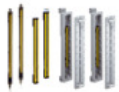


Safety light curtains

Safety light curtains reliably and cost-effectively protect against access into hazardous points and areas. Depending on the variant, different machine functions are integrated or can be selected via safe control solutions. The range from small and compact types to extremely robust and resistant variants that withstand special ambient conditions up to the highest safety level.



deTec

- NFC diagnosis and smartphone app
- Diagnostics and automation via IO-Link
- 2-signal muting
- Smart presence detection
- Dynamic protective field widths
- Configuration of all functions without software
- Reduced resolution: 1 or 2 beams
- IP65, IP67, and IP69K enclosure ratings plus variants for explosion-hazardous areas



C4000 Fusion Ex

- Certified for use in explosion-hazardous areas in accordance with ATEX, IECEx and NEC thanks to explosion-proof enclosure
- Access protection with differentiation between personnel and materials – without muting
- Hazardous point protection with optional regular blanking
- Available in protective field heights of 600 mm, 900 mm, and 1,200 mm



C4000 Advanced Ex

- ATEX for gas: II 2 G Ex db IIB T6
- ATEX for dust: II 2 D Ex tb IIIC T56°C Db IP6X
- NFPA 70/NEC 500 Class I, Div. 1, Groups C and D
- NFPA 70/NEC 500 Class II, Div. 1, Groups E, F and G
- NFPA 70/NEC 500 Class III, Div. 1
- Available in protective field heights of 600 mm, 900 mm and 1,200 mm
- Resolution of 30 mm
- Scanning range of 16 m



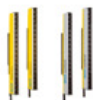
C4000 Entry/Exit ATEX II 3G/3D

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- ATEX II 3G / 3D (2/22 zones)
- ATEX for gas: II 3G Ex nA op is IIC T4 Gc X
- ATEX for dust: II 3D Ex tc IIIC T135 °C Dc
- 7-segment display
- External device monitoring (EDM) and restart interlock
- Beam coding for accurate system allocation
- Configuration and diagnostics via PC



C4000 Fusion ATEX II 3G/3D

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- ATEX II 3G / 3D (2/22 zones)
- ATEX for gas: II 3G Ex nA op is IIC T4 Gc X
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- External device monitoring (EDM) and restart interlock
- Beam coding for accurate system allocation
- Configuration and diagnostics via PC



miniTwin

- Twin sticks: sender and receiver in a compact housing
- Different protective field heights, graduated to 60 mm each
- Diagnostics through protective field visualization
- Commissioning and alignment by means of color LEDs, configuration without software
- Cascading possible
- Application-specific brackets



TWINOX4

- Media resistance due to stainless-steel housing
- Easy-to-clean design with rounded edges and without undercuts
- Twin concept: Sender and receiver in a single housing
- Restart interlock, external device monitoring (EDM), beam coding
- Enclosure ratings IP65 and IP67



C4000 Palletizer

- Type 4 (IEC 61496), SIL3 (EN 62061), PL e (EN ISO 13849)
- Self-teaching, dynamic blanking for detection of goods and pallets
- Direction detection
- Multiple sampling
- Reduced resolution
- Muting alternative
- Beam coding
- Object gap suppression



M4000 Advanced Curtain

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Rugged housing with three mounting grooves
- 7-segment display
- Resolution 14 mm or 30 mm, scanning range up to 19 m
- External device monitoring (EDM), restart interlock (RES), application diagnostic output (ADO), and SDL interface
- Beam coding for correct system allocation
- Muting: on-site connection and processing in combination with the UE403 muting switching amplifier
- Configuration and diagnostics via PC



C4000 Entry/Exit

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Self-teaching, dynamic blanking
- 7-segment display
- Multiscan function increases availability
- External device monitoring (EDM), restart interlock
- Beam coding
- Configuration and diagnostics via PC



C4000 Advanced

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Various options for blanking objects: fixed, floating, or teach-in
- 7-segment display
- PSDI mode with the UE402 switching amplifier
- External device monitoring (EDM) and restart interlock (RES)
- Beam coding for correct system allocation
- Configuration and diagnostics via PC
- Cascade up to three systems



