

SINAMICS G120 Basic - TIA Portal Startdrive

General Information

Course Code: SCT-DVGPTM1A
Length: 2½ Days

Audience

This course is intended for Personnel responsible for the long term maintenance and diagnostics of the Siemens Drive.

Prerequisites

- Basic Computer Skills
- Basic industrial technology skills
- Basic Industrial Electronics experience
- Competent in safe use of common electrical test tools such as VOM, DMM, oscilloscope, etc.
- Completion of the following quickSTEP online course: Basics of AC Drives at <https://www.sitrain-lms.com/STEP.aspx>

Objectives

Upon completion of this course, the student shall be able to:

- Utilize G120 Architecture to troubleshoot Hardware Modules
- Troubleshoot the Power Electronics
- Operate the Drive via BOP-2 and/or IOP Operator Panels
- Perform Basic Commissioning and Set Up via BOP-2 and/or IOP
- Backup and Restore the Operating Program via Memory Card and OPs
- Establish communication with the TIA Portal Startdrive
- Upload, Archive, and Restore G120 Configuration via Startdrive
- Control Drive via Startdrive Control Panel
- Trace Signals within the G120 configuration utilizing BICO technology
- Modify/Trace Command and Setpoint sources
- Troubleshoot Drive via LEDs, Operator Panels, and Startdrive
- Use the Diagnostic Fault and Warning Buffer to troubleshoot the system
- Install or Replace Drive System Components

Topics

1. Introduction to SINAMICS G120 Drives
 - a. Frequency Converter basics
 - b. Power Electronic Troubleshooting
 - c. G120 Drives Family
 - d. Control Units
 - e. Power Units
 - f. Component Replacement
2. Set up, Operation, and Data Backup via Operator Panels
 - a. BOP-2
 - b. IOP
3. The Totally Integrated Automation Portal
 - a. Overview
 - b. Project creation
4. TIA Portal - Startdrive
 - a. Overview
 - b. PG/PC connection
 - c. Accessible Node search
 - d. PROFINET name and addressing
 - e. Startdrive Control Panel
5. G120 Data Backup
 - a. Operator Panel
 - b. Micro Memory Card
 - c. TIA Portal Project
6. BICO Technology
 - a. Command Source
 - b. Setpoint Source
 - c. Signal Tracing
7. G120 Diagnostics
 - a. LEDs
 - b. Control Words
 - c. Status Words
 - d. Alarms and Faults
 - e. I/O simulation
8. Obtaining Technical Support/Additional Training