# **SEL-787L Line Current Differential**

## **Standard Features**

## Protection

- 87L Line Differential
- Overcurrent
- Harmonic Blocking
- Reclosing
- Breaker Monitoring
- Breaker Failure
- IEC Thermal Element

### Hardware

- 3-Phase AC Current Inputs
  - Slot Z
- Neutral AC Current Input
  - Slot Z
- 2 Digital Inputs (DI)
  - Slot A
- 3 Digital Ouputs (DO)
  - Slot A
- IRIG-B Time Code Input
  - Slot B
- Fiber-Optic Serial With ST Connectors (Port 2, 87L Communication only)

## Human Machine Interface (HMI)

- Display
- Programmable Pushbuttons With Two Tri-Color LEDS each
- 8 Target Tri-Color LEDs (6 Programmable)
- Operator Control Interface
- EIA-232 Port (Port F)
- Multi-Language Support

#### Protocols

- IEEE C37.94
- IEEE C37.118 Synchrophasors
- Modbus<sup>®</sup> RTU
- SEL ASCII and Compressed ASCII
- SEL Fast Meter, Fast Operate, Fast SER
- SEL Fast Message
- Ymodem File Transfer
- SEL MIRRORED BITS Communications
- Event Messenger

## Other

- ACSELERATOR SEL-5030 Software
- User Configurable Labels

Part Number:	0 7	8 7										
<b>Advanced Firmware Features</b>												
o Arc Sense technology for HIF detection	on is app	licable for	r low-im	pedan	ce gr	ound	ed sy	stems	5			
None			0									
o Requires 4ACI card in Slot Z												
Charging Current Compensation, Fault			1									
Locator, Vector Shift, Over/Under												
Frequency with 81R, 81RF 27/59, 32,												
55, 60 LOP elements												
o Requires 4ACI/3AVI card in Slot Z												
Charging Current Compensation and			2									
Directional												
o Low impedance grounded systems only o Requires 4ACI/3AVI card in Slot Z												
o Available only with 5A/1A neutral CT												
selection												
Charging Current Compensation and			3									
Advanced Directional												
o Advanced Directional includes												
directional protection for ungrounded,												
low-impedance, high impedance and Petersen coil grounded systems and												
requires 200 mA neutral CT selection												
o Requires 4ACI/3AVI card in Slot Z												
Charging Current Compensation,			4									
Directional and Arc Sense												
o Low impedance grounded systems only												
o Requires 4ACI/3AVI card in Slot Z												
o Available only with 5A/1A neutral CT selection												
SCICCION												

Charging Current Compensation, Advanced Directional and Arc Sense o Advanced Directional includes				5									
directional protection for ungrounded, low-impedance, high impedance and Petersen coil grounded systems and requires 200 mA neutral CT selection													
o Requires 4ACI/3AVI card in Slot Z													
User Interface													
English				0									
Spanish				S									
Slot A Power Supply Voltage	Slot A	Digita	al In <sub>l</sub>	out V	olta	ige							
110-250 Vdc (110-240 Vac)   125 Vdc/Vac					1	Α							
110-250 Vdc (110-240 Vac)   24 Vdc/Vac					1	В							
110-250 Vdc (110-240 Vac)   48 Vdc/Vac					1	С							
110-250 Vdc (110-240 Vac)   110 Vdc/Vac					1	D							
110-250 Vdc (110-240 Vac)   220 Vdc/Vac					1	G							
110-250 Vdc (110-240 Vac)   250 Vdc/Vac					1	Н							
24-48 Vdc   125 Vdc/Vac					2	Α							
24-48 Vdc   24 Vdc/Vac					2	В							
24-48 Vdc   48 Vdc/Vac					2	С							
24-48 Vdc   110 Vdc/Vac					2	D							
24-48 Vdc   220 Vdc/Vac					2	G							
24-48 Vdc   250 Vdc/Vac					2	Н							
Front Danel													
Front Panel 2x16 LCD With 8 Pushbuttons											0		
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8											0 A		
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons			071								Α		
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe								ar S	Seria	al P	Α	Por	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber-								ar S	Seria	al P	Α	( <b>Por</b>	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232								ar S	Seria	al P	Α	0	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber-								ar S	Seria	al P	Α		t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km	net or Sin							ar S	Seria	al P	Α	0	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm,	net or Sin							ar S	Seria	al P	Α	0	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485	net or Sin							ar S	Seria	al P	Α	0 1 2 3	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km	net or Sin							ar S	Seria	al P	Α	0 1 2	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm,	net or Sin							ar S	Seria	al P	Α	0 1 2 3	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232	net or Sin							ar S	Seria	al P	A ort (	0 1 2 3 4	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km	net or Sin							ar S	Seria	al P	A ort (	0 1 2 3 4	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 None   1310 nm, Single-Mode ST	net or Sin							ar S	Seria	al P	A ort (	0 1 2 3 4	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 None   1310 nm, Single-Mode ST Fiber-Optic Serial, 25 km   EIA-232 None   1310 nm, Single-Mode ST	net or Sin							ar S	Seria	al P	A ort (	0 1 2 3 4 6	t 3)
2x16 LCD With 8 Pushbuttons 5" Color Touchscreen With 8 Pushbuttons  Slot B Ethernet (Port 1)   Fibe o EIA-485 available only with No Ether None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-232 None   850 nm, Multimode ST Fiber- Optic Serial, 1 km   EIA-485 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Single 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-485 Single 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 10/100BASE-T   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 Dual 100BASE-FX MM LC   850 nm, Multimode ST Fiber-Optic Serial, 1 km   EIA-232 None   1310 nm, Single-Mode ST Fiber-Optic Serial, 25 km   EIA-232	net or Sin							ars	Seria	al P	A ort (	0 1 2 3 3 4 6 8 A	t 3)

