

ESN Series

Universal Use Safety Light Curtain



Product Introduction

ESN series is independent dual OSSD output design, with self-diagnosis and over current protective circuit function. Special optical lens ensure a long sensing distance up to 30m. Transistor output ensure barriers can be connected PLC. Dual slide enclosure support multiple installation for various environment.

Product Feature

- Long sensing distance up to 30m;
- Dual self-diagnosis OSSD ensure high safety performance;
- Strong ability to against electromagnet interference of different moto;
- Anti-vibration circuit and aluminum alloy enclosure, great to against vibration;
- Wire-syn technology anti light interference well;
- Multiple mounting method for different environment.

Safety Light Curtain

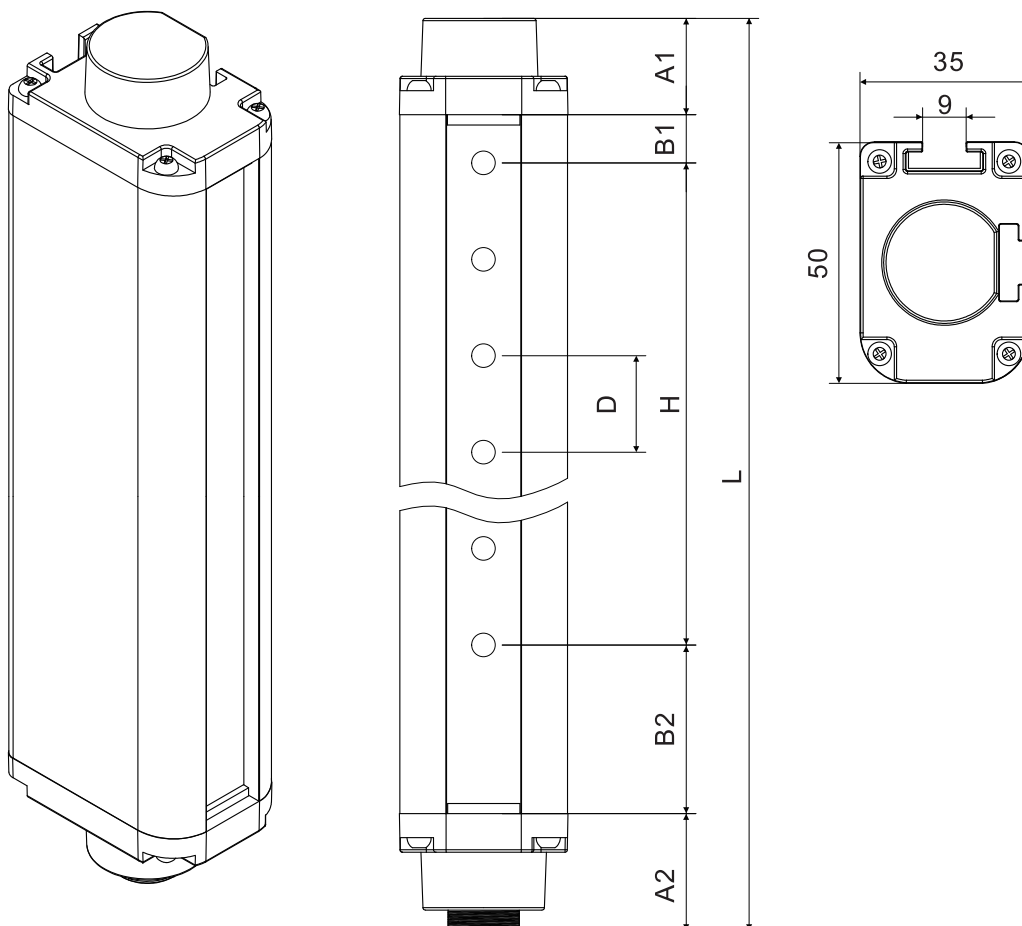
Product Parameter

Safety Standard	Type 2 (IEC 61496-1/-2) Cat. 2, PL c (ISO 13849-1) SIL 1 (IEC 62061 IEC 61508)
Power Supply	DC24V±20%
Capacity	<5W
Beam Space	10mm, 20mm, 40mm
Resolution	20mm, 30mm, 50mm
Beams	10mm: 8, 12, 16,...320
	20mm: 4, 6, 8,...160
	40mm: 4, 6, 8,...120
Protective Height	Protection height=(N-1)*beam space, (N is beams)
Light Wavelength	940nm
Response Time	Response Time= (N * 0.1ms) + 0.4ms (N is beams)
Safety Output (OSSD)	PNP or NPN Load current ≤ 200mA, residual voltage ≤ 1V (except for voltage drop caused by cable extension) and leakage current ≤ 1mA.
