

SEL-FT50 and SEL-FR12 Fault Transmitter and Receiver System



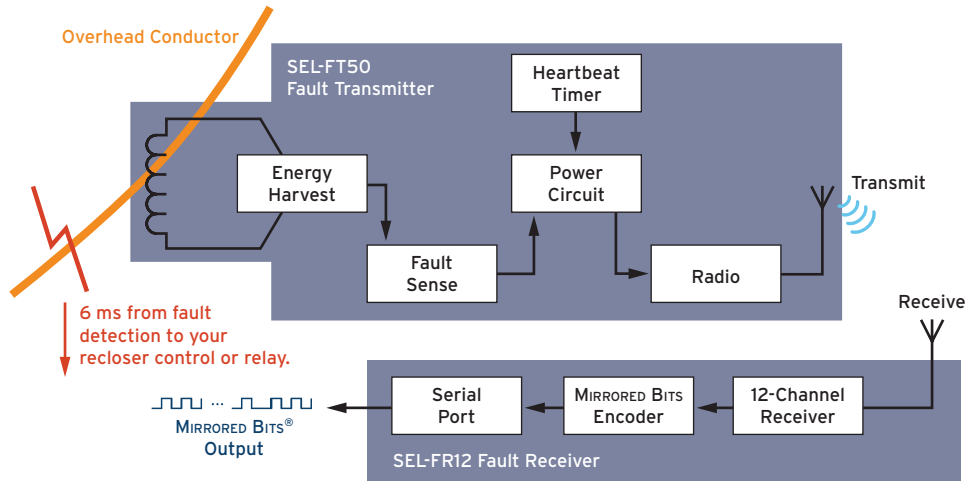
Accelerate tripping, speed up restoration, and improve safety on distribution feeders

- Send fault signals to relays and recloser controls in 6 ms.
- Install fault transmitters in minutes with a hot stick and easy-to-configure settings—no computer is needed.
- Save time and money—maintenance-free and no batteries.



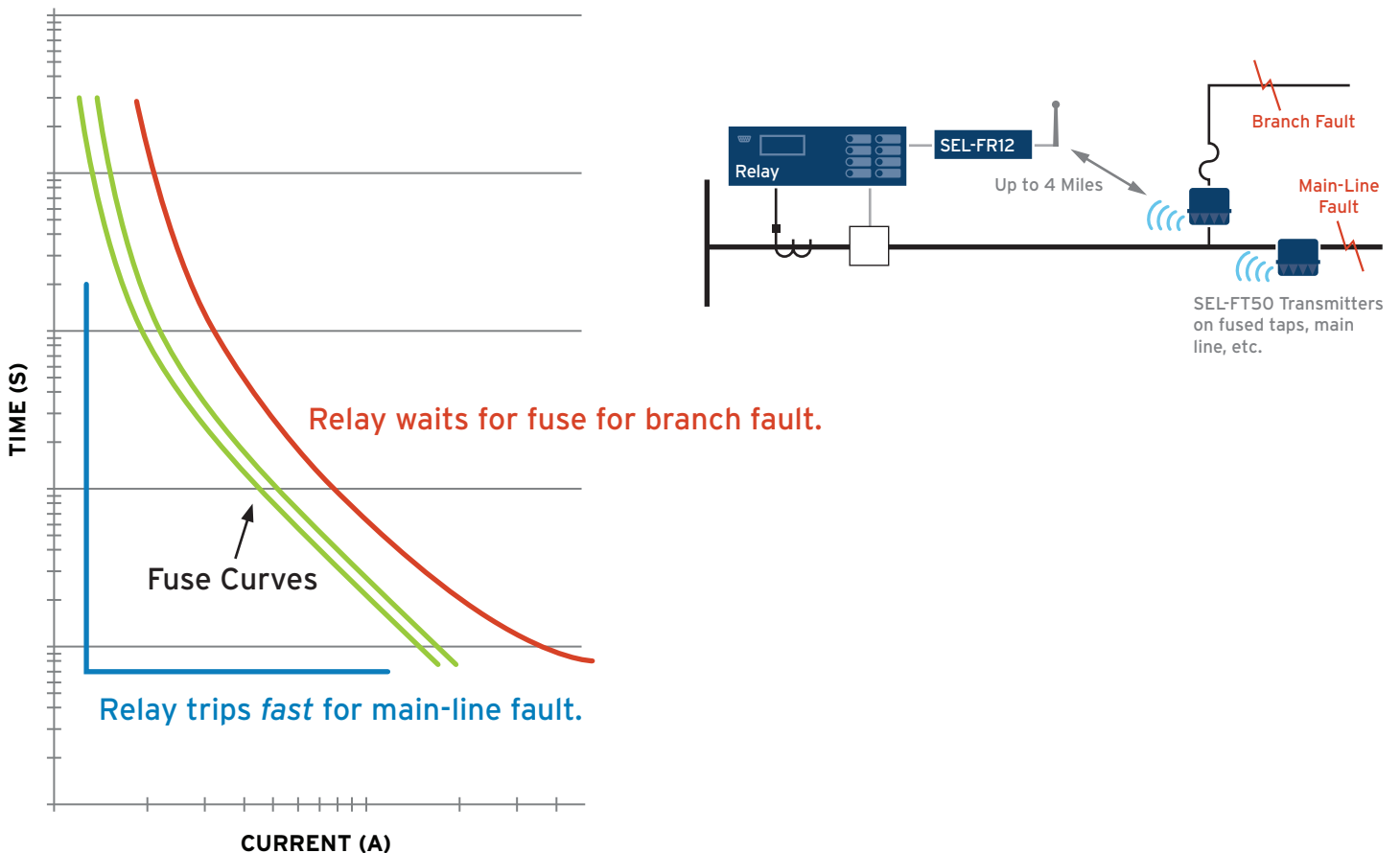
SEL Fault Transmitter and Receiver System

