PRODUCT OVERVIEW

SAFETY SWITCHES

OVERVIEW OF THE PRODUCTS

Non-contact safety switches, safety locking devices, electro-mechanical safety switches, safety command devices, mechanical bolts for safety switches

SICK
Sensor Intelligence.

BROAD PRODUCT RANGE FOR YOUR DIVERSE APPLICATIONS

Safety switches are indispensable in any application where safety is required for people and machinery. They are used for protecting movable physical guards, determining the position of dangerous movements, and the safe stop function. SICK offers not only traditional electro-mechanical safety switches and safety command devices but also a large selection of safety locking devices and non-contact safety switches. In combination with safe control systems, this enables us to provide you with tailor-made complete solutions.

CHALLENGES CALL FOR SOLUTIONS

Safely monitor hazardous access points like doors or flaps

The manipulation of safety switches on physical guards is a problem in many companies. A high level of protection against manipulation is therefore often necessary to avoid accidents. SICK offers suitable solutions for this: from the tried-and-proven RE1 and RE2 magnetic safety switches through to the flexible STR1 transponder safety switches with a high, variant-dependent coding level and performance level e.

Manipulation-proof closing of doors or flaps to protect people and processes

Is manipulation proofing the protective devices on your machines or equipment an important issue for you? Then we recommend the RFID-monitored TR110 Lock safety locking devices with performance level e.

The MLP1 magnetic safety locking device with a high offset tolerance is the ideal solution for protecting processes from unnecessary interventions.

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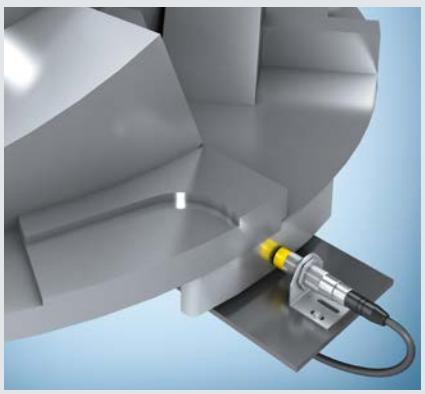
YOUR PARTNER FOR SAFETY

SICK has a comprehensive portfolio of sensors, controllers and services and can also assist you on-site with the world's largest network of functional safety experts. In addition to solving your safety needs, SICK offers you unbeatable added value because the safety portfolio also includes a handy range of non-safety automation components.



Safely monitor the position or presence of machine parts

Sensors used for position monitoring in dynamic processes are subjected to high levels of mechanical stress as a result of frequent actuation. The IME2S and IQB2S inductive safety switches from SICK operate in a non-contact manner and are therefore especially low-wear and low-maintenance. They also have a very precise switching point.

Safely stopping machines in case of emergency or manually resetting protective devices

The ability to immediately stop a machine in absolute emergencies is essential. The easy-to-install ES11 emergency stop pushbutton offers the ideal solution for this. Why? Because it already comes with an integrated button for manually resetting protective devices. An LED also makes it easier for the machine operator to see the operating status.

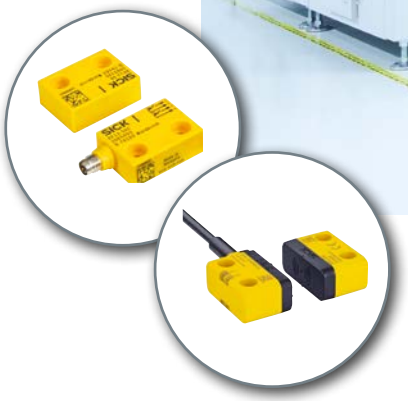
To find the right safety switch for your safety task, see the selection guide on ➜ Page 6

