C40S-0703CA010, C40E-0703CA010
C4000 Standard

SAFETY LIGHT CURTAINS
### Ordering information

<table>
<thead>
<tr>
<th>System part</th>
<th>Type</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sender</td>
<td>C40S-0703CA010</td>
<td>1018641</td>
</tr>
<tr>
<td>Receiver</td>
<td>C40E-0703CA010</td>
<td>1018642</td>
</tr>
</tbody>
</table>

Other models and accessories ➔ [www.sick.com/C4000_Standard](http://www.sick.com/C4000_Standard)

### Detailed technical data

#### Features

<table>
<thead>
<tr>
<th>Description</th>
<th>C4000 Standard without extension connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Normal industrial environment</td>
</tr>
<tr>
<td>System part</td>
<td>Sender-receiver pair</td>
</tr>
<tr>
<td>Resolution</td>
<td>30 mm</td>
</tr>
<tr>
<td>Scanning range</td>
<td>21 m</td>
</tr>
<tr>
<td>Protective field height</td>
<td>750 mm</td>
</tr>
<tr>
<td>Response time</td>
<td>11 ms ¹</td>
</tr>
<tr>
<td>Synchronization</td>
<td>Optical synchronisation</td>
</tr>
</tbody>
</table>

¹ Without beam coding, without blanking, no cascaded systems. Other response times see operating instructions.

#### Safety-related parameters

<table>
<thead>
<tr>
<th>Type</th>
<th>Type 4 (IEC 61496-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety integrity level</td>
<td>SIL3 (IEC 61508)</td>
</tr>
<tr>
<td></td>
<td>SILCL3 (EN 62061)</td>
</tr>
<tr>
<td>Category</td>
<td>Category 4 (EN ISO 13849)</td>
</tr>
<tr>
<td>Performance level</td>
<td>PL e (EN ISO 13849)</td>
</tr>
<tr>
<td>PFH₀ (mean probability of a dangerous failure per hour)</td>
<td>15 * 10⁻⁹ (EN ISO 13849)</td>
</tr>
<tr>
<td></td>
<td>43 * 10⁻⁹ (EN ISO 13849)</td>
</tr>
<tr>
<td></td>
<td>63 * 10⁻⁹ (EN ISO 13849)</td>
</tr>
<tr>
<td>TM (mission time)</td>
<td>20 years (EN ISO 13849)</td>
</tr>
<tr>
<td>Safe state in the event of a fault</td>
<td>At least one OSSD is in the OFF state.</td>
</tr>
</tbody>
</table>

#### Functions

<table>
<thead>
<tr>
<th>Functions</th>
<th>Delivery status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective operation</td>
<td>✔</td>
</tr>
<tr>
<td>Restart interlock</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>External</td>
</tr>
<tr>
<td>Functions</td>
<td>Delivery status</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>External device monitoring (EDM)</td>
<td>✓</td>
</tr>
<tr>
<td>Beam coding</td>
<td>✓</td>
</tr>
<tr>
<td>Configurable scanning range</td>
<td>✓</td>
</tr>
<tr>
<td>Fixed blanking</td>
<td>✓</td>
</tr>
<tr>
<td>Floating blanking</td>
<td>✓</td>
</tr>
<tr>
<td>Safe SICK device communication via EFI</td>
<td>✓</td>
</tr>
</tbody>
</table>

 Functions in combination with UE402

<table>
<thead>
<tr>
<th>Functions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bypass</td>
<td>✓</td>
</tr>
<tr>
<td>Operating mode switching</td>
<td>✓</td>
</tr>
<tr>
<td>PSDI mode</td>
<td>✓</td>
</tr>
</tbody>
</table>

Interfaces

<table>
<thead>
<tr>
<th>System connection</th>
<th>Hirschmann male connector M26, 12-pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction of cable connection</td>
<td>Straight</td>
</tr>
<tr>
<td>Conductor cross-section</td>
<td>0.75 mm²</td>
</tr>
<tr>
<td>Permitted cable length</td>
<td>50 m ¹</td>
</tr>
<tr>
<td>Configuration connection</td>
<td>Female connector M8, 4-pin</td>
</tr>
<tr>
<td>Configuration method</td>
<td>PC with CDS (Configuration and Diagnostic Software)</td>
</tr>
<tr>
<td>Display elements</td>
<td>7-segment display</td>
</tr>
<tr>
<td>Fieldbus, industrial network</td>
<td>CANopen ²</td>
</tr>
<tr>
<td>Integration via Flexi Soft safety controller</td>
<td>DeviceNet™</td>
</tr>
<tr>
<td>Integration via EFI gateways</td>
<td>EtherCAT®</td>
</tr>
<tr>
<td></td>
<td>EtherNet/IP™</td>
</tr>
<tr>
<td></td>
<td>Modbus TCP</td>
</tr>
<tr>
<td></td>
<td>PROFIBUS DP</td>
</tr>
<tr>
<td></td>
<td>PROFINET</td>
</tr>
<tr>
<td></td>
<td>CANopen ³</td>
</tr>
<tr>
<td></td>
<td>Ethernet</td>
</tr>
<tr>
<td></td>
<td>PROFIBUS DP</td>
</tr>
<tr>
<td></td>
<td>PROFIBUS PROFIsafe</td>
</tr>
<tr>
<td></td>
<td>PROFINET PROFIsafe</td>
</tr>
</tbody>
</table>

