

T2 series

Machine Safety Devices

Applications

- Injection molding machine
- Robotic production line
- Low-risk, medium grade automation, metal forming and storage of all
- Packing Line Orientation Control
- Medical equipment
- Semiconductor equipment
- Panel equipment
- Food Machinery
- Machine tool industry
- Automobile industry

Introduction

The T2 series safety light curtains optical design architecture is compact and in line with international safety standards. The safety light curtains as a whole also meets the safety requirements of the international safety standards IEC61496-1 and IEC61496-2 TYPE 2, and has obtained the certificate of conformity of well-known European notified bodies.

The use of non-synchronous wire wiring eliminates extra wiring, and the special optoelectronic communication method can avoid the optical crosstalk problem of the general photoelectric sensor, and achieve the stability of the photoelectric switch with line synchronous communication.

The exterior structure is small but strong; it is suitable for the overall shape design of the machine. The large safety light curtains still retains a strong structure, and the additional intermediate fixing method is convenient to install.



Property

- Various type, 30mm 、 40mm 、 45mm 、 50mm detection capability.
- The most long-range detection of up to 10m; the closest detect only 0.5m.
- Detection zone:185mm ~ 1955mm.
- Enclosure Rating IP-66.
- Self-diagnosis and work status indicator.
- Easy to Install and calibrate for alignment.
- Good quality and stability, price concessions.

General Specifications

Number of beam	4 ~ 48			8 ~ 64	
Detection capability	50mm	45mm		30mm	25mm
Detection zone	195mm ~ 1955mm	192mm ~ 1952mm		230mm ~ 1630mm	185mm ~ 1305mm
Operating distance	4m ~ 10m	2m ~ 5.5m	0.5m ~ 2.5m	0.5m ~ 2.5m	0.5m ~ 2.5m
Response time	20msec (Exclude relay switch time)				
Ambient temperature	0°C to +50°C				
IP rating	IP 66 (Ingress Protection) ratings				
Power supply	24VDC $\pm$ 20% · 1.5A (MAX)				
Power consumption	TX 200mA + RX 200mA + OSSD Output (500mA max.)				
Connector	M12 connector(T type)				
Appearance	Aluminum ; yellow powder coating				
Classification	IEC61496-1 & IEC61496-2 : TYPE 2 IEC62061 SIL1 & ISO13849-1 PLc				
Output mode	2 independent safety output (type: solid state PNP transistor switches 500mA@24V DC)				

T2A S Series

Detection Capability 45mm			Operating distance 0.5m to 2.5m		
Beams	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
4	T2A-4S	192	200	234	260
8	T2A-8S	352	360	394	420
12	T2A-12S	512	520	554	580
16	T2A-16S	672	680	714	740
20	T2A-20S	832	840	874	900
24	T2A-24S	992	1000	1034	1060
28	T2A-28S	1152	1160	1194	1220
32	T2A-32S	1312	1320	1354	1380
36	T2A-36S	1472	1480	1514	1540
40	T2A-40S	1632	1640	1674	1700
44	T2A-44S	1792	1800	1834	1860
48	T2A-48S	1952	1960	1994	2020

► Other dimensions please inquire Smartscan TW.

