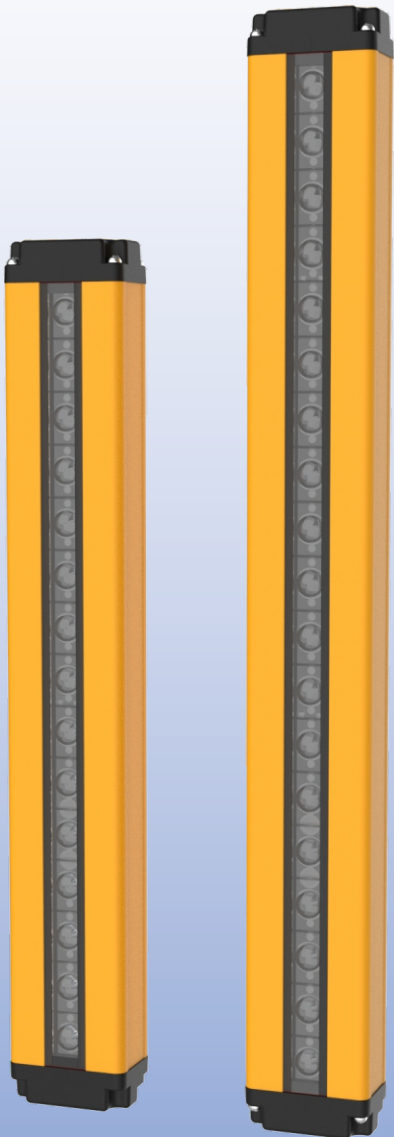




## TYF series positive light universal light curtain



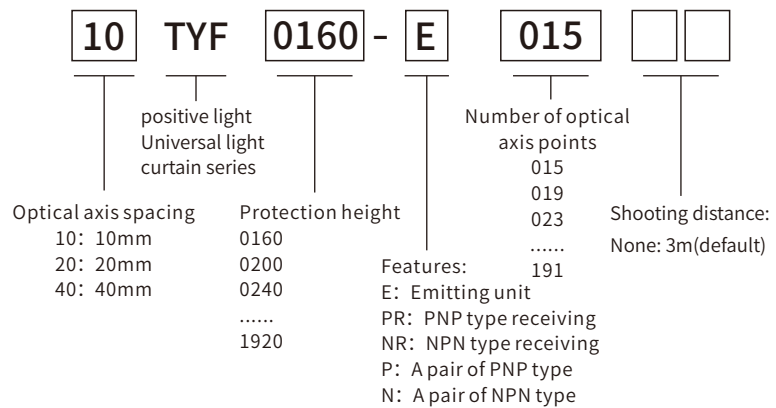
### ▶ Performance characteristics

TYF 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








TYF 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

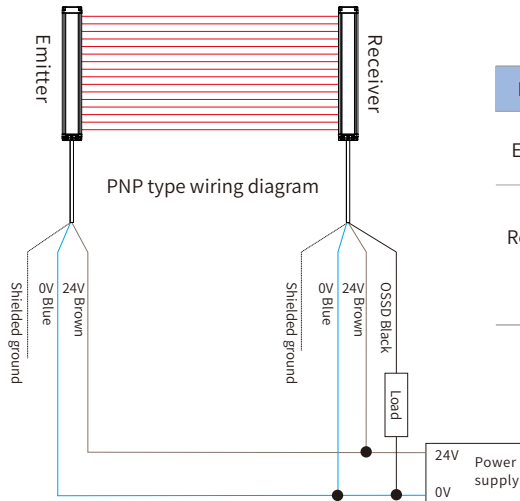


### Common troubleshooting

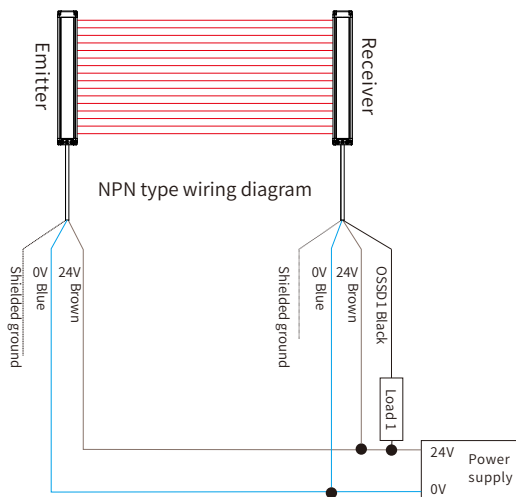
		LED indicator	Description
Emitting		Green light	Normal operation
		2Hz green light flashes	Software fault
		The 2Hz traffic light flashes alternately	Select Circuit Fault
		1Hz red light flashes	Launch tube failure
		2Hz red light flashes	Power failure