The system includes up to 12 line-powered fault transmitters and a fault receiver. Install the SEL-FT50 Fault Transmitters on laterals, branches, and the main line to broadcast fault status via a 900 MHz radio to one or more SEL-FR12 Fault Receivers. The system uses MIRRORRED BITS® communications to transmit the fault data to a relay or recloser control—all in 6 ms.



Adapt Your Coordination, Fast

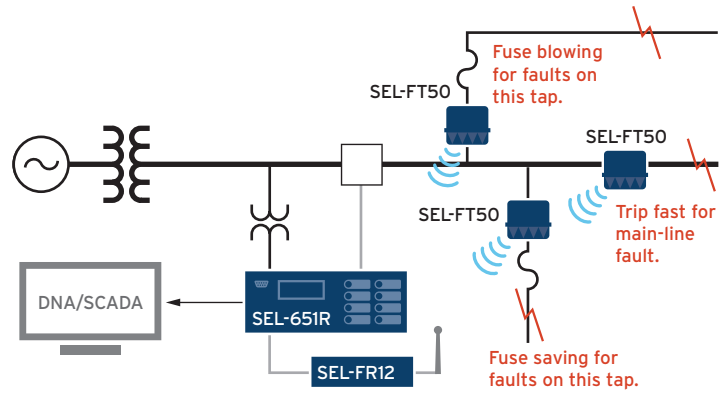
Clear main-line faults fast without waiting for fuse coordination on branch circuits.



Applications

Tailor Fuse Coordination

Trip fast for main-line faults and combine fuse-saving and fuse-blowing schemes on the same feeder to improve reliability.

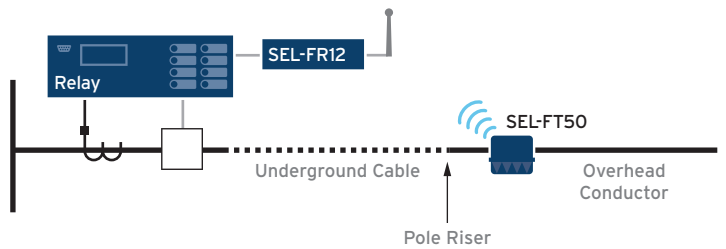


Improve Fault Locating With SEL DNA® (Distribution Network Automation) Systems

Send information via the relay or recloser control into your DNA system and/or existing SCADA system for improved fault locating and situational awareness.

