



# C4P-EA12031C00

deTec

**SAFETY LIGHT CURTAINS**

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

Note	Resolution	Scanning range	Protective field height	System part	Type	Part no.
The system plug has to be ordered separately. For details, see "Accessories". The system plug has to be ordered separately. For details, see "Accessories".	30 mm	30 m	1,200 mm	Receiver	C4P-EA12031C00	1220143

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

Other models and accessories → [www.sick.com/deTec](http://www.sick.com/deTec)



## Detailed technical data

### Features

<b>Product version</b>	deTec4
<b>Application</b>	Normal industrial environment
<b>System part</b>	Receiver
<b>Resolution</b>	30 mm
<b>Scanning range</b>	30 m
<b>Protective field height</b>	1,200 mm
<b>Response time</b>	12 ms (Uncoded) 20 ms (code 1 or code 2)
<b>No blind zones</b>	Yes
<b>Synchronization</b>	Optical synchronization
<b>Items supplied</b>	Receiver Test rod with diameter corresponding to the resolution of the safety light curtain Safety instruction Mounting instructions Operating instructions for download

### Safety-related parameters

<b>Type</b>	Type 4 (IEC 61496-1)
<b>Safety integrity level</b>	SIL 3 (IEC 61508)
<b>Category</b>	Category 4 (ISO 13849-1)
<b>Performance level</b>	PL e (ISO 13849-1)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	

Single device	$15.3 \times 10^{-9}$
Cascade with one guest	$30.5 \times 10^{-9}$
Cascade with two guest devices	$45.6 \times 10^{-9}$
<b>T<sub>M</sub> (mission time)</b>	20 years (ISO 13849-1)
<b>Safe state in the event of a fault</b>	At least one OSSD is in the OFF state.

## Functions

<b>Protective operation</b>	✓
<b>Automatic calibration of the protective field width</b>	✓
<b>Beam coding</b>	✓
<b>Restart interlock</b>	✓
<b>External device monitoring (EDM)</b>	✓
<b>Cascading</b>	✓
<b>Smart presence detection</b>	✓
<b>Reduced resolution</b>	✓
<b>Dynamic protective field width during operation</b>	✓
<b>Differentiation between person and material</b>	
2-signal muting	✓

## Interfaces

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

## Electronics

<b>Protection class</b>	III (IEC 61140)
<b>Supply voltage V<sub>S</sub></b>	24 V DC (19.2 V ... 28.8 V)
<b>Ripple</b>	≤ 10 %
<b>Power consumption typical</b>	3.63 W (DC)
<b>Output signal switching devices (OSSDs)</b>	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored <sup>1)</sup>
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

<sup>1)</sup> Applies to the voltage range between –30 V and +30 V.

Application diagnostic output (ADO)	
Type of output	PNP semiconductor, short-circuit protected <sup>1)</sup>
Output voltage HIGH (active)	$\geq V_s - 3 \text{ V}$
Output voltage LOW (deactivated)	High resistance
Output current HIGH (active)	$\leq 100 \text{ mA}$

<sup>1)</sup> Applies to the voltage range between -30 V and +30 V.

## Mechanics

<b>Dimensions</b>	See dimensional drawing
<b>Housing material</b>	Aluminum extruded profile