ACCESS AND POSITION: NON-CONTACT SAFETY

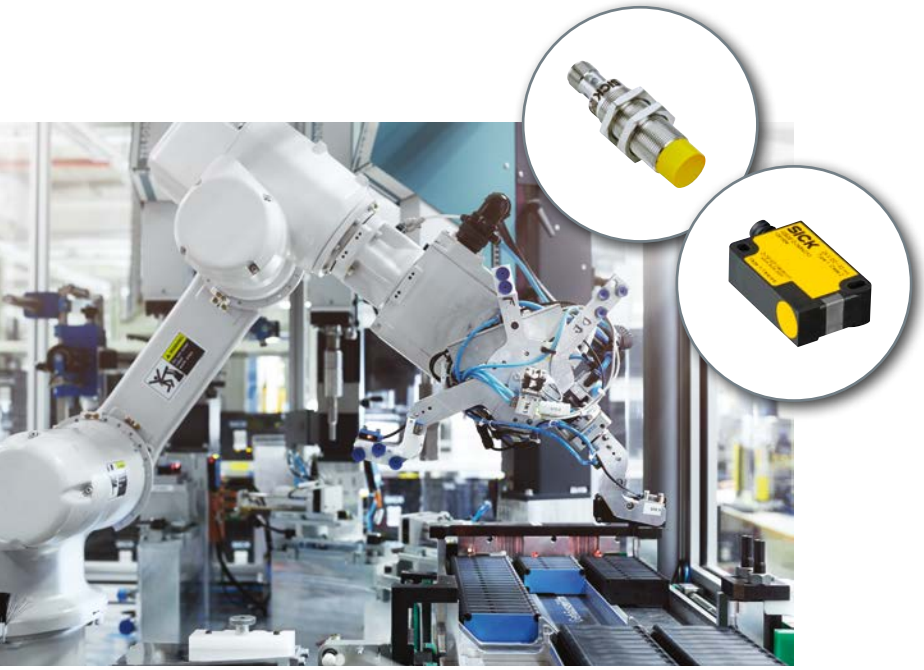
Machines and production lines have doors and flaps that need to be safeguarded. Highly manipulation proof magnetic safety switches and transponder safety switches are optimally suited for this application.
Moving machine parts also need to be reliably monitored. Inductive safety switches detect a defined position and register it reliably.
Magnetic, inductive and transponder safety switches belong to the class of non-contact safety switches and operate in a particularly low-wear manner: a clear advantage for minimizing your costs.

Rugged functionality for a longer product life cycle

The RE1 and RE2 magnetic safety switches and the STR1 transponder safety switch guarantee optimal monitoring of doors and flaps. They offer a high tolerance to door offset.
The RE1 and RE2 are not only reliable but also low maintenance and, when combined with a suitable safety module in the controller, deliver performance level e protection.
The STR1 also offers a very intuitive diagnostic function. It provides flexible mounting options and maximum protection against manipulation.



Discover the innovative STR1 ➜ www.sick.com/STR1
Check out the reliable RE1 and RE2 ➜ www.sick.com/RE1 & www.sick.com/RE2



Quick installation for maximum machine availability

Inductive safety switches guarantee simple and reliable position and area monitoring up to performance level d. Because they are activated by metal, the safety switches do not require a separate actuator to perform this task. This makes them especially low wear in operation. They are simple and flexible to mount and, thanks to the wide range of products available, can be used for numerous safety tasks.

Find out more about the cubic IQB2S
➜ www.sick.com/IQB2S
Discover the possibilities of the cylindrical IME2S
➜ www.sick.com/IME2S

