



C40S-1002FY010

C4000 Fusion

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

| Resolution | Scanning range | Protective field height | System part | Type | Part no. |
|------------|----------------|-------------------------|-------------|----------------|----------|
| 20 mm | 21 m | 1,050 mm | Sender | C40S-1002FY010 | 1043187 |

Other models and accessories → www.sick.com/C4000_Fusion



Detailed technical data

Features

| | |
|---------------------------------------|-------------------------------|
| Application | Normal industrial environment |
| System part | Sender |
| Resolution | 20 mm |
| Scanning range | 21 m |
| Protective field height | 1,050 mm |
| Synchronization | Optical synchronisation |
| Integrated laser alignment aid | ✓ |

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) | $15 \cdot 10^{-9}$ (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 | ✓ | Internal |
| External device monitoring (EDM) | ✓ | Deactivated |
| Beam coding | ✓ | Code 1 |
| Configurable scanning range | ✓ | |
| Reduced resolution | ✓ | Deactivated |
| Fixed blanking | ✓ ¹⁾ | |

¹⁾ Only in combination with a Flexi Soft safety controller via EFI.

| | Functions | Delivery status |
|---|-----------|-----------------|
| Dynamic blanking for object pattern recognition | ✓ | 2x evaluation |
| Self-teaching dynamic blanking for goods detection | ✓ | |
| Self-teaching dynamic blanking for pallet detection | ✓ | |
| Multiple sampling | ✓ | |
| Direction monitoring | ✓ | |
| Sensor gap monitoring | ✓ | |
| Sequence monitoring | ✓ | |
| Object entry monitoring | ✓ | |
| Detection of geometrically even objects | ✓ | |
| Safe SICK device communication via EFI | ✓ | |

¹⁾ Only in combination with a Flexi Soft safety controller via EFI.

Interfaces

| | |
|---------------------------------|---|
| System connection | Hirschmann male connector M26, 12-pin |
| Conductor cross section | 0.75 mm ² |
| Permitted cable length | ≤ 50 m |
| Configuration connection | Female connector M8, 4-pin |
| Configuration method | PC with CDS (Configuration and Diagnostic Software) |
| Display elements | 7-segment display |

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 | 2,250 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 |
| Integrated laser alignment aid | ✓ |
| Light source | LED |
| Laser class | 1 (IEC 60825-1), eye-safe |
| Type of light | Visible red light |

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))