Protective Circuit	Overvoltage protection, power supply reverse protection and overcurrent protection.
Sensing Distance	0.1~0.5m, 0.1~2m, 0.1~5m, 0.1~10m, 0.1~20m (Remark; If any light reflecting, please let us know)
	0.1~30m (10mm: 8-160 beams, 20mm: 4-80 beams, 40mm: 4-76 beams.)
Against Optical Interference	10000 Lux (angle>5°)
Sensing Method	Thru-beam
Synchronization	Wire synchronization
Enclosure Material	Aluminum alloy
Enclosure Protection Rate	IP65
Sectional Size	35*50mm
Vibration Resistance	Frequency 10Hz-55Hz, amplitude 0.35±0.05mm, 20 times each at X, Y and Z direction.
Ambient Operating Temperature	-10°C~55°C (no freezing)
Storage Temperature	-30°C~70°C (no freezing)
Ambient Operating Humidity	When temperature 20°C, the humidity max. 85%

Model Selection (e.g.: ESN1020L1NCC-5)

Product Series	Beams	Beam Space	Bracket	Output	Sensing method	Scanning method	Sensing Distance
ESN	10	20	L1	N	C	C	— 5
	04, 06, 08...	10mm 20mm 40mm	L1: L1 side mounting H1: H1 end mounting JZ: JZ vibration absorbing bracket	N: NPN P: PNP	C: normally close	Parallel scanning C: cross scanning	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

Product Size



A1: Up cover
 A2: Bottom cover + aviation plug
 B1: Up blind area
 B2: Bottom blind area
 D: Beam space (10mm/20mm/40mm)
 H: Protection height
 L: Total Height

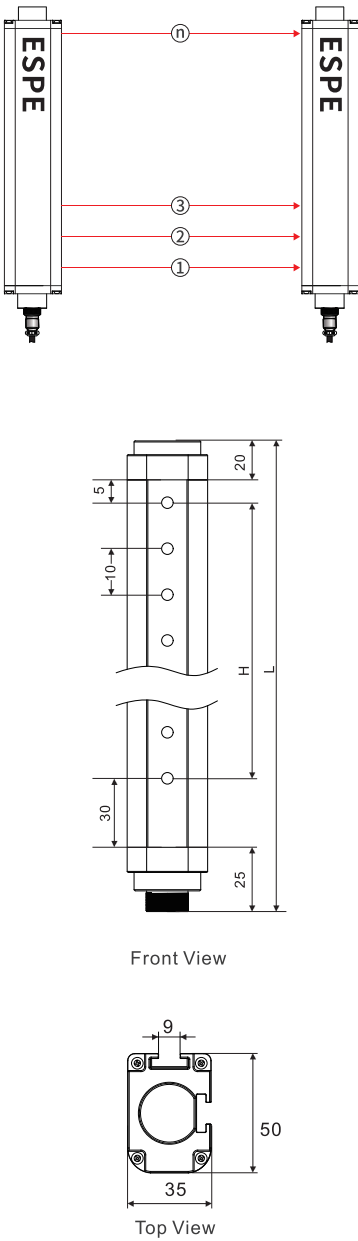
A1 is 20mm, A2 is 25mm,
 When D=10mm, B1=5mm, B2=30mm
 When D=20mm, B1=10mm, B2=35mm
 When D=40mm, B1=10mm, B2=35mm

