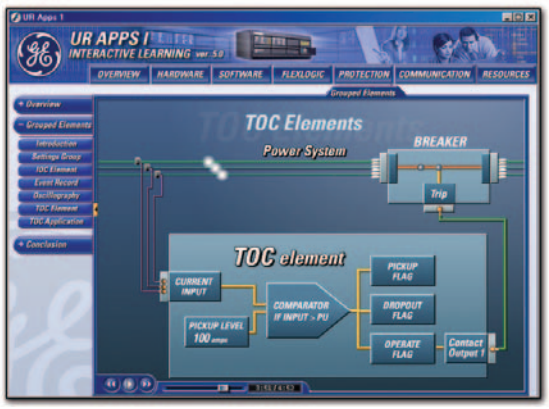
UR APPLICATIONS 1

TRCD-URA1-C-S-1

INTERACTIVE LEARNING CD

Interactive Learning CD Advantage

The UR Applications 1 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 a thorough understanding of the Universal Relay platform of products. Students will be introduced to all the functionality and hardware options that are available in all the members of the UR family. Through hands-on examples and testing after each section, students will learn how to configure all of the settings in the UR Relays and how to apply Peer-to-Peer communications to expand and enhance its protection and control capabilities.

Agenda

1 - Overview

- Introduction
- How to use the Interactive Learning Interface

2 - Hardware

- Overview of the UR Family
- Modular concept
- Modules and specifications
  - CPU modules
  - Current/Voltage Input modules
  - Digital Input/Output modules
  - Analog Input/RTD modules
  - Communication modules
- Wiring
  - Power Supply
  - Current Inputs
  - Voltage Inputs
  - Digital Inputs
  - Digital Outputs
  - Serial communication ports

3 - Software

- Establishing communication to the relay
- Device configuration
  - Product setup
  - System Setup
    - Current and voltage sources
    - Power system
  - Settings File management
  - Oscillography and Event records

4 - FlexLogic™

- Rules
- Logic Gates
- Contact Inputs, Virtual Outputs
- Configuring Contact Outputs
- Configuring LEDs
- Programming Control Logic equations
  - Breaker Control logic exercise

5 - Protection

- CT and VT configuration
- Metering
- Settings groups
- Protection elements
  - Phase Instantaneous Overcurrent element (50)
  - Integrating IOC element into a protection and control solution
  - Oscillography and Event record analysis
  - UR Phase Time Overcurrent element (51)
  - Integrating IOC element into a protection and control solution

6 - Data Communication

- Terminology
- LAN topologies
  - RS232, RS485
    - Connection
    - Signal levels
    - Distances
  - 10 BaseT
    - Connection
    - Distances
  - 10 Base F
    - Power Budget
    - Single/Multi-mode
    - Connection
  - Peer-to-peer communication
    - Introduction to UCA GOOSE messaging

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