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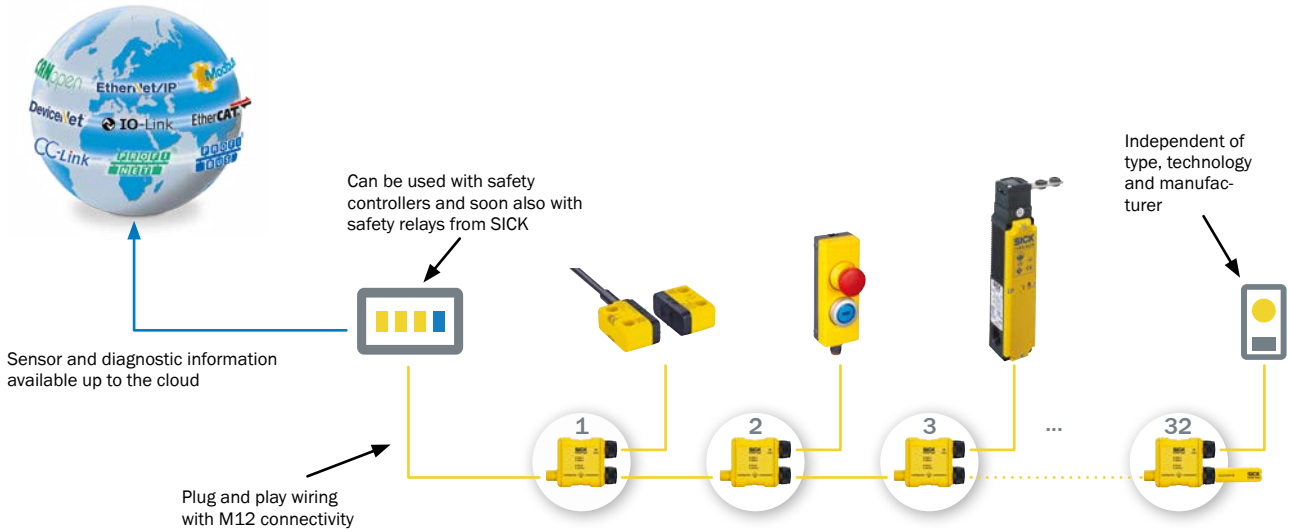
VERSATILE AND ABLE TO BE INTEGRATED INTO ANY SYSTEM

Different sectors, different tasks, different requirements – there are many ways of integrating sensors. Whether it be wiring sensors individually, connecting simple sensors in series, or cascading different protective devices. SICK is a reliable partner in this field and can offer a suitable solution for integrating your sensors.

Cuts costs, supports diagnostics, reliable

Flexi Loop provides a flexible solution for connecting safety switches and other safety sensors in series within a machine. Thanks to the ability to individually monitor each sensor, this series connection allows safety levels up to performance level e with no compromise in safety. Which safety level is required for your system depends on the risk assessment. We would be happy to assist you with this.



For background information and further integration options, see:

- ➜ **Which safety level is required for your system depends on the risk assessment.**
- ➜ **Explanatory video on fault masking**

AN OVERVIEW OF THE MOST IMPORTANT FEATURES OF THE SAFETY SWITCHES

	Safety application	Key selection criteria		Manipulation protection due to coding level of the actuator (EN ISO 14119)	Product group	Products	from page	
Interlocking movable physical guards								
	Door locking	Protection of people [1]	Power to release	Low coding level	Safety locking devices	i14 Lock, i10 Lock, i110 Lock, i200 Lock	10	→
				Low/high coding level		TR10 Lock/TR110 Lock	10	
			Power to lock [2]	Low coding level		i10 Lock, i110 Lock, i200 Lock	11	
				Low/high coding level		TR10 Lock, TR110 Lock	10	
		Process protection	Power to lock	Low coding level		MLP1	10	
	Door monitoring	No tolerance to door offset	Retaining force required, electromechanical volt-free contact	Low of coding	Safety switches with separate actuator	i12S, i16S, i17S, i110S	12	
		Tolerance to door offset	No retaining force required, volt-free reed contacts (low-wear)	Low coding level	Magnetic safety switches	RE1, RE2	8	
			No retaining force required, OSSDs (low-wear)	Low/high coding level	Transponder safety switches	STR1	8	
Safe position monitoring								
	Monitoring of machine stop positions	Switch off when activated	Mechanical activation	No coding	Safety position switches	i10P, i10R, i110P, i110R	11	→
		Switch on when activated	Non-contact activation by metal without additional actuator		Inductive safety switches	IME2S, IQB2S	9	
						IN4000 Direct	9	
			Non-contact activation by coded actuator	Low/high coding level	Transponder safety switches	STR1	8	
Safety commands								
	Emergency stop	–	Triggering of emergency stop at defined positions	–	Emergency stop pushbutton	ES11, ES21	14	→
			Triggering emergency stop throughout the entire distance	–	Rope pull switches	110RP, 150RP	15	
	Resetting of the protective device	–	–	–	Reset pushbutton	ER12	14	
	Manual approval for maintenance and setup mode	–	–	–	Enabling switch	E100	15	

