



# C4C-SC02010A10000

C4-RD

**SAFETY LIGHT CURTAINS**

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type              | part no. |
|-------------------|----------|
| C4C-SC02010A10000 | 1112987  |

Other models and accessories → [www.sick.com/C4-RD](http://www.sick.com/C4-RD)

Detailed technical data

Features

|                         |                         |
|-------------------------|-------------------------|
| System part             | Sender                  |
| Compatible receiver     | 1112994                 |
| Resolution              | 14 mm                   |
| Scanning range          | 4.5 m                   |
| Protective field height | 200 mm                  |
| No blind zones          | Yes                     |
| Synchronization         | Optical synchronization |
| Items supplied          | Sender                  |

Safety-related parameters

|                                                                     |                                        |
|---------------------------------------------------------------------|----------------------------------------|
| Type                                                                | Type 4 (IEC 61496-1)                   |
| Safety integrity level                                              | SIL 3 (IEC 61508)                      |
| Category                                                            | Category 4 (ISO 13849-1)               |
| Performance level                                                   | PL e (ISO 13849-1)                     |
| PFH <sub>D</sub> (mean probability of a dangerous failure per hour) | $3.7 \times 10^{-9}$                   |
| T <sub>M</sub> (mission time)                                       | 20 years (ISO 13849-1)                 |
| Safe state in the event of a fault                                  | At least one OSSD is in the OFF state. |

Functions

|                      |   |
|----------------------|---|
| Protective operation | ✓ |
|----------------------|---|

Interfaces

|                   |                           |
|-------------------|---------------------------|
| System connection | Male connector M12, 5-pin |
| Display elements  | LEDs                      |

## Electronics

|                                     |                             |
|-------------------------------------|-----------------------------|
| <b>Protection class</b>             | III (IEC 61140)             |
| <b>Supply voltage V<sub>S</sub></b> | 24 V DC (19.2 V ... 28.8 V) |
| <b>Ripple</b>                       | ≤ 10 % <sup>1)</sup>        |
| <b>Power consumption typical</b>    | 0.88 W (DC)                 |

<sup>1)</sup> Within the limits of V<sub>S</sub>.

## Mechanics

|                         |                           |
|-------------------------|---------------------------|
| <b>Dimensions</b>       | See dimensional drawing   |
| <b>Housing material</b> | Aluminum extruded profile |
| <b>Weight</b>           | 189 g (± 50 g)            |

## Ambient data

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| <b>Enclosure rating</b>              | IP65 (IEC 60529)<br>IP67 (IEC 60529)      |
| <b>Ambient operating temperature</b> | -30 °C ... +55 °C                         |
| <b>Storage temperature</b>           | -30 °C ... +70 °C                         |
| <b>Air humidity</b>                  | 15 % ... 95 %, Non-condensing             |
| <b>Vibration resistance</b>          | 5 ... 150 Hz, 3,5 mm / 1 g (EN 60068-2-6) |
| <b>Shock resistance</b>              | 15 g / 6 ms (EN 60068-2-27)               |
| <b>Class</b>                         | 3M4 (IEC TR 60721-4-3)                    |

## Other information

|                      |                                |
|----------------------|--------------------------------|
| <b>Wave length</b>   | 850 nm                         |
| <b>Type of light</b> | Near-infrared (NIR), invisible |

## Certificates

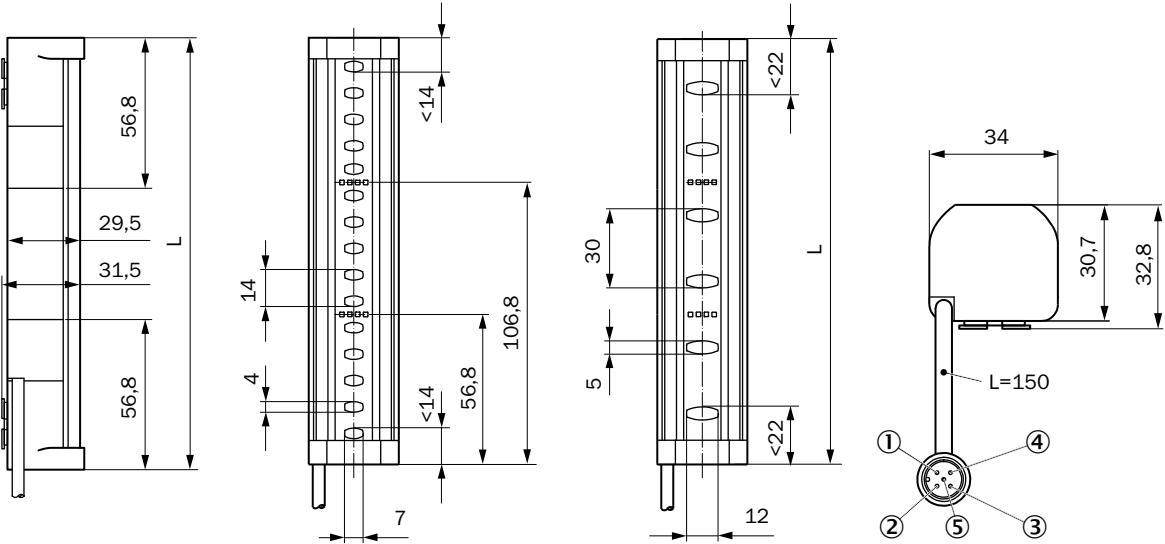
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>ACMA declaration of conformity</b>     | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China-RoHS</b>                         | ✓ |
| <b>ULus approval</b>                      | ✓ |
| <b>cUL approval</b>                       | ✓ |
| <b>Japan Press Safety certificate</b>     | ✓ |
| <b>EC-Type-Examination approval</b>       | ✓ |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27272704 |
| <b>ECLASS 5.1.4</b> | 27272704 |
| <b>ECLASS 6.0</b>   | 27272704 |
| <b>ECLASS 6.2</b>   | 27272704 |
| <b>ECLASS 7.0</b>   | 27272704 |
| <b>ECLASS 8.0</b>   | 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



