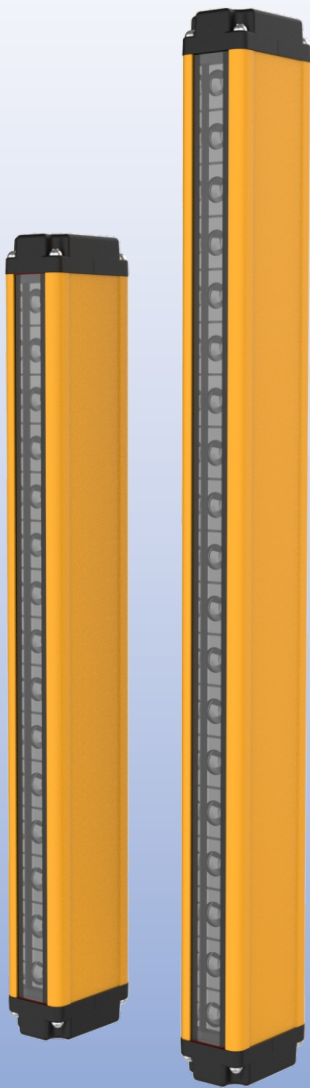




## TYS series side-emitting universal light curtain



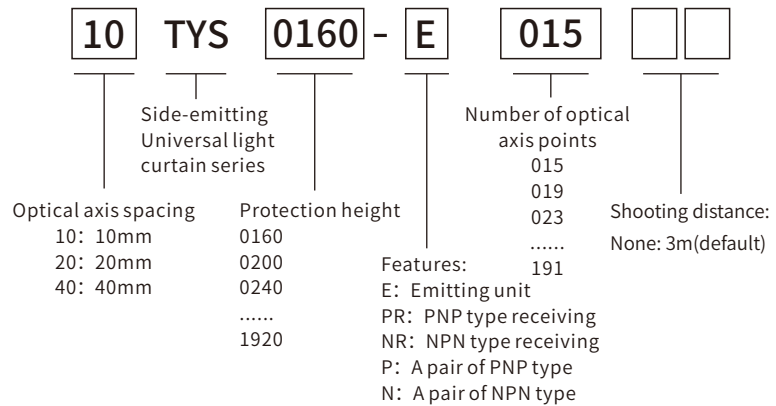
### Performance characteristics

TYS series light curtain is a new type of through-beam photoelectric protection device developed with international advanced technology, professional optical and circuit design makes the light curtain have very good anti-electromagnetic interference and environmental light interference capabilities, so it can be used in many harsh environments, structural restricted areas.

This light curtain has the following features:

- ◆ Light curtain resolution 14mm, 25mm, 45mm optional;
- ◆ Using the most advanced infrared light synchronization technology, simple installation and easy to use;
- ◆ It has good on-site application ability, strong anti-optical interference, anti-electromagnetic interference ability;
- ◆ Small size;
- ◆ Dedicated interface.

### Model description



### Technical parameter

TYS Series side-emitting light curtain (10/20/40 Series)

Standard	IEC61496-1 / IEC61496-2
Optical axis spacing	10mm (14mm) 20mm (25mm) 40mm(45mm)
Detection distance	0.1-3m
Number of optical axes	4-191
Protection height	100-1910mm
Light source wavelength	940nm
Response time	See selection table
Output type	NPN/PNP
Max output current	200mA
Max capacitive load	0.1uF
Supply voltage	+24V±10%
Max power	<3W
Enclosure protection	IP65 (IP67 can be customized)
Operating temperature	-10~55°C
Storage temperature	-20°C~70°C
Relative humidity	15%~85%
Impact	10g/20ms
Vibration	0.35mm/10~55Hz

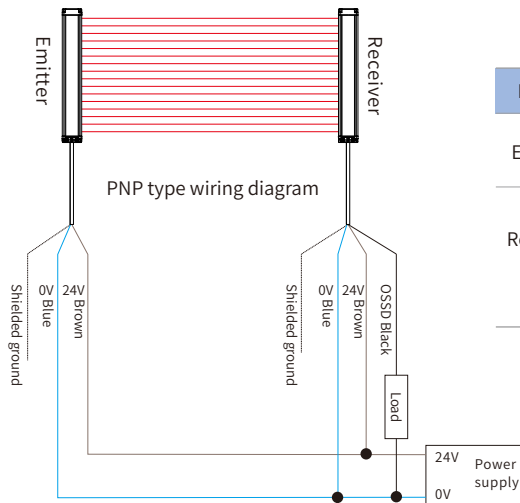


## Common troubleshooting

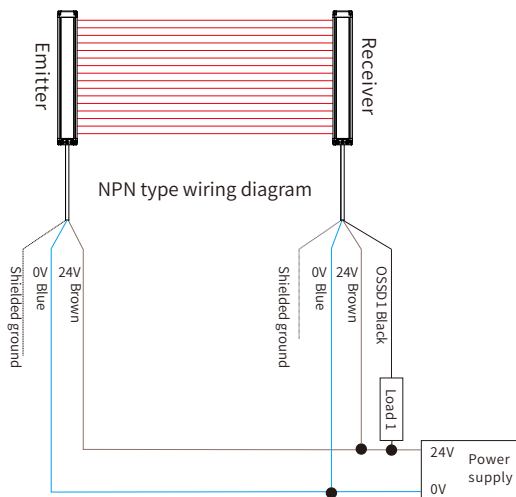
		LED indicator	Description
Emitting		Green light	Normal operation
		2Hz green light flashes	Software fault
		The 2Hz traffic light flashes alternately	Select Circuit Fault
		1Hz red light flashes	Launch tube failure
		2Hz red light flashes	Power failure

		LED indicator	Description
Receiver		Green light	All beams are turned on
		Red light	Beam blocking (Light not matched)
		1Hz green light flashes	Interferences
		2Hz green light flashes	Software fault
		2Hz red and green flashes alternately	Select Circuit Fault
		1Hz red light flashes	Output errors, overloads
		2Hz red light flashes	Power supply failure

