



# C4C-SA12010A10000, C4C-EA12010A10000

deTec4 Core

**SAFETY LIGHT CURTAINS**

**SICK**  
Sensor Intelligence.



### Ordering information

System part	Type	Part no.
Sender	C4C-SA12010A10000	1211478
Receiver	C4C-EA12010A10000	1211479

Other models and accessories → [www.sick.com/deTec4\\_Core](http://www.sick.com/deTec4_Core)



### Detailed technical data

#### Features

<b>System part</b>	Sender/receiver pair with QuickFix bracket				
<b>Resolution</b>	14 mm				
<b>Protective field height</b>	1,200 mm				
<b>Scanning range</b>	<table border="0"> <tr> <td>Minimum</td> <td>0 m ... 7 m</td> </tr> <tr> <td>Typical</td> <td>0 m ... 8 m</td> </tr> </table>	Minimum	0 m ... 7 m	Typical	0 m ... 8 m
Minimum	0 m ... 7 m				
Typical	0 m ... 8 m				
<b>Response time</b>	16 ms				
<b>Synchronization</b>	Optical synchronisation				

#### Safety-related parameters

<b>Type</b>	Type 4 (IEC 61496)
<b>Safety integrity level</b>	SIL3 (IEC 61508) SILCL3 (EN 62061)
<b>Category</b>	Category 4 (EN ISO 13849)
<b>Performance level</b>	PL e (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$3,7 \times 10^{-9}$ (EN ISO 13849)
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)
<b>Safe state in the event of a fault</b>	At least one OSSD is in the OFF state.

#### Interfaces

<b>System connection</b>	<table border="0"> <tr> <td>Connection type</td> <td>Male connector M12, 5-pin</td> </tr> <tr> <td>Permitted cable length</td> <td>≤ 50 m</td> </tr> </table>	Connection type	Male connector M12, 5-pin	Permitted cable length	≤ 50 m
Connection type	Male connector M12, 5-pin				
Permitted cable length	≤ 50 m				
<b>Fieldbus, industrial network</b>					

<sup>1)</sup> For additional information on Flexi Soft -> [www.sick.com/Flexi\\_Soft](http://www.sick.com/Flexi_Soft).

Integration via Flexi Soft safety controller CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET <sup>1)</sup>

<sup>1)</sup> For additional information on Flexi Soft -> [www.sick.com/Flexi\\_Soft](http://www.sick.com/Flexi_Soft).

## Electrical data

<b>Protection class</b>	III (EN 50178)
<b>Supply voltage <math>V_S</math></b>	24 V DC (19.2 V DC ... 28.8 V DC)
<b>Ripple</b>	$\leq 2.4 V_{pp}$ <sup>1)</sup>
<b>Power consumption typical</b>	3.36 W / 1.68 W (depending on type)
<b>Safety outputs (OSSD)</b>	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored <sup>2)</sup>
Switching voltage HIGH	24 V DC ( $V_S - 2.25$ V DC ... $V_S$ )
Switching voltage LOW	$\leq 2$ V DC
Switching current	$\leq 300$ mA

<sup>1)</sup> Within the limits of  $V_S$ .

<sup>2)</sup> Applies to the voltage range between -30 V and +30 V.

## Mechanical data

<b>Housing cross-section (incl. system connection)</b>	34 mm x 30.7 mm
<b>Housing material</b>	Aluminum extruded profile
<b>Weight</b>	1,120 g / 1,110 g (depending on type)

## Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529) IP67 (EN 60529)
<b>Ambient operating temperature</b>	-30 °C ... +55 °C
<b>Storage temperature</b>	-30 °C ... +70 °C
<b>Air humidity</b>	15 % ... 95 %, Non-condensing
<b>Vibration resistance</b>	5 g, 10 Hz ... 55 Hz (EN 60068-2-6)
<b>Shock resistance</b>	10 g, 16 ms (EN 60068-2-29)

