

# TRAINING: SOLIDWORKS Electrical Schematic (3 Days)

**Prerequisites:** Experience with Windows, Fundamental knowledge of electrical design

**Description:** Topics covered: projects, single line diagrams, cabling, creating schematics, cross-referencing the single line diagram, control drawings, managing origin-destination arrows, programmable logic controllers (PLC), creating and using macros, editing the PLC drawing, creating and running reports

## Introduction

- About This Course

## Lesson 1: Project Templates

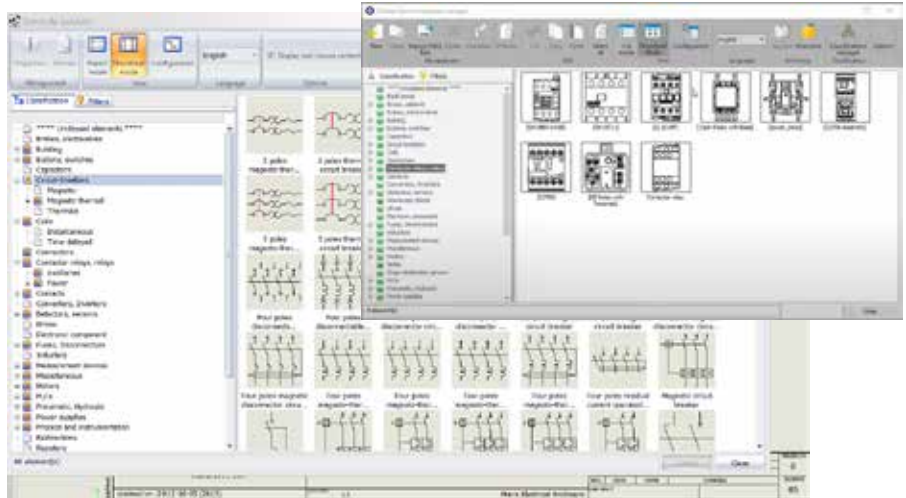
- Project Configurations, General, Graphic, Symbol, Font, Mark, Title Blocks, Libraries and Palettes
- How is a Project Structured? Book, Folders, Drawings
- Stages in the Process Project Storage, Formula Managers, Title Blocks

## Lesson 2: Modifying Project Templates

- What are Environments?
- Draw Multiple Wires
- Wire Style Selection
- Project Macros
- Environment Data Selection

## Lesson 3: Drawing Types

- What are Drawing Types?
- Drawings
- Scheme
- Creating Drawings
- Existing and Archived Projects
- Opening an Existing Project
- Unarchiving a Project
- Closing Projects
- Line Diagram Symbols
- Adding Symbols
- Symbols Library
- Symbol Orientation
- Adding Cables
- Schematic Drawing
- Scheme Best Practices
- Symbols Panel
- Schematic Symbols
- Symbol Properties



## Lesson 4: Symbols and Components

- What is a component?
- Component Identification
- Component Symbol Identification
- Symbol Component Association

## Lesson 5: Manufacturers Parts

- Circuits and Terminals
- Circuit Association
- Finding Manufacturer Parts
- Search Options
- Editing Parts
- Circuit Symbols
- Circuit Association
- Electrical Assemblies

## Lesson 6: Wires and Equipotential

- Equipotential and Wires
- Wire Styles
- Wire Style Manager
- Numbering Group
- Replacing Wires
- Replacement Range
- Equipotential Numbering Results
- Wire Numbering Results
- Using Nodal Indicators

## Lesson 7: Cabling

- Changes in the Wiring Diagram
- Cables
- Detailed Cabling
- Terminal Strip
- Pin to Pin Connections
- Wires
- Terminals
- Creating a New Cable
- Adding Terminals to the Strip
- Terminals Editor
- Copy and Paste

## Lesson 8: Symbol Creation

- Symbols and Standards
- Symbol Creation
- Symbols Manager
- Symbol Properties
- Circuits, Terminals, Types Circuit Transmission Connection Point Insertion
- Multiple Attribute
- Splitting Attribute Data
- Add to Library
- Copy, Paste Symbol

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## Lesson 9: Macros

- What are Macros?
- Creating and Adding Macros
- Creating a New Group
- Project Macros
- Paste Special

