

# C40S-0901CA010

C4000 Standard

**SAFETY LIGHT CURTAINS**

**SICK**  
Sensor Intelligence.

Illustration may differ

### Ordering information

| Resolution | Scanning range | Protective field height | System part | Type           | Part no. |
|------------|----------------|-------------------------|-------------|----------------|----------|
| 14 mm      | 10 m           | 900 mm                  | Sender      | C40S-0901CA010 | 1018597  |

Other models and accessories → [www.sick.com/C4000\\_Standard](http://www.sick.com/C4000_Standard)



### Detailed technical data

#### Features

|                                |                         |
|--------------------------------|-------------------------|
| <b>System part</b>             | Sender                  |
| <b>Resolution</b>              | 14 mm                   |
| <b>Protective field height</b> | 900 mm                  |
| <b>Scanning range</b>          | 10 m                    |
| <b>Synchronization</b>         | Optical synchronisation |

#### Safety-related parameters

|   |  |
|---|--|
| <b>Type</b>   | Type 4 (IEC 61496-1)   |
| <b>Safety integrity level</b>   | SIL3 (IEC 61508)<br>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> | 15 * 10 <sup>-9</sup> (EN ISO 13849)<br>43 * 10 <sup>-9</sup> (EN ISO 13849)<br>63 * 10 <sup>-9</sup> (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.   |

#### Functions

|   | Functions | Delivery status |
|---|-----------|-----------------|
| <b>Restart interlock</b>                      | ✓         |                 |
| <b>External device monitoring (EDM)</b>       | ✓         |                 |
| <b>Beam coding</b>                            | ✓         | Uncoded         |
| <b>Configurable scanning range</b>            | ✓         | 0 m ... 2.5 m   |
| <b>Safe SICK device communication via EFI</b> | ✓         |                 |

#### Functions in combination with UE402

|                                 |   |
|---------------------------------|---|
| <b>Bypass</b>                   | ✓ |
| <b>Operating mode switching</b> | ✓ |
| <b>PSDI mode</b>                | ✓ |

## Interfaces

|  |   |
|--|---|
| <b>System connection</b>                     |   |
| Connection type                              | Hirschmann male connector M26, 12-pin   |
| Direction of cable connection                | Straight  |
| Permitted cable length                       | 50 m <sup>1)</sup>  |
| Conductor cross-section                      | 0.75 mm <sup>2</sup>  |
| <b>Display elements</b>                      | 7-segment display   |
| <b>Fieldbus, industrial network</b>          |   |
| Integration via EFI gateways                 | CANopen <sup>2)</sup><br>Ethernet<br>PROFIBUS DP<br>PROFIBUS PROFI-safe<br>PROFINET PROFI-safe            |
| Integration via Flexi Soft safety controller | CANopen <sup>3)</sup><br>DeviceNet™<br>EtherCAT®<br>EtherNet/IP™<br>Modbus TCP<br>PROFIBUS DP<br>PROFINET |

<sup>1)</sup> Depending on load, power supply and wire cross-section. The technical specifications must be observed.

<sup>2)</sup> For a suitable EFI-gateway see modules and gateways in the accessory section of connection systems.

<sup>3)</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) <sup>1)</sup> |
| <b>Residual ripple</b>                 | ≤ 10 % <sup>2)</sup>                      |

<sup>1)</sup> The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

<sup>2)</sup> Within the limits of  $V_S$ .

## Mechanical data

|                              |                           |
|------------------------------|---------------------------|
| <b>Dimensions</b>            | See dimensional drawing   |
| <b>Housing cross-section</b> | 48 mm x 40 mm             |
| <b>Housing material</b>      | Aluminum extruded profile |
| <b>Weight</b>                | 1,960 g                   |

## Ambient data

|                                      |                               |
|--------------------------------------|-------------------------------|
| <b>Enclosure rating</b>              | IP65 (EN 60529)               |
| <b>Ambient operating temperature</b> | 0 °C ... +55 °C               |
| <b>Storage temperature</b>           | -25 °C ... +70 °C             |
| <b>Air humidity</b>                  | 15 % ... 95 %, Non-condensing |
| <b>Vibration resistance</b>          | EN 60068-2-6                  |
| <b>Shock resistance</b>              | 10 g, 16 ms (EN 60068-2-27)   |

## Other information

|                    |        |
|--------------------|--------|
| <b>Wave length</b> | 950 nm |
|--------------------|--------|

