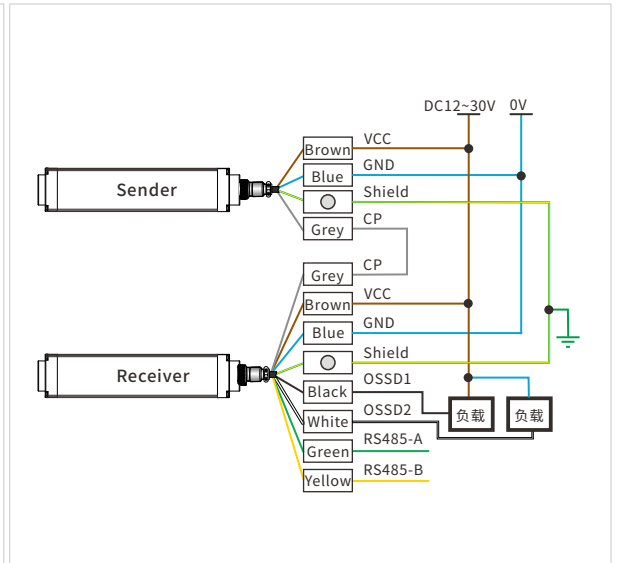


Wire connection

Connection of Rs485

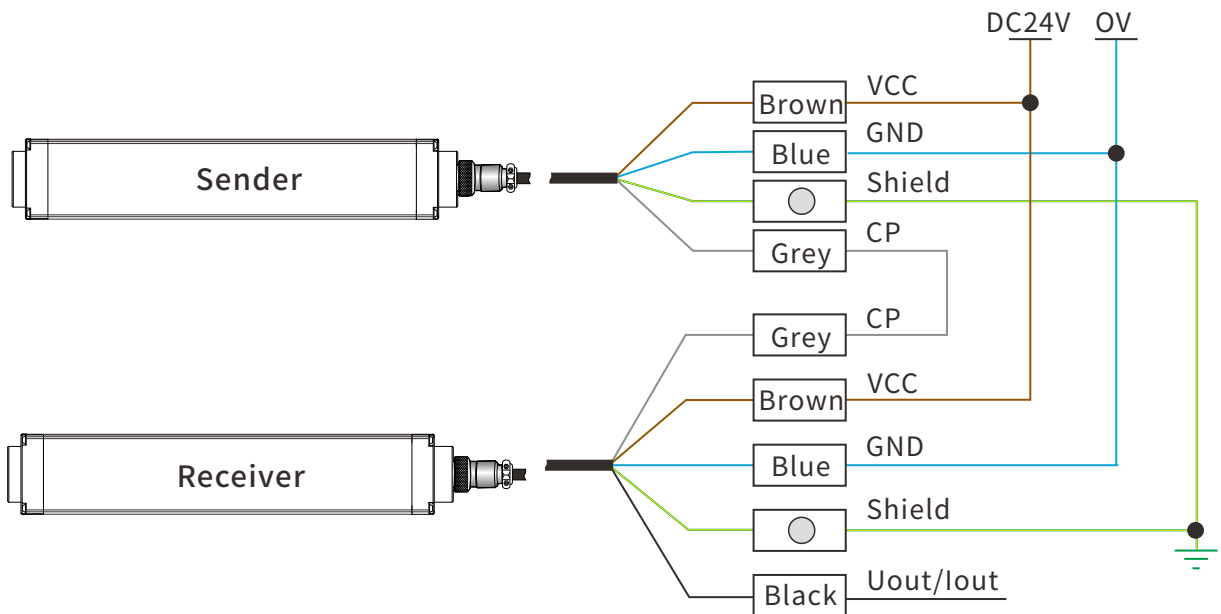


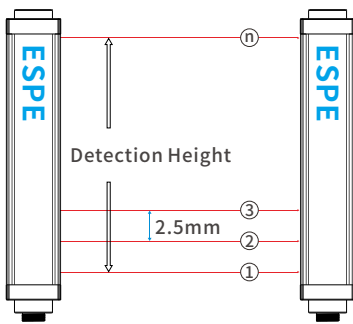
PNP Switching output method



NPN Switching output method

Connection of Analog output

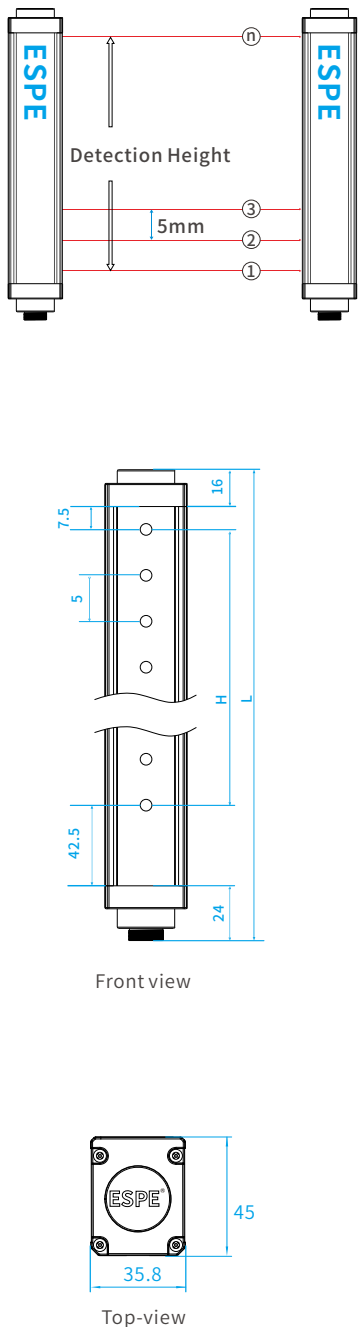


Shape (mm)	Beam (n)	Detection Height (mm)	Total Height (mm)	Model	Size L*W*H (mm)
	32	77.50	205	ESCL32025	35.8*45*205
	64	157.50	285	ESCL64025	35.8*45*285
	96	237.50	365	ESCL96025	35.8*45*365
	128	317.50	445	ESCL128025	35.8*45*445
	160	397.50	525	ESCL160025	35.8*45*525
	192	477.50	605	ESCL192025	35.8*45*605