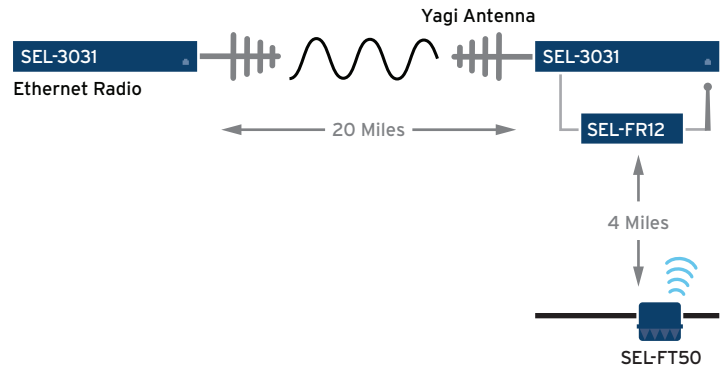
Disable Reclosing for Underground Faults

Knowing whether a fault is on an overhead or underground section of a feeder can be very useful in coordinating reclosing and protection schemes. In the application diagram, an SEL-FT50 monitors the first span of an overhead line. The system will allow reclosing only when the SEL-FT50 signals that the fault is on the overhead portion of the feeder.



Extend the Range by 20 Miles With SEL-3031 Serial Radio Transceivers

SEL-3031 Radios can extend the fault transmitter range from 4 miles to 24 miles, typically adding less than 5 milliseconds of latency for control commands using MIRRORRED BITS communications.



Specifications

General

Compliance	Designed and manufactured under an ISO 9001-certified quality management system.
Operating and Storage Temperature Range	-40° to +85°C (-40° to +185°F)
Operating Environment	Pollution degree: 2 Relative humidity: 5–95%, noncondensing Maximum altitude: 2,000 m
Ingress Protection (SEL-FT50)	IP67
Clamp Range (SEL-FT50)	0.3" to 1.1"
Dimensions	SEL-FT50 145 mm diameter, 148 mm tall (5.72" diam., 5.83" T) SEL-FR12 44 mm tall, 243 mm wide, 117 mm deep (1.72" T, 9.57" W, 4.60" D)
Weight	SEL-FT50 0.6 kg (1.3 lbs)
Power	SEL-FT50 Line-powered (no batteries) SEL-FR12 Voltage: 9–30 Vdc Power consumption: <2 W

System

Power System Frequency Range	45–65 Hz
Current Pickup Level	SEL-FT50 units individually configurable: 50, 100, 200, 400, 600, 800, 1,000, and 1,200 A
Fault Detection Accuracy	20% typical
Maximum Voltage	Up to 38 kV (L-L)
Latency	Fault detection (SEL-FT50) to MIRRORRED BITS communications output (SEL-FR12): 6 ms
Network Size	12 SEL-FT50 Transmitters per receiver 16 user-selectable network IDs

Radio

Frequency Band	902–928 MHz ISM band 902–907.5 MHz for Brazil 915–928 MHz for Brazil, Australia, and New Zealand 916–928 MHz for Peru 863–870 MHz for European Union SEL-FT50 TX power: 30 dBm (21 dBm for Australia and New Zealand, 16 dBm for European Union) SEL-FR12 Number of channels: 12 RX sensitivity: -97 dBm (-105 dBm for Australia, New Zealand, and European Union) at 1% packet error rate (PER)
Serial Communications	Serial protocol: MIRRORRED BITS communications Serial port: 9,600, 19,200, 38,400, 115,200 bps
Modulation	FSK
Typical Range	4 miles with 20 dB fade margin

Patents pending

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