European Machinery Directive

Machinery Directive 2006/42/EC and New Safety Installations in the European Union (EU)

The Machinery Directive 2006/42/EC is a European Union mandate that applies broadly to many machine types. For manufacturers of safety components and devices, including Banner Engineering, it means those safety products that are sold after December 31, 2011 must meet one of or both of the following EN standards if they are to display the CE mark for new installations:

- EN IEC 62061:2005 Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems (IEC 62061:2005)
- EN ISO 13849-1:2008 Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2006)

These standards use statistical analysis to make a probabilistic determination as to the reliability of the components, devices, and circuitry used in the safety-related part of the control system(s). This determination represents the probability of a failure to danger over time and is represented by a Safety Integrity Level (SIL) or a Performance Level (PL). This information is incorporated into a risk assessment to evaluate and ensure that the appropriate level of risk reduction has been achieved.

EN IEC 62061 determines Safety Integrity Levels by using a methodology that includes several parameters and calculations, such as Probability of Failure to Danger per Hour (PFH_D), Diagnostic Proof Test (T), Failure rate (λ), Susceptibility to failures as a result of common cause (ß), Safe Failure Fraction (SFF) and Diagnostic Coverage (DC).

EN ISO 13849-1 has a similar methodology of identifying Performance Levels to determine the probability of a failure to danger. The methodology includes Category (Cat.) of circuit structure/architecture, Mean Time to Dangerous Failure ($MTTF_d$), number of cycles with which 10% of components have a failure to danger (B_{10d}), Diagnostic Coverage (DC), and Common Cause Failure (CCF).

At this time, Banner Engineering has made the decision not to generate the listed parameters and re-certify several legacy safety products to continue the CE mark for use in new installations. These include:

- AT-AM-2A, AT-BM-2A and AT-FM-2A DUO-TOUCH® THC Modules
- AT-GM-13A and AT-HM-13A DUO-TOUCH® SG THC Modules
- ES-FA-6G Emergency Stop Module
- ES-FL-2A Emergency Stop Module
- EZ-SCREEN® Grid and Point
- MMD-TA-11B and MMD-TA-12B Muting Module

The products listed above will be available for sale and will display the CE mark, but these products can be used only as replacement parts on existing machines in the European Union (EU) per the Machinery Directive 2006/42/EC Article 1 clause 2(a) and the Low Voltage Directive (2006/95/EC). All other current Banner safety products will be CE certified to meet the new Machinery Directive by the December 2011 deadline.

In addition, the MMD-TA-11B and MMD-TA-12B were originally certified to the 2006/42/EC Machinery Directive, but Banner Engineering has decided to not renew the EC type-examination certificate after the initial five-year period. Thus, in the E.U., as above, these products may only be used as replacement devices on existing machines.

It is very important to note:

- This does not imply that the above listed products are in any way less “safe” than before the implementation of the new Machinery Directive,
- This does not affect any other certifications, such as UL or CSA and
- This does not apply to machinery or installations in the United States, Canada and other countries that are not members of the European Union or otherwise recognize the Machinery Directive 2006/42/EC.

It should also be stressed that Banner Engineering has the highest confidence in the level of safety performance of the products listed above. Banner Engineering will work with all customers currently using these products to find updated safety solutions that satisfy requirements for CE certification to Machinery Directive 2006/42/EC.

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