



deTec4 Core Safety Light Curtain

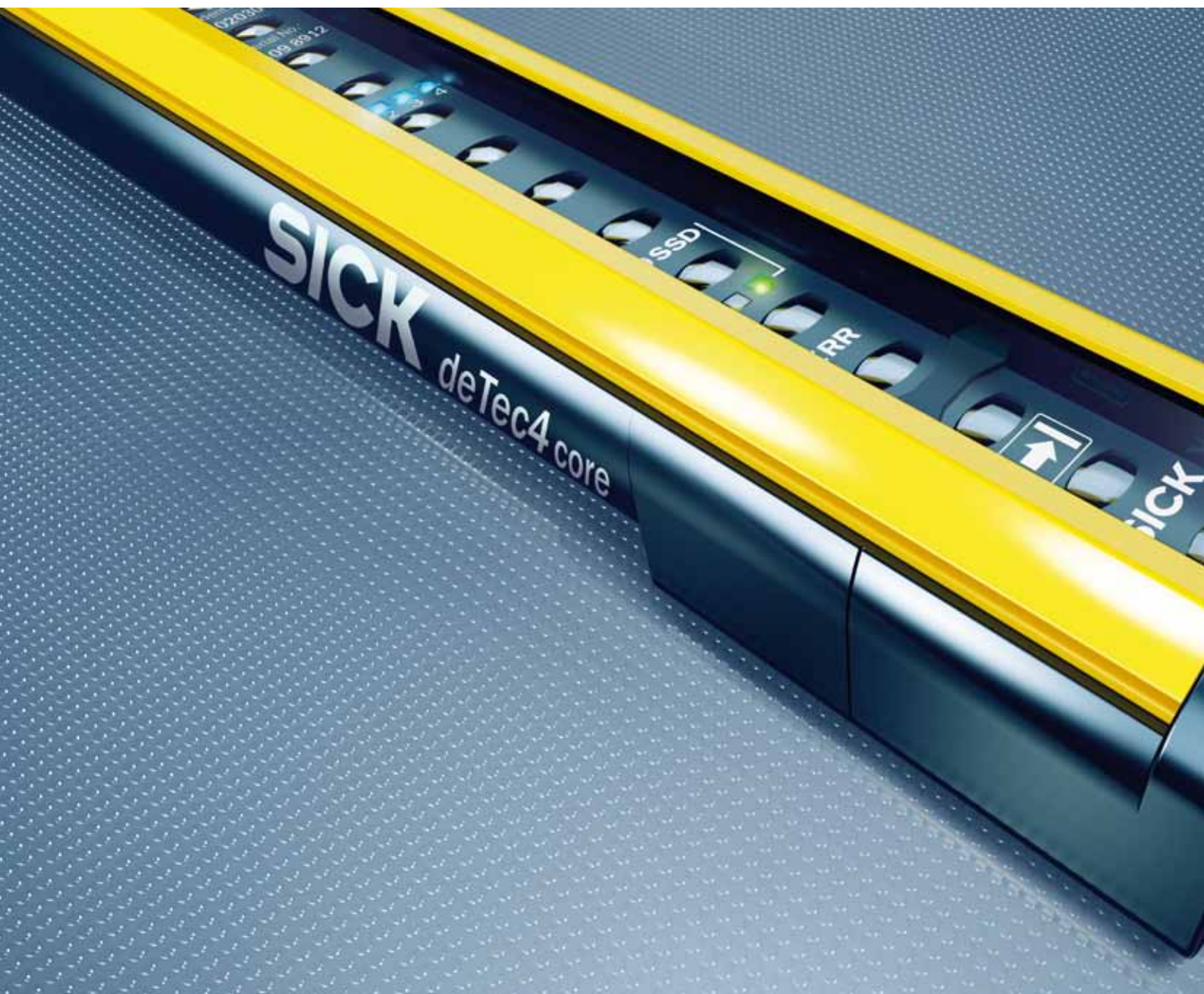
Efficient integration. Quick installation. Simply safe.

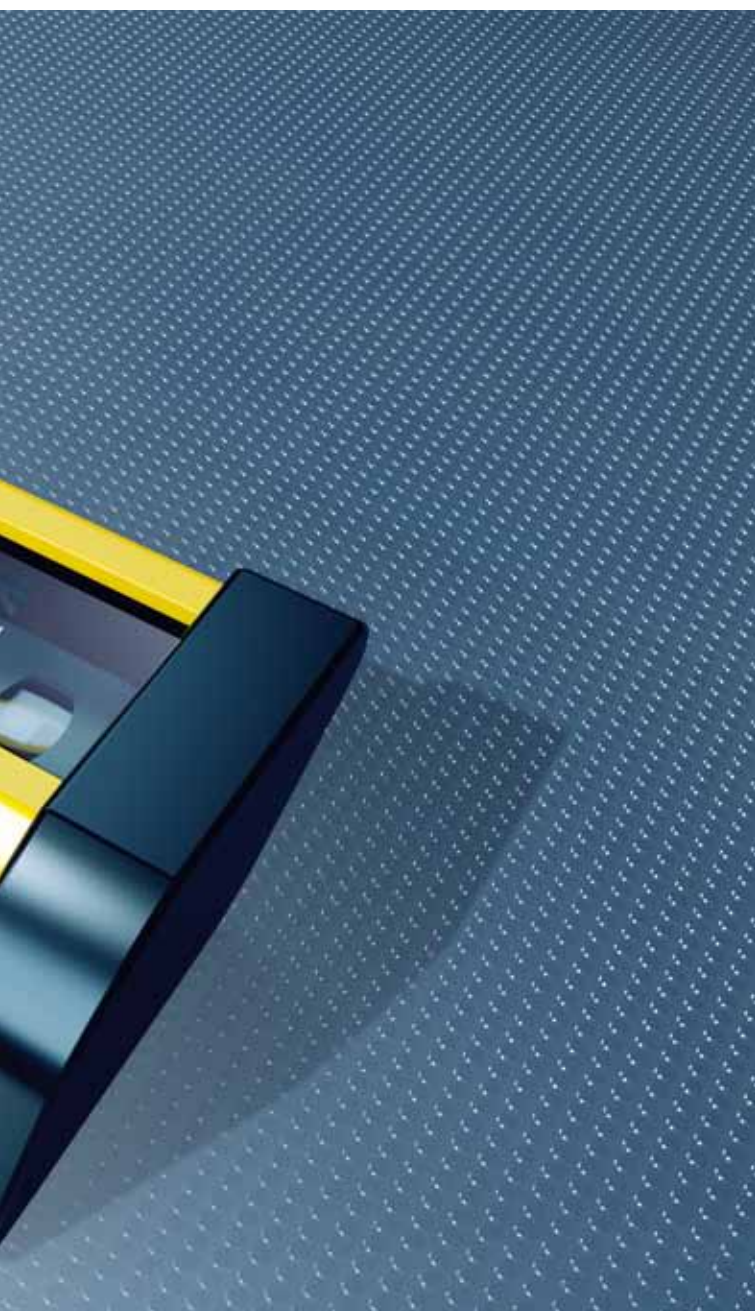
SICK
Sensor Intelligence.

