



# C2MT-04214BBC04DE0

miniTwin

SAFETY LIGHT CURTAINS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type               | part no. |
|--------------------|----------|
| C2MT-04214BBC04DE0 | 1207871  |

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

### Detailed technical data

#### Features

|                                |   |
|--------------------------------|---|
| <b>System part</b>             | 1 Twin-Stick  |
| <b>Usage</b>                   | miniTwin2 as host for 2- or 3-device cascade<br>miniTwin2 as middle guest for 3-device cascade  |
| <b>Mounting system type</b>    | C-fix or L-fix bracket  |
| <b>Resolution</b>              | 14 mm   |
| <b>Scanning range</b>          | Minimum 0 m ... 6 m<br>Typical 0 m ... 8 m  |
| <b>Protective field height</b> | 420 mm  |
| <b>Response time</b>           | ≤ 14 ms <sup>1)</sup>   |
| <b>Synchronization</b>         | Optical, without separate synchronization   |
| <b>Items supplied</b>          | Twin stick<br>System plug<br>C-Fix and L-Fix bracket, 2 pieces each<br>Test rod with diameter corresponding to the resolution of the safety light curtain<br>Safety instruction<br>Mounting instructions<br>Operating instructions for download |

<sup>1)</sup> Standalone devices, no cascaded systems. Other response times can be found in the operating instructions.

#### Safety-related parameters

|                                  |                           |
|----------------------------------|---------------------------|
| <b>Type</b>                      | Type 2 (IEC 61496-1)      |
| <b>Safety integrity level</b>    | SIL 1 (IEC 61508)         |
| <b>Category</b>                  | Category 2 (EN ISO 13849) |
| <b>Test rate (internal test)</b> | 47 /s                     |

<sup>1)</sup> Between two requirements on a safety-related response of the device, at least 100 internal or external tests must be carried out.

<sup>2)</sup> The performance level does not include any specific requirements regarding aspects such as optical performance features. For more information, see page xx.

|   |  |
|---|--|
| <b>Maximum demand rate</b>  | 28 min <sup>-1</sup> (EN ISO 13849) <sup>1)</sup>                            |
| <b>Performance level</b>  | PL c (EN ISO 13849), Pay attention to optical characteristics! <sup>2)</sup> |
| <b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b> | Cascaded systems: 5.2 x 10 <sup>-8</sup> (EN ISO 13849)                      |
| <b>T<sub>M</sub> (mission time)</b>                                       | 20 years (EN ISO 13849)  |
| <b>Safe state in the event of a fault</b>                                 | At least one OSSD is in the OFF state.                                       |

<sup>1)</sup> Between two requirements on a safety-related response of the device, at least 100 internal or external tests must be carried out.

<sup>2)</sup> The performance level does not include any specific requirements regarding aspects such as optical performance features. For more information, see page xx.

## Functions

|   | Functions | Delivery status |
|---|-----------|-----------------|
| <b>Restart interlock</b>                | ✓         | Deactivated     |
| <b>External device monitoring (EDM)</b> | ✓         | Deactivated     |
| <b>Beam coding</b>                      | Automatic |                 |

## Interfaces

|                             |                             |
|-----------------------------|-----------------------------|
| <b>System connection</b>    | Male connector M12, 5-pin   |
| Length of cable             | 350 mm                      |
| Conductor cross section     | 0.34 mm <sup>2</sup>        |
| Permitted cable length      | ≤ 20 m <sup>1)</sup>        |
| <b>Extension connection</b> | Female connector M12, 5-pin |
| Length of cable             | 350 mm                      |
| <b>Configuration method</b> | Hard wired                  |
| <b>Display elements</b>     | LEDs                        |

<sup>1)</sup> Depending on load, power supply and wire cross-section. The technical specifications must be observed.

