



# C4C-SA18010A10000, C4C-EA18010A10000

deTec

SAFETY LIGHT CURTAINS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

System part	Type	Part no.
Sender	C4C-SA18010A10000	1211486
Receiver	C4C-EA18010A10000	1211487

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

### Detailed technical data

#### Features

<b>Application</b>	Normal industrial environment
<b>System part</b>	Pair
<b>Compatible sender</b>	1211486
<b>Compatible receiver</b>	1211487
<b>Resolution</b>	14 mm
<b>Scanning range</b>	10 m
<b>Protective field height</b>	1,800 mm
<b>Response time</b>	20 ms
<b>No blind zones</b>	Yes
<b>Synchronization</b>	Optical synchronisation
<b>Items supplied</b>	Sender 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>	SIL3 (IEC 61508) SILCL3 (IEC 62061)
<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>	$3.7 \times 10^{-9}$
<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>	✓

## Interfaces

<b>System connection</b>	Male connector M12, 5-pin
<b>Display elements</b>	LEDs
<b>Fieldbus, industrial network</b> Integration via Flexi Soft safety controller	CANopen <sup>1)</sup> DeviceNet™ EtherCAT® EtherNet/IP™ Modbus TCP PROFIBUS DP PROFINET

<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 (IEC 61140)
<b>Supply voltage <math>V_S</math></b>	24 V DC (19.2 V ... 28.8 V)
<b>Ripple</b>	≤ 10 %
<b>Power consumption typical</b>	4.32 W (DC) / 2.16 W (DC) (depending on type)
<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 ( $V_S - 2.25$ V DC ... $V_S$ )
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 300 mA

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

## Mechanical data

<b>Dimensions</b>	See dimensional drawing
<b>Housing material</b>	Aluminum extruded profile
<b>Bending radius</b>	
Stationary position	> 12 x cable diameter
Flexible use	> 15 x cable diameter

## 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 g, 10 Hz ... 55 Hz (IEC 60068-2-6)
<b>Shock resistance</b>	10 g, 16 ms (IEC 60068-2-27)

