

Safety Evaluation Tool

Safe machine concepts without detours

The Safety Evaluation Tool for the IEC 62061 and ISO 13849-1 standards takes you to your goal directly. This TÜV-tested online tool from the Safety Integrated program by Siemens supports the fast and reliable assessment of your machine's safety functions. As a result, you are provided with a standard-compliant report, which can be integrated in the documentation as proof of safety.

A must:
Maximum safety for persons, machines and production

Functional safety is paramount for the protection of persons and machines: Particularly the correct function of a machine's or system's control and protection equipment must be ensured to realize an optimum safety level both for persons and machines as well as for production goods.

The means:
Risk analysis and protective measures

Risks are determined and assessed on the basis of the risk analysis, after which measures for risk minimization are defined.

On the safe side:
Compliance with the European Machinery Directive through standard-compliant documentation

Correct application of the IEC 62061 or ISO 13849-1 standard takes you on the safe side as it ensures compliance with the new directive, which will be mandatory as of the end of 2009. Application of one of these standards provides you with a high degree of legal security – the CE declaration of conformity, for which the standard-compliant documentation serves as proof.

Without detours:
Safety Evaluation Tool

The TÜV-tested online tool guides the user step by step – from specification of the safety system's structure to component selection, up to determination of the attained safety integrity (SIL/PL). As a result, you are provided with a standard-compliant report, which can be integrated in the documentation as proof of safety.



Step-by-Step Preparation of Standard-Compliant Machine Documentation with the Safety Evaluation Tool

With the Safety Evaluation Tool, you have opted for the easy way to prove your machine's safety as this online tool guides you through the process of result report preparation in a targeted manner.

When starting a new project, initially the safety areas are analyzed and the safety functions specified (step 1 to 3). In the next step, the sub-systems are created and filled with data (step 4). After evaluation of the overall result, you are provided with the final report which contains clear status information (step 5 and 6).

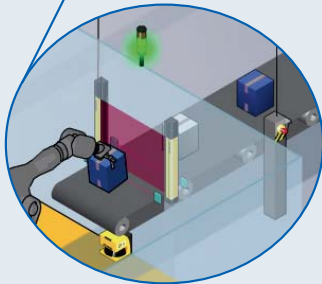
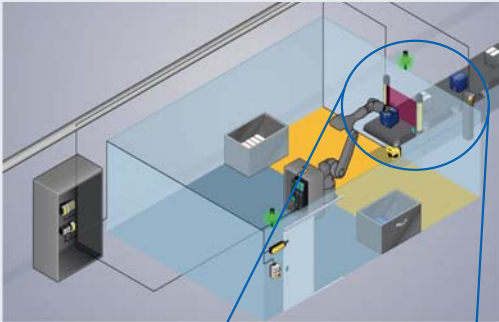


1st step

Definition of a safety function

E.g. the "hazardous zone protection" safety function

- The light curtain is interrupted
 - The contactors switch off
 - The discharge remains in operation



2nd step

Selection of the standard, on which the calculations should be based

E.g. the safety function "hazardous zone protection"

- IEC 62061 or
- ISO 13489-1



3rd step

Description of the safety function

The safety function "hazardous zone protection" consists of the sub-systems **detection** (light curtain), **evaluation** (modular safety system) and **reaction** (contactors)

Create new safety function - Choose layout

Layout of the safety function:


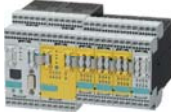

DETECTION > EVALUATION > ACTOR

or combinations of safety functions:

DETECTION+EVALUATION > ACTOR

DETECTION > EVALUATION+REACTION

DETECTION+EVALUATION+REACTION

Detection	Evaluation	Reaction
		
Light curtain	Modular safety system	Contactors

Entry of the required PL or SIL

Consideration of safety integrity by IEC 62061

Required SIL: Please choose Please choose Find out

Please choose
 SIL 1
 SIL 2
 SIL 3
 Other measures

Further functions

4th step

Creation of the sub-systems or the SRP/CS detection, evaluation, reaction

Data entry:

Product selection from the database

Product selection interface showing fields for Name, Type, Manufacturer, Product group, Product type, Integrated communication connection, Order number, and More order numbers.

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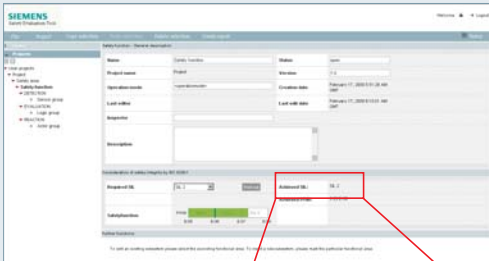
SIL CL	SIL 3
PFHD	2.00 E-10

Result:

Safety Integrity Level (SIL) or Performance Level (PL) and PFHD of the sub-system or SRP/CS

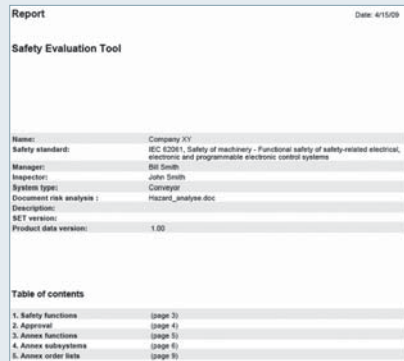
5th step

Determination of the overall result



6th step

Preparation of the result report for machine documentation





The Safety Evaluation Tool forms part of Safety Integrated, the intelligent safety solution by Siemens with a full-range product portfolio. Our certified safety technology complies with all relevant standards and is already incorporated in the Safety Evaluation Tool.

Further information on increased safety and productivity is available at:
www.siemens.com/safety-integrated

Application of the standards and the use of certified products minimize expenditures and risks. Siemens Safety Integrated products are certified in accordance with the relevant manufacturer standards and can be comfortably called up in the tool together with manufacturer specifications.

Relevant user standards:

IEC 62061

Safety of machinery – Functional safety of electrical, electronic and programmable control systems

ISO 13849-1

Safety of machines – Safety-related parts of control systems,
Part 1: General principles for design

Safety Evaluation Tool – your advantages at a glance:

- Safety regarding compliance with standards: Automatic calculation in accordance with current standards
- Rapid result: Standard-compliant report
- TÜV-tested tool
- Time savings in terms of safety function assessment
- Fast access to current product data
- Comfortable archiving: Projects can be saved and called up again as required
- Fast and easy handling: Comprehensive, pre-defined example libraries
- Free use of the online tool*
- Worldwide service and support

(* Only the usual costs for Internet access accrue)