### 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))

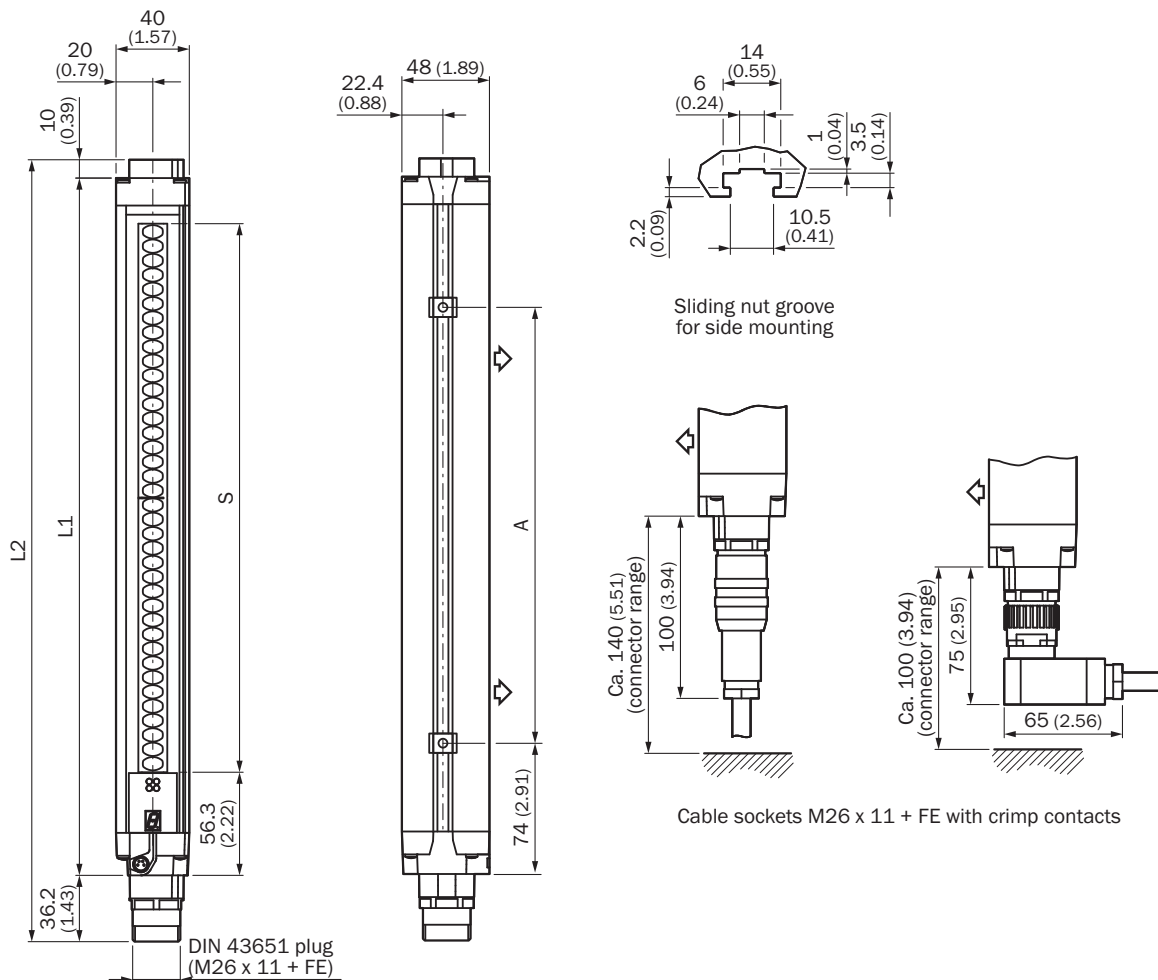
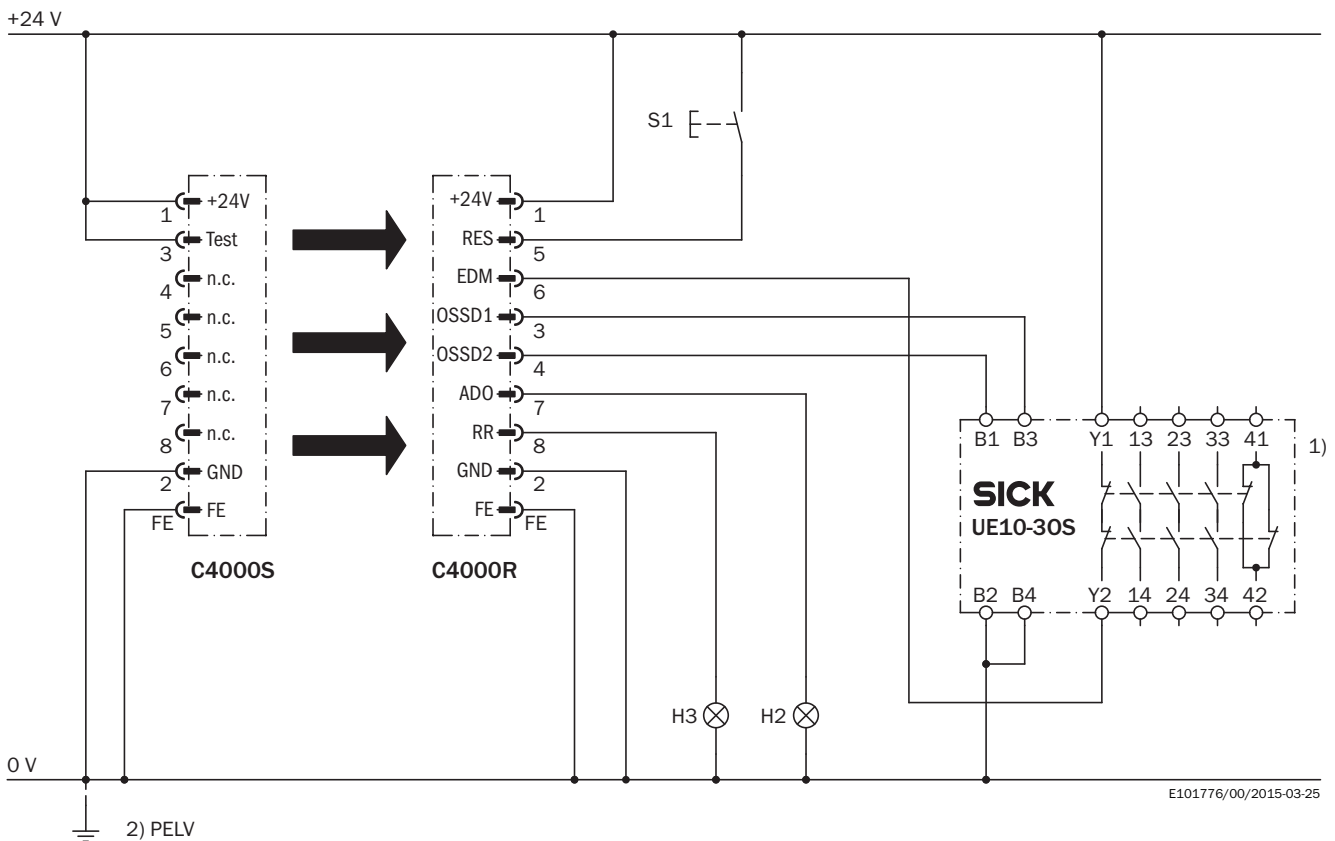


