



# C4MT-09024ABB03FB0

miniTwin

SAFETY LIGHT CURTAINS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

miniTwin4 as a standalone device

| System connection         | Resolution | Length of cable | Protective field height | Type                | Part no. |
|---------------------------|------------|-----------------|-------------------------|---------------------|----------|
| Male connector M12, 5-pin | 24 mm      | 700 mm          | 900 mm                  | C4MT-09024AB-B03FB0 | 1207329  |

This article includes 1 twin stick. Please order 2 for a functioning miniTwin4 system.

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>                   | miniTwin4 as a standalone device   |         |             |         |             |
| <b>Mounting system type</b>    | O-fix bracket  |         |             |         |             |
| <b>Resolution</b>              | 24 mm  |         |             |         |             |
| <b>Scanning range</b>          | <table border="0"> <tr> <td>Minimum</td> <td>0 m ... 4 m</td> </tr> <tr> <td>Typical</td> <td>0 m ... 5 m</td> </tr> </table>  | Minimum | 0 m ... 4 m | Typical | 0 m ... 5 m |
| Minimum                        | 0 m ... 4 m  |         |             |         |             |
| Typical                        | 0 m ... 5 m  |         |             |         |             |
| <b>Protective field height</b> | 900 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>O-Fix bracket, 2 pieces<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> | Standalone system: 4.3 x 10 <sup>-9</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>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.

## Electrical data

|  |  |
|--|--|
| <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.

## Mechanical data

|  |                           |
|--|---------------------------|
| <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>  | 320 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 g, 10 Hz ... 55 Hz (EN 60068-2-6) |
| <b>Shock resistance</b>              | 10 g, 16 ms (EN 60068-2-27)         |

## 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 |

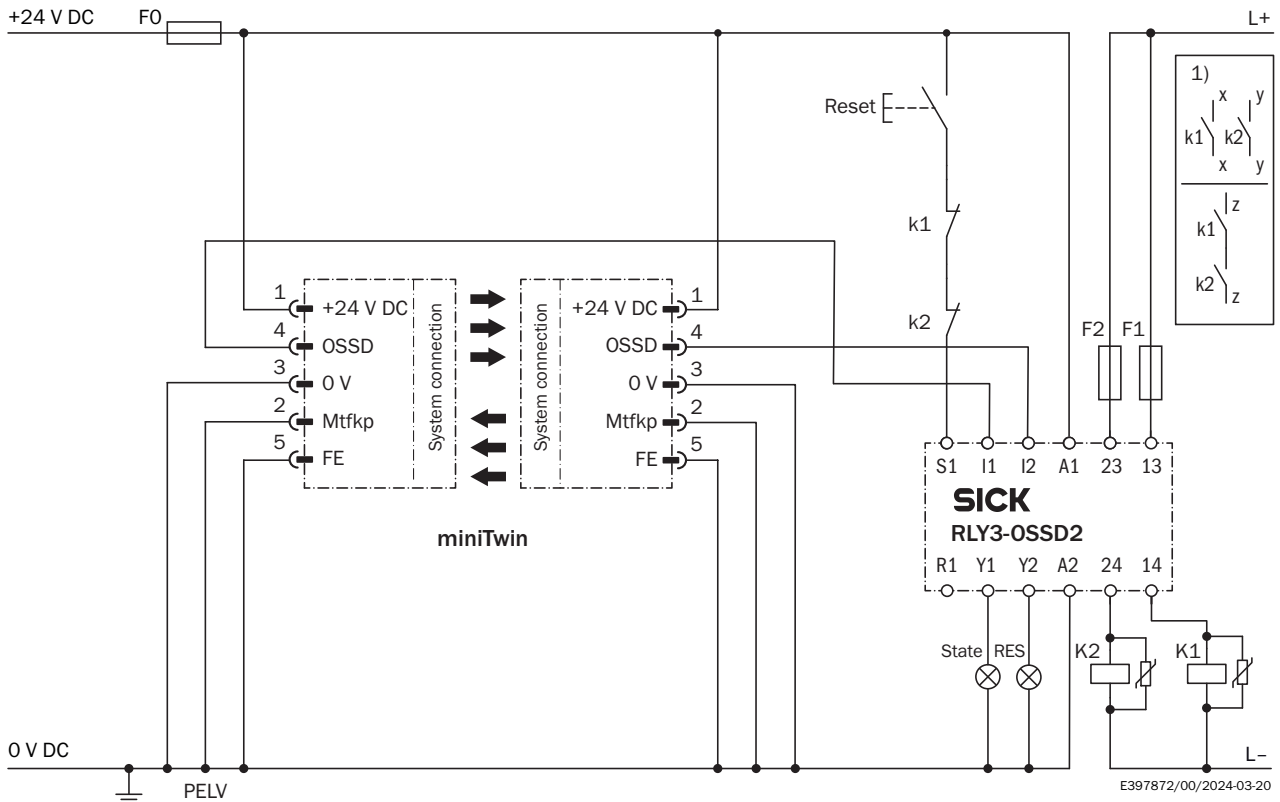
Dimensional drawing (Dimensions in mm (inch))



