

SICK Sensor Intelligence.

**SAFETY LIGHT CURTAINS** 

SAFETY LIGHT CURTAINS



#### Ordering information

Note	Resolution	Scanning range	Protective field height	System part	Туре	Part no.
The system plug has to be ordered separately. For details, see "Acces- sories"., The system plug has to be or- dered sepa- rately. For de- tails, see "Ac- cessories".	14 mm	20 m	300 mm	Receiver	C4P- EX03011C00	1222449

The system plug has to be ordered separately. For details, see "Accessories".

Other models and accessories -> www.sick.com/deTec



#### Detailed technical data

#### Features

Sub product family	deTec4 Ex II 3GD
Application	Explosive areas
Ex-approvals	ATEX for gas: II 3G Ex ec op is IIC T4 Gc ATEX for dust: II 3D Ex tc IIIC T135°C Dc
System part	Receiver
Resolution	14 mm
Scanning range	20 m
Protective field height	300 mm
Response time	11 ms (Uncoded) 16 ms (code 1 or code 2)
No blind zones	Yes
Synchronization	Optical synchronisation
Items supplied	Receiver Test rod with diameter corresponding to the resolution of the safety light curtain "Notes for explosion protection" label(s) Safety instruction Mounting instructions Operating instructions for download

#### Safety-related parameters

Туре

Type 4 (IEC 61496-1)

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Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (ISO 13849-1)
Performance level	PL e (ISO 13849-1)
$\ensuremath{PFH}\xspace_D$ (mean probability of a dangerous failure per hour)	
Single device	15.3 x 10 <sup>-9</sup>
Cascade with one guest	30.5 x 10 <sup>-9</sup>
Cascade with two guest devices	45.6 x 10 <sup>-9</sup>
T <sub>M</sub> (mission time)	20 years (ISO 13849-1)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

#### Functions

Protective operation	✓
Automatic calibration of the protective field width	<ul> <li>Image: A start of the start of</li></ul>
Beam coding	✓
Restart interlock	✓
External device monitoring (EDM)	✓
Cascading	✓
Smart presence detection	✓
Reduced resolution	✓
Dynamic protective field width during oper- ation	✓
Differentiation between person and materi- al	
2-signal muting	✓
Smart Box Detection	✓

#### Interfaces

System connection	Depending on system plug (M12 male connector, 5-pin or 8-pin)		
Extension connection	Depending on system plug (without extension connection or with M12 female connector, 5-pin) $$		
Configuration method	DIP switch on system plug		
Display elements	LEDs		
Display of the synchronization status of the upper and lower beams	✓		
Application diagnostic output (ADO)	✓		
IO-Link	✓		
Near Field Communication (NFC)	✓		

#### Electrical data

Protection class	III (IEC 61140)
Supply voltage V <sub>S</sub>	24 V DC (19.2 V 28.8 V)
Ripple	≤ 10 %
Power consumption typical	3.43 W (DC)

 $^{1)}\ensuremath{\,\text{Applies}}$  to the voltage range between –30 V and +30 V.

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Output signal switching devices (OSSDs)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored $^{1)} \label{eq:product}$
ON state, switching voltage HIGH	24 V DC (V <sub>S</sub> - 2.25 V DC V <sub>S</sub> )
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 500 mA
Application diagnostic output (ADO)	
Type of output	PNP semiconductor, short-circuit protected <sup>1)</sup>
Output voltage HIGH (active)	$\geq$ V <sub>s</sub> – 3 V
Output voltage LOW (deactivated)	High resistance
Output current HIGH (active)	≤ 100 mA

 $^{1)}\ensuremath{\,\text{Applies}}$  to the voltage range between –30 V and +30 V.