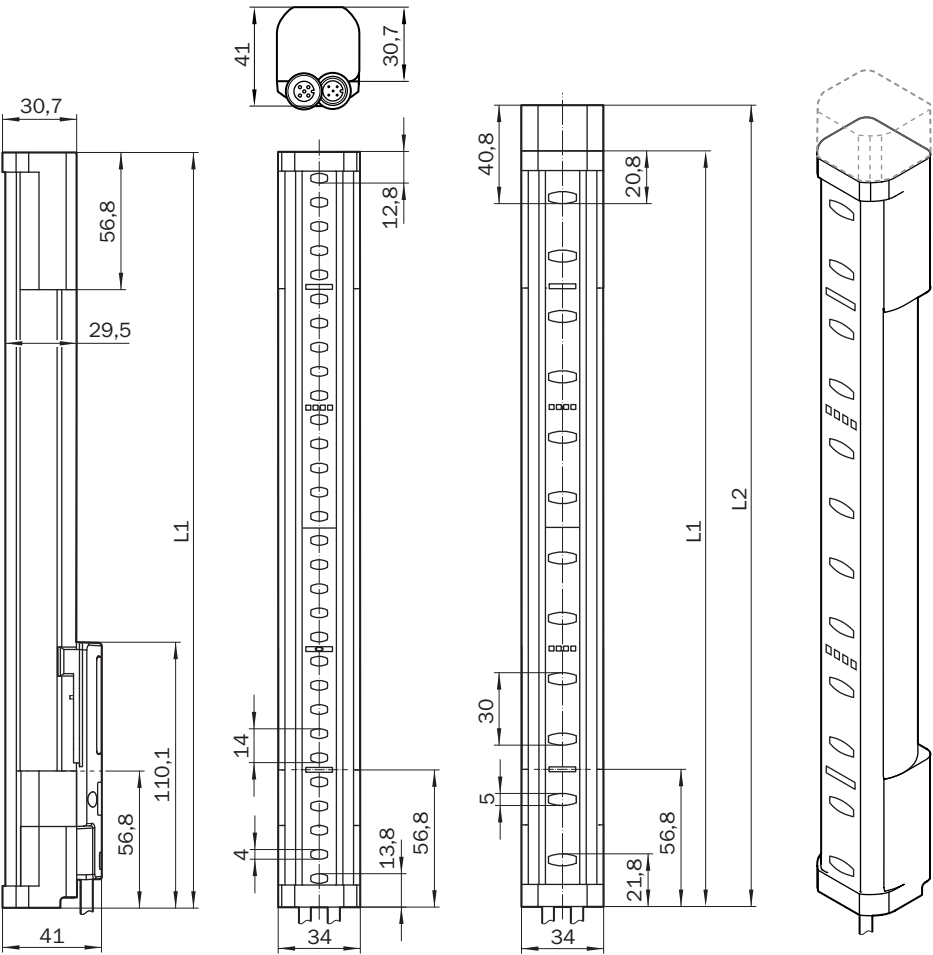
## Ambient data

<b>Enclosure rating</b>	IP65 (IEC 60529) IP67 (IEC 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 ... 150 Hz, 3,5 mm / 1 g (EN 60068-2-6)
<b>Shock resistance</b>	15 g / 6 ms (EN 60068-2-27)
<b>Class</b>	3M4 (IEC TR 60721-4-3)