deTec4 Core safety light curtain: Pure safety from the market leader

SICK, creator of the safety light curtain, is the world's leading manufacturer of optical safety devices. SICK is now introducing a completely new generation of light curtains – the deTec4 Core.

With this development, SICK is focusing on the essentials: state-of-the-art safety.





A new standard in every sense

The deTec4 Core safety light curtain makes it easier than ever before to cost-effectively protect hazardous zones and access points. The deTec4 Core is efficient to integrate, quick to install and safe in routine operation – deTec4 Core is also the best-in-class safety light curtain.

- Efficient integration Page 4
- Quick installation Page 6
- Simply safe Page 8

Based on more than 60 years of experience

The development and production of safety light curtains has been one of SICK's core areas of competency for more than six decades. Our safety light curtains are proven in the field - through their widespread use worldwide in a multitude of applications. Economic factors are also an important consideration, in addition to safety matters. Optimally designed safety technology with user-oriented functionality is key to increasing system efficiency. Of course, it goes without saying that SICK utilizes open systems that ensure a high level of investment security.

deTec4 Core safety light curtain on the Internet:
www.sick.com/detec4



deTec4 Core safety light curtain: Economical and reliable during operation

The deTec4 Core safety light curtain is the perfect solution for cost-effective protection of hazardous points and single-sided access protection. In doing so, safety is made easy right from the outset.

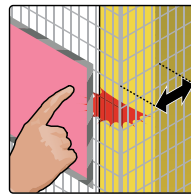
Safety and efficiency combined – for maximum availability

Day for day, the deTec4 Core safety light curtain ensures safety of personnel and productivity of machines and systems in a cost-effective manner for many industries. For example, machines for processing workpieces of all dimensions.

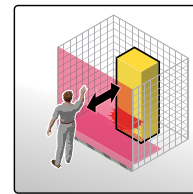
Typical areas of application include:

- Machine tools industry
- Automotive
- Handling and warehousing systems
- Consumer goods and packaging industry

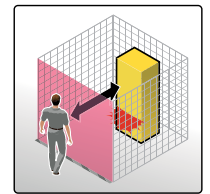
deTec4 Core safety light curtain for a wide range of safety applications



Finger and hand
detection



Hand and person
detection



Single-sided
access protection



Efficient integration – from planning to selection and installation

In the event of minimal space: continuous protective fields

The complete housing of the deTec4 Core safety light curtain generates a continuous protective field with high resolution right up to the ends of the housing. This minimizes the safety distances in terms of machine integration. And, with protective field heights of up to 2100 mm, the deTec4 Core safety light curtain also reduces allowances for reaching under and reaching over the protective field in accordance with current safety standards. An additional advantage: short safety distances for the operator to hazardous points accelerates processes with higher productivity.

deTec4 Core – the technology at a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- Protective operation
- No blind zones
- Resolution of 14 mm or 30 mm
- Protective field height of 300 mm to 2100 mm
- Automatic range measurement up to 10 m
- Operating temperature of -30°C to $+55^{\circ}\text{C}$
- Enclosure rating IP 65 / IP 67

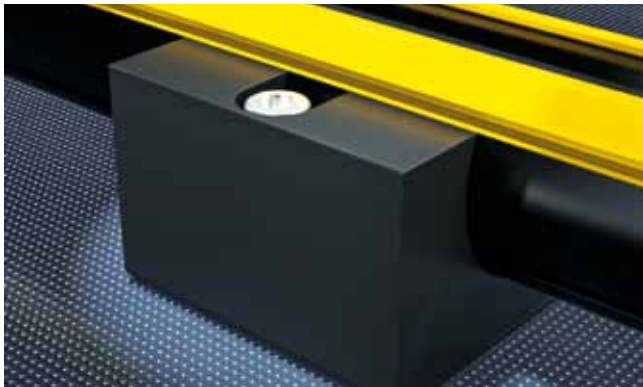


deTec4 Core safety light curtain: Sophisticated design for rapid installation

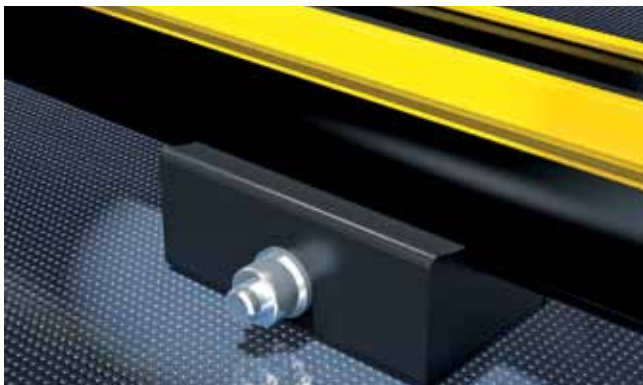
The deTec4 Core safety light curtain is impressive with minimal commissioning and maintenance requirements. An innovative system of brackets as well as rapid alignment and diagnostics with the help of integrated status indicators.

