SEL-2595 Teleprotection Terminal

Reliably Send Permissive, Blocking, and Direct Transfer Trips

Digital Network

IEEE C37.94 Two Fibers

IEEE C37.94 Two Fibers

<5.5 ms + Network Delay

SEL-2595

SEL-2595

8   8

8   8

Contact I/O

Contact I/O
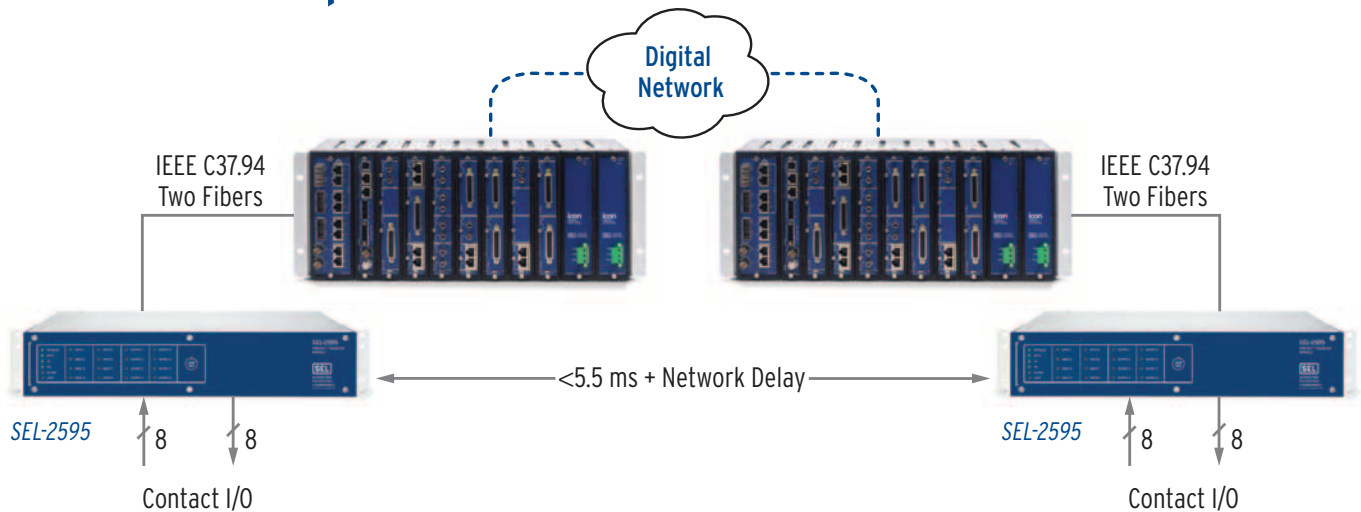
Provide secure, high-speed teleprotection through IEEE C37.94 communications multiplexers.

ENABLED   INPUT 1   INPUT 5   OUTPUT 1   OUTPUT 5
DATA   INPUT 2   INPUT 6   OUTPUT 2   OUTPUT 6
TX   INPUT 3   INPUT 7   OUTPUT 3   OUTPUT 7   LAMP TEST
RX
ALARM   INPUT 4   INPUT 8   OUTPUT 4   OUTPUT 8
LOOP

SEL-2595 TELEPROTECTION

Features and Benefits

Rapidly Clear Faults With High-Speed Teleprotection

Use existing station communications paths with IEEE C37.94 compliant devices for electric power pilot protection schemes. The SEL-2595 Teleprotection Terminal provides better than 5.5 ms back-to-back operating time via 64 kbps communications.

Reduce Costs

Employ eight bidirectional channels per terminal to pass critical protection data for pilot protection schemes such as POTT, DCB, DCUB, and DTT (direct transfer trip).

Improve Reliability

Increase reliability of auxiliary relay functions with the self-testing capability of the SEL-2595. Digital error detection provides better security than audio tone equipment.

Increase Safety and Noise Immunity

Use fiber-optic cable between protection and telecommunications devices to avoid ground paths and induced noise interference. All wiring is behind the panel.

