

# C4MT-03624ABB04DE0

miniTwin

**SAFETY LIGHT CURTAINS** 





# Ordering information

miniTwin4 as host for 2- or 3-device cascade, miniTwin4 as middle guest for 3-device cascade

| System connection                 | Extension connection              | Resolution | Length<br>of cable | Protective field height | Туре                        | Part no. |
|-----------------------------------|-----------------------------------|------------|--------------------|-------------------------|-----------------------------|----------|
| Male con-<br>nector<br>M12, 5-pin | Female<br>connector<br>M12, 5-pin | 24 mm      | 350 mm             | 360 mm                  | C4MT-<br>03624AB-<br>B04DE0 | 1207286  |

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

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



### Detailed technical data

#### **Features**

| reatures                |   |
|-------------------------|---|
| System part             | 1 Twin-Stick  |
| Usage                   | miniTwin4 as host for 2- or 3-device cascade miniTwin4 as middle guest for 3-device cascade   |
| Mounting system type    | C-fix or L-fix bracket  |
| Resolution              | 24 mm   |
| Scanning range          |   |
| Minimum                 | 0 m 4 m   |
| Typical                 | 0 m 5 m   |
| Protective field height | 360 mm  |
| Response time           | ≤ 13 ms <sup>1)</sup>   |
| Synchronization         | Optical, without separate synchronization   |
| Items supplied          | Twin stick System plug C-Fix and L-Fix bracket, 2 pieces each Test rod with diameter corresponding to the resolution of the safety light curtain Safety instruction Mounting instructions 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

| Туре  | 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)                                     |
| $\ensuremath{PFH_D}$ (mean probability of a dangerous failure per hour) | Cascaded systems: 1.3 x 10 <sup>-8</sup> (EN ISO 13849) |
| T <sub>M</sub> (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 |
|----------------------------------|-----------|-----------------|
| Restart interlock                | 1         | Deactivated     |
| External device monitoring (EDM) | 1         | Deactivated     |
| Beam coding                      | Automatic |                 |

### Interfaces

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

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

### Electrical data

| Protection class                        | III (EN 61140)   |
|---|--|
| Supply voltage $V_{\rm S}$              | 24 V DC (19.2 V DC 28.8 V DC)  |
| Ripple                                  | ≤ 10 % <sup>1)</sup>   |
| Power consumption                       | $\leq$ 3 A $^{2)}$   |
| Output signal switching devices (OSSDs) |  |
| 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  $\mbox{\rm V}_{\mbox{\scriptsize S}}.$ 

#### Mechanical data

| $\label{thm:consection} \mbox{Housing cross-section (incl. system connection)}$ | 15 mm x 32 mm             |
|---|---------------------------|
| Housing material  | Aluminum alloy ALMGSI 0.5 |
| Weight  | 135 g                     |

# Ambient data

| Enclosure rating              | IP65 (EN 60529)                 |
|-------------------------------|---------------------------------|
| Ambient operating temperature | -20 °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)     |

<sup>&</sup>lt;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.

 $<sup>^{\</sup>rm 3)}$  Applies to the voltage range between –30 V and +30 V.

# C4MT-03624ABB04DE0 | miniTwin

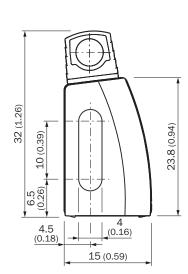
SAFETY LIGHT CURTAINS

# Other information

| Wave length     | 850 nm   |
|-----------------|----------|
| 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))

