

SCADA and HMI Panel Courses Contents

➤ Brief Description

- ✚ Be able to recognize SCADA development environments.
- ✚ Be able to design SCADA Application for a specific project
- ✚ Be able to communicate with different Hardware and recognize their protocols.
- ✚ Be able to design, Develop and trouble shoot SCADA Applications.
- ✚ Be able to acquire data from voltage sensor, Current Sensor and temp PT100 attached with different PLCs.
- ✚ Be able to learn data formats and their inter conversion for certain tasks.
- ✚ Understand the analog to digital conversion and display of data and Scale Up and down of Data.
- ✚ Be able to backup and restore a SCADA program when required.
- ✚ Be able to perform basic system diagnostics when a problem occurs
- ✚ Be able to use OPC Servers, DDE, ODBC, API and Industrial data Bridge in SCADA Applications
- ✚ Be able to interface PLCSIM Simulator for S7-PLCs and WinCC.
- ✚ HMI Panels Programming

➤ Training Kits Used

- ✚ S7-300 & S7-400 PLCs with Analog Modules
- ✚ S7-226 PLC with analog Modules
- ✚ S7-1200 and S7-1500 PLCs

- ✚ Wientek HMI panels
- ✚ SCADA WinCC Explorer v7.2.

➤ Introduction

- ✚ Background of SCADA
- ✚ SCADA as a system
- ✚ Supervision vs. control
- ✚ Applications of SCADA.
- ✚ Different SCADA software and their introduction such as Winlog_Pro, LabVIEW-DSC, WinCC explorer and Indosoft Web Studio as a SCADA.
- ✚ Advantages and Disadvantages of the above mentioned SCADA software.
- ✚ Project Development techniques of SCADA.

➤ WinCC Explorer

- ✚ Background to WinCC.
- ✚ WinCC: main features, composition and methods of use. Basic design concepts installation of the integrated development environment.
- ✚ General settings. The integrated development environment as a tool for uniform project development.
- ✚ Development methods.
- ✚ Project structure and components.

✚ Exercises:

➤ Project Configuration

- ✚ Project Settings.
- ✚ Communications Protocols.
- ✚ Adding Devices to the Project.

- ✚ Tag management: Using Internal Tags, simulations with Simatic Tag Simulator
- ✚ Adding the Starting Picture of the Project.
- ✚ Making a simple HMI (HMI visualization of data).
- ✚ Training project demonstration and analysis.

➤ Creating Gates/Tags

- ✚ Tag management in Detail.
- ✚ What is Tag? Types of Tags.
- ✚ Creating Tags & its Connections with the Field Devices.
- ✚ Digital Tags & Applications.
- ✚ Numerical Tags & Applications.
- ✚ Compound Tags & Applications.
- ✚ String Tags & Applications.
- ✚ Events/Alarms Tags & Applications
- ✚ Tags Logging and archiving
- ✚ Horns
- ✚ Administrator Groups and its Accessing Power of Authentications.

➤ Creating Pictures

- ✚ Setting of the Picture according to the requirement of the Project.
- ✚ Adding Controls to the Screen.
- ✚ Property and Events Editor of the Controls.

- ✚ Assigning Tags to the Controls.
- ✚ Writing Functions in VBS and C. Global Script.
- ✚ Login & Access to the Controls

➤ Images and Animations

- ✚ Adding Images from Symbol Factory and Process Animations.

➤ Reports & Charts/Graphs

➤ Alarms and Recipe

- ✚ Types of Alarms
- ✚ Alarms View & Creating , saving and display of recipe Items

➤ Data Base Connectivity

- ✚ OPC Servers and OPC simulators
- ✚ ODBC & DDE connectivity with Microsoft Access & Excel
- ✚ Logs and Archives database.

➤ HMI Panel Programming

- ✚ Wientek & Siemens HMI Panels
- ✚ Complete project development for HMI Panel

➤ Exercises:

- **More Than 10 Demo Projects developed in WinCC interfaced with s7-300 and S7-1200 training Kits.**

For more detail contact us:

Cellular # 0333-9172465

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