SEL-3301 Protocol Gateway

Convert Protocols With Highly Reliable, Robust Gateways

Features and Benefits

- **Reliable Substation Operation—Meets IEEE C37.90 and IEC 60255 Protective Relay Standards**
  Install the SEL-3301 in your substations instead of desktop and rack-mount computers designed for controlled office environments. The SEL-3301 is designed for harsh substation environments and withstands vibration, electrical surges, fast transients, and extreme temperatures.

- **No Fans, No Moving Parts, Ten-Year Warranty**
  Improve reliability with the SEL-3301, which has a predicted mean time between failures (MTBF) of at least five times that of typical computers. An independent diagnostics watchdog processor improves system availability by detecting and alarming for problems, detecting system crashes, and restarting the main processor. Eliminate inverters by using station dc power.

- **Flexible Communications**
  Use any combination of eight serial ports, two Ethernet ports, four USB ports, and an IRIG-B time-synchronization input. An option adds eight more serial ports. All serial ports include IRIG-B outputs to synchronize clocks in attached devices.

Contact SEL today for other protocols.

Making Electric Power Safer, More Reliable, and More Economical®
**Port Transmit and Receive LEDs**
Show activity to aid commissioning and problem solving.

**Lamp Test Button**
Verifies LEDs are operational.

**Drive Activity LEDs**
Indicate activity of Flash memory drive.

**Two USB Ports**
Accommodate plug-in memory for updates or mouse for configuration.

**Power LED**
Illuminates when power is applied.

**Alarm LED**
Announces alarm state.

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**SEL-3021 Serial Encrypting Transceiver**
Connect an SEL-3021 to the SCADA master and another SEL-3021 to the SEL-3301 Protocol Gateway to easily protect the data link.

Utilities Telecom Council
2004 Telecom Product of the Year

Utilities Telecom Council
Protect serial data links against intrusion.
**VGA Monitor, Keyboard, and Mouse Ports**
Facilitate setup and diagnostics with resident software.

**Two Ethernet Ports**
Both support 100 Mbps fiber-optic connections; one port also has a 10/100 Mbps electrical connection.
Transfer data and edit configuration using Microsoft® Remote Desktop.

**Back-Panel USB Ports**
Support pointing devices and plug-in memory for updates.

**Alarm Output Contact**
Indicates system failures (detected by an independent watchdog processor), login accesses, and power failures.

**IRIG Input and Output Ports**
Connect IRIG-B time-synchronization signal to IRIG IN to set the computer clock.
Send a time signal to synchronize the clocks of other devices through the serial ports and the IRIG OUT connector.

**EIA-232 Serial Ports**
Connect to remote links or local devices with eight or 16 EIA-232 serial ports.
Include full-duplex data communications plus an IRIG-B time-synchronization output.
**General Specifications**

**General**
- 733 Mhz single-board computer with 256 MB RAM
- 512 MB plug-in Flash RAM
- Watchdog processor, independent of single-board computer
- Operating temperature range of —40° to +75°C
- No fans or other moving parts

**Operating System**
- Windows® XP Embedded

**Protocols**
- Included
  - **Master**
    - DNP3 Serial, DNP3 LAN/WAN, OPC Client, OPC Server,
    - Recon 1.1, LG 8979
  - **Slave**
    - DNP3 Serial, DNP3 LAN/WAN, OPC Client, OPC Server,
    - Harris 5000/6000, IEC 60870-5-101, IEC 60870-5-104,
    - Modbus®, Modbus WAN/LAN,
    - SEL Fast Messaging

**Ethernet Ports**
- Ports: 2
- Data Rate: 10 or 100 Mbps
- Standard: IEEE 801-2
- **Ethernet Port 1**
  - Connectors: RJ-45 Female and 2 ST® Connectors
  - Interface: 10/100BASE-T and 100BASE-FX
- **Ethernet Port 2**
  - Connectors: 2 ST Connectors
  - Interface: 100BASE-FX

**Serial Ports**
- Ports: 8 or 16
- Connectors: DB-9 Female
- Data Rate: 300 to 115000 bps
- Data Signals: EIA-232 full-duplex data
- Time Output: Demodulated IRIG-B
- Other: Power output on Pin 1

**IRIG Ports**
- Connectors: Female BNC
- IRIG Input: Modulated or Demodulated IRIG-B
- IRIG Output: Demodulated IRIG-B

**Power Supply Options**
- 125/240 Vdc or Vac
- 48/125 Vdc or 125 Vac
- 24/48 Vdc

**Substation- and Plant-Grade Equipment**
- Designed, built, and tested with the same practices, processes, and standards that we use for our protective relays, communications processors, and other products. This includes compliance with IEEE and IEC standards for electrostatic discharge, fast transients, radiated emissions, surge withstand capability, dielectric strength, pulsed magnetic fields, and disturbances.
- Refer to the SEL-3301 Data Sheet for detailed test data. Specifications and tests are per the ANSI/IEEE C37.90-1989 and IEC 60255 protective relay standards, and the ANSI/IEEE 1613-2003 standard covering communications and networking devices.