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Non-contact safety switches
Technology Overview

Non-contact safety switches

Selection guide

?! Find the right solution for your application

Doors or flaps safely monitored

with interlocking

Personal protection

flexLock

Process protection

MLP1

without interlocking

Standard tamper proof

RE1

RE2

High tamper proof

STR1

IQB2S

Safely detect objects and positions

SIL 2 PL d

IME2S

Safety requirements

Stationary/ mobile Applications

SIL 3 PL e

IN4000

flexLock

RFID-monitored safety locking device with 180° actuation radius

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Achieve the Highest Level Safety

- 3150 N locking force offers up to PL e safety rating
- Reliable protection against manipulation with RFID monitoring and high coding level

Flexible Integration

- 180° actuation radius allows for a flexible actuator entry point
- Rigid or flexible actuators can be used to accommodate a variety of approach angles

Clean, Robust Solution

- Clean design with rounded corners, screw covers, and open locking head saves time and money on cleaning
- IP69K rated to withstand harsh environments

Increase Machine Uptime

- Device status is visible across the factory floor via the diagnostic LEDs
- The flex lock allows for ± 3 mm of misalignment tolerance which helps accommodate for door sagging over time

Safe locking of protective doors and flaps for personal protection

Reliable process locking

Find out more:

→ www.sick.com/flexLock

MLP1

RFID safety switch with magnetic locking for process protection

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Prevent Unwanted Process Interruptions

- Magnetic locking function prevents unwanted door openings
- Up to Performance Level PL e, Category 4 (EN ISO 13849), SIL 3 (EN 61508) for door monitoring

Tamper-proof

- Reduce risk of tampering with RFID technology
- Actuators are available with a low or high coding level

Easy Integration

- Two mounting options:
  1) Mount on top of machine frame
  2) Remove front face plate for lower profile mounting
- Variants with two M12 connectors for simple cascading

Ensure Doors Stay Closed in Harsh Environments

- IP67 rated housing – ideal for dirty, dusty environments due to non-contact technology

Less susceptible to door vibration

- 25 N retaining force
- 500 N locking force
- Accommodates door misalignment with offset tolerance of ± 5 mm.

Process protection for guarding safety gates

Effective process protection

Find out more:

→ https://sick.com/MLP1

IQB2S

Small, cuboid inductive safety switch for position monitoring

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Easy Integration

- Inductive technology removes requirement for an actuator
- Flexible machine integration with compact form factor
- Connection options with integrated connectors or cables

Safe Position and Area Monitoring

- Up to PL d for position and area monitoring
- LED display allows faults to be diagnosed quickly on the shop floor

Withstand Harsh Environments

- Protection class IP67
- Large operating range -25 °C to +70 °C

Long Product Service Life

- Non-contact technology results in low wear and decreased maintenance
- Precise detection increases machine uptime

Position monitoring of the turntable in the conveyor system

Find out more:

→ https://sick.com/IQB2S

IME2S

Cylindrical inductive safety switch for position monitoring

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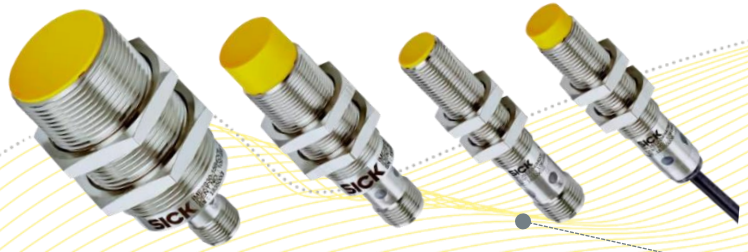
Flexible Installation

- IME2S does not require a separate actuator because it is activated by metal
- Easy and quick integration due to its cylindrical design ranging from M12 to M30

Safe Position and Area Monitoring

- Up to PL d for position and area monitoring



Fast Diagnosis

- Using the LED Status display faults can be diagnosed quickly

Long Product Life

- In dynamic processes, sensors are subject to high stress. IME2S operates without contact, with low wear and low maintenance.
- Together with its precise switching behavior and constant switching point, IME2S increases machine uptime

Intelligent safety concept for safeguarding a robot

Monitoring a forklift arm for stacker cranes

Simple steering angle detection for AGVs

Find out more:

→ www.sick.com/IME2S

RE1

Small magnetic safety switch for non-contact door monitoring

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Reduce Machine Downtime

- RE1 has a high door misalignment tolerance with a response range of up to 7 mm

Simple Tamper-proof Protection

- The RE1 is activated directly with a coded magnetic actuator
- It operates with low wear and maintenance