S = protective field height = housing length

### Connection diagram

Sicherheitslichtvorhang miniTwin an Sicherheitsrelais RLY3-OSSD2, mit Wiederanlaufsperrre und Schützkontrolle



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.

Sicherheitslichtvorhang miniTwin an Sicherheitsrelais RLY3-OSSD1, mit Wiederanlaufsperrung und Schützkontrolle



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. |
|-------------------------------------|--|------------------------|----------|
| <b>Alignment aids</b>               |  |                        |          |
|                                     | 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 miniTwin4 and miniTwin2   | AR60 adapter, miniTwin | 4064710  |
| <b>Test and monitoring tools</b>    |  |                        |          |
|                                     | 24 mm diameter, 250 mm length  | Test rod 24 mm         | 2045592  |
| <b>Mounting brackets and plates</b> |  |                        |          |
|                                     | 2 pieces, 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) | BEF-3AAA0MKU2S04       | 2045843  |

|   | Brief description   | Type                    | Part no. |
|---|---|-------------------------|----------|
|    | 2 pieces, O-Fix bracket, 2 pieces, for all sizes, for all protective field heights  | BEF-3SHAEMKU2           | 2045835  |
| Plug connectors and cables  |   |                         |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.75 \text{ mm}^2</math></li> </ul>   | DOS-1205-G              | 6009719  |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.75 \text{ mm}^2</math></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>Connection type head A:</b> Male connector, M12, 5-pin, straight</li> <li>• <b>Description:</b> Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.75 \text{ mm}^2</math></li> <li>• <b>Note:</b> For field bus technology</li> </ul>                                  | STE-1205-G              | 6022083  |
| Others  |   |                         |          |
|    | <ul style="list-style-type: none"> <li>• <b>Cable:</b> 160 mm</li> <li>• <b>Description:</b> Unshielded, miniTwin system plug for cascade, system connection: Cable with M12 male connector, 5-pin, extension connection: Cable with M12 female connector, 5-pin, length of cable: 160 mm each</li> </ul>   | Cascade system plug     | 2046452  |
|   | <ul style="list-style-type: none"> <li>• <b>Cable:</b> 350 mm</li> <li>• <b>Description:</b> Unshielded, miniTwin system plug for cascade, system connection: Cable with M12 male connector, 5-pin, extension connection: Cable with M12 female connector, 5-pin, length of cable: 350 mm each</li> </ul>   | Cascade system plug     | 2046454  |
|  | <ul style="list-style-type: none"> <li>• <b>Cable:</b> 700 mm</li> <li>• <b>Description:</b> Unshielded, miniTwin system plug for cascade, system connection: Cable with M12 male connector, 5-pin, extension connection: Cable with M12 female connector, 5-pin, length of cable: 700 mm each</li> </ul>   | Cascade system plug     | 2046456  |
|  | <ul style="list-style-type: none"> <li>• <b>Cable:</b> 10 m</li> <li>• <b>Description:</b> Unshielded, miniTwin system plug for standalone, system connection: Cable, flying leads, 5-wire, length of cable: 10 m</li> </ul>  | Stand-alone system plug | 2051290  |
|  | <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> 1 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A15-010UB5M2A15      | 2096007  |
|  | <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> Zones with oils and lubricants, Drag chain operation, Robot</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> 5 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>   | YF2A15-050VB5XLEAX      | 2096240  |



|   | Brief description  | Type               | Part no. |
|---|--|--------------------|----------|
|  | <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, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF2A15-100VB5XLEAX | 2096241  |
|  | <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> 15 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF2A15-150VB5XLEAX | 2096242  |

## SICK AT A GLANCE

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