



*Training Course:  
In-Depth Protection Relay Training for Feeders,  
Busbars, and Generators*

*1 - 5 June 2025  
In-House*

## Training Course: In-Depth Protection Relay Training for Feeders, Busbars, and Generators

Training Course code: EN235983 From: 1 - 5 June 2025 Venue: In-House - Training Course Fees: € Euro

### Introduction:

Protection relays are a vital component of modern power systems, ensuring the safe and selective isolation of faults to protect critical assets like feeders, busbars, and generators. Understanding their logic, configuration, and fault response behavior is essential for electrical engineers working in substations, utilities, and power plants.

This 5-day training program, designed by [Global Horizon Training Center](#), provides participants with comprehensive in-classroom knowledge of protection relay operation, settings, and analysis. The program replaces hands-on field work with [high-quality presentations](#), [case study discussions](#), [software screen recordings](#), and [video demonstrations](#). This method ensures that even without lab access, participants gain practical insight into configuring relays, analyzing COMTRADE files, and troubleshooting faults effectively.

### Objectives:

By the end of this training, participants will:

- Understand detailed protection principles for feeders, busbars, and generators
- Recognize the logic and architecture of numerical protection relays
- Learn software-based configuration steps through guided video sessions
- Analyze fault events using real-world COMTRADE examples
- Gain insight into typical misoperation cases and how to prevent them

### Target Audience:

- Protection Engineers
- Electrical Maintenance & Commissioning Engineers
- Substation & Utility Engineers
- Technical Support Staff involved in relay protection and system reliability

### Outlines:

Day 1:

Protection Concepts and Relay Fundamentals

- Fundamentals of power system protection
- Types of protection schemes feeder, busbar, generator
- ANSI codes and relay functions overview
- Role of CTs, VTs, and protection coordination
- [Video](#): Real-world impact of failed protection
- [Presentation](#): Interactive relay schematics and component mapping

#### Day 2:

##### Relay Architecture and Communication

- Overview of digital and numerical relay structure
- Signal flow inside a protection relay
- Communication protocols IEC 61850, Modbus, DNP3
- SCADA and relay interface fundamentals
- [Video](#): Relay data communication and IEC 61850 substation animation
- [Case Study](#): Substation communication failure and restoration

#### Day 3:

##### Protection Software Overview and Demonstrations

- Guided overview of software tools: DIGSI, PCM600, EnerVista
- Live screen recordings showing relay parameter configuration
- Creating logic diagrams and setting thresholds video demos
- Backup and restoration procedures
- [Presentation](#): Software screenshots with guided explanation
- [Video](#): Uploading settings and testing protection logic

#### Day 4:

##### Fault Records and COMTRADE File Analysis

- Introduction to disturbance records and COMTRADE format

- Step-by-step interpretation of fault waveforms
- Typical event file walkthroughs: overcurrent, differential, and trip events
- [Video](#): Software-based COMTRADE analysis fault playback
- [Group Activity](#): Analyze and explain a real fault record guided

#### Day 5:

##### Practical Scenarios and Troubleshooting

- Relay misoperation case studies and root cause analysis
- Simulation videos of fault conditions and relay trip behavior
- Reading and explaining event logs
- Preparing and reviewing sample setting sheets
- [Review session](#): Fault coordination, logic, and alarm settings

## Registration form on the Training Course: In-Depth Protection Relay Training for Feeders, Busbars, and Generators

Training Course code: EN235983 From: 1 - 5 June 2025 Venue: In-House - Training Course Fees: € Euro

Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

### Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....  
Position: .....  
Telephone / Mobile: .....  
Personal E-Mail: .....  
Official E-Mail: .....

### Company Information

Company Name: .....  
Address: .....  
City / Country: .....

### Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....  
Position: .....  
Telephone / Mobile: .....  
Personal E-Mail: .....  
Official E-Mail: .....

### Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
- ☐ Please invoice my company

### Easy Ways To Register

Telephone:  
+201095004484 to  
provisionally reserve your  
place.

Fax your completed  
registration  
form to: +20233379764

E-mail to us :  
info@gh4t.com  
or training@gh4t.com

Complete & return the  
booking form with cheque  
to: Global Horizon  
3 Oudai street, Aldouki,  
Giza, Giza Governorate,  
Egypt.