Space-Saving Installation

- The small housing of the RE1 allows it to be installed even where space is limited
- Safe series connection possible with Flexi Loop to reduce cabling and safety controller I/O

Easy Cleaning

- Designed to reduce dust / dirt build up
- IP67 rated to withstand heavily soiled areas

Monitoring the protective cover

Access guarding on safety gates

Protecting safety gates

Find out more:

→ www,sick.com/RE1

RE2

Compact magnetic safety switch for non-contact door monitoring

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Reduce Machine Downtime

- RE2 has a high door misalignment tolerance with a response range of up to 9 mm

Simple Tamper-proof Protection

- The RE2 is activated directly with a coded magnetic actuator
- Offers up to PL e (with proper evaluation unit)
- It operates with low wear and maintenance

Status via LED

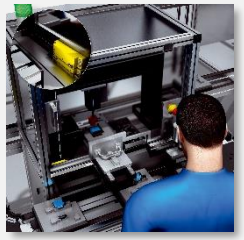
- The RE27 always indicates its status via the LED.
- All variants of the RE2 can be optimally used in series and diagnosed via Flexi Loop.

Easy cleaning

- Designed to reduce dust / dirt build up
- IP67 rated to withstand heavily soiled areas

Monitoring of safety gates

Monitoring the side service door



Monitoring of safety gates on handling robots

Find out more:

→ www.sick.com/RE2

STR1

Small RFID safety switch for door monitoring with manipulation protection

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Flexible Integration

- Small housing and 4 different actuator sizes makes the STR1 easy to integrate
- The STR1 can be actuated from three different sides
- Up to PL e for door monitoring and can self-detect faults

Clear Diagnosis

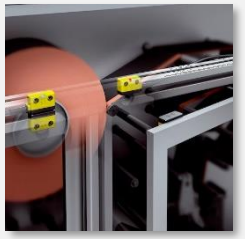
- Bright LEDs allow device status to be visible from across the shop floor
- Diagnostic lights help indicate when door is falling out of alignment
- With Flexi Loop, up to 32 STR1s can be connected in series an individual status information can be provided

High Productivity

- Increase machine uptime due to 14 mm of door misalignment tolerance
- Long product service life due to low-wear and low-maintenance non-contact design

Reduce Tampering

- STR1 offers variants with universally, uniquely, and permanently coded versions to protect against unauthorized access
- In accordance with EN ISO 14119, no additional tamper protection is required



Protection of safety doors in battery production

Economical protection of assembly cells

Monitoring of safety gates and flaps

Find out more:

→ www.sick.com/STR1

ES21

Emergency stop pushbutton for fast and reliable stopping of the machine

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Easy Mounting

- The ES21 is easy to install on the machine with SICK's wide range of built-in and surface-mounted versions.
- Integrated M12 versions offer fast commissioning and quick replacement

Visible Distinction from Standard Push Buttons

- Reduce unplanned machine stops in heavily frequented work areas

Clear Diagnostics

- With Flexi Loop, connect up to 32 E-stops in series and gather individual diagnostics with minimal wiring effort

Keep Workers Safe

- Self-monitored which allows the machine to switch off in the event of incorrect installation or mechanical damage

Emergency stop of conveyor belts

Safeguarding hazardous points when feeding paper stacks

Find out more:

→ www.sick.com/ES21

ES11

Reliable emergency stop pushbutton with optional reset pushbutton

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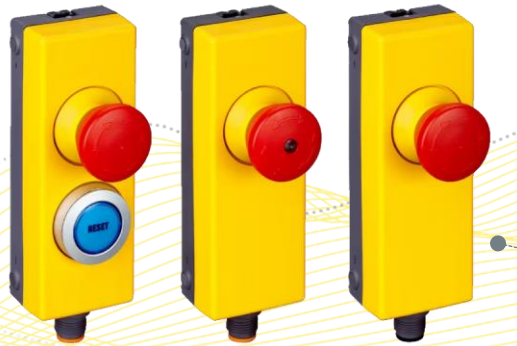
Easy Mounting

- Integrated connection allows for quick integration
- The slim housing reduces space on the machine frame

Different Variants

- Leverage as a single device with an E-Stop button or in combination with reset button
- LED lighting is also available



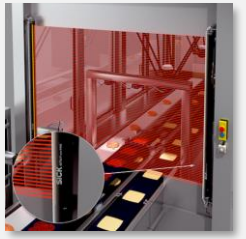
Clear Diagnostics

- With Flexi Loop, connect up to 32 E-stops in series and gather individual diagnostics with minimal wiring effort

Quick exchange

- Fast commissioning and quick replacement with M12 connection

Access protection



Hazardous point protection

Find out more:

➜ www.sick.com/ES11