

## Control Circuits and Reading of Electrical Drawings

*Cairo (Egypt)*

*17 - 21 August 2025*

UK Traininig

# PARTNER



# Control Circuits and Reading of Electrical Drawings

Code: OG28 From: 17 - 21 August 2025 City: Cairo (Egypt) Fees: 4000 Pound

## Introduction

Control circuits and electrical drawings are integral to the operation of electrical systems in industrial and commercial environments. This course is designed to provide participants with a solid understanding of control circuits, their functionality, and how to accurately read and interpret electrical drawings. Through practical exercises and case studies, participants will develop the skills necessary to troubleshoot, design, and maintain control systems, ensuring operational efficiency and safety in electrical installations.

## Course Objectives

- Understand the fundamentals of control circuits and their key components.
- Gain the ability to read and interpret various types of electrical drawings.
- Learn the standards and symbols used in electrical schematics.
- Acquire skills to troubleshoot, design, and enhance basic control circuits.
- Apply knowledge to analyze and optimize control systems in real-world settings.

## Course Outlines

### Day 1: Basics of Control Circuits

- Introduction to control systems and circuits.
- Components of control circuits relays, switches, contactors, etc..
- Basic theory behind electrical and control circuits.
- Overview of common applications for control circuits.
- Safety protocols for operating and maintaining control circuits.

### Day 2: Electrical Drawing Basics

- Different types of electrical drawings schematic, wiring, layout diagrams.
- Understanding electrical symbols and standards e.g., IEC, ANSI.
- How to read and interpret single-line diagrams.
- Introduction to ladder logic diagrams.
- Hands-on practice: Analyzing and interpreting basic electrical drawings.

### Day 3: Control Circuit Operation and Analysis

- Different control circuit configurations manual, automatic, and semi-automatic.
- Common control circuit types start-stop, reversing, interlocking.
- Techniques for testing and troubleshooting control circuits.
- Using timers and sensors in control circuits.



- Workshop: Building and analyzing a basic control circuit.

#### Day 4: Advanced Electrical Drawings

- In-depth exploration of wiring diagrams and connection layouts.
- Cross-referencing complex schematics for detailed analysis.
- Interpreting control panel layouts and terminal connections.
- Identifying and resolving common issues in electrical drawings.
- Case study: Analyzing and interpreting a real-world electrical system drawing.

#### Day 5: Designing and Improving Control Systems

- Principles of designing efficient control circuits.
- Creating electrical drawings using modern software tools.
- Techniques for improving efficiency and reliability in control systems.
- Integrating advanced technologies in control systems e.g., IoT, automation.
- Final project: Designing a control circuit and corresponding electrical drawings.



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