#### Mechanical data

Dimensions	See dimensional drawing
Housing material	Aluminum extruded profile

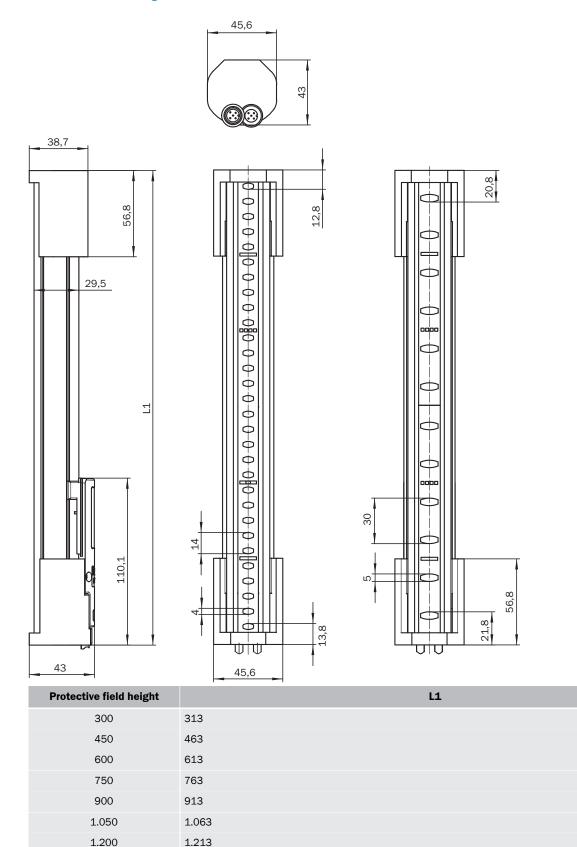
#### Ambient data

Enclosure rating	IP65 (IEC 60529)
Ambient operating temperature	0 °C +55 °C
Storage temperature	-30 °C +70 °C
Air humidity	15 % 95 %, Non-condensing
Vibration resistance	5 g, 10 Hz 55 Hz (IEC 60068-2-6)
Shock resistance	10 g, 16 ms (IEC 60068-2-27)

#### Classifications

ECLASS 5.0	27272704
ECLASS 5.1.4	27272704
ECLASS 6.0	27272704
ECLASS 6.2	27272704
ECLASS 7.0	27272704
ECLASS 8.0	27272704
ECLASS 8.1	27272704
ECLASS 9.0	27272704
ECLASS 10.0	27272704
ECLASS 11.0	27272704
ECLASS 12.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
UNSPSC 16.0901	46171620

Dimensional drawing (Dimensions in mm (inch))



1.350

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Protective field height	L1
1.500	1.512
1.650	1.662
1.800	1.812
1.950	1.962
2.100	2.112

#### Recommended accessories

Other models and accessories -> www.sick.com/deTec

	Brief description	Туре	Part no.	
Connection modules				
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A $$	IOLA2US-01101 (SiLink2 Master)	1061790	
	Connector for connecting an IO-Link master and up to 2 muting sensors to a safety light curtain or a multiple light beam safety device	IO-Link connector	2092757	
	Connector for connecting 2 muting sensors and a muting lamp to a safety light curtain or a multiple light beam safety device	Muting connector	2092758	
Alignment aid	s			
Ŵ	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!, 19 mm x 67.3 mm x 66.9 mm	AR60	1015741	
Muting access	sories			
	Sensor bracket G6 and P250	BEF-2KHAAAKU1	2113145	
	Universal holder for round steel arms and muting arms, for mounting sensors or reflec- tors	BEF-KHS-N01	2044953	
	Muting arm bracket for deTec safety light curtain or deTem safety multibeam sensor	Muting arm bracket	2106455	
	Muting arm, long	Muting arm, long	2111923	
	Muting arm, short	Muting arm, short	2111924	
Test and monitoring tools				
C	14 mm diameter, 250 mm length	Test rod 14 mm	2022599	
	24 mm diameter, 250 mm length	Test rod 24 mm	2045592	
	34 mm diameter, 250 mm length	Test rod 34 mm	2045593	