²) For additional information on Flexi Soft -> www.sick.com/Flexi_Soft.
³) For a suitable EFI-gateway see modules and gateways in the accessory section of connection systems.

Electrical data

<table>
<thead>
<tr>
<th>Protection class</th>
<th>III (IEC 61140)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage Vₜ</td>
<td>24 V DC (19.2 V ... 28.8 V) ¹</td>
</tr>
<tr>
<td>Residual ripple</td>
<td>≤ 10 % ²</td>
</tr>
<tr>
<td>Output signal switching devices (OSSDs)</td>
<td>2 PNP semiconductors, short-circuit protected, cross-circuit monitored ³</td>
</tr>
</tbody>
</table>

¹) 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.
²) Within the limits of Vₜ.
³) Applies to the voltage range between −30 V and +30 V.
### Mechanical data

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>See dimensional drawing</td>
</tr>
<tr>
<td>Housing cross-section</td>
<td>48 mm x 40 mm</td>
</tr>
<tr>
<td>Housing material</td>
<td>Aluminum extruded profile</td>
</tr>
<tr>
<td>Weight</td>
<td>1,700 g / 1,670 g depending on type</td>
</tr>
</tbody>
</table>

### Ambient data

<table>
<thead>
<tr>
<th>Data</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure rating</td>
<td>IP65 (EN 60529)</td>
</tr>
<tr>
<td>Ambient operating temperature</td>
<td>0 °C ... +55 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-25 °C ... +70 °C</td>
</tr>
<tr>
<td>Air humidity</td>
<td>15% ... 95%, Non-condensing</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>5 g, 10 Hz ... 55 Hz (EN 60068-2-6)</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>10 g, 16 ms (EN 60068-2-27)</td>
</tr>
</tbody>
</table>

### Other information

| Wave length                 | 950 nm                                     |

### Classifications

<table>
<thead>
<tr>
<th>Classification</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC1@ss 5.0</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 5.1.4</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 6.0</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 6.2</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 7.0</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 8.0</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 8.1</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 9.0</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 10.0</td>
<td>27272704</td>
</tr>
<tr>
<td>EC1@ss 11.0</td>
<td>27272704</td>
</tr>
<tr>
<td>ETIM 5.0</td>
<td>EC002549</td>
</tr>
<tr>
<td>ETIM 6.0</td>
<td>EC002549</td>
</tr>
<tr>
<td>ETIM 7.0</td>
<td>EC002549</td>
</tr>
<tr>
<td>ETIM 8.0</td>
<td>EC002549</td>
</tr>
<tr>
<td>UNSPSC 16.0901</td>
<td>46171620</td>
</tr>
</tbody>
</table>
Dimensional drawing (Dimensions in mm (inch))

<table>
<thead>
<tr>
<th>Protective field height S</th>
<th>L1</th>
<th>L2</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>381</td>
<td>427</td>
<td>224</td>
</tr>
<tr>
<td>450</td>
<td>532</td>
<td>578</td>
<td>374</td>
</tr>
<tr>
<td>600</td>
<td>682</td>
<td>728</td>
<td>524</td>
</tr>
<tr>
<td>750</td>
<td>833</td>
<td>879</td>
<td>674</td>
</tr>
<tr>
<td>900</td>
<td>984</td>
<td>1030</td>
<td>824</td>
</tr>
<tr>
<td>1.050</td>
<td>1.134</td>
<td>1.180</td>
<td>974</td>
</tr>
<tr>
<td>1.200</td>
<td>1.283</td>
<td>1.329</td>
<td>1.124</td>
</tr>
<tr>
<td>1.350</td>
<td>1.435</td>
<td>1.481</td>
<td>1.274</td>
</tr>
<tr>
<td>1.500</td>
<td>1.586</td>
<td>1.632</td>
<td>1.424</td>
</tr>
<tr>
<td>1.650</td>
<td>1.736</td>
<td>1.782</td>
<td>1.574</td>
</tr>
<tr>
<td>1.800</td>
<td>1.887</td>
<td>1.933</td>
<td>1.724</td>
</tr>
</tbody>
</table>
Connection diagram

C4000 safety light curtain to UE10-3OS safety relay

Task
Connection of a C4000 Standard/Advanced/Palletizer/Fusion safety light curtain to UE10-3OS. Operating mode with restart interlock and external device monitoring.