## Signal interface definition and application wiring diagram



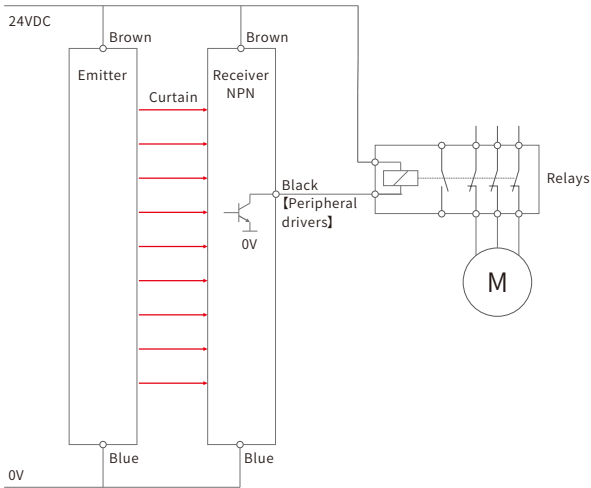
Name	Color	Description
Emitter	Brown (+24VDC)	Supply voltage, DC 24V
	Blue (GND)	Power supply 0V
Receiver	Brown (+24VDC)	Supply voltage, DC 24V
	Blue (GND)	Power supply 0V
	Black (OSSD)	Safety output: NPN/PNP (can be directly fed into PLC, safety relay)



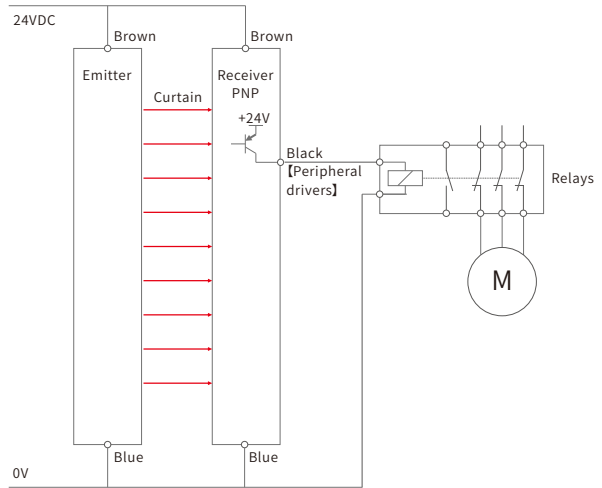
### Warning

- ◆ Make sure doing wiring after the power has been turned off.
- ◆ Please make sure that the power supply voltage does not change beyond the rated range.
- ◆ Do not run the wire with the high-voltage line or power line or within the same line, this may cause a malfunction due to induction.
- ◆ Do not use for a short period of time (2S) after the power is turned on.
- ◆ Avoid dust, dirt and water vapor.
- ◆ Do not put the light curtain in direct contact with water, oil, grease or organic solutions (such as thinners).
- ◆ Do not directly expose the light curtain to the fluorescence of a fast-start lamp or high-frequency illumination equipment, as this will affect the detection performance.
- ◆ If possible, the light curtain should be installed as insulated as possible.

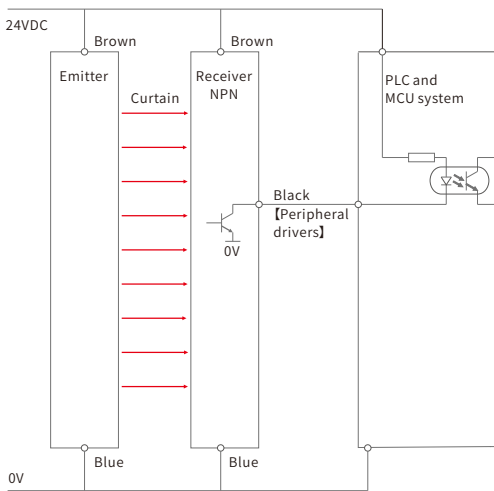
TYS light curtain (NPN) and relay applications wiring diagram



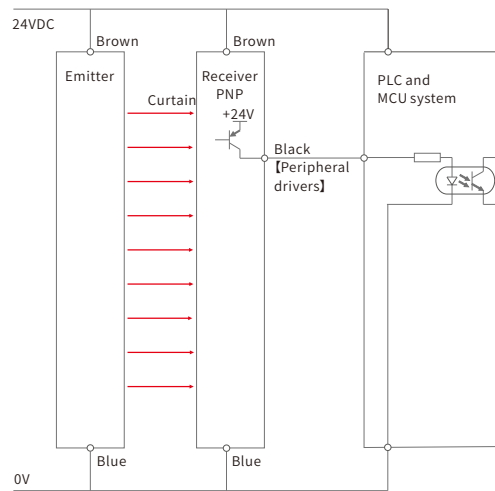
TYS light curtain (PNP) and relay applications wiring diagram



