

SEL-3060

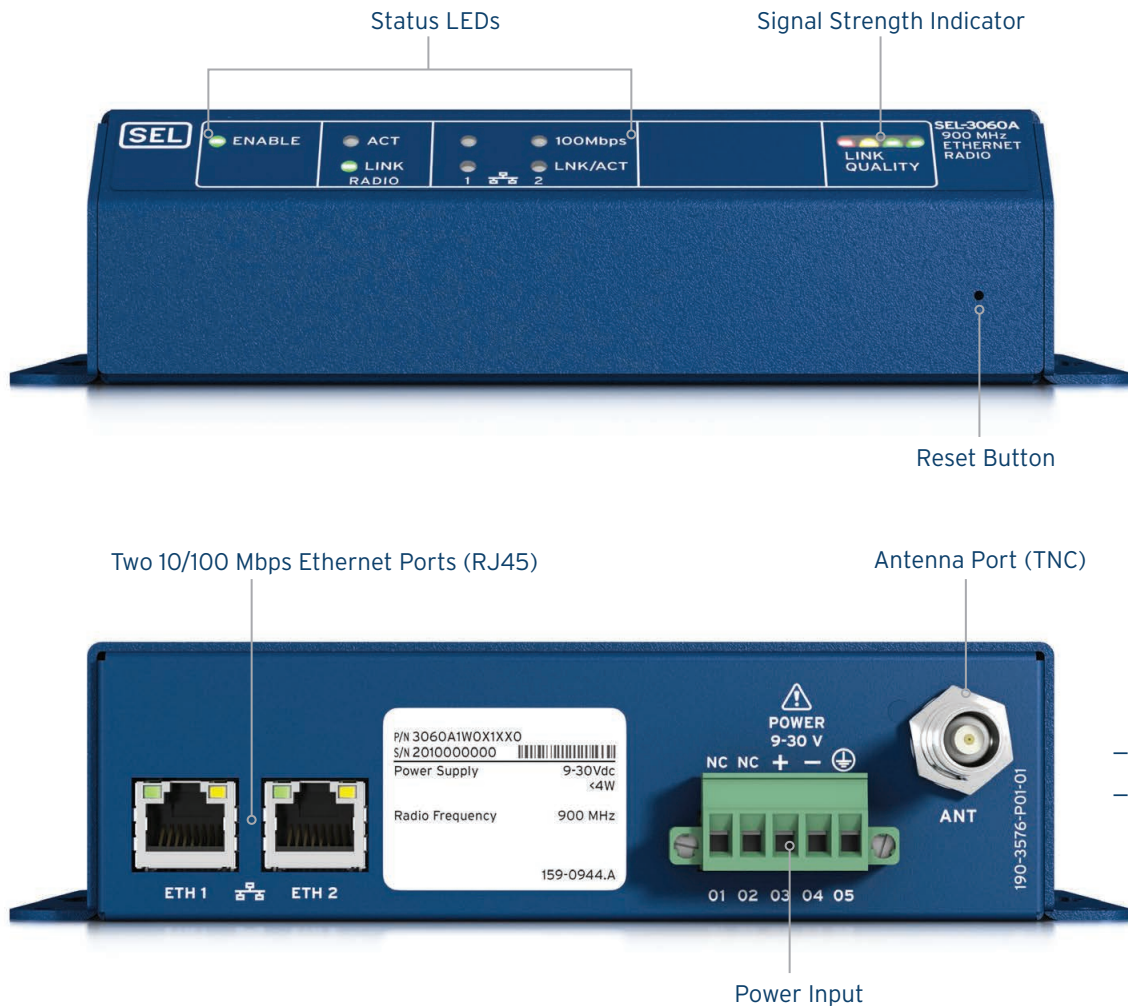
Ethernet Radio



The simple, secure way to wirelessly extend Ethernet networks.

- Increase speed, reliability, and versatility in remote automation applications with low-latency Ethernet connectivity.
- Accelerate data collection with 1 Mbps throughput.
- Protect wireless communications with standard AES 128-bit encryption.
- Simplify implementation with the intuitive web interface, built-in spectrum analyzer, and license-free band operation.





Broaden Your Network Capabilities

Extend Ethernet connectivity with wireless technology.

The SEL-3060 Ethernet Radio is a multipurpose Ethernet radio that can be used for point-to-point operation to transfer data with low latency and for point-to-multipoint operation to economically gather SCADA information. The SEL-3060A operates in the 900 MHz, license-free ISM frequency band, and the SEL-3060B uses the license-free 2.4 GHz band.

Flexible

Provide point-to-point or point-to-multipoint operation with up to 63 nodes. Apply the SEL-3060 for:

- Distribution automation
- Data acquisition
- SCADA
- Engineering access

Powerful

Communicate 15 miles point to point or 10 miles point to multipoint using 12 channels with the SEL-3060A. With the SEL-3060B, point-to-point links can stretch 10 miles and point-to-multipoint links can span 7 miles. The SEL-3060B communicates using 26 channels.

Fast

Transfer data up to 1 Mbps, with 6–12 ms latency for IEC 61850 GOOSE messages using point-to-point operation.

Low Power Requirements

Consuming less than 4 watts, the SEL-3060 is well-suited for battery backup in remote locations.

Secure

Supports AES 128-bit encryption.