## Electronics

|  |  |
|--|--|
| <b>Protection class</b>                        | III (EN 61140)   |
| <b>Supply voltage V<sub>S</sub></b>            | 24 V DC (19.2 V DC ... 28.8 V DC)  |
| <b>Ripple</b>                                  | ≤ 10 % <sup>1)</sup>   |
| <b>Power consumption</b>                       | ≤ 3 A <sup>2)</sup>  |
| <b>Output signal switching devices (OSSDs)</b> |  |
| Type of output                                 | PNP semiconductors, short-circuit protected, cross-circuit monitored <sup>3)</sup> |
| ON state, switching voltage HIGH               | 24 V DC (V <sub>S</sub> - 2.25 V DC ... V <sub>S</sub> )                           |
| OFF state, switching voltage LOW               | ≤ 2 V DC   |
| Current-carrying capacity per OSSD             | ≤ 300 mA   |

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

<sup>2)</sup> Maximum power consumption of a host/guest/guest system with 1,200 mm protective field height and a resolution of 14 mm.

<sup>3)</sup> Applies to the voltage range between -30 V and +30 V.

## Mechanics

|  |                           |
|--|---------------------------|
| <b>Housing cross-section (incl. system connection)</b> | 15 mm x 32 mm             |
| <b>Housing material</b>                                | Aluminum alloy ALMGSI 0.5 |

|               |       |
|---------------|-------|
| <b>Weight</b> | 155 g |
|---------------|-------|

### Ambient data

|                                      |   |
|--------------------------------------|---|
| <b>Enclosure rating</b>              | IP65 (EN 60529)                           |
| <b>Ambient operating temperature</b> | -20 °C ... +55 °C                         |
| <b>Storage temperature</b>           | -25 °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 |
|--------------------|--------|

