



## Target Group

Hands-on troubleshooting training for individuals from the commissioning, maintenance, and service departments. Basic knowledge of industrial automation is recommended.

## Training Objectives

- Understand the basics of EtherNet/IP technology and its areas of applications
- Learn the planning, installation, acceptance, and maintenance of EtherNet/IP systems
- Be able to use diagnostic tools effectively
- Carry out quality assurance and troubleshooting in EtherNet/IP networks

## Contents of the Course

### 1. Introduction to EtherNet/IP technology

- Overview of the EtherNet/IP fieldbus technology & terminology
- Similarities and differences to classical fieldbus systems
- Characteristics of EtherNet/IP, transmission media and transmission methods
- Areas of application and advantages in industrial automation

### 2. EMC & Potential Equalization

- Symmetrical data transmission
- Taking EMC interferences already into consideration during the planning phase
- Detecting and eliminating EMC weak points in existing installations (functionality of a shield, functionality of potential equalization, ways of coupling in case of disturbances)

### 3. Ethernet/IP Diagnosis

- Most important diagnosis parameters
- Handling of diagnostic tools and fault-finding
- Troubleshooting on sample setup

### 4. Documentation and Components

- Structure of a topology map, Important parameters, and means of automatic determination
- Live determination of topology on sample setup
- Line categories: classification e.g. Cat5/Cat5e
- Connectors RJ45 / M12 / SCRJ

## Troubleshooting Tools Used for Training

- PNMA Tap
- PROlinetest | PROFINET-Ethernet cable tester
- EtherNet/IP-INspektor®
- EMCheck® clamps – LSMZ I, MWMZ II, ISMZ I
- PROscan Active Topology
- PROmanage® SCADA

To register for this course or for other training inquiries please email us at [sales@indusolamerica.com](mailto:sales@indusolamerica.com).