



# SR489

TRCD-SR489-C-S-1

## GENERATOR PROTECTION INTERACTIVE LEARNING CD

### INTERACTIVE LEARNING CD ADVANTAGE

The SR489 Generator Protection Interactive Learning CD uses simulations, hands-on examples and practical applications to provide students with the same information and practical experience they would receive if they attended the in-class course. This CD allows Engineers, Electrical Personnel and Maintenance Staff to learn at their own pace and review the course material as often as they desire.

### WHAT WILL I LEARN?

This Interactive Learning CD provides students with an understanding of the theoretical concepts they will require in the areas of Primary and Backup Generator Protection. The CD will then step the students through the installation of a SR489 relay including wiring, configuring the relay using the EnerVista SR489 Setup Software and demonstrating any procedures needed for performing maintenance tasks.



### AGENDA

#### 1 - Basic Protection Theory

- Power System components
- Power Generation
- Zones of Protection
- Primary Relaying
- Backup Relaying
- Types of Protection Relays
- Transducers (CTs, VTs, CVTs)
- Current Transformer selection for the SR489
- Breakers

#### 2 - Generator Theory

- Electromagnetism
- Typical Systems
- Grounding
- Phase Differential
- 100% Stator Ground
- Reverse Power
- Inadvertent Energization
- AVR / Governor Backup

#### 3 - SR489 Hardware

- Installation and removal of the SR489 Transformer Management relay
- Front Panel features
- Display
- LEDs
- Keypad / Port
- Setpoint and Actual Value menu structures

#### 4 - SR489 Wiring

- Digital Inputs
- Control Power
- AC Phase Current Inputs
- AC Neutral Current Inputs
- Voltage Inputs
- Failsafe / Non-failsafe
- Trip, Alarm, Auxiliary, and Self-test Output Contacts
- Trip and Close Coil Monitoring
- Communications
- RTD Inputs
- IRIG-B

#### 5 - SR489 Software

- Basic Relay Setup
  - Software configuration
  - System configuration
  - Actual Values
  - Digital Inputs
  - Contact outputs
  - Event Recorder
  - Waveform Capture
- Protection
  - Phase Differential
  - Phase Overcurrent
  - Inadvertent Energization
  - Ground Overcurrent
  - Reverse Power
  - 100% Stator Ground
  - Voltage / Frequency Protection
- System functions
  - Setpoint Files / Groups
  - Upgrading Firmware