Product data sheet

# C40S-0303CA010

## C4000 Advanced

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Resolution | Scanning range | Protective field height | System part | Type | Part no. |
|---|---|---|---|---|---|
| 30 mm | 21 m | 300 mm | Sender | C40S-0303CA010 | 1018635 |

Other models and accessories → www.sick.com/C4000_Advanced

## Detailed technical data

### Features

| | |
|---|---|
| **Application** | Normal industrial environment |
| **System part** | Sender |
| **Resolution** | 30 mm |
| **Scanning range** | 21 m |
| **Protective field height** | 300 mm |
| **Synchronization** | Optical synchronisation |

### Safety-related parameters

| | |
|---|---|
| **Type** | Type 4 (IEC 61496-1) |
| **Safety integrity level** | SIL 3 (IEC 61508) |
| **Category** | Category 4 (EN ISO 13849) |
| **Performance level** | PL e (EN ISO 13849) |
| **$PFH_D$ (mean probability of a dangerous failure per hour)** | $15 * 10^{-9}$ (EN ISO 13849)<br>$43 * 10^{-9}$ (EN ISO 13849)<br>$63 * 10^{-9}$ (EN ISO 13849) |
| **$T_M$ (mission time)** | 20 years (EN ISO 13849) |
| **Safe state in the event of a fault** | At least one OSSD is in the OFF state. |

### Functions

| | Functions | Delivery status |
|---|---|---|
| **Protective operation** | ✓ | |
| **Restart interlock** | ✓ | |
| **External device monitoring (EDM)** | ✓ | Deactivated |
| **Beam coding** | ✓ | Uncoded |
| **Configurable scanning range** | ✓ | 0 m ... 6 m |

| | Functions | Delivery status |
|---|---|---|
| **Fixed blanking** | ✓ | Deactivated |
| **Floating blanking** | ✓ | Deactivated |
| **Safe SICK device communication via EFI** | ✓ | |

## Functions in combination with UE402

| | |
|---|---|
| **Bypass** | ✓ |
| **Operating mode switching** | ✓ |
| **PSDI mode** | ✓ |

## Interfaces

| | |
|---|---|
| **System connection** | Hirschmann male connector M26, 12-pin |
| Direction of cable connection | Straight |
| Conductor cross section | 0.75 mm² |
| Permitted cable length | 50 m [1] |
| **Display elements** | 7-segment display |

[1] Depending on load, power supply and wire cross-section. The technical specifications must be observed.

## Electrical data

| | |
|---|---|
| **Protection class** | III (IEC 61140) |
| **Supply voltage $V_S$** | 24 V DC (19.2 V ... 28.8 V) [1] |
| **Residual ripple** | ≤ 10 % [2] |

[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 $V_S$.

## Mechanical data

| | |
|---|---|
| **Dimensions** | See dimensional drawing |
| **Housing cross-section** | 48 mm x 40 mm |
| **Housing material** | Aluminum extruded profile |
| **Weight** | 820 g |

## Ambient data

| | |
|---|---|
| **Enclosure rating** | IP65 (EN 60529) |
| **Ambient operating temperature** | 0 °C ... +55 °C |
| **Storage temperature** | –25 °C ... +70 °C |
| **Air humidity** | 15 % ... 95 %, Non-condensing |
| **Vibration resistance** | 5 g, 10 Hz ... 55 Hz (EN 60068-2-6) |
| **Shock resistance** | 10 g, 16 ms (EN 60068-2-27) |