T2A Series

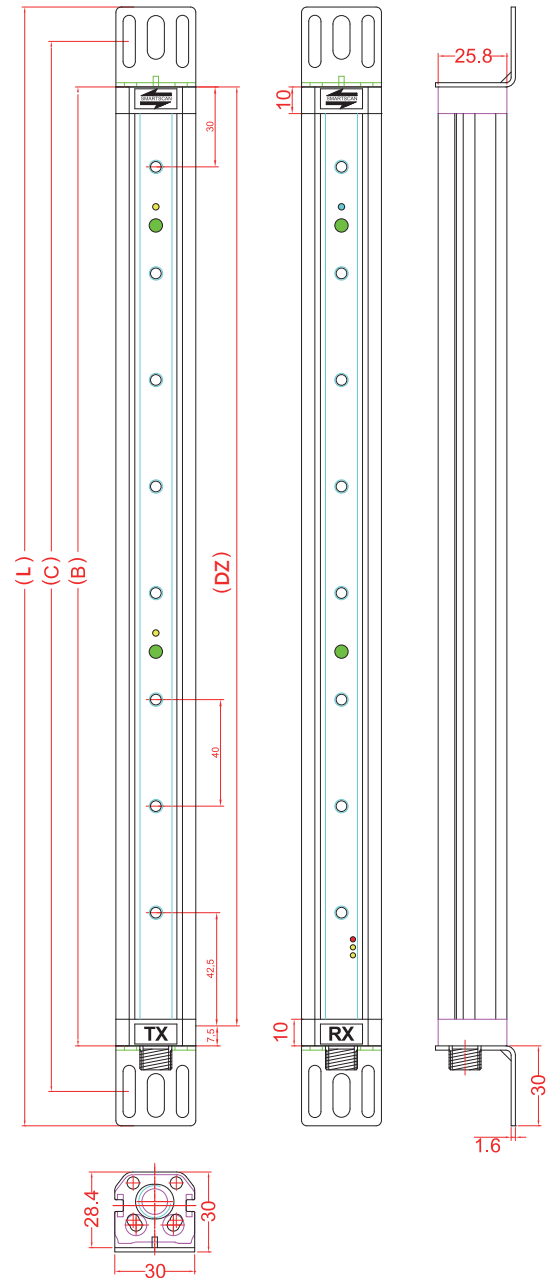
Detection Capability 45mm			Operating distance 0.5m to 5.5m		
Beams	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
4	T2A-4	192	200	234	260
8	T2A-8	352	360	394	420
12	T2A-12	512	520	554	580
16	T2A-16	672	680	714	740
20	T2A-20	832	840	874	900
24	T2A-24	992	1000	1034	1060
28	T2A-28	1152	1160	1194	1220
32	T2A-32	1312	1320	1354	1380
36	T2A-36	1472	1480	1514	1540
40	T2A-40	1632	1640	1674	1700
44	T2A-44	1792	1800	1834	1860
48	T2A-48	1952	1960	1994	2020

► Other dimensions please inquire Smartscan TW.

T2A L Series

Detection Capability 50mm			Operating distance 4m to 10m		
Beams	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
4	T2A-4L	195	200	234	260
8	T2A-8L	355	360	394	420
12	T2A-12L	515	520	554	580
16	T2A-16L	675	680	714	740
20	T2A-20L	835	840	874	900
24	T2A-24L	995	1000	1034	1060
28	T2A-28L	1155	1160	1194	1220
32	T2A-32L	1315	1320	1354	1380
36	T2A-36L	1475	1480	1514	1540
40	T2A-40L	1635	1640	1674	1700
44	T2A-44L	1795	1800	1834	1860
48	T2A-48L	1955	1960	1994	2020

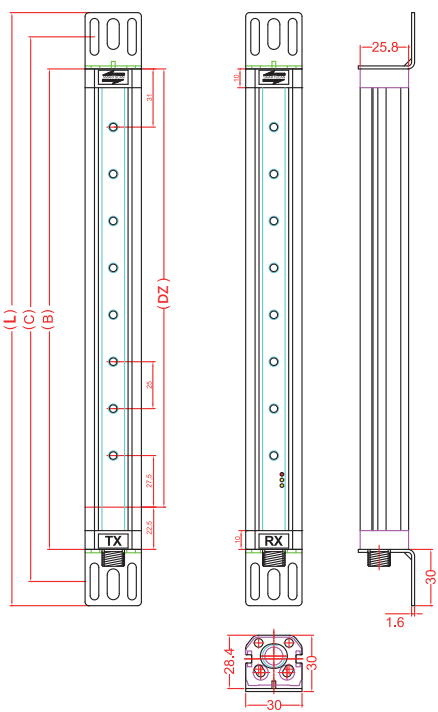
► Other dimensions please inquire Smartscan TW.



