Training Course on Comprehensive SIPROTEC 5 Protection

Professional Development Training Course Outline

Category	Development	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In the evolving world of electrical power systems, the demand for robust, reliable, and intelligent protection devices is higher than ever. SIPROTEC 5 by Siemens is a cutting-edge, modular, and flexible protection system that empowers utilities and industrial sectors to achieve maximum network stability, operational transparency, and automation. Training Course on Comprehensive SIPROTEC 5 Protection provides participants with the skills and expertise required to deploy, configure, operate, and troubleshoot SIPROTEC 5 devices across various real-time scenarios and infrastructures.

Whether you're an engineer, technician, or system integrator, mastering SIPROTEC 5 is critical to modern power system reliability. This instructor-led, hands-on course is designed to ensure participants fully understand digital substation technologies, IEC 61850 integration, relay coordination, and parameterization of SIPROTEC 5 devices, offering both theoretical background and practical insights for optimal system implementation.

Programme Curriculum

Training Course on Comprehensive SIPROTEC 5 Protection

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technologies, IEC 61850 integration, relay coordination, and parameterization of SIPROTEC 5 devices, offering both theoretical background and practical insights for optimal system implementation.

Training Objectives

1. Understand the architecture and functional features of SIPROTEC 5 protection relays.
2. Master the parameterization process using DIGSI 5 software.
3. Configure and integrate SIPROTEC 5 with IEC 61850 protocols.
4. Learn fault analysis and event diagnostics using SIPROTEC 5 tools.
5. Perform backup and restore operations for device settings.
6. Implement and verify protection schemes such as overcurrent, distance, and differential protection.
7. Troubleshoot and resolve common SIPROTEC 5 communication issues.
8. Understand Goose Messaging and its role in substation automation.
9. Gain practical knowledge of SIPROTEC 5 hardware components and wiring.
10. Develop and test custom logic applications in CFC (Continuous Function Chart).
11. Apply digital substation concepts to SIPROTEC integration.
12. Practice relay testing and commissioning techniques using secondary injection tools.
13. Review and apply real-world case studies for advanced decision-making.

Target Audience

1. Power System Protection Engineers
2. Substation Automation Technicians
3. Electrical Maintenance Engineers
4. Utility Protection Engineers
5. Electrical Consultants
6. Relay and SCADA Engineers
7. Control & Instrumentation Engineers
8. Graduate Engineers and Trainees

Course Duration: 5 days

Course Modules

Module 1: Introduction to SIPROTEC 5 Devices

- Overview of SIPROTEC 5 Family
- Hardware architecture and modular design
- Device types and application scopes
- Operating principles and key features
- Navigation through SIPROTEC HMI
- **Case Study**: Comparison of SIPROTEC 4 and SIPROTEC 5 implementations

Module 2: DIGSI 5 Software Essentials

- Introduction to DIGSI 5 user interface
- Creating and managing projects
- Parameterization of basic protection functions
- Device configuration and addressing
- Upload/download settings and reports
- **Case Study**: Building a complete SIPROTEC 5 project from scratch

Module 3: Protection Functions Implementation

- Time-overcurrent protection

- Distance protection settings
- Transformer differential protection
- Earth fault protection strategies
- Backup protection schemes
- **Case Study**: Analysis of protection behavior during a fault condition

Module 4: IEC 61850 Communication Integration

- Basics of IEC 61850 protocol
- Goose messaging and system testing
- SCL configuration and engineering
- Inter-device communication setup
- HMI and SCADA data mapping
- **Case Study**: Implementing Goose communication between SIPROTEC relays

Module 5: Advanced Logic and CFC Programming

- Introduction to Continuous Function Chart (CFC)
- Creating logic blocks and interlocks
- Inputs/outputs handling and timers
- Binary logic applications
- Uploading and monitoring logic in devices
- **Case Study**: Creating a logic-based load shedding scheme

Module 6: Testing, Simulation, and Troubleshooting

- Relay testing using OMICRON or similar tools
- Fault simulation techniques
- Analyzing fault records and disturbance files
- Communication issue diagnosis
- Troubleshooting hardware faults
- **Case Study**: Diagnosing a misoperation during relay testing

Module 7: Backup, Restore, and Cybersecurity

- Secure access and password protection
- Backup procedures using DIGSI 5
- Restore and configuration validation
- Cybersecurity compliance in relay configuration
- Firmware updates and lifecycle management
- **Case Study**: System recovery after unintended setting loss

Module 8: Real-Time Application and Commissioning

- Pre-commissioning checklist
- Wiring and terminal assignments
- Final validation and testing
- Documentation and reporting
- Onsite troubleshooting and maintenance
- **Case Study**: Full commissioning of SIPROTEC 5 in a substation

Training Methodology

- Interactive theoretical sessions led by industry-certified experts
- Hands-on lab sessions with real SIPROTEC 5 hardware and DIGSI 5
- Group-based exercises and simulations for enhanced collaboration

- Real-world case studies to bridge theory and practice
- Assessments, quizzes, and practical evaluations for progress tracking

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com