


EFFICIENT INTEGRATION. QUICK INSTALLATION. SIMPLY SAFE.



The top section of the image contains four small diagrams illustrating protection scenarios: a hand reaching towards a vertical dashed line, a hand reaching towards a horizontal dashed line, a person walking through a vertical dashed line, and a person walking through a horizontal dashed line. Below these is a large, vertical, yellow and black safety light curtain unit with the SICK logo and 'deTec4 Core' text on its side.

CE cULus

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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 +/-15°. Integrated LED displays, diagnostic functions, and automatic calibration on the protective field width

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 and IP 67. With ambient operating temperatures of between -30 °C and +55 °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), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Absence of blind zones
- Resolution of 14 mm or 30 mm
- Protective field height of 300 mm to 2.100 mm
- Automatic calibration on the protective field width up to 10 m range
- Ambient operating temperature of -30 °C to +55 °C
- Enclosure rating IP 65 and IP 67
- Flexi Loop-compatible M12 male connector

Your benefits

- Simple assembly with innovative mounting and no blind zones
- Quick commissioning thanks to integrated LED display and automatic calibration on the protective field width up to 10 m range
- 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 and enables a safe series connection with Flexi Loop
- 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

You can find more detailed data in the operating instructions. Download → www.sick.com/IO

Features

	Resolution 14 mm	Resolution 30 mm
Protective field height	300 mm ... 2,100 mm (depending on type)	
Scanning range	Minimum	0 m ... 7 m
	Typical	0 m ... 8 m
Response time	11 ms ... 22 ms (depending on type)	10 ms ... 14 ms (depending on type)
Synchronization	Optical synchronisation	

Safety-related parameters

Type	Type 4 (IEC 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)	$3,7 \times 10^{-9}$ (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 OFF state.

Interfaces

System connection	Connection type	Male connector M12, 5-pin
	Flexi Loop-compatible M12 plug connector	✓
	Permitted cable length	≤ 50 m
Fieldbus, industrial network	Integration via Flexi Soft safety controller	CANopen, DeviceNet, EtherCAT, EtherNet/IP, Modbus TCP, PROFIBUS DP, PROFINET ¹⁾

¹⁾ For further information on Flexi Soft, please see sens:Control – safe control solutions product catalog or → www.sick.com/FlexiSoft

Electrical data

	Sender	Receiver
Protection class	III (EN 50178)	
Supply voltage V_S	24 V DC (19.2 V DC ... 28.8 V DC)	
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⁾
	Switching voltage HIGH	24 V DC (V _S – 2.25 V DC ... V _S)
	Switching voltage LOW	≤ 2 V DC
	Switching current	≤ 300 mA

¹⁾ Within the limits of V_S.

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

Mechanical data

	Sender	Receiver
Housing cross-section (incl. system connection)	34 mm x 30.7 mm	
Housing material	Aluminum extruded profile	
Weight	290 g ... 1,920 g (depending on type)	300 g .. 1,930 g (depending on type)

Ambient data

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)

Other information

Wave length	850 nm
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Ordering information

Items supplied deTec4 Core:

