

PROPOSED IN-HOUSE TRAINING

PROGRAMMABLE LOGIC CONTROLLER SIMATIC S7-1200 WITH TIA SOFTWARE



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ABOUT US

We offer training solutions to various organizations, matching their requirement in technical segments since 1994. We always strive to guarantee overall customer satisfaction and place utmost importance to customer feed back. Over the years we have trained more than 500 organizations and over two thousand participants in all our training modules. We have also expanded our services to cover technical training institutions and institutions of higher learning providing extensive knowledge sharing for all levels and fields of expertise in the workplace.

INTRODUCTION

The Totally Integrated Automation (TIA) Portal for Simatic S7-1200 PLCs forms the work environment for integrated engineering with Simatic Step7 and Simatic WinCC.

In this part of the training, participants shall learn to familiarize with TIA Portal, basic knowledge about the structure of the controller hardware and the basics of programming. They will learn to clear simple hardware faults and software errors and to create, modify and expand small PLC programs. They will also get an overview on operator control and monitoring.

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COURSE OBJECTIVES

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

- Create and manage projects in STEP7 using TIA Portal
- Configure the connection with the controller and set up the necessary hardware
- Understand the rules in writing programs in LAD/FBD language using logic arithmetic operations, timers and counters
- Understand how to use basic testing and monitoring tools for programs written in LAD/FBD
- Consolidate the acquired knowledge, with the numerous practical hands-on exercises

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COURSE CONTENT

Module 1 : Simatic S7 system family overview

- i. Totally Integrated Automation (TIA) Portal
- ii. S7-1200 / 1500 / 300 systems
- iii. STEP7 overview
- iv. Overview of TIA concept

Module 2 : Installation / Maintenance of PLC

- i. Configuring S7 components
- ii. Installation rules
- iii. Electrical configuration
- iv. Wiring of S7 modules

Module 3 : Hardware Configuration

- i. CPU properties and parameterization
- ii. Hardware configuration methods
- iii. Remote I/O connections
- iv. CPU clock memory

Module 4 : Hardware Commissioning

- i. Check list
- ii. Module indicators
- iii. Variable table
- iv. I/O wiring test

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COURSE CONTENT

Module 5 : Block Architecture and Block Editor

- i. Program struture and execution
- ii. Program Blocks (OB, FB, FC, DB)
- iii. LAD / FBD Editors

Module 6 : Binary Operations

- i. AND, OR, XOR, NAND, NOR
- ii. Normally open and normally closed contacts

Module 7 : Digital Operation

- i. Data types - Integer, Real BCD
- ii. Timers and Counters
- iii. Accumulators
- iv. Data management and conversions

Module 8 :Introduction to HMI

Module 9 : Exercises

- i. Memory Set/Reset
- ii. Latching circuits
- iii. Timers and Counters
- iv. Debug simple program errors
- v. Software and Hardware commisioning

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WHO SHOULD ATTEND

- All staff involving the maintenance of equipment/machine with control systems
- Executives
- Managers
- Support employees

METHODOLOGY

The workshop is interactive & participative with a mixture of:

- Self assessment
- Videos and activities
- Hands-on programming
- Group discussions & case studies
- Interactive lectures

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TRAINER'S PROFILE

Mr. Henry Choong has more than 20 years of solid experience in the field of industrial automation (PLC, Pneumatics, Hydraulics, Electrical, Vacuum, Sensors & DAQ etc). He is a certified trainer by Pembangunan Sumber Manusia Berhad (PSMB), and also by AB Mecman, Stockholm, Sweden.

During his employment with Jebsen & Jessen (M) Sdn Bhd and Allen Automation & Pneumatics Sdn Bhd, he had numerous project experiences in the automation industries in handling PLCs, pneumatics, hydraulics systems as well as sensor technology, both hardware and software for system integration.

Beside his practical engineering experiences, he is also actively involved in training and consultancy. Some of the organizations and institutions which he had trained and collaborated, includes SKF Bearings Industries (M) Sdn Bhd, Petronas Refinery, Malacca Industrial Skills Development Centre (MISDEC), Selangor Human Resource Development Centre (SHRDC) etc.

In addition, he constantly presents seminars updating the latest industrial technologies to institutions of higher learning. He was also in the panel for the development of NOSS in Robotic Technology, Sijil Kemahiran Malaysia (SKM) Level 4 & Level 5

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