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The Future of Safety is Here

Castell Safety International Statement on EN/ISO 13849-1:2015 Reviewed Jan 2023

With Castell Safety International's experience of the safety market gained commencing with our invention of trapped key interlocking in 1920, and our real world reliability data, based on product performance over this period, we have reviewed the new standards and would like to make the following statement.

The standard covering Safety of Machinery and Safety related parts of Control Systems, EN/IEC 954-1, has been superseded by EN/ISO 13849-1:2015 which covers Safety of Machinery, Safety related parts of Control Systems – Pt 1 General Principals of Design.

The key change between the standards is the move to a reliability based approach to determining machinery safety. The designer of a machine will need to carry out a risk assessment of the whole system to determine the level of risk and hence the level of safety that is required to protect users and operators.

In designing the safety system the designer, under the new standard, needs to assess the Performance Level (PL) of the safety system required to provide the appropriate level of safety for the whole machine.

The PL for the whole system is determined through understanding how the parts within the system operate as a whole. Therefore the designer must gather all the reliability data for each individual component to enable this calculation to be made, however, it can not be assumed that a system of components that all reach a level will perform to that level. The calculation still needs to be made.

Products that use conventional technology, non electronic, to interrupt safety circuits can be used in systems with high levels of safety integrity, PLe or PLd under EN/ISO 13849-1:2015. The overall performance level of the system will depend on the design of the system not just the components within that system.

Therefore, Castell's Trapped Key Interlock products can be used in highest safety category, PLe, (or PLd on some products – please refer to our MTTFd Certs used and applied correctly.

Castell's trapped key interlock switching ranges are examples of products that can be used with monitoring systems that have a 99% diagnostic coverage due to the positive mode technology.

Castell have provided product performance and reliability data. This is available on the Castell website, www.castell.com.

Neal Partridge
Head of Compliance
5/1/2023