Visualize I/O Status

Print user-configurable labels (included) to clearly indicate I/O usage.

Save Space and Service Time

Reduce your installation to a compact, two-rack unit chassis. Use Connectorized® terminal blocks, instead of screw-terminal blocks, to easily install and remove unit without disturbing wiring.

Making Electric Power Safer, More Reliable, and More Economical®

SEL-2595 Teleprotection Terminal

Functional Overview

- Use existing communications paths with IEEE C37.94 compliant inputs to send permissive, blocking, and direct transfer trips between stations.
- Use the SEL-2595 to send transfer trips to and from electromechanical relays.
- Provide station alarm contacts to a central location for data acquisition, monitoring, or security systems.
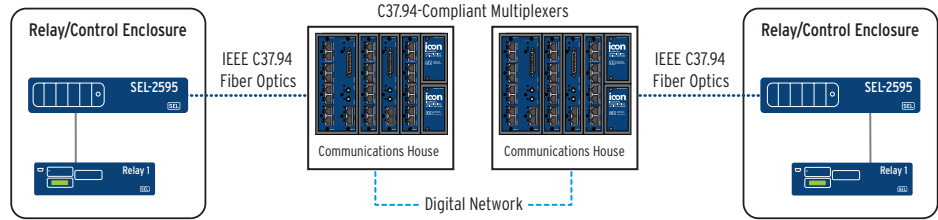
The SEL-2595 communicates through a remote multiplexer using IEEE C37.94 protocol, eliminating all electrical connections in the communications path.

General Specifications

Fiber-Optic Port Options

Connector	Fiber	Distance	Class 1 Device*	IEEE C37.94
ST®	Multimode	≤2 km	Laser	Compliant
ST	Single-mode	≤14 km	LED	Modulation Only

*Eye-safe, Class 1 product per EN 60825-1

Digital Output Ratings

	Standard	High Speed
Make	30 A	30 A
Carry @ 70°C	6 A	6 A
Pickup Time	<5 ms	<200 μs
MOV Protection	270 Vac rms	dc only
Continuous	360 Vdc	330 Vdc
Break L/R=40 ms	0.3 A @ 125 Vdc	10 A

Digital Input Ratings

4 mA Nominal Input Current

Voltage Ranges (selected at order time):

Range	On	Off
24 Vdc	15–30 Vdc	
48 Vdc	38.4–60 Vdc	<28.8 Vdc
110 Vdc	88–132 Vdc	<66 Vdc
125 Vdc	105–150 Vdc	<75 Vdc
220 Vdc	176–264 Vdc	<132 Vdc
250 Vdc	210–300 Vdc	<150 Vdc

Operate Time

Back-to-Back

Standard Outputs	11 ms
High-Speed Outputs	<5.5 ms

Operating Temperature Range

−40° to +85°C (−40° to +185°F)

Power Supply Ratings

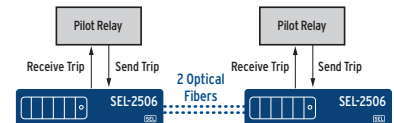| 48/125 Volt	36–200 Vdc or 85–140 Vac, 50–60 Hz, 5 W max.
125/250 Volt	85–350 Vdc or 85–264 Vac, 50–60 Hz, 5 W max.

Dimensions

88.1 mm H x 455.1 mm W x 223.5 mm D
(3.47" x 18.31" x 8.80")

About IEEE C37.94

The IEEE C37.94 standard provides plug-and-play transparent communications between different manufacturers' teleprotection and multiplexer devices using multimode optical fiber. The standard defines clock recovery, jitter tolerances, physical connection method, and the equipment-failure actions for all communications link failures. The standard has no restrictions to the content of the data stream.

Related Products

Use two optical fibers with SEL-2506 Remote I/O Modules to transfer information in 4 ms via SEL MIRRORED BITS® communications.