Motion Control Learning System – Schneider, 1-Axis

890-MCSE1

ELECTRONICS

890-MCSE1

Student Reference Guide

Optional eBook

Learning Topics:

- Drive Safety
- System Start Up
- System Operation
- Drive Configuration with HMI
- Drive Configuration with Software
- Drive Tuning
- Manual Drive Operation
- System Configuration
- Function Blocks and Languages
- System Programming
- Basic Instructions and Variables
- Project Visualization and Monitoring
- Position Control
- Homing
- Velocity and Current Control
- CANopen Programming
- CANopen Configuration

Amatrol's Motion Control Learning System, 890-MCSE1, provides instruction for a Schneider Electric LMC20/Lexium32 Single Axis Motion Control System, including set-up, operation, programming, and single-axis synchronization and control. Motion control is used when precise control of motor speed, torque, or position is required to produce a product. It is commonly used in the automotive, energy, medical, petroleum, printing, and packaging industries for applications as simple as opening and closing a valve or as complex as controlling multiple axes on a CNC machine.

The 890-MCSE1 includes a single axis drive, motion controller, programming software, digital I/O block, linear motion module, and an I/O simulator. These real-world components are mounted on a heavy-duty workstation of 11-gauge steel built to stand-up to frequent use. Combined with Amatrol's world-class curriculum, these industrial components provide learners with the skills that can be directly applied on the job.

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Technical Data

Complete technical specifications available upon request.

Tabletop Workstation
- 37"H x 38"W x 30"L
- Power Supply 24VDC
- Circuit Breaker, 15 amp
- Pulley, 30 tooth
- Degree Wheel Guard Assembly
- Emergency Stop Pushbutton
- Safety Lockout

Single-Axis Servo Drive
- Regulator Assembly, 24 V to 5 V
- Servo Motor with Absolute Encoder
- CANopen Fieldbus
- Integrated EMC Filter
- Analog Inputs (2)
- Modes of Control (5)

Motion Controller
- LMC20 Motion Controller
- Memory: 1 MB RAM, 1 MB flash EPROM, 60 kB non-volatile RAM
- Synchronization for 8 Axes
- Virtual Axes
- Master Axis via External Encoder
- 24 VDC, 4 amp

Digital I/O Block
- Sinking Inputs, 24 VDC (12)
- Sourcing Outputs, 24 VDC (8)

Linear Motion Module
- Lead Screw Assembly
- Linear Bearing Assemblies (2)
- Inductive Homing and Limit Switches (3)
- Absolute Distance Measurement Indicator

I/O Simulator
- Incandescent Lights, Red (8)
- Pushbuttons, Green (4)
- Pushbuttons, Black (4)

SoMove Lite Software

MotionPro Software

Degree Wheel

L-Type Coupling 9mm Keyed

Lockout/Tagout Kit

Communication Cables
- Modbus Cable
- Crossover Cable

Ball Driver

Nut Driver

Power Cord, 8'

Student Curriculum (B40831)

Instructor's Guide (C40831)

Installation Guide (D40831)

Student Reference Guide (H40831)

Supplemental Disc: 1-Axis (S40831)

Instructor's Solution Disk (U40831)

Optional Curriculum eBook (E40831)

Additional Requirements
- Computer, See Requirements: http://www.amatrol.com/support/computer-requirements/
- Mobile Technology Workstation (82-610) or Equivalent

Utilities Required
- Electricity (120 VAC/60 Hz/1 phase)

Industrial-Standard Motion Control Components

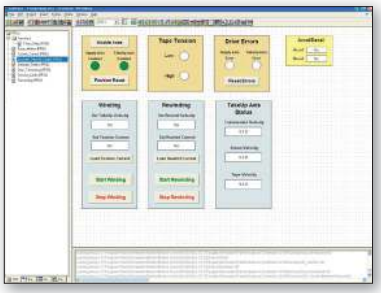
890-MCSE1's Motion Controller, Digital I/O, and Servo Drive

The 890-MCSE1 features a variety of industrial-standard components such as a single-axis servo drive with five modes of control (point-to-point positioning, current regulation, speed regulation, electronic gearing, and manual mode) and a motion controller used to accomplish common industry functions like rotary knife, camming, positioning, and clamping.

Additional components include a digital I/O block with twelve 24 VDC sinking inputs and eight 24 VDC sourcing outputs, a linear motion module with inductive homing and limit switches, and an I/O simulator with pushbuttons and output simulator lights. All of these components are mounted on a tabletop workstation with silkscreened labels for ease of use and identification. The open layout that clearly exposes each component will also allow learners to understand each component's role in a motion control project.

Develop Skills Using Real Motion Control Software

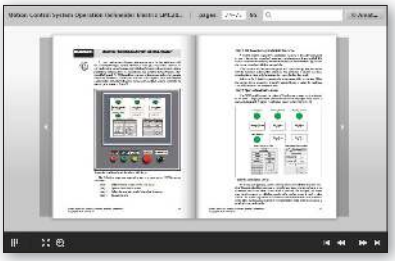
The 890-MCSE1 includes SoMove Lite and MotionPro software that learners will use to develop motion control skills. SoMove Lite allows learners to practice setting up, configuring, and adjusting motion control hardware via a personal computer. Learners can then use MotionPro to develop motion control programs. Motion control programming is essential for controlling and setting up applications, which is why Amatrol strongly focuses on motion control programming and helps learners to develop solid programming knowledge.



Motion Control Programming Software

World-Class Curriculum that Integrates Knowledge and Skill-Building

The 890-MCSE1 features world-class motion control curriculum with a stunning breadth and depth of topics and skills. The curriculum begins with motion control fundamentals and safety and then advances to drive and system configuration, including vital topics such as drive tuning and function blocks and languages. Learners then study system programming, position control, and velocity and current control. Integrated within this theoretical knowledge, learners will practice industry-relevant skills such as configuring communications for a motion control system, creating and running a position control project that uses digital inputs and outputs, and configuring and running a velocity control motion control project.



Optional eBook Curriculum

This learning system includes printed curriculum, but Amatrol now offers an optional online eBook version. These eBooks look like real books and allow users to flip between pages with ease. Enhanced with features such as keyword searches and zoom controls, eBooks enable learners to quickly locate and view information and make them a great learning tool.

Student Reference Guide

A sample copy of the Motion Control 1 Student Reference Guide is included with the learning system. Sourced from the curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfect-bound book.

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