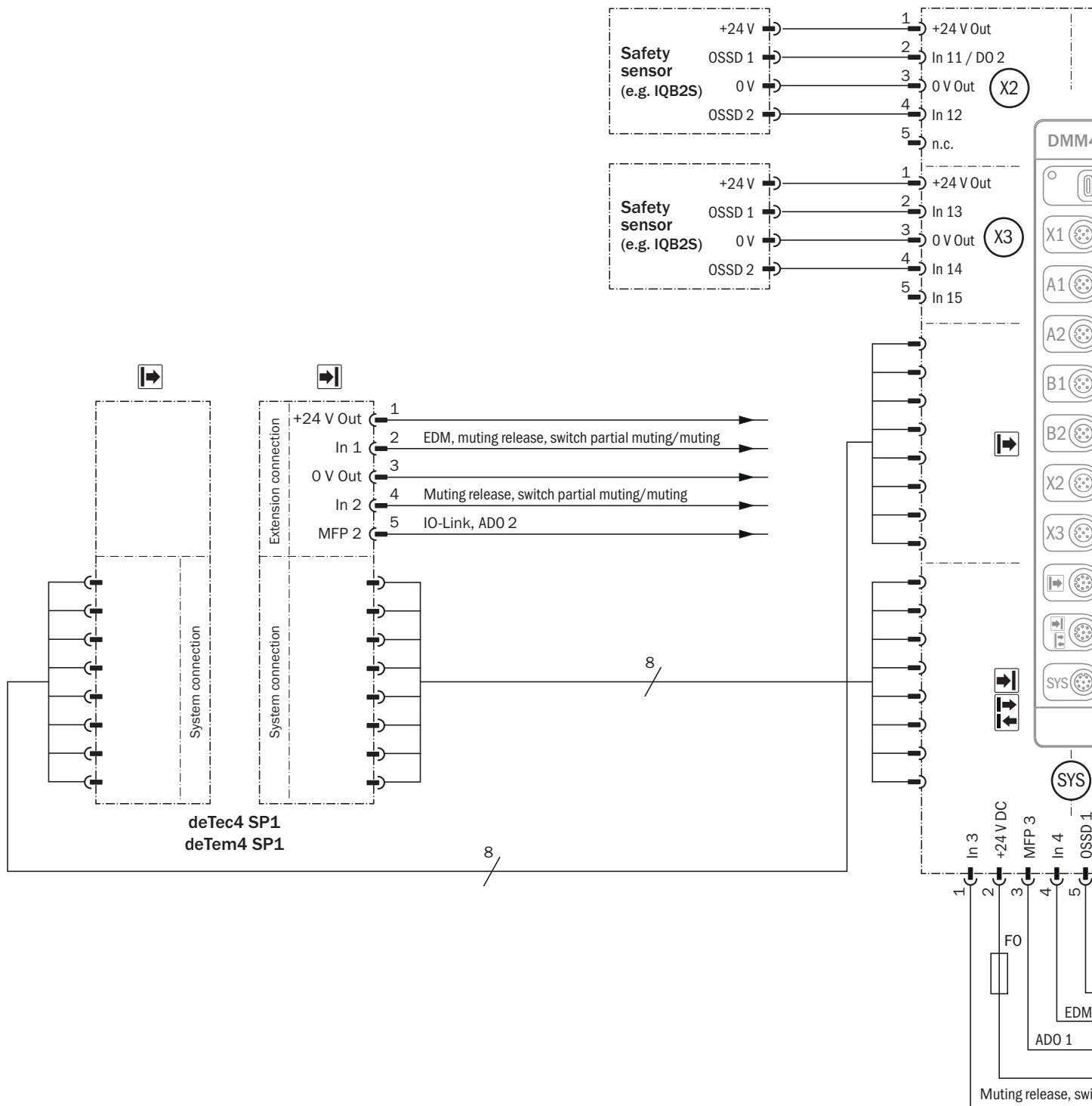
## Classifications

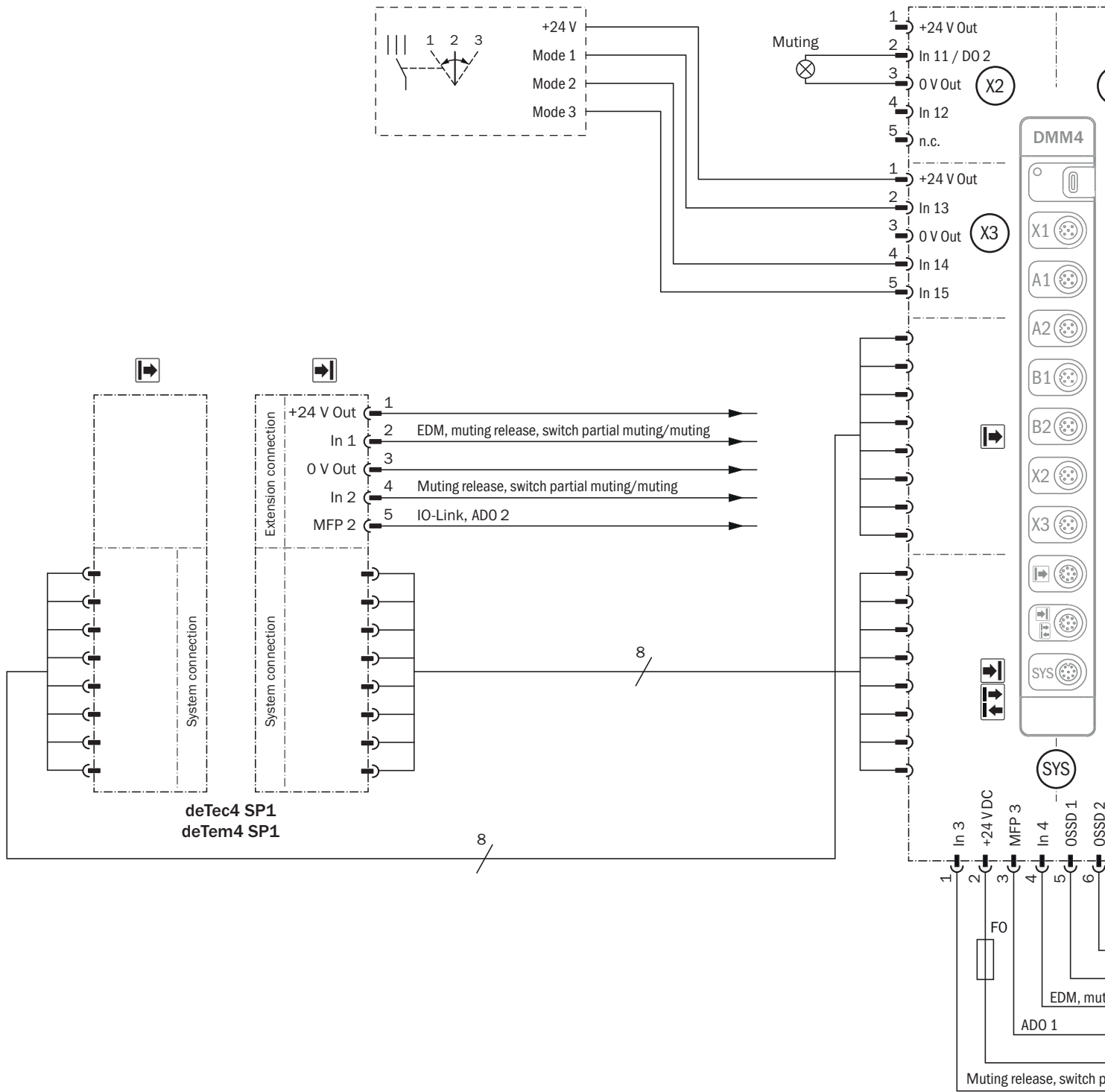
<b>ECLASS 5.0</b>	27272704
<b>ECLASS 5.1.4</b>	27272704
<b>ECLASS 6.0</b>	27272704
<b>ECLASS 6.2</b>	27272704
<b>ECLASS 7.0</b>	27272704
<b>ECLASS 8.0</b>	27272704
<b>ECLASS 8.1</b>	27272704
<b>ECLASS 9.0</b>	27272704
<b>ECLASS 10.0</b>	27272704
<b>ECLASS 11.0</b>	27272704
<b>ECLASS 12.0</b>	27272704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

Dimensional drawing (Dimensions in mm (inch))



## Connection diagram





## Recommended accessories

Other models and accessories → [www.sick.com/deTec](http://www.sick.com/deTec)

