



IMPORTANCE OF MACHINE SAFETY

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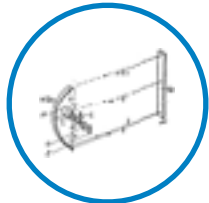
SICK is one of the world's leading producers of sensors and sensor solutions for industrial applications. Founded in 1946 by Dr.-Ing. e. h. Erwin Sick, the company with headquarters in Waldkirch im Breisgau near Freiburg ranks among the technological market leaders. With more than 50 subsidiaries and equity investments as well as numerous agencies, SICK maintains a presence around the globe. In the fiscal year 2017, SICK had almost 9,000 employees worldwide and a group revenue of around EUR 1.5 billion.



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one of
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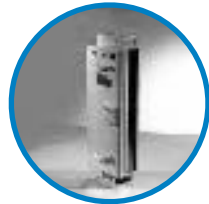
CONTINUITY

USING INNOVATIVE SENSORS BRINGS YOU COMPETITIVE ADVANTAGE



1950

First photoelectric switch based on autocollimation principle



1952

First light curtain for accident prevention



1993

First safety laser scanner based on pulse time-of-flight principle



2013

Cost-saving cascading of safe switches and sensors within a machine



2019

First certified safety laser scanner for outdoor use in the world



outdoorScan3 – PRODUCT DESCRIPTION

KEY FEATURES - OVERVIEW



Certified for outdoor safety

Certified in accordance with ISO 13849 and IEC/TS 62998 for indoor and outdoor use



Scan technology outdoor safeHDDM®

High-precision measurement data for reliable use even under challenging weather conditions.
Highly precise measurement data for localization.



Intelligent functions

High flexibility with individual field settings, up to 128 freely configurable fields and safe networking with Flexi Soft safety controller



Functional design

Optimized product design for outdoor use and at the same time easy to use

**Safe productivity
for outdoor
automation...**

**... again Sick is
innovating and
creating the
market trend!**

- In the European Union machinery is a contributing factor in more than 300.000 injuries involving more than 3 days off work, according to data from the European Commission
- Annually there are 65.000 injuries involving days away from work in USA (2012) and 15.000 injuries in Canada. In Australia, in 2013, there have been 3.500 hospitalisations from machinery-related injuries
- In 2015, the number of fatal accidents per 100.000 employed persons ranged from less than 1.00 in Germany, the United Kingdom, Sweden and the Netherlands to more than 3.50 fatal accidents per 100.000 persons employed in Portugal, Bulgaria, Lithuania and Romania
- **The highest rate among the EU Member States was recorded in Romania, at 5.56 fatal accidents per 100.000 persons employed**

Machinery Safety is probably the main leverage that can reduce the number of deaths and injuries in the work place!

Moving machinery can cause injuries in many ways:

- People can be struck and injured by moving parts of machinery or ejected materials
- Parts of the body can also be drawn in or trapped between rollers, belts and pulley drives
- Sharp edges can cause cuts and severing injuries, sharp-pointed parts can cause stabbing or puncture the skin and rough surface parts can cause friction or abrasion
- People can be crushed, both between parts moving together or towards a fixed part of the machine, wall or other object or two parts moving past one another can cause shearing
- Parts of the machine, materials and emissions (such as steam or water) can be hot or cold enough to cause burns or scalds and electricity can cause electrical shock and burns



Injuries can also occur due to machinery becoming unreliable and developing faults or when machines are used improperly through inexperience or lack of training!

- **Ensuring the safety of machines and systems is not only the responsibility of the manufacturer, but also machine and system owners, who are obliged to provide safe work environment.** The experts at SICK use their knowledge and experience to support the operating company in this regard. Inspecting the machine or system before it is commissioned and during life time of machine ensures that all the safety-related equipment is functioning safely and that all steps have been completed and documented accordingly
- The owner of the machine must make sure that the machine is safe for operators, not only that they have protective equipment and clear processes



Who is responsible in case of an accident in the plant due to a faulty machine?