Single-Mode ST Fiber-Optic Serial, 25 km   ELR-485										
Kim   ELA-485   Single 1008ASE-PX MM LC   1310 mm, Single-Mode ST Fiber-Optic Serial, 25 km   ELA-232   Dual 10/1008ASE-PX MM LC   1310 mm, Single-Mode ST Fiber-Optic Serial, 25 km   ELA-232   ELA-232   Dual 10/1008ASE-PX MM LC   1310 mm, Single-Mode ST Fiber-Optic Serial, 25 km   ELA-232   EL										D
Single 1008ASE-FX MM IC   1310 nm,	,									
Single-Mode ST Fiber-Optic Serial, 25 km   EIA-232     Dual 10/1008ASE-T   1310 nm, Single-Mode ST Fiber-Optic Serial, 25 km   EIA-232     Dual 10/1008ASE-TX MM LC   1330 nm, Single-Mode ST Fiber-Optic Serial, 25 km   EIA-232	1	,								E
Dual 10/1,008ASE-T   13.10 mm,   F   Single-Mode ST Fiber-Optic Serial, 25 km   E1A-232   Single-Mode ST Fiber-Optic Serial, 25 km   E1A	, ,									
Single-Mode ST Fiber-Optic Serial, 25 km   E1A-232     Dual 1008ASE-FX MM LC   1310 nm, single-Mode ST Fiber-Optic Serial, 25 km   E1A-232     E1A-232     E1C 61850 Protocol   DNP3 Protocol   IEC 60870-5-103 Protocol   EtherNet/IP Protocol     DIP3 Protocol   DNP3 Protocol   1										F
Dual 100BASE-FX MM LC   1310 nm,   G   Single-Mode ST Fiber-Optic Serial, 25   km   E1A-232	Single-Mode ST Fiber-Optic Serial, 25									·
Single-Mode ST Fiber-Optic Serial, 25										
IEC 61850 Protocol   DNP3 Protocol   IEC 60870-5-103 Protocol   EtherNet/IP Protocol o IEC 61850 and EtherNet/IP available only for models with Ethernet options in Slot B  None	Single-Mode ST Fiber-Optic Serial, 25									G
O   EC 61850 and EtherNet/IP available only for models with Ethernet options in Slot B   O     EC 61850 Protocol	km   EIA-232									
None	-		-					erNet/IP	Protocol	
IEC 61850 Protocol   DNP3 Protocol   2   2	,	e only for	models	with Eth	ernet op	tions in S	Slot B			
DNP3 Protocol   DNP3 Protocol   2   1EC 61850 Protocol   DNP3 Protocol   3   1EC 60870-5-103 Protocol   4   4   1EC 61850 Protocol   1EC 60870-5-103 Proto										
IEC 61850 Protocol   DNP3 Protocol										
IEC 61850 Protocol   IEC 60870-5-103 Protocol   IEC 60870-5-103 Protocol   IEC 60870-5-103 Protocol   IEC 61850										
IEC 61850 Protocol   IEC 60870-5-103 Protocol	·									
103 Protocol     1EC 60870-5-103 Protocol   1EC 60870-5-103 Protoc										
DNP3 Protocol   Etc 60870-5-103 Protocol	· ·									5
EEC 60870-5-103 Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EEC 61850 Protocol   EtherNet/IP Protocol   EEC 61850 Protocol   DNP3 Protocol   EEC 61850 Protocol   DNP3 Protocol   EEC 61850 Protocol   DNP3 Protocol   EEC 61850 Protocol   IEC 60870-5-103 Protocol   EEC 61850 Protocol   IEC 60870-5-103 Protocol   EEC 61850 Protocol   IEC 60870-5-103 Protocol   EEC 61850 Protocol   DNP3 Protocol   IEC 60870-5-103 Protocol   EEC 61850 Protocol   DNP3 Protocol   EEC 61850 Protocol   EEC 61850 Protocol   DNP3 Protocol   EEC 61850 Protocol   EEC 618	DNP3 Protocol									6
IEC 61850 Protocol   EtherNet/IP   9   Protocol										7
Protocol   DNP3 Protocol   EtherNet/IP Protocol   B   EtherNet/IP Protocol   B   EtherNet/IP Protocol   EC 61850 Protocol   DNP3 Protocol   EC 61850 Protocol   EC 6	EtherNet/IP Protocol									8
IEC 60870-5-103 Protocol   EtherNet/IP Protocol   EC 61850 Protocol   DNP3 Protocol   EC 61850 Protocol   DNP3 Protocol   EC 61850 Protocol   DNP3 Protocol   EC 60870-5-   D   DNP3 Protocol   EL 60870-5-   DNP3 Protocol   EL										9
EtherNet/IP Protocol   IEC 61850 Protocol   DNP3 Protocol   EtherNet/IP Protocol   IEC 61850 Protocol   IEC 60870-5-103 Protoco	DNP3 Protocol   EtherNet/IP Protocol									Α
IEC 61850 Protocol   DNP3 Protocol   EtherNet/IP Protocol   IEC 60870-5-103 Protocol   IEC 60870-5-103 Protocol   IEC 60870-5-103 Protocol   IEC 60870-5-103   E   E   IEC 61850 Protocol   DNP3 Protocol   IEC 60870-5-103 Protocol   I	· ·									В
103 Protocol   EtherNet/IP Protocol     DNP3 Protocol   IEC 60870-5-103     Fortocol   EtherNet/IP Protocol     IEC 61850 Protocol   DNP3 Protocol     IEC 61850 Protocol   DNP3 Protocol     IEC 60870-5-103 Protocol     EtherNet/IP Protocol     Slot C   Slot C Digital Input Voltage     Only one (1) 3 DI / 4 DO / 1 AO card per chassis     Only one (1) 4 AI / 4 AO card per chassis     Empty	IEC 61850 Protocol   DNP3 Protocol									С