[1] All locks for protecting people can also be used for process protection.

[2] In the event of a voltage drop, the safety locking device unlocks regardless of whether the dangerous state of the machine has ended. Use for protecting people requires correct project planning.

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ACHIEVABLE PERFORMANCE LEVEL FOR THE SAFE EVALUATION UNIT AND THE SAFETY SWITCH

	 **ReLy RLY3-EMSSx** For safety sensors with volt-free contacts	 **ReLy RLY3-OSSDx** For safety sensors with OSSDs	 **Flexi Classic** For volt-free contacts and OSSDs	 **Flexi Soft** For volt-free contacts and OSSDs
→	PL c / (PL d) [3]	–	PL c / (PL d) [3]	PL c / (PL d) [3]
	–	PL e [4]	–	PL e [4]
	PL c / (PL d) [3]	–	PL c / (PL d) [3]	PL c / (PL d) [3]
	–	PL e [4]	PL e [4]	PL e [4]
	–	PL e [5]	PL e [5]	PL e [5]
	PL c / (PL d) [3]	–	PL c / (PL d) [3,7]	PL c / (PL d) [3]
	PL e [6,7]	–	PL e [6]	PL e [6,7]
	–	PL e	PL e	PL e
→	PL c	–	PL c	PL c
	–	PL d	PL d	PL d
	–	PL e	PL e	PL e
	–	PL e	PL e	PL e
→	PL e [9]	–	PL e [9]	PL e [9]
	PL e [6]	–	PL e [6]	PL e [6]
	–	–	compatible	compatible
	compatible [10]	compatible [10]	compatible [10]	compatible
	→ www.sick.com/ReLy	→ www.sick.com/ReLy	→ www.sick.com/Flexi_Classic	→ www.sick.com/Flexi_Soft

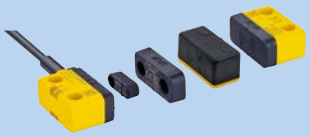
[3] PL d with fault exclusion (e.g., when using the MB1 in conjunction with electromechanical safety locking devices or safety switches with a separate actuator).

[4] PL e for door and locking device monitoring. | [5] PL e for door monitoring. | [6] PL e when using PSDI inputs. | [7] PL e when actuated at least once a month.

[8] Can only be combined with magnetic safety switches with equivalent contacts (RE13, RE23, RE27).

[9] PL e when using PSDI inputs and integrated dropout protection contact (additional contact which monitors the correct position of the contact block in the built-in version of the emergency stop pushbutton).

[10] Only with series connection of one normally closed and one normally open contact.