		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



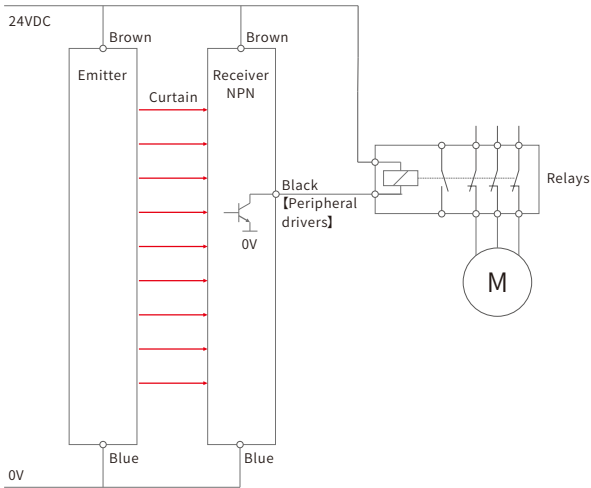
Name	Color	Description
Emitter	Brown (+24VDC)	Supply voltage, DC 24V
	Blue (GND)	Power supply 0V
Receiver	Brown (+24VDC)	Supply voltage, DC 24V
	Blue (GND)	Power supply 0V
	Black (OSSD)	Safety output: NPN/PNP (can be directly fed into PLC, safety relay)



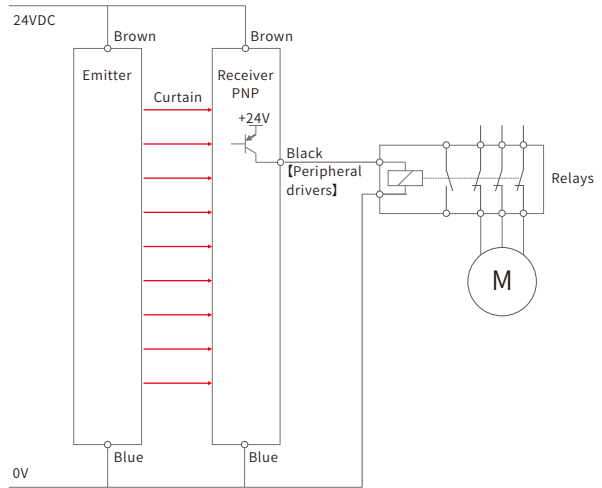
#### Warning

- ◆ 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.

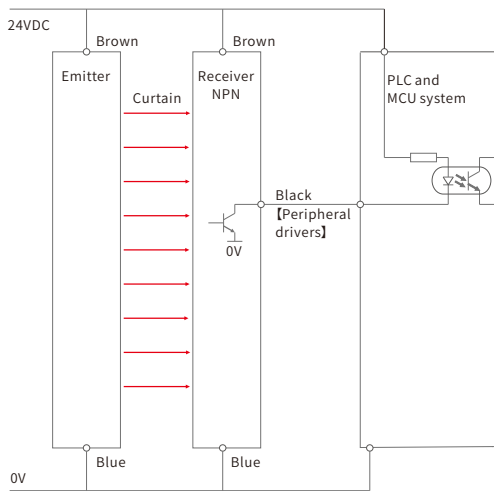
TYF light curtain (NPN) and relay applications wiring diagram



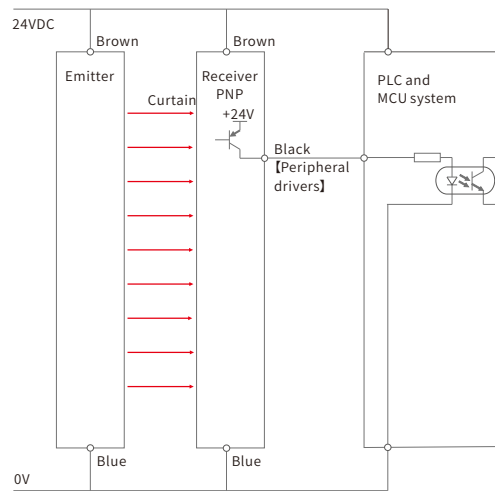
TYF light curtain (PNP) and relay applications wiring diagram



TYF light curtain (NPN) and PLC applications wiring diagram



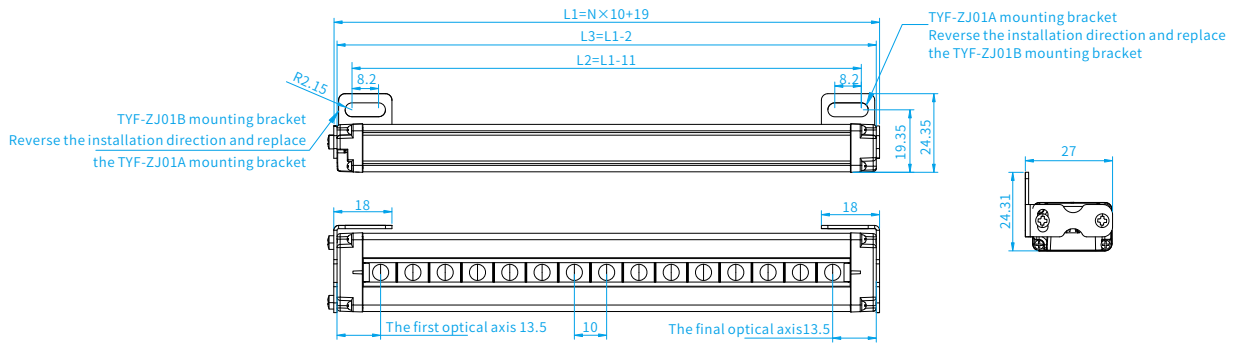
TYF light curtain (PNP) and PLC applications wiring diagram



