Attention: The following topics are *not* addressed during this class:

- Motion Control
- TwinSAFE

Prerequisite:

Students are expected to know basic computer skills, including file and folder management.

Topics Covered

Documentation – Catalog and Information System

I/O and Bus coupler Diagnostics

- Hardware Identification
- EtherCAT I/O Hardware
- K-Bus
- Terminal Wiring
- Grounding
- Power Rail
- Replacing Terminals
- Bus Coupler LEDs

TwinCAT Architecture

- TwinCAT System Service
- TwinCAT System Manager
- TwinCAT PLC Control

TwinCAT System Manager

- Menus and Controls
- System Configuration
- NC Configuration Overview
- PLC Configuration
- IO Configuration
- Scanning for Hardware

Using the System Manager as a troubleshooting tool

Troubleshooting EtherCAT network

Troubleshooting K-bus networks

IPC Diagnostics

Installing TwinCAT

Beckhoff Automation LLC
13130 Dakota Ave. Savage, MN 55378
Phone: +1 (952) 890-0000
E-Mail: TrainingUSA@beckhoff.com
www.beckhoffautomation.com

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- Selecting the Correct Build
- Downloading from the Web
- Restoring Licenses

Connecting PLC Variables to Hardware

- Appending the PLC project to the System Manager
- Linking the PLC variables to Hardware
- Simple PLC Program – Connecting inputs and outputs

Variables

- Variable Types
- Declarations
- Variable Scope
- Initial Values
- Constants
- Retained Data
- Persistent Data

Review of IEC 61131 Languages

- IL – Instruction List
- LD – Ladder Diagram
- FBD – Function Block Diagram
- ST – Structured Text
- SFC – Sequential Function Chart
- CFC – Continuous Function Chart

Loading and Running the PLC

Applying New PLC Code

Structures

Enumerations

Arrays

Functions

- Declaration
- Coding
- Use

Function Blocks

- Declaration
- Coding

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- Use

Libraries

Code Sequencing and POU Calls

Troubleshooting PLC Code

- Break Points
- Flow Control
- Global Search
- Cross Reference

Boot Project

Source Code Download

Remote Connections

Scope View

Project Compare