	 **STR1**	 **TR4 Direct**	 **RE1**	
	Compact, safe, and flexible	Intelligent and non-contact door monitoring with high manipulation protection	Simple and reliable non-contact door monitoring	
Technical data overview				
Principle of operation	Transponder	Transponder	Magnetic	
Safety integrity level	SIL3 (IEC 61508), SILCL3 (EN 62061)	SIL3 (IEC 61508), SILCL3 (EN 62061)	–	
Category	Category 4 (EN ISO 13849)	Category 4 (EN ISO 13849)	–	
Performance level	PL e (EN ISO 13849)	PL e (EN ISO 13849)	–	
Number of N/C contacts	–	–	1/0	
Actuator coding level	Low/high coding level (EN ISO 14119)	Low/high coding level (EN ISO 14119)	Low coding level (EN ISO 14119)	
Number of normally open contacts	–	–	1/2	
Type of output	Semiconductor output (OSSD)	Semiconductor output (OSSD)	Reed contacts	
Number of safe outputs	2	2	–	
Connection type	Cable with male connector, M8, -pin Cable with male connector, M12, 5-pin Cable with male connector, M12, 8-pin Cable, 5-wire Cable, 7-wire	Cable/cable with male connector, M12, 5-pin/cable with male connector, M12, 8-pin	Plug connector, M8, 4-pin Cable Cable with male connector, M12, 4-pin Cable with male connector, M8, 4-pin	
At a glance				
	• Response range of up to 14 mm • Small housing with flexible mounting options • Sensor activation possible from three sides • Four different actuators available • Universally coded, uniquely coded, and permanently coded sensors • PL e (EN ISO 13849), SIL3 (IEC 61508) • Safe series connection of up to 30 sensors possible	• Response range of up to 25 mm • Unique and universally-coded sensors up to enclosure rating IP 69K • Up to performance level PL e (EN ISO 13849) • Two OSSD safety outputs • Reliable series connection of up to 30 sensors possible (depending on the variant) • LED status indicator • Periphery indicator and magnetic holding force (optional) • Flexi-Loop-compatible M12 plug connector (depending on the variant)	• Response range of up to 7 mm • 2 or 3 contacts • Up to performance level PL e (EN ISO 13849) • Sensors with plug connector or connected cable • Flexi-Loop-compatible M12 plug connector (depending on the variant)	
Detailed information	➜ www.sick.com/STR1	➜ www.sick.com/TR4_Direct	➜ www.sick.com/RE1	

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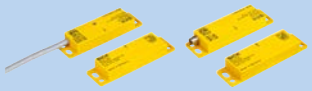
	RE2	IME2S	IQB2S	IN4000 Direct
				
	Simple and reliable non-contact door monitoring	Simple and reliable position monitoring up to PL d	Simple and reliable position monitoring up to PL d	Reliable non-contact position monitoring
	Magnetic	Inductive	Inductive	Inductive
	–	SIL2 (IEC 61508), SILCL2 (EN 62061)	SIL2 (IEC 61508), SILCL2 (EN 62061)	SIL3 (IEC 61508), SILCL3 (EN 62061)
	–	Category 2 (ISO 13849-1)	Category 2 (ISO 13849-1)	Category 3 (EN ISO 13849)
	–	PL d (ISO 13849-1)	PL d (ISO 13849-1)	PL e (EN ISO 13849)
	1/0	–	–	–
	Low coding level (EN ISO 14119)	Uncoded (EN ISO 14119)	Uncoded (EN ISO 14119)	Uncoded (EN ISO 14119)
	1/2	–	–	–
	Reed contacts	Semiconductor output (OSSD)	Semiconductor output (OSSD)	Semiconductor output (OSSD)
	–	2	2	2
	Plug connector, M8, 4-pin Cable Cable with male connector, M8, 4-pin Cable with male connector, M12, 4-pin Cable with male connector, M12, 8-pin	Male connector, M12, 4-pin/ cable with male connector, M12, 4-pin/cable, 4-wire	Cable with male connector, M12, 4-pin/male connector, M8, 4-pin/cable, 4-wire	Plug connector, M12, 4-pin
	• Response range of up to 9 mm • 2 or 3 contacts • Up to performance level PL e (EN ISO 13849) • Sensors with plug connector or connected cable • LED status indicator (RE27) • Flexi-Loop-compatible M12 plug connector (depending on the variant)	• 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	• Cuboid design: 12 mm x 26 mm x 40 mm • Response range: 4 mm • Two OSSD safety outputs • Enclosure rating: IP67 • Temperature range: –25 °C to +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	• Two OSSD safety outputs for direct connection of sensors to a 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
	→ www.sick.com/RE2	→ www.sick.com/IME2S	→ www.sick.com/IQB2S	→ www.sick.com/IN4000_Direct

