Data sheet

# C40E-1203CB010

## C4000 Advanced

**SAFETY LIGHT CURTAINS**

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| C40E-1203CB010 | 1018810 |

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

## Detailed technical data

### Features

| | |
|---|---|
| **Application** | Normal industrial environment |
| **System part** | Receiver |
| **Resolution** | 30 mm |
| **Scanning range** | 21 m |
| **Protective field height** | 1,200 mm |
| **Response time** | 13 ms [1)] |
| **Synchronization** | Optical synchronization |

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

### 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 |
| **External device monitoring (EDM)** | ✓ | Deactivated |
| **Beam coding** | ✓ | Uncoded |
| **Configurable scanning range** | ✓ | 0 m ... 6 m |
| **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** | |
| Direction of cable connection | Straight |
| Conductor cross section | 0.75 mm² |
| Permitted cable length | 50 m [1] |
| **Configuration connection** | Female connector M8, 4-pin |
| **Configuration method** | PC with CDS (Configuration and Diagnostic Software) |
| **Display elements** | 7-segment display |

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

## Electronics

| | |
|---|---|
| **Protection class** | III (IEC 61140) |
| **Supply voltage $V_S$** | 24 V DC (19.2 V ... 28.8 V) [1] |
| **Residual ripple** | ≤ 10 % [2] |
| **Output signal switching devices (OSSDs)** | |
| Type of output | 2 PNP semiconductors, short-circuit protected, cross-circuit monitored [3] |
| 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 | ≤ 500 mA |

[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 $V_S$.

[3] Applies to the voltage range between –30 V and +30 V.

## Mechanics

| | |
|---|---|
| **Dimensions** | See dimensional drawing |
| **Housing cross-section** | 48 mm x 40 mm |
| **Housing material** | Aluminum extruded profile |
| **Weight** | 2,560 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 |

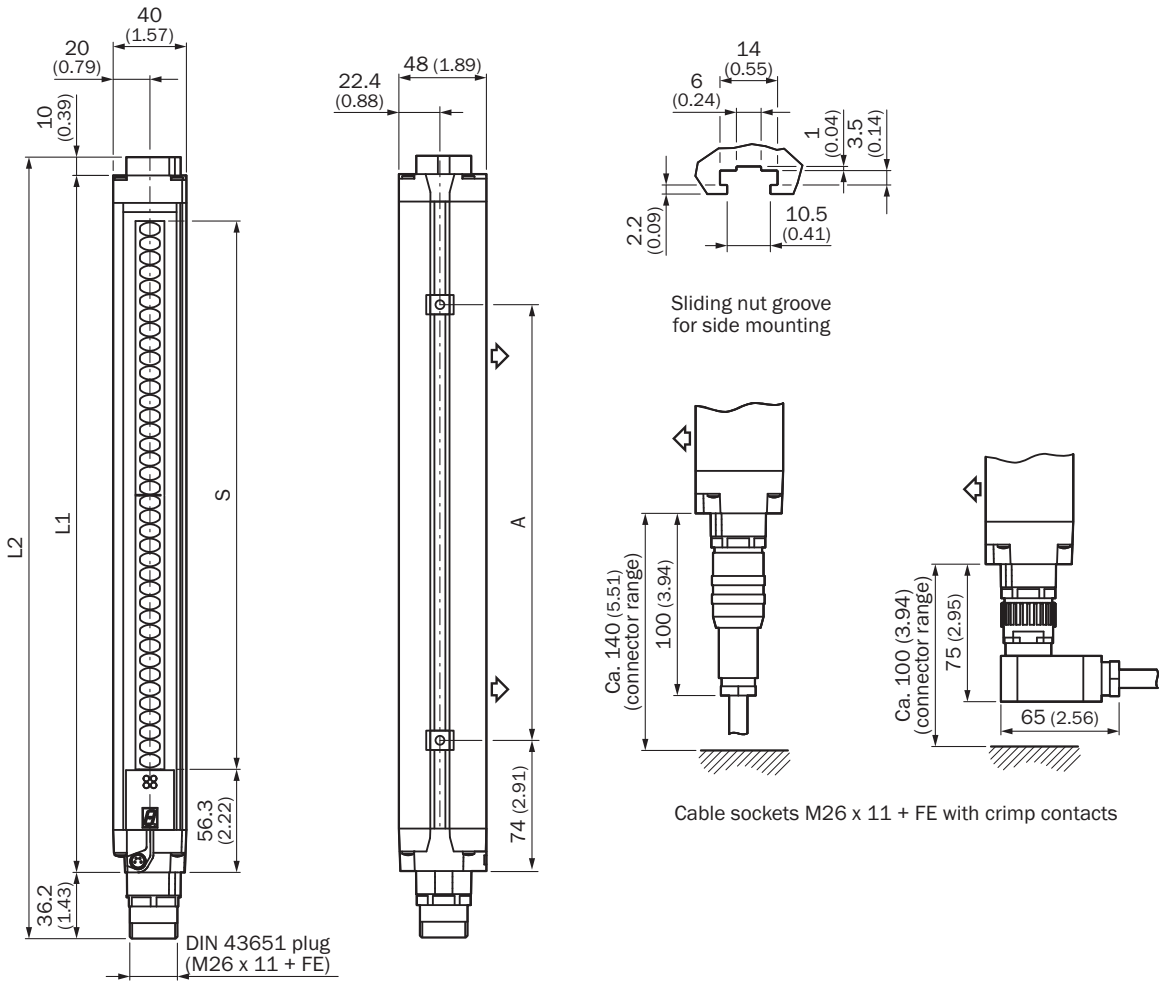
## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **ULus approval** | ✓ |
| **cUL approval** | ✓ |
| **Taiwan OSHA certificate** | ✓ |
| **EC-Type-Examination approval** | ✓ |
| **China GB certificate** | ✓ |
| **Information according to Art. 3 of Data Act (Regulation EU 2023/2854)** | ✓ |