Function
When the light path is clear and the UE10-3OS 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 UE10-3OS is switched on. Upon the interruption of one of the light beams, the UE10-3OS 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 UE10-3OS 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
1) 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.
2) 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)

<table>
<thead>
<tr>
<th>Brief description</th>
<th>Type</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alignment aids</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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</td>
<td>AR60</td>
<td>1015741</td>
</tr>
<tr>
<td>Adapter AR60 for housing cross-section 48 mm x 40 mm</td>
<td>AR60 adapter, 48x40</td>
<td>4032461</td>
</tr>
<tr>
<td>Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column</td>
<td>AR60 adapter, 48x40, PU3H</td>
<td>4056731</td>
</tr>
<tr>
<td><strong>Cleaning agent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic cleaner and care product, anti-static, 0.5 liter</td>
<td>Plastic cleaner</td>
<td>5600006</td>
</tr>
<tr>
<td><strong>Optics cloths</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cloth for cleaning optical surfaces</td>
<td>Lens cloth</td>
<td>4003353</td>
</tr>
<tr>
<td><strong>Test and monitoring tools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 mm diameter</td>
<td>Test rod 30 mm</td>
<td>2022602</td>
</tr>
<tr>
<td><strong>Mounting brackets and plates</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 pieces, Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers</td>
<td>BEF-3WNGBAST4</td>
<td>7021352</td>
</tr>
<tr>
<td><strong>Plug connectors and cables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: female connector, M26, 12-pin, straight</td>
<td>DOL-0610G05M075KM1</td>
<td>2046888</td>
</tr>
<tr>
<td>Head B: Flying leads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable: PVC, unshielded, 5 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without EFI: Pin 9 and 10 not connected</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOL-0610G10M075KM1</td>
<td>2046889</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: female connector, M26, 12-pin, straight</td>
<td>DOL-0612G05M075KM0</td>
<td>2022545</td>
</tr>
<tr>
<td>Head B: Flying leads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable: Sensor/actuator cable, PVC, unshielded, 5 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOL-0612G10M075KM0</td>
<td>2022547</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: female connector, M26, 12-pin, straight</td>
<td>DOL-0612G15M075KM0</td>
<td>2022548</td>
</tr>
<tr>
<td>Head B: Flying leads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable: Sensor/actuator cable, PVC, unshielded, 15 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOL-0612G20M075KM0</td>
<td>2022549</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: female connector, M26, 12-pin, straight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head B: Flying leads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable: Sensor/actuator cable, PVC, unshielded, 20 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brief description</td>
<td>Type</td>
<td>Part no.</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Head A: male connector, M8, 4-pin, straight</td>
<td>DSL-8U04G02M025KM1</td>
<td>6034574</td>
</tr>
<tr>
<td>Head B: male connector, USB-A, straight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable: PVC, unshielded, 2 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: male connector, M8, 4-pin, straight</td>
<td>DSL-8U04G10M025KM1</td>
<td>6034575</td>
</tr>
<tr>
<td>Head B: male connector, USB-A, straight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable: PVC, unshielded, 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: female connector, M26, 12-pin, straight</td>
<td>DOS-0612G000GA3KM0</td>
<td>6020757</td>
</tr>
<tr>
<td>Cable: unshielded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 crimping contacts enclosed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: female connector, M26, 12-pin, angled</td>
<td>DOS-0612W000GA3KM0</td>
<td>6020758</td>
</tr>
<tr>
<td>Cable: unshielded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 crimping contacts enclosed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: male connector, M26, 12-pin, straight</td>
<td>STE-0612G000GA3KM0</td>
<td>6021191</td>
</tr>
<tr>
<td>Cable: unshielded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 crimping contacts enclosed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head A: male connector, M26, 12-pin, angled</td>
<td>STE-0612W000GA3KM0</td>
<td>6021192</td>
</tr>
<tr>
<td>Cable: unshielded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 crimping contacts enclosed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Terminal and alignment brackets**

| 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-2SMMEAAAL4 | 2044847   |
| 4 pieces, Mounting kit 2, rotatable, swivel mount, Polyamide PA6                   | BEF-2SMMEAKU4                            | 2019659   |

**Switching amplifiers**

- **Applications**: Functionality upgrade
- **Compatible sensor types**: C4000 safety light curtains
- **Housing width**: 22.5 mm

| 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.”

WORLDWIDE PRESENCE:

Contacts and other locations www.sick.com