



Functional Safety Seminars 2010



The new Machinery Directive unravelled -
low cost compliance for OEMs and End Users

Take the right steps to compliance -
benefit from our expertise and experience

Two seminars:

- An introduction for Managers and Engineers, OEM's and End Users
- Understand and apply BS EN ISO13849-1



Two Seminars for Low Cost Compliance. Concise training programs for understanding the Machinery Directive, Work Equipment Directive and the latest Machinery Functional Safety Standards.

SICK has had a direct input into the key standards relating to safety systems and has over 50 years experience in the field. This has enabled SICK to create an imaginative and practical approach to training in issues related to machinery safety.

We are offering two day seminars that are structured as separate modules but also complimentary. The first day of the workshop is an introduction to the key issues for 2010 and the second day is a more involved examination of the requirements of the new standards for functional machine safety.

Day 1

Machinery Directive 2010 & Safety Related control standard BS EN ISO13849-1. A pragmatic introduction for Managers and Engineers, OEMs and End Users.

- Review of the Machinery Directive and changes in 2010
- Key considerations when modifying existing machines
- Review of existing safety control standards (EN954)
- Introduction to the Application of BS EN ISO13849-1

Agenda

[An introduction to the Machinery Directive 2010](#) [The obligation of the machine builder](#)

Key requirements for CE Marking
Changes to the directive
Complete and partly finished machines

[Review of the Work Equipment Directive \(PUWER\)](#) [The obligation of the machine user](#)

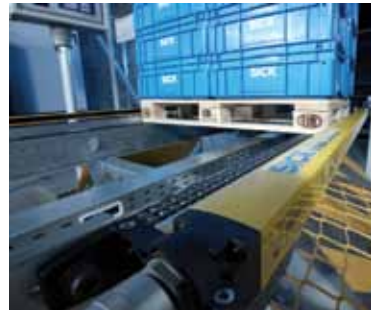
Machinery life cycle from a safety point of view
Modifying existing machines – Obligations of the owner

[Review of Safety Related Controls and standards EN954-1](#)

Key terminology
Architecture and single, dual channel systems

[Introduction to NEW Functional Safety Standard BS EN ISO13849-1](#)

Performance Level definition (PL)
Mean time to dangerous failure
Diagnostic Coverage and common cause failure
Validation & Documentation



Understand and apply BS EN ISO13849-1. A practical, informal approach to understanding and implementing the key elements of the latest safety related control standards.

- The objectives of BS EN ISO13894-1 and key requirements
- Performance Level determination
- Key parameters of the control system elements MTTFd, Cat., Common Cause failure, Diagnostic coverage, PFHd, validation & documentation
- Identify and allocate functional safety sub-systems using examples
- Key requirements for Safety Related Software
- Sistema - a PL calculation tool will be supplied and training given in order to calculate PFHd and confirm Performance Levels

Agenda

Introduction to BS EN ISO13849-1 (Revision for course 1)

Introduction to the application of Functional Safety Management
 Identification of safety functions on a machine.
 Creating functional safety subsystem block diagrams

Safety Software – Programmable Systems

Issues relating to functional safety software

Sistema – A software tool for Performance Level Calculations according to BS EN ISO13849-1

Step by step PL calculation using the project manager, based on hydraulic, electrical and pneumatic safety circuit examples.
(Laptop with Windows and installation rights required.)



The seminars will be specifically relevant to Control Engineers, Maintenance Engineers, Design Engineers and Project Managers.

The fee for each day is £150 + VAT -
 discounted to £250 for both days, if taken together.

Includes: course notes, worksheets, Sistema software, certificate of attendance, lunch & refreshments.



Step this way
 to book your place



Please register me for the following SICK Functional Safety Seminar:

2 Day Courses (£150 + VAT each day or £250 + VAT for both days)

5-6th May	St Albans	Day 1	<input type="checkbox"/>	Day 2	<input type="checkbox"/>	Both	<input type="checkbox"/>
6-7th July	Wetherby	Day 1	<input type="checkbox"/>	Day 2	<input type="checkbox"/>	Both	<input type="checkbox"/>
13-14th July	St Albans	Day 1	<input type="checkbox"/>	Day 2	<input type="checkbox"/>	Both	<input type="checkbox"/>
14-15th Sept	Wakefield	Day 1	<input type="checkbox"/>	Day 2	<input type="checkbox"/>	Both	<input type="checkbox"/>
19-20th Oct	Newcastle-U-Lyme	Day 1	<input type="checkbox"/>	Day 2	<input type="checkbox"/>	Both	<input type="checkbox"/>
23-24th Nov	St Albans	Day 1	<input type="checkbox"/>	Day 2	<input type="checkbox"/>	Both	<input type="checkbox"/>

(See previous pages for each day course details)

[See our website for additional dates and venues](#)



Name	Job Title
Company	Department
Address	
Town/City	Postcode
Tel	Fax
Email	

Purchase Order No: _____

Pay by Cheque* Credit Card** Invoice BACS***

Invoice address if different from above:

Additional attendees details, comments or special dietary requirements:

* please make cheques payable to 'SICK (UK) LTD'

** we will contact you for the credit card details

*** BACS Payment Details: Account No. 10931000,
Sort Code 23-10-48, Deutsche Bank

Fee does not include travel or accommodation
Terms & Conditions apply
Please see website for details