C4000 Fusion

- Type 4 (IEC 61496), SIL3 (EN 62061), PL e (EN ISO 13849)
- Self-teaching and dynamic blanking for access protection related to the application
- Hand and area protection in dirty environments
- Multiple sampling
- Reduced resolution
- Fixed blanking
- 2 virtual photoelectric switches
- Integrated laser alignment



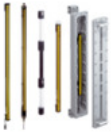
C4000 Palletizer ATEX II 3G/3D

- ATEX II 3G / 3D classification thanks to modified C4000 housing
- Muting alternative
- Self-teaching, dynamic blanking for detection of goods
- Direction detection
- Reduced resolution: 1 or 2 beams
- Multiple sampling of objects possible
- Beam coding
- Object gap suppression

Multiple light beam safety devices



Multiple light beam safety devices are electro-sensitive protective devices with two or more light beams. If one or more of the light beams is interrupted, a deactivation signal is sent to the machine so that any dangerous state on a machine or system can be stopped. A system consists of a sender and a receiver. In active/passive systems, the sender and receiver are located in a housing unit while a deflection unit on the passive side provides beam deflection.



deTem

- Smart Sensor: diagnostic data via IO-Link or NFC and the SICK Safety Assistant app
- Compact housing, standardized connectivity, compatible accessories
- Integrated alignment aid with status LEDs directly on the device
- Configuration of all functions without software
- Variants for explosion-hazardous areas as well as enclosure rating IP69K



M4000 Standard

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Robust housing with three mounting grooves
- Wide scanning range, up to 70 m
- External device monitoring (EDM), restart interlock and application diagnostic output
- Standardized M12 connectivity
- 7-segment display
- Configuration keys located directly on the device
- Optional integration features: laser alignment aid, LED or AS-i interface



M4000 Standard A/P

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Sender/receiver in a single housing, scanning range up to 7.5 m
- External device monitoring (EDM), restart interlock and application diagnostic output
- Standardized M12 connectivity
- 7-segment display
- Configuration keys for setting directly on the device
- Beam coding for correct system allocation
- Optional integrated: LED, AS-i interface



M4000 Advanced

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Robust housing with three mounting grooves
- Wide scanning range, up to 70 m
- External device monitoring (EDM), restart interlock, application diagnostic output, SDL interface
- Muting in combination with the UE403 muting switching amplifier
- 7-segment display
- Configuration and diagnostics via PC
- Optional integration features: laser alignment aid, LED



M4000 Advanced A/P

- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Sender/receiver in a single housing, scanning range up to 7.5 m
- External device monitoring (EDM), restart interlock, application diagnostic output, SDL interface
- Muting in combination with the UE403 muting switching amplifier
- 7-segment display
- Configuration and diagnostics via PC
- Optional integrated: LED



M2000 RES/EDM A/P

- Type 2 (IEC 61496), PL c (EN ISO 13849)
- Robust, industrial housing
- 7-segment display
- Scanning range up to 6 m
- External device monitoring (EDM), restart interlock (RES), and internal self-testing configurable without PC
- Economical active/passive variants minimize the wiring costs
- Standardized M12 connectivity

M2000 Standard A/P



- Type 2 (IEC 61496), SIL1 (IEC 61508), PL c (EN ISO 13849)
- Robust, industrial housing
- Scanning range up to 6 m
- External device monitoring (EDM) and internal self-testing configurable without PC
- Standardized M12 connectivity is available
- 7-segment display
- Unique A/P version minimize the wiring costs

M2000 Standard



- Type 2 (IEC 61496), SIL1 (IEC 61508), PL c (EN ISO 13849)
- Robust, industrial housing
- Wide scanning range, up to 70 m
- External device monitoring (EDM) and internal self-testing configurable without PC
- Standardized M12 connectivity available
- 7-segment display
- Beam coding for correct system allocation