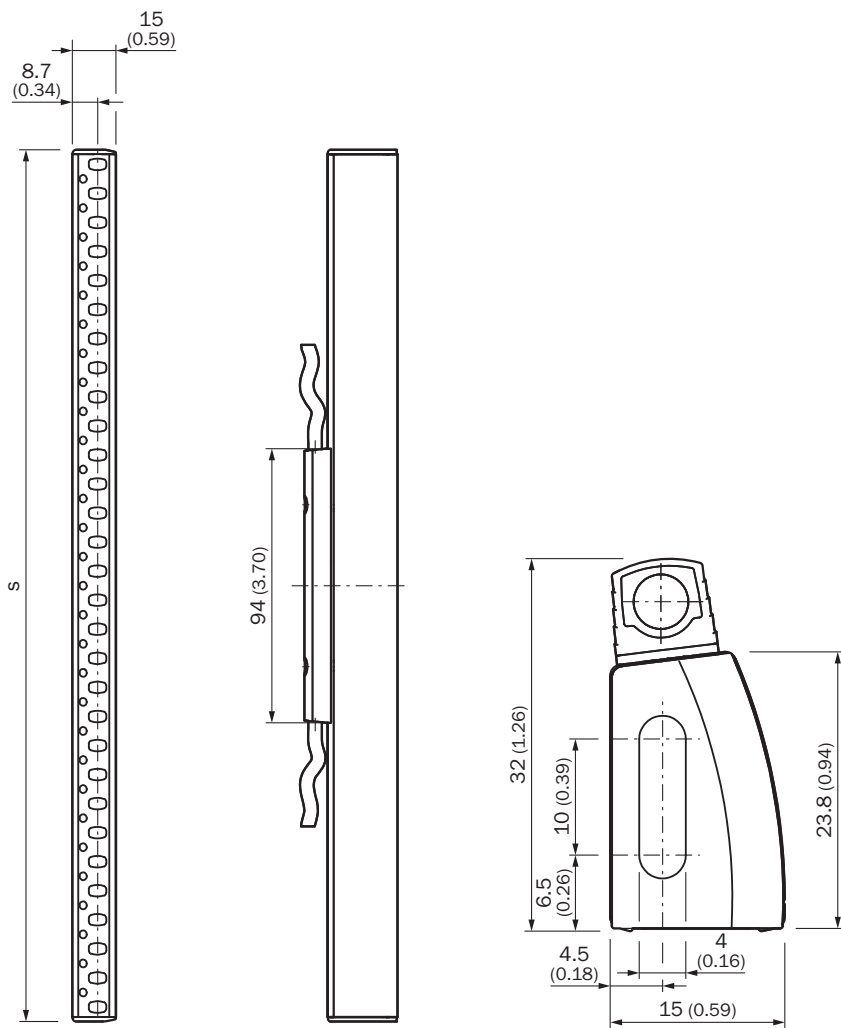
### Certificates

|  |   |
|--|---|
| <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>UK-Type-Examination approval</b>  | ✓ |
| <b>ULus approval</b>   | ✓ |
| <b>cUL approval</b>  | ✓ |
| <b>EC-Type-Examination approval</b>  | ✓ |
| <b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</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 |
| <b>ECLASS 8.1</b>     | 27272704 |
| <b>ECLASS 9.0</b>     | 27272704 |
| <b>ECLASS 10.0</b>    | 27272704 |
| <b>ECLASS 11.0</b>    | 27272704 |
| <b>ECLASS 12.0</b>    | 27272704 |
| <b>ETIM 5.0</b>       | EC002549 |
| <b>ETIM 6.0</b>       | EC002549 |
| <b>ETIM 7.0</b>       | EC002549 |
| <b>ETIM 8.0</b>       | EC002549 |
| <b>UNSPSC 16.0901</b> | 46171620 |

Dimensional drawing



Dimensions in mm (inch)  
S = protective field height = housing length

Connection diagram miniTwin safety light curtain to RLY3-OSSD2 safety relay with restart interlock and external device monitoring



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.

Connection diagram miniTwin safety light curtain to RLY3-OSSD1 safety relay with restart interlock and external device monitoring



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.

Recommended accessories

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

|   | Brief description   | Type              | part no. |
|---|---|-------------------|----------|
| Mounting systems  |   |                   |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Bracket for miniTwin, for all protective field heights, scope of delivery: 2 C-Fix brackets and 2 L-Fix brackets (suitable for 2 miniTwin devices)</li> <li><b>Packing unit:</b> 2 pieces</li> </ul> | BE-F-3AAA0MKU2S04 | 2045843  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> O-Fix bracket, 2 pieces, for all sizes, for all protective field heights</li> <li><b>Packing unit:</b> 2 pieces</li> </ul>   | BEF-3SHAEMKU2     | 2045835  |

|   | Brief description   | Type                   | part no. |
|---|---|------------------------|----------|
| Commissioning aids and test equipment   |   |                        |          |
|    | <ul style="list-style-type: none"> <li><b>Product:</b> Alignment aids</li> <li><b>Description:</b> Adapter AR60 for miniTwin4 and miniTwin2</li> </ul>  | AR60 adapter, miniTwin | 4064710  |
|    | <ul style="list-style-type: none"> <li><b>Product:</b> Alignment aids</li> <li><b>Dimensions (W x H x L):</b> 19 mm<br/>67.3 mm<br/>66.9 mm</li> <li><b>Description:</b> Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!</li> </ul>  | AR60                   | 1015741  |
|    | <ul style="list-style-type: none"> <li><b>Product:</b> Test equipment</li> <li><b>Description:</b> 14 mm diameter, 250 mm length</li> </ul>   | Test rod 14 mm         | 2022599  |
| connectors and cables   |   |                        |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li><b>Note:</b> Test voltage 1.0 kV eff/60 s, insulation group C to VDE 0110</li> </ul>   | DOS-1205-GX            | 6047950  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li><b>Note:</b> For field bus technology</li> </ul>   | STE-1205-G             | 6022083  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>  | DOS-1205-G             | 6009719  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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> 1 m, 5-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A15-010UB5M2A15     | 2096007  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A15-020UB5M2A15     | 2096009  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PVC</li> <li><b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>   | YF2A15-050VB5XLEAX     | 2096240  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PVC</li> <li><b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>  | YF2A15-100VB5XLEAX     | 2096241  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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> 15 m, 5-wire, PVC</li> <li><b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>  | YF2A15-150VB5XLEAX     | 2096242  |

|   | Brief description | Type                    | part no. |
|---|-------------------|-------------------------|----------|
| system plugs and extension modules  |                   |                         |          |
|  |                   | Cascade system plug     | 2046452  |
|  |                   | Cascade system plug     | 2046454  |
|  |                   | Cascade system plug     | 2046456  |
|  |                   | Stand-alone system plug | 2051290  |

## SICK AT A GLANCE

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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.

For us, that is “Sensor Intelligence.”

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