Mounting and alignment in seconds

The mounted deTec4 Core safety light curtain can be rotated $\pm 15^\circ$ on the machine thanks to its FlexFix bracket – greatly facilitating the alignment process. The semi-circular contours on the rear of the housing additionally enable positioning of the bracket on various parts of the housing. The deTec4 Core safety light curtain can be mounted without blind zones regardless of where the bracket is placed on the housing.



Fasten the deTec4 Core with a single screw:
the easy to align FlexFix bracket.



Optimal support and easy machine integration:
the rigidly designed QuickFix bracket.

Saves time thanks to automatic range measurement

The new automatic range measurement function is impressive during initialization. The deTec4 Core automatically measures the scanning range following the mounting and alignment processes. This means that it requires no configuration and is always optimally set up.



Developed for ultimate ease

LEDs enable fast commissioning

As all basic functions of the deTec4 Core safety light curtain are available without prior configuration, the commissioning process can be carried out without the need for software. Moreover, the deTec4 Core cuts down commissioning time thanks to its integrated LEDs and diagnostic functions.

Plug-and-play maintenance and exchange

Maintenance tasks can be carried out quickly on the deTec4 Core safety light curtain without the need for configuration or wiring. Its sophisticated bracket design and standardized 5-pin M12 connection technology additionally simplifies the rapid exchange of individual devices. Bright LEDs provide continuous status information for all processes.



Direct feedback during alignment: the optimal position of the two housings relative to each other is indicated by the four blue LEDs.

deTec4 core safety light curtain: Rugged housings for harsh production environments

Protecting people every day, keeping machines available and always keeping economic efficiency in mind – no problem for the solid deTec4 Core safety light curtain.

Impact-resistant housing, completely re-designed

An ingenious combination of metal and synthetic components make the deTec4 Core safety light curtain extremely rugged. This means it easily withstands even hard impacts and safety is ensured at all times.

No blind zones: flexible system integration

The deTec4 Core safety light curtain can always be optimally positioned, regardless of the available installation points for brackets on the machine frame. Its complete lack of blind zones and bracket design offers a high degree of flexibility in terms of machine integration.

Reliability with IP 67 protection class

High availability is guaranteed for deTec4 Core applications in harsh environments. The safety light curtain fulfills the requirements of IP 65 as well as IP 67 in a single device.

Temperature resistant up to $-30\text{ }^{\circ}\text{C}$

The deTec4 Core safety light curtain is designed for operating temperatures between $-30\text{ }^{\circ}\text{C}$ and $+55\text{ }^{\circ}\text{C}$ for consistent safety in all operational conditions. This means it is suitable for refrigerated areas where it provides accident-free and cost-effective processes.



Simply safe –
proven expertise from SICK.



Uncomplicated integration into safety controllers

Just like all of SICK's safety devices, the deTec4 Core safety light curtain was especially developed so that it can be integrated into all standard controllers without additional effort. This means that SICK's industry-leading expertise offers perfect integration into all safety and system environments in the area of machine safety.



Complete solutions with safetyPLUS®

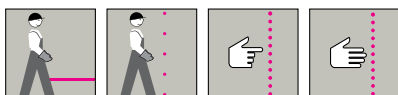
safetyPLUS® from SICK offers comprehensive solutions for industrial automation – including development and services:

- Application-oriented functions and trend-setting products that increase your system efficiency
- Incorporating the currently applicable international standards in order to support your business all over the world
- Services that range from realization of your ideas through to regular maintenance
- Tools for safety engineering
- A full range of services to support the safety functions in your machines and systems

Visit www.sick-safetyplus.com for more information



Efficient integration. Quick installation.
Simply safe.



Additional information

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Product description

The deTec4 Core safety light curtain is impressive with a new innovative system of brackets, no blind zones, and the increased height of its protective field. The effort required for commissioning and maintenance is minimized. The half-rounded contour of the rear of the housing enables the brackets to be positioned in any location on the housing. The FlexFix bracket facilitates alignment at up to $\pm 15^\circ$. Integrated LED displays, diagnostic functions, and automatic range measurements help to

save time and costs during commissioning. The deTec4 Core is also suitable for use in harsh ambient conditions thanks to the enclosure rating IP 65 / IP 67. With ambient operating temperatures of between -30°C and $+55^\circ\text{C}$, the safety light curtain can also be used in low-temperature environments. The deTec4 Core provides reliable hand and finger protection at the highest PL e protection level. The available protective field heights range from 300 mm to 2,100 mm.

