SEL-3031

The SEL-3031 is a 900 MHz ISM serial data radio that supports point-to-point (P2P) and point-to-multipoint (P2MP) operational modes. In P2P mode, the SEL-3031 supports three serial data ports in one radio channel.

SEL-3061

The SEL-3061 provides remote access for devices using the public cellular radio network. It supports 4G LTE, 3G, and 2G cellular technologies.

SEL-2924

The portable SEL-2924 connects to an EIA-232 port on a relay, controller, or other device to enable secure Bluetooth® wireless communications from up to 10 m (32 ft) away.

SEL-2925

The SEL-2925 connects to an EIA-232 serial port in a control cabinet or panel to enable Bluetooth wireless communications from up to 100 m (328 ft) away.
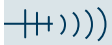
Applications	SEL-3031	SEL-3061	SEL-2924	SEL-2925
Wireless Communications for SCADA	■	■		■
High-Speed Teleprotection	■			
Distribution Automation	■	■		
Wireless Communications for Synchrophasor Data	■	■		
Substation-to-Substation Communications Link		■		
Anti-Island Detection	■	■		
Wireless Communications for Distributed Generation	■	■		
Permanent Wireless Cable Replacement	■	■		■
Temporary Wireless Cable Replacement			■	
Remote Engineering Access	■	■		
Short-Range Engineering Access	■	■	■	■
LAN Extension		■		
Wireless Backhaul Communications for Fault and Load Transmitters		■		

Setup Method	SEL-3031	SEL-3061	SEL-2924	SEL-2925
USB Port	■			
Secure Web Interface Via Ethernet Port		■		
Control (DIP) Switches			■	■
Wireless Configuration	■	■	■	■
Simple Network Management Protocol (SNMP)		■		

Features

Features	SEL-3031	SEL-3061	SEL-2924	SEL-2925
915 MHz ISM Band (License-Free)	■			
2.4 GHz ISM Band (License-Free)			■	■
Serial Communication	■	■	■	■
Ethernet Communication		■		
Low Latency for Teleprotection	■			
Compatible With SEL MIRRORED BITS® Communications	■			
Compatible With Modbus	■	■		
Compatible With DNP3 and Typical Byte-Oriented Protocols	■	■	■	■
Encryption	ƒ	■	■	■
Point-to-Multipoint Capability	■			
Cellular Capability		■		
EIA-232 Port (Quantity)	3	1	1	1
Wired EIA-485 Port	+			
High Maximum Throughput (1 Mbps or Greater)		■		
Device Status LEDs	■	■	■	■
Visible Link Quality Indicator		■		

■ Standard feature   + Model option   ƒ With SEL-3044 Encryption Card option

# Wireless Communications Applications

Electrical transmission lines

Apply SEL-3031 Serial Radio Transceivers for communications-assisted teleprotection instead of local step-distance protection to accelerate the operation time for Zone 2 faults from 20–40 electrical cycles to 2–4 cycles. You can transfer control commands with a typical 5.5 ms latency via SEL MIRRORED BITS® communications. The remaining serial channels can provide engineering access and primary or backup SCADA communications.
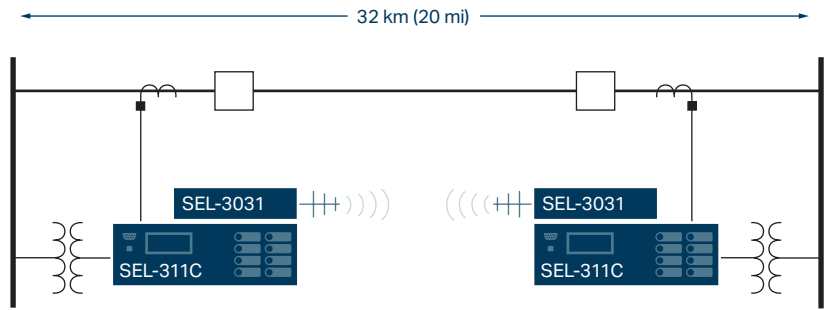
Distributed generation

