

IMPROVING ELECTRICAL SAFETY WITH SHORT CIRCUIT PROTECTION INDUSTRIAL CONTROL PANELS



WHEN

DATES:

- **Part 1:** Tuesday, September 29, 11:00 am – Noon EDT
- **Part 2:** Thursday, October 1, 11:00 am – Noon EDT **HOW TO**

REGISTER:

- Visit keinc.info/M929

ABOUT THIS SEMINAR

Personnel who work in or on industrial control panels (ICP) while they are energized may have an increased risk of an arc flash event. Providing optimum protection to these workers requires attention to providing adequate Short Circuit Current Rating (SCCR) for the panel, enhanced component short circuit protection and minimizing arc flash energies within the panel.

The NEC requires that control panels have a greater SCCR than the fault current available to the input of the panel. UL 508A Supplement SB, recognized in the NEC, provides a method for calculating panel SCCR based on the SCCR of the components in the panel. With the proper fuse protection, panel SCCR can easily be increased from 5kA to as high as 100kA. These fuses can also ensure that you obtain Type 2 “No Damage” short circuit protection of motor starters.

The right choice of fuse and its location can also limit arc flash incident energy levels within the panel to less than 1.2 cal/cm²; the threshold of a 2nd degree burn.

This seminar will:

- Review the importance and safety implications of adequate SCCR for ICP.
- Provide an overview of low voltage UL listed current limiting fuses.
- Show what fuses are best for arc flash mitigation and how to ensure the lowest incident energy for workers exposed to the arc flash hazard.
- Review strategies for improving short circuit safety and minimizing risk
- Show what current limiting fuses can provide Type 2 protection.
- Review NEC SCCR requirements for installation of panels.
- Demonstrate how UL 508A Supplement SB is used to determine panel SCCR.
- Give examples of how the use of current limiting fuses can increase component SCCR and panel SCCR.

THE PRESENTER

Mike Lang, Principal Field Engineer for Mersen, has trained electrical professionals for over 25 years. As leader of the Mersen arc flash team, he has participated in over 1,000 arc flash tests in Mersen’s high power test lab. He has coauthored several prize-winning IEEE papers on arc flash and received 2018 Technical Award for Excellence in Prevention Through Design by the Electrical Safety Committee of the IEEE Industrial Application Society.

WEBINAR AGENDA

PART 1 - 60 MINUTES

Hazards of Overcurrents

- Electromagnetic Force
- Heat
- Arc Energy

Importance of Adequate Short Circuit Ratings

- SCCR, AIR, High Fault Current Ratings

Enhancing Short Circuit Safety with Current Limiting Fuses

- Current Limiting Fuse Performance
- Fuses for optimum short circuit protection of equipment and components
- Dual Element, Time Delay, or Fast Acting?
- Fuses for minimizing arc flash hazards
- Choosing a U/L Class as a Standard

PART 2 - 60 MINUTES

Brief Review of Enhancing Short Circuit Safety with Current Limiting Fuses

- Current limiting Performance and Advantages
- Fuses for optimum short circuit protection of equipment and components
- Minimizing arc flash hazards

Improving Control Panel SCCR with Current Limiting Fuses

- Overview of the 3-step Methodology of UL508A Supplement SB
- Addressing low SCCR components
- Examples

Design concepts to improve reliability of the short circuit protection

- Zones of Protection
- Fuse Selection for Power Circuits
 - NEC Considerations
 - Coordination Considerations
 - Achieving Type 2 Protection
 - Arc Flash Considerations
- Achieving Full Coordination for Safety

Overview and Suggestions for Safety Improvements

- Arc Flash Hazard

Five reasons to attend

1. Gain insight into improving safety for short circuits
2. Gain an understanding of the UL508A method for determining panel SCCR
3. Learn techniques to achieve high SCCR for control panels
4. Learn how to reduce incident energies within the control panel to less than 1.2 cal/cm²
5. Review other concepts that minimize risk to workers