	224	557.50	685	ESCL224025	35.8*45*685
	256	637.50	765	ESCL256025	35.8*45*765
	288	717.50	845	ESCL288025	35.8*45*845
	320	797.50	925	ESCL320025	35.8*45*925
	352	877.50	1005	ESCL352025	35.8*45*1005
	384	957.50	1085	ESCL384025	35.8*45*1085
	416	1037.50	1165	ESCL416025	35.8*45*1165
	448	1117.50	1245	ESCL448025	35.8*45*1245
	480	1197.50	1325	ESCL480025	35.8*45*1325
</					

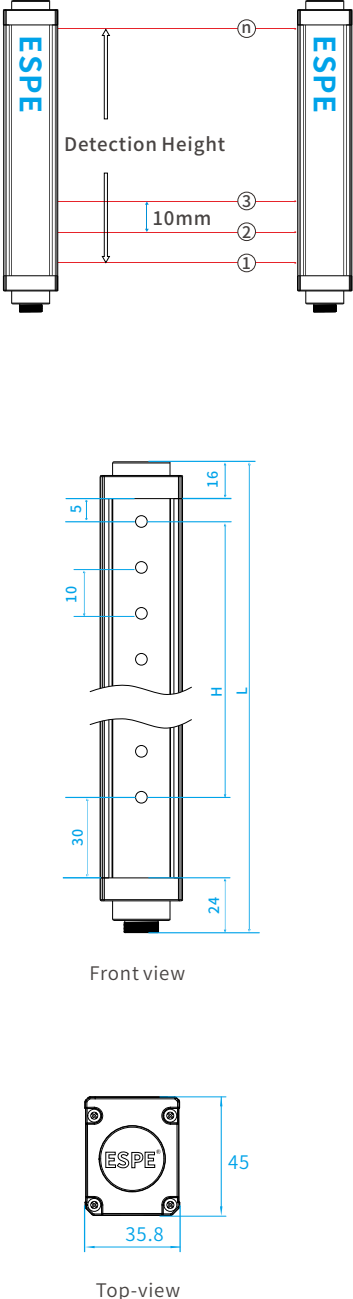
L is total height: $L=A1+A2+B1+B2+H$
H is protective height: $H=(\text{beams}-1) * \text{beam space}$

Remark: Size can be customized according to real application.

