

## COURSE DESCRIPTION

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# ION Meter Programmer

## For Utility Meter Shop Technicians

### Overview

This 2-day course focuses on how to setup and program ION revenue meters using the front panel and ION Setup software. After reviewing the displays and setup menus available via the meter front panel, students will configure ION meters for revenue metering, advanced security, communications, energy pulsing, logging and power quality monitoring. All of the key features of ION Setup software will be emphasized, including the *Setup Assistant*, Offline meter programming, *Network Mode*, *Advanced Module View* and *Data Viewing Mode*. Topics such as meter template and firmware management, time synchronization and meter configuration reports will be covered. Students will also explore the advanced features of ION Setup to add and change ION modules for customized functions. The last part of the course concentrates on using ION Setup software as a meter troubleshooting tool.

### Duration

2 Days

### Who should attend

Anyone who will be configuring, customizing and troubleshooting ION meters extensively using ION Setup software.

### Prerequisites

- ❑ Basic computer skills and experience with Microsoft Windows
- ❑ Basic metering terminology

### Students will be able to

- ❑ Use the front panel of an ION meter
- ❑ Use ION Setup software to configure ION meters
- ❑ Use ION Setup software to assess meter wiring
- ❑ Use ION Setup software to manage ION meter programs
- ❑ Use ION Setup in *Network Mode* to connect to multiple meters
- ❑ Use ION Setup in *Data Viewing Mode* to view meter values remotely
- ❑ Describe ION architecture and ION module properties
- ❑ Use ION Setup in *Advanced Module View* to create additional functionality

# Agenda

## Day 1

### **Use the front panel of an ION meter**

- Use the front panel for viewing metering information
- Use the front panels for checking and setting the meter configuration
- Use the front panels for manual reset actions including a Master Reset

### **Use ION Setup software to configure ION meters**

- Use ION Setup software to set the PT & CT ratios
- Use ION Setup software to manage and apply advanced security profiles
- Use ION Setup software to configure the Ethernet and serial Com ports
- Use ION Setup software to enable DNP on a Com port
- Use ION Setup software to configure the Clock settings for time synchronization
- Use ION Setup software to program an ION meter to do energy pulsing
- Use ION Setup software to modify the Load Profile log for MV-90
- Use ION Setup software to configure an ION meter for power quality monitoring
- Use ION Setup software to create customized front panel displays
- Use ION Setup software to put a meter into “Test Mode”

### **Use ION Setup software to assess meter wiring**

- View the real-time phasors to diagnose meter wiring
- Invert the polarity of the voltage and current inputs to confirm bad wiring

### **Use ION Setup software to manage meter programs**

- Upgrade ION meter firmware
- Build and save ION meter templates using Offline ION meters
- Save ION meter configuration report text files
- Master Reset an ION meter before deployment to the field

## Day 2

### **Use ION Setup in *Network Mode* to connect to multiple meters**

- Establish connections to multiple meters that connect via an Ethernet gateway
- Establish connections to multiple meters that connect via a Modem gateway
- Establish a naming system to name meters in the network

### **Use ION Setup in *Data Viewing Mode* to view meter values remotely**

- View meter real time outputs such as voltage, current and demand
- View the meter event log
- View meter data logs and plot historical data
- Manually trigger a waveform capture
- View and analyze waveforms captured in the meter

### **Describe ION architecture and ION module properties**

- Describe the ION module concept, including setup and output registers
- Describe the functions of the “Core” ION modules
- Use the *ION Reference* and *ION Device Template Reference* documents

### **Use ION Setup in *Advanced Module View* to create additional functionality**

- Program an ION meter to count pulses and convert them to consumption values
- Add Alert modules for enhanced alarm notification via a Modem or E-mail
- Document the advanced meter configuration changes
- Save the meter template