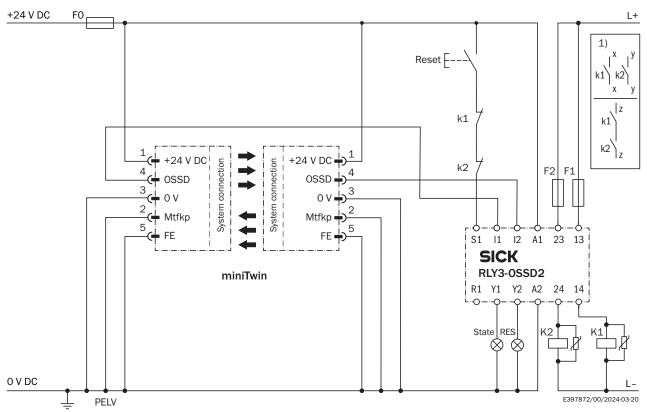




S = protective field height = housing length

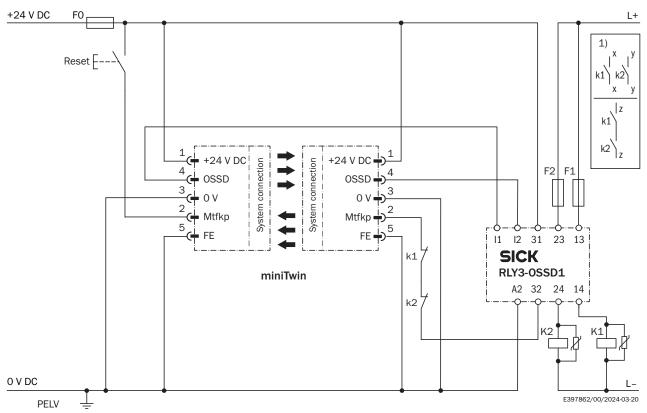
### Connection diagram

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.

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

|                              | Brief description  | Туре                      | Part no. |  |
|------------------------------|--|---------------------------|----------|--|
| Alignment aids               |  |                           |          |  |
| <b>L</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,<br>miniTwin | 4064710  |  |
| Test and moni                | toring tools   |                           |          |  |
|                              | 24 mm diameter, 250 mm length  | Test rod 24 mm            | 2045592  |  |
| Mounting brackets and plates |  |                           |          |  |
| il.                          | 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-<br>3AAAOMKU2SO4      | 2045843  |  |

|        | Brief description   | Туре                       | Part no. |
|--------|---|----------------------------|----------|
|        | 2 pieces, O-Fix bracket, 2 pieces, for all sizes, for all protective field heights  | BEF-3SHAEMKU2              | 2045835  |
| Others |   |                            |          |
|        | <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: ≤ 0.75 mm²</li> <li>Note: Test voltage 1.0 kV eff/60 s, insulation group C to VDE 0110</li> </ul>   | DOS-1205-GX                | 6047950  |
|        | <ul> <li>Connection type head A: Male connector, M12, 5-pin, straight, A-coded</li> <li>Description: Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm 6 mm Head B: -</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: ≤ 0.75 mm²</li> <li>Note: For field bus technology</li> </ul>   | STE-1205-G                 | 6022083  |
| 100    | <ul> <li>Cable: 160 mm</li> <li>Description: 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> <li>Cable: 350 mm</li> <li>Description: 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  |
| 18/    | <ul> <li>Cable: 700 mm</li> <li>Description: 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> <li>Cable: 10 m</li> <li>Description: Unshielded, miniTwin system plug for standalone, system connection:<br/>Cable, flying leads, 5-wire, length of cable: 10 m</li> </ul>  | Stand-alone<br>system plug | 2051290  |
|        | <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Description: Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm 6 mm Head B: -</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: ≤ 0.75 mm²</li> </ul>   | DOS-1205-G                 | 6009719  |
| 4.4    | <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 1 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A15-<br>010UB5M2A15     | 2096007  |
| k to   | <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Male connector, M12, 5-pin, straight, A-coded</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 5-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A15-<br>020UB5M2A15     | 2096009  |
|        | <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 5-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals</li> </ul>   | YF2A15-<br>050VB5XLEAX     | 2096240  |
| 40     | <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 5-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals</li> </ul>  | YF2A15-<br>100VB5XLEAX     | 2096241  |

# C4MT-03624ABB04DE0 | miniTwin

SAFETY LIGHT CURTAINS

| Brief description  | Туре                   | Part no. |
|--|------------------------|----------|
| <ul> <li>Connection type head A: Female connector, M12, 5-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 15 m, 5-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals</li> </ul> | YF2A15-<br>150VB5XLEAX | 2096242  |

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