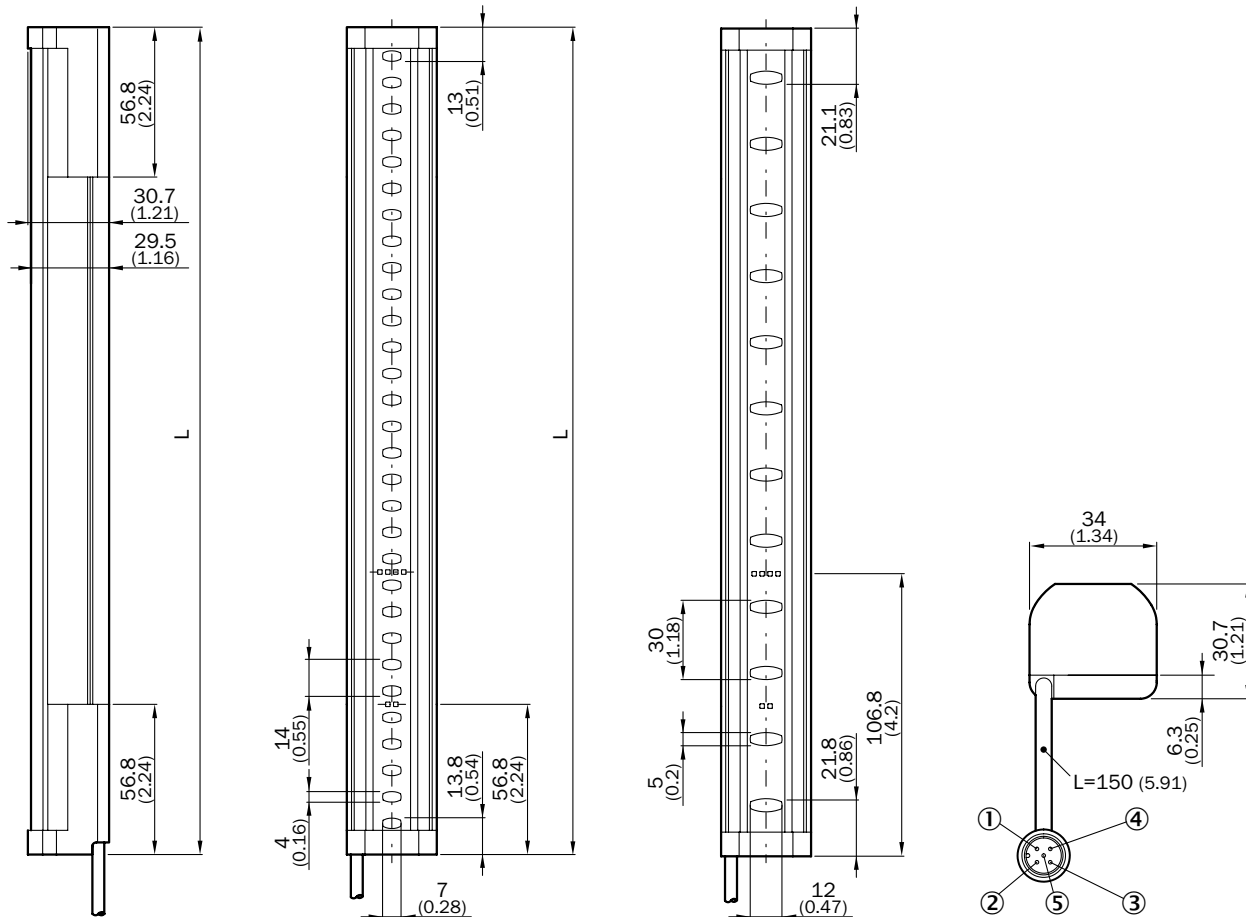
- Safety light curtain consisting of a sender and a receiver
- 4 QuickFix brackets
- Test rod with diameter corresponding to the resolution of the safety light curtain
- Operating instructions on CD-ROM
- Adhesive label with information on the daily check
- **Resolution:** 14 mm
- **Minimum scanning range:** 0 m ... 7 m
- **Typical scanning range:** 0 m ... 8 m

Protective field height	Sender		Receiver	
	Type	Part no.	Type	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
- **Minimum scanning range:** 0 m ... 10 m
- **Typical scanning range:** 0 m ... 12 m

Protective field height	Sender		Receiver	
	Type	Part no.	Type	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