TYS light curtain (NPN) and PLC applications wiring diagram



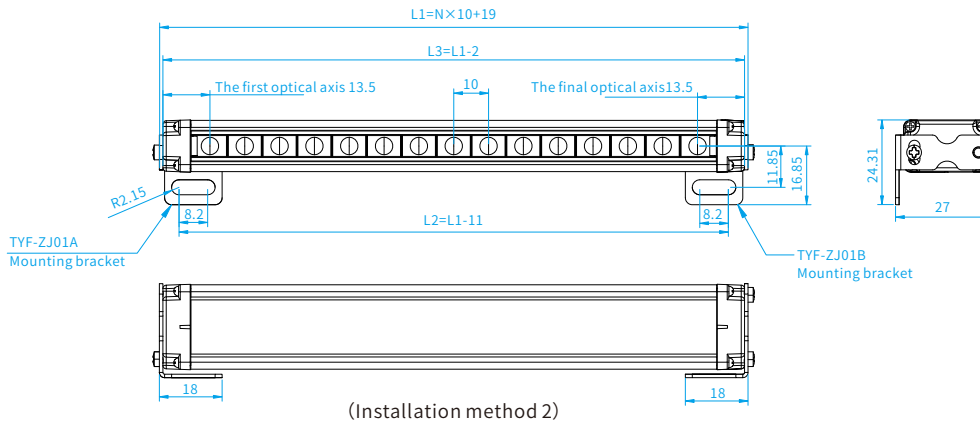
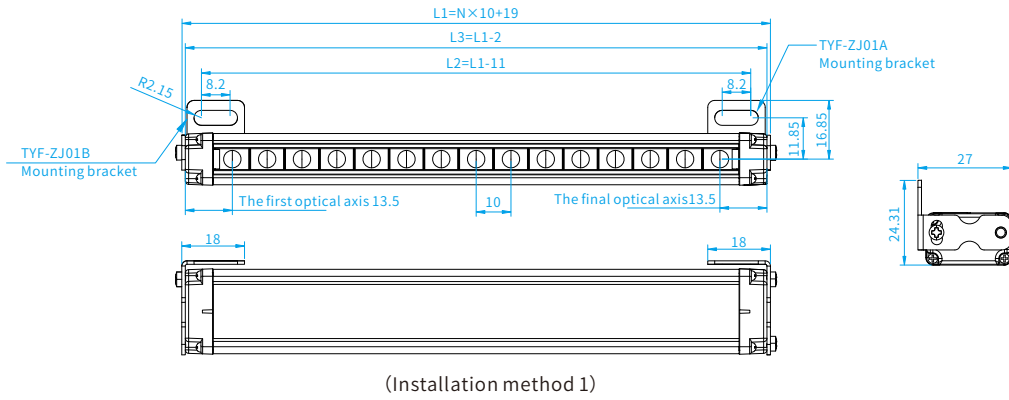
TYS light curtain (PNP) and PLC applications wiring diagram



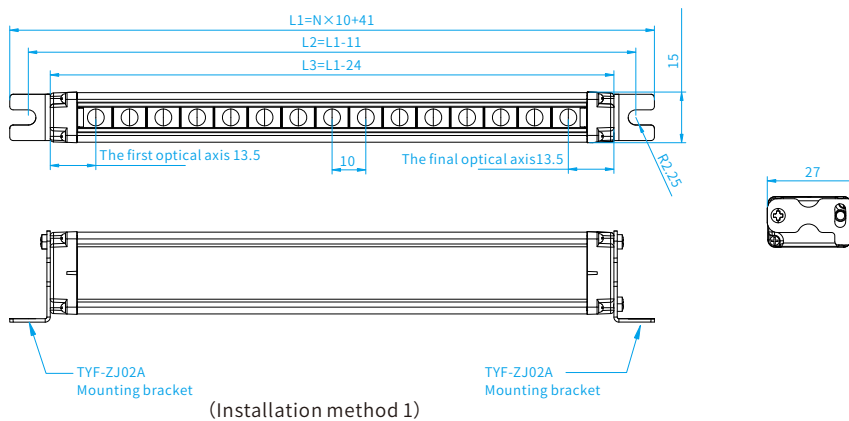
## Specification selection and installation size

### ◆ 10 series installation and size drawing

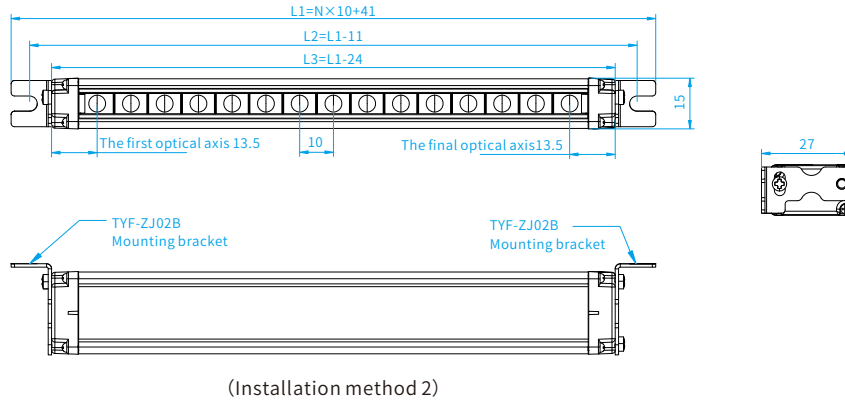
#### ● 10TYS light curtain with TYF-ZJ01A, TYF-ZJ01B mounting bracket



#### ● 10TYS light curtain with TYF-ZJ02A, TYF-ZJ02B mounting bracket

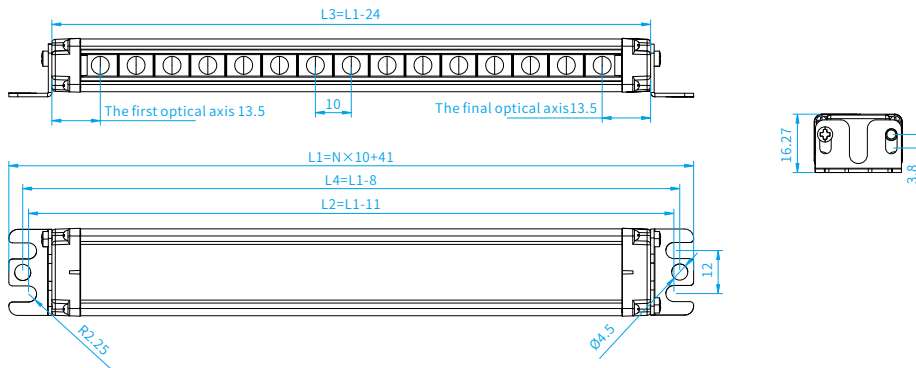


\*Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

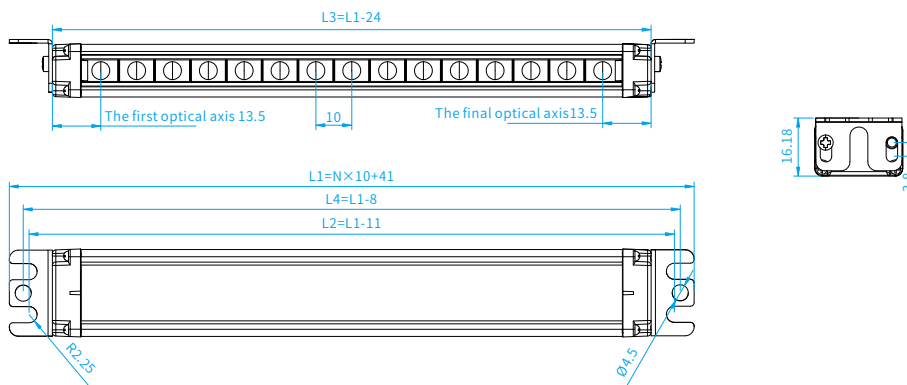


(Installation method 2)