At a glance

- Type 4 (IEC 61496), PL e (EN ISO 13849)
- Protective operation
- Absence of blind zones
- Resolution of 14 mm or 30 mm
- Protective field height of 300 mm to 2,100 mm
- Automatic range measurement up to 10 m
- Ambient operating temperature of -30°C to $+55^\circ\text{C}$
- Enclosure rating IP 65 / IP 67

Your benefits

- Simple assembly with innovative mounting and no blind zones
- Quick commissioning thanks to integrated LED display and automatic range measurement of up to 10 m
- Simply safe: rugged and reliable thanks to enclosure rating IP 67 and an ambient operating temperature down to -30°C , enabling use in harsh ambient conditions
- Intelligently standardized: M12, 5-pin provide cost reductions
- Basic function without configuration effort enables quick replacement when servicing is required

→ www.mysick.com/en/deTec4_Core

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

General data

Resolution	14 mm / 30 mm (depending on type)	
Protective field range		
Resolution 14 mm	0 m ... 7 m	
Resolution 30 mm	0 m ... 10 m	
Protective field height	300 mm ... 2,100 mm (depending on type)	
Safety-related parameters		
Type	Type 4 (EN 61496)	
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)	
Category	Category 4 (EN ISO 13849)	
Performance level	PL e (EN ISO 13849)	
PFHd (mean probability of a dangerous failure per hour)	3,7 x 10 ⁻⁹ (EN ISO 13849)	
T _M (mission time)	20 years (EN ISO 13849)	
Safe state in the event of a fault	At least one OSSD is in the LOW state	
Synchronization	Optical synchronisation	

Electrical data

	Sender	Receiver
Supply voltage	24 V DC (19.2 V DC ... 28.8 V DC)	
Residual ripple	≤ 2.4 V _{pp} ¹⁾	
Power consumption typical	0.82 W ... 2.4 W (depending on type)	1.63 W ... 4.8 W (depending on type)
Safety outputs (OSSD)		
Type of output	-	2 PNP semiconductors, short-circuit protected, cross-circuit monitored ²⁾
Response time	-	10 ms ... 22 ms (depending on type)
Switching voltage HIGH	-	24 V DC (V _S - 2.25 V DC ... V _S)
Switching voltage LOW	-	≤ 2 V DC
Switching current	-	≤ 300 mA
Connection type	M12, 5-pin	
Cable length	≤ 50 m	

¹⁾ Within the limits of V_S.

²⁾ Applies to the voltage range between -30 V and +30 V.

Operating data

	Sender	Receiver
Protection class	III (EN 50178)	
Enclosure rating	IP 65 (EN 60529) IP 67 (EN 60529)	
Ambient operating temperature	-30 °C ... +55 °C	
Storage temperature	-30 °C ... +70 °C	
Air humidity	15 % ... 95 %, non-condensing	
Vibration resistance	5 g, 10 Hz ... 55 Hz (EN 60068-2-6)	
Shock resistance	10 g, 16 ms (EN 60068-2-29)	
Housing cross-section	34 mm x 30.7 mm	
Weight	290 g ... 1,920 g (depending on type)	300 g ... 1,930 g (depending on type)

Ordering information

- Resolution: 14 mm
- Protective field range: 0 m ... 7 m

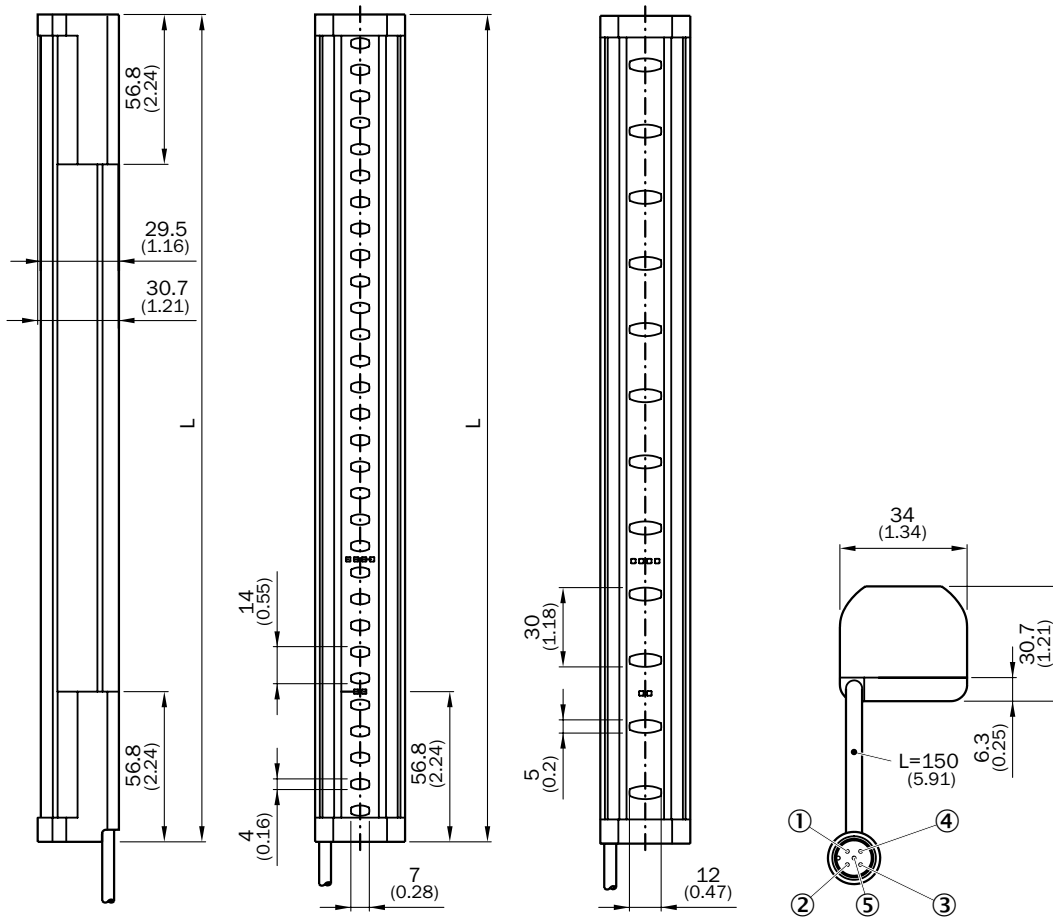
Protective field height	Sender		Receiver	
	Model name	Part no.	Model name	Part no.
300 mm	C4C-SA03010A10000	1211450	C4C-EA03010A10000	1211463
450 mm	C4C-SA04510A10000	1211469	C4C-EA04510A10000	1211470
600 mm	C4C-SA06010A10000	1211471	C4C-EA06010A10000	1211472
750 mm	C4C-SA07510A10000	1211473	C4C-EA07510A10000	1211474
900 mm	C4C-SA09010A10000	1211475	C4C-EA09010A10000	1211515
1,050 mm	C4C-SA10510A10000	1211476	C4C-EA10510A10000	1211477
1,200 mm	C4C-SA12010A10000	1211478	C4C-EA12010A10000	1211479
1,350 mm	C4C-SA13510A10000	1211480	C4C-EA13510A10000	1211481
1,500 mm	C4C-SA15010A10000	1211482	C4C-EA15010A10000	1211483
1,650 mm	C4C-SA16510A10000	1211484	C4C-EA16510A10000	1211485
1,800 mm	C4C-SA18010A10000	1211486	C4C-EA18010A10000	1211487
1,950 mm	C4C-SA19510A10000	1211488	C4C-EA19510A10000	1211489
2,100 mm	C4C-SA21010A10000	1211490	C4C-EA21010A10000	1211491