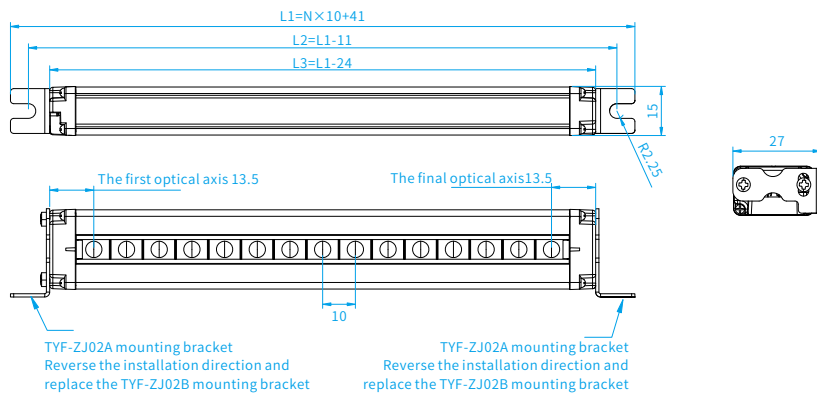
## Specification selection and installation size

### ◆ 10 series installation and size drawing

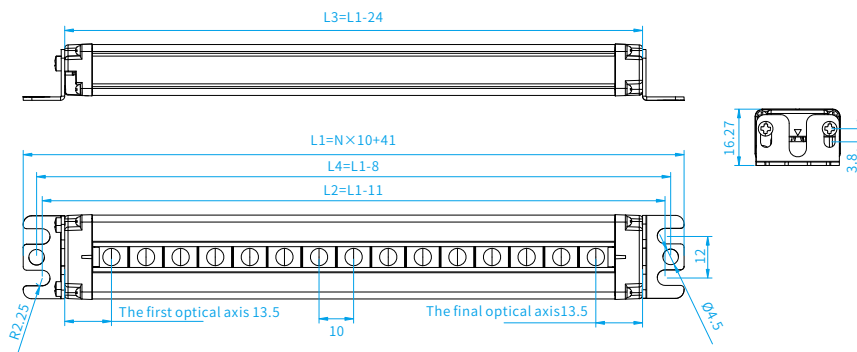
#### ● 10TYF light curtain with TYF-ZJ01A, TYF-ZJ01B mounting bracket



