SEL-387L Line Current Differential Relay

Superior Differential Protection. Zero Settings.

Use the SEL-387L to provide sensitive, fast, and secure three-pole current differential protection with zero settings.

Features and Benefits

Easy Application

Protect two-terminal transmission lines and subtransmission lines with the same ratio CTs on each end. Apply a 64 kb digital communications channel for complete phase and ground fault protection with no settings.

Simple Installation

Connect single-mode optical fiber, 1300 and 1550 nm, for distances up to 120 km without a repeater. No additional transceivers are required.

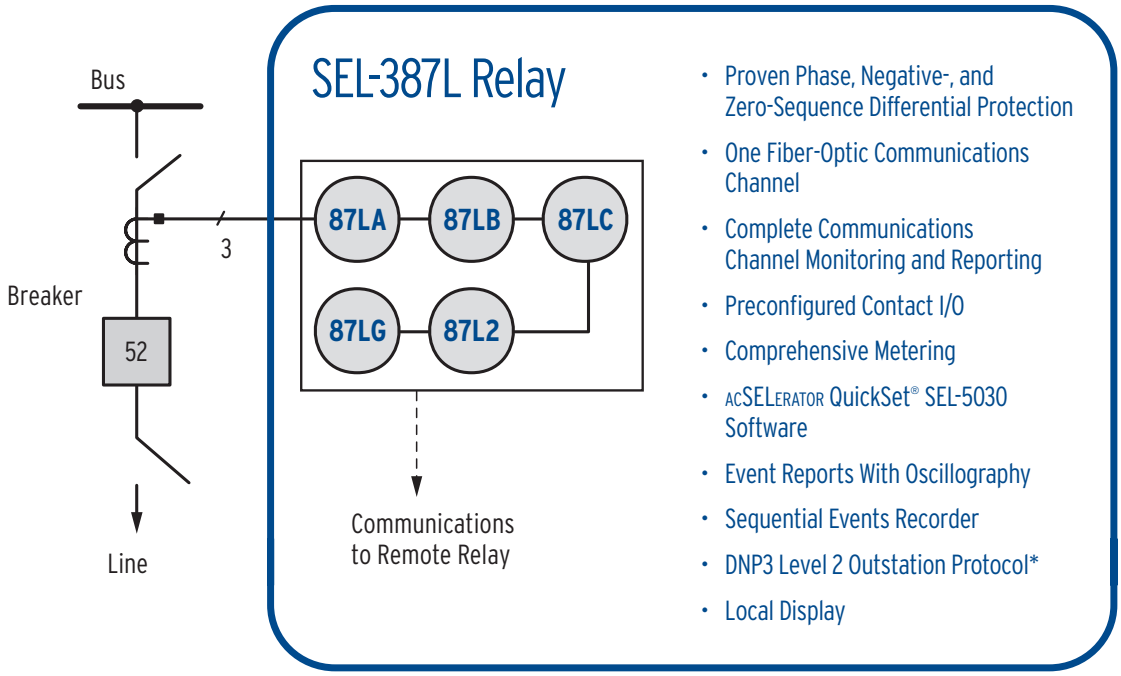
Flexible Communications

Apply the SEL-387L with a multiplexed communications system using the built-in IEEE C37.94 compliant connection. Connect to EIA-422 and G.703 multiplexers using the SEL-3094 Interface Converter.

Low-Cost Replacement of Obsolete Systems

Use the SEL-387L for complete protection of two terminal lines. Save money with low equipment costs and no settings costs. Replace error-prone pilot-wire relays with a sensitive and secure fiber-optic line current differential relay. Use the built-in communications monitoring and alarm system to improve protection quality.