	Brief description	Type	Part no.
Connection modules			
	IOLA2US-01101 (SiLink2 Master)	IOLA2US-01101 (SiLink2 Master)	1061790
	<ul style="list-style-type: none"> <li><b>Description:</b> 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</li> </ul>	IO-Link connector	2092757
	<ul style="list-style-type: none"> <li><b>Description:</b> Connector for connecting 2 muting sensors and a muting lamp to a safety light curtain or a multiple light beam safety device</li> </ul>	Muting connector	2092758
Terminal and alignment brackets			
	<ul style="list-style-type: none"> <li><b>Description:</b> FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned <math>\pm 15^\circ</math>, including M5 screw</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>	BEF-1SHABPKU4	2066614
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor bracket G6 and P250</li> </ul>	BEF-2KHAAKU1	2113145
	<ul style="list-style-type: none"> <li><b>Description:</b> QuickFix bracket for 2 devices (e.g. sender and receiver)</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>	BEF-3SHABPKU4	2098710
	<ul style="list-style-type: none"> <li><b>Description:</b> Universal holder for round steel arms and muting arms, for mounting sensors or reflectors</li> </ul>	BEF-KHS-N01	2044953
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, A-coded</li> <li><b>Connection type head C:</b> Female connector, M12, 5-pin, A-coded</li> <li><b>Description:</b> T-piece for simultaneous connection to sender and receiver, splits the cable from the control cabinet to the sender and receiver</li> <li><b>Note:</b> 5-pin</li> </ul>	DSC-1205T000025KM0	6030664
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP1</li> <li><b>System connection:</b> Male connector M12, 5-pin</li> <li><b>Extension connection:</b> Without extension connection</li> </ul>	SP1-1000	2076832
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP1</li> <li><b>System connection:</b> Male connector M12, 5-pin</li> <li><b>Extension connection:</b> Female connector M12, 5-pin</li> </ul>	SP1-1100	2076833
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP1</li> <li><b>System connection:</b> Male connector M12, 8-pin</li> <li><b>Extension connection:</b> Without extension connection</li> </ul>	SP1-1200	2076834
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP1</li> <li><b>System connection:</b> Male connector M12, 8-pin</li> <li><b>Extension connection:</b> Female connector M12, 5-pin</li> </ul>	SP1-1300	2076835
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, A-coded</li> <li><b>Connection type head B:</b> Female connector, M12, 8-pin, A-coded</li> <li><b>Connection type head C:</b> Male connector, M12, 8-pin, A-coded</li> <li><b>Description:</b> T-distributor for simultaneous connection to sender and receiver, splits the cable from the control cabinet between the sender and receiver</li> <li><b>Note:</b> 8-pin</li> </ul>	DSC-1208T000025KM0	6058647



	Brief description	Type	Part no.
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-020UB5XLEAX	2095617
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-050UB5XLEAX	2095618
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-100UB5XLEAX	2095619
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-050UA5XLEAX	2095653
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-100UA5XLEAX	2095654
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-020UB5M2A15	2096009
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-050UB5M2A15	2096010
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-100UB5M2A15	2096011

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-020UA5M2A18	2096033
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-050UA5M2A18	2096034
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-100UA5M2A18	2096035
	<ul style="list-style-type: none"> <li><b>Product family:</b> Muting arms</li> <li><b>Description:</b> Muting arm bracket for deTec safety light curtain or deTem safety multi-beam sensor</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> deTec, deTem</li> </ul>	Muting arm bracket	2106455
	<ul style="list-style-type: none"> <li><b>Product family:</b> Muting arms</li> <li><b>Description:</b> Muting arm, short</li> <li><b>Suitable for:</b> deTec, deTem</li> </ul>	Muting arm, short	2111924
	<ul style="list-style-type: none"> <li><b>Product family:</b> Muting arms</li> <li><b>Description:</b> Muting arm, long</li> <li><b>Suitable for:</b> deTec, deTem</li> </ul>	Muting arm, long	2111923
	<ul style="list-style-type: none"> <li><b>Description:</b> Rectangular, screw connection</li> <li><b>Dimensions:</b> 51 mm 61 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>	P250	5304812
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A18-020UA5XLEAX	2095652
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP2</li> <li><b>System connection:</b> Male connector M12, 5-pin</li> <li><b>Extension connection:</b> Without extension connection</li> </ul>	SP2-2000	2093097
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP2</li> <li><b>System connection:</b> Male connector M12, 5-pin</li> <li><b>Extension connection:</b> Female connector M12, 5-pin</li> </ul>	SP2-2100	2093098
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP2</li> <li><b>System connection:</b> Male connector M12, 8-pin</li> <li><b>Extension connection:</b> Without extension connection</li> </ul>	SP2-2200	2093099
	<ul style="list-style-type: none"> <li><b>Function range:</b> SP2</li> <li><b>System connection:</b> Male connector M12, 8-pin</li> <li><b>Extension connection:</b> Female connector M12, 5-pin</li> </ul>	SP2-2300	2093100