T2B S Series

Detection Capability 30mm			Operating distance 0.5m to 2.5m		
Beams	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
8	T2B-8S	230	256	290	316
12	T2B-12S	330	356	390	416
16	T2B-16S	430	456	490	516
20	T2B-20S	530	556	590	616
24	T2B-24S	630	656	690	716
28	T2B-28S	730	756	790	816
32	T2B-32S	830	856	890	916
36	T2B-36S	930	956	990	1016
40	T2B-40S	1030	1056	1090	1116
44	T2B-44S	1130	1156	1190	1216
48	T2B-48S	1230	1256	1290	1316
52	T2B-52S	1330	1356	1390	1416
56	T2B-56S	1430	1456	1490	1516
60	T2B-60S	1530	1556	1590	1616
64	T2B-64S	1630	1656	1690	1716

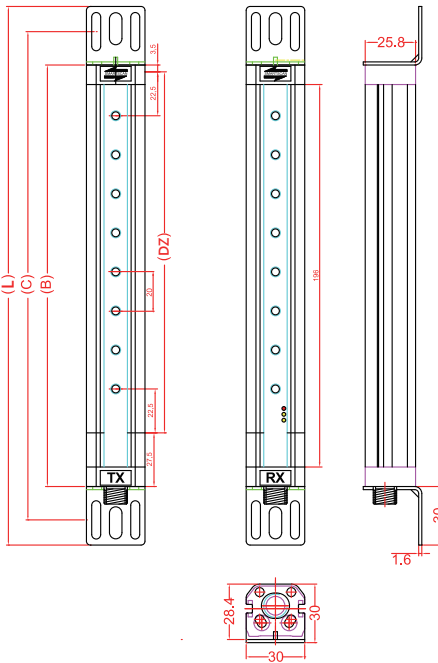
► Other dimensions please inquire Smartscan TW.



T2C S Series

Detection Capability 25mm			Operating distance 0.5m to 2.5m		
Beams	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
8	T2C-8S	185	216	250	276
12	T2C-12S	265	296	330	356
16	T2C-16S	345	376	410	436
20	T2C-20S	425	456	490	516
24	T2C-24S	505	536	570	596
28	T2C-28S	585	616	650	676
32	T2C-32S	665	696	730	756
36	T2C-36S	745	776	810	836
40	T2C-40S	825	856	890	916
44	T2C-44S	905	936	970	996
48	T2C-48S	985	1016	1050	1076
52	T2C-52S	1065	1096	1130	1156
56	T2C-56S	1145	1176	1210	1236
60	T2C-60S	1225	1256	1290	1316
64	T2C-64S	1305	1336	1370	1396

► Other dimensions please inquire Smartscan TW.

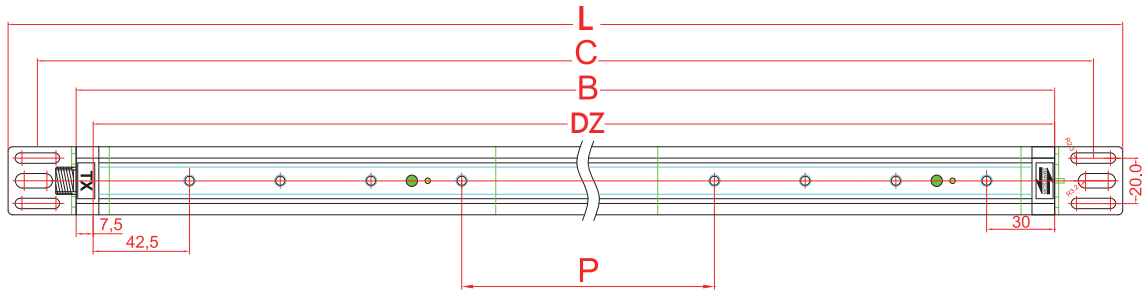


Perimeter Series

※ Perimeter series please refer to page 8 for the diagram

		Operating distance 0.5m to 2.5m		Operating distance 2m to 5.5m		Operating distance 4m to 10m				
Beams	Beam Pitch (P)(mm)	Model	Detection Zone (DZ)(mm)	Model	Detection Zone (DZ)(mm)	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
8	480	T2A-8S-PRM	793	T2A-8-PRM	793	T2A-8L-PRM	793	800	834	860
12	380	T2A-12S-PRM	1193	T2A-12-PRM	1193	T2A-12L-PRM	1193	1200	1234	1260
16	280	T2A-16S-PRM	1393	T2A-16-PRM	1393	T2A-16L-PRM	1393	1400	1434	1460