A distributed generation source needs a high-speed, low-latency communications link between each distributed generator and the substation to feed power to the electric utility. An SEL-3031 Serial Radio Transceiver communications link allows the control center to monitor each distributed generation site, read meter information, and, most importantly, automatically disconnect the distributed generation site if system issues arise. High-speed radio communications facilitate applications such as anti-island detection and power curtailment control. The low price and installation cost of radios make them an attractive choice for these applications.
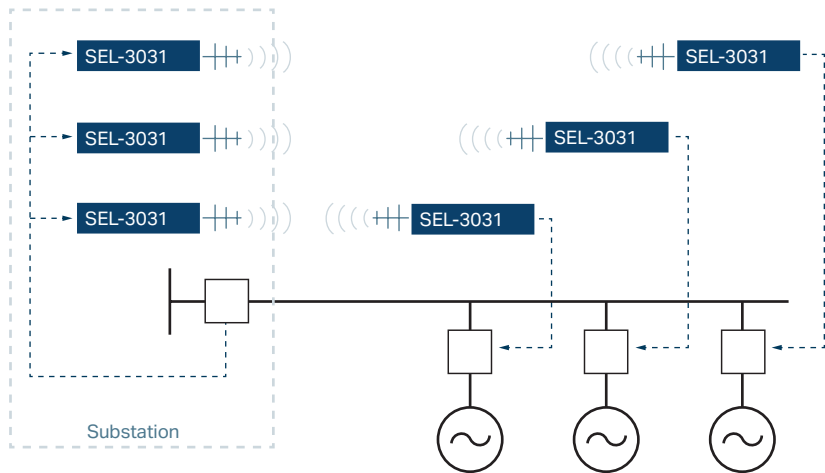
Backhaul for fault and load transmitter and receiver systems

The SEL-FLR Fault and Load Receiver collects fault and load data from SEL-FLT Fault and Load Transmitters. With the SEL-3061 Cellular Router, you can backhaul that information to a real-time automation controller (RTAC) in the substation or to a centralized location.
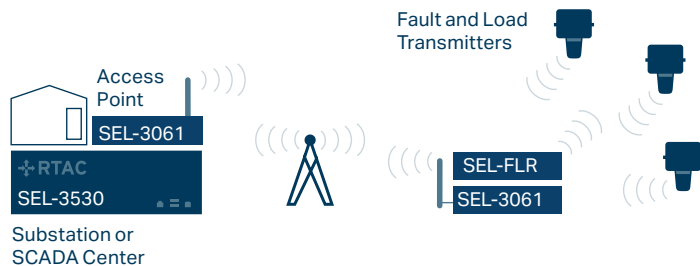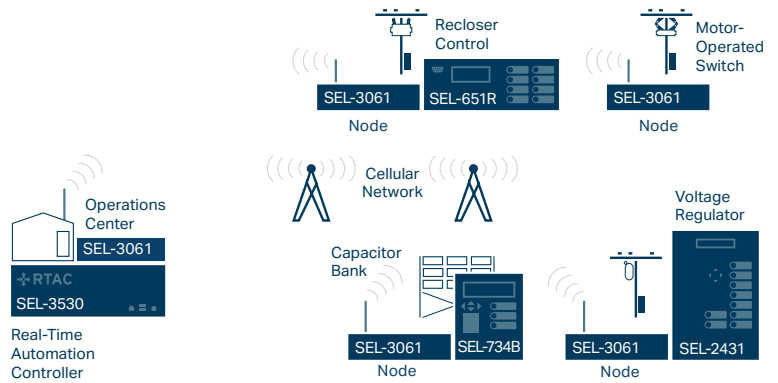
Wireless engineering access

Provide local engineering access with an SEL-2925 Bluetooth® Serial Adapter. This adapter lets you avoid opening the door and exposing the recloser control to precipitation or windblown contaminants. With the SEL-2925, you can access the recloser control from up to 100 m (328 ft) away to avoid hazards to personnel.