			
	TR110 Lock	**MLP1**	**i14 Lock**
	Safety locking device with transponder monitoring	Safety switch with magnetic locking device for process protection	Safe and economic door monitoring with high locking force
Technical data overview			
Type	Type 4, transponder (EN ISO 14119)	Type 4, transponder (EN ISO 14119)	Type 2, electromechanical (EN ISO 14119)
Actuator coding level	High coding level (EN ISO 14119)	Low coding level (EN ISO 14119)	Low coding level (EN ISO 14119)
Type of output	Semiconductor output (OSSD)	Semiconductor output (OSSD)	Electromechanical contacts
Locking principle	Power to lock/power to release	Power to lock	Power to release
Locking device monitoring	✔	–	✔
Door monitoring	✔	✔	–
Locking force	3,900 N (EN ISO 14119)	500 N	1,000 N (EN ISO 14119)
Connection type	Plug connector, M12, 8-pin Plug connector, M12, 5-pin	Cable with male connector, M12, 5-pin Cable with female connector, M12, 5-pin Cable with male connector, M12, 8-pin	Cable entry, 1 x M20
LED	–	✔	✔
At a glance			
	• 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 escape release • Variants with two illuminable pushbuttons	• 500 N magnetic locking force, 25 N retaining force • PL e/Cat. 4 (EN ISO 13849), SIL3 (EN 61508) for door monitoring • Offset tolerance of ± 5 mm • IP67 enclosure rating • Standard or integrated mounting • Variants with two M12 plug connectors for simple cascading	• Compact plastic housing • M20 x 1.5 cable entry • Power to release • interlocking monitoring • LED interlocking status indicator • Mechanical unlocking mechanism on three sides
Detailed information	**➜ www.sick.com/TR110_Lock**	**➜ www.sick.com/MLP1**	**➜ www.sick.com/i14_Lock**

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	i10 Lock	**i110 Lock**	**i200 Lock**
	Safe and economic door monitoring with high locking force	Safe and economic door monitoring with high locking force	Safe and economic door monitoring with high locking force
	Type 2, electromechanical (EN ISO 14119)	Type 2, electromechanical (EN ISO 14119)	Type 2, electromechanical (EN ISO 14119)
	Low coding level (EN ISO 14119)	Low coding level (EN ISO 14119)	Low coding level (EN ISO 14119)
	Electromechanical contacts	Electromechanical contacts	Electromechanical contacts
	Power to lock/power to release	Power to lock/power to release	Power to lock/power to release
	✔	✔	✔
	✔	✔	✔
	1,300 N (EN ISO 14119)	2,500 N (EN ISO 14119)	2,600 N (EN ISO 14119)
	Cable entry, 3 x M20 Plug connector, M12, 8-pin	Cable entry, 3 x M20 Plug connector, M12, 8-pin	Cable entry, 3 x M20
	–	–	✔
	• Narrow plastic housing • Rigid and mobile actuators • With M20 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Power to lock or power to release variants • Interlocking and door monitoring • IP67 enclosure rating	• Narrow plastic housing • Metal actuating head • Rigid and mobile actuators • With M20 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Power to lock or power to release variants • Interlocking and door monitoring	• Compact plastic housing • Stainless steel insertion area for actuator • Either rigid, moving or bolt actuator • Three M20 x 1.5 cable entries • Power to lock or power to release variants • Interlocking and door monitoring • LED interlocking status indicator
	→ www.sick.com/i10_Lock	→ www.sick.com/i110_Lock	→ www.sick.com/i200_Lock