## 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 |

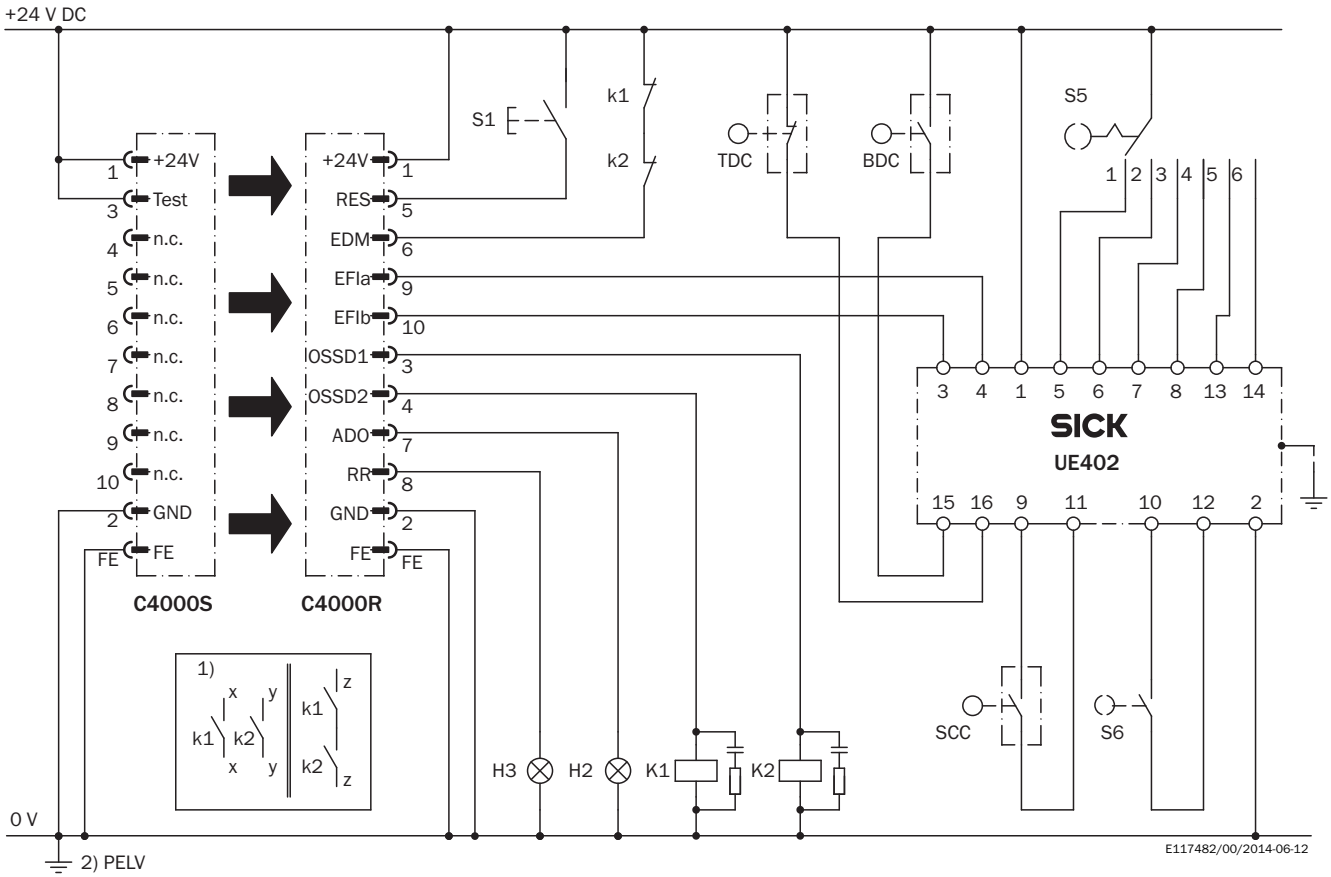
## Dimensional drawing




Dimensions in mm (inch)
illustration sender (receiver mirror image)

| | 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 Advanced safety light curtain on UE402 safety switching amplifier




Aufgabe
Anbindung eines Sicherheits-Lichtvorhanges C4000 Advanced mit UE402 in eine Steuerung. 6 parametrierbare Betriebsarten mit Wiederanlaufsperre und Schützkontrolle. Taktbetrieb mit TDC, BDC, SCC. Ausblendbereiche einlernbar.
Wirkungsweise
Wenn kein Gegenstand im aktiven Schutzfeld detektiert wird und die Schütze K1 und K2 sich in Ruhelage befinden blinkt die Lampe H3 als Aufforderung, das Befehlsgerät S1 zu betätigen. Wenn S1 betätigt (Taster wird betätigt und losgelassen) werden die OSSDs eingeschaltet. Diese schalten die Schütze K1 und K2 ein. Bei Detektion eines Gegenstandes im aktiven Schutzfeld schalten die OSSDs die Schütze K1 und K2 ab.
Fehlerbetrachtung
Das Fehlverhalten eines der Schütze K1 oder K2 führt nicht zum Verlust der Abschaltfunktion. Querschlüsse und Kurzschlüsse der OSSDs werden erkannt und führen zum Sperrzustand (Lock-Out). Die Manipulation (Festklemmen) des Tasters S1 verhindert die Freigabe der Ausgangskreise.
Anmerkungen:
Die Wirkungsgweise der parametrierbaren Funktionen ist den jeweiligen Betriebsanleitungen der eingebundenen Geräte zu entnehmen. Die dabei enthaltenen Angaben sind zu beachten.