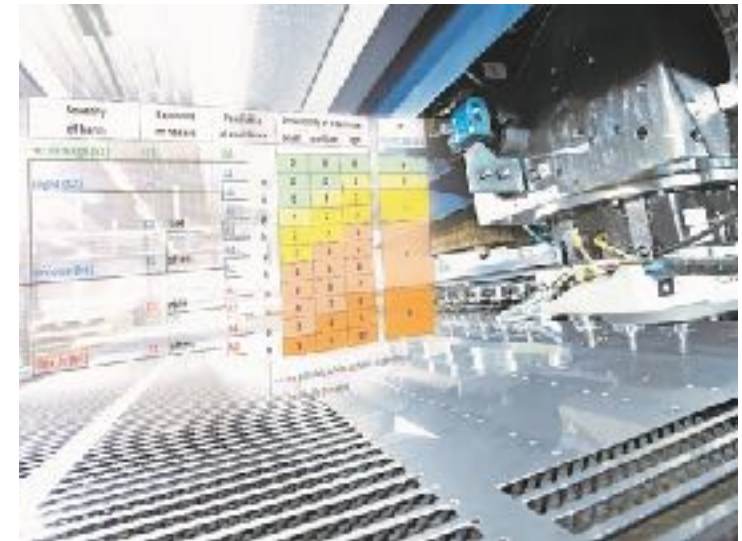
- Employer
- Persons nominated by employer to be responsible for safety (HSE, Technical Manager, Maintenance Manager)

What Sick can do for me?

- Take a part of the responsibility if the accident was due to a faulty machine verified and validated by Sick
- Help with Accident Investigation

1. Law 319/2006 - Art. 13 and Art.39
2. HG1425/2006 - updated

- Performance of or instruction for risk assessments
- Determination of applicable directives and standards
- Identification of hazards
- Risk evaluation
- Specification of safety requirements



Your benefits

- Saves time and resources thanks to involvement of experienced SICK experts
- Independent and comprehensive expertise provide certainty when assessing risks
- Periodic qualification of SICK specialists ensures the latest directives and standards are incorporated in new and repeat projects
- High level of quality thanks to standardized processes and sustainable competency management

SICK LIFE TIME SERVICES

MACHINE GUARDING EVALUATION

- Identification of electrical and mechanical hazards
- Risk assessment of identified hazards
- Evaluation of existing protective measures
- Recommendation of new or improvement of existing protective measures
- Consideration of valid provisions and regulations
- Service can be retrieved worldwide



Your benefits

- Detailed knowledge of the safety status of the machines
- Concrete statements on the urgency of improvement measures
- High flexibility thanks to product-neutral perspective
- Economic, well-thought-out recommendations for reducing detected risks
- Reduced effort when drafting safety concepts
- Enables simple and standard-compliant implementation of the recommended protective measures for safety technology

- Configuration and parameter setting of components or systems, optimized for each application
- Final functional testing of components or systems
- Documentation of the configuration and parameter setting in the acceptance report
- Briefing of operating personnel



Your benefits

- High productivity: via application-optimized components and system settings
- Cost savings: quick transition to normal operation under professional supervision
- Planning reliability: via effective cooperation between SICK, the system integrator and the customer

- Creation of a verification and validation plan to thoroughly check for proper selection, installation, implementation and functioning of the safety-related parts of the control system (SRP/CS)
- Configuration of safety-related parts of the control system
- Analysis and testing according to the verification and validation plan
- Specification of the necessary adjustment and, if necessary, revision of the safety-related application program

Your benefits

- Saves time and resources: experienced SICK experts provide efficient execution
- Ensures protection objectives have been met thanks to standardized validation using analysis and testing
- Implements the two-man rule: execution and checking completed by two qualified individuals
- Comprehensive service: specification and implementation of any adjustments that may be necessary
- High level of quality thanks to standardized processes and sustainable competency management



- Evaluation of the optical protective devices to ensure they have been installed correctly and according to the specification
- Inspection of whether the protective device is operating according to current machine usage
- Identification of operational changes and manipulations
- Readjustment of the optical protective devices and removal of contamination
- Production of an inspection report and issuance of a test seal

Your benefits

- Safety is determined and corresponding documentation is provided in the inspection report as proof that the legal obligation for testing has been fulfilled
- High testing quality through certification and periodic inspections in accordance with IEC 17020 is carried out by independent bodies and with on-going competency management
- Safety is ensured due to early detection of changes to application conditions and manipulations
- High machine reliability due to periodic checking and, if necessary, removal of contamination or readjustment

HOW CAN WE HELP YOU WHY CHOOSE SICK?

- **SICK LifeTime Services improve your investment security, open the door to potential new savings!**
- **We always keep the main goal – safety for humans and for machines – in view!**
- **Our more than 70 years of experience are put at your service!**
- **Over 100.000 safety inspections per year demonstrate SICK's expertise!**
- **Over 550 service employees are available to provide support worldwide!**



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



WE SHARE RESPONSIBILITY WITH YOU!

SICK
Sensor Intelligence.