



C2MT-09034BBC03FE0

miniTwin

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

miniTwin2 as a standalone device, miniTwin2 as last guest for 2- or 3-device cascade

| System connection | Resolution | Length of cable | Protective field height | Type | Part no. |
|---------------------------|------------|-----------------|-------------------------|--------------------|----------|
| Male connector M12, 5-pin | 34 mm | 700 mm | 900 mm | C2MT-09034BBC03FE0 | 1207860 |

This article includes 1 twin stick. Please order 2 for a functioning miniTwin2 system. Important notes: 1.) Concerns installation as a spare part: This type 2 device may be used as per section 1, paragraph (2a) of Machinery Directive 2006/42/EC within the EU as a spare part for identical PL d/SIL2 devices only if the machine was put on the market before 10/5/2015. Keep this note with your machine documentation. If the machine is resold, this note must be passed on to the next buyer. 2.) Concerns installation in new machines: Due to the amendment to the EN/IEC 61496-1 standard, this type 2 device may only be installed on new machines up to PLc/SIL1 as of 5/10/2015.

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



Detailed technical data

Features

| | |
|--------------------------------|---|
| System part | 1 Twin-Stick |
| Usage | miniTwin2 as a standalone device miniTwin2 as last guest for 2- or 3-device cascade |
| Mounting system type | C-fix or L-fix bracket |
| Resolution | 34 mm |
| Scanning range | Minimum 0 m ... 6 m Typical 0 m ... 8 m |
| Protective field height | 900 mm |
| Response time | ≤ 13 ms ¹⁾ |
| Synchronization | Optical, without separate synchronization |
| Items supplied | Twin stick System plug C-Fix bracket 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 |

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

Safety-related parameters

| | |
|----------------------------------|---------------------------|
| Type | Type 2 (IEC 61496-1) |
| Safety integrity level | SIL 1 (IEC 61508) |
| Category | Category 2 (EN ISO 13849) |
| Test rate (internal test) | 58 /s |

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

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

| | |
|---|--|
| Maximum demand rate | $\leq 34 \text{ min}^{-1}$ (EN ISO 13849) ¹⁾ |
| Performance level | PL c (EN ISO 13849), Pay attention to optical characteristics! ²⁾ |
| PFH_D (mean probability of a dangerous failure per hour) | Standalone system: 2.4×10^{-8} (EN ISO 13849) |
| T_M (mission time) | 20 years (EN ISO 13849) |
| Safe state in the event of a fault | At least one OSSD is in the OFF state. |

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

²⁾ 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 |
|---|-----------|-----------------|
| Restart interlock | ✓ | Deactivated |
| External device monitoring (EDM) | ✓ | Deactivated |
| Beam coding | Automatic | |

Interfaces

| | |
|-----------------------------|-----------------------------------|
| System connection | Male connector M12, 5-pin |
| Length of cable | 700 mm |
| Conductor cross section | 0.34 mm ² |
| Permitted cable length | $\leq 20 \text{ m}$ ¹⁾ |
| Configuration method | Hard wired |
| Display elements | LEDs |

¹⁾ 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_S | 24 V DC (19.2 V DC ... 28.8 V DC) |
| Ripple | $\leq 10 \%$ ¹⁾ |
| Power consumption | $\leq 3 \text{ A}$ ²⁾ |
| Output signal switching devices (OSSDs) | |
| Type of output | PNP semiconductors, short-circuit protected, cross-circuit monitored ³⁾ |
| ON state, switching voltage HIGH | 24 V DC (V _S - 2.25 V DC ... V _S) |
| OFF state, switching voltage LOW | $\leq 2 \text{ V DC}$ |
| Current-carrying capacity per OSSD | $\leq 300 \text{ mA}$ |

¹⁾ Within the limits of V_S.

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

³⁾ Applies to the voltage range between -30 V and +30 V.

Mechanical data

| | |
|--|---------------------------|
| Housing cross-section (incl. system connection) | 15 mm x 32 mm |
| Housing material | Aluminum alloy ALMGSI 0.5 |
| Weight | 320 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) |

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

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

| | Brief description | Type | Part no. |
|-------------------------------------|--|------------------------|----------|
| Alignment aids | | | |
| | 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 |
| Test and monitoring tools | | | |
| | 34 mm diameter, 250 mm length | Test rod 34 mm | 2045593 |
| Mounting brackets and plates | | | |
| | 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"> • Connection type head A: Female connector, M12, 5-pin, straight • Description: Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: $\leq 0.75 \text{ mm}^2$ | DOS-1205-G | 6009719 |
| | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: $\leq 0.75 \text{ mm}^2$ • Note: Test voltage 1.0 kV eff/60 s, insulation group C to VDE 0110 | DOS-1205-GX | 6047950 |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 5-pin, straight • Description: Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: $\leq 0.75 \text{ mm}^2$ • Note: For field bus technology | STE-1205-G | 6022083 |
| Others | | | |
|  | <ul style="list-style-type: none"> • Cable: 160 mm • 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 | Cascade system plug | 2046452 |
|  | <ul style="list-style-type: none"> • Cable: 350 mm • 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 | Cascade system plug | 2046454 |
|  | <ul style="list-style-type: none"> • Cable: 700 mm • 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 | Cascade system plug | 2046456 |
|  | <ul style="list-style-type: none"> • Cable: 10 m • Description: Unshielded, miniTwin system plug for standalone, system connection: Cable, flying leads, 5-wire, length of cable: 10 m | Stand-alone system plug | 2051290 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Male connector, M12, 5-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 1 m, 5-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-010UB5M2A15 | 2096007 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Male connector, M12, 5-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 2 m, 5-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot | YF2A15-020UB5M2A15 | 2096009 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF2A15-050VB5XLEAX | 2096240 |

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF2A15-100VB5XLEAX | 2096241 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 15 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF2A15-150VB5XLEAX | 2096242 |

SICK AT A GLANCE

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