Are your valves as safe as you think?

Find out in the first book to explain how to improve final element safety

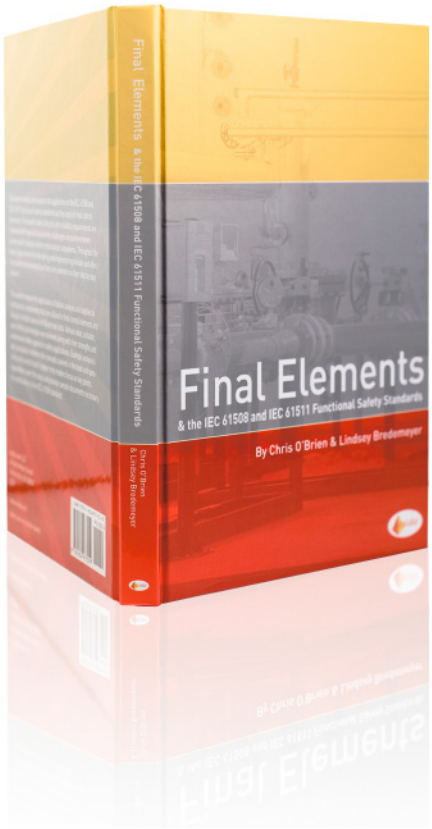
We trust the final elements in a safety application with the critical role of isolating the process or removing an energy source. Yet most focus typically gets placed on the system PLC.

The first book to delve into final elements in safety applications, *Final Elements* breaks down how to use the guidance in the IEC 61508 and 61511 functional safety standards to reduce risk in critical processes. The book explores issues like the different reliability factors that come from lack of use, discusses the advantages and disadvantages of various technologies, and provides practical guidance for mitigating risk.

The Fundamental Questions

The first book to break down design and implementation of final elements using the IEC 61508 and 61511 functional safety standards, *Final Elements* provides practical guidance on device design, selection and implementation. The book helps you answer questions such as:

- What are the 61508 and 61511 standards, and how do they benefit me?
- How do the standards apply to valves, actuators, and other final elements?
- What parts of a final control scheme do I consider when evaluating reliability?
- What methodologies work best to determine failure rates for mechanical equipment?
- How do valve design requirements differ in safety applications versus process applications?
- What are the advantages and disadvantages of various valve types for safety applications?
- How do actuators and control devices factor into safety applications?



Making it Practical

These are only a few of the topics tackled in *Final Elements*. At just under 200 pages, *Final Elements* takes a practical approach to helping with the design and implementation of final elements for safety applications. It uses diagrams, photography, exercises, and explanations designed for a range of experience levels to ensure the material is accessible and practical. Example analyses and calculations reinforce the concepts covered in the book, and questions at the end of each chapter help readers focus on key points. Appendices cover the steps and provide sample documents necessary for certification to the IEC 61508 standard.

Learning from the Experts

Final Elements weaves together its authors nearly fifty years of combined experience. **Lindsey Bredemeyer, PE**, has nearly twenty years of experience in valve engineering. His prior experience includes activity in aerospace and oilfield equipment, and he has been awarded two patents for valve emission control devices. Lindsey currently performs mechanical Failure Modes, Effects and Diagnostic Analysis (FMEDA) projects for exida, a functional safety and security consulting firm.

> " The book is a must read for anyone planning or implementing safety functions in the process industry."
>
> Brian F. Gregg, CFSE
> Invensys Process Systems

Chris O'Brien, CSFE, has over twenty years of experience in the design, manufacture, and marketing of process automation, reserve power systems, and safety-related equipment. Chris has been awarded five patents, including one for the industry's first safety-rated transmitter. Chris is currently a Partner and Director of Business Development with exida, where he helps customers implement

Place your order for *Final Elements* at www.exida.com today!