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



#### ● 10TYF 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

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

10TYF light curtain			Number of optical axes	Response time (ms)	Protection Height (mm)	Raster dimension
Emitter	PNP type receiving	NPN type receiving				
10TYF0160-E015□□	10TYF0160-PR015□□	10TYF0160-NR015□□	15	20	160	15×25×167mm
10TYF0200-E019□□	10TYF0200-PR019□□	10TYF0200-NR019□□	19	24	200	15×25×207mm
10TYF0240-E023□□	10TYF0240-PR023□□	10TYF0240-NR023□□	23	29	240	15×25×247mm
10TYF0280-E027□□	10TYF0280-PR027□□	10TYF0280-NR027□□	27	33	280	15×25×287mm
10TYF0320-E031□□	10TYF0320-PR031□□	10TYF0320-NR031□□	31	37	320	15×25×327mm
10TYF0360-E035□□	10TYF0360-PR035□□	10TYF0360-NR035□□	35	41	360	15×25×367mm
10TYF0400-E039□□	10TYF0400-PR039□□	10TYF0400-NR039□□	39	45	400	15×25×407mm
10TYF0440-E043□□	10TYF0440-PR043□□	10TYF0440-NR043□□	43	49	440	15×25×447mm
10TYF0480-E047□□	10TYF0480-PR047□□	10TYF0480-NR047□□	47	21	480	15×25×487mm
10TYF0520-E051□□	10TYF0520-PR051□□	10TYF0520-NR051□□	51	23	520	15×25×527mm
10TYF0560-E055□□	10TYF0560-PR055□□	10TYF0560-NR055□□	55	24	560	15×25×567mm
10TYF0600-E059□□	10TYF0600-PR059□□	10TYF0600-NR059□□	59	25	600	15×25×607mm
10TYF0640-E063□□	10TYF0640-PR063□□	10TYF0640-NR063□□	63	27	640	15×25×647mm
10TYF0680-E067□□	10TYF0680-PR067□□	10TYF0680-NR067□□	67	28	680	15×25×687mm
10TYF0720-E071□□	10TYF0720-PR071□□	10TYF0720-NR071□□	71	29	720	15×25×727mm
10TYF0760-E075□□	10TYF0760-PR075□□	10TYF0760-NR075□□	75	31	760	15×25×767mm
10TYF0800-E079□□	10TYF0800-PR079□□	10TYF0800-NR079□□	79	32	800	15×25×807mm
10TYF0840-E083□□	10TYF0840-PR083□□	10TYF0840-NR083□□	83	33	840	15×25×847mm
10TYF0880-E087□□	10TYF0880-PR087□□	10TYF0880-NR087□□	87	35	880	15×25×887mm
10TYF0920-E091□□	10TYF0920-PR091□□	10TYF0920-NR091□□	91	36	920	15×25×927mm
10TYF0960-E095□□	10TYF0960-PR095□□	10TYF0960-NR095□□	95	38	960	15×25×967mm
10TYF1000-E099□□	10TYF1000-PR099□□	10TYF1000-NR099□□	99	39	1000	15×25×1007mm
10TYF1040-E103□□	10TYF1040-PR103□□	10TYF1040-NR103□□	103	40	1040	15×25×1047mm
10TYF1080-E107□□	10TYF1080-PR107□□	10TYF1080-NR107□□	107	42	1080	15×25×1087mm
10TYF1120-E111□□	10TYF1120-PR111□□	10TYF1120-NR111□□	111	43	1120	15×25×1127mm
10TYF1160-E115□□	10TYF1160-PR115□□	10TYF1160-NR115□□	115	44	1160	15×25×1167mm
10TYF1200-E119□□	10TYF1200-PR119□□	10TYF1200-NR119□□	119	46	1200	15×25×1207mm
10TYF1240-E123□□	10TYF1240-PR123□□	10TYF1240-NR123□□	123	47	1240	15×25×1247mm
10TYF1280-E127□□	10TYF1280-PR127□□	10TYF1280-NR127□□	127	49	1280	15×25×1287mm
10TYF1320-E131□□	10TYF1320-PR131□□	10TYF1320-NR131□□	131	50	1320	15×25×1327mm
10TYF1360-E135□□	10TYF1360-PR135□□	10TYF1360-NR135□□	135	51	1360	15×25×1367mm
10TYF1400-E139□□	10TYF1400-PR139□□	10TYF1400-NR139□□	139	53	1400	15×25×1407mm
10TYF1440-E143□□	10TYF1440-PR143□□	10TYF1440-NR143□□	143	54	1440	15×25×1447mm
10TYF1480-E147□□	10TYF1480-PR147□□	10TYF1480-NR147□□	147	55	1480	15×25×1487mm
10TYF1520-E151□□	10TYF1520-PR151□□	10TYF1520-NR151□□	151	57	1520	15×25×1527mm
10TYF1560-E155□□	10TYF1560-PR155□□	10TYF1560-NR155□□	155	58	1560	15×25×1567mm
10TYF1600-E159□□	10TYF1600-PR159□□	10TYF1600-NR159□□	159	59	1600	15×25×1607mm
10TYF1640-E163□□	10TYF1640-PR163□□	10TYF1640-NR163□□	163	61	1640	15×25×1647mm
10TYF1680-E167□□	10TYF1680-PR167□□	10TYF1680-NR167□□	167	62	1680	15×25×1687mm
10TYF1720-E171□□	10TYF1720-PR171□□	10TYF1720-NR171□□	171	64	1720	15×25×1727mm
10TYF1760-E175□□	10TYF1760-PR175□□	10TYF1760-NR175□□	175	65	1760	15×25×1767mm
10TYF1800-E179□□	10TYF1800-PR179□□	10TYF1800-NR179□□	179	66	1800	15×25×1807mm
10TYF1840-E183□□	10TYF1840-PR183□□	10TYF1840-NR183□□	183	68	1840	15×25×1847mm
10TYF1880-E187□□	10TYF1880-PR187□□	10TYF1880-NR187□□	187	69	1880	15×25×1887mm
10TYF1920-E191□□	10TYF1920-PR191□□	10TYF1920-NR191□□	191	70	1920	15×25×1927mm

※ n: Number of light spots;

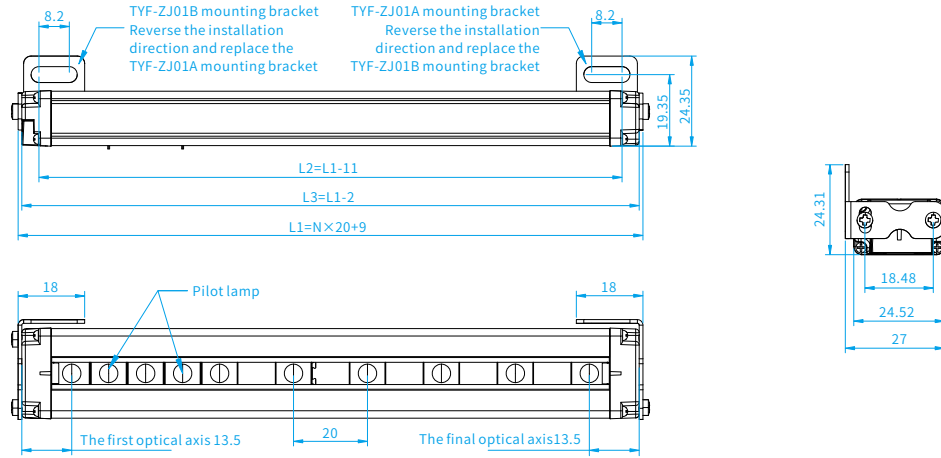
※ The above specifications are part of the specifications;

