

Diagnostica e Manutenzione avanzata con TIA Portal (TIA-DIAG3)

Short Description

The activity provides the basic knowledge required to carry out analysis tasks necessary for identifying hardware and software issues in the TIA Portal environment.

By using system diagnostics and integrated tools, participants will learn how to identify the cause of a fault or machine downtime, assess its severity, and take action to restore the automation system.

Basic concepts will also be provided for identifying faults in communication networks, HMI supervision systems, and drives.

The proposed exercises are carried out on SIMATIC S71500 control systems.

Objectives

Provide the necessary knowledge for firstlevel intervention on SIMATIC control events using the TIA Portal platform.

Participants are given an understanding of the tools and diagnostic techniques for the main components: PLCs, HMIs, Drives, and industrial communication networks.

Target Group

- Electrical and mechanical maintenance technicians
- Service personnel
- Machine and plant commissioning staff
- Plant operators

Content

PLC 1200 and 1500 Control Systems:

- Typical architecture of an S71200/1500 system
- Installation and replacement of hardware components
- Interpretation of hardware faults using integrated diagnostic tools (CPU display, expansion module LEDs, etc.)
- Use of the TIA Portal environment for diagnostics and error detection
- Use of diagnostic tools for machine/plant downtime analysis: watch tables, forcing, online functions, etc.
- Backup and restore methods for programs
- Practical exercise on a 1500 control system

HMI Operator Interface:

- Configuration of communication interfaces
- Configuration of the HMI within the TIA project
- Replacement of an HMI device
- Backup and restore methods for HMI programs (Prosave)
- Practical exercise on an HMI system

SCADA:

- General information on a SCADA system
- Typical architecture
- Overview of diagnostic intervention possibilities

Drives and Motion Control:

- Diagnostics of a typical drive (e.g., Sinamics G120) using TIA Portal–StartDrive
- Overview of terminal blocks and electrical wiring
- Overview of typical machine data: reading and modification
- Hardware replacement and restoration
- Practical exercise on a G120 drive

Communication Networks and ET200:

- Basic diagnostics on automation networks
- Replacement of ET200 distributed I/O stations in PROFINET
- Main communication network issues and related troubleshooting
- Practical exercise on a control system and ET200 peripheral

Safety:

- Introduction to safety standards
- Hardware replacement and restoration
- Diagnostics using TIA Portal
- Wiring
- Practical exercise on a Safety control system and ET200 peripheral

Prerequisites

No prerequisites required.

Type

Face-to-face training

Duration

5 days

Language

it