M4000 Area



- Type 4 (IEC 61496), SIL3 (IEC 61508), PL e (EN ISO 13849)
- Robust housing with three mounting grooves
- Wide scanning range, up to 70 m
- Resolution 60 mm or 80 mm
- External device monitoring (EDM), restart interlock, application diagnostic output, SDL interface
- 7-segment display
- Configuration and diagnostics via PC
- Beam coding for correct system allocation

Mirror columns and device columns



Free choice of space for the safety: Mirror and device columns from SICK are used in applications where it is difficult to mount optoelectronic protective devices. Used together, mirror and device columns are the ideal solution to protect multi-sided areas in machining centers or material transfer applications. The optoelectronic devices can be mounted to freestanding device columns to ensure hazardous areas are properly safeguarded. Mirror columns are used in conjunction with device columns to deflect the beam from the sender to the receiver. Since multiple sides of a machine can be protected with a single pair of devices, the overall wiring is reduced. In addition to reliable device protection, the device columns have two external mounting grooves, which enable muting arms to be installed.

Mirror columns with separate mirrors



- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Easy mounting and adjustment
- Large reflector surface for efficient multi-sided protection via beam deflection and high availability
- Mirror columns in various lengths
- With individual mirrors for multiple light beam safety devices

Mirror columns with protective field height mirror



- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Simple mounting and adjustment
- Large reflector surface for efficient multi-sided protection via beam deflection and high availability
- Mirror columns in various lengths
- With a continuous mirror for safety light curtains and for multiple light beam safety devices with any number of beams

Device columns with external grooves



- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Simple mounting and adjustment
- Device protection against external influences
- Universal application for:
 - Multiple light beam safety devices
 - Safety light curtains

Device columns for outdoor use



- Use of heatable front screen in outdoor areas
- Free-standing mounting solution
- Compact, rugged design and extremely high stability
- Easy mounting and adjustment
- Device protection against external influences
- Applicable for M4000 multiple light beam safety devices

Safety laser scanners



SICK safety laser scanners combine know-how and experience with maximum performance. Whether mobile or stationary, for area protection or access protection, indoors or outdoors – our comprehensive portfolio offers the right cost-effective package for each and every requirement. Using the time-of-flight measurement principle, the compact devices scan their surroundings and measure distances. An integrated rotating mirror allows protection areas defined by the customer to be monitored in two dimensions.

Contact Chess Controls for more information on Sick safety laser scanners at 705 682 2828

Safe radar sensors



Safe radar sensors from SICK stand for reliable personal and object detection with very high machine availability, even under harsh production conditions. Whether there are sparks, wood chips, dust, heat, cold or other interfering factors: The rugged radar technology from SICK ensures high machine and plant productivity.

Contact Chess Controls for more information on Sick safety radar sensors at 705 682 2828

Safety camera systems



Safety camera systems from SICK are electro-sensitive protective devices based on image processing technology. Sender and receiver are integrated into a single housing. The compact camera systems do not require any additional software and can be commissioned at the push of a button.

Automatic alignment makes for high flexibility when defining the protective field, and the high degree of freedom in the machine design optimizes ergonomics for the operator.

Contact Chess Controls for more information on Sick safety camera systems at 705 682 2828

Single-beam photoelectric safety switches



Single-beam photoelectric safety switches comprise either self-testing senders and receivers or testable senders and receivers combined with an evaluation unit. They have long sensing ranges and come in a variety of types and sizes. They comply with Type 2 or Type 4 to EN 61496, and PL c or PL e to EN ISO 13849. Fields of application include robots, processing machinery, machining centers, palletizer systems, high-bay warehouses, and transfer lines.