Functional Overview

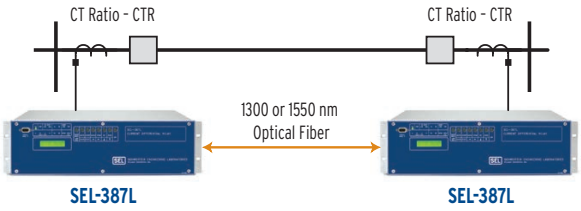


**Optional*

Easy and Flexible Application

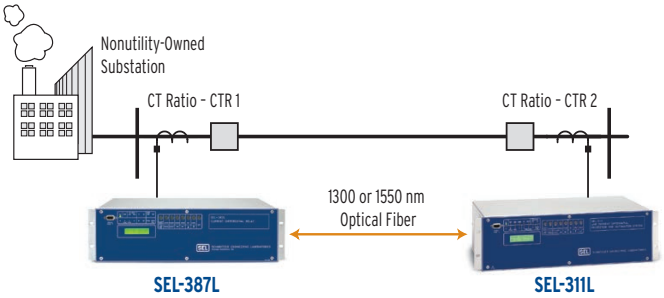
Simple Two-Terminal Application

No line protection relay is easier to apply than the SEL-387L. For a typical two-terminal line application, with direct connected fiber as shown below, the relay is connected to CTs, dc power, and optical fibers and is wired for trip and alarm. The relay and terminal identifiers are input (if desired), and the transmit and receive addresses are selected (1, 2 at one end; 2, 1 at the other). The relay is then ready to begin protecting the line.



Complex Two-Terminal Application

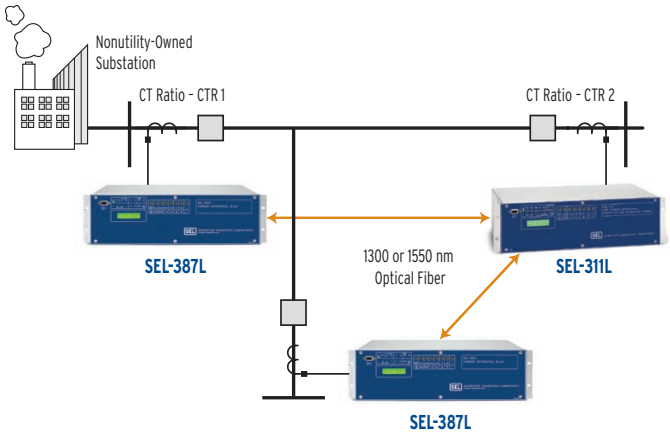
The differential protection of the SEL-387L uses the same measuring principle and communication as the fully configured SEL-311L Line Current Differential System. This provides the capability to use the two relays together. The SEL-311L is set to transmit a data bit to put the SEL-387L into "follower" mode. The SEL-311L uses the current measurements sent from the SEL-387L to make all current differential protection decisions. Backup relaying and transfer tripping are also provided. This is an ideal application for a nonutility-owned substation because no settings are made in the SEL-387L.



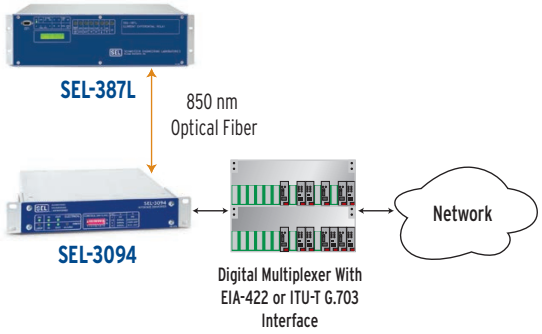
Easy and Flexible Application

Complex Three-Terminal Application

Economically protect three-terminal lines using two SEL-387L Relays and one SEL-311L. As with complex two-terminal applications, the SEL-311L acts as the "leader" and makes all the protection decisions. No settings are made in the SEL-387L Relays.

