

Programmable Industrial Computer Motion Control Maintenance Course

INTRODUCTION

The objective of the Motion Control Maintenance Course is to present to the user a general understanding of the PiC PiC, MMC, Digital MMC, Smart Drives & S200w/Digital Link systems. The modules of information discussed and the hands-on laboratory experience will support a functional understanding of the PiC900/MMC systems.

WHO SHOULD ATTEND

- Electronic Technicians
 - Field Service Reps
 - Maintenance Specialists
 - Anyone who needs a general knowledge of the PiC, MMC, Digital MMC, Smart Drives & S200w/Digital Link systems
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COURSE LENGTH

3 Days: Monday through Wednesday

GENERAL COURSE OBJECTIVES

Upon completion of this course, you will be able to:

1. Describe the system operation of the Programmable industrial Computer.
 2. Identify and define the terminology relevant to PiCPro ladder diagram programming.
 3. Debug ladder diagrams using the PiCPro.
 4. Identify and locate function blocks within the PiCPro library.
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PREREQUISITE

Beneficial: Familiarity with IBM or compatible computers and the Windows operating system.

Beneficial: Prior knowledge of PLC and Ladder Logic Programming.

MOTION CONTROL MAINTENANCE COURSE OUTLINE

1. INTRODUCTION

- A) System Overview
- B) PiCPro[□]

2. HARDWARE

- A) Controls
 - 1) PiC
 - 2) MMC
 - 3) MMC for a PC
 - 4) Digital MMC/SmartDrive
 - 5) Standalone Digital Controls
 - 6) S200w/Digital Link
- B) Modules
 - 1) Identification
 - 2) Installation
 - 3) Wiring

3. RESTORING MEMORY

- A) Files
 - 1) Identify File Names
 - 2) Identify the Directories the Files Are Located In
 - 3) Identify the Directory to Work From
- B) Reloading the Ladder (.LDO)
 - 1) Starting PiCPro
 - 2) Module Menu
 - a) Open the Module
 - b) Down-load the Module
 - c) Backing out of PiCPro
- C) Reloading the RAMDisk
 - 1) Processor Menu
 - 2) Disk Operations
 - 3) Send File
 - 4) Backing Out of PiCPro

4. START-UP DIAGNOSTICS

- A) Diagnostic LEDs on Controls
- B) CPU Blink Codes

5. ONLINE CONTROL

- A) Control Operations
- B) Status
- C) Scan Control
- D) Drive Maintenance

6. TROUBLESHOOTING I/O

- A) Hardware Modules
 - 1) Fusing
 - 2) LED Indicators
 - 3) General Procedure
- B) Software
 - 1) Monitor
 - a) View List
 - b) Forcing Table

7. CLOSED LOOP CONTROL

- A) General Overview
 - 1) Overview of the Velocity Loop
 - 2) Overview of the Position Loop
 - 3) Gains in the Position Loop
 - a) Proportional Gain
 - b) Integral Gain
 - c) Derivative Gain
- B) Wiring
 - 1) Shielding
 - 2) Single-Point Ground
 - 3) Routing

8. AXIS TUNE

- A) Servo Setup and Tuning
- B) Opening the File
- C) Viewing
 - 1) Servo View List
 - 2) Servo Force List
 - 3) Changing Values
 - 4) Saving Changes