Contact Chess Controls for more information on Sick safety single beam photoelectric switches at 705 682 2828



Non-contact safety switches

Safety solutions - low-wear and low-maintenance

Non-contact safety switches are the optimal solution if precise guidance of protective doors is difficult. Whether magnetic, inductive or via transponders, they are low-wear and low-maintenance when it comes to safe monitoring of doors or safe position monitoring.



i150RP

- Rope lengths up to 75 m, with rope break and rope pull function
- Metal housing with integrated emergency stop push button and tension display
- Rotary unlocking lever
- Available with M20 X 1.5 cable entry gland or Flexi Loop compatible M12 plug connector (depending on variant)
- Slow-action switching elements with four contacts



i110RP

- Rope lengths up to 30 m, with rope break and rope pull function
- Metal housing with integrated rotary unlocking lever and tension display
- Available with M20 X 1.5 cable entry gland or Flexi Loop-compatible M12 plug connector (depending on variant)
- Slow-action switching elements with four contacts
- Complies to the standards EN ISO 13850 and IEC/EN 60947-5-5



ES21

- Available either as a surface-mounted version with housing or as a built-in version (Ø 22 mm)
- Built-in version for machine control panels with self-monitoring contacts between pushbutton and switching element
- Surface-mounted version for direct mounting on different machines and systems
- Variants with LED ring lighting
- Optionally available with protective collar to prevent inadvertent actuation



ES11

- Slim plastic housing with quick disconnect mounting clip
- Available as an emergency stop pushbutton or as a combined emergency stop/reset unit
- Emergency stop pushbutton with optional LED illumination
- Illuminated reset pushbutton
- Flexi Loop-compatible M12 plug connector



TR110 Lock

- PL e for door and locking monitoring (EN ISO 13849)
- Locking force: up to 3,900 N
- Actuator with high coding level (EN ISO 14119)
- Enclosure rating: IP67, IP69K
- Power to lock or power to release variants
- Three actuation directions
- Optional emergency release
- Variants with two illuminable pushbuttons



i200 Lock

- Compact plastic housing
- Stainless steel entry for actuator
- Either rigid, mobile or bolt actuators available
- 3 M20 x 1.5 cable entry glands
- Power to lock or power to release variants
- Lock and door monitoring
- LED locking indicator



i15 Lock

- Compact plastic housing
- Variants with metal actuator head
- Rigid or mobile actuators
- 1 M20 x 1.5 cable entry gland
- Power to lock or power to release variants
- Lock and door monitoring
- IP 67 enclosure rating



MB1

- Rugged design
- Variants with ANSI-compliant locking mechanism
- Standardized frame plates suitable for many safety switches from SICK
- Horizontal installation tolerance of 27 mm
- Compensation of vertical door offset up to ± 7 mm
- Variants with catch release button and emergency release



MLP1

- Actuator with low or high coding level
- Magnetic locking force: 500 N, retaining force: 25 N
- PL e, category 4 (EN ISO 13849), SIL 3 (EN 61508) for door monitoring
- Offset tolerance: ± 5 mm
- Enclosure rating: IP67
- Standardized or integrated mounting
- Variants with two M12 plug connectors for simple cascading



IQB2S

- Rectangular type: 12 mm x 26 mm x 40 mm
- Response range: 4 mm
- Two OSSD safety outputs
- Enclosure rating: IP67
- Temperature range: -25 °C bis +70 °C
- Rugged VISTAL® housing
- Up to performance level PL d (EN ISO 13849)
- Connection variants: M8 male connector, cable or cable with M12 male connector



IN4000 Direct

- Two OSSD safety outputs for direct connection of sensors to a single safety controller
- Response range of up to 20 mm
- LED status indicator
- Up to performance level PL e (EN ISO 13849)
- Flexi Loop-compatible M12 plug connector



i10 Lock

- Narrow plastic housing
- Rigid or mobile actuators
- Available with M20 X 1.5 cable entry glands or Flexi Loop-compatible M12 plug connector (depending on variant)
- Power to lock or power to release variants
- Lock and door monitoring
- IP 67 enclosure rating



i110 Lock

- Narrow plastic housing
- Metal actuator head
- Rigid or mobile actuators
- Available with M20 X 1.5 cable entry glands or Flexi Loop-compatible M12 plug connector (depending on variant)
- Power to lock or power to release variants
- Lock and door monitoring