- Resolution: 30 mm
- Protective field range: 0 m ... 10 m

Protective field height	Sender		Receiver	
	Model name	Part no.	Model name	Part no.
300 mm	C4C-SA03030A10000	1211462	C4C-EA03030A10000	1211464
450 mm	C4C-SA04530A10000	1211492	C4C-EA04530A10000	1211493
600 mm	C4C-SA06030A10000	1211494	C4C-EA06030A10000	1211495
750 mm	C4C-SA07530A10000	1211496	C4C-EA07530A10000	1211497
900 mm	C4C-SA09030A10000	1211498	C4C-EA09030A10000	1211516
1,050 mm	C4C-SA10530A10000	1211499	C4C-EA10530A10000	1211500
1,200 mm	C4C-SA12030A10000	1211501	C4C-EA12030A10000	1211502
1,350 mm	C4C-SA13530A10000	1211503	C4C-EA13530A10000	1211504
1,500 mm	C4C-SA15030A10000	1211505	C4C-EA15030A10000	1211506
1,650 mm	C4C-SA16530A10000	1211507	C4C-EA16530A10000	1211508
1,800 mm	C4C-SA18030A10000	1211509	C4C-EA18030A10000	1211510
1,950 mm	C4C-SA19530A10000	1211511	C4C-EA19530A10000	1211512
2,100 mm	C4C-SA21030A10000	1211513	C4C-EA21030A10000	1211514

Dimensional drawing

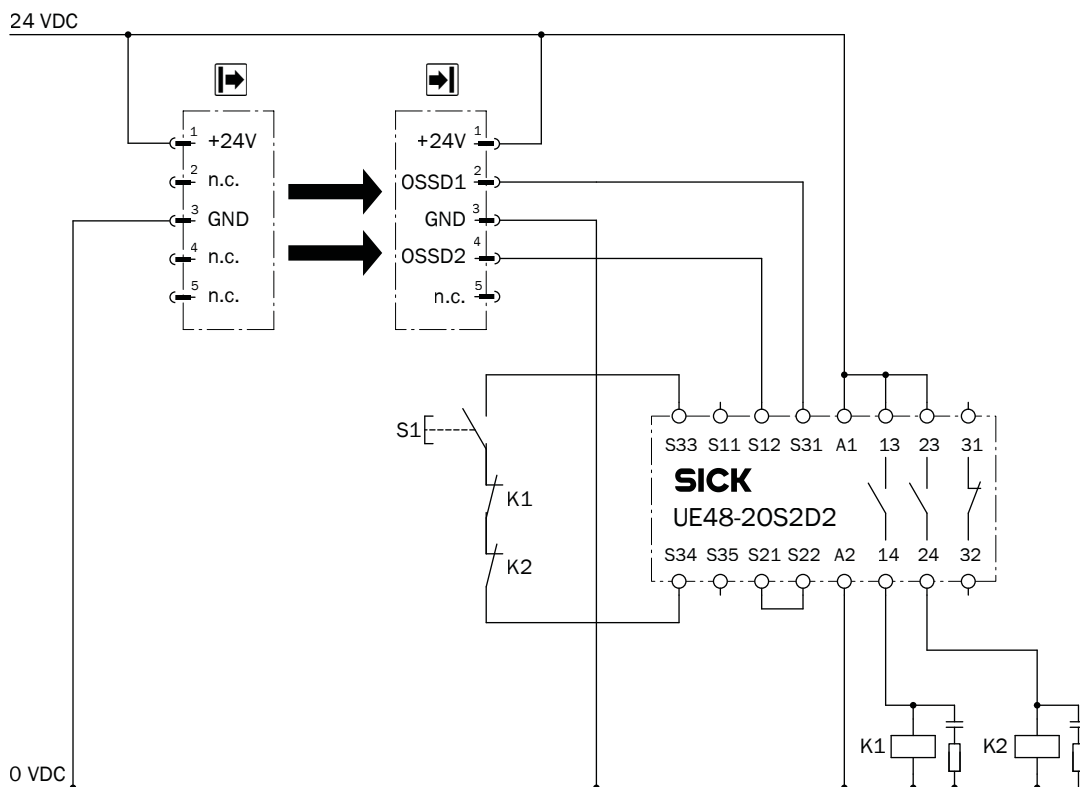
dimensions in mm (inch)