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

Safety Light Curtain

ESN Model Selection Table

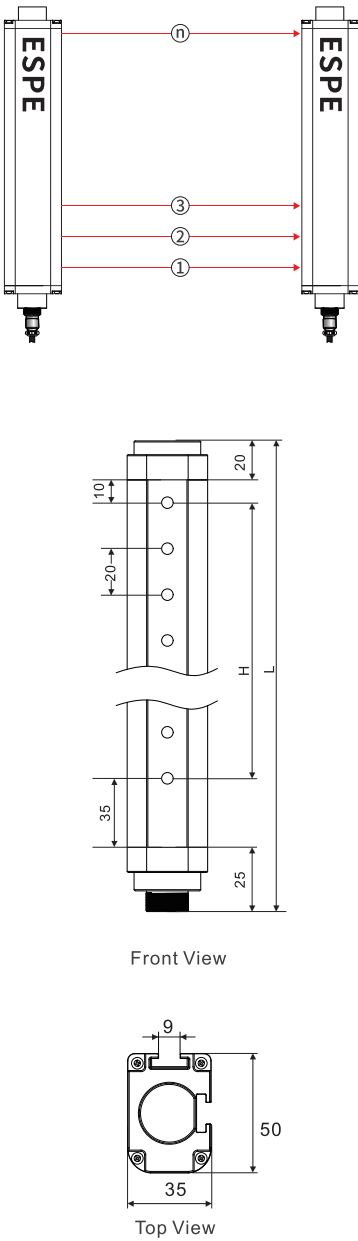
- Beam space 10mm, resolution 20mm

Picture	Beams (n)	Protection Height (mm)	Total Height (mm)	Model
 Front View Top View H is protection height=(beams-1)*beam space L is total height=end covers+ up & bottom blind area + protection height	08	70	150	ESN0810
	12	110	190	ESN1210
	16	150	230	ESN1610
	20	190	270	ESN2010
	24	230	310	ESN2410
	28	270	350	ESN2810
	32	310	390	ESN3210
	36	350	430	ESN3610
	40	390	470	ESN4010
	44	430	510	ESN4410
	48	470	550	ESN4810
	52	510	590	ESN5210
	56	550	630	ESN5610
	60	590	670	ESN6010
	64	630	710	ESN6410
	68	670	750	ESN6810
	72	710	790	ESN7210
	76	750	830	ESN7610
	80	790	870	ESN8010
	84	830	910	ESN8410
	88	870	950	ESN8810
	92	910	990	ESN9210
	96	950	1030	ESN9610
	100	990	1070	ESN10010
	104	1030	1110	ESN10410
	108	1070	1150	ESN10810
	112	1110	1190	ESN11210
	116	1150	1230	ESN11610
	120	1190	1270	ESN12010
	124	1230	1310	ESN12410
	128	1270	1350	ESN12810
				
	320	3190	3270	ESN32010

Remark: Besides above model, other curtains can be customized.

ESN Model Selection Table

- Beam space 20mm, resolution 30mm

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

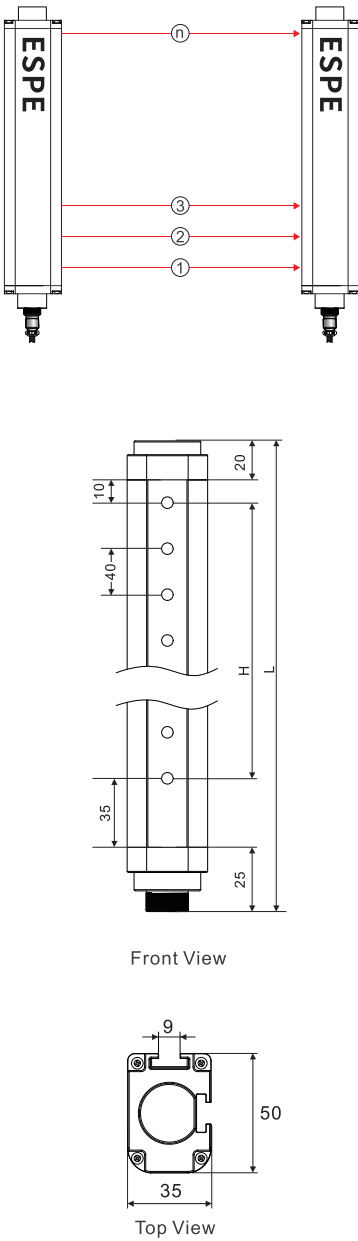
H is protection height=(beams-1)*beam space
 L is total height=end covers+ up & bottom blind area + protection height

Remark: when over 80 beams, the beam increment is changed to 4 beams, i.e. 80, 84,88.