	i12S	i16S	i17S	
				
	Reliable and economic door monitoring with retaining force	Reliable and economic door monitoring with retaining force	Reliable and economic door monitoring with retaining force	
Technical data overview				
Switch type	safety switches with separate actuator	safety switches with separate actuator	safety switches with separate actuator	
Number of positive opening normally closed contacts	1/2	1/2	2	
Number of normally open contacts	1/0	1/0	1	
Housing material	Plastic	Plastic	Plastic	
Enclosure rating	IP67 (IEC 60529)	IP67 (IEC 60529)	IP67 (IEC 60529)	
Switching principle	Slow action switching element	Slow action switching element	Slow action switching element	
Connection type	Cable entry, 1 x M16 / plug connector, M12, 4-pin	Cable entry, 3 x M20 / plug connector, M12, 4-pin	Cable entry, 3 x M20	
At a glance				
	• Narrow plastic housing • Rigid and mobile actuators • With M16 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Slow action switching element with up to three contacts • IP67 enclosure rating	• Compact plastic housing • Rigid and mobile actuators • With M20 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Slow action switching element with two contacts • High retaining force • IP67 enclosure rating	• Compact plastic housing • Rigid and mobile actuators • Three M20 x 1.5 cable entries • Slow action switching elements with three contacts • IP67 enclosure rating	
Detailed information	➜ www.sick.com/i12S	➜ www.sick.com/i16S	➜ www.sick.com/i17S	

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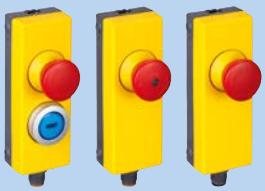
	i110S	i10H	i10P, i10R	i110P, i110R
				
	Reliable and economic door monitoring with retaining force	Reliable door monitoring directly on the hinge	Safe and reliable inductive position monitoring	Safe and reliable inductive position monitoring
	safety switches with separate actuator	Safety hinge switches	Safety position switches	Safety position switches
	2/3	1/2	2	1/2/3
	2/0/1	1	1	1/2
	Metal	Plastic	Plastic	Metal
	IP67 (IEC 60529)	IP67 (IEC 60529)	IP66 (IEC 60529)	IP66 (IEC 60529)
	Slow action switching element	Slow action switching element	Slow action switching element	Snap-action switching element/ slow action switching element
	Cable entry, 1 x M20 / plug connector, M12, 4-pin	Cable entry, 1 x M16	Cable entry, 1 x M20	Cable entry, 1 x M20
	• Standardized metal housing • Rigid and mobile actuators • With M20 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Slow action switching elements with four contacts • IP67 enclosure rating	• Standardized plastic housing • Stainless steel solid shaft, Ø 10 mm • 1 M16 x 1.5 cable entry • Slow action switching element with up to three contacts • Adjustable switching point • IP67 enclosure rating	• Standardized plastic housing • Roller plunger with plastic roller/turning lever with plastic roller • One M20 x 1.5 cable entry • Slow action switching elements with three contacts	• Standardized metal housing • Roller plunger with stainless steel roller/metal turning lever with plastic roller • One M20 x 1.5 cable entry • Slow action or snap-action switching element with up to four contacts
	➜ www.sick.com/i110S	➜ www.sick.com/i10H	➜ www.sick.com/i10P ➜ www.sick.com/i10R	➜ www.sick.com/i110P ➜ www.sick.com/i110R

