INTERNATIONAL CERTIFICATION SERVICES

SAFETY INTEGRITY LEVEL (SIL)

Safety Integrity Level

(SIL) is defined as a relative level of risk-reduction provided by a safety function, or to specify a target level of risk reduction. SIL is a measurement of performance required for a Safety Instrumented Function. A SIL is determined based on a number of quantitative factors in combination with qualitative factors such as development process and safety life cycle management.
Based on the IEC 61508 standard, four SILs are defined, with SIL 4 being the most dependable and SIL 1 being the least. SIL has a simple number scheme to represent its levels (1-4), a high-level understanding of each level is typically all that is necessary to convey SIL at management levels.

Why Safety Integrity Level (SIL) to be measured?

What is the confidence that the safety function will perform when called upon?
The SIL is a measure of the reliability of the safety function performing to specification.
This saves management from having to understand the technical aspects of SIL, while allowing them to discuss their concerns

How Safety Integrity Level is assigned?

There are several methods used to assign a SIL. These are normally used in combination include:

- Risk Matrices
- Risk Graphs
- Layers Of Protection Analysis (LOPA)

Of the methods presented above, LOPA is by far the most commonly used by large industrial facilities. The assignment may be tested using both pragmatic and controllability approaches,

Safety Integrity Level (SIL) Assignment approach

Assignment of SIL is an exercise in risk analysis where the risk associated with a specific hazard is calculated without the beneficial risk reduction effect of the SIF. That "unmitigated" risk is then compared against a tolerable risk target. The difference between the "unmitigated" risk and the tolerable risk, is correlated with the SIL target. In essence, each order of magnitude of risk reduction that is required correlates with an increase in one of the required SIL numbers.

Safety Integrity Level (SIL) Certification

Certification schemes are used to establish whether a device meets a particular SIL. The requirements of these schemes can be met either by establishing a rigorous development process, or by establishing that the device has sufficient operating history to argue that it has been proven in use. IEC 61511 is an application-specific adaptation of IEC 61508 for the Process Industry sector. This standard is used in the petrochemical and hazardous chemical industries, among others.

SIL in Safety Standards

The following standards use SIL as a measure of reliability and/or risk reduction.

- ANSI/ISA S84 (Functional safety of safety instrumented systems for the process industry sector)
- IEC EN 61508 (Functional safety of electrical/electronic/programmable electronic safety related systems)

SAFETY INTEGRITY LEVEL

Are you Looking for the **SAFETY INTEGRITY LEVEL (SIL)**

Call for further information at:

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