TR10 Lock

- PL e for door and locking monitoring (EN ISO 13849)
- 1,690 N locking force
- RFID actuator with low or high coding level (EN ISO 14119)
- Enclosure rating IP 67, IP 69K
- Power to lock or power to release variants
- Reliable series connection of safety outputs (OSSDs)
- Four actuation directions
- Flexi-Loop-ready



ER12

- Thin housing with snap-lock connection
- Illuminable pushbuttons
- Lock function
- M12 plug connector



IME2S

- Types: M12 to M30
- Increased response ranges: 4 mm to 15 mm
- Two OSSD safety outputs
- Enclosure rating: IP67
- Temperature range: -25 °C to +70 °C
- Nickel-plated brass housing, plastic sensing face
- Up to performance level PL d (EN ISO 13849)
- Connection variants: M12 male connector, cable or cable with M12 male connector



IN4000 Standard

- One clocked safety output for direct connection of sensors to a safety controller
- IP67 or IP69K enclosure rating
- Response range up to 15 mm
- LED status indicator
- Up to performance level PL e (EN ISO 13849)
- Safe series connection of sensors possible



i10P

- Standardized plastic housing
- Roller plunger with plastic roller
- 1 M20 x 1.5 cable entry gland
- Slow-action switching elements with three contacts



i110R

- Standardized metal housing
- Metal turning lever with plastic roller
- 1 M20 x 1.5 cable entry gland
- Slow-action or snap-action switching element with up to four contacts



i110P

- Standardized metal housing
- Roller plunger with stainless steel roller
- 1 M20 x 1.5 cable entry gland
- Slow-action or snap-action switching element with up to four contacts



i10R

- Standardized plastic housing
- Turning lever with plastic roller
- 1 M20 x 1.5 cable entry gland
- Slow-action switching element with three contacts



i16S

- Compact plastic housing
- Rigid and mobile actuators
- Available with M20 X 1.5 cable entry glands or Flexi Loop-compatible M12 plug connector (depending on variant)
- Slow-action switching elements with two contacts
- High retaining force
- IP 67 enclosure rating



i12S

- Narrow plastic housing
- Rigid and mobile actuators
- Available with M16 X 1.5 cable entry gland or Flexi Loop-c plug connector (depending on variant)
- Slow-action switching element with up to three contacts
- IP 67 enclosure rating



i17S

- Compact plastic housing
- Rigid or mobile actuators
- 3 M20 x 1.5 cable entry glands
- Slow-action switching elements with three contacts
- IP 67 enclosure rating



i110S

- Standardized metal housing
- Rigid or mobile actuators
- Available with M20 X 1.5 cable entry gland or Flexi Loop-compatible M12 plug connector (depending on variant)
- Slow-action switching elements with four contacts
- IP 67 enclosure rating



i10H

- Standardized plastic housing
- Stainless steel solid shaft with Ø 10 mm
- 1 cable entry M16 x 1.5
- Slow action switching element with up to 3 contacts
- Adjustable switching point
- IP67 enclosure rating

Additional Safety products available

Safety controllers



SICK's safety controllers provide straightforward, flexible, and scalable solutions for the implementation of intelligent machine design. Flexi safety controllers create a modular hardware platform without the use of complex software. They are user-friendly and provide the ideal basis for easy integration of all safety control components. Their compact design makes these safety controllers optimally suited for a variety of applications.

Safe Motion



Safe Motion is the continuous safe monitoring of machine movements. A variety of certified drive safety functions optimize the interaction between human and machine as well as productivity. In both mobile and stationary machines, Safe Motion safely monitors the direction, speed and position to implement interruption-free processes.

Safety relays



The wide range of safety solutions from SICK – from a single-channel emergency stop pushbutton to a safety laser scanner with PNP outputs – can be connected to safety relays. Safety relays are ideal for flexible and cost-effective machine integration. The extensive portfolio of safety products from SICK offers the right solution for virtually any application.

SICK
Sensor Intelligence.

 **CHESS**
CONTROLS

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Safety light curtains