	ES11	ES21	ER12
			
	Reliable and safe with emergency stop pushbutton and reset pushbutton	Fast and reliable safety protection with emergency stop	Reliable and safe with reset pushbuttons and multiple pushbuttons
Technical data overview			
Switch type	Emergency stop pushbutton	Emergency stop pushbutton	Reset pushbutton/dual push-button
Number of positive opening normally closed contacts	2	1/2	–
Number of normally open contacts	0/1	0/1	1/2
Housing material	Plastic	Plastic	Plastic
Enclosure rating	IP65 (EN 60529)	IP65 (IEC 60529) IP54 (IEC 60529)	IP65 (EN 60529)
Emergency stop pushbutton (illuminable)	✔	✔	–
Pushbuttons (illuminable)	✔	–	✔
Suitable for muting applications (with UE403)	–	–	✔
Connection type	Plug connector, M12, 4-pin/plug connector, M12, 8-pin	Cable entry, 2 x M20	Plug connector, M12, 4-pin/ plug connector, M12, 5-pin/plug connector, M12, 8-pin
Suitable for reset/override applications (with deTec4)	–	–	✔
At a glance			
	• Thin housing with snap-lock connection • Available either as stand-alone device with emergency stop pushbutton or in combination with a reset pushbutton • Emergency stop push-button with optional LED indicator lamp • Illuminable reset pushbut-ton • Flexi Loop compatible M12 plug connector	• Available either as a surface-mounted version with housing or as a built-in version (Ø 22 mm) • Built-in version for ma-chine control panels with self-monitoring contacts between the pushbutton and switching element • Surface-mounted version for direct mounting on dif-ferent machines and plants • Variants with LED ring lighting • Optionally available with protective collar to prevent inadvertent actuation	• Thin housing with snap-lock connection • Illuminable pushbuttons • Lock function • M12 plug connector
Detailed information	➜ www.sick.com/ES11	➜ www.sick.com/ES21	➜ www.sick.com/ER12

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	i110RP	**i150RP**	**E100**
	Safety protection over long distances	Safety protection for extra long distances	Safety during setup or maintenance operation
	Rope pull switches	Rope pull switches	Enabling switch
	2/3	2/3	2
	2/0/1	2/0/1	2
	Metal IP66 (IEC 60529)	Metal IP65 (IEC 60529)	Plastic IP67 (EN 60529) IP65 (EN 60529)
	–	–	–
	–	–	–
	–	–	–
	Cable entry, 1 x M20 / plug connector, M12, 4-pin	Cable entry, 3 x M20 / plug connector, M12, 4-pin	Cable open end
	–	–	–
	• Rope pull switch with rope lengths up to 30 m, with integrated rope tear and rope pull function • Metal housing with position indicator and pivoted unlocking lever • With M20 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Slow action switching elements with four contacts • Complies with the EN ISO 13850 and IEC/EN 60947-5-5 standards	• Rope pull switch with rope lengths up to 75 m, with integrated rope tear and rope pull function • Metal housing with integrated emergency stop pushbutton and position indicator • Pivoted unlocking lever • With M20 x 1.5 cable entry or Flexi Loop-compatible M12 plug connector (depending on the variant) • Slow action switching elements with four contacts	• Plastic housing with connected cable • 3-stage functional structure (off-on-off) • Slow action switching elements with four contacts • Variant with additional plus/minus pushbuttons • Complies with the IEC/EN 60947-5-8 standard
	→ www.sick.com/i110RP	→ www.sick.com/i150RP	→ www.sick.com/E100

MB1

Mechanical bolt for rugged door protection and high machine availability

Technical data overview	
installation tolerance (horizontal)	3 mm ... 30 mm
Suitable for	i10 Lock safety locking device i110 Lock safety locking device TR110 Lock safety locking device RE1 non-contact safety switch STR1 non-contact safety switch TR10 Lock safety locking device

At a glance

- 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 escape release

Detailed information → www.sick.com/MB1

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Subject to change without notice

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Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.

Consulting and design
Safe and professional

Product and system support
Reliable, fast, and on-site

Verification and optimization
Safe and regularly inspected

Upgrade and retrofits
Easy, safe, and economical

Training and education
Practical, focused, and professional

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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. 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.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

That is "Sensor Intelligence."

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com

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Sensor Intelligence.