Safety Light Curtain

ESN Model Selection Table

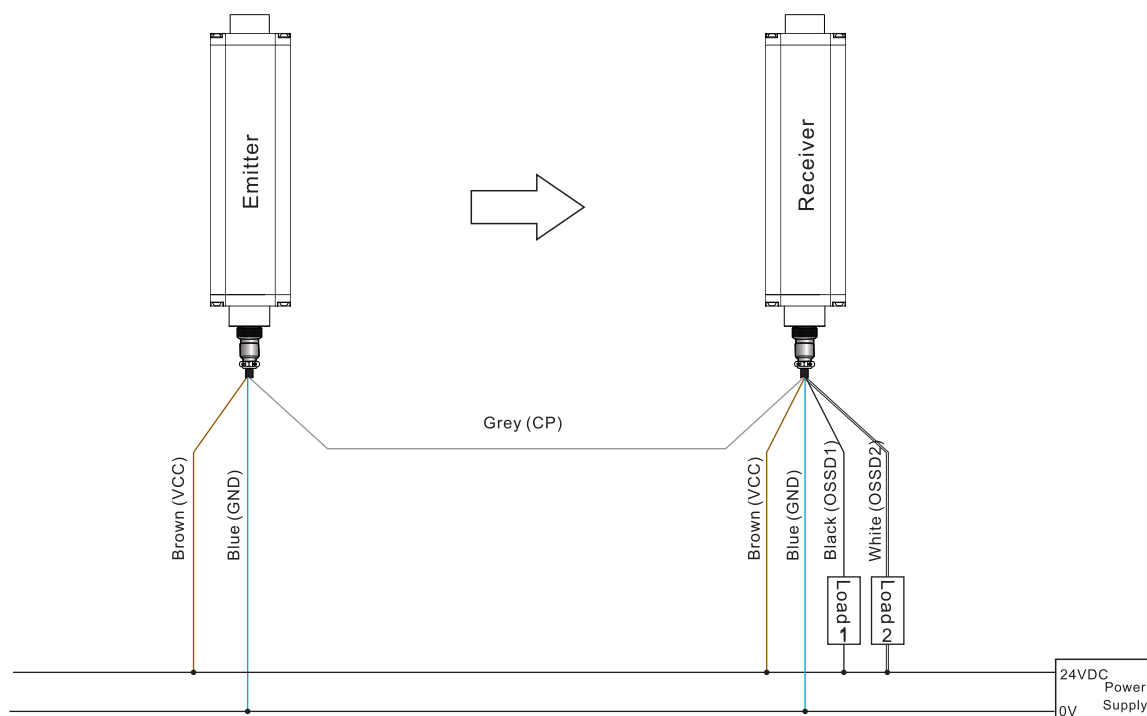
- Beam space 40mm, Resolution 50mm

Picture	Beams (n)	Protection Height (mm)	Total Height (mm)	Model
 Front View Top View H is protection height=(beams-1)*beam space L is total height=end covers+ up & bottom blind area + protection height	04	120	210	ESN0440
	06	200	290	ESN0640
	08	280	370	ESN0840
	10	360	450	ESN1040
	12	440	530	ESN1240
	14	520	610	ESN1440
	16	600	690	ESN1640
	18	680	770	ESN1840
	20	760	850	ESN2040
	22	840	930	ESN2240
	24	920	1010	ESN2440
	26	1000	1090	ESN2640
	28	1080	1170	ESN2840
	30	1160	1250	ESN3040
	32	1240	1330	ESN3240
	34	1320	1410	ESN3440
	36	1400	1490	ESN3640
	38	1480	1570	ESN3840
	40	1560	1650	ESN4040
	42	1640	1730	ESN4240
	44	1720	1810	ESN4440
	46	1800	1890	ESN4640
	48	1880	1970	ESN4840
	50	1960	2050	ESN5040
	52	2040	2130	ESN5240
	54	2120	2210	ESN5440
	56	2200	2290	ESN5640
	58	2280	2370	ESN5840
	60	2360	2450	ESN6040
	62	2440	2530	ESN6240
	64	2520	2610	ESN6440
				
