

1000+ series

Machine Safety Devices

Applications

- Part type Press Machine
- Injection Molding Machine
- Manipulator production line
- Middle of level automation, Metal Forming and variety of manufacturing line
- Automatic Storage Retrieval System, low risk
- Packaging line

Introduction

The 1000+ 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.

In the past, safety light curtains were very expensive, which affected the willingness to adopt them in many applications. Smartscan TW Technologies' 1000+ series safety light curtains is based on the design concept of popularizing the application of safety products, using the latest advanced technology, by providing a "platform" for basic safety photoelectric sensing functions that meet the needs of mechanical safety protection, users can obtain photoelectric protection functions at a lower price.

During practical use, various functions can be supplemented according to the actual situation, making the use of light curtains more cost-effective; For industrial applications, many new application fields will be developed to achieve the effect of popularizing security protection technology.



TD0401BT

Property

- 30mm · 40mm · 45mm · 50mm Variety of types and diversity, have objection detection capacity provide different needs of client.
- Operating distance 0.5~10m.
- Detection zone 180mm ~ 1840mm.
- Enclosure Rating IP-65.
- Self-diagnosis and work status indicator.
- Installation and calibration easy, good anti-disturbance light performance.
- Quality and stability, price concessions.
- The safety light curtains, applicable both internally and externally high-precision anti-vibration, is best suited for punching and shearing equipment.

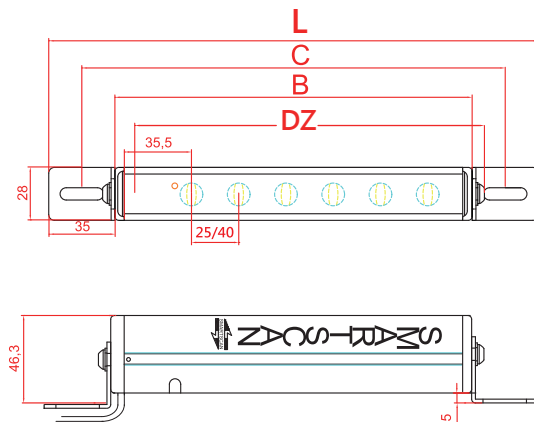
General Specifications

Number of beam	6 ~ 72		4 ~ 44	
Detection capability	30mm	40mm	45mm	50mm
Detection zone	180mm ~ 1830mm	190mm ~ 1840mm	205mm ~ 1805mm	210mm ~ 1810mm
Operating distance	0.5m ~ 5m	4m ~ 10m	0.5m ~ 5m	4m ~ 10m
Response time	20msec (Exclude relay switch time)			
Ambient temperature	0°C to +50°C			
Enclosure rating	IP65 (Ingress Protection)Ratings			
Power supply	24VDC ± 20% · 1.5A (MAX)			
Power consumption	TX 200mA + RX 200mA + OSSD Output (500mA max.)			
Connector	Direct Cable Out		M12connector(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)			

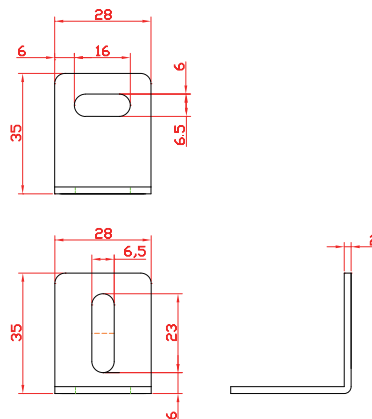
Standard Type Pitch 25mm Series

Detection capability 30mm			Detection capability 30mm		Detection capability 40mm		Standard type(direct output)			
Operating distance 0.5m to 2m			Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	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)	
	6	012-098S	180	012-098	180	012-099	190	189	224	259
	12	012-100S	330	012-100	330	012-101	340	339	374	409
	18	012-102S	480	012-102	480	012-103	490	489	524	559
	24	012-104S	630	012-104	630	012-105	640	639	674	709
	30	012-106S	780	012-106	780	012-107	790	789	824	859
	36	012-108S	930	012-108	930	012-109	940	939	974	1009
	42	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 are direct output, other dimensions please inquire Smartscan TW .