## Lesson 10: Cross Referencing

- What is Cross Referencing?
- Cross Reference List
- Cross Reference State Colors
- Cross Reference Text Coding
- Cross Reference Types
- Same Level Cross Referencing
- Cross Reference Location Listing

## Lesson 11: Managing Origin-Destination Arrows

- What are Origin-Destination Arrows
- Origin-Destination Arrows
- Interpreting the Arrow Text

## Lesson 12: Dynamic Programmable Logic Control

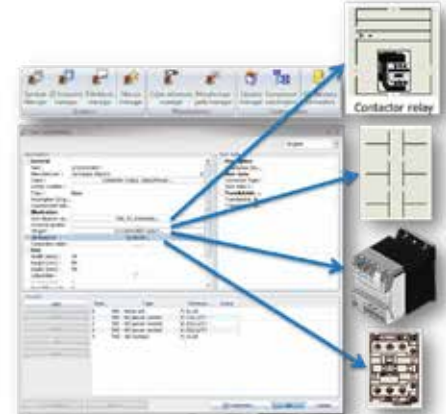
- What is a PLC?
- Dynamic Insertion
- Adding a New Scheme
- Adding a PLC Mark
- Inserting a PLC Configuration
- PLC Configuration Options
- Editing Wires
- Editing a PLC

## Lesson 13: Automated Programmable Logic Control

- How are PLCs Automated?
- PLC Mark, Part Manufacturer Data
- IO Manager

## Lesson 14: Connectors

- Connectors
- Insert Connector
- Connector Insertion



## Lesson 15: 2D Cabinet Layouts

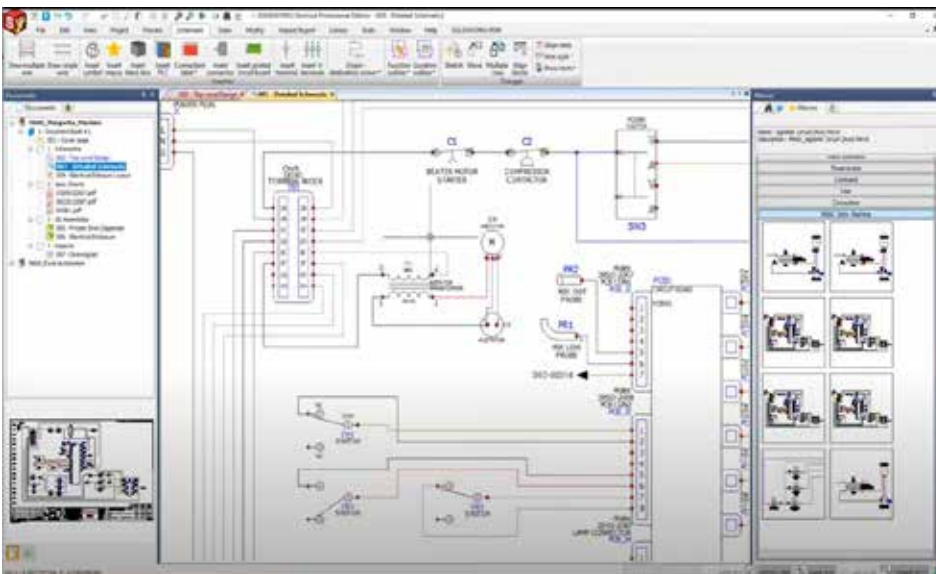
- Creating a 2D Layout
- Inserting Ducts and Rails
- Inserting Components
- Wire Cabling Order
- Optimize Wire Cabling Order

## Lesson 16: Design Rule Checks

- What are Design Rule Checks?
- Stages in the Process
- Unconnected Pins
- Equipotential Conflicts
- Max. Terminal Wires
- Duplicated Parent Symbols
- Child Symbols without Parent
- Empty Terminal Strip
- Duplicated Terminals

## Lesson 17: Reports

- What are Reports?
- Bill of Materials Grouped by Manufacturer
- List of Wires by Line Style
- List of Cables Grouped by Reference
- Drawings List
- Stages in the Process
- Report Templates
- Report Columns
- Column Formula
- SQL Query Column Variable
- Sort and Break



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