Illustration sender (receiver mirror image)

| Protective field height S | L1    | L2    | A     |
|---------------------------|-------|-------|-------|
| 300                       | 381   | 427   | 224   |
| 450                       | 532   | 578   | 374   |
| 600                       | 682   | 728   | 524   |
| 750                       | 833   | 879   | 674   |
| 900                       | 984   | 1.030 | 824   |
| 1.050                     | 1.134 | 1.180 | 974   |
| 1.200                     | 1.283 | 1.329 | 1.124 |
| 1.350                     | 1.435 | 1.481 | 1.274 |
| 1.500                     | 1.586 | 1.632 | 1.424 |
| 1.650                     | 1.736 | 1.782 | 1.574 |
| 1.800                     | 1.887 | 1.933 | 1.724 |

Connection diagram

C4000 safety light curtain to UE10-30S safety relay



Task

Connection of a C4000 Standard/Advanced/Palletizer/Fusion safety light curtain to UE10-30S. Operating mode with restart interlock and external device monitoring.

Function

When the light path is clear and the UE10-30S is de-energized and functioning correctly, the yellow LED on the receiver and the H3 lamp flash. The system is ready to be switched on. The system is enabled by pressing S1 (button is pressed and released).

The OSSD1 and OSSD2 outputs are live, and the UE10-30S is switched on. Upon the interruption of one of the light beams, the UE10-30S is deactivated by the OSSD1 and OSSD2 outputs.

### Possible faults

Cross-circuits and short-circuits of the OSSDs are detected and lead to the inhibited state (lock-out). The incorrect functioning of the UE10-30S will be detected, but will not result in the loss of the shutdown function. Jamming of the S1 button prevents the output circuit from enabling. H2 lamp is illuminated if there is contamination (adjustable parameter).

