

1000+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
- Some type of pressing machine

Introduction

1000 Plus light curtains comply with European and International Safety Standards BS EN 61496-1 and BS IEC 61496-2 Type 2. They are normally used where the risk assessment for the safety related parts of the control system, as indicated in EN 62061, EN13849, (EN954-1), determines a requirement up to and including SIL2, PL d, (Category 3) control equipment.



TD0401BT

Property

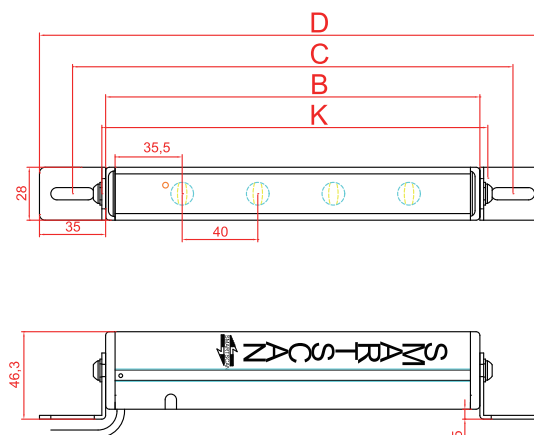
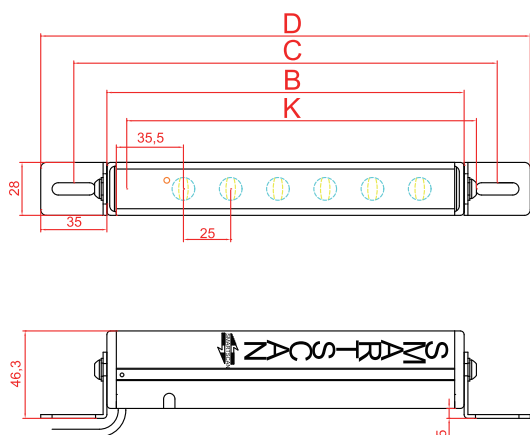
- IEC61496-1/-2 TYPE2
Various type, 30mm 、 40mm 、 45mm 、 50mm detection capability.
- The most long-range detection of up to 10m; the closest detect only 0.2m.
- Detection zone:180mm ~ 1840mm.
- Enclosure rating IP-65
- Self-diagnosis and work status indication.
- Installation and calibration easy, good anti-disturbance light performance.
- Quality and stability, price concessions.
- Inside and outside all application processing apparatus curtains special high seismic technology, the most suitable for the red, cutting class equipment (press, cut class device special type).

General Specifications

Beam axis pitch	6 ~ 72		4 ~ 44	
Detection capability	30mm	40mm	45mm	50mm
Detection zone	180mm ~ 1830mm	190mm ~ 1840mm	205mm ~ 1805mm	210mm ~ 1810mm
Operating distance	0.2m ~ 5m	4m ~ 10m	0.2m ~ 5m	4m ~ 10m
Reaction time	20msec (It does not include relay switch time)			
Ambient temperature	0°C to +50°C			
Enclosure rating	IP65			
Power supply	24VDC ± 20% · 1.5A (MAX)			
Power consumption	TX 200mA + RX 200mA + OSSD Output (500mA max.)			
Connector	Direct output(standard type)		M12 connector(T type)	
Appearance	Aluminum, yellow 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)			

Standard type Pitch 25mm series

Detection Capability 30mm			Detection Capability 30mm		Detection Capability 30mm		Detection Capability 40mm		Standard type(direct output)		
Operating distance 0.3m to 1m			Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m				
Beams	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)
6	012-098SS	180	012-098S	180	012-098	180	012-099	190	189	224	259
12	012-100SS	330	012-100S	330	012-100	330	012-101	340	339	374	409
18	012-102SS	480	012-102S	480	012-102	480	012-103	490	489	524	559
24	012-104SS	630	012-104S	630	012-104	630	012-105	640	639	674	709
30	012-106SS	780	012-106S	780	012-106	780	012-107	790	789	824	859
36	012-108SS	930	012-108S	930	012-108	930	012-109	940	939	974	1009
42	012-110SS	1080	012-110S	1080	012-110	1080	012-111	1090	1089	1124	1159
48					012-112	1230	012-113	1240	1239	1274	1309
54					012-114	1380	012-115	1390	1389	1424	1459
60					012-116	1530	012-117	1540	1439	1574	1609
66					012-118	1680	012-119	1690	1689	1724	1759
72					012-120	1830	012-121	1840	1839	1874	1909

