



# C4MT-11424ABB04FE0

miniTwin

SAFETY LIGHT CURTAINS

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Sensor Intelligence.



Illustration may differ

### Ordering information

| Type               | part no. |
|--------------------|----------|
| C4MT-11424ABB04FE0 | 1048904  |

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

### Detailed technical data

#### Features

|                                |   |
|--------------------------------|---|
| <b>System part</b>             | 2 Twin-Sticks   |
| <b>Usage</b>                   | miniTwin4 as host for 2- or 3-device cascade<br>miniTwin4 as middle guest for 3-device cascade  |
| <b>Mounting system type</b>    | C-fix or L-fix bracket  |
| <b>Resolution</b>              | 24 mm   |
| <b>Scanning range</b>          | Minimum 0 m ... 4 m<br>Typical 0 m ... 5 m  |
| <b>Protective field height</b> | 1,140 mm  |
| <b>Response time</b>           | ≤ 13 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 4 (IEC 61496-1)                                    |
| <b>Safety integrity level</b>   | SIL 3 (IEC 61508)                                       |
| <b>Category</b>   | Category 4 (EN ISO 13849)                               |
| <b>Performance level</b>  | PL e (EN ISO 13849)                                     |
| <b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b> | Cascaded systems: 1.3 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.                  |

## 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             | 700 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             | 700 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 <math>V_S</math></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 ( $V_S - 2.25$ V DC ... $V_S$ )  |
| OFF state, switching voltage LOW               | ≤ 2 V DC   |
| Current-carrying capacity per OSSD             | ≤ 300 mA   |

<sup>1)</sup> Within the limits of  $V_S$ .

<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>  | 400 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 |
|--------------------|--------|

### 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 x 67.3 mm x 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  |
| 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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