



SAFETY CENTRE

Industrial and Hazardous Safety Training

Email: training@resourcechurchill.com

Web: www.resourcechurchill.com

Tel: +234 905 766 6626



Course Outline: Basics of Programmable Logic Controllers/ Maintenance and Troubleshooting of Pneumatic and Electro-pneumatic Systems

This course is designed to teach the student the purpose, uses, and basic applications of the PLC

Programmable logic controller (PLC) in industrial environments utilizing various methods and software to program PLC.

Target Audience: Installation/Project/OPS Engineers, Maintenance Personnel, Project Managers/Directors etc.

Duration: 5 Days

Location: Orchid Hotels, Lekki – Epe Expressway, Lagos

Course Fee: N200, 000 per candidate (Covers training, tea breaks and lunch buffet only. This fee excludes accommodation and transport to the training location)

TOPICAL/COURSE OUTLINE

- Introductions to the purpose, functions, and operations of the PLC in industrial applications.
- Identification of various components of the PLC
- Introduction to PLC ladder logic and basic programming concepts
- Establishing communications with the PLC
- Definitions of conditional inputs and outputs
- Electrical continuity versus logical continuity
- Applications of discrete inputs with PLC's
- Programming applications and navigation through software
- I/O configuration and downloading PLC programs
- Installation and troubleshooting sensors wired as sinking or sourcing current
- PLC timer and counter concepts and programming applications
- Programming applications using sequencers

STUDENT LEARNING OUTCOMES

- Understand the purpose, functions, and operations of a PLC



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- Identify the basic components of the PLC and how they function
- View a directory of processor files using PLC software
- Establish communications with a PLC
- Restore and monitor a PLC processor file using PLC programming software
- Run a PLC processor file using PLC programming software
- Create a PLC project using PLC software
- Configure the I/O for a PLC project using PLC software
- Enter a basic PLC program using PLC software
- Save a PLC program to a disk using PLC software
- Edit a PLC program using PLC software
- Generate and print out a ladder logic report using PLC software



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MAINTENANCE AND TROUBLESHOOTING ON PNEUMATIC AND ELECTRO-PNEUMATIC SYSTEMS

OVERVIEW

Extend your specialist knowledge of complex pneumatic and electro-pneumatic control systems and improve your methodical skills.

Practical exercises on training equipment for Setting up, Commissioning, Troubleshooting and Fault elimination. Making it easier to transfer knowledge to your day-to-day work.

COURSE CONTENTS

- Setting up and commissioning pneumatic and electro-pneumatic systems
- Analysis of control tasks in accordance with DIN EN 60848
- Design and function of pneumatic and electro-pneumatic circuits
- Special pneumatic components (valve)
- Different types of valve terminal actuation
- Operating modes (AUT/MAN/EMERGENCY STOP)
- Electro-pneumatic and electronic control systems
- Most recent standards and regulations
- Practical exercises and systematic troubleshooting

PREREQUISITE

Basic knowledge of pneumatics

COURSE MATERIAL

- Manual – Maintenance of Pneumatics and Electro-Pneumatics
- Folder with writing materials
- Exercise Sheets