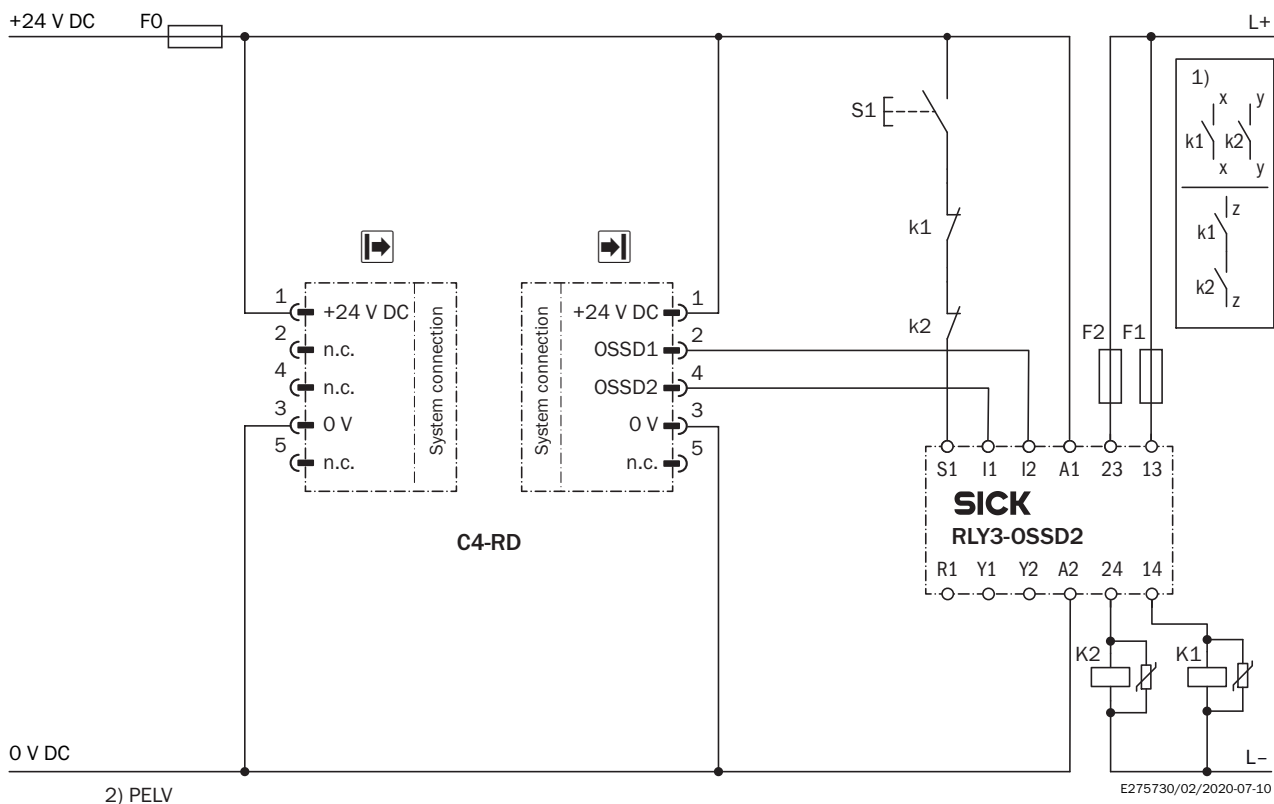
Dimensions in mm (inch)