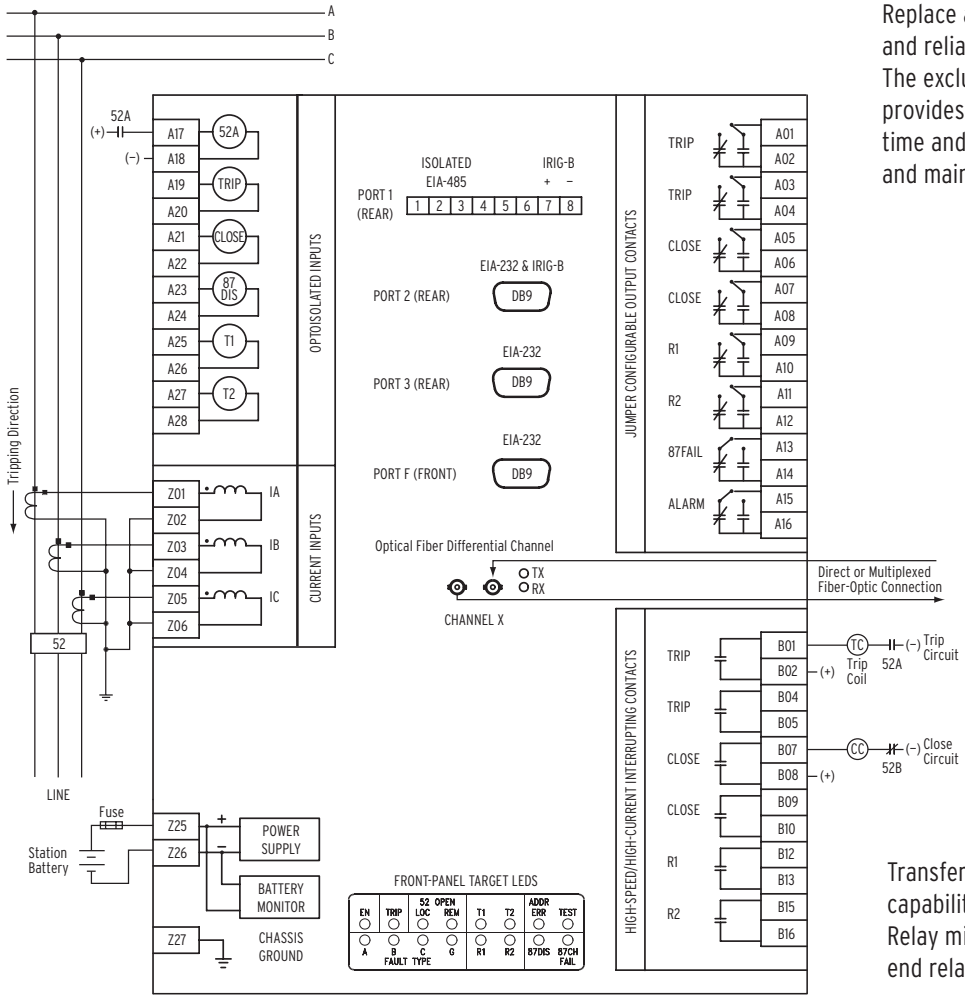


Apply With Multiplexed Communications



The base model SEL-387L connects to digital multiplexers using a built-in IEEE C37.94 compliant optical fiber connection. Connect to EIA-422 and G.703 multiplexers using the SEL-3094 Interface Converter.

Easy Installation—Zero Settings



Replace aging electromechanical relays with secure and reliable SEL-387L Line Current Differential Relays. The exclusive SEL Alpha Plane Restraint principle provides sensitive protection with no settings. Save time and money with reduced engineering, testing, and maintenance.

Installation

1. Unpack and mount relays
2. Wire ac and dc circuits
3. Connect communications fiber
4. Apply power
5. Enter the communications address via computer or front panel
6. Use meter function to verify correct connections
7. Job Done®

Transfer contacts provide flexible remote control capabilities. The R1 and R2 contacts in one SEL-387L Relay mirror the T1 and T2 inputs from the remote end relay. Use them for remote signaling or control.

SEL-387L Line Current Differential Relay

Simplify Replacement of Older, Obsolete Relays

Select an SEL-387L to fit your existing requirements: CT input, power supply, input rating, or communications type. No settings means completing more projects in less time and for less money. Monitored communications improve protection quality by eliminating the noise and channel-caused false trips common in older relays.

Old electromechanical relays.

Complexity

Calculate, set, and test:

- Restraint tap
- Phase tap
- Ground sensitivity tap

Maintain and test every six months:

- Settings
- Bearings
- Springs
- Open contacts
- Holding coil

Simplicity

Zero settings

Zero maintenance

SEL-387L zero-settings relays.

Installation Options

AC Current Inputs

5 A

1 A

Power Supply

125/250 Vdc or Vac

48/125 Vdc or 125 Vac

Rated: 24/48 Vdc

Differential Communications

1550 nm single-mode

1300 nm multimode or single-mode

850 nm multimode, IEEE C37.94 compliant

Operating Temperature Range

−40° to +85°C (−40° to +185°F)

More Information

Visit **www.selinc.com/SEL-387L** for additional information about the SEL-387L Line Current Differential Relay, the first zero-settings digital relay.

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