

## SEL-411L-2 With Sampled Values or TiDL Technology

Current Differential Relay with full Distance Backup Protection

NOTE: When applying the SEL-411L relay in line current differential applications, relays at all terminals of a protected line must use firmware that is compatible as shown in Table A.1.

Part Number: **0 4 1 1 L 2** **X** **4** **X X**

### Firmware

Standard Current Differential and Distance elements Plus Sub-cycle Distance Elements, Series Compensation Logic, and Broken Conductor Detection	2
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### Connector Type

None <sup>(1)</sup> (SV Subscriber)	X X X	E	4	X X X
Time-Domain Link (TiDL) <sup>(2)*</sup>	R X X		4	X X X

### Conformal Coat

None	X
Conformally Coated Circuit Boards*	1

### Power Supply

24-48 Vdc	2
48-125 Vdc or 110-120 Vac	4
125-250 Vdc or 110-240 Vac	6

### Serial Line Current Differential Communications Channel 1

None <sup>(3)</sup>	0 0
Isolated EIA-422*	A
Isolated G.703 Co-Directional*	B
850 nm IEEE C37.94 Fiber*	C
1300 nm Fiber*	D
1550 nm Fiber*	E
1300 nm IEEE C37.94 Fiber*	H

### Serial Line Current Differential Communications Channel 2

None <sup>(3)</sup>	0
Isolated EIA-422*	A
Isolated G.703 Co-Directional*	B
850 nm IEEE C37.94 Fiber*	C
1300 nm Fiber*	D
1550 nm Fiber*	E
1300 nm IEEE C37.94 Fiber*	H

### Ethernet Communications Protocols

FTP, Telnet, Synchrophasors, and DNP3	B
FTP, Telnet, Synchrophasors, DNP3, and IEC 61850*	C
FTP, Telnet, Synchrophasors, DNP3, and IEC 61850 with Sampled Values Subscription*	E

### Ethernet Connection Options

Four 10/100BASE-T Connectors <sup>(4)</sup>		6	
Four 100BASE-FX Connectors <sup>(4)*</sup>		7	
Two 10/100BASE-T and Two 100BASE-FX Connectors <sup>(4)(5)*</sup>		8	
Two 100/1000BASE and Three 100BASE SFP Ports (Order SFP Transceivers Separately) <sup>(6)*</sup>		9	

### Mounting

Horizontal Rack Mount		H	
Horizontal Panel Mount		3	
Vertical Rack Mount		V	
Vertical Panel Mount		4	

### Chassis

4U, One I/O Board		4	
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### I/O Board Position B for 4U Chassis

8 Optoisolated Independent Level-Sensitive Inputs, 13 Standard Form A, 2 Standard Form C Outputs*		2	
18 Common and 6 Independent Optoisolated Level-Sensitive Inputs, 6 High-Speed High-Current Interrupting Form A Outputs, 2 Standard Form A Outputs*		4	
8 Optoisolated Independent Level-Sensitive Inputs, 8 High-Speed High-Current Interrupting Form A Outputs*		8	

### I/O Board Position B Input Voltage

24 Vdc		1	
48 Vdc		2	
110 Vdc		3	
125 Vdc		4	
220 Vdc		5	
250 Vdc		6	

### Accessories

Literature		
Instruction Manual Set for SEL-411L-2 <sup>(7)</sup>		P M 4 1 1 L - K T - 0 2

\* Additional Cost

- (1) Sampled values subscriber relays have no analog input boards and instead receive voltages and currents via Ethernet.
- (2) Not compatible with Axion based TiDL systems.
- (3) Line current differential protection requires serial line differential communication options.
- (4) IEEE Precision Time Protocol (PTP) is available on Ports 5A, 5B.
- (5) Ports 5A and 5C are dedicated as 100BASE-FX and Ports 5B and 5D are dedicated as 10/100BASE-T.
- (6) IEEE Precision Time Protocol (PTP) and IEC Parallel Redundancy Protocol (PRP) are available on the process and station bus ports. Two independent IP addresses are available: one for the station bus and one for engineering access. See the instruction manual or [selinc.com/products/sfp/](http://selinc.com/products/sfp/) for a list of compatible SFP transceivers.
- (7) This product comes standard with a CD manual. One complimentary instruction manual kit is available upon request with each product purchased.

**Table A.1**

411L-2 Firmware Version	411L-2 Firmware is Compatible with	411L-0,-1,-A Firmware is Compatible with
R200 and Higher	R200 and Higher	R128 and Higher

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 **SCHWEITZER ENGINEERING LABORATORIES, INC.**

2350 NE Hopkins Court - Pullman, WA 99163 USA  
Phone: +1.509.332.1890 - Fax: +1.509.332.7990