ESCL selection sheet

Shape (mm)	Beam (n)	Detection Height (mm)	Total Height (mm)	Model	Size L*W*H (mm)
 Side view diagram showing two vertical units with 'ESPE' branding. A vertical arrow indicates 'Detection Height'. A horizontal arrow indicates '5mm' beam spacing. Circled numbers 1, 2, 3, and n are shown on the right unit. Front view diagram showing a vertical unit with dimensions: 16 (top), 7.5 (middle), 5 (middle), 42.5 (bottom), and 24 (bottom). Total height is labeled 'L'. Protective height is labeled 'H'. Top-view diagram showing a square unit with dimensions: 35.8 (width) and 45 (height). The 'ESPE' logo is in the center. L is total height: $L=A1+A2+B1+B2+H$ H is protective height: $H=(\text{beams}-1) * \text{beam space}$	16	75	165	ESCL1605	35.8*45*165
	24	115	205	ESCL2405	35.8*45*205
	32	155	245	ESCL3205	35.8*45*245
	40	195	285	ESCL4005	35.8*45*285
	48	235	325	ESCL4805	35.8*45*325
	56	275	365	ESCL5605	35.8*45*365
	64	315	405	ESCL6405	35.8*45*405
	72	355	445	ESCL7205	35.8*45*445
	80	395	485	ESCL8005	35.8*45*485
	88	435	525	ESCL8805	35.8*45*525
	96	475	565	ESCL9605	35.8*45*565
	104	515	605	ESCL10405	35.8*45*605
	112	555	645	ESCL11205	35.8*45*645
	120	595	685	ESCL12005	35.8*45*685
	128	635	725	ESCL12805	35.8*45*725
	136	675	765	ESCL13605	35.8*45*765
	144	715	805	ESCL14405	35.8*45*805
	152	755	845	ESCL15205	35.8*45*845
	160	795	885	ESCL16005	35.8*45*885
	168	835	925	ESCL16805	35.8*45*925
	176	875	965	ESCL17605	35.8*45*965
	184	915	1005	ESCL18405	35.8*45*1005
	192	955	1045	ESCL19205	35.8*45*1045
	200	995	1085	ESCL20005	35.8*45*1085
	208	1035	1125	ESCL20805	35.8*45*1125
	216	1075	1165	ESCL21605	35.8*45*1165
	224	1115	1205	ESCL22405	35.8*45*1205
	232	1155	1245	ESCL23205	35.8*45*1245
	240	1195	1285	ESCL24005	35.8*45*1285
	248	1235	1325	ESCL24805	35.8*45*1325
	256	1275	1365	ESCL25605	35.8*45*1365
					
	640	3195	3285	ESCL64005	35.8*45*3285

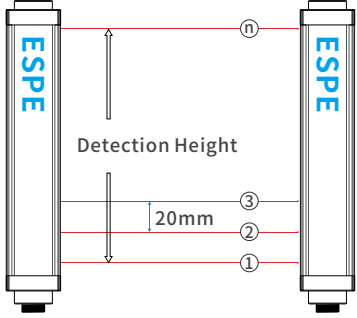
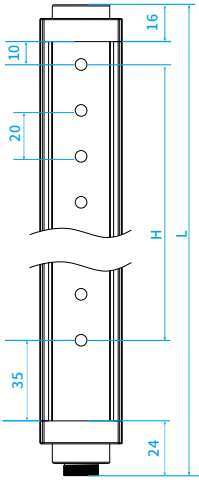
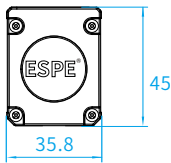
Remark: Size can be customized according to real application.

Shape (mm)	Beam (n)	Detection Height (mm)	Total Height (mm)	Model	Size L*W*H (mm)
 Front view Top-view L is total height: $L=A1+A2+B1+B2+H$ H is protective height: $H=(\text{beams}-1) * \text{beam space}$	16	150	225	ESCL1610	35.8*45*225
	24	230	305	ESCL2410	35.8*45*305
	32	310	385	ESCL3210	35.8*45*385
	40	390	465	ESCL4010	35.8*45*465
	48	470	545	ESCL4810	35.8*45*545
	56	550	625	ESCL5610	35.8*45*625
	64	630	705	ESCL6410	35.8*45*705
	72	710	785	ESCL7210	35.8*45*785
	80	790	865	ESCL8010	35.8*45*865
	88	870	945	ESCL8810	35.8*45*945
	96	950	1025	ESCL9610	35.8*45*1025
	104	1030	1105	ESCL10410	35.8*45*1105
	112	1110	1185	ESCL11210	35.8*45*1185
	120	1190	1265	ESCL12010	35.8*45*1265
	128	1270	1345	ESCL12810	35.8*45*1345
	136	1350	1425	ESCL13610	35.8*45*1425
	144	1430	1505	ESCL14410	35.8*45*1505
	152	1510	1585	ESCL15210	35.8*45*1585
	160	1590	1665	ESCL16010	35.8*45*1665
	168	1670	1745	ESCL16810	35.8*45*1745
	176	1750	1825	ESCL17610	35.8*45*1825
	184	1830	1905	ESCL18410	35.8*45*1905
	192	1910	1985	ESCL19210	35.8*45*1985
	200	1990	2065	ESCL20010	35.8*45*2065
	208	2070	2145	ESCL20810	35.8*45*2145
	216	2150	2225	ESCL21610	35.8*45*2225
	224	2230	2305	ESCL22410	35.8*45*2305
	232	2310	2385	ESCL23210	35.8*45*2385
	240	2390	2465	ESCL24010	35.8*45*2465
	248	2470	2545	ESCL24810	35.8*45*2545
	256	2550	2625	ESCL25610	35.8*45*2625
					
	400	3990	4065	ESCL40010	35.8*45*4065

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Remark: Size can be customized according to real application.