- ① +24 V DC
- ② Sender: Reserved, receiver: OSSD1
- ③ 0 V DC
- ④ Sender: Reserved, receiver: OSSD2
- ⑤ Not assigned

| Protective field height | L   |
|-------------------------|-----|
| 150                     | 163 |
| 200                     | 213 |
| 250                     | 263 |
| 300                     | 313 |
| 350                     | 363 |
| 400                     | 413 |
| 450                     | 463 |
| 500                     | 513 |
| 550                     | 563 |
| 600                     | 613 |

| Protective field height | L     |
|-------------------------|-------|
| 750                     | 763   |
| 900                     | 913   |
| 1.050                   | 1.063 |
| 1.200                   | 1.213 |

Connection diagram C4-RD safety light curtain on RLY3-OSSD200 safety relay



① Output circuits: These contacts must be incorporated into the control such that the dangerous state is brought to an end if the output circuit is open. For categories 4 and 3, they must be incorporated on dual-channels (x, y paths). Single-channel incorporation into the control (z path) is only possible with a single-channel control and taking the risk analysis into account.

② SELV/PELV safety/protective extra-low voltage.

#### Task

Connection of a C4-RD safety light curtain to a RLY3-OSSD2 safety relay. Operating mode: With restart interlock and external device monitoring.

#### Mode of operation

When the protective field is clear, the OSSD1 and OSSD2 outputs carry voltage. The system can be switched on when K1 and K2 are in a fault-free de-energized position. The RLY3-OSSD2 is switched on by pressing S1 (pushbutton is pressed and released). The outputs (contacts 13-14 and 23-24) switch the K1 and K2 contactors on. When the protective field is interrupted, the OSSD1 and OSSD2 outputs switch the RLY3-OSSD2 off. Contactors K1 and K2 are switched off.

#### Fault analysis

Cross-circuits and short-circuits of the OSSDs are recognized and lead to the locking status (lock-out). A malfunction with one of the K1 or K2 contactors is detected. The switch-off function is retained. In the event of manipulation (e.g., jamming) of the S1 pushbutton, the RLY3-OSSD2 will not re-enable the output current circuits.

## Recommended accessories

Other models and accessories → [www.sick.com/C4-RD](http://www.sick.com/C4-RD)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Type               | part no. |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, A-coded</li> <li>• <b>Connection type head B:</b> Female connector, M12, 5-pin, A-coded</li> <li>• <b>Connection type head C:</b> Male connector, M12, 5-pin, A-coded</li> <li>• <b>Description:</b> Unshielded</li> </ul>                                                                                                                                                                                           | DSC-1205T000025KMC | 6030664  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>  | YF2A15-020UB5M2A15 | 2096009  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                   | YF2A15-020UB5XLEAX | 2095617  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>  | YF2A15-050UB5M2A15 | 2096010  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                   | YF2A15-050UB5XLEAX | 2095618  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A15-100UB5M2A15 | 2096011  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                  | YF2A15-100UB5XLEAX | 2095619  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Type          | part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Swivel mount bracket for 2 devices (e.g. sender or receiver), 360° alignment possible, consisting of swivel mount port and swivel mount adapter, including M5 screw</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>                                                                                                                                                             | BEF-2SMJEPKU4 | 2118584  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Flat mount bracket comprising two A brackets and two B brackets for two devices (e.g., sender and receiver)</li> <li><b>Dimensions (W x H x L):</b> 34 mm x 51.7 mm x 5 mm</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>                                                                                                                                                      | BEF-3SHAHPKU4 | 2118327  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> QuickFix bracket for 2 devices (e.g. sender and receiver)</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>                                                                                                                                                                                                                                                                       | BEF-3SHABPKU4 | 2098710  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Compact FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned <math>\pm 15^\circ</math>, including M5 screw, for mounting with countersunk screws</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>                                                                                                                                                            | BEF-1SHTBPKU4 | 2117731  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned <math>\pm 15^\circ</math>, including M5 screw</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>                                                                                                                                                                                                          | BEF-1SHABPKU4 | 2066614  |
| Safety relays                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |          |
|  | <ul style="list-style-type: none"> <li><b>Applications:</b> Evaluation unit</li> <li><b>Compatible sensor types:</b> Safety sensors with OSSDs</li> <li><b>Connection type:</b> Front connector with spring terminals</li> <li><b>Restart interlock:</b> yes</li> <li><b>External device monitoring (EDM):</b> Integrated</li> <li><b>Outputs:</b> 2 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe)</li> <li><b>Housing width:</b> 18 mm</li> </ul> | RLY3-OSSD200  | 1085344  |
|  | <ul style="list-style-type: none"> <li><b>Applications:</b> Evaluation unit</li> <li><b>Compatible sensor types:</b> Safety sensors with OSSDs</li> <li><b>Connection type:</b> Front connector with spring terminals</li> <li><b>Restart interlock:</b> yes</li> <li><b>External device monitoring (EDM):</b> Integrated</li> <li><b>Outputs:</b> 3 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe)</li> <li><b>Housing width:</b> 18 mm</li> </ul> | RLY3-OSSD300  | 1099969  |

## 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](http://www.sick.com)