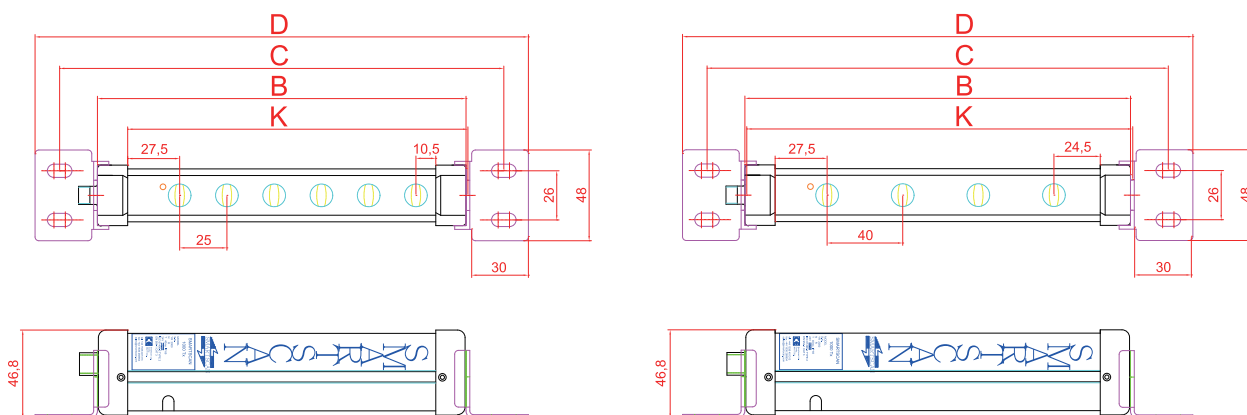


Standard type Pitch 40mm series

Detection Capability 45mm			Detection Capability 45mm		Detection Capability 45mm		Detection Capability 50mm		Standard type(direct output)			
Operating distance 0.3m to 1m			Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)	
	4	012-404SS	205	012-404S	205	012-404	205	012-504	210	198	234	268
	6	012-406SS	285	012-406S	285	012-406	285	012-506	290	278	314	348
	8	012-408SS	365	012-408S	365	012-408	365	012-508	370	358	394	428
	10	012-410SS	445	012-410S	445	012-410	445	012-510	450	438	474	508
	12	012-412SS	525	012-412S	525	012-412	525	012-512	530	518	554	588
	14	012-414SS	605	012-414S	605	012-414	605	012-514	610	598	634	668
	16	012-416SS	685	012-416S	685	012-416	685	012-516	690	678	714	748
	20	012-420SS	845	012-420S	845	012-420	845	012-520	850	838	874	908
	24	012-424SS	1005	012-424S	1005	012-424	1005	012-524	1010	998	1034	1068
	28					012-428	1165	012-528	1170	1158	1194	1228
	32					012-432	1325	012-532	1330	1318	1354	1388
	36					012-436	1485	012-536	1490	1478	1514	1548
40					012-440	1645	012-540	1650	1638	1674	1708	
44					012-444	1805	012-544	1810	1798	1834	1868	

T type Pitch 25mm series

Detection Capability 30mm			Detection Capability 30mm		Detection Capability 30mm		Detection Capability 40mm		T type(M12 connector)			
Operating distance 0.3m to 1m			Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)	
	6	012-098SST	180	012-098ST	180	012-098T	180	012-099T	190	195	235	261
	12	012-100SST	330	012-100ST	330	012-100T	330	012-101T	340	345	385	411
	18	012-102SST	480	012-102ST	480	012-102T	480	012-103T	490	495	535	561
	24	012-104SST	630	012-104ST	630	012-104T	630	012-105T	640	645	685	711
	30	012-106SST	780	012-106ST	780	012-106T	780	012-107T	790	795	835	861
	36	012-108SST	930	012-108ST	930	012-108T	930	012-109T	940	945	985	1011
	42	012-110SST	1080	012-110ST	1080	012-110T	1080	012-111T	1090	1095	1135	1161
	48					012-112T	1230	012-113T	1240	1245	1285	1311
	54					012-114T	1380	012-115T	1390	1395	1435	1461
	60					012-116T	1530	012-117T	1540	1445	1585	1611
	66					012-118T	1680	012-119T	1690	1695	1735	1761
72					012-120T	1830	012-121T	1840	1845	1885	1911	