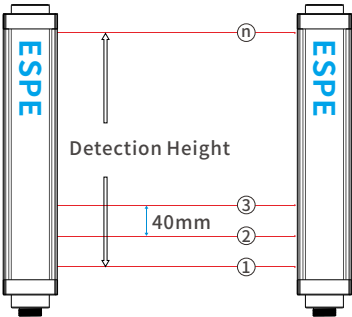
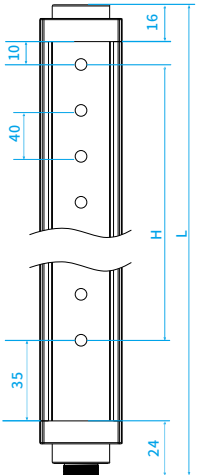
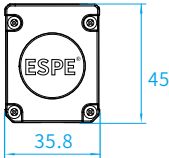
ESCL selection sheet

Shape (mm)	Beam (n)	Detection Height (mm)	Total Height (mm)	Model	Size L*W*H (mm)
	16	300	385	ESCL1620	35.8*45*385
	24	460	545	ESCL2420	35.8*45*545
	32	620	705	ESCL3220	35.8*45*705
	40	780	865	ESCL4020	35.8*45*865
	48	940	1025	ESCL4820	35.8*45*1025
	56	1100	1185	ESCL5620	35.8*45*1185
	64	1260	1345	ESCL6420	35.8*45*1345
	72	1420	1505	ESCL7220	35.8*45*1505
	80	1580	1665	ESCL8020	35.8*45*1665
	88	1740	1825	ESCL8820	35.8*45*1825
	96	1900	1985	ESCL9620	35.8*45*1985
	104	2060	2145	ESCL10420	35.8*45*2145
	112	2220	2305	ESCL11220	35.8*45*2305
	120	2380	2465	ESCL12020	35.8*45*2465
	128	2540	2625	ESCL12820	35.8*45*2625
	136	2700	2785	ESCL13620	35.8*45*2785
	144	2860	2945	ESCL14420	35.8*45*2945
	152	3020	3105	ESCL15220	35.8*45*3105
	160	3180	3265	ESCL16020	35.8*45*3265
	168	3340	3425	ESCL16820	35.8*45*3425
	176	3500	3585	ESCL17620	35.8*45*3585
	184	3660	3745	ESCL18420	35.8*45*3745
	192	3820	3905	ESCL19220	35.8*45*3905
	200	3980	4065	ESCL20020	35.8*45*4065
	208	4140	4225	ESCL20820	35.8*45*4225
	216	4300	4385	ESCL21620	35.8*45*4385
	224	4460	4545	ESCL22420	35.8*45*4545
	232	4620	4705	ESCL23220	35.8*45*4705
	240	4780	4865	ESCL24020	35.8*45*4865
					

L is total height: $L=A1+A2+B1+B2+H$

H is protective height: $H=(\text{beams}-1) * \text{beam space}$

Remark: Size can be customized according to real application.

Shape (mm)	Beam (n)	Detection Height (mm)	Total Height (mm)	Model	Size L*W*H (mm)
	08	280	365	ESCL0840	35.8*45*365
	12	440	525	ESCL1240	35.8*45*525
	16	600	685	ESCL1640	35.8*45*685
	20	760	845	ESCL2040	35.8*45*845
	24	920	1005	ESCL2440	35.8*45*1005
	28	1080	1165	ESCL2840	35.8*45*1165
	32	1240	1325	ESCL3240	35.8*45*1325
	36	1400	1485	ESCL3640	35.8*45*1485
	40	1560	1645	ESCL4040	35.8*45*1645
	44	1720	1805	ESCL4440	35.8*45*1805
	48	1880	1965	ESCL4840	35.8*45*1965
	52	2040	2125	ESCL5240	35.8*45*2125
	56	2200	2285	ESCL5640	35.8*45*2285
	60	2360	2445	ESCL6040	35.8*45*2445
	64	2520	2605	ESCL6440	35.8*45*2605
 Front view	68	2680	2765	ESCL6840	35.8*45*2765
	72	2840	2925	ESCL7240	35.8*45*2925
	76	3000	3085	ESCL7640	35.8*45*3085
	80	3160	3245	ESCL8040	35.8*45*3245
	84	3320	3405	ESCL8440	35.8*45*3405
	88	3480	3565	ESCL8840	35.8*45*3565
	92	3640	3725	ESCL9240	35.8*45*3725
	96	3800	3885	ESCL9640	35.8*45*3885
	100	3960	4045	ESCL10040	35.8*45*4045
	104	4120	4205	ESCL10440	35.8*45*4205
	108	4280	4365	ESCL10840	35.8*45*4365
	112	4440	4525	ESCL11240	35.8*45*4525
	116	4600	4685	ESCL11640	35.8*45*4685
	120	4760	4845	ESCL12040	35.8*45*4845
 Top-view					
L is total height: $L=A_1+A_2+B_1+B_2+H$ H is protective height: $H=(\text{beams}-1) * \text{beam space}$					