## Other information

| | |
|---|---|
| **Wave length** | 850 nm |

## 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))

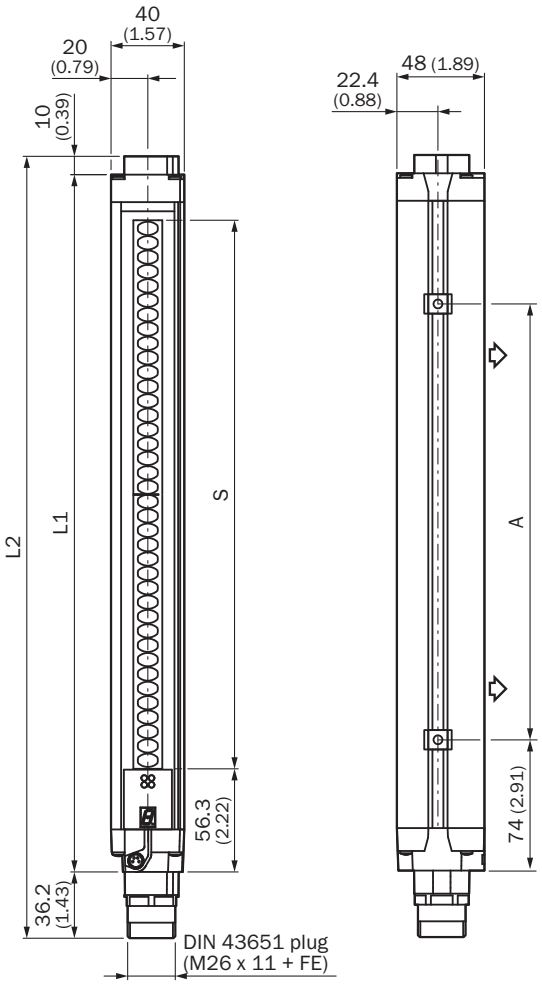
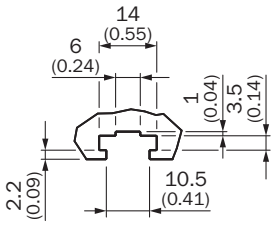
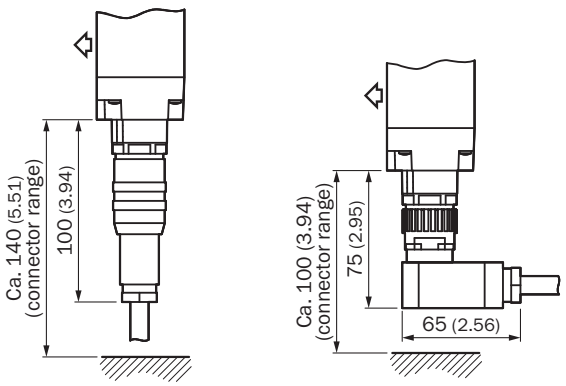



Illustration sender (receiver mirror image)




