

Protective Analog-to-Digital Relay Conversion

fact sheet



Before and after conversion to digital relays

Overview

When originally constructed, many industrial facilities and utilities were forced to rely on analog electromechanical relaying to provide electrical protection for their facility. Much of this protective relaying technology was developed early in the 20th century. Examples of the types of industrial facilities affected include paper, steel, petrochemical, cement and water treatment sites, plus utility power plants and transmission lines. In recent years, relay technology has made great strides in reliability, speed, communications and troubleshooting.

For customers ready to switch from analog to digital relays, GE offers a comprehensive conversion process using proven GE Multilin Universal Relays (UR) and a successful track record in both large and small scale projects.

Key Features

- Prebuilt panels and panel fronts with relays tested and the settings already installed, including point-to-point wiring tests prior to shipment, that allow for reduced installation times.
- Multiple relay functions are included in a single UR relay and allow one UR relay to replace multiple electromechanical relays (on average, one UR replaces 4-7 electromechanical relays).
- Flexibility in settings and logic are available with multiple setting groups and set points and flexible logic.
- Flexible communication methods are available including serial, Ethernet and fiber optic.

- UR relays support many common communications protocols including IEC 61850, DNP 3.0, IEC 60870-5-104, Modbus RTU and Modbus ICP/IP.
- Scalable units with modular construction allow for multiple configurations and reduced spare parts inventory.
- Event recording with over 1000 events with a 0.5ms scan time.
- Complete oscillography with up to 64 digital and 40 analog channels.
- Real-time monitoring and annunciator system with remote desktop or control room access .
- GPS time synchronization between relays.
- GE's unmatched product familiarity, field service capability and availability.

Benefits

With GE Multilin Universal Relays (UR) for protective analog-to-digital relay conversions, you can be confident in the proven reliability of GE digital relays, combined with GE domain expertise and qualified field engineering resources, to meet your individual needs.

Benefits of converting include the ability to:

- Integrate protection, control and communication solutions
- Acquire more system intelligence with greater accuracy and fewer moving parts
- Capture event log and oscillograph data on critical events for more reliable troubleshooting and root cause analysis
- Spend less on maintenance with digital relaying. NETA standards call for a three year maintenance cycle on analog relays and a six year cycle on digital relays
- Add power management data and functionality with minimal hardware additions
- Reduce arc flash hazards with the ability to change settings for maintenance mode, faster response times, and more accurate coordination
- Provide improved data for NERC testing and contingency procedure reports



For more information, contact your local GE Energy office, call 1-888-GE4-SERV or 540-378-3280, or visit www.ge-energy.com/industrial