	Brief description	Type	Part no.
Photoelectric sensors			
	<ul style="list-style-type: none"> <li>• <b>Sensing range max.:</b> 0.15 m ... 12 m0.15 m ... 10 m</li> <li>• <b>Functional principle:</b> Photoelectric retro-reflective sensor</li> <li>• <b>Functional principle detail:</b> With minimum distance to reflector (dual lens system)</li> <li>• <b>Switching output:</b> PNP</li> <li>• <b>Switching mode:</b> Light/dark switching</li> <li>• <b>Connection type:</b> Male connector M12, 4-pin</li> <li>• <b>Light source:</b> PinPoint LED</li> <li>• <b>Adjustment:</b> None</li> </ul>	GL10-P4151	1069860
	<ul style="list-style-type: none"> <li>• <b>Sensing range max.:</b> 0.03 m ... 6 m</li> <li>• <b>Functional principle:</b> Photoelectric retro-reflective sensor</li> <li>• <b>Connection type:</b> Cable with M12 male connector, 4-pin</li> <li>• <b>Type of light:</b> Visible red light</li> <li>• <b>Adjustment:</b> Potentiometer</li> <li>• <b>Housing:</b> Rectangular</li> </ul>	GL6-P0211S49	1070568
	<ul style="list-style-type: none"> <li>• <b>Sensing range max.:</b> 20 mm ... 950 mm</li> <li>• <b>Functional principle:</b> Photoelectric proximity sensor</li> <li>• <b>Functional principle detail:</b> Background suppression</li> <li>• <b>Switching output:</b> PNP</li> <li>• <b>Switching mode:</b> Light switching</li> <li>• <b>Connection type:</b> Male connector M12, 4-pin</li> <li>• <b>Light source:</b> PinPoint LED</li> <li>• <b>Adjustment:</b> Potentiometer</li> </ul>	GTB10-P4411S01	1066852
	<ul style="list-style-type: none"> <li>• <b>Sensing range max.:</b> 5 mm ... 500 mm</li> <li>• <b>Functional principle:</b> Photoelectric proximity sensor</li> <li>• <b>Connection type:</b> Cable with M12 male connector, 4-pin, 300 mm</li> <li>• <b>Type of light:</b> Infrared light</li> <li>• <b>Adjustment:</b> Potentiometer</li> <li>• <b>Housing:</b> Rectangular</li> </ul>	GTB6-P7441S56	1077541
Safety switching amplifier			
	<ul style="list-style-type: none"> <li>• <b>Applications:</b> Output expansion module for OSSDs</li> <li>• <b>Compatible sensor types:</b> Safety sensors with OSSDs</li> <li>• <b>Connection type:</b> Front connector with spring terminals</li> <li>• <b>Restart interlock:</b> no</li> <li>• <b>External device monitoring (EDM):</b> Via path</li> <li>• <b>Outputs:</b> 2 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe)</li> <li>• <b>Housing width:</b> 18 mm</li> </ul>	RLY3-OSSD100	1085343
	<ul style="list-style-type: none"> <li>• <b>Applications:</b> Output expansion module for OSSDs</li> <li>• <b>Compatible sensor types:</b> Safety sensors with OSSDs</li> <li>• <b>Connection type:</b> Front connector with spring terminals</li> <li>• <b>Restart interlock:</b> no</li> <li>• <b>External device monitoring (EDM):</b> Via path</li> <li>• <b>Outputs:</b> 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>• <b>Housing width:</b> 28 mm</li> </ul>	RLY3-OSSD400	1099971

## 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)