

## COURSE DESCRIPTION

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# Hardware Installation & Troubleshooting

## Overview

This 4-day course focuses on installation and setup of PowerLogic and ION metering. Participants will identify and resolve meter setup issues, CT and PT wiring issues, and meter communication network issues. Participants will examine the capabilities of specific PowerLogic and ION meters and learn how to select the correct meter for different metering points in a facility. Participants will explore the features of PowerLogic communication gateways and practice setup and configuration. The ION Setup Utility will be used to display real-time data tables for the purpose of verifying that meter CTs and PTs are correctly wired to the meters. The ION Setup Utility will also be used to setup logging and event detection for each meter in the system. Participants will also create and manage a basic system in EcoStruxure Power Monitoring Expert. This course provides an introduction to installing and setting up a metering system utilizing PowerLogic and ION hardware.

## Duration

4 Days (M-W 8am-4pm / Th 8am-1:30pm). *Please book departing flights for 4pm or later on the last day of class.*

## Who should attend

Anyone who will be designing, installing, configuring, troubleshooting, or maintaining PowerLogic and ION metering and communication devices.

## Prerequisites

- Basic computer skills and experience with Microsoft Windows.
- Working knowledge and understanding of electrical terminology, concepts, and calculations, including an understanding of the relationships among current, voltage, power and power factor in three-phase circuits.

## Students will be able to

- Understand basic power fundamentals and terminology
- Determine the capabilities of specific PowerLogic and ION metering devices
- Use the PowerLogic and ION meter front panels
- Use the ION Setup Utility to troubleshoot CT and PT wiring issues
- Use the ION Setup Utility to modify and save meter configurations
- Explain how to correctly mount and wire PowerLogic and ION meters
- Upgrade the firmware of PowerLogic meters and ION meters
- Troubleshoot meter wiring and communication issues
- Configure PowerLogic gateways for device communications
- Add PowerLogic and ION meters into an EcoStruxure system
- Create a simple power monitoring system in EcoStruxure Power Monitoring Expert
- Generate a Vista diagram and create basic Vista objects

## Agenda

### Day 1

#### **Course Introduction**

- Student and Instructor introductions and overview of course logistics
- Overview of course topics and agenda

#### **Review Power Fundamentals and Power Quality**

- Understand power fundamentals topics and the variety of quantities that can be measured
- Review key components of power quality

#### **Introduction to PowerLogic and ION meters**

- Overview of PowerLogic and ION meters
- Describe meter placement in systems
- Review of communication devices (gateways)
- Identify meter volts mode and wiring configurations

### **Familiarize and use meter front panels**

- Navigate the display screens to view meter information
- Access the front panel setup menus to configure meter settings

## **Day 2**

### **Introduction to ION Setup**

- Understand the features and uses of ION Setup for meter configuration
- Practice connecting to both PowerLogic and ION meters

### **CT & PT wiring**

- Recognize proper meter readings based on wiring
- Understand three and four wire systems and associated phasor diagrams
- Practice troubleshooting and correcting meter wiring issues

### **ION Setup data validation and time synchronization**

- Display real time data from a meter using ION Setup software
- Configure time synchronization in PowerLogic and/or ION meters

## **Day 3**

### **Communications between metering, gateways, and software**

- Define a communications model
- Review physical elements of communications networks
- Examine serial networks and associated configuration parameters

### **Logging and alarming configuration**

- Discuss meter logging quantities
- Review standard alarm lists and set-points

### **Troubleshooting Labs**

- Demonstrate setting up a physical serial communication network (meter to gateway)
- Validate proper communications between devices
- Troubleshoot serial communications

## Day 4

### **Troubleshooting review**

- Discuss troubleshooting techniques
- Review communications networks.

### **Introduction to Power Monitoring Expert (PME)**

- Understand the products and tools within PME and how they can be used

### **Modify and add meters to PME through Management Console**

- Maintaining your system using Management Console
- Determine communications details for newly installed meter
- Add new meters in PME
- Verify communications of newly installed meters

### **Modify and create diagrams using the Vista tool**

- Understand the objects in the Vista Toolbar
- Create basic screens with values, statuses, and other Toolbar objects

### **Course Summary**

- Answer any remaining questions
- Outline available resources for education going forward