ESE Series

ESN Series

ESOS Series

ESOC Series

ESA Series

ELG Series

EB15 Series

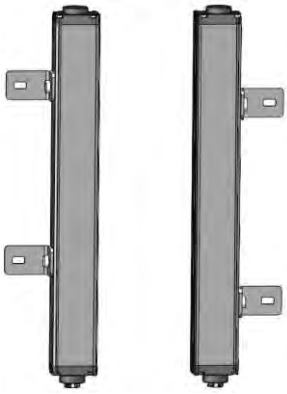
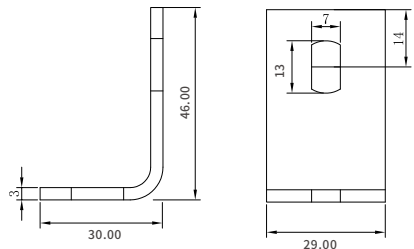
EB13 Series

EFB Series

ESCL Series

ESR Series

Option of brackets

Picture	Brackets	Accessories	Size
	L1 side mounting bracket,	1. L type bracket; 2. Slide block; 3.M6 grommet; 4. M6 Pad; 5. M6*16 screw; 6.M6*8 screw;	

Application Case

ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series



ESR series

Safety relay module

Details of ESR safety relay module

The ESR safety relay module is complied with the PLe safety requirement of EN/ISO 13849-1, and can be applied for monitoring various signals in industrial sites with high safety requirements – Include emergency stop buttons, safety switches, safety light curtain. Provide output 2 normally open and 1 normally close, can choose manual reset or automatic reset

Features of product:

- Design according to EN ISO 13849-1 (Category 4, PL e);
- Relay output: 2 normally open contact, 1 normally close auxiliary contact;
- Option: manual reset or automatic reset
- Internal circuit with cross fault monitoring;
- Self-check function redundant circuit design;
- Self-protection when over-voltage or over-current;
- Power supply anti-reverse connection protection design;
- Intuitive status indicator display for easy operation status diagnosis;
- Detachable terminal block for easy maintenance;
- Standard 35mm width design.



Technical data

Safety level

Reference standard	EN 6 1496-1
	EN 60204-1:2018
	EN/ISO 12100: 2010
	EN 61000-6-2
	EN/ISO 13849-1: 2015
Safety level	EN 61000-6-4
	EN/ISO 13849-1 (Cat.4/Ple)

Module parameters

Power volatge	DC24V±10%
Consumption	<3W
Response time	<20ms
Buffer time	<50ms
Power-on time	<1s
Safety Input	2 NPN normally close input (ESRN type) 2 PNP normally close input (ESRP type) 2 NPN normally close input (ESRN type) 2 PNP normally close input (ESRP type)
Input synchronization	S1 always before S2
Safety output	2 normally open contact 1 normally close contact
Contacts capacity	AC15:5A/250V DC13:6A/24V
Lifespan	≥1000万次

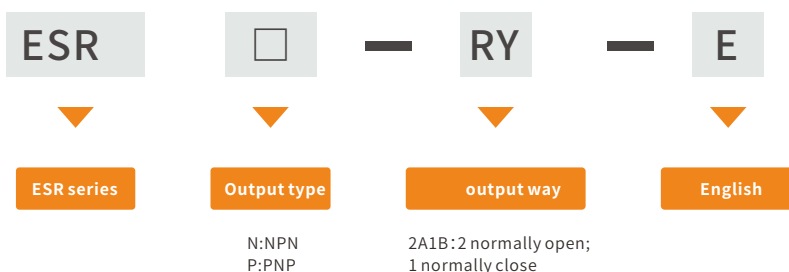
Work environment

Anti-vibration	Frequency 10Hz~55Hz, amplitude 0.35±0.05mm, 20 times each in X, Y and Z directions
Impact resistance	Acceleration 10g, pulse duration 16ms, 1000 times each in X, Y and Z directions
Work temperature	-10~+55℃
Storage temperature	-40~+85℃

Installation/ Structure

Installation	35 DIN rail
Size of wire	0.2~2.5mm
Size of relay	117×100.6×22.5

Explain of model(Such as:ESR□-2A1B-□)