	Brief description	Туре	Part no.			
Reflectors						
	Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mount- ing	P250	5304812			
Terminal and	Terminal and alignment brackets					
R	4 pieces, FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned $\pm15^\circ$ , including M5 screw, plastic	BEF-1SHABPKU4	2066614			
198	4 pieces, QuickFix bracket for 2 devices (e.g. sender and receiver), plastic	BEF-3SHABPKU4	2098710			
ð.,	<ul> <li>Connection type head A: Female connector, M12, 5-pin, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, A-coded</li> <li>Connection type head C: Female connector, M12, 5-pin, A-coded</li> <li>Description: T-piece for simultaneous connection to sender and receiver, splits the cable from the control cabinet to the sender and receiver</li> <li>Note: 5-pin</li> </ul>	DSC- 1205T000025KM0	6030664			
<b>A</b>	<ul> <li>Connection type head A: Female connector, M12, 8-pin, A-coded</li> <li>Connection type head B: Female connector, M12, 8-pin, A-coded</li> <li>Connection type head C: Male connector, M12, 8-pin, A-coded</li> <li>Description: T-distributor for simultaneous connection to sender and receiver, splits the cable from the control cabinet between the sender and receiver</li> <li>Note: 8-pin</li> </ul>	DSC- 1208T000025KM0	6058647			
10 10	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 020UB5M2A15	2096009			
100	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 050UB5M2A15	2096010			
100	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 100UB5M2A15	2096011			
Ro Ro	<ul> <li>Connection type head A: Female connector, M12, 8-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 8-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 8-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A18- 020UA5M2A18	2096033			
8.8.	<ul> <li>Connection type head A: Female connector, M12, 8-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 8-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 8-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A18- 050UA5M2A18	2096034			

	Brief description	Туре	Part no.
R. R.	<ul> <li>Connection type head A: Female connector, M12, 8-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 8-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 8-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A18- 100UA5M2A18	2096035
1	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 020UB5XLEAX	2095617
1	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 050UB5XLEAX	2095618
1	<ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A15- 100UB5XLEAX	2095619
×.	<ul> <li>Connection type head A: Female connector, M12, 8-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 8-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A18- 050UA5XLEAX	2095653
×.	<ul> <li>Connection type head A: Female connector, M12, 8-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 8-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A18- 100UA5XLEAX	2095654
×.	<ul> <li>Connection type head A: Female connector, M12, 8-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 8-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A18- 020UA5XLEAX	2095652
Photoelectric	sensors		
	<ul> <li>Sensing range max.: 0.15 m 12 m0.15 m 10 m</li> <li>Functional principle: Photoelectric retro-reflective sensor</li> <li>Functional principle detail: With minimum distance to reflector (dual lens system)</li> <li>Switching output: PNP</li> <li>Switching mode: Light/dark switching</li> <li>Connection type: Male connector M12, 4-pin</li> <li>Light source: PinPoint LED</li> <li>Adjustment: None</li> </ul>	GL10-P4151	1069860
Ĩ	<ul> <li>Sensing range max.: 0.03 m 6 m</li> <li>Functional principle: Photoelectric retro-reflective sensor</li> <li>Connection type: Cable with M12 male connector, 4-pin</li> <li>Type of light: Visible red light</li> <li>Adjustment: Potentiometer</li> <li>Housing: Rectangular</li> </ul>	GL6-P0211S49	1070568

