



Automation Trainings

Technical Skills Development

Introduction

Unlock your potential in industrial automation. Machinotech now offers expert-led, hands-on training for today's most in-demand skills, including PLCs, HMI, Instrumentation, VFDs, Pneumatics, and Motor Control. Join us to build the expertise you need to advance your career.



S7 1200 Basic Course

- SIMATIC S7 1200 System Family Overview
- Installation and maintenance of a PLC
- SIMATIC S7-1200 software package
- Hardware configuration
- Hardware commissioning
- Block architecture and Program Editors
- Symbols
- Binary and Digital Operations including IEC Timers and Counters
- Introduction to Data Blocks
- Introduction to HMI and Profinet networking
- PLC and HMI tags
- Program documenting, saving and archiving
- Each of the above topic areas are backed up by practical exercises using a conveyor model and simulator. Working examples are provided and tested out during the course.





TIA Portal Programming 1

- Overview and significant performance characteristics of the SIMATIC S7 system family
- The components of the TIA Portal: STEP 7, WinCC, communication
- Program execution in automation systems
- STEP 7 block types and program structuring
- Binary and digital operations
- Programming of parameterizable blocks
- Data management with data blocks
- Programming organizational blocks
- Test tools for system information, troubleshooting and diagnostics
- Hardware configuration and parameterization of the SIMATIC S7-1500 modules, a PROFINET IO system (ET-200SP), a Touch Panel (TP 700) and a Sinamics G120 drive over PROFINET
- Program documentation and saving
- Deeper understanding of contents through practical exercises on TIA system model





SIMATIC Programming 2

- Use program design methods to structure the program
- Solve extensive programming tasks with reusable blocks
- Program advanced functions, such as indirect addressing, in STEP 7
- Implement data management with the SIMATIC S7 automation system
- Apply system blocks along with blocks from the standard STEP 7 library
- Program classical software error handling and evaluation
- Configure the connection of an operator control and monitoring system (HMI).
- Configure TIA system components consisting of SIMATIC S7, HMI, PROFINET IO.





VFD Training Course – Siemens

- Design of the System and Components
- Electrical Basics Review
- Different motor-starting methods
- Incoming Power (line) Wiring
- Motor (load) Wiring
- Control Wiring
- Keypad Controls
- Terminal Strip Control – Automatic, Manual
- Bus Communication Control
- Open Loop Control
- Manual Operation
- Automatic Operation – 2/3 wire mode
- References & Limits
- Motor Speeds – Min, Max and Preset
- Ramp Times
- Speed Reference
- Skip Frequencies
- Inputs / Outputs Functions – Analog, Digital, and Relay
- Application Functions
- Reset



VFD Training Course – Danfoss

- What is Local, 2 wire and 3 wire Control why and where it is used
- (explanation)
- Basic programming parameters and Local Control
- 2 wire control
- Analog Input Control
- Program Parameters
- Preset frequency using digital input
- Relay operation
- Display Parameters, Terminal Parameters
- 3 wire control
- Jogging using a digital input.
- All advanced Parameters (Eg:- Skip frequency, Start at power up)
- Other digital input parameters
- Automatic stopping of the motor when the frequency exceeds a predefined limit
- Practice Questions



Thank You



+971 54 305 8343



tehcnicalsupport@machinotech.ae



www.machinotech.ae