The GATEKEEPER

Man - Machine Safeguarding News from SCHMERSAL

November 2019

Machine Safety Education

Working in a safe environment free of recognized hazards is something that we all should be thankful for this Thanksgiving; unfortunately this is not the case for everyone. Failing to meet general machine guarding requirements as called out in OSHA 1910.212 continues to be among the top 10 most citied violations in 2019. Though some violations are due to negligence, others are due to honest misinterpretation of the many different safety codes, standards and regulations.

With automation processes taking leaps and bounds in what types of activities can be performed, safety guidelines have too been progressing. For example, ISO 14119 provides direction on how to physically install different types of interlock devices depending on actuator options available from the manufacture and ISO 13849 calls for calculations on the probability of failures per hour for the components used within a given safety system. These are concepts that were not taken into account just a few years ago.

It can be an overwhelming task when trying to determine which ISO, ANSI, NFPA, .etc standard to apply in order to adhere to the rather vague OSHA requirements. Where to start and how to actually implement what is being asked of you are some of the common questions that tend to come up.

Having the proper guidance from the start can not only provide ease of mind but can also prevent having to redo control measures repeatedly until the right one is in place.

Machine Safety Training Courses

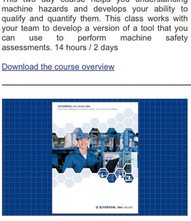
Being a world leader in safety is more than offering the well tried and proven components which make up the vast Schmersal portfolio. It also means that it is our responsibility to educate our customers on the ever evolving rules and regulations focused on providing a safe work environment. Schmersal offers high quality, product-neutral training courses focused on various aspects of machine safety, and taught by a T ÜV Functional Safety Engineer for Machinery.

The educational courses offered from the tec.nicum branch of Schmersal include:

General Machine Safety

Anyone responsible for the design, operation, or maintenance of machines needs an understanding of safety systems. This course covers legal requirements, risk assessment, types of hazards, the several levels of circuit design, and available types of safety equipment and how they all come together for a complete safety solution.
7 hours / 1 day

Download the course overview



ISO 13849

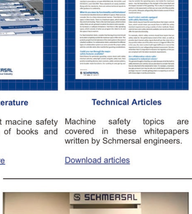
ISO13849 is a global harmonized standard relating to the risk assessment, design, and performance of safety control systems on machinery. This standard is accepted worldwide as the principle safety control design guideline and it represents a major change in the philosophy of hazard analysis and design of safety related parts of machine control systems. 7 hours / 1 day

Download the course overview

Safety Circuits and Wiring

Learn the theory of safety related control systems and its practical application in this hands-on course. Students will use training boards to wire a variety of components in order to meet specific safety control requirements.
7 hours / 1 day

Download the course overview



Risk Assessment Training

This two day course helps you understanding machine hazards and develops your ability to qualify and quantify them. This class works with your team to develop a version of a tool that you can use to perform machine safety assessments. 14 hours / 2 days

Download the course overview

CE Conformity Training

Machine manufacturers have certain legal requirements to meet when providing machines for the European market. This course provides background knowledge in order to be able to pass through a CE conformity assessment procedure as a manufacturer, in accordance with the Machinery Directive (MRL 2006/42/EC).
35 hours / 5 days

Download the course overview

More Engineering Services

tec.nicum offers more than just machine safety training courses. Other engineering services include:

- ISO 12100 based risk assessments
- ISO 10218 robotic risk assessments
- ISO 13849 reporting including validation
- CE certification
- time stop analysis

Download the brochure

More Resources

Brochures

Discover more about the various safety devices available from Schmersal.

Download brochures

Safety Literature

Learn more about machine safety from a selection of books and brochures.

Download literature

Technical Articles

Machine safety topics are covered in these whitepapers written by Schmersal engineers.

Download articles

Videos: product animation

A series of animated videos highlight the functions and applications of various Schmersal safety devices.

View the videos

Videos: Product demo

Our application engineers give a hands on demonstration of various Schmersal safety devices.

View the videos

Recent Webinar

Validation of Machine Safety Functions

This webinar reviews some of the characteristics with validation in both design and physical testing of a safety system. Some examples are provided with an overview of some validation principles. It provides an explanation why validation is important and what can potentially happen if an effective validation is not done.
Duration: 1 hour

Register to view this webinar

More Webinars

View our collection of past webinars on machine safety topics such as Machine Guarding Technology, Safeguarding Robots, LO/TO vs Machine Guarding, and much more. Go to the webinar archive.

Ask The Expert

Devin Murray
TUV Functional Safety Engineer
ID-No. 4274/11

Q: "I am starting from scratch, where do I start? Which safety standard must I follow?" – Anonymous

A: Figuring out where to start can be overwhelming. First let me note that we are not required by law to follow any safety standard. OSHA requirement is for the employer to provide a safe working environment. With that said, it is in our best interest to show due diligence and follow current relevant safety standards to help guide us in providing a safe working environment. So which ones do we follow?

Standards can be broken into 4 types. Type A – basic safety principles; Type B1 – general aspects of safety; Type B2 – requirements for specific safety devices and Type C – general requirements for a specific type of equipment. Typically you would want to see if the equipment you are safeguarding has a Type C standard associated with it; for example robots and robot cells have ISO 10218 or lathes have ISO 23125. If there is no Type C standard such as for a homegrown piece of equipment you would want to start with a Type A standard such as ISO 12100 to identify hazards with the equipment. Adding control measures such as hand guards or safety functions such as keyed interlock switches will ultimately guide you into the Type B1 and B2 standards such as ISO13857 for hard guarding distances and ISO 13850 for Emergency Stop requirements.

Have a question? Ask Devin: dmurray@schmersal.com