● 10TYS light curtain with TYF-ZJ03 mounting bracket



(Installation method 1)



(Installation method 2)

※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

◆ 10 series (optical axis spacing: 10mm, resolution: 14mm)

10TYS light curtain			Number of optical axes	Response time (ms)	Protection Height (mm)	Raster dimension
Emitter	PNP type receiving	NPN type receiving				
10TYS0160-E015□□	10TYS0160-PR015□□	10TYS0160-NR015□□	15	20	160	25×15×167mm
10TYS0200-E019□□	10TYS0200-PR019□□	10TYS0200-NR019□□	19	24	200	25×15×207mm
10TYS0240-E023□□	10TYS0240-PR023□□	10TYS0240-NR023□□	23	29	240	25×15×247mm
10TYS0280-E027□□	10TYS0280-PR027□□	10TYS0280-NR027□□	27	33	280	25×15×287mm
10TYS0320-E031□□	10TYS0320-PR031□□	10TYS0320-NR031□□	31	37	320	25×15×327mm
10TYS0360-E035□□	10TYS0360-PR035□□	10TYS0360-NR035□□	35	41	360	25×15×367mm
10TYS0400-E039□□	10TYS0400-PR039□□	10TYS0400-NR039□□	39	45	400	25×15×407mm
10TYS0440-E043□□	10TYS0440-PR043□□	10TYS0440-NR043□□	43	49	440	25×15×447mm
10TYS0480-E047□□	10TYS0480-PR047□□	10TYS0480-NR047□□	47	21	480	25×15×487mm
10TYS0520-E051□□	10TYS0520-PR051□□	10TYS0520-NR051□□	51	23	520	25×15×527mm
10TYS0560-E055□□	10TYS0560-PR055□□	10TYS0560-NR055□□	55	24	560	25×15×567mm
10TYS0600-E059□□	10TYS0600-PR059□□	10TYS0600-NR059□□	59	25	600	25×15×607mm
10TYS0640-E063□□	10TYS0640-PR063□□	10TYS0640-NR063□□	63	27	640	25×15×647mm
10TYS0680-E067□□	10TYS0680-PR067□□	10TYS0680-NR067□□	67	28	680	25×15×687mm
10TYS0720-E071□□	10TYS0720-PR071□□	10TYS0720-NR071□□	71	29	720	25×15×727mm
10TYS0760-E075□□	10TYS0760-PR075□□	10TYS0760-NR075□□	75	31	760	25×15×767mm
10TYS0800-E079□□	10TYS0800-PR079□□	10TYS0800-NR079□□	79	32	800	25×15×807mm
10TYS0840-E083□□	10TYS0840-PR083□□	10TYS0840-NR083□□	83	33	840	25×15×847mm
10TYS0880-E087□□	10TYS0880-PR087□□	10TYS0880-NR087□□	87	35	880	25×15×887mm
10TYS0920-E091□□	10TYS0920-PR091□□	10TYS0920-NR091□□	91	36	920	25×15×927mm
10TYS0960-E095□□	10TYS0960-PR095□□	10TYS0960-NR095□□	95	38	960	25×15×967mm
10TYS1000-E099□□	10TYS1000-PR099□□	10TYS1000-NR099□□	99	39	1000	25×15×1007mm
10TYS1040-E103□□	10TYS1040-PR103□□	10TYS1040-NR103□□	103	40	1040	25×15×1047mm
10TYS1080-E107□□	10TYS1080-PR107□□	10TYS1080-NR107□□	107	42	1080	25×15×1087mm
10TYS1120-E111□□	10TYS1120-PR111□□	10TYS1120-NR111□□	111	43	1120	25×15×1127mm
10TYS1160-E115□□	10TYS1160-PR115□□	10TYS1160-NR115□□	115	44	1160	25×15×1167mm
10TYS1200-E119□□	10TYS1200-PR119□□	10TYS1200-NR119□□	119	46	1200	25×15×1207mm
10TYS1240-E123□□	10TYS1240-PR123□□	10TYS1240-NR123□□	123	47	1240	25×15×1247mm
10TYS1280-E127□□	10TYS1280-PR127□□	10TYS1280-NR127□□	127	49	1280	25×15×1287mm
10TYS1320-E131□□	10TYS1320-PR131□□	10TYS1320-NR131□□	131	50	1320	25×15×1327mm
10TYS1360-E135□□	10TYS1360-PR135□□	10TYS1360-NR135□□	135	51	1360	25×15×1367mm
10TYS1400-E139□□	10TYS1400-PR139□□	10TYS1400-NR139□□	139	53	1400	25×15×1407mm
10TYS1440-E143□□	10TYS1440-PR143□□	10TYS1440-NR143□□	143	54	1440	25×15×1447mm
10TYS1480-E147□□	10TYS1480-PR147□□	10TYS1480-NR147□□	147	55	1480	25×15×1487mm
10TYS1520-E151□□	10TYS1520-PR151□□	10TYS1520-NR151□□	151	57	1520	25×15×1527mm
10TYS1560-E155□□	10TYS1560-PR155□□	10TYS1560-NR155□□	155	58	1560	25×15×1567mm
10TYS1600-E159□□	10TYS1600-PR159□□	10TYS1600-NR159□□	159	59	1600	25×15×1607mm
10TYS1640-E163□□	10TYS1640-PR163□□	10TYS1640-NR163□□	163	61	1640	25×15×1647mm
10TYS1680-E167□□	10TYS1680-PR167□□	10TYS1680-NR167□□	167	62	1680	25×15×1687mm
10TYS1720-E171□□	10TYS1720-PR171□□	10TYS1720-NR171□□	171	64	1720	25×15×1727mm
10TYS1760-E175□□	10TYS1760-PR175□□	10TYS1760-NR175□□	175	65	1760	25×15×1767mm
10TYS1800-E179□□	10TYS1800-PR179□□	10TYS1800-NR179□□	179	66	1800	25×15×1807mm
10TYS1840-E183□□	10TYS1840-PR183□□	10TYS1840-NR183□□	183	68	1840	25×15×1847mm
10TYS1880-E187□□	10TYS1880-PR187□□	10TYS1880-NR187□□	187	69	1880	25×15×1887mm
10TYS1920-E191□□	10TYS1920-PR191□□	10TYS1920-NR191□□	191	70	1920	25×15×1927mm