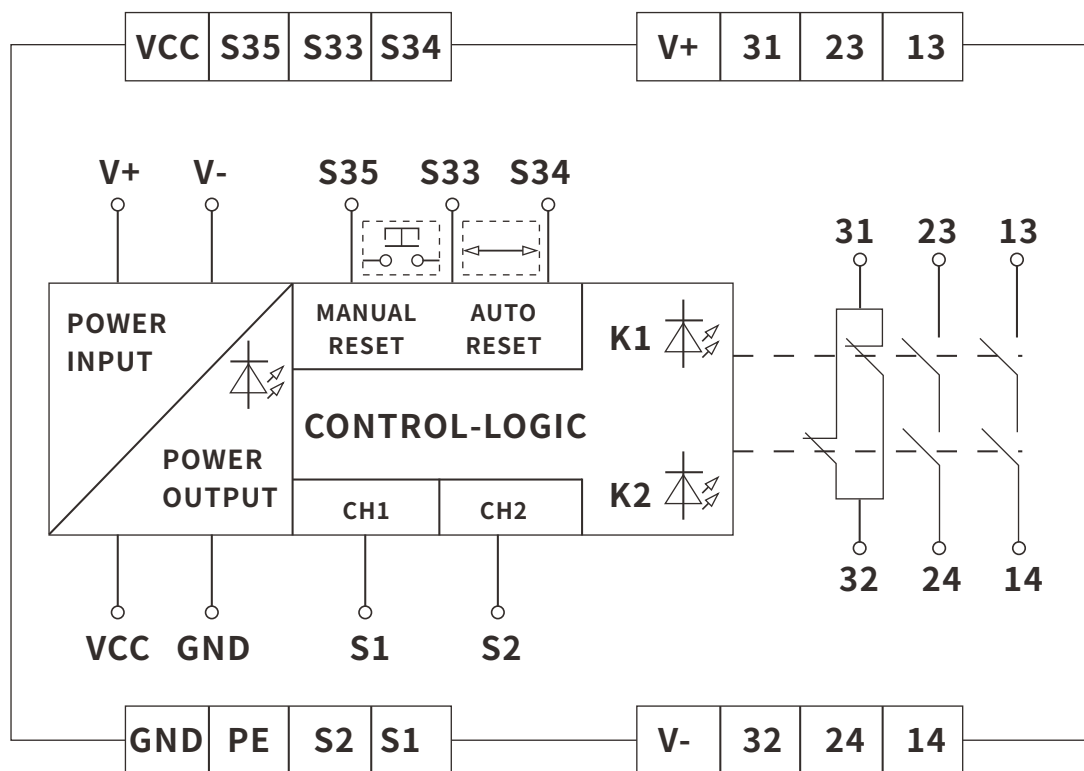


Panel function

- Power light: Light is lit after normally power-on
- CH1: Channel 1 indicates, it lights up when the relay 1 is closed, and off when it is disconnected.
- CH2: Channel 2 indicates, it lights up when the relay 2 is closed, and off when it is disconnected.
- V+/V-: Power input terminal.
- VCC/GND: Power output terminal.
- PE: Protective ground terminal.
- S1: safety light curtain input signal 1
- S2: safety light curtain input signal 2
- S33/S34: Automatic reset when combine S33, S34
- S33/S35: Manual reset when combine S33, S35
- 13/14, 23/24: 2 safety output (NO) terminal
- 31/32: 1 auxiliary output (NC) terminal