Protective field height	L
300 (11.81)	313 (12.32)
450 (17.72)	463 (18.23)
600 (23.62)	613 (24.13)
750 (29.53)	763 (30.04)
900 (35.43)	912.5 (35.93)
1,050 (41.34)	1,062.5 (41.83)
1,200 (47.24)	1,212.5 (47.74)
1,350 (53.15)	1,362 (53.62)
1,500 (59.06)	1,512 (59.53)
1,650 (64.96)	1,662 (65.43)
1,800 (70.87)	1,811.5 (71.32)
1,950 (76.77)	1,961.5 (77.22)
2,100 (82.68)	2,111.5 (83.13)

Connection diagrams

deTec4 Core safety light curtain connected to UE48-20S safety relay



The deTec4 Core safety light curtain can be connected to the UE48-20S switching amplifiers. It is operated with restart interlock and external device monitoring.



When the protective field is clear, the OSSD1 and OSSD2 outputs carry voltage. The system can be switched on when K1 and K2 are in the de-energized position. Pressing the S1 button switches on the UE48 switching amplifier. Contacts 13-14 and 23-24 of the UE48 activate the K1 and K2 contactors.

When the protective field is interrupted, the OSSD1 and OSSD2 outputs carry no voltage. The UE48 switches off and K1, K2 are deactivated.




Failure of K1 and K2 does not cause the loss of the shut-down function. Cross-circuits and shortcircuits of the OSSD1 and OSSD2 outputs are recognized and lead to the locking state. It is recognized if the K1 or K2 contactors does not de-energize.

Accessories


Terminal and alignment brackets

Figure	Brief description	Model name	Part no.
	Flex-Fix-bracket (Packing unit 4 pcs.)	BEF-1SHABPKU4	2066614
	Quick-Fix-bracket (Packing unit 2 pcs.)	BEF-3SHABPKU2	2066048



Plug connectors and cables

Figure	Connection type	Cable length	Model name	Part no.
	Female connector, M12, 5-pin, straight	2 m	DOL-1205-G02MC	6025906
		5 m	DOL-1205-G05MC	6025907
		10 m	DOL-1205-G10MC	6025908
		20 m	DOL-1205-G20MC	6050247
		30 m	DOL-1205-G30MC	6050248
	Female connector, M12, 5-pin, angled	2 m	DOL-1205-W02MC	6025909
		5 m	DOL-1205-W05MC	6025910
		10 m	DOL-1205-W10MC	6025911
	M12, 5-pin, plug straight/socket straight	2 m	DSL-1205-G02MC	6025931
		5 m	DSL-1205-G05MC	6029282
		10 m	DSL-1205-G10MC	6038954
		15 m	DSL-1205-G15MC	6038956



Power supply units

Figure	Input voltage	Output voltage	Output current	Model name	Part no.
	100 V AC ... 240 V AC	24 V DC	≤ 2.1 A	Power supply	7028789
			≤ 3.9 A	Power supply	7028790



Deflector mirrors

Figure	Brief description	Mirror material	Suitable for protective field height	Model name	Part no.
	Horizontal deflection	Glass	≤ 300 mm	PNS75-034	1019414
			≤ 450 mm	PNS75-049	1019415
			≤ 600 mm	PNS75-064	1019416
			≤ 750 mm	PNS75-079	1019417
			≤ 900 mm	PNS75-094	1019418
			≤ 1,050 mm	PNS75-109	1019419
			≤ 1,200 mm	PNS75-124	1019420
			≤ 1,350 mm	PNS75-139	1019421
			≤ 1,500 mm	PNS75-154	1019422
			≤ 1,650 mm	PNS75-169	1019423
			≤ 1,800 mm	PNS75-184	1019424
			≤ 300 mm	PNS125-034	1019425
			≤ 450 mm	PNS125-049	1019426
			≤ 600 mm	PNS125-064	1019427
			≤ 750 mm	PNS125-079	1019428
			≤ 900 mm	PNS125-094	1019429
			≤ 1,050 mm	PNS125-109	1019430
			≤ 1,200 mm	PNS125-124	1019431
			≤ 1,350 mm	PNS125-139	1019432
			≤ 1,500 mm	PNS125-154	1019433
≤ 1,650 mm	PNS125-169	1019434			
≤ 1,800 mm	PNS125-184	1019435			

Alignment aids

Figure	Brief description	Model name	Part no.
	Laser alignment aid for various sensors, laser class 2 (IEC 60825): Never look into the beam.	AR60	1015741
	Adapter for alignment aid AR60	Adapter AR60 for deTec4 Core	4070854

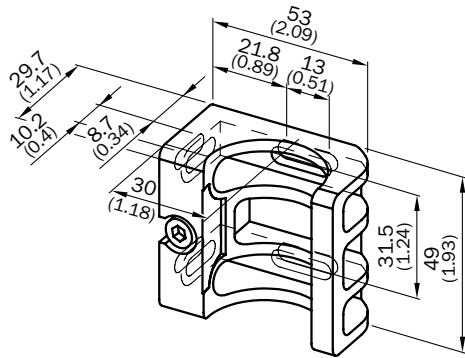
Test and monitoring tools

Figure	Brief description	Model name	Part no.
	14 mm diameter	Test rod	2022599
	30 mm diameter	Test rod	2022602
	Test rod holder	BEF-3WNAAAAL1	2052249