Sliding nut groove
for side mounting

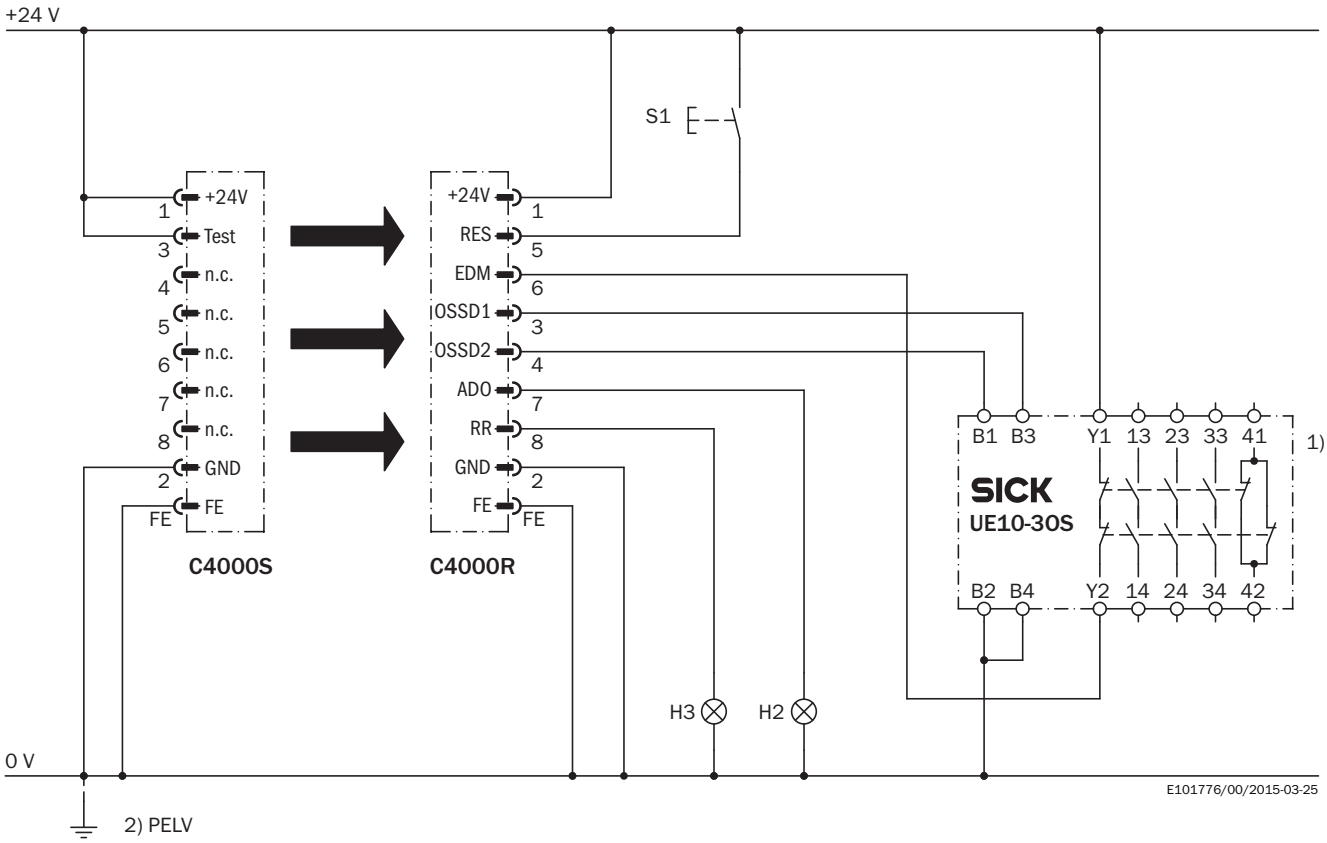



Cable sockets M26 x 11 + FE with crimp contacts

| | 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 UE10-3OS 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_Advanced

| | Brief description | Type | Part no. |
|---|---|---|---|
| Alignment aids | | | |
| | 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 |
| | 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 |
| Optics cloths | | | |
| | Cloth for cleaning optical surfaces | Lens cloth | 4003353 |
| Mounting brackets and plates | | | |
| | 4 pieces, Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers | BEF-3WNGBAST4 | 7021352 |
| Plug connectors and cables | | | |
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Description:** Unshielded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | DOS-0612G000GA3KM0 | 6020757 |
| | • **Connection type head A:** Female connector, M26, 12-pin, angled<br>• **Description:** Unshielded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | DOS-0612W000GA3KM0 | 6020758 |
| | • **Connection type head A:** Male connector, M26, 12-pin, straight<br>• **Description:** Unshielded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | STE-0612G000GA3KM0 | 6021191 |

| | Brief description | Type | Part no. |
|---|---|---|---|
| | • **Connection type head A:** Male connector, M26, 12-pin, angled<br>• **Description:** Unshielded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | STE-0612W000GA3KM0 | 6021192 |
| 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-2SMMEAAL4 | 2044847 |
| | 4 pieces, Stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301 | BEF-2SMMEAES4 | 2023708 |
| | 4 pieces, Mounting kit 2, rotatable, swivel mount, Polyamide PA6 | BEF-2SMMEAKU4 | 2019659 |
| Others | | | |
| | • **Connection type head A:** Male connector, M8, 4-pin, straight<br>• **Connection type head B:** Male connector, USB-A, straight<br>• **Cable:** 2 m, 4-wire, PVC<br>• **Description:** Unshielded, Configuration cable with integrated RS-232 transducer on USB for connecting a sensor configuration connection (M8, 4-pin) to the USB interface of a PC | DSL-8U04G02M025KM1 | 6034574 |
| | • **Connection type head A:** Male connector, M8, 4-pin, straight<br>• **Connection type head B:** Male connector, USB-A, straight<br>• **Cable:** 10 m, 4-wire, PVC<br>• **Description:** Unshielded, Configuration cable with integrated RS-232 transducer on USB for connecting a sensor configuration connection (M8, 4-pin) to the USB interface of a PC | DSL-8U04G10M025KM1 | 6034575 |
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 12-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Connection systems:** Flying leads | DOL-0612G05M075KM0 | 2022545 |
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 12-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Connection systems:** Flying leads | DOL-0612G10M075KM0 | 2022547 |
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 15 m, 12-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Connection systems:** Flying leads | DOL-0612G15M075KM0 | 2022548 |
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 20 m, 12-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Connection systems:** Flying leads | DOL-0612G20M075KM0 | 2022549 |

| | Brief description | Type | Part no. |
|---|---|---|---|
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Cable:** 5 m, PVC<br>• **Description:** Unshielded<br>• **Connection systems:** Flying leads<br>• **Note:** Without EFI: Pin 9 and 10 not connected | DOL-0610G05M075KM1 | 2046888 |
| | • **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Cable:** 10 m, PVC<br>• **Description:** Unshielded<br>• **Connection systems:** Flying leads<br>• **Note:** Without EFI: Pin 9 and 10 not connected | DOL-0610G10M075KM1 | 2046889 |
| Switching amplifiers | | | |
| | • **Applications:** Functionality upgrade<br>• **Compatible sensor types:** C4000 safety light curtains<br>• **Description:** Upgrades the C4000 Standard, Advanced, Palletizer, Entry/Exit, and Fusion to include the functions defined in the technical specifications, e.g., bypass, operating mode switching, and PSDI in the case of C4000 Standard, Advanced. | 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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