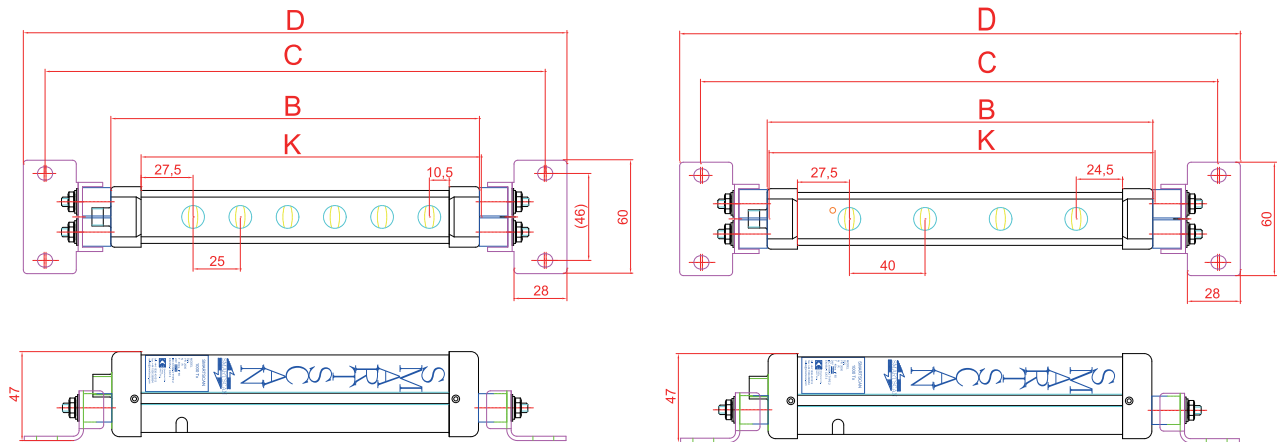


T type Pitch 40mm series

Detection Capability 45mm			Detection Capability 45mm			Detection Capability 45mm			Detection Capability 50mm		T type(M12 connector)		
Operating distance 0.3m to 1m			Operating distance 0.5m to 2m			Operating distance 0.5m to 5m			Operating distance 4m to 10m				
Beams	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)		
	4	012-404SST	205	012-404ST	205	012-404T	205	012-504T	210	204	244	270	
	6	012-406SST	285	012-406ST	285	012-406T	285	012-506T	290	284	324	350	
	8	012-408SST	365	012-408ST	365	012-408T	365	012-508T	370	364	404	430	
	10	012-410SST	445	012-410ST	445	012-410T	445	012-510T	450	444	484	510	
	12	012-412SST	525	012-412ST	525	012-412T	525	012-512T	530	524	564	590	
	14	012-414SST	605	012-414ST	605	012-414T	605	012-514T	610	604	644	670	
	16	012-416SST	685	012-416ST	685	012-416T	685	012-516T	690	684	724	750	
	20	012-420SST	845	012-420ST	845	012-420T	845	012-520T	850	844	884	910	
	24	012-424SST	1005	012-424ST	1005	012-424T	1005	012-524T	1010	1004	1044	1070	
	28					012-428T	1165	012-528T	1170	1164	1204	1230	
	32					012-432T	1325	012-532T	1330	1324	1364	1390	
	36					012-436T	1485	012-536T	1490	1484	1524	1550	
	40					012-440T	1645	012-540T	1650	1644	1684	1710	
44					012-444T	1805	012-544T	1810	1804	1844	1870		

Press, cut class device special type Pitch 25mm series

Detection Capability 30mm			Detection Capability 30mm		Detection Capability 30mm		Detection Capability 40mm		press, cut class device special type (M12 connector)			
Operating distance 0.3m to 1m			Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)	
	6	012-098SST	180	012-098ST	180	012-098T	180	012-099T	190	195	265	288
	12	012-100SST	330	012-100ST	330	012-100T	330	012-101T	340	345	415	438
	18	012-102SST	480	012-102ST	480	012-102T	480	012-103T	490	495	565	588
	24	012-104SST	630	012-104ST	630	012-104T	630	012-105T	640	645	715	738
	30	012-106SST	780	012-106ST	780	012-106T	780	012-107T	790	795	865	888
	36	012-108SST	930	012-108ST	930	012-108T	930	012-109T	940	945	1015	1038
	42	012-110SST	1080	012-110ST	1080	012-110T	1080	012-111T	1090	1095	1165	1188
	48					012-112T	1230	012-113T	1240	1245	1315	1338
	54					012-114T	1380	012-115T	1390	1395	1465	1488
	60					012-116T	1530	012-117T	1540	1445	1615	1638
	66					012-118T	1680	012-119T	1690	1695	1765	1788
72					012-120T	1830	012-121T	1840	1845	1915	1938	

