

# COURSE: Burner Management Systems

# BMS

The function of a burner management system (BMS) is to assure safe operation of the combustion associated with boilers, ovens, kilns, process heaters and furnaces. The BMS provides a safe start-up procedure and stops fuel flow if conditions are detected that affect the safety of the unit. With the advancement of microprocessor technology, programmable systems have become the preferred solution for burner management design. Programmable systems offer enhanced capabilities for operator graphics and diagnostics as well as ease of system expansion and modification. Since the failure modes of microprocessor technology is not readily predictable, the National Fire Protection Association (NFPA) and a number of other agencies (FM, IRI, TUV etc.) have established recommended practices and guidelines for applying this technology in burner management applications.

## Skills You Will Learn:

- ◇ Understand the hazards of combustion
- ◇ Develop an understanding of NFPA, ISA and IEC standard requirements for BMS programmable systems.
- ◇ Identifying safety functions of combustion systems.
- ◇ How to determine SIL levels for BMS design.
- ◇ How to review BMS Logic and P&ID's
- ◇ How to design compliant BMS safety functions
- ◇ How to verify that BMS designs are optimized for risk reduction and economics

## Course Topics:

- ◇ Purpose of Burner Management Systems
- ◇ Causes of Furnace Explosions / Implosions
- ◇ Overview of Combustion Equipment
- ◇ Standards covering Burner Management Systems
- ◇ Burner Management System Interlocks/Safety Instrumented Functions
- ◇ Light-off Sequences
- ◇ Selecting Safety Integrity Levels for Burner Management System Interlocks
- ◇ Quantitative Reliability Analysis of Burner Management System Interlocks
- ◇ Function testing
- ◇ Documentation

## Who Should Attend:

- ◇ Control Engineers
- ◇ Safety Engineers
- ◇ Engineering Management

**Length:** 2 Days

**Cost:** TBD

# TRAINING

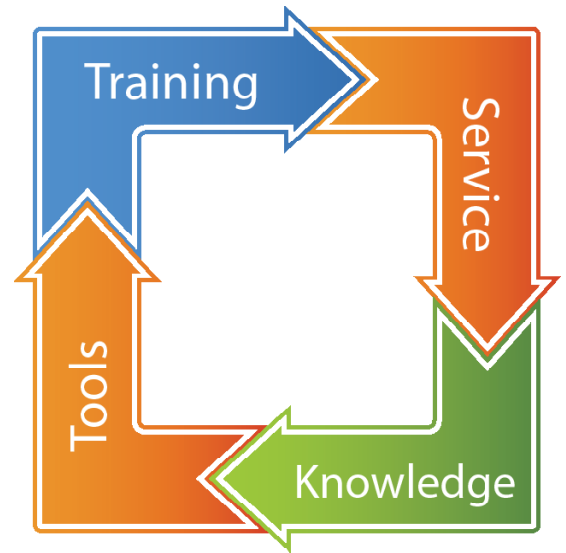


**exida is excellence in dependable automation.**

The key to our ability to deliver the cutting edge and influential knowledge is our staff of world class experts. The staff of exida have pioneered the tools and procedures used around the world for the design, maintenance, installation, and operation of safety instrumented systems. We have written the textbooks that are used for teaching automation reliability. We helped write the standards that the world uses for designing safe automation systems. We wrote the procedures that certification agencies use to verify the effectiveness of safety system hardware. We developed the procedures that industry uses to select automation that is both safe and cost effective. We give the lectures and symposia that train the industry's top professionals and present the latest developments. Nowhere else can you find the level of knowledge, expertise, and experience possessed by exida.

exida is able to provide a greater value than traditional consulting firms because of our sophisticated communication and delivery. In addition to traditional consulting, exida has leveraged the power of the internet to make knowledge transfer and sharing faster and more effective. Our internet virtual community contains resources and access to the world's leading authorities on safety and highly available automation. Our knowledge is also available in on-line expert system applications that are hosted at our web site, so you are not required to install and maintain them. exida ensures that the information is current, correct, and available.

We are independent, yet tightly integrated with safety instrumented systems vendors. We are financially independent and neutral so that we are able to provide an objective third party evaluation. We also act as partners in their design processes and in some cases act as partners in the delivery of safety life cycle services for complete turn-key solutions. This duality allows us to offer the best of both worlds to the end user.



## Automation Users

- Safety Function Identification
- Hazard/Risk Analysis
- Safety Integrity Level Selection / Tools
- Safety Integrity Level Verification / Tools
- Conceptual SIS Design
- Detailed SIS Design
- Pre-Startup Safety Review
- Operation & Maintenance Procedures
- Function Testing Market Analysis

## Automation Vendors

- Market Analysis
- Requirements Tracking
- Product Certification
- Cyber Security Certification
- Industry Partner Program
- Brand Labeled Service

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