

**SAFETY LIGHT CURTAINS** 



SAFETY LIGHT CURTAINS



### Ordering information

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

System connection	Extension connection	Resolution	Length of cable	Protective field height	Туре	Part no.
Male con- nector M12, 5-pin	Female connector M12, 5-pin	14 mm	700 mm	600 mm	C4MT- 06014AB- B04FE0	1207123

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

Illustration may differ

#### System part 1 Twin-Stick miniTwin4 as host for 2- or 3-device cascade Usage miniTwin4 as middle guest for 3-device cascade Mounting system type C-fix or L-fix bracket Resolution 14 mm Scanning range Minimum 0 m ... 4 m Typical 0 m ... 5 m 600 mm **Protective field height Response time** $\leq$ 14 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

 $^{(1)}$  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)
$\ensuremath{PFH}_{\ensuremath{D}}$ (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.

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### 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 <sup>2</sup>		
Permitted cable length	≤ 20 m <sup>1)</sup>		
Extension connection	Female connector M12, 5-pin		
Length of cable	700 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 <sub>S</sub>	24 V DC (19.2 V DC 28.8 V DC)
Ripple	< 10 % <sup>1)</sup>
Power consumption	$\leq$ 3 A <sup>2)</sup>
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

 $^{1)}$  Within the limits of  $\mathrm{V}_{\mathrm{S}}.$ 

<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.

 $^{3)}$  Applies to the voltage range between –30 V and +30 V.

### Mechanical data

Housing cross-section (incl. system connec- tion)	15 mm x 32 mm
Housing material	Aluminum alloy ALMGSI 0.5
Weight	215 g

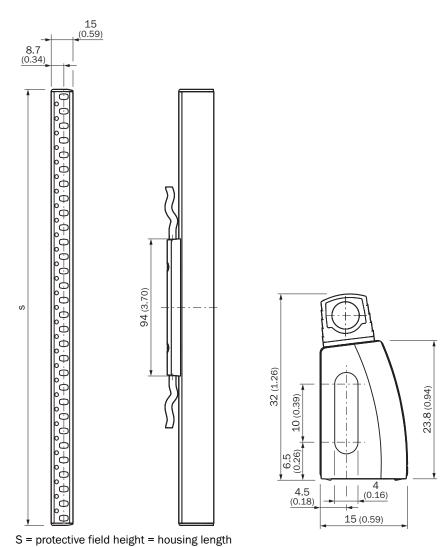
### Ambient data

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)

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### 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



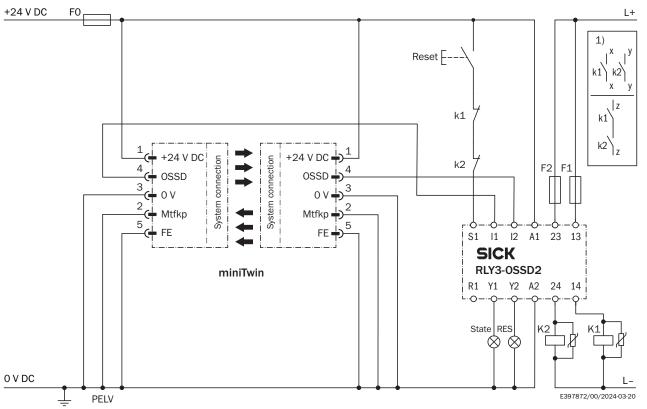
### Dimensional drawing (Dimensions in mm (inch))

C4MT-06014ABB04FE0 | miniTwin

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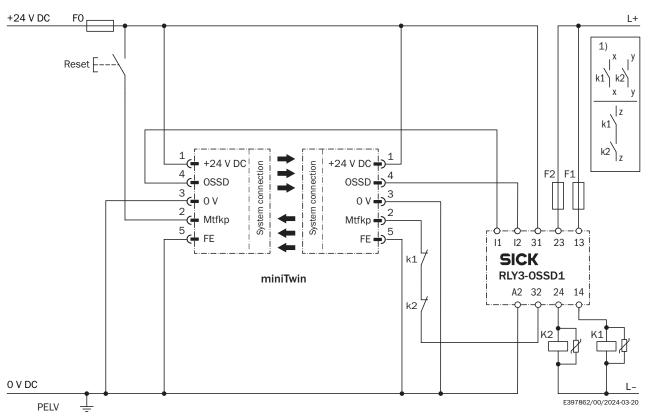
#### **Connection diagram**

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.

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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				
Ŵ	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 moni	toring tools			
	14 mm diameter, 250 mm length	Test rod 14 mm	2022599	
Device protection (mechanical)				
	Front screen protection set (protects sensors from damage by flying sparks and welding beads)	Additional front screen	2058489	

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	Brief description	Туре	Part no.
Mounting bra	ickets and plates		
LE	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- 3AAAOMKU2SO4	2045843
	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 mm<sup>2</sup></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 mm<sup>2</sup></li> <li>Note: For field bus technology</li> </ul>	STE-1205-G	6022083
19	<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
10	<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
10	<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: Cable, flying leads, 5-wire, length of cable: 10 m</li> </ul>	Stand-alone 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 mm<sup>2</sup></li> </ul>	DOS-1205-G	6009719
10 ×0	<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- 010UB5M2A15	2096007
100	<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- 020UB5M2A15	2096009
<b>\$</b>	<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- 050VB5XLEAX	2096240

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	Brief description	Туре	Part no.
N°O	<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- 100VB5XLEAX	2096241
<b>N</b> 0	<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- 150VB5XLEAX	2096242

# SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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