• Functional principle: Photoelectric proximity sensor • Functional principle detail: Background suppression • Switching output: PNP • Switching mode: Light switching • Connection type: Male connector M12, 4-pin • Light source: PinPoint LED • Adjustment: Potentiometer • Adjustment: Potentiometer • Functional principle: Photoelectric proximity sensor • Connection type: Cable with M12 male connector, 4-pin, 300 mm • Type of light: Infrared light • Adjustment: Potentiometer • Housing: RectangularGTB6-P7441S56 (Connection type: Cable with M12 male connector, 4-pin, 300 mm • Type of light: Infrared light • Adjustment: Potentiometer • Housing: RectangularRLY3-OSSD10010Safety switchire • Connection type: Front connector with spring terminals • Connection type: Front connector with spring terminals • Restart interlock: no • External device monitoring (EDM): Via pathRLY3-OSSD10010	066852				
• Functional principle: Photoelectric proximity sensor       • Connection type: Cable with M12 male connector, 4-pin, 300 mm         • Type of light: Infrared light       • Adjustment: Potentiometer         • Housing: Rectangular       • Housing: Rectangular         Safety switching amplifier       • Applications: Output expansion module for OSSDs         • Connection type: Front connector with spring terminals       RLY3-OSSD100         • Restart interlock: no       • External device monitoring (EDM): Via path					
Applications: Output expansion module for OSSDs     Compatible sensor types: Safety sensors with OSSDs     Connection type: Front connector with spring terminals     Restart interlock: no     External device monitoring (EDM): Via path	85343				
Compatible sensor types: Safety sensors with OSSDs     Connection type: Front connector with spring terminals     Restart interlock: no     External device monitoring (EDM): Via path	85343				
<ul> <li>Outputs: 2 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe)</li> <li>Housing width: 18 mm</li> </ul>					
<ul> <li>Applications: Output expansion module for OSSDs</li> <li>Compatible sensor types: Safety sensors with OSSDs</li> <li>Connection type: Front connector with spring terminals</li> <li>Restart interlock: no</li> <li>External device monitoring (EDM): Via path</li> <li>Outputs: 4 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe), 1 signaling current path (not safe)</li> <li>Housing width: 28 mm</li> </ul>	99971				
SP1 system plug					
• System plug: SP1       SP1-1000       20         • Connection type: Male connector M12, 5-pin       Extension connection: -       20	76832				
• System plug: SP1       SP1-1100       20         • Connection type: Male connector M12, 5-pin       Extension connection: Female connector M12, 5-pin       SP1-1100       20	76833				
• System plug: SP1       SP1-1200       20         • Connection type: Male connector M12, 8-pin       Extension connection: -       20	076834				
• System plug: SP1       SP1-1300       20         • Connection type: Male connector M12, 8-pin       Extension connection: Female connector M12, 5-pin       SP1-1300       20	76835				
SP2 system plug					
• System plug: SP2 • Connection type: Male connector M12, 5-pin • Extension connection: -	93097				
• System plug: SP2       SP2-2100       20         • Connection type: Male connector M12, 5-pin       Extension connection: Female connector M12, 5-pin       20	93098				
• System plug: SP2 • Connection type: Male connector M12, 8-pin • Extension connection: -	93099				

	Brief description	Туре	Part no.			
	<ul> <li>System plug: SP2</li> <li>Connection type: Male connector M12, 8-pin</li> <li>Extension connection: Female connector M12, 5-pin</li> </ul>	SP2-2300	2093100			
Sensor Integra	Sensor Integration Gateway					
0	<ul> <li>Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions</li> <li>Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A)</li> <li>Logic editor: yes</li> <li>Communication interface: IO-Link, USB, Ethernet, PROFINET, REST API</li> <li>Product category: IO-Link Master</li> </ul>	SIG200-0A0412200	1089794			
	<ul> <li>Description: The SIG200 Sensor Integration Gateway is an IO-Link master with 4 configurable ports through which the IO-Link devices or standard inputs or standard outputs can be connected to a PLC or cloud application using the REST API.</li> <li>Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions</li> <li>Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A)</li> <li>Logic editor: yes</li> <li>Communication interface: IO-Link, USB, Ethernet, EtherNet/IP™, REST API</li> <li>Product category: IO-Link Master</li> </ul>	SIG200-0A0512200	1089796			
	<ul> <li>Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions</li> <li>Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A)</li> <li>Logic editor: yes</li> <li>Communication interface: IO-Link, USB, Ethernet, REST API</li> <li>Product category: IO-Link Master</li> </ul>	SIG200-0A0G12200	1102605			

## 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



Online data sheet