## Other information

<b>Wave length</b>	850 nm
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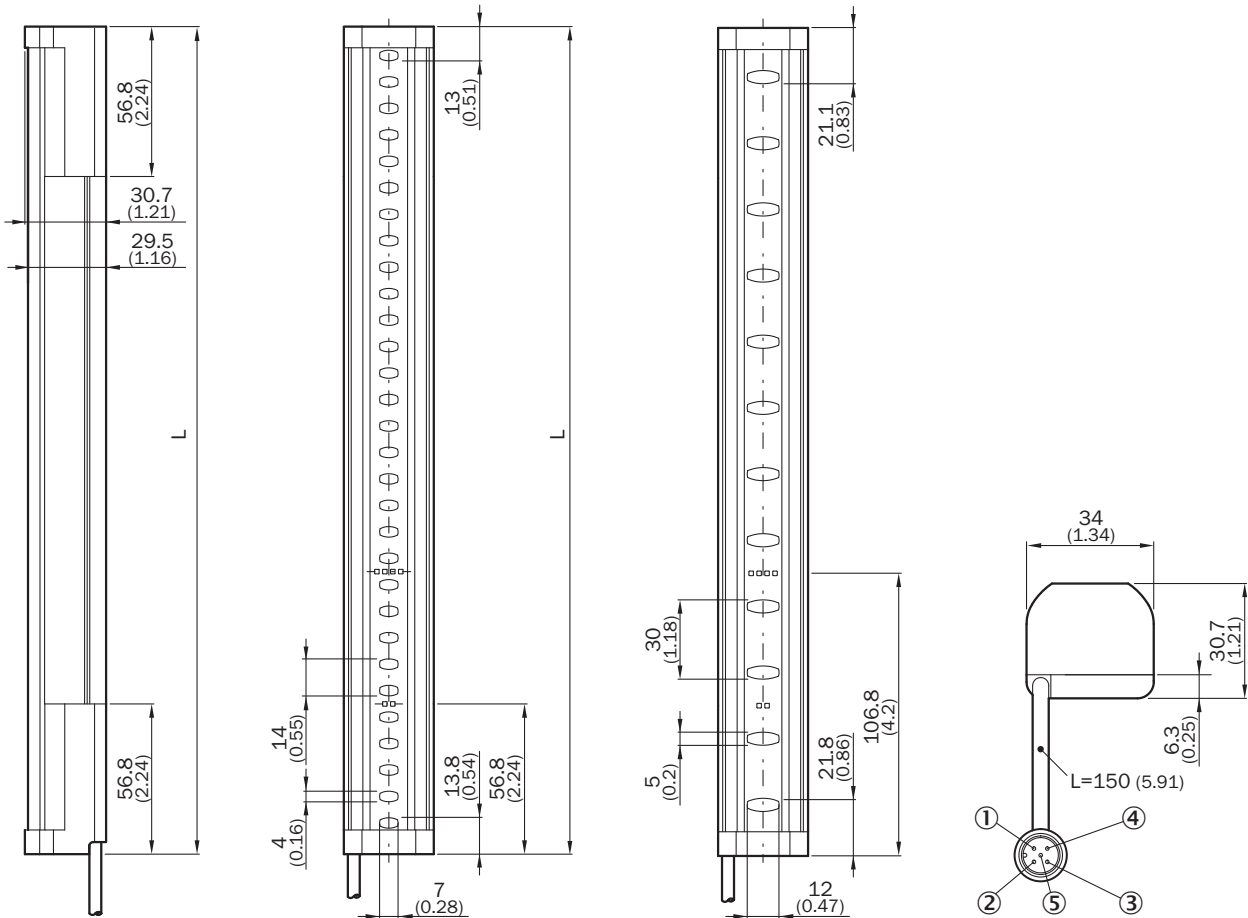
## Classifications

<b>ECl@ss 5.0</b>	27272704
<b>ECl@ss 5.1.4</b>	27272704
<b>ECl@ss 6.0</b>	27272704
<b>ECl@ss 6.2</b>	27272704
<b>ECl@ss 7.0</b>	27272704
<b>ECl@ss 8.0</b>	27272704
<b>ECl@ss 8.1</b>	27272704
<b>ECl@ss 9.0</b>	27272704
<b>ETIM 5.0</b>	EC002549
<b>ETIM 6.0</b>	EC002549