### 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, this 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 taking the risk analysis into account.

<sup>2)</sup> PELV as required in EN 60204-1 / 6.4

The related operating instructions for the integrated devices must be observed.

## Recommended accessories

Other models and accessories → [www.sick.com/C4000\\_Standard](http://www.sick.com/C4000_Standard)

| Brief description   | Description  | Type               | Part no. |
|---|--|--------------------|----------|
| <b>Mounting brackets and plates</b>   |  |                    |          |
|    | 4 pieces, Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers   | BEF-3WNGBAST4      | 7021352  |
| <b>Terminal and alignment brackets</b>  |  |                    |          |
|  | 4 pieces, Mounting kit 6, side bracket, rotatable, Zinc diecast  | BEF-1SHABAZN4      | 2019506  |
|  | 4 pieces, Omega bracket, rotatable, fixable with only one screw, for mounting on the swivel mount  | BEF-2SMMEAAL4      | 2044847  |
|  | 4 pieces, Mounting kit 2, rotatable, swivel mount, Polyamide PA6   | BEF-2SMMEAKU4      | 2019659  |
| <b>Plug connectors and cables</b>   |  |                    |          |
|  | Head A: female connector, M26, 12-pin, straight<br>Head B: Flying leads<br>Cable: PVC, unshielded, 5 m<br>Without EFI: Pin 9 and 10 not connected  | DOL-0610G05M075KM1 | 2046888  |
|   | Head A: female connector, M26, 12-pin, straight<br>Head B: Flying leads<br>Cable: PVC, unshielded, 10 m<br>Without EFI: Pin 9 and 10 not connected | DOL-0610G10M075KM1 | 2046889  |
|   | Head A: female connector, M26, 12-pin, straight<br>Head B: Flying leads<br>Cable: PVC, unshielded, 5 m   | DOL-0612G05M075KM0 | 2022545  |
|   | Head A: female connector, M26, 12-pin, straight<br>Head B: Flying leads<br>Cable: PVC, unshielded, 10 m  | DOL-0612G10M075KM0 | 2022547  |

|   | Brief description  | Description | Type                      | Part no. |
|---|--|-------------|---------------------------|----------|
|    | Head A: female connector, M26, 12-pin, straight<br>Head B: Flying leads<br>Cable: PVC, unshielded, 15 m                |             | DOL-0612G15M075KM0        | 2022548  |
|   | Head A: female connector, M26, 12-pin, straight<br>Head B: Flying leads<br>Cable: PVC, unshielded, 20 m                |             | DOL-0612G20M075KM0        | 2022549  |
|   | Head A: male connector, M8, 4-pin, straight<br>Head B: male connector, USB-A, straight<br>Cable: PVC, unshielded, 2 m  |             | DSL-8U04G02M025KM1        | 6034574  |
|   | Head A: male connector, M8, 4-pin, straight<br>Head B: male connector, USB-A, straight<br>Cable: PVC, unshielded, 10 m |             | DSL-8U04G10M025KM1        | 6034575  |
|    | Head A: female connector, M26, 12-pin, straight<br>Cable: unshielded<br>12 crimping contacts enclosed                  |             | DOS-0612G000GA3KM0        | 6020757  |
|    | Head A: female connector, M26, 12-pin, angled<br>Cable: unshielded<br>12 crimping contacts enclosed                    |             | DOS-0612W000GA3KM0        | 6020758  |
|   | Head A: male connector, M26, 12-pin, straight<br>Cable: unshielded<br>12 crimping contacts enclosed                    |             | STE-0612G000GA3KM0        | 6021191  |
|  | Head A: male connector, M26, 12-pin, angled<br>Cable: unshielded<br>12 crimping contacts enclosed                      |             | STE-0612W000GA3KM0        | 6021192  |
| <b>Alignment aids</b>   |  |             |                           |          |
|  | Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!                         |             | AR60                      | 1015741  |
|  | Adapter AR60 for housing cross-section 48 mm x 40 mm   |             | AR60 adapter, 48x40       | 4032461  |
|  | Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column   |             | AR60 adapter, 48x40, PU3H | 4056731  |
| <b>Optics cloths</b>  |  |             |                           |          |
|  | Cloth for cleaning optical surfaces  |             | Lens cloth                | 4003353  |
| <b>Cleaning agent</b>   |  |             |                           |          |
|  | Plastic cleaner and care product, anti-static, 0.5 liter   |             | Plastic cleaner           | 5600006  |
| <b>Switching amplifiers</b>   |  |             |                           |          |
|  |  | UE402       | UE402                     | 1023577  |

## 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.”

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