

# INDUSTRIAL INSTRUMENTATION CONTROL (PLC) (REF:OTSII001)

## Course Objectives

To gain an understanding of the Industrial Instrumentation Control (PLC).

## Course Description

This five-day course will cover the theory and dynamic of Programmable Logic Controllers. In addition to PLC history and development the course will cover the basic programme structure and process control. Advanced PLC Systems and their relationship to DCS are included to provide participants with the most up to date developments in process control and SCADA systems.

Practical sessions will be conducted using an Allen Bradley PLC system to demonstrate the principles of ladder logic/SCADA interface programming.

## Who Should Attend

This course is intended for analysers, control engineers and technicians. Also those who have direct responsibility for or require a working knowledge of PLC's will benefit from the most up-to-date development in modern process control.

## Pre-Requisites

All Attendees should have an instrumentation, electronic or operations background.

## Course Outcome

At the end of this course you will be able to analyse a PLC system.

## Course Outline

### Day 1

Introduction

#### *Instrumentation Overview*

Pressure Devices and Measurement  
Pressure Switches  
Pressure Transducers  
Temperature Devices and Measurement  
Thermocouples and RTD's  
Flow Devices and Measurement  
Level Devices and Measurement  
Practical Calibration examples

### Day 2

#### *Introduction to Programmable Logic Controllers (PLCs)*

PLC history and Development  
Input and Output Systems (I/O)  
Digital I/O  
Analogue I/O Types and Applications  
The Central Process (CPU)  
Uploading/Downloading Program  
Linking to PLC

### Day 3

#### *Ladder Logic Programming (using Allen Bradley PLC)*

Basic Ladder Logic Instructions  
Series and Parallel Branches  
Nesting  
Special Instructions  
Shift Registers  
One Shot Instruction



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## Day 4

### *Advanced PLC Instructions*

Advanced Instructions  
File Basics  
Sequences  
PID Instructions and Process Control

## Day 5

### *SCADA Interface*

Setup Options  
Database configuration  
Screen editing and configuration  
Troubleshooting Exercises on Hardware and Software

## Course review and Feedback

