

First European Process Claim for Industrial Control Panels with UL Verification Mark

Name des Kunden: Siemens AG and Control Mechatronics GmbH

Applikationslösung: Door interlocking design solution for distributed industrial control panels according to UL 508A and NFPA 79

Challenge

Control Mechatronics GmbH (CTMT), a manufacturer of industrial control panels (ICPs), supplies control panels to their end customers who then export them to North America. ICP manufacturers exporting panels to North America are often challenged with design uncertainties regarding the electrical door interlock and relevant standard and regulation requirements according to UL 508A, the Standard for Industrial Control Panels, and NFPA 79, the Electrical Standard for Industrial Machinery.

Siemens AG has developed a process solution that helps integrate their electrical door interlock products into an ICP system at the panel shop site following the standards mentioned above. As these application solutions are not a full product — and as such, are not subject to a UL certification — Siemens needed a way to get this process solution evaluated by a third-party to demonstrate the marketing claim is true.

Solution

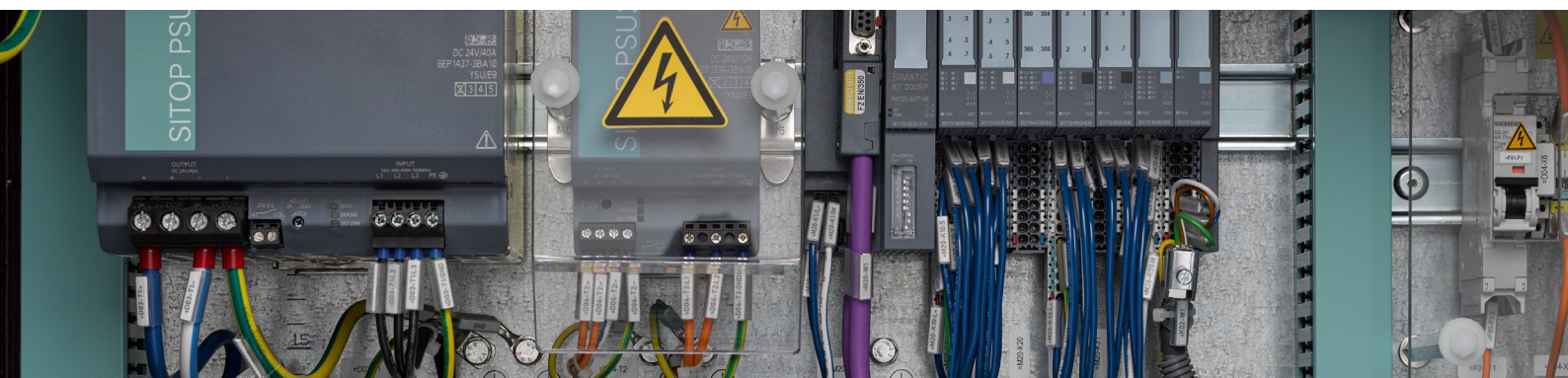
UL's Marketing Claim Verification can be used to evaluate a process solution. Here, an objective, science-based assessment confirms the accuracy of a customer's marketing claim for products, processes, facilities and software. Our independent assessment process uses scientifically sound, repeatable methodologies to determine the validity of specific advertising or promotional statements, i.e., marketing claims, to separate verified fact from fiction. By doing so, we help enhance the validity of specific advertising or promotional statements.

“With the UL Verified solution from Siemens, we gain certainty about local authorities' acceptance in North America as well as trust by our clients about the safety and reliability guaranteed by the use of the electrical door interlock solutions in our control panels.”

Ralf Linker, head of engineering, E-MSR, at CTMT

SIEMENS

Control Mechatronics 



CASE STUDY

The subject of this verification was Siemens' marketing claim, "Application solution exceeds the design requirements of ANSI/UL 508A and NFPA 79." This is the first process in Europe to be evaluated in this way.

Additional information and UL Verified claims can be found on our website at verify.ul.com.

Results

As required in the standards UL 508A and NFPA 79, all doors of an enclosure that give access to uninsulated live parts operating at 50 V RMS AC or 60 V DC or more shall be mechanically or electrically interlocked, or both, with all disconnecting means mounted within or adjacent to the ICP, such that none of the doors can be opened unless the power is disconnected. This means that under normal operating conditions, no live parts can be accessed.

In the past, the most common solution has been the use of a mechanical door interlock system. Recently, the trend has transitioned to electrical use applications. As a panel builder, CTMT has been uncertain about how to identify needs as well as verify how to design the electrical door interlock based on the requirements of the standard. Another obstacle was the time-consuming selection of suitable components that resulted in increased costs.

To help their customers, Siemens developed three solutions which they described in an application manual, including examples and detailed information on how to integrate the door interlock into the ICP system as a comprehensive solution. In detail, the solutions are electronic door interlocking with LOGO!, electric door interlocking

and electronic door interlocking with Simatic®. These application solutions enable electrical engineers to easily comply with all requirements while at the same time saving on effort and costs.

"With the LOGO! controller from the various application examples, the customer has a cost-effective, space- and wiring-saving solution," said Gerhard Flierl, head of Department Application Consulting, Control Panel Engineering at Siemens. "In addition, LOGO! is capable of communication, and the statuses can be reported to a control room. Instead of the indicator lights, the states could also be shown on a LOGO! text display in the door."

The target of the UL Marketing Claim Verification was to verify the validity of Siemens' marketing claim that their solutions exceed the applicable standards UL508A Clause 66.1.3 and NFPA79 Clause 6.2.3.1.2. The design characteristics, functional sequence, circuit diagrams and bill of materials of the three application examples in the document "Application solution – Door interlock for distributed control panels" were reviewed for alignment with the above-mentioned standards. A manufactured product was not assessed during this process. The result of this evaluation was that Siemens' marketing claim about the process was accurate.

Along with the three new solutions developed by Siemens, panel builders such as CTMT are empowered to integrate electrical door interlocks into their systems in a simple and efficient way. It also helps them to select the correct components and ensure the fulfillment of all relevant standard requirements. For CTMT, this is a flexible solution that can be adapted to different kinds of control panel solutions and is comfortable in the handling compared to a mechanical door interlock.

"With the UL Verified solution from Siemens, we gain certainty about local authorities' acceptance in North America as well as trust by our clients about the safety and reliability guaranteed by the use of the electrical door interlock solutions in our control panels," said Ralf Linker, head of engineering, E-MSR, at CTMT.





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