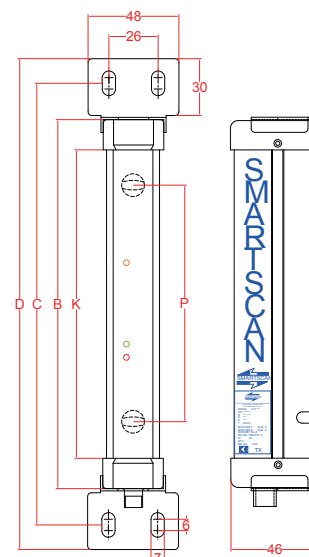


Press, cut class device special type Pitch 40mm series

Detection Capability 45mm			Detection Capability 45mm		Detection Capability 45mm		Detection Capability 50mm		press, cut class device special type (M12 connector)			
Operating distance 0.3m to 1m			Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)	
	4	012-404SST	205	012-404ST	205	012-404T	205	012-504T	210	204	274	297
	6	012-406SST	285	012-406ST	285	012-406T	285	012-506T	290	284	354	377
	8	012-408SST	365	012-408ST	365	012-408T	365	012-508T	370	364	434	457
	10	012-410SST	445	012-410ST	445	012-410T	445	012-510T	450	444	514	537
	12	012-412SST	525	012-412ST	525	012-412T	525	012-512T	530	524	594	617
	14	012-414SST	605	012-414ST	605	012-414T	605	012-514T	610	604	674	697
	16	012-416SST	685	012-416ST	685	012-416T	685	012-516T	690	684	754	777
	20	012-420SST	845	012-420ST	845	012-420T	845	012-520T	850	844	914	937
	24	012-424SST	1005	012-424ST	1005	012-424T	1005	012-524T	1010	1004	1074	1097
	28					012-428T	1165	012-528T	1170	1164	1234	1257
	32					012-432T	1325	012-532T	1330	1324	1394	1417
36					012-436T	1485	012-536T	1490	1484	1554	1577	
40					012-440T	1645	012-540T	1650	1644	1714	1737	
44					012-444T	1805	012-544T	1810	1804	1874	1897	

Perimeter series

		Operating distance 0.5m to 5m		Operating distance 4m to 10m		T type(M12 connector)		
Beams	Beam axis pitch (P)(mm)	Model	Detection Zone (K)(mm)	Model	Detection Zone (K)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (D)(mm)
2	550	012-125T	640	012-122T	640	645	684	709
3	450	012-126T	990	012-123T	990	995	1034	1059
4	400	012-127T	1290	012-124T	1290	1295	1334	1359

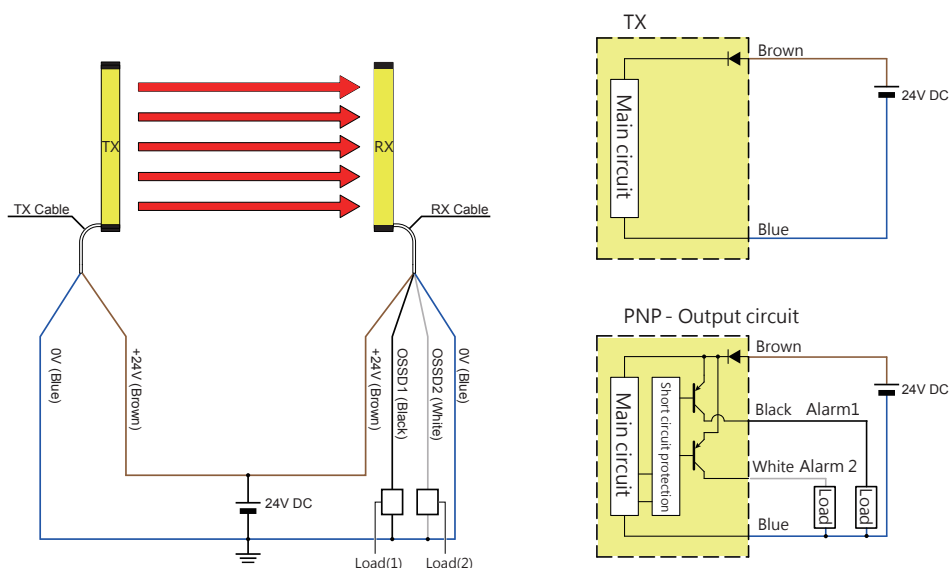


Electric Connection

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+24V during light curtain normal operation(MAX 500mA).