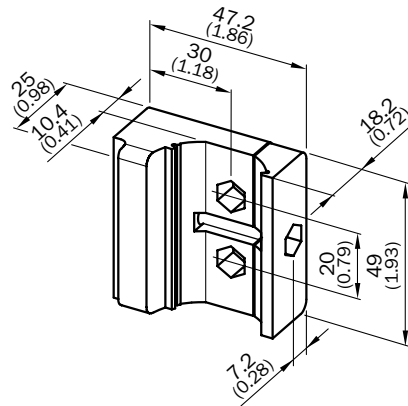
Dimensional drawings Terminal and alignment brackets

dimensions in mm (inch)

BEF-1SHABPKU4



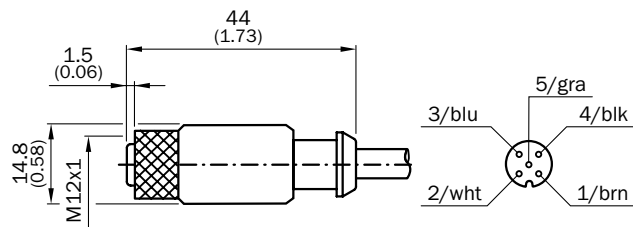
BEF-3SHABPKU2



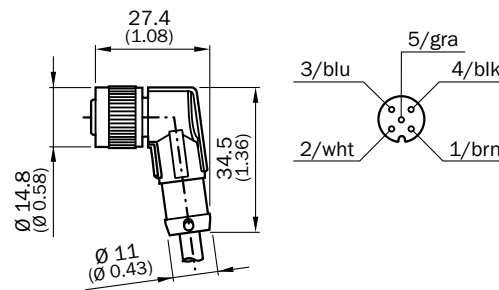
Dimensional drawings Plug connectors and cables

dimensions in mm (inch)

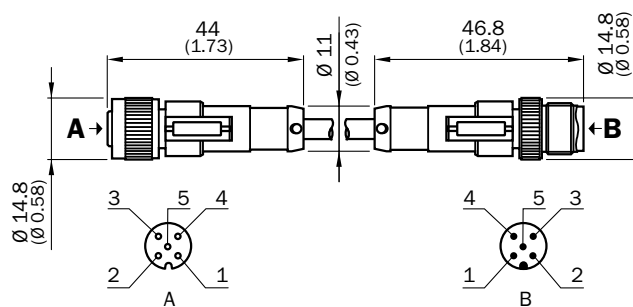
**DOL-1205-G02MC, DOL-1205-G05MC, DOL-1205-G10MC,
DOL-1205-G20MC, DOL-1205-G30MC**



DOL-1205-W02MC, DOL-1205-W05MC, DOL-1205-W10MC



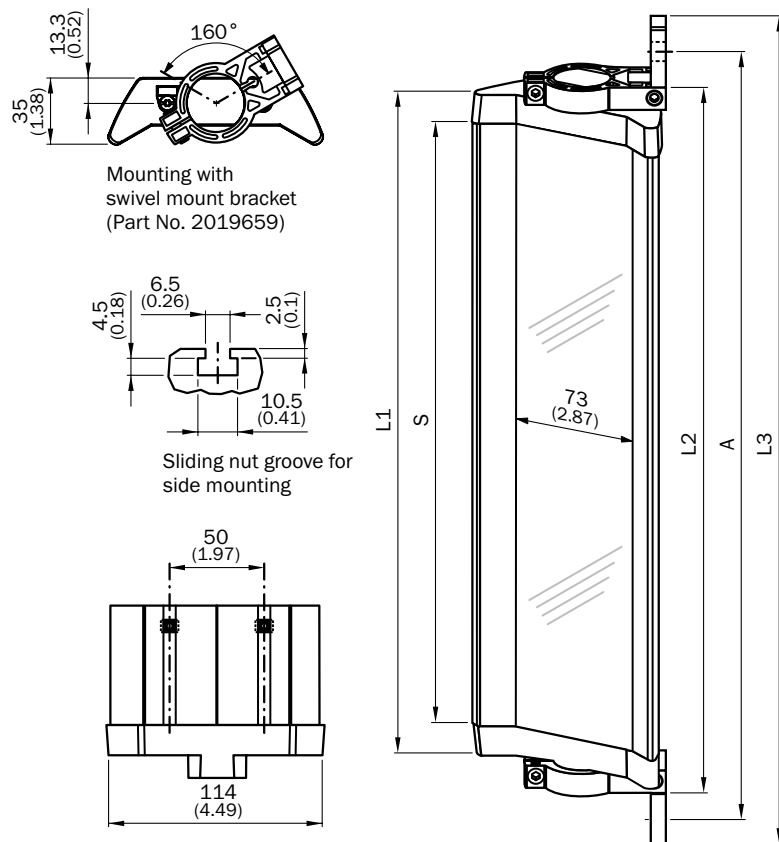
**DSL-1205-G02MC, DSL-1205-G05MC, DSL-1205-G10MC,
DSL-1205-G15MC**



Dimensional drawings Deflector mirrors

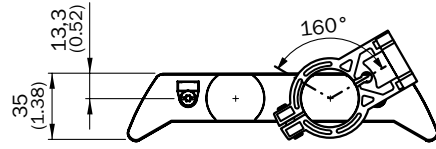
dimensions in mm (inch)