► Can be matched with Mirror Module and safety light curtains freestanding stand components □ type or L type locality protection (P.18 、 P.37)

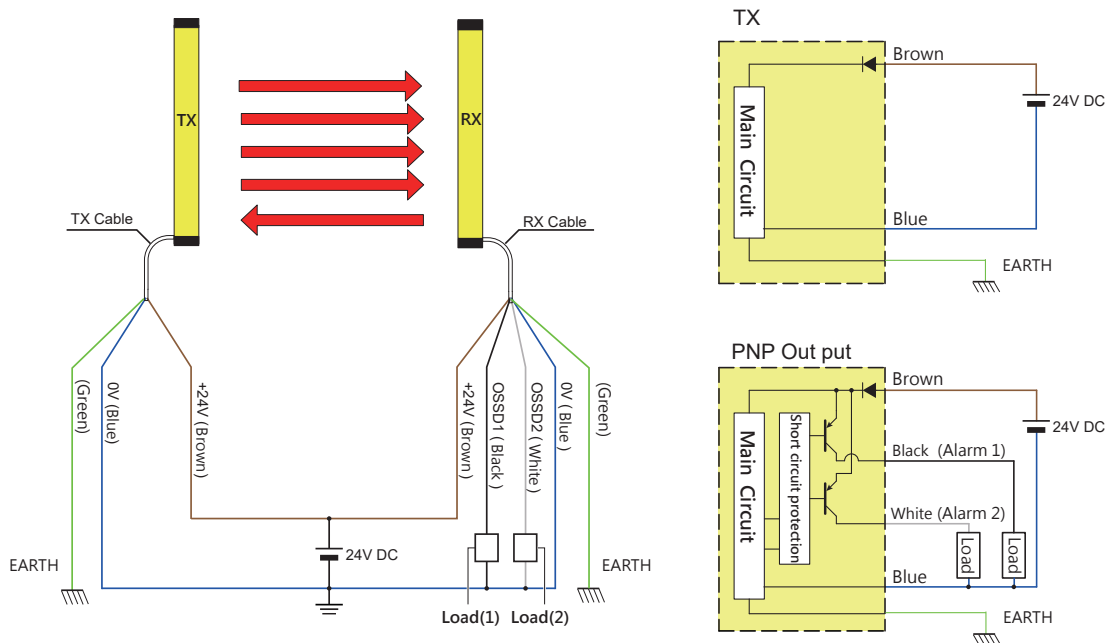


Electric Wiring

► Please refer to the installation manual for detailed.

Input - Output circuit

(1)Power	Vin +24V DC transmitter and receiver(Brown+24V , Blue 0V), we suggest using independently power module. It could avoid surging, Ferrite core installs in RX and case connects with Gnd.
(2)Output	Two groups of transistor(PNP) signal output OSSD1 and OSSD2 ; DC+24Vduring light curtain normal operation(at a of current UP TO 500 mA each).



LED Status Indicator

► Please refer to the installation manual for detailed LED indicator mode.

