

## Basic Automation for Switchgear User (LV-BAS)

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### Objectives

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The participants learn communication options using various bus systems (PROFIBUS, MODBUS TCP/IP) with SENTRON Devices (3WL, 3VA, PAC meter) and SIMOCODE. The effective use of the commissioning and parameterization tool powerconfig is communicated in the practical unit.

### Target Group

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Electrical Maintenance, Service

### Content

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- Introduction to Digital / Analog Signals
- Basic Concepts of Bits, Bytes, Word, Binary, Decimal, BCD, Hex
- Input types (Sinking/Sourcing), Output types (Trans / Relay), Isolation -Galvanic/Optical etc.
- RS232, RS485 difference
- Introduction to various bus systems - PPI, MPI, Profibus, TCP/IP
- Basic Constituents of PLC
- How PLC works?
- Overview of SIMATIC S7 PLC
- Range, Functionality
- Hardware details like front indication, terminals, ports on module
- Introduction to selection
- Hardware configuration in TIA Portal :
- PC-PLC communication
- Installation guidelines, powering & wiring of modules, addressing
- Hand-on practice
- Programming language and representation in LAD
- Elementary Data types in PLC
- Using Symbol Table and VAT
- Basics of Communication (Topology, Synchronous/Asynchronous, Half duplex etc.)
- ISO / OSI 7 layers - brief overview
- Master-Slave, Multi master, TCP/IP
- Profibus Details
- No. of slaves per master
- Criteria for using repeater / MLFB
- Brief overview of data structure
- Function and use of GSD files
- Difference between ES and SCADA
- Diagnostics functions
- Reading and understanding communication manual of SIMOCODE, WL/VA, Soft Starter, PAC meter
- Basic types, Data Sets, Data Records
- Setting up the Profibus network on SIMATIC Manager, adding DP devices like SIMOCODE, WL, Soft starter, PAC meter
- Communicating / controlling switchgear from PLC

### Prerequisites

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Engineers from electrical /electronics engineering. Participants should be familiar with the 3WL ACB, Soft-starter, PAC meter and SIMOCODE.

### Note

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#### BENEFITS:

After this course participant shall be able to make a communication network with the various communicable switchgear devices which can help them to exchange the data from the switchgear devices to the PLC and SCADA system. Also they will be able to troubleshoot the communication related problems.

### Type

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Face-to-face training

### Duration

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3 days

### Language

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### Fee

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18,000 INR