Reliable

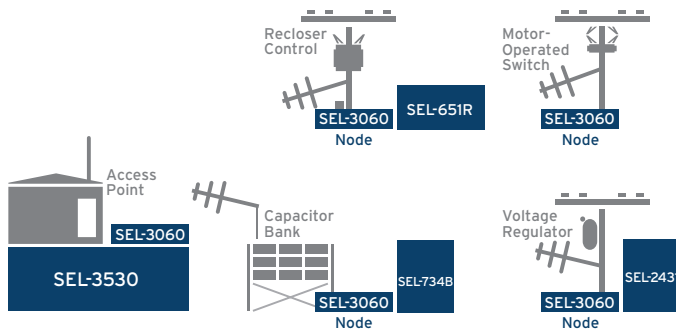
Certified to IEEE 1613, IEEE C37.90, and IEC 60255 standards and backed by a ten-year warranty, the SEL-3060 provides reliable operation.

Electric Power System Applications

SEL-3060 provides low-cost, effective communication for distribution automation, SCADA, engineering access, and substations.

Distribution System Communications

Communicate to voltage regulator controls, capacitor bank controls, meters, motorized switches, and recloser controls. SEL-3060 Ethernet Radios can be used for control, IEC 61850 GOOSE messaging, engineering access, SCADA, metering, and synchrophasor data.



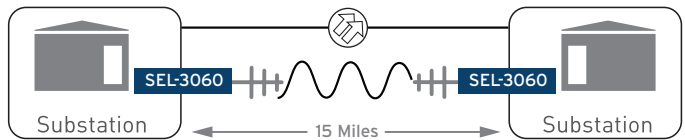
Communications to Substations

Create a primary or backup communications link between substations using a pair of SEL-3060 Ethernet Radios. In point-to-point mode, SEL-3060A Radios can operate up to 15 miles apart and SEL-3060B Radios can operate up to 10 miles apart. For greater distances, connect two collocated SEL-3060 Radios to act as a repeater.

Primary Communications Link

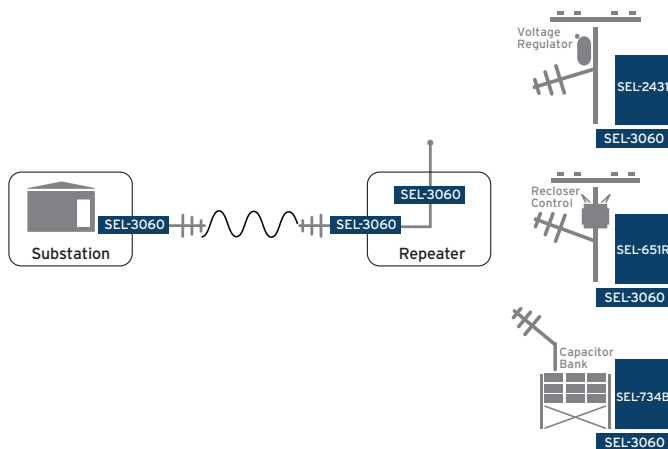


Secondary Communications Link



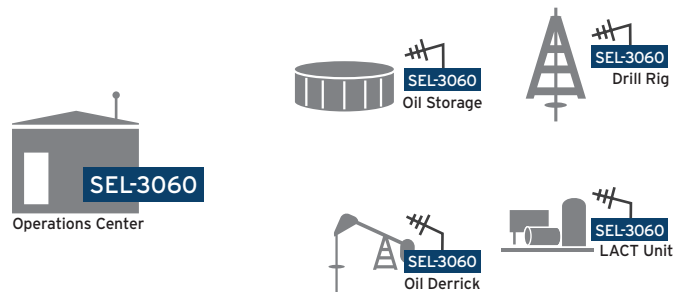
Repeater Mode

In radio networks, repeaters are commonly used to extend distances or route signals over a mountain or other obstacles to devices on the other side. In this example, two SEL-3060 Radios form a point-to-point link. At the repeater, there is a second SEL-3060, which is the access point for a point-to-multipoint extension to three field devices. By using two radios at the repeater site, the throughput is not reduced and the range is maximized.



Example Industrial Application (Oil and Gas)

Provide real-time data collection for analysis and alarm detection. Radios create communications links to tanks, wellheads, Lease Automatic Custody Transfer (LACT) units, flow lines, pumps, valves, and test stations for improved safety and cost savings through efficiency gains.



Specifications

General	
Ports	Two RJ45 10/100BASE-T Ethernet ports
Wireless	ISM band 902–928 MHz (SEL-3060A), 2.4–2.46875 GHz (SEL-3060B)
	Line-of-sight distance Point-to-point 15 miles (SEL-3060A), 10 miles (SEL-3060B) Point-to-multipoint 10 miles (SEL-3060A), 7 miles (SEL-3060B)
	Nonoverlapping channels 12 (SEL-3060A), 26 (SEL-3060B)
	Channel bandwidth 2 MHz
	Technology Digital modulation
	Aggregate data rate 1 Mbps
	Latency 6–12 ms in point-to-point mode 20–50 ms in point-to-multipoint mode (for IEC 61850 GOOSE messages)
	Modes Point-to-point Point-to-multipoint Repeater with 2 collocated radios
	Multipoint nodes Up to 63
	Output power +20 dBm (SEL-3060A) +17 dBm (SEL-3060B)
	Receive sensitivity –93 dBm at 1% packet error rate (SEL-3060A) –91 dBm at 5% packet error rate (SEL-3060B)
	Encryption AES 128-bit
Mounting	Wall mount
Power Input	9–30 Vdc at <4 W
Operating Temperature	–40° to +85°C (–40° to +185°F)
Certifications	Exceeds IEEE C37.90, IEC 60255, and IEEE 1613 UL (pending), FCC



Making Electric Power Safer,
More Reliable, and More Economical

Schweitzer Engineering Laboratories
Tel: +1.509.332.1890 | Email: info@selinc.com | Web: www.selinc.com

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