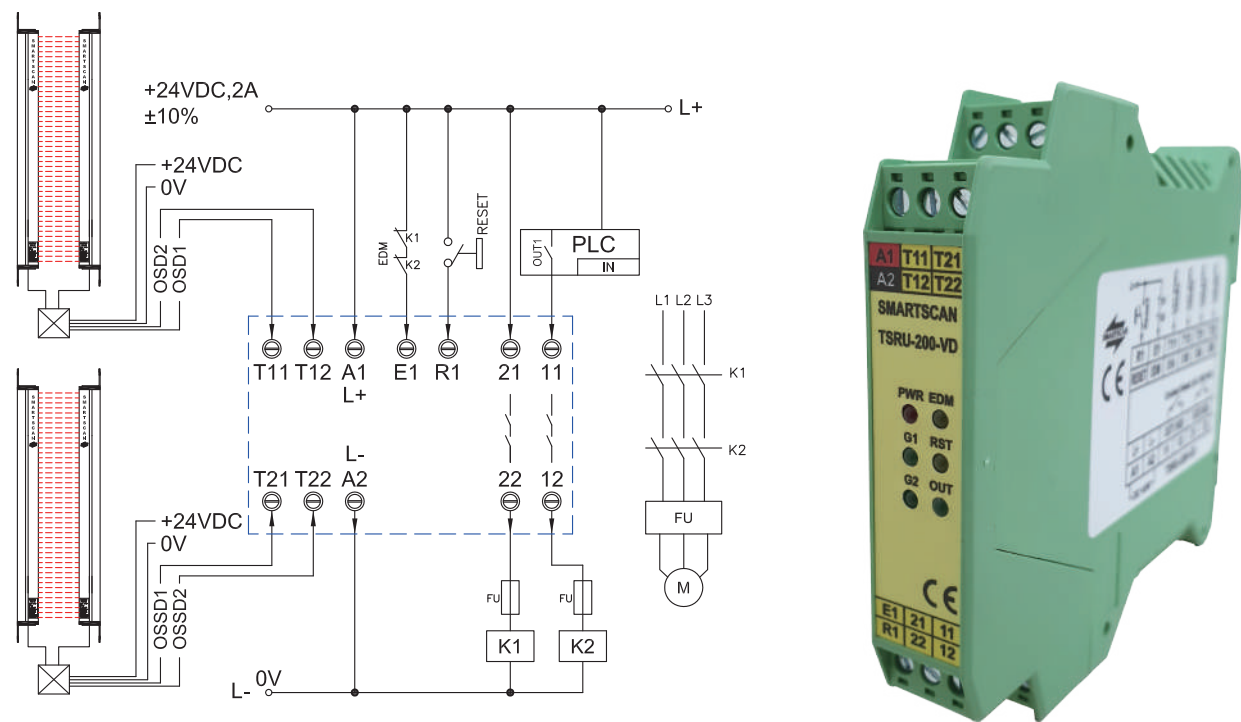
Normal			
Internal Indicators		action pattern	Description
TX	Bi-color LED	Green ON	Safety light curtain works properly
		Red ON	Safety light curtain to be obscured
RX	Bi-color LED	Green ON	Safety light curtain works properly, DC+ 24Vduring light curtain normal operation
		Red ON	Safety light curtain to be obscured

Trouble status

Internal Indicators		action pattern	Description
TX	Bi-color LED	indicator light Blinking	Synchronization error
RX (Output Terminal)	Red LED	Flicker	System Security Issue has been detected · system is immediately locked , cannot start unless troubleshooting and System Reboot (Power cycle)
Yellow LED		S1 ON S2 ON S1 & S2 ON	OSSD1 Short out+24V OR 0V OSSD2 Short out+24V OR 0V OSSD1 & OSSD2 Short out

T2 Series Matching TSRU-200-VD Safety Relay Unit Electric Connection

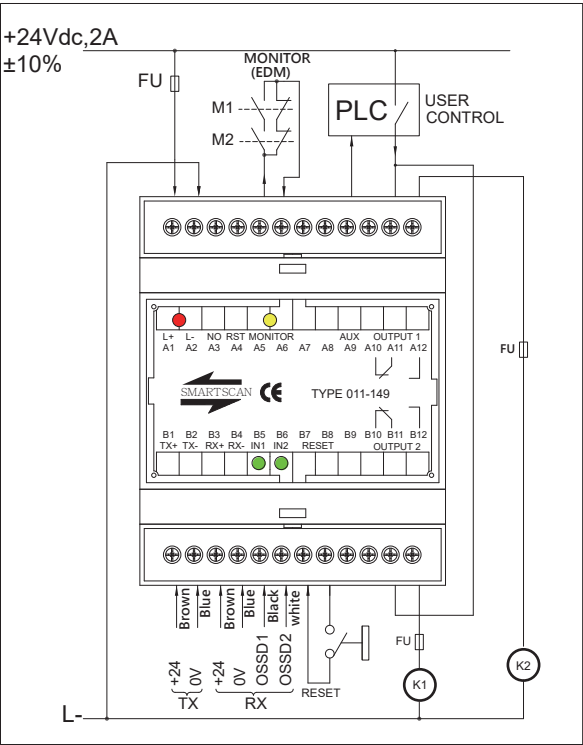
TSRU matching Safety Light Curtains



► Specification please refer to the installation manual for TSRU Safety Light Curtains