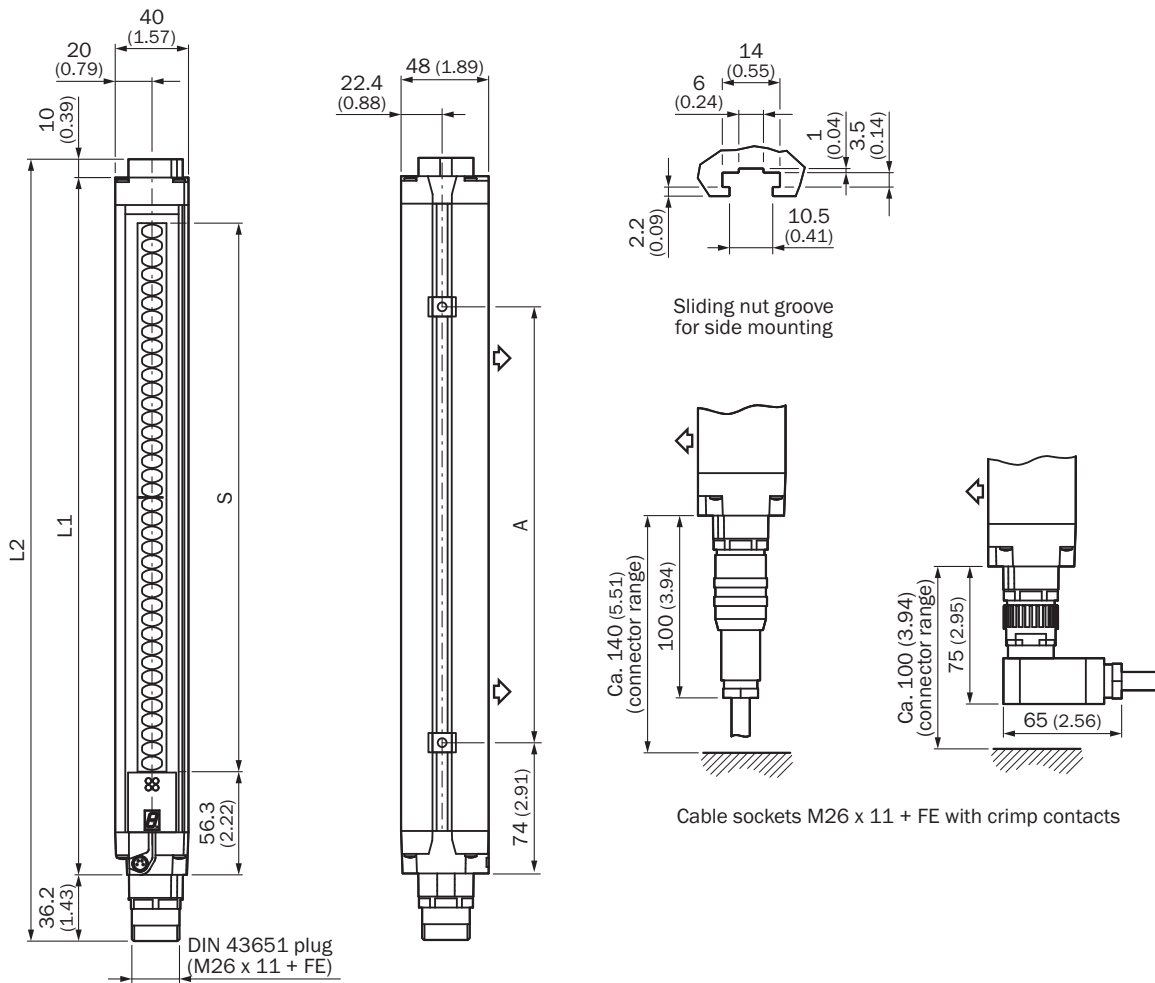


Illustration sender (receiver mirror image)

| | 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 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

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_Fusion

| | 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 |
| Test and monitoring tools | | | |
|  | 20 mm diameter, 250 mm length | Test rod 20 mm | 2022600 |
| Mounting brackets and plates | | | |
|  | 4 pieces, Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers | BEF-3WNGBAST4 | 7021352 |
| Other mounting accessories | | | |
|  | 2 pieces, Floor stands for the horizontal mounting of the safety light curtains C4000 Fusion, Entry/Exit, Palletizer, as well as the multi-beam safety light curtain M4000 Area, for mounting heights of between 70 mm and 780 mm., Includes mounting bracket | BEF-3HHOCAST2 | 2041661 |
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M26, 12-pin, straight Description: Unshielded Connection systems: Crimp contacts Permitted cross-section: 0.5 mm² ... 1.5 mm² Note: 12 crimping contacts enclosed | DOS-0612G000GA3KM0 | 6020757 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M26, 12-pin, angled Description: Unshielded Connection systems: Crimp contacts Permitted cross-section: 0.5 mm² ... 1.5 mm² Note: 12 crimping contacts enclosed | DOS-0612W000GA3KM0 | 6020758 |
|  | <ul style="list-style-type: none"> Connection type head A: Male connector, M26, 12-pin, straight Description: Unshielded Connection systems: Crimp contacts Permitted cross-section: 0.5 mm² ... 1.5 mm² Note: 12 crimping contacts enclosed | STE-0612G000GA3KM0 | 6021191 |
|  | <ul style="list-style-type: none"> Connection type head A: Male connector, M26, 12-pin, angled Description: Unshielded Connection systems: Crimp contacts Permitted cross-section: 0.5 mm² ... 1.5 mm² Note: 12 crimping contacts enclosed | STE-0612W000GA3KM0 | 6021192 |

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| 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-2SMMEAL4 | 2044847 |
|  | 4 pieces, Mounting kit 2, rotatable, swivel mount, Polyamide PA6 | BEF-2SMMEAKU4 | 2019659 |
|  | 4 pieces, Reinforced stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301 | BEF-2SMMVAES4 | 2026850 |
| Others | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads | DOL-0612G05M075KM0 | 2022545 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads | DOL-0612G10M075KM0 | 2022547 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 15 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads | DOL-0612G15M075KM0 | 2022548 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 20 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads | DOL-0612G20M075KM0 | 2022549 |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Connection type head B: Male connector, USB-A, straight • Cable: 10 m, 4-wire, PVC • 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 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 50 m, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads | DOL-0612G50M075KM0 | 2033548 |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Connection type head B: Male connector, USB-A, straight • Cable: 2 m, 4-wire, PVC • 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 |

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Cable: 5 m, PVC • Description: Unshielded • Connection systems: Flying leads • Note: Without EFI: Pin 9 and 10 not connected | DOL-0610G05M075KM1 | 2046888 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Cable: 10 m, PVC • Description: Unshielded • Connection systems: Flying leads • Note: Without EFI: Pin 9 and 10 not connected | DOL-0610G10M075KM1 | 2046889 |
| Switching amplifiers | | | |
|  | <ul style="list-style-type: none"> • Applications: Functionality upgrade • Compatible sensor types: C4000 safety light curtains • 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 |

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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.

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