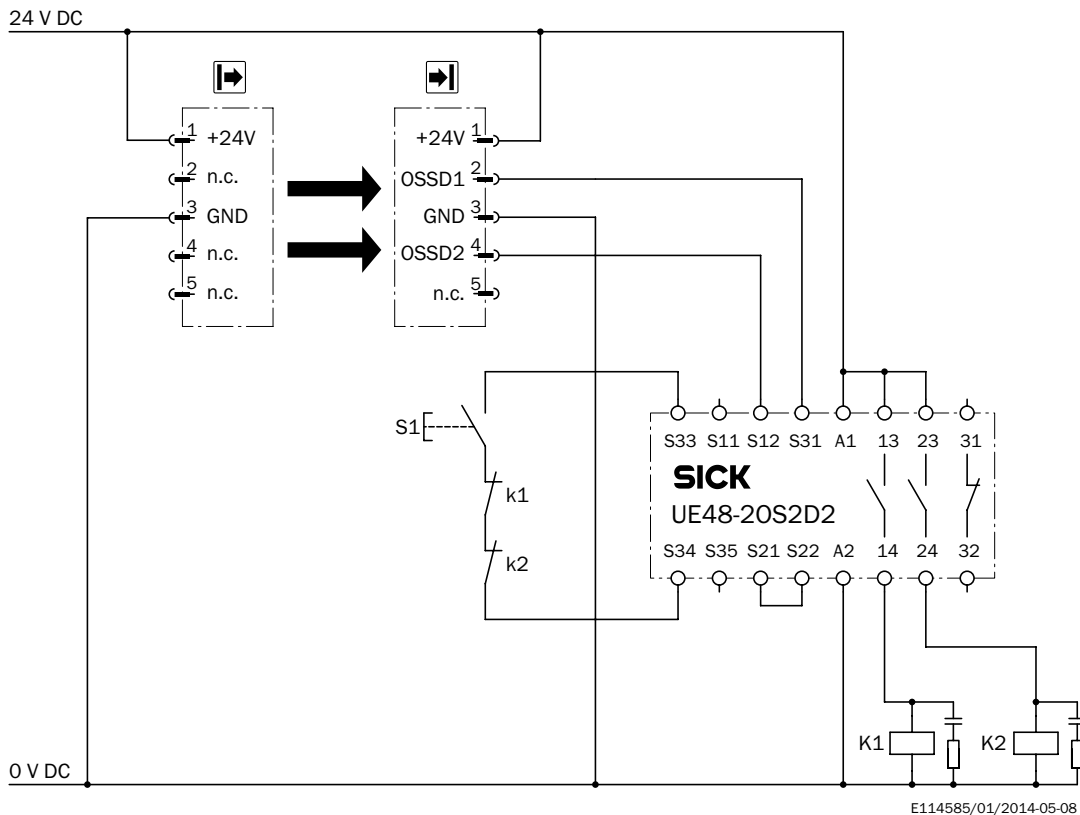
Dimensional drawing (dimensions in mm (inch))



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)	913 (35.94)
1,050 (41.34)	1,063 (41.85)
1,200 (47.24)	1,213 (47.76)
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)	1,812 (71.34)
1,950 (76.77)	1,962 (77.24)
2,100 (82.68)	2,112 (83.15)

Connection diagrams

deTec safety light curtain connected to UE48-20S safety relay



Task

Connection of a deTec4 Core safety light curtain to UE48-20S. Operating mode: with restart interlock and external device monitoring.

Function

When the light path is clear, the OSSD1 and OSSD2 outputs are live. The system is ready to switch on if K1 and K2 are de-energized. By pressing S1 (button is pressed and released), the UE48-20S is energized and its 13 - 14 and 23 - 24 contacts activate K1 and K2. On interruption of one of the light beams, the UE48-20S is de-energized by the OSSD1 and OSSD2 outputs and K1 and K2 are deactivated.

Fault analysis

OSSD cross-circuits and short-circuits are detected and lead to the inhibited state (lock-out). The incorrect functioning of one of the K1 or K2 contactors will be detected and does not result in the loss of the shutdown function. Jamming of the S1 button will prevent the UE48-20S from enabling.

Comments

¹⁾ Output circuits: These contacts are to be connected to the controller such that, with the output circuit open, the dangerous state is disabled. For categories 4 and 3, the integration must be dual-channel (x/y paths). Single-channel integration in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.

Accessories required for commissioning

Description	Number	Items supplied	Further information
Mounting bracket	1	✓	→ Terminal and alignment brackets
Connecting cable	2	-	→ Plug connectors and cables
Operating instructions	1	✓	-
Test rod	1	✓	→ Test and monitoring tools

Suitable accessories → [page 42](#)