## Other information

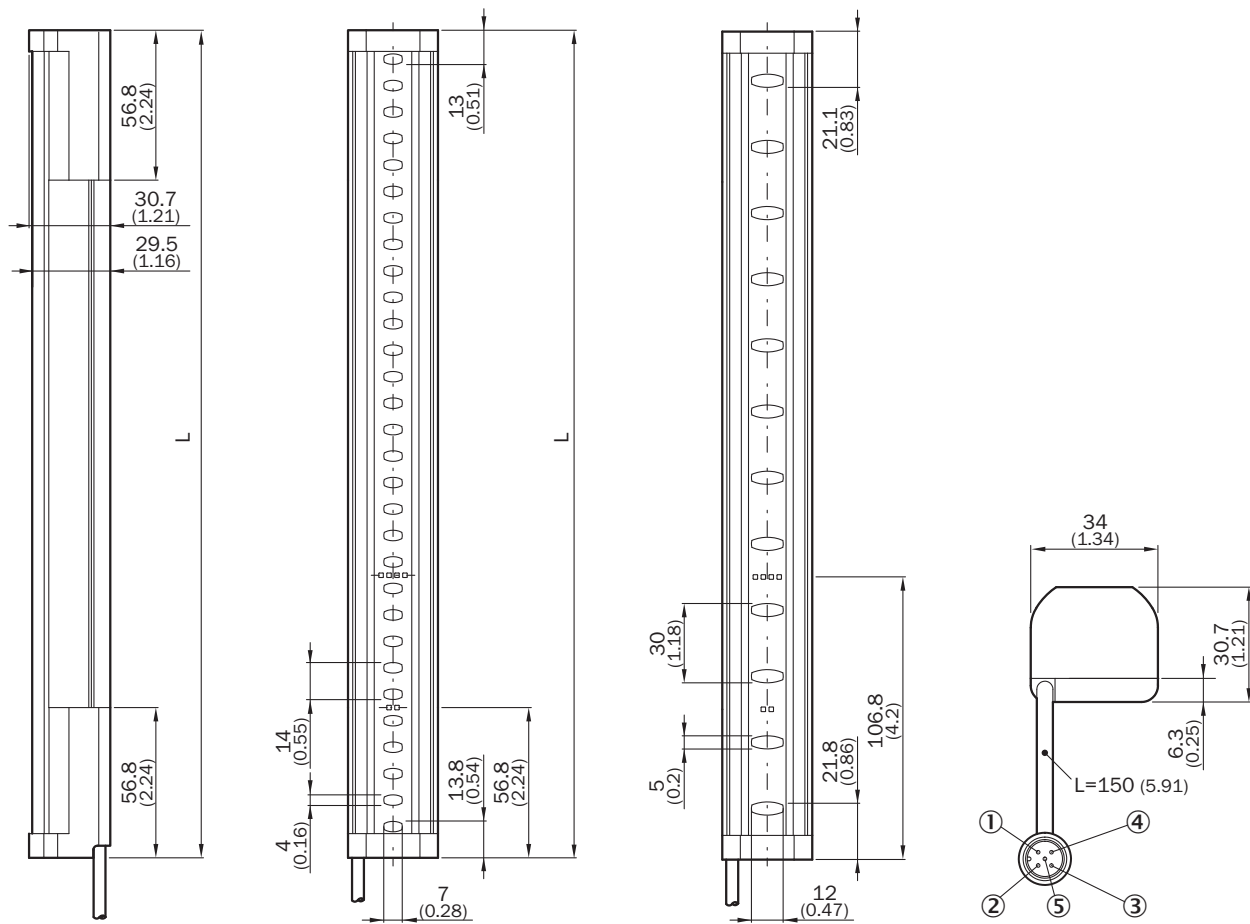
<b>Wave length</b>	850 nm
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<b>Type of light</b>	Near-infrared (NIR), invisible
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## Classifications

<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>ECl@ss 10.0</b>	27272704
<b>ECl@ss 11.0</b>	27272704
<b>ETIM 5.0</b>	EC002549
<b>ETIM 6.0</b>	EC002549
<b>ETIM 7.0</b>	EC002549
<b>UNSPSC 16.0901</b>	46171620

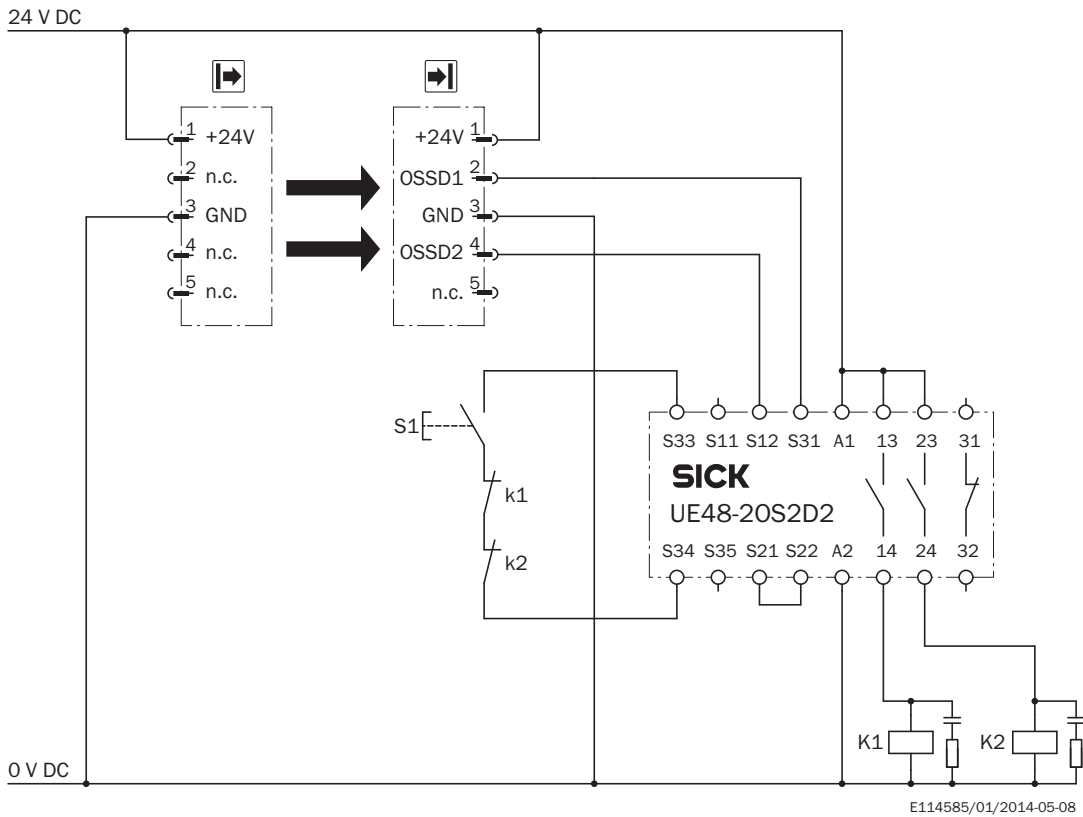
Dimensional drawing (Dimensions in mm (inch))