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

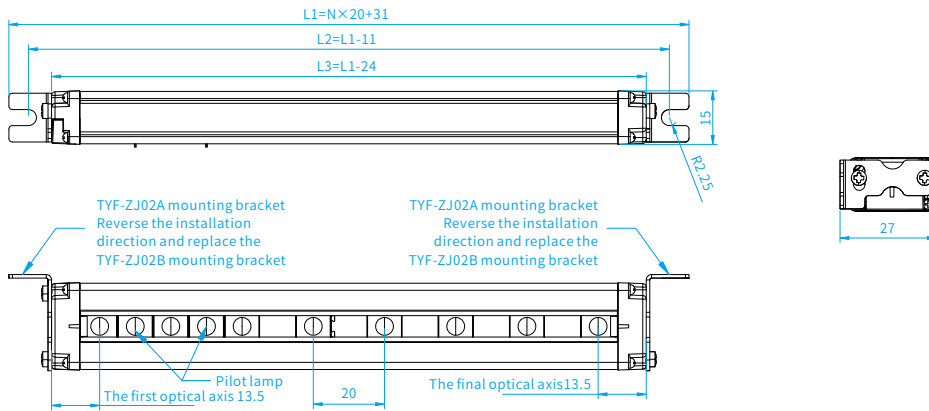
※ The cable needs to be purchased separately, and the standard length of the shipment is 3m, and 4.5m, 6m, and 10m please remark.

◆ 20 series installation and size drawing

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

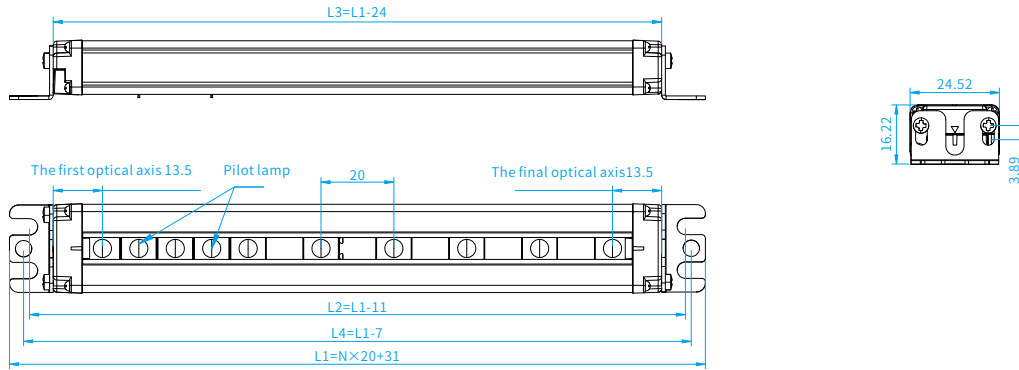


● 20TYF light curtain with TYF-ZJ02A, TYF-ZJ02B mounting bracket



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

• 20TYF 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)

20TYF light curtain			Number of optical axes	Response time (ms)	Protection Height (mm)	Raster dimension
Emitter	PNP type receiving	NPN type receiving				
20TYF0180-E008□□	20TYF0180-PR008□□	20TYF0180-NR008□□	8	13	180	15×25×167mm
20TYF0260-E012□□	20TYF0260-PR012□□	20TYF0260-NR012□□	12	17	260	15×25×247mm
20TYF0340-E016□□	20TYF0340-PR016□□	20TYF0340-NR016□□	16	21	340	15×25×327mm
20TYF0420-E020□□	20TYF0420-PR020□□	20TYF0420-NR020□□	20	26	420	15×25×407mm
20TYF0500-E024□□	20TYF0500-PR024□□	20TYF0500-NR024□□	24	30	500	15×25×487mm
20TYF0580-E028□□	20TYF0580-PR028□□	20TYF0580-NR028□□	28	34	580	15×25×567mm
20TYF0660-E032□□	20TYF0660-PR032□□	20TYF0660-NR032□□	32	38	660	15×25×647mm
20TYF0740-E036□□	20TYF0740-PR036□□	20TYF0740-NR036□□	36	42	740	15×25×727mm
20TYF0820-E040□□	20TYF0820-PR040□□	20TYF0820-NR040□□	40	46	820	15×25×807mm
20TYF0900-E044□□	20TYF0900-PR044□□	20TYF0900-NR044□□	44	50	900	15×25×887mm
20TYF0980-E048□□	20TYF0980-PR048□□	20TYF0980-NR048□□	48	22	980	15×25×967mm
20TYF1060-E052□□	20TYF1060-PR052□□	20TYF1060-NR052□□	52	23	1060	15×25×1047mm
20TYF1140-E056□□	20TYF1140-PR056□□	20TYF1140-NR056□□	56	24	1140	15×25×1127mm
20TYF1220-E060□□	20TYF1220-PR060□□	20TYF1220-NR060□□	60	26	1220	15×25×1207mm
20TYF1300-E064□□	20TYF1300-PR064□□	20TYF1300-NR064□□	64	27	1300	15×25×1287mm
20TYF1380-E068□□	20TYF1380-PR068□□	20TYF1380-NR068□□	68	28	1380	15×25×1367mm
20TYF1460-E072□□	20TYF1460-PR072□□	20TYF1460-NR072□□	72	30	1460	15×25×1447mm
20TYF1540-E076□□	20TYF1540-PR076□□	20TYF1540-NR076□□	76	31	1540	15×25×1527mm
20TYF1620-E080□□	20TYF1620-PR080□□	20TYF1620-NR080□□	80	33	1620	15×25×1607mm
20TYF1700-E084□□	20TYF1700-PR084□□	20TYF1700-NR084□□	84	34	1700	15×25×1687mm
20TYF1780-E088□□	20TYF1780-PR088□□	20TYF1780-NR088□□	88	35	1780	15×25×1767mm
20TYF1860-E092□□	20TYF1860-PR092□□	20TYF1860-NR092□□	92	37	1860	15×25×1847mm
20TYF1940-E096□□	20TYF1940-PR096□□	20TYF1940-NR096□□	96	38	1940	15×25×1927mm