※ n: Number of light spots;

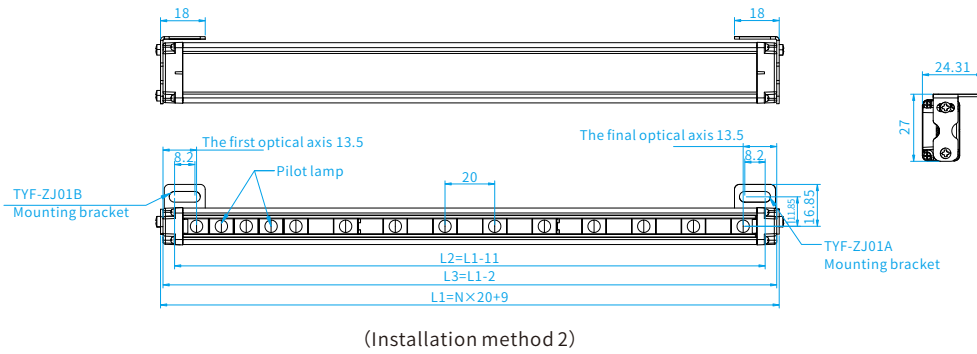
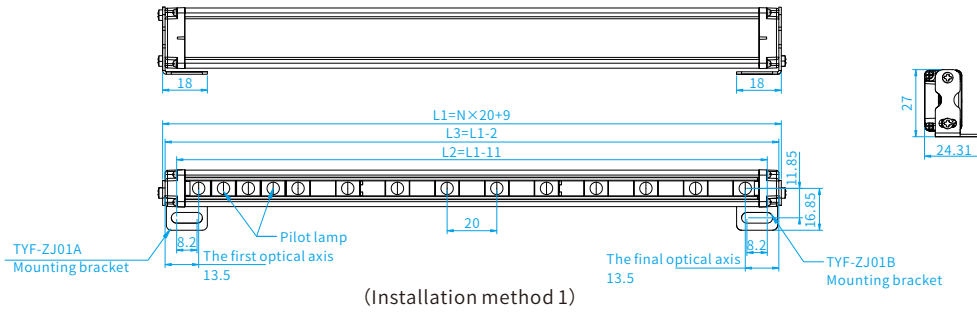
※ The above specifications are part of the specifications;

※ Protection height: The effective height of the test rod (diameter is the length of the spacing) = (n+1) × optical axis spacing;

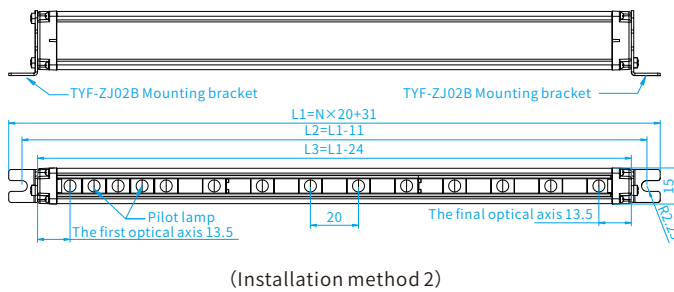
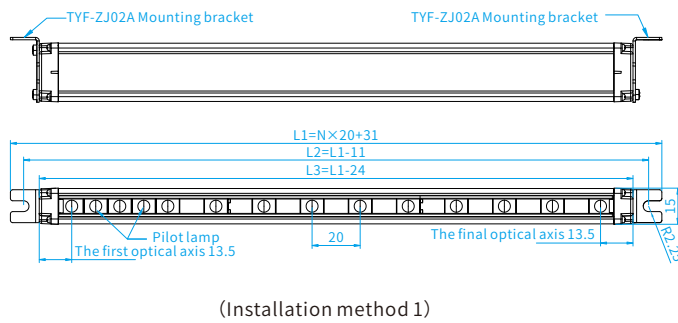
※ The cable needs to be purchased separately, and the standard length of the shipment is 3m, and 4.5m, 6m, and 10m please remark.

◆ 20 series installation and size drawing

- 20TYS light curtain with TYF-ZJ01A, TYF-ZJ01B mounting bracket

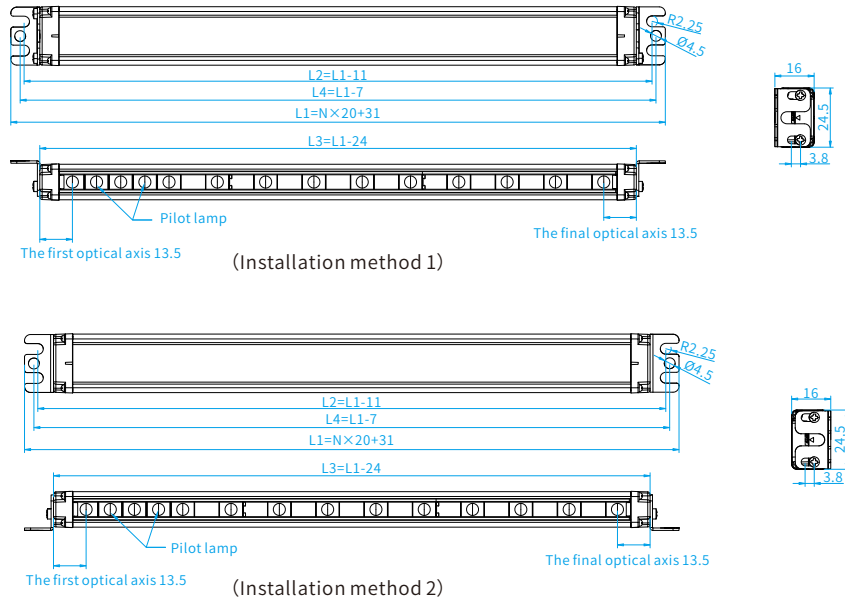


- 20TYS light curtain with TYF-ZJ02A, TYF-ZJ02B mounting bracket



※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

• 20TYS light curtain with TYF-ZJ03 mounting bracket



※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

◆ 20 series (optical axis spacing: 20mm, resolution: 25mm)