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 diagram

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



#### Task

Connection of a deTec4 Core safety light curtain to a UE48-20S.

Operating mode: With restart interlock and external device monitoring

#### Mode of operation

When the light path is clear, the OSSD1 and OSSD2 outputs carry voltage. When K1 and K2 are in a fault-free de-energized position, the system can be switched on and waits for an input signal/switch-on signal. The UE48-20S is switched on by pressing and then releasing the S1 pushbutton. The outputs (contacts 13 - 14 and 23 - 24) switch the K1 and K2 contactors on. When one or more light beams are interrupted, the OSSD1 and OSSD2 outputs switch off the UE48-20S. Contactors K1 and K2 are switched off.

#### Fault analysis





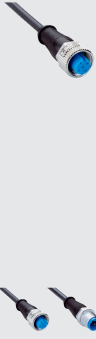
Cross-circuits and short-circuits of the OSSDs are recognized and lead to the locking state (lock-out). A malfunction with one of the K1 or K2 contactors is detected. The shut-down function is retained. In the event of manipulation (e.g., jamming) of the S1 pushbutton, the UE48-20S will not re-enable the output current circuits.

#### Comments

<sup>1)</sup> Output circuits: These contacts must be incorporated into the control such that the dangerous state is brought to an end if the output circuit is open. For categories 4 and 3, they must be incorporated on two channels (x, y paths). Single-channel incorporation into the control (z path) is only possible with a single-channel control and taking the risk analysis into account.

## Recommended accessories

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

	Brief description	Type	Part no.
<b>Terminal and alignment brackets</b>			
	4 pieces, FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned ± 15°, including M5 screw, plastic	BEF-1SHABPKU4	2066614
	4 pieces, QuickFix bracket for 2 devices (e.g. sender and receiver), plastic	BEF-3SHABPKU4	2098710
<b>Test and monitoring tools</b>			
	14 mm diameter	Test rod 14 mm	2022599
<b>Distributors</b>			
	Head A: female connector, M12, 5-pin, A-coded Head B: male connector, M12, 5-pin, A-coded 5-pin	DSC-1205T000025KM0	6030664
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A15-020UB5XLEAX	2095617
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A15-050UB5XLEAX	2095618
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 10 m	YF2A15-100UB5XLEAX	2095619
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A15-020UB5M2A15	2096009
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A15-050UB5M2A15	2096010
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 10 m	YF2A15-100UB5M2A15	2096011

## 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)