LED Indicator light

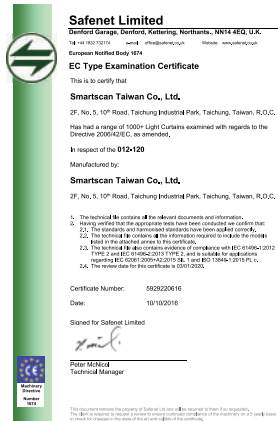
Normal status

Indicator light	Model	Mean
TX	Yellow LED Flash	The system has power , check and adjust the projected completionend system, the fixed frequency of flashing lights thatprojected launch of infrared wave side.
	Yellow LED Flash	Starts off, receiver system to be checked and adjusted with the projected completion of each end of a fixed frequency of blinking, projection side to establish normal communication with transmitter
RX	Green LED Light	Receiver end of the indicator lights working, the most important matter under the system of two independent +24 V output of the voltage sent.
	Red LED Light	The system has power, system checks the receiver and tune;adjustment is completed in normal working condition when the screens are not covered after the light does not shine.

Abnormal status

Indicator light	Model	Mean
RX	Green LED Flash	OSSD1 and OSSD2 Short OSSD1 connetion error 24V or 0V OSSD2 connetion error 24V or 0V
	Red LED Flash	The system detects a state of security concerns and the system immediately blocks unless the abnormal state is removed and the system is reset. (re-power on start)

TYPE 2 Certification



Accessories

Standard equipment

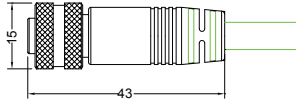
Connector(standard) : 3m

Connector(select): 5m ; 10m

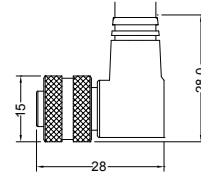
TX : Three core (gray)

RX : Four core (black)

Connector(1) : 180° (standard)

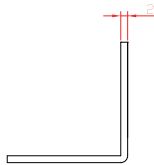
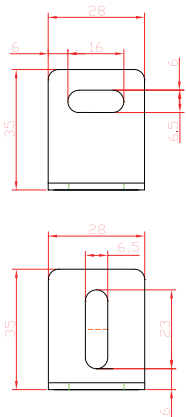


Connector(2) : 90° (select)

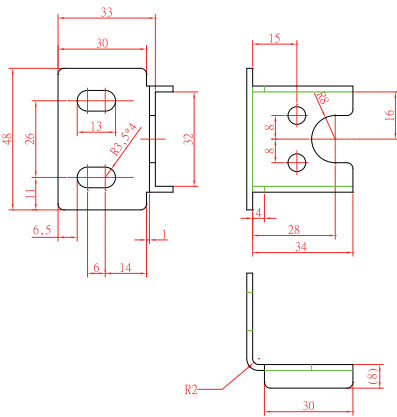


Braccket

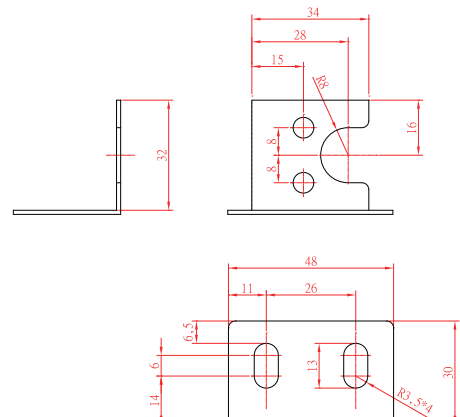
Standard type bracket



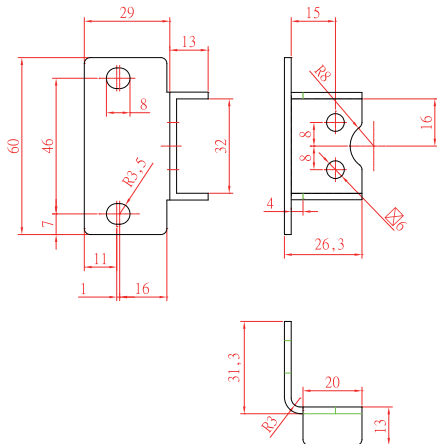
T type bracket



Side bracket



Press, cut class device special type Cylindrical Bracket



Press, cut class device special type
Cylindrical Bracket Bundle

