

**Warning:** Undefined array key 0 in `/var/www/vhosts/amatrol.com/httpdocs/wp-content/themes/kallyas-child/dkpdf/dkpdf-index.php` on line **171**

**Warning:** Trying to access array offset on value of type null in `/var/www/vhosts/amatrol.com/httpdocs/wp-content/themes/kallyas-child/dkpdf/dkpdf-index.php` on line **171**

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## Siemens PLC Programming eLearning | Introduction to Mechatronics

**Basic HMI Panel Operation - WX25052-AA01XEN-E1**

Objective 1: Describe the Function of an HMI Panel

HMI Screens

SIEMENS SIMATIC HMI

Main Screen

Exit RT OPS SCREEN

F1 F2 F3 F4 F5 F6

HMI panel programs often have more than one screen, or page, of interactive images to provide different sets of control functions. This feature enables HMIs to provide more functions than a typical hard-wired operator panel.

AMATROL Page 4 of 70

This Siemens PLC Programming eLearning course (M33745) for a Siemens S7-1500 PLC begins with an introduction to mechatronics and mechatronics safety and quickly builds on concepts like station operation, component adjustment, module sequencing, and station sequencing. Examples of topics from the curriculum include: manually overriding an electro-pneumatic valves; sequencing the operation of a 2-axis pick and place manipulator; adjusting a fiber optic sensor; sequencing the operation of a parts queueing module; operating a gravity feeder with escapement; adjusting motor starter overloads; and much more

### Siemens PLC Programming

#### In-Depth Siemens PLC Programming eLearning for Automated Manufacturing Curriculum Connected to Real-World Skills

Amatrol's Siemens PLC Programming eLearning curriculum is unique in that it thoughtfully combines in-depth theoretical knowledge with practical, hands-on skills. This powerful combination of knowledge and skills solidifies

understanding and creates a strong foundation for pursuing more advanced skills.

For example, the eLearning course covers important topics, such as:

### **Automation Operations**

In this segment, learners begin with an introduction to mechatronics, then study pick and place automation systems, flexible manufacturing systems, and automated manufacturing processes. The course then moves into control system concepts and covers basic sequencing control systems and the types of manual and automatic discrete input and output devices. The next topic, mechatronics safety, includes operator safety rules and electrical and pneumatic lockout/tagout systems. Finally, the segment covers machine operator functions by explaining the role of a modern automated machine operators, the function of a basic operator panel, stop function operation, and automated machine operation.

### **Pick and Place Feeding**

This station operation lesson begins by discussing the types of material feeding systems, powered parts feeder operation, and pick and place pneumatic manipulator operation. Next, the segment covers component adjustment through topics like how to adjust a vacuum gripper, how to adjust a vacuum switch, and how to adjust a shock absorber. The segment continues with module sequencing by discussing powered parts feeder sequence of operation and a 2-axis pick and place manipulator sequence of operation. Finally, station sequencing is discussed through topics like pick and place feeding station sequence of operation and pick and place feeding station with manual/auto/reset functions operation.

### **Indexing**

This segment begins by discussing the operation of an indexing material processing station and a stepper motor index table and how to adjust fiber optic sensors and capacitive sensors. The segment continues by covering how to program a stepper motor controller, how to adjust a homing sensor, and the proper sequence of operation for a part transfer module, a stepper motor index table, and a parts orientation module. The segment concludes with the operation of an indexing station with manual/auto/reset functions.

### **Multiple Station Control**

This segment covers discrete I/O handshaking, system startup/halt, system stop/reset, and FMS programming. Learners begin by studying the function of discrete I/O handshaking, how to connect PLC discrete I/O handshaking lines, and the operation of a PLC program that uses discrete I/O handshaking before moving on to studying how a PLC program uses discrete I/O handshaking for multiple station startup and halt. They will then learn about a multiple station emergency stop circuit and how a PLC program uses discrete I/O handshaking for multiple station cycle stop and reset. Finally, learners study how a PLC program uses discrete I/O handshaking for multiple station FMS and quantity production.

## **Multimedia**

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### **Highly-Interactive Multimedia Format Appeals to All Learning Styles**

Amatrol's PLC eLearning course curriculum features a highly-interactive multimedia format. Stunning 3D animations, videos, pictures, voiceovers of all text, and interactive quizzes and exercises bring learning to life. Amatrol's multimedia curriculum contains elements that will appeal to every learning style, keeping learners motivated and engaged.

Click on the image below to view Amatrol's eLearning demo:

## **Anytime, Anywhere Access Promotes Self-Paced Learning**

In today's fast-paced, technology-driven world, it's more important than ever to extend the reach of industrial skill training beyond the borders of traditional classrooms. Amatrol's eLearning meets the challenge for flexibility by offering in-depth, comprehensive technical skills training via an intuitive, easy-to-use web-based Learning Management System (LMS).

With anytime, anywhere online access, Amatrol's eLearning allows learners to set their own pace at home, on the job, in a traditional class setting, or a blended approach of these options. Click here to learn more about [Amatrol's eLearning and LMS](#).

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