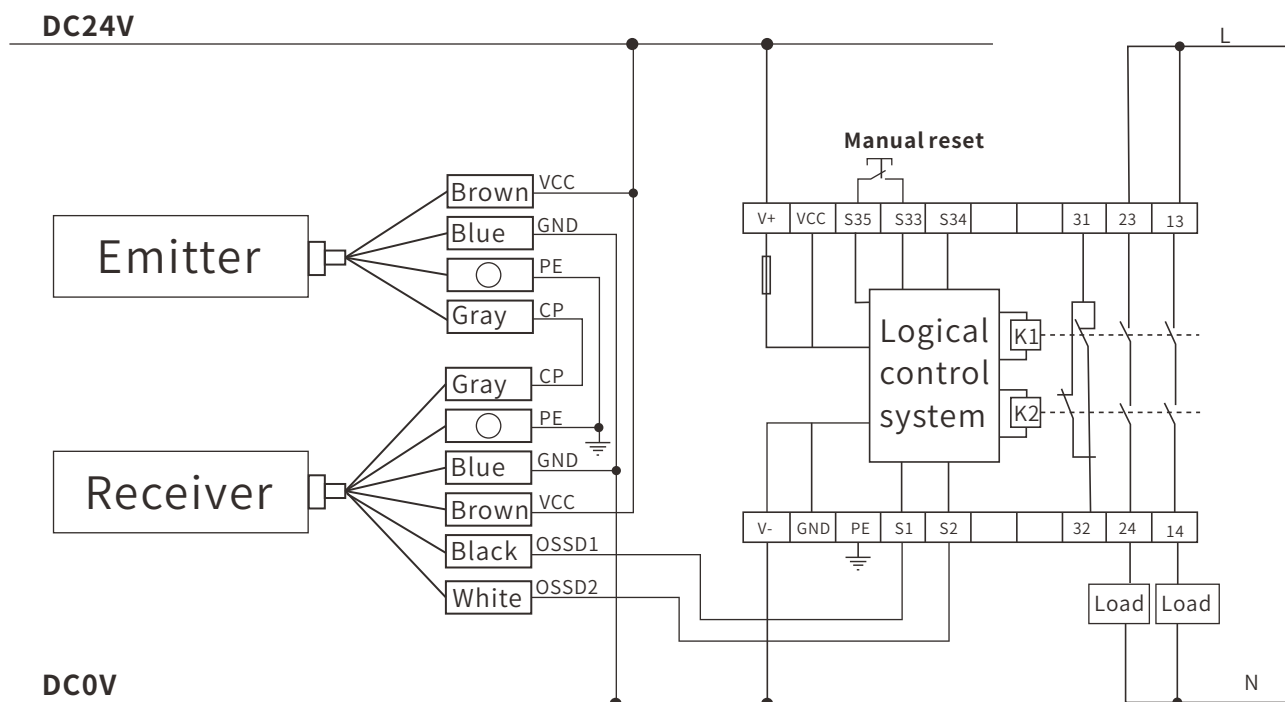
Function picture



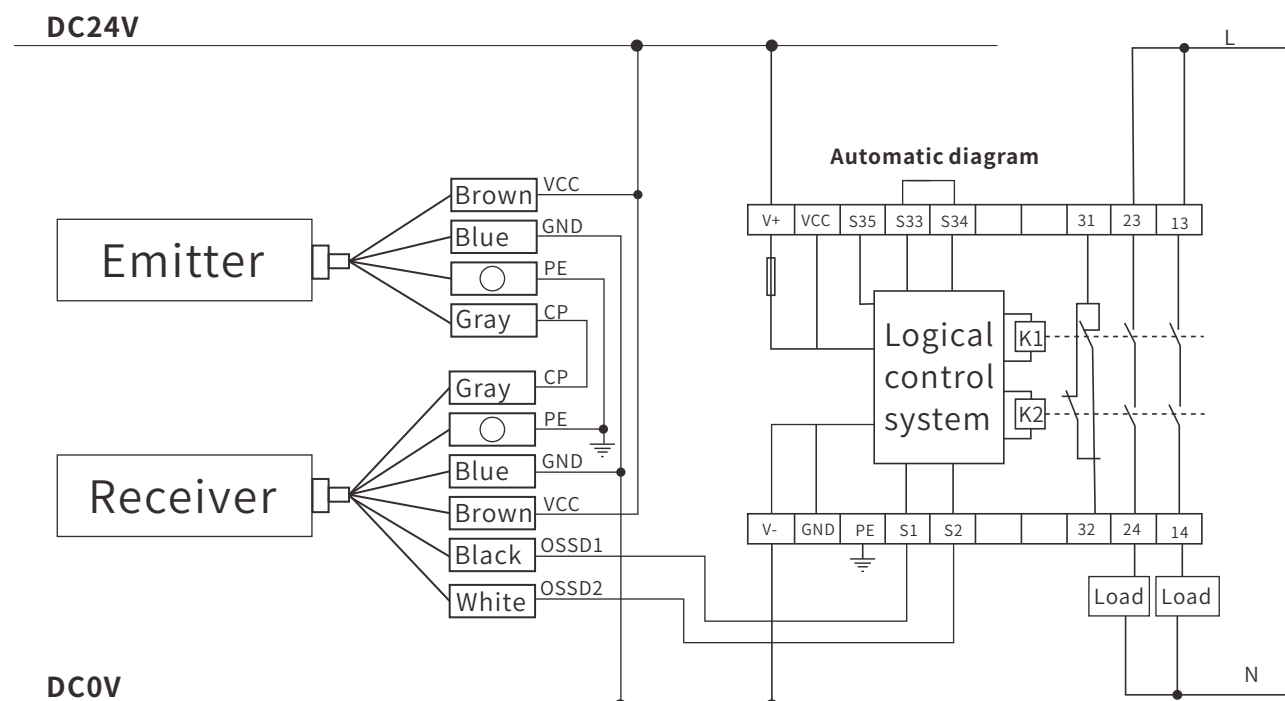
ESE Series
ESN Series
ESQS Series
ESQC Series
ESA Series
ELG Series
EB15 Series
EB13 Series
EFB Series
ESCL Series
ESR Series