DNP3 Protocol   IEC 60870-5-103   F   Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EC 61850 Protocol   DNP3 Protocol   IEC 60870-5-103 Protocol   IEC 60870-5-103 Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol      Slot C   Slot C Digital Input Voltage   Only one (1) 3 DI / 4 DO / 1 AO card per chassis   Only one (1) 4 AI / 4 AO card per chassis   Empty   O X   Serial Communications   A O   (EIA-232/485)   Only one (1) 4 OI / 1 AO (4-20 mA Range)   I25 Vdc/Vac   B A   IA   IA   IA   IA   IA   IA   I										D
IEC 61850 Protocol   DNP3 Protocol   IEC 60870-5-103 Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   EtherNet/IP Protocol   Slot C   Slot C Digital Input Voltage   Only one (1) 3 DI / 4 DO / 1 AO card per chassis   Only one (1) 4 AI / 4 AO card per chassis   Empty   O X   Serial Communications   A O   O   IEC   IE	DNP3 Protocol   IEC 60870-5-103									E
EtherNet/IP Protocol										F
o Only one (1) 3 DI / 4 DO / 1 AO card per chassis o Only one (1) 4 AI / 4 AO card per chassis  Empty  Serial Communications (EIA-232/485) 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 125 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 24 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 48 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 220 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 250 Vdc/Vac 4 DI / 4 DO Electromechanical   1 DI / 4 DO Electromechanical										
o Only one (1) 3 DI / 4 DO / 1 AO card per chassis o Only one (1) 4 AI / 4 AO card per chassis  Empty  Serial Communications (EIA-232/485) 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 125 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 24 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 48 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 220 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range) 1 250 Vdc/Vac 4 DI / 4 DO Electromechanical   1 DI / 4 DO Electromechanical	Slot C   Slot C Digital Input Vo	oltage								
Serial Communications (EIA-232/485)   A 0   D   A   D   D	o Only one (1) 3 DI / 4 DO / 1 AO card	d per chas	ssis							
Serial Communications (EIA-232/485) 3 DI / 4 DO / 1 AO (4-20 mA Range)   125 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   24 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   48 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   220 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   220 Vdc/Vac 4 DI / 4 DO Electromechanical   125 Vdc/Vac	, , , , , , , , , , , , , , , , , , , ,	assis					V			
(EIA-232/485) 3 DI / 4 DO / 1 AO (4-20 mA Range)   125 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   24 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   48 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   220 Vdc/Vac 3 DI / 4 DO / 1 AO (4-20 mA Range)   250 Vdc/Vac 4 DI / 4 DO Electromechanical   125 Vdc/Vac 4 DI / 4 DO Electromechanical   125 Vdc/Vac 4 DI / 4 DO Electromechanical   125 Vdc/Vac	• •									
125 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   B B   B   B   B   B   B   B   B   B						Α	U			
24 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   B C     48 Vdc/Vac     3 DI / 4 DO / 1 AO (4-20 mA Range)   B D     110 Vdc/Vac     3 DI / 4 DO / 1 AO (4-20 mA Range)   B G     220 Vdc/Vac     3 DI / 4 DO / 1 AO (4-20 mA Range)   B G     250 Vdc/Vac     4 DI / 4 DO Electromechanical   1 A   125 Vdc/Vac   4 DI / 4 DO Electromechanical   1 A   1 B						В	Α			
48 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   B D   3 DI / 4 DO / 1 AO (4-20 mA Range)   220 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   B H   3 DI / 4 DO Electromechanical   1 DI / 4 DO Electro						В	В			
110 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   B G   B G   S DI / 4 DO / 1 AO (4-20 mA Range)   B H   S DI / 4 DO / 1 AO (4-20 mA Range)   B H   S DI / 4 DO Electromechanical   S DI /						В	С			
220 Vdc/Vac   3 DI / 4 DO / 1 AO (4-20 mA Range)   B H	110 Vdc/Vac					В	D			
250 Vdc/Vac	220 Vdc/Vac					В	G			
125 Vdc/Vac 4 DI / 4 DO Electromechanical   1 B	250 Vdc/Vac					В	Н			
	125 Vdc/Vac					1	Α			
						1	В			