※ 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;

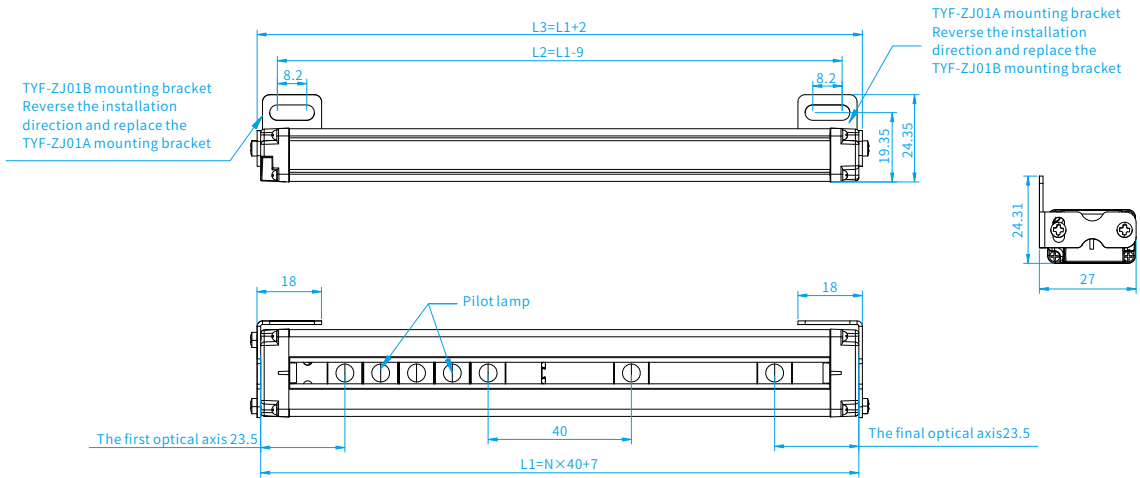
※The cable needs to be purchased separately, and the standard length of the shipment is 3m, and 4.5m, 6m, and 10m please remark.

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

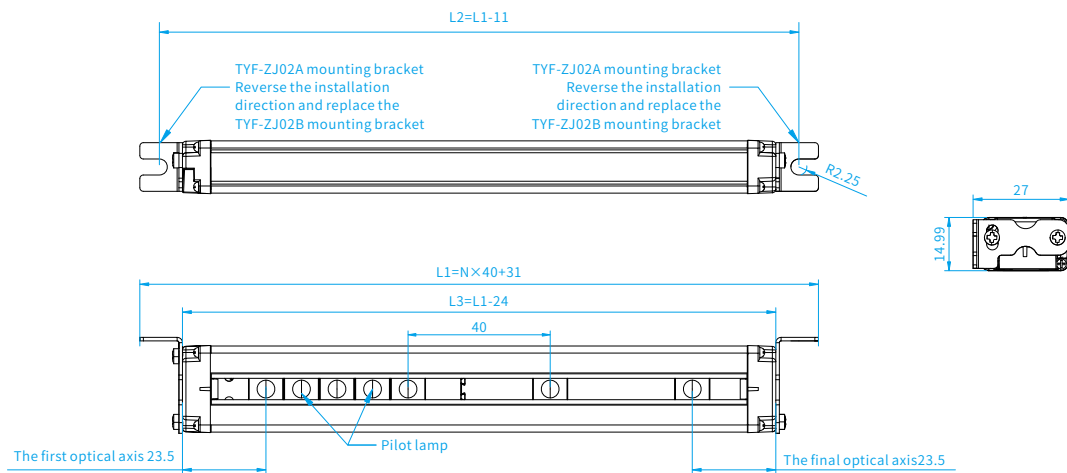
TYF SERIES POSITIVE LIGHT UNIVERSAL LIGHT CURTAIN