Picture of wire connection

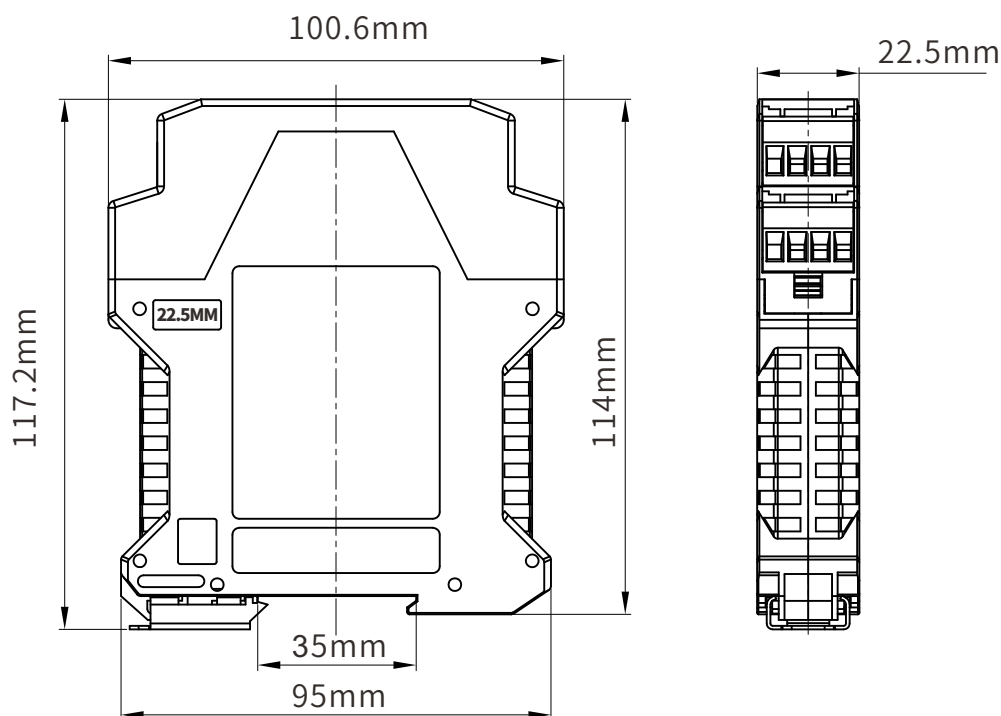
Manual reset diagram



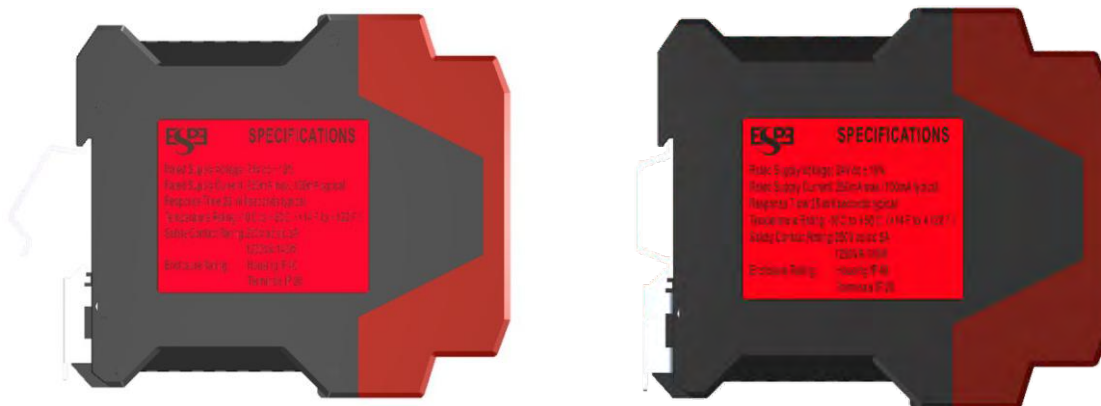
Automatic diagram



- ESE Series
- ESN Series
- ESQS Series
- ESQC Series
- ESA Series
- ELG Series
- EB15 Series
- EB13 Series
- EFB Series
- ESCL Series
- ESR Series



- ◆ Cut off the power of the machine to ensure that there is no dangerous voltage inside the machine, except for lighting and spare sockets;
- ◆ The product adopts 35mm DIN rail to install and fix.
- ◆ Connect the cables according to the wiring drawing of the safety relay.
- ◆ Before powering on, check whether the cable connection is correct and whether the relay is fastened to the mounting rail
- ◆ The power supply of the machine must be cut off before disassembling the safety module;
- ◆ Loosen the locking screw or remove the terminal.





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