	Transport						
4 DI / 4 DO Electromechanical   48 Vdc/Vac			1	С			
4 DI / 4 DO Electromechanical   110 Vdc/Vac			1	D			
4 DI / 4 DO Electromechanical   220 Vdc/Vac			1	G			
4 DI / 4 DO Electromechanical   250 Vdc/Vac			1	Н			
4 DI / 4 DO Fast High Current Hybrid   125 Vdc/Vac			С	Α			
4 DI / 4 DO Fast High Current Hybrid   24 Vdc/Vac			С	В			
4 DI / 4 DO Fast High Current Hybrid   48 Vdc/Vac			С	С			
4 DI / 4 DO Fast High Current Hybrid   110 Vdc/Vac			С	D			
4 DI / 4 DO Fast High Current Hybrid   220 Vdc/Vac			С	G			
4 DI / 4 DO Fast High Current Hybrid   250 Vdc/Vac			С	Н			
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   125 Vdc/Vac			D	Α			
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   24 Vdc/Vac			D	В			
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   48 Vdc/Vac			D	С			
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   110 Vdc/Vac			D	D			
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   220 Vdc/Vac			D	G			
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   250 Vdc/Vac			D	Н			
8 DO Electromechanical (Form A)			2	Α			
8 DO Electromechanical (Form B)			2	В			
8 DO Electromechanical (6 Form A, 2 Form B)			2	С			
8 DO Electromechanical (2 Form A, 6 Form B)			2	D			
8 DO Electromechanical (4 Form A, 4 Form B)			2	G			
8 DI   125 Vdc/Vac			3	Α			
8 DI   24 Vdc/Vac			3	В			
8 DI   48 Vdc/Vac			3	С			
8 DI   110 Vdc/Vac			3	D			
8 DI   220 Vdc/Vac			3	G			
8 DI   250 Vdc/Vac			3	Н			
14 DI   125 Vdc/Vac			4	Α			
14 DI   24 Vdc/Vac			4	В			
14 DI   48 Vdc/Vac			4	С			
14 DI   110 Vdc/Vac			4	D			
14 DI   220 Vdc/Vac			4	G			
14 DI   250 Vdc/Vac			4	Н			
8 AI ( $\pm$ 20 mA or $\pm$ 10 V Range)			5	Χ			
4 AI / 4 AO (±20 mA or ±10 V Selectable)			6	X			

