



International KROHNE Academy

Optimization of Safety Loops acc. to IEC 61508/61511

16.- 17. September Duisburg, Germany



















First-hand knowledge

The KROHNE Academy is organizing a series of seminars in 2025 titled Optimization of Safety Loops acc. to IEC 61508/61511 with leaders in their respective fields: PHOENIX CONTACT, AUMA, SAMSON, HIMA, EXIDA, RAMSYS, TÜV Nord and DOW. This Academy is not a product promoting seminar series, but instead it aims to bring industry experts together under one roof to provide an insight into the various technologies related to functional safety.

It will address key operating issues from basics to ways of optimization of Safety Instrumented Function (SIF) accordingto the standards IEC 61508/61511. In addition to the seminar program, an exhibition will be running during the break times, which will show possible solutions to some of the topics discussed. It will also provide an ideal opportunity to speak to the experts and benefit from their vast application knowledge.

The KROHNE Academy is a completely free event for registered delegates.

Location



Address:

Duisburg KROHNE Messtechnik GmbH Ludwig-Krohne-Str.5 47058 Duisburg Germany www.krohne.com

Agenda Day 1

08:00-9:00 h	Get together
09:15 h	Welcome
09:15–10:15 h	Basics of Functional Safety: Terms and conditions, Risk analysis, calculation
PHOENIX CONTACT	Brief overview of standards and regulations, parameters for SIL classification, risk analysis using risk graphs in accordance with IEC 61511.
10:15–11:00 h	Basics of Functional Safety: Calculation examples
KROHNE	Based on five practical examples, this module shows in detail how the calculation of safety instrumented systems (SIS) is carried out. All areas are covered from the basic idea of the safety function, to risk analysis and the determination of proof test intervals.
11:00–11:30 h	Break
11:30–12:00 h	Automates partial proof tests acc. to IEC61511
KROHNE HIMA	Practical demonstration of automated partial test of a measuring device (example: Coriolis mass flowmeter) and detailed descriptions of the individual steps and customer benefits.
12:00–12:30 h	Flexible proof tests acc. to NA106: Principle and customer benefits
KROHNE HIMA	Detailed description of the possibilities with NA106 with regard to optimized proof testing of safety circuits. The presentation is illustrated using practical examples and will show the potential of this legal method.
12:30–13:00 h	The different methods for calculating random failures
RAMSYS	Practical implementation of SIL verification calculations. Explanation of the background, pragmatic approach, and relevant normative requirements.
13:00–14:00 h	Lunch Break
13:00 – 14:00 h 14:00 – 14:45 h	Lunch Break Functional Safety Management according to IEC 61511
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Agenda Day 2

8:00 -8:30 h	Get together
08:30 – 9:30 h AUMA	EN 17955: Finally, clarity in the assessment of valves and actuators for func- tional safety
EXIDA	Mechanical components are not adequately considered in IEC 61508. The presentation outlines the basic ideas of the new EN 17955 from the perspective of a component manufacturer and a third party assessor. EN 17955 will finally standardize the evaluation of valves and actuators for functional safety.
09:30 – 10:30 h	Avoiding systematic faults in valves and actuators of a SIS
SAMSON AUMA	Actuated valve assemblies are one of the most important final elements of a SIS. They bring together electrical and mechanical components. Topics such as the correct selection and design of actuators and valves, online diagnostics (PST) and proof test are addressed.
10:30 – 11:00 h	Break
11:00 – 12:00 h DOW	Workshop: Settings and interpretation of partial and full stroke tests of actuators
SAMSON	In this workshop, the possibilities and the pitfalls associated with partial stroke tests are discussed. Examples will be used to show how error patterns can be interpreted.
12:00 – 12:45 h	Use of smart meter valves in safety-related applications
DOW EXIDA KROHNE	Basic idea and use of smart meter valves as control devices in safety-related applications. It is explained in detail, which possibilities open up to the user and how they are incorporated into the calculation and optimization of safety circuits in terms of standards.
12:45 – 13:45 h	Lunch
13:45 - 14:30	Digital Twins and Functional Safety
PHOENIX CONTACT	The administration shell (AAS) offers considerable potential for increasing efficiency in the engineering process. Various examples (Ex, SIL) illustrate the added value and benefits of digital twins in the process industry.
14:30 - 15:00	Avoiding systematic errors in the field of sensor technology
KROHNE	Presentation of possible systematic errors and how to avoid them during plan- ning, commissioning and operation of the system. The details and practical tips are presented by means of practical examples.
15:00 - 15:45	#safetygoesdigital - Digitalization of functional safety with added value
НІМА	What sounds like squaring the circle, is now possible with the new HIMA approach to the digitalization of functional safety. Our approach is clear: digitalization must create added value! Because digitalization can help to reduce costs, increase plant availability, make processes more efficient and provide data for optimization projects.
15:45 – 16:00 h 16:00 h	Discussion End of Event

Organisers

AUMA

is a world leading manufacturer of actuators for the automization of industrial valves. As specialist for electric actuators AUMA provides customer specific solutions for the process industry as well as for many other industrial sectors. www.auma.com

DOW

as an international company, offers its customers a portfolio of plastics, industrial intermediates, coatings and silicones in fast-growing sectors such as packaging, infrastructure, mobility and consumer goods, as well as a broad range of science-based products and solutions.

www.dow.com

EXIDA

was founded in 2000 by several of the world's leading reliability and security experts and is the world's leading product certification and knowledge company specialising in functional safety, alarm management and cyber security. www.exida.com

HIMA

is a independent provider of safety-related automation solutions for the process and railway industries to protect people, the environment and economic assets. With more than 50,000 TÜV-certified safety systems installed, HIMA is recognised as the technology leader in these industries. www.hima.com

KROHNE

is one of the world's leading designers, developers and manufacturers of innovative and reliable process measuring technology and has over 100 years of experience in providing flow, level, temperature and pressure instrumentation to all industry sectors around the globe.

www.krohne.com

Organisers

PHOENIX CONTACT

is a worldwide leading manufacturer of electrical connection technology, interface and industrial automation technolgy. The diverse product range includes DIN rail terminal blocks, PCB terminal blocks and connectors, interface, surge protection components, hardware and software systems offering comprehensive automation solutions.

www.phoenixcontact.com

RAMSYS

is a medium-sized, family-run engineering company that supports you in all phases of your E/MSR projects with consulting, engineering and service. RAMSYS offers expert knowledge in the fields of functional safety, explosion protection, CE labelling and PLC programming.

www.ramsys.org

SAMSON

is a worldwide leading supplier of control valves and regulators. Applications for the equipment are in the chemical, pharmaceutical, food & beverage, refining and oil & gas industries as well as in HVAC installations.

www.samsongroup.com

TÜV NORD InfraChem

TÜV NORD InfraChem GmbH & Co. KG, based in the Marl Chemical Park, is a joint venture between TÜV NORD Systems GmbH & Co. KG and Evonik Operations GmbH. TÜV NORD InfraChem tests and inspects chemical plants on the basis of national and international norms and standards.

www.tuev-nord-infrachem.de

Registration



Please note that accommodation is not included in the Academy. We will be happy to recommend a comfortable hotel nearby so that you can concentrate fully on the seminar. Please contact us.

academy.de@krohne.com

Contact

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