20TYS light curtain			Number of optical axes	Response time (ms)	Protection Height (mm)	Raster dimension
Emitter	PNP type receiving	NPN type receiving				
20TYS0180-E008	20TYS0180-PR008	20TYS0180-NR008	8	13	180	25×15×167mm
20TYS0260-E012	20TYS0260-PR012	20TYS0260-NR012	12	17	260	25×15×247mm
20TYS0340-E016	20TYS0340-PR016	20TYS0340-NR016	16	21	340	25×15×327mm
20TYS0420-E020	20TYS0420-PR020	20TYS0420-NR020	20	26	420	25×15×407mm
20TYS0500-E024	20TYS0500-PR024	20TYS0500-NR024	24	30	500	25×15×487mm
20TYS0580-E028	20TYS0580-PR028	20TYS0580-NR028	28	34	580	25×15×567mm
20TYS0660-E032	20TYS0660-PR032	20TYS0660-NR032	32	38	660	25×15×647mm
20TYS0740-E036	20TYS0740-PR036	20TYS0740-NR036	36	42	740	25×15×727mm
20TYS0820-E040	20TYS0820-PR040	20TYS0820-NR040	40	46	820	25×15×807mm
20TYS0900-E044	20TYS0900-PR044	20TYS0900-NR044	44	50	900	25×15×887mm
20TYS0980-E048	20TYS0980-PR048	20TYS0980-NR048	48	22	980	25×15×967mm
20TYS1060-E052	20TYS1060-PR052	20TYS1060-NR052	52	23	1060	25×15×1047mm
20TYS1140-E056	20TYS1140-PR056	20TYS1140-NR056	56	24	1140	25×15×1127mm
20TYS1220-E060	20TYS1220-PR060	20TYS1220-NR060	60	26	1220	25×15×1207mm
20TYS1300-E064	20TYS1300-PR064	20TYS1300-NR064	64	27	1300	25×15×1287mm
20TYS1380-E068	20TYS1380-PR068	20TYS1380-NR068	68	28	1380	25×15×1367mm
20TYS1460-E072	20TYS1460-PR072	20TYS1460-NR072	72	30	1460	25×15×1447mm
20TYS1540-E076	20TYS1540-PR076	20TYS1540-NR076	76	31	1540	25×15×1527mm
20TYS1620-E080	20TYS1620-PR080	20TYS1620-NR080	80	33	1620	25×15×1607mm
20TYS1700-E084	20TYS1700-PR084	20TYS1700-NR084	84	34	1700	25×15×1687mm
20TYS1780-E088	20TYS1780-PR088	20TYS1780-NR088	88	35	1780	25×15×1767mm
20TYS1860-E092	20TYS1860-PR092	20TYS1860-NR092	92	37	1860	25×15×1847mm
20TYS1940-E096	20TYS1940-PR096	20TYS1940-NR096	96	38	1940	25×15×1927mm

※ n: Number of light spots;

※ The above specifications are part of the specifications;

※ Protection height: The effective height of the test rod (diameter is the length of the spacing) = (n+1) × optical axis spacing;

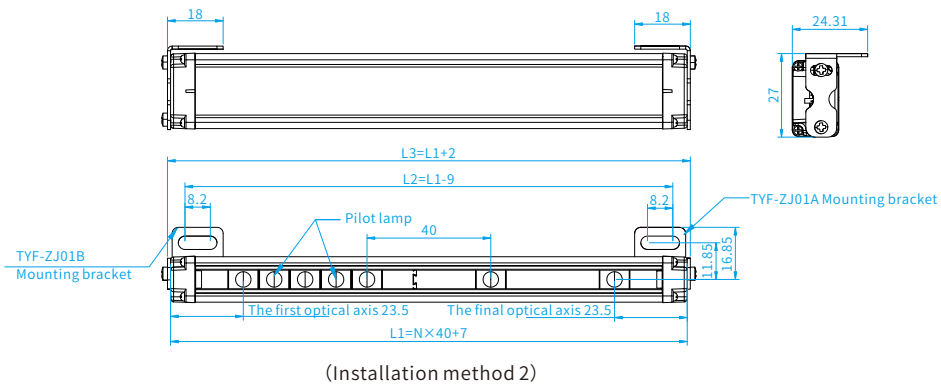
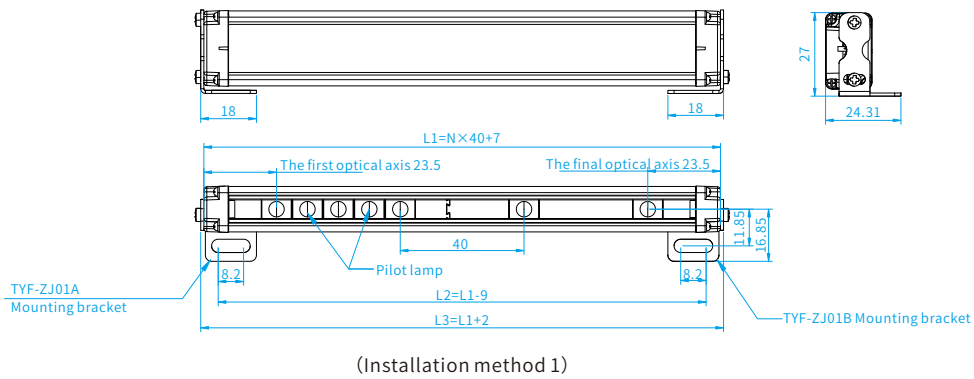
※The cable needs to be purchased separately, and the standard length of the shipment is 3m, and 4.5m, 6m, and 10m please remark.