◆ 40 series installation and size drawing

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



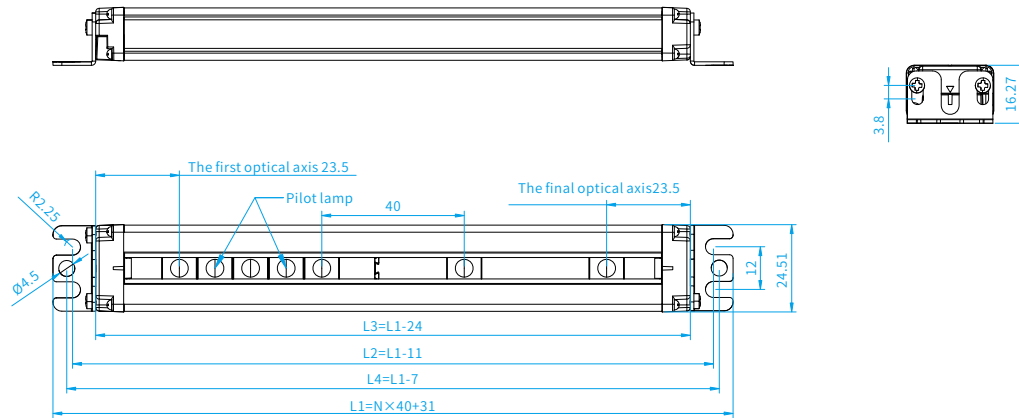
- 40TYF light curtain with TYF-ZJ02A, TYF-ZJ02B mounting bracket



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



● 40TYF 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)

40TYF light curtain			Number of optical axes	Response time (ms)	Protection Height (mm)	Raster dimension
Emitter	PNP type receiving	NPN type receiving				
40TYF0200-E004□□	40TYF0200-PR004□□	40TYF0200-NR004□□	4	9	200	15×25×167mm
40TYF0280-E006□□	40TYF0280-PR006□□	40TYF0280-NR006□□	6	11	280	15×25×247mm
40TYF0360-E008□□	40TYF0360-PR008□□	40TYF0360-NR008□□	8	13	360	15×25×327mm
40TYF0440-E010□□	40TYF0440-PR010□□	40TYF0440-NR010□□	10	15	440	15×25×407mm
40TYF0520-E012□□	40TYF0520-PR012□□	40TYF0520-NR012□□	12	17	520	15×25×487mm
40TYF0600-E014□□	40TYF0600-PR014□□	40TYF0600-NR014□□	14	19	600	15×25×567mm
40TYF0680-E016□□	40TYF0680-PR016□□	40TYF0680-NR016□□	16	21	680	15×25×647mm
40TYF0760-E018□□	40TYF0760-PR018□□	40TYF0760-NR018□□	18	23	760	15×25×727mm
40TYF0840-E020□□	40TYF0840-PR020□□	40TYF0840-NR020□□	20	26	840	15×25×807mm
40TYF0920-E022□□	40TYF0920-PR022□□	40TYF0920-NR022□□	22	28	920	15×25×887mm
40TYF1000-E024□□	40TYF1000-PR024□□	40TYF1000-NR024□□	24	30	1000	15×25×967mm
40TYF1080-E026□□	40TYF1080-PR026□□	40TYF1080-NR026□□	26	32	1080	15×25×1047mm
40TYF1160-E028□□	40TYF1160-PR028□□	40TYF1160-NR028□□	28	34	1160	15×25×1127mm
40TYF1240-E030□□	40TYF1240-PR030□□	40TYF1240-NR030□□	30	36	1240	15×25×1207mm
40TYF1320-E032□□	40TYF1320-PR032□□	40TYF1320-NR032□□	32	38	1320	15×25×1287mm
40TYF1400-E034□□	40TYF1400-PR034□□	40TYF1400-NR034□□	34	40	1400	15×25×1367mm
40TYF1480-E036□□	40TYF1480-PR036□□	40TYF1480-NR036□□	36	42	1480	15×25×1447mm
40TYF1560-E038□□	40TYF1560-PR038□□	40TYF1560-NR038□□	38	44	1560	15×25×1527mm
40TYF1640-E040□□	40TYF1640-PR040□□	40TYF1640-NR040□□	40	46	1640	15×25×1607mm
40TYF1720-E042□□	40TYF1720-PR042□□	40TYF1720-NR042□□	42	48	1720	15×25×1687mm
40TYF1800-E044□□	40TYF1800-PR044□□	40TYF1800-NR044□□	44	50	1800	15×25×1767mm
40TYF1880-E046□□	40TYF1880-PR046□□	40TYF1880-NR046□□	46	21	1880	15×25×1847mm
40TYF1960-E048□□	40TYF1960-PR048□□	40TYF1960-NR048□□	48	22	1960	15×25×1927mm

※ n: Number of light spots;