## Recommended accessories

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

| | Brief description | Type | part no. |
|---|---|---|---|
| **device protection and care** | | | |
| | • **Product family:** Cleaning agents<br>• **Description:** Cloth for cleaning optical surfaces | Lens cloth | 4003353 |
| **Mounting systems** | | | |
| | • **Description:** Mounting kit 6, side bracket, rotatable<br>• **Material:** Zinc diecast<br>• **Details:** Zinc diecast<br>• **Packing unit:** 4 pieces<br>• **Suitable for:** All protective field heights | BEF-1SHABAZN4 | 2019506 |
| | • **Description:** Mounting kit 2, rotatable, swivel mount<br>• **Material:** Plastic<br>• **Details:** Polyamide PA6<br>• **Packing unit:** 4 pieces<br>• **Suitable for:** All protective field heights | BEF-2SMMEAKU4 | 2019659 |
| | • **Description:** Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers<br>• **Packing unit:** 4 pieces<br>• **Suitable for:** All protective field heights | BEF-3WNGBAST4 | 7021352 |
| | • **Description:** Stainless steel bracket, rotatable<br>• **Material:** Stainless steel<br>• **Details:** Stainless steel 1.4350, stainless steel 1.4301<br>• **Packing unit:** 4 pieces | BEF-2SMMEAES4 | 2023708 |
| | • **Description:** Omega bracket, rotatable, fixable with only one screw, for mounting on the swivel mount<br>• **Packing unit:** 4 pieces<br>• **Suitable for:** All protective field heights in large housing | BEF-2SMMEAAL4 | 2044847 |
| **Commissioning aids and test equipment** | | | |
| | • **Product:** Alignment aids<br>• **Dimensions (W x H x L):** 19 mm<br>67.3 mm<br>66.9 mm<br>• **Description:** Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam! | AR60 | 1015741 |
| | • **Product:** Alignment aids<br>• **Description:** Adapter AR60 for housing cross-section 48 mm x 40 mm | AR60 adapter, 48x40 | 4032461 |
| | • **Product:** Alignment aids<br>• **Description:** Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column | AR60 adapter, 48x40, PU3H | 4056731 |

| | Brief description | Type | part no. |
|---|---|---|---|
| connectors and cables | | | |
| | • **Description:** Unshielded<br>• **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 | DSL-8U04G02M025KM1 | 6034574 |
| | • **Description:** Unshielded<br>• **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 | DSL-8U04G10M025KM1 | 6034575 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **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>• **Connection systems:** Flying leads<br>• **Application:** Uncontaminated zones, Zones with chemicals | DOL-0612G05M075KM0 | 2022545 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **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>• **Connection systems:** Flying leads<br>• **Application:** Uncontaminated zones, Zones with chemicals | DOL-0612G10M075KM0 | 2022547 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **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>• **Connection systems:** Flying leads<br>• **Application:** Uncontaminated zones, Zones with chemicals | DOL-0612G15M075KM0 | 2022548 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **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>• **Connection systems:** Flying leads<br>• **Application:** Uncontaminated zones, Zones with chemicals | DOL-0612G20M075KM0 | 2022549 |
| | • **Description:** Unshielded<br>• **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Cable:** 5 m, PVC<br>• **Connection systems:** Flying leads<br>• **Note:** Without EFI: Pin 9 and 10 not connected<br>• **Application:** Uncontaminated zones, Zones with chemicals | DOL-0610G05M075KM1 | 2046888 |
| | • **Description:** Unshielded<br>• **Connection type head A:** Female connector, M26, 12-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Cable:** 10 m, PVC<br>• **Connection systems:** Flying leads<br>• **Note:** Without EFI: Pin 9 and 10 not connected | DOL-0610G10M075KM1 | 2046889 |

| | Brief description | Type | part no. |
|---|---|---|---|
| | • **Application:** Uncontaminated zones, Zones with chemicals | | |
| | • **Description:** Unshielded<br>• **Connection type head A:** Female connector, M26, 12-pin, straight, A-coded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | DOS-0612G000GA3KM( | 6020757 |
| | • **Description:** Unshielded<br>• **Connection type head A:** Female connector, M26, 12-pin, angled, A-coded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | DOS-0612W000GA3KM( | 6020758 |
| | • **Description:** Unshielded<br>• **Connection type head A:** Male connector, M26, 12-pin, straight, A-coded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | STE-0612G000GA3KM( | 6021191 |
| | • **Description:** Unshielded<br>• **Connection type head A:** Male connector, M26, 12-pin, angled, A-coded<br>• **Connection systems:** Crimp contacts<br>• **Permitted cross-section:** 0.5 mm² ... 1.5 mm²<br>• **Note:** 12 crimping contacts enclosed | STE-0612W000GA3KM( | 6021192 |
| system plugs and extension modules | | | |
| | • **Applications:** Functionality upgrade<br>• **Compatible sensor types:** C4000 safety light curtains | 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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