※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

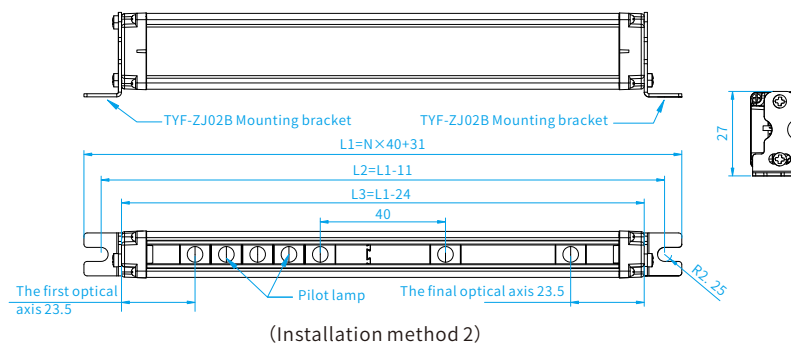
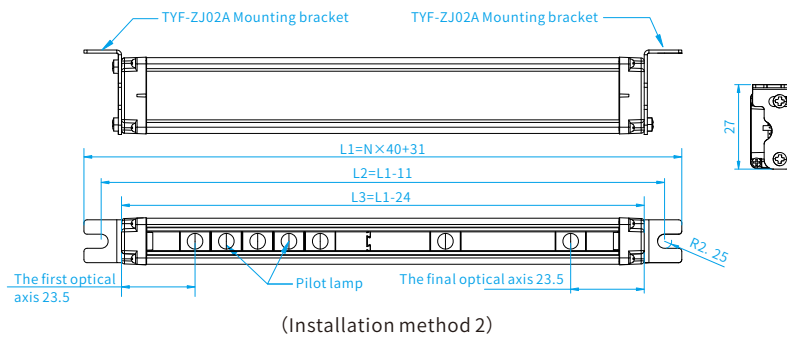


◆ 40 series installation and size drawing

- 40TYS light curtain with TYF-ZJ01A, TYF-ZJ01B mounting bracket

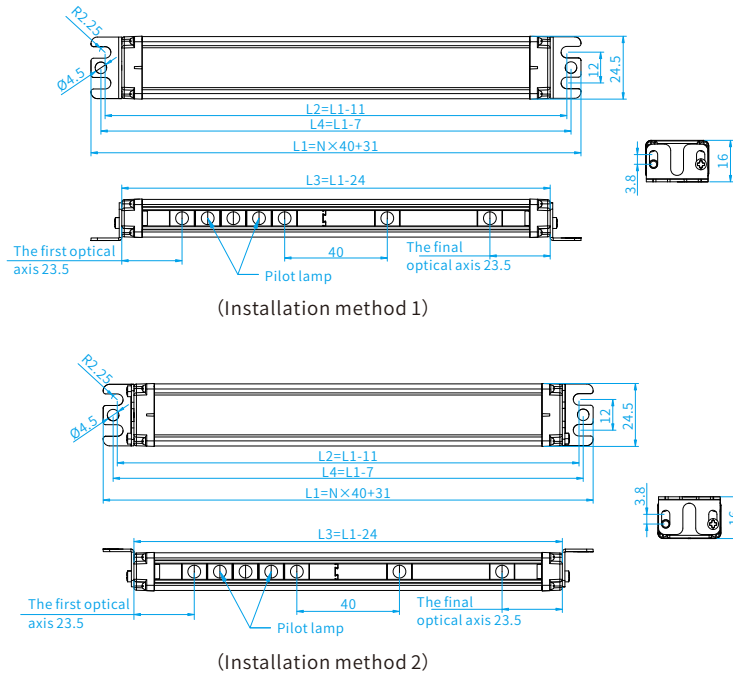


- 40TYS light curtain with TYF-ZJ02A, TYF-ZJ02B mounting bracket



※ Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

● 40TYS light curtain with TYF-ZJ03 mounting bracket



※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product

◆ 40 series (optical axis spacing: 40mm, resolution: 45mm)

40TYS light curtain			Number of optical axes	Response time (ms)	Protection Height (mm)	Raster dimension
Emitter	PNP type receiving	NPN type receiving				
40TYS0200-E004□□	40TYS0200-PR004□□	40TYS0200-NR004□□	4	9	200	25×15×167mm
40TYS0280-E006□□	40TYS0280-PR006□□	40TYS0280-NR006□□	6	11	280	25×15×247mm
40TYS0360-E008□□	40TYS0360-PR008□□	40TYS0360-NR008□□	8	13	360	25×15×327mm
40TYS0440-E010□□	40TYS0440-PR010□□	40TYS0440-NR010□□	10	15	440	25×15×407mm
40TYS0520-E012□□	40TYS0520-PR012□□	40TYS0520-NR012□□	12	17	520	25×15×487mm
40TYS0600-E014□□	40TYS0600-PR014□□	40TYS0600-NR014□□	14	19	600	25×15×567mm
40TYS0680-E016□□	40TYS0680-PR016□□	40TYS0680-NR016□□	16	21	680	25×15×647mm
40TYS0760-E018□□	40TYS0760-PR018□□	40TYS0760-NR018□□	18	23	760	25×15×727mm
40TYS0840-E020□□	40TYS0840-PR020□□	40TYS0840-NR020□□	20	26	840	25×15×807mm
40TYS0920-E022□□	40TYS0920-PR022□□	40TYS0920-NR022□□	22	28	920	25×15×887mm
40TYS1000-E024□□	40TYS1000-PR024□□	40TYS1000-NR024□□	24	30	1000	25×15×967mm
40TYS1080-E026□□	40TYS1080-PR026□□	40TYS1080-NR026□□	26	32	1080	25×15×1047mm
40TYS1160-E028□□	40TYS1160-PR028□□	40TYS1160-NR028□□	28	34	1160	25×15×1127mm
40TYS1240-E030□□	40TYS1240-PR030□□	40TYS1240-NR030□□	30	36	1240	25×15×1207mm
40TYS1320-E032□□	40TYS1320-PR032□□	40TYS1320-NR032□□	32	38	1320	25×15×1287mm
40TYS1400-E034□□	40TYS1400-PR034□□	40TYS1400-NR034□□	34	40	1400	25×15×1367mm
40TYS1480-E036□□	40TYS1480-PR036□□	40TYS1480-NR036□□	36	42	1480	25×15×1447mm
40TYS1560-E038□□	40TYS1560-PR038□□	40TYS1560-NR038□□	38	44	1560	25×15×1527mm
40TYS1640-E040□□	40TYS1640-PR040□□	40TYS1640-NR040□□	40	46	1640	25×15×1607mm
40TYS1720-E042□□	40TYS1720-PR042□□	40TYS1720-NR042□□	42	48	1720	25×15×1687mm
40TYS1800-E044□□	40TYS1800-PR044□□	40TYS1800-NR044□□	44	50	1800	25×15×1767mm
40TYS1880-E046□□	40TYS1880-PR046□□	40TYS1880-NR046□□	46	21	1880	25×15×1847mm
40TYS1960-E048□□	40TYS1960-PR048□□	40TYS1960-NR048□□	48	22	1960	25×15×1927mm