Pole With Recloser and Control
SEL-651RA
SEL-2925

Laptop or Smartphone

100 m (328 ft)
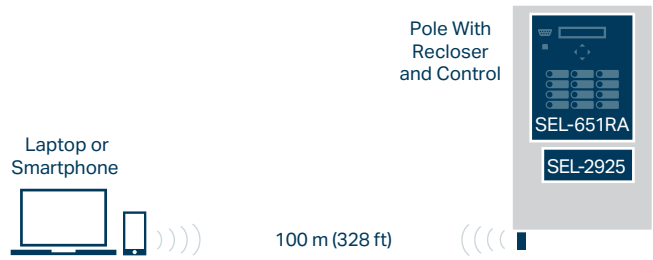
Distribution Network Automation

Distribution system communications

Provide communications for distribution automation with the SEL-3061 Cellular Router. Cellular links are a cost-effective solution for collecting SCADA information from field devices and for engineering access to devices. The SEL-3061 works wherever you have public cellular coverage.

Recloser Control
SEL-3061   SEL-651R
Node

Motor-Operated Switch
SEL-3061
Node

Operations Center
SEL-3061

RTAC
SEL-3530

Real-Time Automation Controller

Cellular Network

Capacitor Bank
SEL-3061   SEL-734B
Node

Voltage Regulator
SEL-3061   SEL-2431
Node

Communications to substations

Use the SEL-3061 Cellular Router to communicate with substation equipment over secure cellular networks. This can be the primary communications link, or it can be a redundant link for a fiber cable.

Primary or Secondary Communications Link

SEL-3061   SEL-3061

Substation   Substation

SEL-3031
Serial Radio Transceiver

selinc.com/products/3031 ⌨

The SEL-3031 is a 915 MHz ISM serial data radio that supports point-to-point (P2P) and point-to-multipoint (P2MP) operational modes. In P2P mode, the SEL-3031 supports three serial data ports in one radio channel. The ports are completely independent and support a mix of protocols, including DNP3, Modbus, MIRRORED BITS® communications, SEL Fast Message, plain ASCII, and more. In P2MP mode, a one-channel master radio communicates with multiple remote radios for SCADA or other data-gathering applications. SEL Hop-Sync™ technology optimizes co-located radios applied as multiple point-to-point links or as active repeaters. The SEL-3031 is a low-power device using less than 5 W in the wall-mount version, which allows you to incorporate it into recloser controls, such as the SEL-651R Advanced Recloser Control. A 1 RU rack-mount version is also available.

SEL-3061
Cellular Router

selinc.com/products/3061 ⌨

The SEL-3061 is a secure router for critical applications. For electric utilities, the SEL-3061 provides connectivity to recloser controls, motor-operated switches, capacitor banks, voltage regulators, substations, and much more. The combination of serial and Ethernet ports provides application flexibility, and using public networks with secure tunneling makes installation easy without sacrificing security.

The SEL-3061 ensures the confidentiality and integrity of your data using comprehensive security methods that include IPsec data encryption, secure VPN connections, a stateful packet inspection (SPI) firewall, MAC address filtering, and syslog. You can manage user access using centralized authentication with Remote Authentication Dial-In User Service (RADIUS) support.

SEL-2924

Portable Bluetooth® Serial Adapter

selinc.com/products/2924 ⌨

The SEL-2924 connects to an EIA-232 port on a relay, controller, or other device as a portable solution for wireless communication from a convenient, safe location. You can use the built-in Bluetooth wireless capability of a laptop, smartphone, or other device to enable a secure wireless link from up to 10 m (32 ft) away. The adapter comes with batteries and a USB Standard-A to Micro-B cable for charging.

SEL-2925

Bluetooth Serial Adapter

selinc.com/products/2925 ⌨

The SEL-2925 connects to an EIA-232 port on a relay, controller, or other device and is useful for permanent installation to avoid entering hazardous areas. It transmits data at up to 115,200 bps to distances of 100 m (328 ft) in typical applications with a line-of-sight communications path. For even greater distances, you can use directional gain antennas. The adapter receives power via the included USB Standard-A to Micro-B cable. Optional accessories include a worldwide ac power supply or a USB cable with plain wires to connect the SEL-2925 to a 5 Vdc source.