Standard Bracket



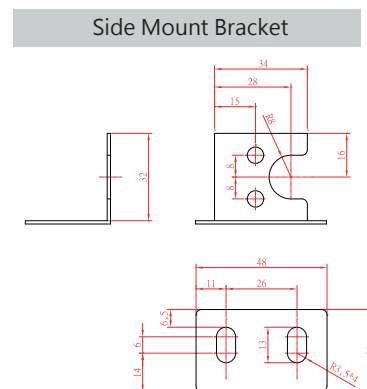
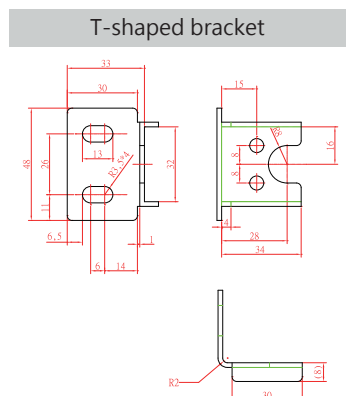
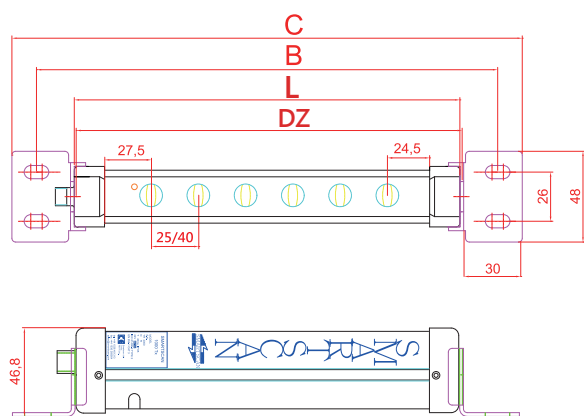
Standard Type Pitch 40mm Series

Detection capability 45mm			Detection capability 45mm		Detection capability 50mm		Standard type(direct output)		
Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to10m					
Beams	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)
4	012-404S	205	012-404	205	012-504	210	198	234	268
6	012-406S	285	012-406	285	012-506	290	278	314	348
8	012-408S	365	012-408	365	012-508	370	358	394	428
10	012-410S	445	012-410	445	012-510	450	438	474	508
12	012-412S	525	012-412	525	012-512	530	518	554	588
14	012-414S	605	012-414	605	012-514	610	598	634	668
16	012-416S	685	012-416	685	012-516	690	678	714	748
20	012-420S	845	012-420	845	012-520	850	838	874	908
24	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

► Standard type are direct output, other dimensions please inquire Smartscan TW .

T Shaped Pitch 25mm Series

Detection capability 30mm			Detection capability 30mm		Detection capability 40mm		T-Shaped (M12connector)		
Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	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)
6	012-098ST	180	012-098T	180	012-099T	190	195	235	261
12	012-100ST	330	012-100T	330	012-101T	340	345	385	411
18	012-102ST	480	012-102T	480	012-103T	490	495	535	561
24	012-104ST	630	012-104T	630	012-105T	640	645	685	711
30	012-106ST	780	012-106T	780	012-107T	790	795	835	861
36	012-108ST	930	012-108T	930	012-109T	940	945	985	1011
42	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



► There are other fixed patterns, please inquire Smartscan TW.

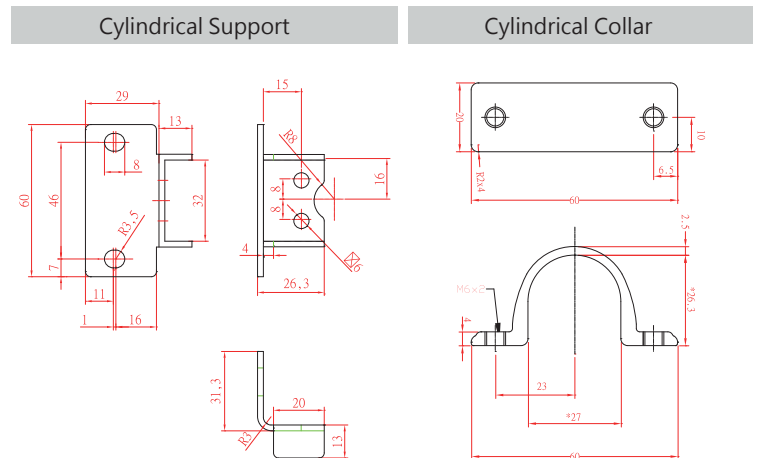
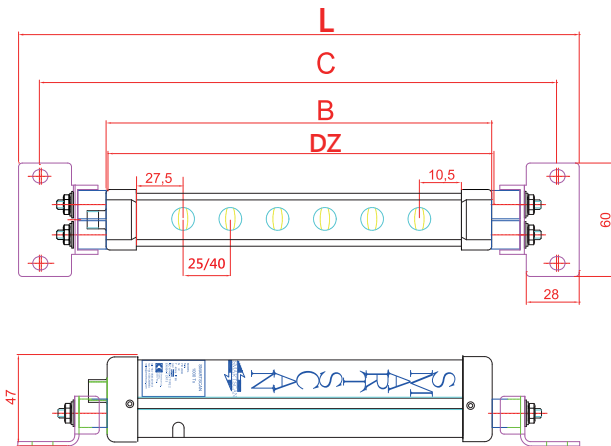
T Shaped Pitch 40mm Series

