



*Training Course:
Gas Detection Systems: Design, Installation, and
Compliance*

*13 - 17 September 2026
Cairo (Egypt)*

Training Course: Gas Detection Systems: Design, Installation, and Compliance

Training Course code: EN235464 From: 13 - 17 September 2026 Venue: Cairo (Egypt) - Training Course Fees: 4410 € Euro

Introduction

Gas detection systems are essential for ensuring safety in environments where hazardous gases may be present. Effective system design, proper installation, and strict compliance with international standards are critical to preventing incidents and maintaining safe operations.

This program, designed by Global Horizon Training Center, equips participants with the technical knowledge and practical expertise required to design, install, and ensure compliance of gas detection systems across industrial and commercial applications.

Course Objectives

By the end of this program, participants will be able to:

- Understand design principles for gas detection systems
- Select appropriate detection technologies based on risk assessment
- Develop system layouts aligned with international standards
- Apply best practices in installation and commissioning
- Ensure compliance with safety regulations and industry codes
- Perform inspection, testing, and system validation
- Identify and mitigate common design and installation challenges
- Integrate gas detection systems with broader safety infrastructures

Target Audience

This program is designed for:

- Electrical and Instrumentation Engineers
- HSE Engineers and Safety Officers
- Design and Project Engineers
- Maintenance and Facility Management Professionals
- Oil & Gas and Petrochemical Industry Personnel
- Technicians responsible for installation and commissioning

Outline

Day 1: Principles of Gas Detection System Design

- Fundamentals of gas hazards and risk assessment
- Types of gases and detection requirements
- Design considerations based on facility type and risk level
- Overview of international standards IEC, NFPA, ATEX
- System specifications and performance criteria

Day 2: Detection Technologies and System Selection

- Overview of gas detection technologies IR, catalytic, electrochemical, PID
- Fixed vs. portable detection systems
- Sensor selection and application criteria
- Environmental and operational considerations
- System selection based on hazard scenarios

Day 3: Installation and Commissioning Practices

- Installation standards and site preparation
- Detector placement and coverage optimization
- Wiring, cabling, and hazardous area requirements
- Commissioning procedures and functional testing
- Documentation and system handover

Day 4: Compliance, Inspection, and Maintenance

- Regulatory frameworks and compliance requirements
- Inspection routines and testing protocols
- Calibration procedures and maintenance schedules
- Audit preparation and documentation
- Managing system lifecycle and upgrades

Day 5: Integration, Safety Systems, and Case Studies

- Integration with fire and emergency systems
- Interface with control systems SCADA, BMS
- Alarm management and response planning
- Incident prevention and safety improvements
- Case studies and practical applications

Registration form on the Training Course: Gas Detection Systems: Design, Installation, and Compliance

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