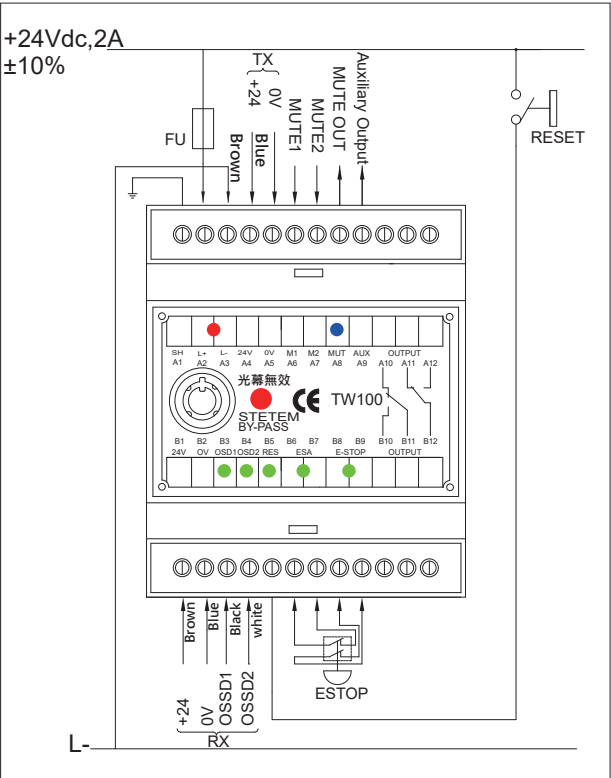
Matching 011-149 Security Module Electric Connection

► It can also be matched with types of Safety Control Module (P.35~P.36)



Matching TW100 Security Module Electric Connection

► With Mute Function



TYPE 2 Security Certificate

Safenet Certification Services Ltd.
Ducart Suite, Castletroy Park Commercial Campus, Limerick, V94 Y6FD, Ireland
Tel: +353 61 50 2046 e-mail: office@safenetcs.ie Website: www.safenetcs.ie
European Notified Body 2805

EC Type Examination Certificate

This is to certify that

Smartsan Taiwan Co., Ltd.

2F, No. 5, 10th Road, Taichung Industrial Park, Taichung, Taiwan, R.O.C.

Has had a range of T2 Light Curtains examined with regards to the Directive 2006/42/EC as amended.

In respect of the **T2F-1014**

Manufactured by:

Smartsan Taiwan Co., Ltd.

2F, No. 5, 10th Road, Taichung Industrial Park, Taichung, Taiwan, R.O.C.

- The technical file contains all the relevant information.
- Having verified that the appropriate tests have been conducted.
 - The standards and transposed standards have been applied correctly.
 - The example representing series production of the item, complies with the essential health and safety requirements of the Directive 2006/42/EC as amended.
- The technical file contains all the information required to include the models listed in the attached annex to this certificate.
- The technical file also contains evidence of compliance with EN IEC 61496-1:2020 TYPE 2 and EN IEC 61496-2:2020 TYPE 2, and is suitable for applications regarding EN IEC 62061:2021 SIL 1 and EN ISO 13849-1:2015 PL c.

Certificate Number: 6028051121 version 2

Date: 04/03/2022 Expiry Date: 11/01/2027

Signed for Safenet Certification Services Ltd.

Peter McNicol
Technical Manager

Machinery Directive
Number 2805

This Document remains the property of Safenet Certification Services Ltd and will be returned to them if so requested. The client is required to request a review to ensure continued compliance of the machinery on a 5 yearly basis to check for changes in the state of the art and validity of the certificate.