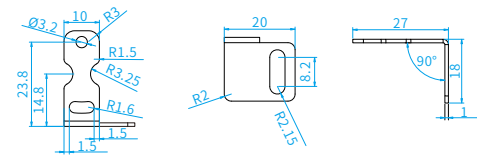

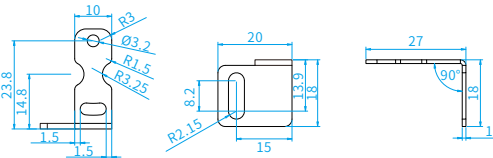

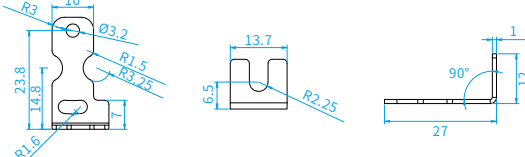

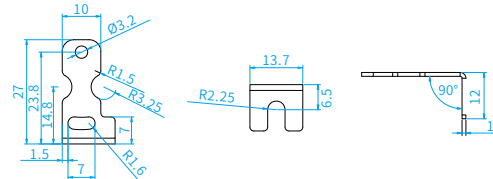

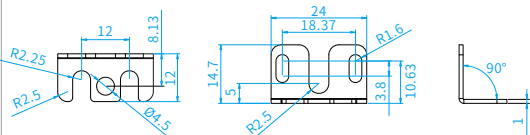


※ The above specifications are part of the specifications;

※ 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

General grating accessories selection table

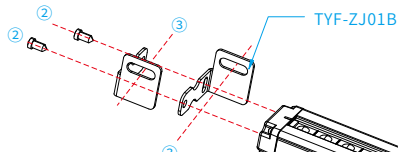
Accessory name		Model	Image/Order number	Dimensional drawings	QTY																	
Each pair of light curtains requires two 1A brackets and two 1B brackets to work together	TYF Light curtain 1A Mounting Bracket	TYF-ZJ01A	 LOT40203102055		1																	
	TYF Light curtain 1B Mounting Bracket	TYF-ZJ01B	 LOT40203102056		1																	
※Each pair of light curtains requires two 2A brackets and two 2B brackets to work together	TYF Light curtain 2A Mounting Bracket	TYF-ZJ02A	 LOT40203102057		1																	
	TYF Light curtain 2B Mounting Bracket	TYF-ZJ02B	 LOT40203102058		1																	
TYF Light curtain No. 3 Mounting Bracket	TYF-ZJ03	 LOT40203102059		1																		
TYF light curtain emits a 3-core bus	TYFE303		<p><b>Nomenclature for cable models</b></p> <table border="0"> <tr> <td>TYF</td> <td>E3</td> <td>03</td> </tr> <tr> <td>Product range</td> <td>Core use</td> <td>Cable length</td> </tr> <tr> <td></td> <td>E3: Transmit 3 cores</td> <td>03:3m</td> </tr> <tr> <td></td> <td>R4: Receives 4 cores</td> <td>05:5m</td> </tr> <tr> <td></td> <td></td> <td>06:6m</td> </tr> <tr> <td></td> <td></td> <td>10:10m</td> </tr> </table>	TYF	E3	03	Product range	Core use	Cable length		E3: Transmit 3 cores	03:3m		R4: Receives 4 cores	05:5m			06:6m			10:10m	1
TYF	E3	03																				
Product range	Core use	Cable length																				
	E3: Transmit 3 cores	03:3m																				
	R4: Receives 4 cores	05:5m																				
		06:6m																				
		10:10m																				
TYF light curtain receives a 4-core busbar	TYFR403			1																		

Note: Accessories need to be purchased additionally, and the cable length can be customized according to actual requirements

※Due to the influence of product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product;  
 ※The factory is equipped with two 2A and two 2B mounting brackets by default, if need other mounting brackets, need to purchase separately.

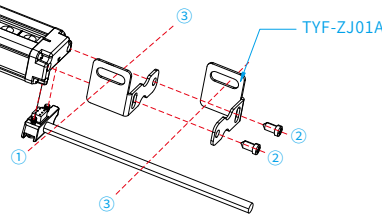
## Installation method of general grating mounting bracket

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

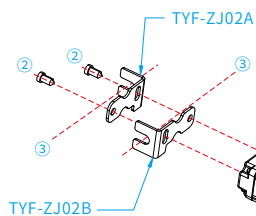


- ① Install the cable (need to distinguish between the transmitting and receiving wires)
- ② Install TYF-ZJ01A or TYF-ZJ01B mounting bracket (optional two-direction installation)
- ③ Install the light curtain to the device using it with M4 screws

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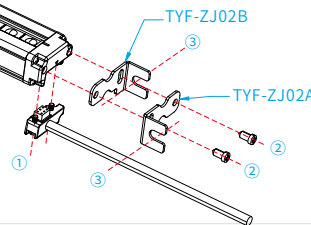


### ◆ TYF-ZJ02A, TYF-ZJ02B bracket installation method

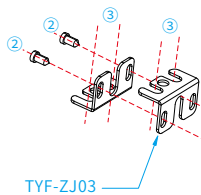


- ① Install the cable (need to distinguish between the transmitting and receiving wires)
- ② Install TYF-ZJ02A or TYF-ZJ02B mounting bracket (optional two-direction installation)
- ③ Install the light curtain to the device using it with M4 screws

	<p>◆ The torque of the fixing cable screw should not exceed 0.6N. m;</p> <p>◆ The torque of the fixed installation bracket screws should not exceed 0.6N. m</p>
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### ◆ TYF-ZJ03 bracket installation method



- ① Install the cable (need to distinguish between the transmitting and receiving wires)
- ② Install TYF-ZJ03 mounting bracket (optional two-direction installation)
- ③ Install the light curtain to the device using it with M4 screws

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