UNSPSC 16.0901

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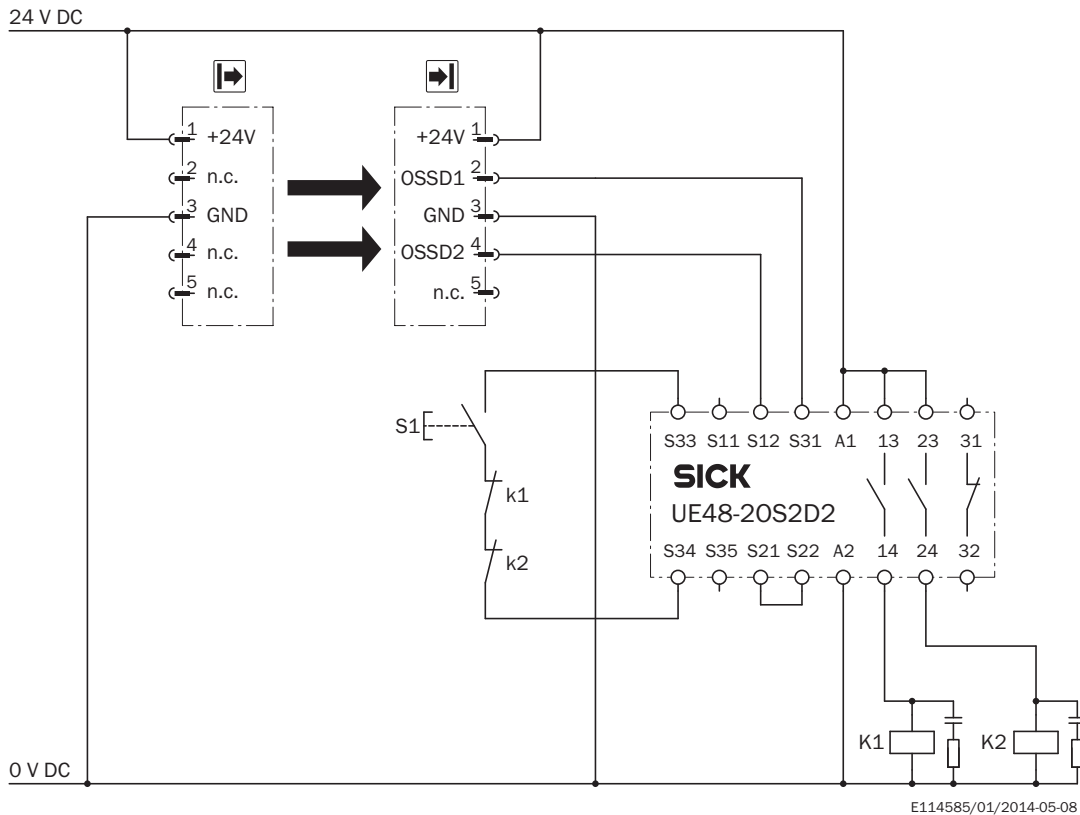
Dimensional drawing (Dimensions in mm (inch))



	L
300	313
450	463
600	613
750	763
900	913
1,050	1,063
1,200	1,213
1,350	1,362
1,500	1,512
1,650	1,662
1,800	1,812
1,950	1,962
2,100	2112

## Connection diagram

deTec4 Core 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

<sup>1)</sup> 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.

### Recommended accessories

Other models and accessories → [www.sick.com/deTec4\\_Core](http://www.sick.com/deTec4_Core)

	Brief description	Type	Part no.
<b>Device protection (mechanical)</b>			
	1 piece, self-adhesive protective film for the front screen (protects sensors from damage by flying sparks and welding beads)	Self-adhesive protective film	2069268
<b>Terminal and alignment brackets</b>			
	4 pieces, FlexFix bracket, plastic, can be aligned ± 15°, including screw M5, Plastic	BEF-1SHABPKU4	2066614
	2 pieces, QuickFix bracket, Plastic	BEF-3SHABPKU2	2066048
<b>Adapters and distributors</b>			
	CANopen, T-piece	DSC-1205T000025KM0	6030664
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: Power, I/O, drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-G02MC	6025906
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 5 m	DOL-1205-G05MC	6025907
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 10 m	DOL-1205-G10MC	6025908
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 20 m	DOL-1205-G20MC	6050247
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 30 m	DOL-1205-G30MC	6050248
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: Power, I/O, drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-W02MC	6025909
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 5 m	DOL-1205-W05MC	6025910
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 10 m	DOL-1205-W10MC	6025911
	Head A: female connector, M12, 5-pin, straight, A-coding Head B: male connector, M12, 5-pin, straight, A-coding Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 5 m	DSL-1205-G05MC	6029282
	Head A: female connector, M12, 5-pin, straight, A-coding Head B: male connector, M12, 5-pin, straight, A-coding Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 10 m	DSL-1205-G10MC	6038954
	Head A: female connector, M12, 5-pin, straight, A-coding Head B: male connector, M12, 5-pin, straight, A-coding Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 15 m	DSL-1205-G15MC	6038956

	Brief description	Type	Part no.
Alignment aids			
	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!	AR60	1015741
	Adapter AR60 for deTec4, deTec2 and MLG-2	AR60 adapter, deTec, MLG-2	4070854
Test and monitoring tools			
	14 mm diameter	Test rod 14 mm	2022599

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)