Safenet Certification Services Ltd.
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Tel: +353 61 50 2046 e-mail: office@safenetcs.ie Website: www.safenetcs.ie
European Notified Body 2805

EC Type Examination Certificate

Annex Certificate 6028051121 version 2

Models included:

T2A S series (45mm ODC):
T2A-4S, T2A-8S, T2A-12S, T2A-16S, T2A-20S, T2A-24S, T2A-28S, T2A-32S, T2A-36S, T2A-40S, T2A-44S, T2A-48S

T2A L series (45mm ODC):
T2A-4L, T2A-8L, T2A-12L, T2A-16L, T2A-20L, T2A-24L, T2A-28L, T2A-32L, T2A-36L, T2A-40L, T2A-44L, T2A-48L

T2A L series (50mm ODC):
T2A-4L, T2A-8L, T2A-12L, T2A-16L, T2A-20L, T2A-24L, T2A-28L, T2A-32L, T2A-36L, T2A-40L, T2A-44L, T2A-48L

T2A S Perimeter series:
T2A-8S-PRM, T2A-12S-PRM, T2A-16S-PRM

T2A Perimeter series:
T2A-8-PRM, T2A-12-PRM, T2A-16-PRM

T2A L Perimeter series:
T2A-8L-PRM, T2A-12L-PRM, T2A-16L-PRM

T2B S series (30mm ODC):
T2B-8S, T2B-12S, T2B-16S, T2B-20S, T2B-24S, T2B-28S, T2B-32S, T2B-36S, T2B-40S, T2B-44S, T2B-48S, T2B-52S, T2B-56S, T2B-60S, T2B-64S

T2C S series (25mm ODC):
T2C-8S, T2C-12S, T2C-16S, T2C-20S, T2C-24S, T2C-28S, T2C-32S, T2C-36S, T2C-40S, T2C-44S, T2C-48S, T2C-52S, T2C-56S, T2C-60S, T2C-64S

T2F series (14mm ODC):
T2F-1014, T2F-1024, T2F-1034, T2F-1044, T2F-1054, T2F-1064, T2F-1074, T2F-1084, T2F-1094, T2F-10104, T2F-10114, T2F-10124

T2F series (24mm ODC):
T2F-2007, T2F-2012, T2F-2017, T2F-2022, T2F-2027, T2F-2032, T2F-2037, T2F-2042, T2F-2047, T2F-2052, T2F-2057, T2F-2062

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Accessories & Part dimensions

Connector(1) : 180°
(Standard Configuration)

Connector(2) : 90°
(Optional Accessory)

► The Safety Light Curtains price includes connecting line 3M(5、10、15M is Optional Accessory)

T2 Series-M12 Connection Cable 180°	
Cable Series	M12 Cable Length
T2-3M-180-TX	T2 Connection Cable 3M 180°(TX)
T2-3M-180-RX	T2 Connection Cable 3M 180°(RX)
T2-5M-180-TX	T2 Connection Cable 5M 180°(TX)
T2-5M-180-RX	T2 Connection Cable 5M 180°(RX)
T2-10M-180-TX	T2 Connection Cable 10M 180°(TX)
T2-10M-180-RX	T2 Connection Cable 10M 180°(RX)
T2-15M-180-TX	T2 Connection Cable 15M 180°(TX)
T2-15M-180-RX	T2 Connection Cable 15M 180°(RX)

► Flexible Pairing 180° or 90° Wire

T2 Series-M12 Connection Cable 90°	
Cable Series	M12 Cable Length
T2-3M-90-TX	T2 Connection Cable 3M 90°(TX)
T2-3M-90-RX	T2 Connection Cable 3M 90°(RX)
T2-5M-90-TX	T2 Connection Cable 5M 90°(TX)
T2-5M-90-RX	T2 Connection Cable 5M 90°(RX)
T2-10M-90-TX	T2 Connection Cable 10M 90°(TX)
T2-10M-90-RX	T2 Connection Cable 10M 90°(RX)
T2-15M-90-TX	T2 Connection Cable 15M 90°(TX)
T2-15M-90-RX	T2 Connection Cable 15M 90°(RX)

Fixed Bracket