PNS75

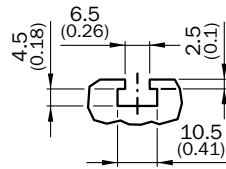


Mirror height S	L1	L2	L3	A
340 (13.39)	372 (14.65)	396 (15.59)	460 (18.11)	440 (17.32)
490 (19.29)	522 (20.55)	546 (21.5)	610 (24.02)	590 (23.23)
640 (25.2)	672 (26.46)	696 (27.4)	760 (29.92)	740 (29.13)
790 (31.1)	822 (32.36)	846 (33.31)	910 (35.83)	890 (35.04)
940 (37.01)	972 (38.27)	996 (39.21)	1,060 (41.73)	1,040 (40.94)
1,090 (42.91)	1,122 (44.17)	1,146 (45.12)	1,210 (47.64)	1,190 (46.85)
1,240 (48.82)	1,272 (50.08)	1,296 (51.02)	1,360 (53.54)	1,340 (52.76)
1,390 (54.72)	1,422 (55.98)	1,446 (56.93)	1,510 (59.45)	1,490 (58.66)
1,540 (60.63)	1,572 (61.89)	1,596 (62.83)	1,660 (65.35)	1,640 (64.57)
1,690 (66.54)	1,722 (67.8)	1,746 (68.74)	1,810 (71.26)	1,790 (70.47)
1,840 (72.44)	1,872 (73.7)	1,896 (74.65)	1,960 (77.17)	1,940 (76.38)

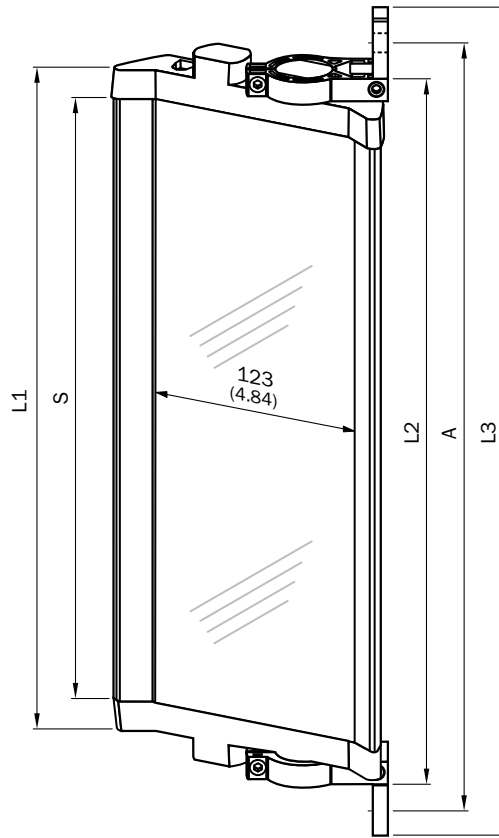
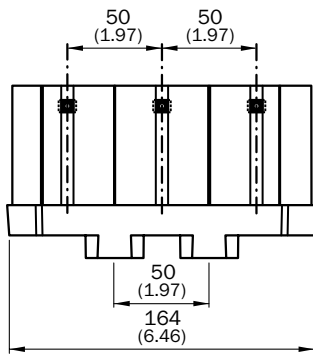
PNS125



Mounting with
swivel mount bracket
(Part No. 2019659)

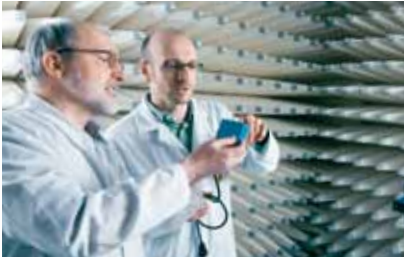


Sliding nut groove for
side mounting



Mirror height S	L1	L2	L3	A
340 (13.39)	372 (14.65)	396 (15.59)	460 (18.11)	440 (17.32)
490 (19.29)	522 (20.55)	546 (21.5)	610 (24.02)	590 (23.23)
640 (25.2)	672 (26.46)	696 (27.4)	760 (29.92)	740 (29.13)
790 (31.1)	822 (32.36)	846 (33.31)	910 (35.83)	890 (35.04)
940 (37.01)	972 (38.27)	996 (39.21)	1,060 (41.73)	1,040 (40.94)
1,090 (42.91)	1,122 (44.17)	1,146 (45.12)	1,210 (47.64)	1,190 (46.85)
1,240 (48.82)	1,272 (50.08)	1,296 (51.02)	1,360 (53.54)	1,340 (52.76)
1,390 (54.72)	1,422 (55.98)	1,446 (56.93)	1,510 (59.45)	1,490 (58.66)
1,540 (60.63)	1,572 (61.89)	1,596 (62.83)	1,660 (65.35)	1,640 (64.57)
1,690 (66.54)	1,722 (67.8)	1,746 (68.74)	1,810 (71.26)	1,790 (70.47)
1,840 (72.44)	1,872 (73.7)	1,896 (74.65)	1,960 (77.17)	1,940 (76.38)

SICK at a glance



Leading technologies

With a staff of more than 5,800 and nearly 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.



Unique product range

- Non-contact detecting, counting, classifying, positioning and measuring of any type of object or media
- Accident and operator protection with sensors, safety software and services
- Automatic identification with bar code and RFID readers
- Laser measurement technology for detecting the volume, position and contour of people and objects
- Complete system solutions for analysis and flow measurement of gases and liquids



Comprehensive services

- SICK LifeTime Services – for safety and productivity
- Application centers in Europe, Asia and North America for the development of system solutions under real-world conditions
- E-Business Partner Portal www.mysick.com – price and availability of products, requests for quotation and online orders

Worldwide presence with subsidiaries in the following countries:

Australia
Belgium/Luxembourg
Brasil
Česká Republika
Canada
China
Danmark
Deutschland
España
France
Great Britain
India
Israel
Italia
Japan

México
Nederland
Norge
Österreich
Polska
România
Russia
Schweiz
Singapore
Slovenija
South Africa
South Korea
Suomi
Sverige
Taiwan
Türkiye
United Arab Emirates
USA

Please find detailed addresses and additional representatives and agencies in all major industrial nations at www.sick.com