

Scandinavian Academy Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

# Course: Instrumentation Diagrams & Symbols Application

| Code | City | hotel | Start | End | price | Language - Hours |
|---|---|---|---|---|---|---|
| OG-549SA | Dammam | Hotel Meeting Room | 2027-09-19 | 2027-09-23 | 12950 SR | En - 25 |

## About The Course

This course presents the methodology for developing and applying instrument and control drawings and the ISA Standards available to assist in this effort. You will develop actual documents for a simple project to aid your understanding.

## Course Objectives

### Upon Completion of the Course, Participants will be able to:

- You will become familiar with the documents used to define instrument and control systems, including: Process Flow Diagrams, Piping & Instrumentation Drawings, Instrument Lists, Specification Forms, Logic Diagrams, Location Plans, Installation Details, Loop Diagrams
- You will understand the type of information included on each document
- You will become familiar with the sequence of document development for a typical project
- You will cover the definition and use of: Process Flow Diagrams, P&IDs, Instrument Lists, Specification Forms, Logic Diagrams, Location Plans, Installation Details, Loop Diagrams
- You will cover an overview of some process control devices and the symbols used to define them
- You will become aware of the ISA Standards available to assist you in developing and understanding instrument and control documents

## Designed For

- Process Control Engineers & Technicians
- Automation Engineers
- DCS Engineer
- Operations Managers
- Operators & Control Room Personnel
- Metallurgists
- Production Engineers
- Process Engineers
- Plant Engineers
- Electrical Engineers
- Electrical & Instrumentation Technicians
- Maintenance Engineers & Supervisors
- All those who want to be updated on the latest developments in SCADA and PLC systems and want to get a solid appreciation of the fundamentals of their design, installation and troubleshooting.

## Training Methodology

The Course will be highly participative and will include a wide range of methods including presentations, discussions, videos, case studies and exercises. Where appropriate, these will include real issues brought to the Course by delegates.

- Case studies from different industries will be investigated. Each delegate will receive an extensive reference manual, as well as case studies, while worked out solutions will be handed out to the delegates on conclusion of group discussions.
- To ensure the concepts introduced during the course are understood, they will be reinforced through a mix of learning methods, including lecture style presentation, open discussion, case studies, simulations and group work.

## Course Outline

**Symbols:**

- General Instrument or Function Symbols
- Instrument Line Symbols
- Function Blocks – Function Designations

**ISA Standard Identification Letters:**

- Typical Letter Combinations
- Field or Local Instruments
- More Primary Element Symbols
- Typical Transmitters – Flow
- Orifice Plates
- Typical Transmitters – Level
- Transmitters – Pressure and Temperature

**Typical Controllers:**

- Field Locations
- Control Board Locations
- DCS | Computer
- PLC

**Control Valve Types:**

- Actuator Action and Power Failure

**Process Flow Diagram:**

- Process Description
- P&IDs and ISA Standards
- Typical P&ID

**Climatization:**

- Instrument Numbering

**Instrument List:**

- Specification Forms
- An ISA20 Specification Form

**Logic Diagram:**

- Binary Logic Diagrams for Process Operations
- Motor Start Logic

**Instrument Installation:**

- Installation Detail

**Loop Diagram:**

- Types and Uses

**Control Schemes:**

- Feedback Loop
- Radio Control
- Cascade Control

**The Scandinavian Academy for Training Center** adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

**Program Timings:  9:00 AM to 2:00 PM**

**The program includes:**

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

# Our Success Partners

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