Detection capability 45mm			Detection capability 45mm		Detection capability 50mm		T-Shaped (M12connector)			
Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m						
Beams	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)	
	4	012-404ST	205	012-404T	205	012-504T	210	204	244	270
	6	012-406ST	285	012-406T	285	012-506T	290	284	324	350
	8	012-408ST	365	012-408T	365	012-508T	370	364	404	430
	10	012-410ST	445	012-410T	445	012-510T	450	444	484	510
	12	012-412ST	525	012-412T	525	012-512T	530	524	564	590
	14	012-414ST	605	012-414T	605	012-514T	610	604	644	670
	16	012-416ST	685	012-416T	685	012-516T	690	684	724	750
	20	012-420ST	845	012-420T	845	012-520T	850	844	884	910
	24	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

Punching and Shearing device special type for Pitch 25mm series

Detection capability 30mm			Detection capability 30mm		Detection capability 40mm		Special type of Punching (T-shaped and Shearing device connector)			
Operating distance 0.5m to 2m			Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	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)	
	6	012-098ST	180	012-098T	180	012-099T	190	195	265	288
	12	012-100ST	330	012-100T	330	012-101T	340	345	415	438
	18	012-102ST	480	012-102T	480	012-103T	490	495	565	588
	24	012-104ST	630	012-104T	630	012-105T	640	645	715	738
	30	012-106ST	780	012-106T	780	012-107T	790	795	865	888
	36	012-108ST	930	012-108T	930	012-109T	940	945	1015	1038
	42	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	

► This model is for punching and shearing machinery, and it is recommended to use it with GCM series control HOST, if need other dimensions please inquire Smartscan TW.



► Used with stamping machine round rod support

Punching and Shearing device special type for Pitch 40 mm series

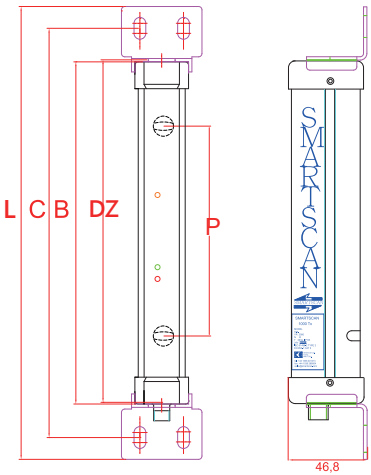
Detection capability 45mm			Detection capability 45mm		Detection capability 50mm		Special type of Punching (T-shaped and Shearing device connector)		
Operating distance 0.5m to 2m		Operating distance 0.5m to 5m		Operating distance 4m to 10m					
Beams	Model	Detection Zone (DZ)(mm)	Model	Detection Zone (DZ)(mm)	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(mm)
4	012-404ST	205	012-404T	205	012-504T	210	204	274	297
6	012-406ST	285	012-406T	285	012-506T	290	284	354	377
8	012-408ST	365	012-408T	365	012-508T	370	364	434	457
10	012-410ST	445	012-410T	445	012-510T	450	444	514	537
12	012-412ST	525	012-412T	525	012-512T	530	524	594	617
14	012-414ST	605	012-414T	605	012-514T	610	604	674	697
16	012-416ST	685	012-416T	685	012-516T	690	684	754	777
20	012-420ST	845	012-420T	845	012-520T	850	844	914	937
24	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

► This model is for punching and shearing machinery, and it is recommended to use it with GCM series control HOST, if need other dimensions please inquire Smartscan TW.

Perimeter series

		Operating distance 0.5m to 5m		Operating distance 4m to 10m		T-Shaped Connector		
Beams	Beam axis pitch (P)(mm)	Model	Detection Zone (DZ)(mm)	Model	Detection Zone (DZ)(mm)	Overall Length (B)(mm)	Install Length (C)(mm)	Assembly Length (L)(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