	120	4760	4850	ESN12040

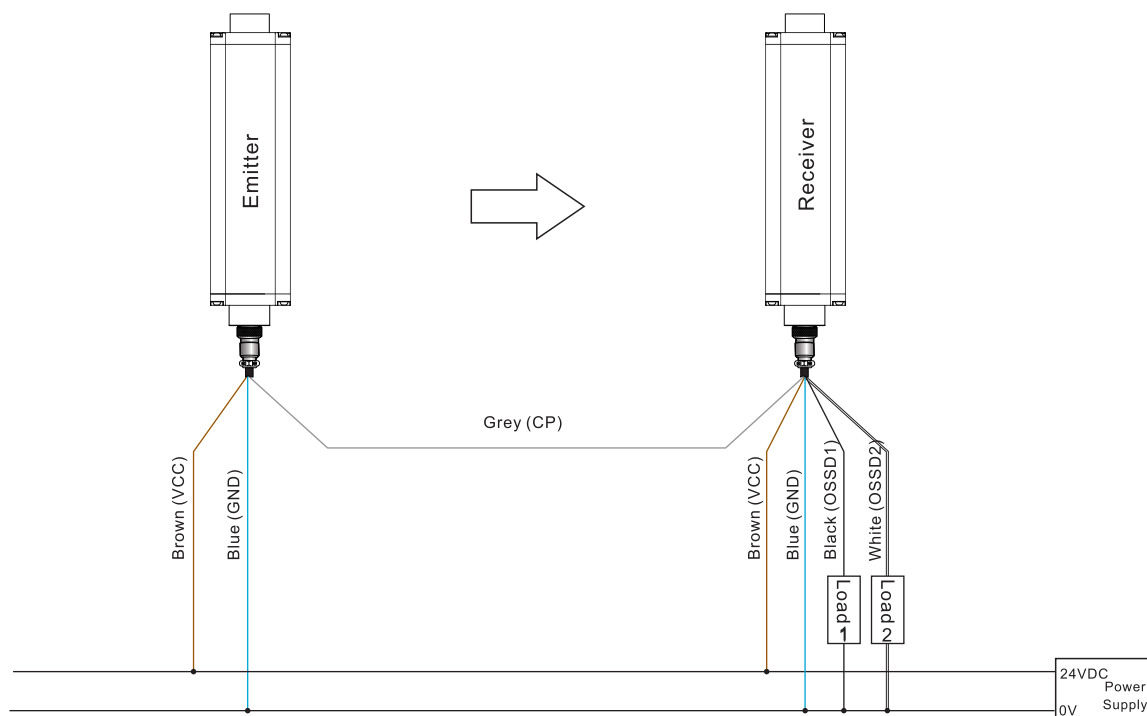
Remark: when over 76 beams, the beam increment is changed to 4 beams, i.e. 76, 80, 84.

Wire Diagram

NPN

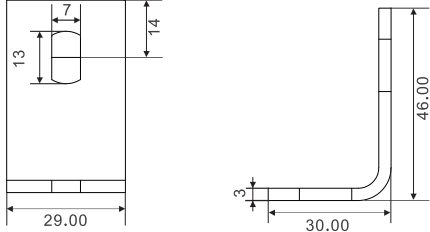
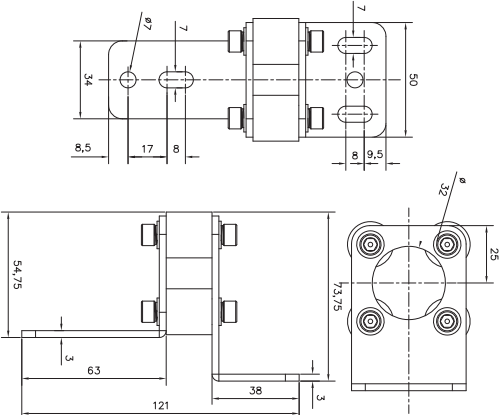
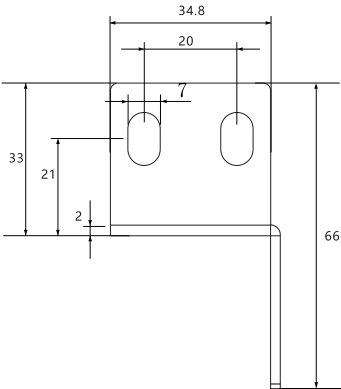


PNP



Safety Light Curtain

Option of Bracket

Picture	Name	Accessories	Size
	L1 bracket	L type brackets (4pcs) Slider (4pcs) M6 pad (4pcs) M6 spring washer (4pcs) M6*16 screw (4pcs) M6*8 screw (4pcs)	
	JZ vibration absorbing bracket	Assembled bracket (4pcs) Slider (8pcs) M6 pad (8pcs) M6 spring washer (8pcs) M6*16 screw (8pcs) M6*8 screw (8pcs)	
	H1 end mounting	H type bracket (4pcs) Slider (4pcs) M6 pad (4pcs) M6 spring washer (4pcs) M6*16 screw (8pcs) M6*8 screw (4pcs)	

Application