※ n: Number of light spots;

※ The above specifications are part of the specifications;

※ Protection height: The effective height of the test rod (diameter is the length of the spacing) = (n+1) × optical axis spacing;

※The cable needs to be purchased separately, and the standard length of the shipment is 3m, and 4.5m, 6m, and 10m please remark.

※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product



## Installation method of general grating mounting bracket

### TYF-ZJ01A, TYF-ZJ01B bracket installation method

① Remove the "TYF light curtain terminal dust plug"  
② Install the "transmit or receive cable"  
③ Install the TYF-ZJ01A mounting bracket  
④ Install the TYF-ZJ01B mounting bracket  
⑤ Install the light curtain to the device

**Warn**

- ◆ The torque of the fixing cable screw should not exceed 0.6N. m;
- ◆ The torque of the fixed installation bracket screws should not exceed 0.6N. m

### TYF-ZJ01B, TYF-ZJ01A bracket installation method

① Remove the "TYF light curtain terminal dust plug"  
② Install the "transmit or receive cable"  
③ Install the TYF-ZJ01A mounting bracket  
④ Install the TYF-ZJ01B mounting bracket  
⑤ Install the light curtain to the device

**Warn**

- ◆ The torque of the fixing cable screw should not exceed 0.6N. m;
- ◆ The torque of the fixed installation bracket screws should not exceed 0.6N. m

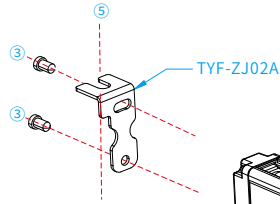
### TYF-ZJ02A, TYF-ZJ02B bracket installation method

① Remove the "TYF light curtain terminal dust plug"  
② Install the "transmit or receive cable"  
③ Install the TYF-ZJ02B mounting bracket  
④ Install the TYF-ZJ02A mounting bracket  
⑤ Install the light curtain to the device

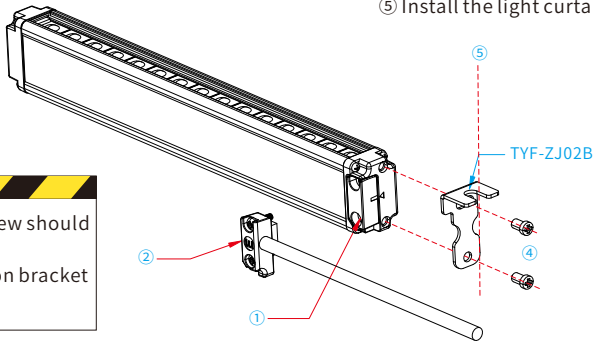
**Warn**

- ◆ The torque of the fixing cable screw should not exceed 0.6N. m;
- ◆ The torque of the fixed installation bracket screws should not exceed 0.6N. m

◆ TYF-ZJ02B, TYF-ZJ02A bracket installation method

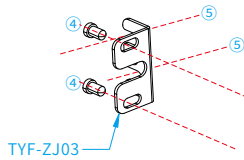


- ① Remove the "TYF light curtain terminal dust plug"
- ② Install the "transmit or receive cable"
- ③ Install the TYF-ZJ02A mounting bracket
- ④ Install the TYF-ZJ02B mounting bracket
- ⑤ Install the light curtain to the device



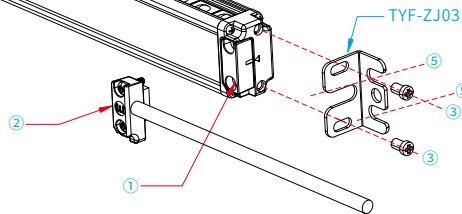
<p><b>Warn</b></p>	<ul style="list-style-type: none"> <li>◆ The torque of the fixing cable screw should not exceed 0.6N. m;</li> <li>◆ The torque of the fixed installation bracket screws should not exceed 0.6N. m</li> </ul>
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◆ TYF-ZJ03 bracket installation method

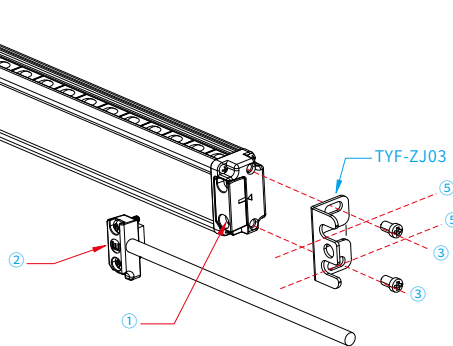
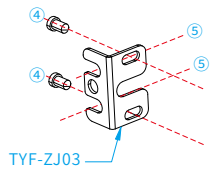


- ① Remove the "TYF light curtain terminal dust plug"
- ② Install the "transmit or receive cable"
- ③ Install the TYF-ZJ03 mounting bracket
- ④ Install the TYF-ZJ03 mounting bracket
- ⑤ Install the light curtain to the device

Installation method 1



Installation method 2



<p><b>Warn</b></p>	<ul style="list-style-type: none"> <li>◆ The torque of the fixing cable screw should not exceed 0.6N. m;</li> <li>◆ The torque of the fixed installation bracket screws should not exceed 0.6N. m</li> </ul>
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