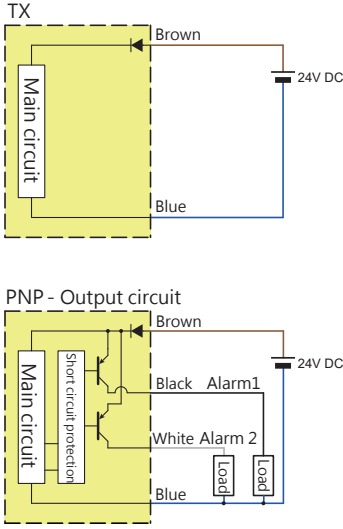
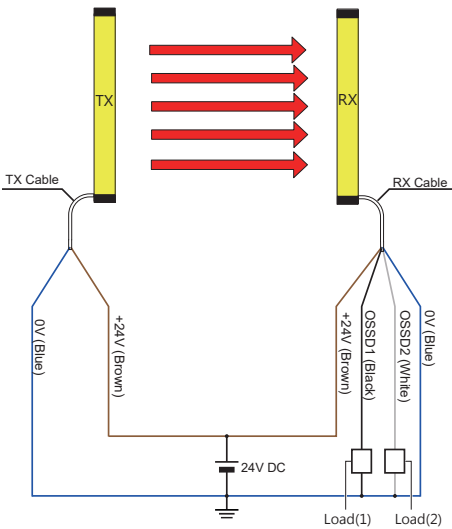
► Can be matched with Mirror Module and safety light curtains freestanding stand components □ type or L type locality protection (P.18 、 P.37)



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



LED Status Indicator

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

Normal			
Internal Indicators		action pattern	Mean
TX	Yellow LED	Flash	Safety light curtain works properly
	Yellow LED	Flash	Safety light curtain to be obscured
RX	Green LED	Light	Safety light curtain works properly, DC+ 24V during light curtain normal operation
	Red LED	Light	Safety light curtain to be obscured
Trouble status			
Internal Indicators		action pattern	Mean
RX	Green LED	Flash	OSSD1 and OSSD2 Short OSSD1 connection error 24V or 0V OSSD2 connection 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)

		Safenet Certification Services Ltd. Ducett Bldg, Castletroy Park Commercial Campus, Limerick, V94 Y6FD, Ireland Tel: +353 91 501 510 or 0800 1 40464 info@safenet.ie www.safenet.ie	
European Notified Body 2065			
EC Type Examination Certificate			
This is to certify that			
Smartscan Taiwan Co., Ltd.			
No. 7, Gongyeqiao 41th Road, Xian District, Taichung City 407, Taiwan, R.O.C.			
Has had a range of 1000' Light Curtains examined with regards to the Directive 2006/42/EC as amended.			
In respect of the 012-120			
Manufactured by:			
Smartscan Taiwan Co., Ltd.			
No. 7, Gongyeqiao 41th Road, Xian District, Taichung City 407, Taiwan, R.O.C.			
1. The technical file contains all the relevant information. 2. Having verified that the appropriate tests have been conducted: 2.1. The standards and transposed standards have been applied correctly. 2.2. The example representing series production of the item, complies with the essential health and safety requirements of the Directive 2006/42/EC as amended. 3. The technical file contains all the information required to include the models listed in the attached annex to this certificate. 4. Compliance with EN 60954-1:2018 has been confirmed with the Safety Objectives of the Low Voltage Directive 2014/35/EU. 5. The technical file also contains evidence of compliance with IEC 61496-1:2020 TYPE 2 and IEC 61496-2:2020 TYPE 2, and is suitable for applications regarding IEC 60204-1:2017+A1:2018 (SIL 1) and ISO 13849-1:2020 PL C.			
Certificate Number:	7177060825		
Date:	18/09/2025	Expiry Date:	18/09/2030
Signed for Safenet Certification Services Ltd.			
Peter McNicol Technical Manager			
The signatory is authorised by Safenet Certification Services Ltd. and the signatory is a duly qualified person. The client is required to ensure a written assurance of compliance with the relevant European standards. The client is required to ensure the accuracy of the certificate, on their responsibility to ensure compliance with the relevant European standards.			

[illegible]

Connection Cable		Part number	
Connector(1) : 180° (Standard Configuration)	Connector(2) : 90° (Optional Accessory)	P/N	Description
		1000 ⁺ -3m-180	3M Wiring(180°)
		1000 ⁺ -3m-90	3M Wiring(90°)
		1000 ⁺ -5m-180	5M Wiring(180°)
		1000 ⁺ -5m-90	5M Wiring(90°)
		1000 ⁺ -10m-180	10M Wiring(180°)
		1000 ⁺ -10m-90	10M Wiring(90°)

Narrow-angle mirrors can be used to create 2-3 surface protection areas.

The left diagram illustrates a basic optical communication setup. A Transmitter (TX) on the left and a Receiver (RX) on the right are connected by three parallel red lines representing light paths. These paths reflect off a single vertical Mirror Unit positioned between them. The right diagram shows a more complex setup. A Transmitter (TX) on the left and a Receiver (RX) on the right are connected by three parallel red lines that reflect off a single vertical Mirror Unit positioned between them. Additionally, there is a fourth path that reflects off a wall behind the RX and then off the Mirror Unit before reaching the TX.