



HARNESS THE POWER
OF KNOWLEDGE

**Advanced Training Program on
Industrial Programmable
Controllers Dedicated to Safety**

TRAIN



Introduction

Industrial programmable controllers dedicated to safety (APIDS) are specialized PLCs designed to provide safety-critical control functions in industrial automation systems

These systems play a crucial role in protecting personnel and equipment from hazards, ensuring the safe operation of industrial processes

This comprehensive 5-day training program, delivered by Global Business Minds, will equip participants with in-depth knowledge and practical skills in the design, implementation, operation, and maintenance of APIDS-based safety systems

Day 1: Fundamentals of Safety in Industrial Automation

- Overview of safety concepts and terminology in industrial automation
- Understanding the principles of functional safety and risk assessment
- Familiarization with safety standards and regulations, such as IEC 61508 and SIL
- Exploration of safety lifecycle phases, including concept phase, design phase, implementation phase, and operational phase

Day 2: Hardware and Software Architecture of APIDS

- Understanding the architecture of APIDS, including safety-related hardware and software components
- Familiarization with safety programming languages, such as Structured Text (ST) and Ladder Diagram (LD)
- Exploration of safety-related communication protocols, such as PROFIsafe and CIP Safety
- Understanding the role of safety-related devices, such as safety sensors and safety actuators

Day 3: Design and Implementation of APIDS-Based Safety Systems

- Applying safety lifecycle methodologies to design APIDS-based safety systems
- Selecting and configuring safety-related hardware and software components
- Implementing safety-related control algorithms using APIDS programming languages
- Testing and validating safety-related functions using simulation and real-time testing techniques

Day 4: Operation and Maintenance of APIDS-Based Safety Systems

- Familiarization with operational procedures and protocols for APIDS-based safety systems
- Monitoring and maintaining safety-related functions using APIDS programming tools and diagnostic software
- Implementing safety maintenance strategies and preventive maintenance programs
- Troubleshooting common safety system problems

Day 5: Advanced Topics in APIDS-Based Safety Systems

- Exploring the application of advanced safety concepts, such as safety integrity levels (SIL) and redundant safety systems
- Integrating APIDS-based safety systems with other industrial automation systems
- Addressing cybersecurity challenges in safety-critical systems
- Staying up-to-date with the latest advancements in APIDS technology and safety standards

Target Audience

This training program is designed for engineers, technicians, and professionals involved in the design, implementation, operation, and maintenance of APIDS-based safety systems in various industries, including:

- Oil and gas
- Petrochemical
- Power generation
- Chemical
- Pharmaceutical
- Water and wastewater treatment
- Manufacturing
- Food and beverage

- Utilities

Learning Outcomes

Upon completion of this training program, participants will be able to:

- Demonstrate in-depth knowledge of APIDS and their role in safety-critical industrial automation systems
- Apply safety lifecycle methodologies to design effective APIDS-based safety systems
- Select, configure, and implement safety-related hardware and software components
- Implement safety-related control algorithms using APIDS programming languages
- Understand and apply safety standards and regulations, such as IEC 61508 and SIL
- Test and validate safety-related functions using simulation and real-time testing techniques
- Operate and maintain APIDS-based safety systems safely and efficiently
- Implement safety maintenance strategies and preventive maintenance programs
- Troubleshoot common safety system problems
- Apply advanced safety concepts, such as safety integrity levels (SIL) and redundant safety systems
- Integrate APIDS-based safety systems with other industrial automation systems
- Address cybersecurity challenges in safety-critical systems
- Stay up-to-date with the latest advancements in APIDS technology and safety standards

Certificate Delivered by Global Business Minds:

- Certificate of Completion in Industrial Programmable Controllers Dedicated to Safety (APIDS)

Additional Notes

- This detailed professional training program can be tailored to specific industry requirements and application needs

- Hands-on exercises and case studies can be customized to reflect real-world challenges and scenarios faced by participants

- The training can be delivered in a blended format, combining in-person sessions with online modules for flexibility and accessibility

- Global Business Minds can provide ongoing support and resources to participants to ensure their continued success in APIDS-based safety systems