**Slot D | Slot D Digital Input Voltage** o Only one (1) 3 DI / 4 DO / 1 AO card per chassis o Only one (1) 4 AI / 4 AO card per chassis

o Only one (1) 4 AI / 4 AO card per ch	assis				
Empty			0	X	
3 DI / 4 DO / 1 AO (4-20 mA Range)   125 Vdc/Vac			В	A	
3 DI / 4 DO / 1 AO (4-20 mA Range)   24 Vdc/Vac			В	В	
3 DI / 4 DO / 1 AO (4-20 mA Range)   48 Vdc/Vac			В	С	
3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac			В	D	
3 DI / 4 DO / 1 AO (4-20 mA Range)   220 Vdc/Vac			В	G	
3 DI / 4 DO / 1 AO (4-20 mA Range)   250 Vdc/Vac			В	Н	
4 DI / 4 DO Electromechanical   125 Vdc/Vac			1	Α	
4 DI / 4 DO Electromechanical   24 Vdc/Vac			1	В	
4 DI / 4 DO Electromechanical   48 Vdc/Vac			1	С	
4 DI / 4 DO Electromechanical   110 Vdc/Vac			1	D	
4 DI / 4 DO Electromechanical   220 Vdc/Vac			1	G	
4 DI / 4 DO Electromechanical   250 Vdc/Vac			1	Н	
4 DI / 4 DO Fast High Current Hybrid   125 Vdc/Vac			С	A	
4 DI / 4 DO Fast High Current Hybrid   24 Vdc/Vac			С	В	
4 DI / 4 DO Fast High Current Hybrid   48 Vdc/Vac			С	С	
4 DI / 4 DO Fast High Current Hybrid   110 Vdc/Vac			С	D	
4 DI / 4 DO Fast High Current Hybrid   220 Vdc/Vac			С	G	
4 DI / 4 DO Fast High Current Hybrid   250 Vdc/Vac			С	Н	
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   125 Vdc/Vac			D	Α	
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   24 Vdc/Vac			D	В	
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   48 Vdc/Vac			D	С	
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   110 Vdc/Vac			D		
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   220 Vdc/Vac			D	G	
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   250 Vdc/Vac			D	H	
8 DO Electromechanical (Form A)			2	Α	
8 DO Electromechanical (Form B) 8 DO Electromechanical (6 Form A, 2			2	В	
Form B) 8 DO Electromechanical			2	С	
(2 Form A, 6 Form B) 8 DO Electromechanical			2	G	
(4 Form A, 4 Form B)					
8 DI   125 Vdc/Vac			3	A	
8 DI   24 Vdc/Vac			3	В	
8 DI   48 Vdc/Vac			3	С	
8 DI   110 Vdc/Vac			3	D	

8 DI   220 Vdc/Vac			3	G			
8 DI   250 Vdc/Vac			3	Н			
14 DI   125 Vdc/Vac			4	Α			
14 DI   24 Vdc/Vac			4	В			
14 DI   48 Vdc/Vac			4	С			
14 DI   110 Vdc/Vac			4	D			
14 DI   220 Vdc/Vac			4	G			
14 DI   250 Vdc/Vac			4	Н			
8 AI (±20 mA or ±10 V Range)			5	Χ			
4 AI / 4 AO (±20 mA or ±10 V Selectable)			6	Χ			
10 RTD Inputs			9	Χ			

Slot E | Slot E Digital Input Voltage o Only one (1) 3 DI / 4 DO / 1 AO card per chassis o Only one (1) 4 AI / 4 AO card per chassis

o Only one (1) 4 AI / 4 AO card per chas	sis	
Empty	0	X
3 DI / 4 DO / 1 AO (4-20 mA Range)   125 Vdc/Vac	В	A
3 DI / 4 DO / 1 AO (4-20 mA Range)   24 Vdc/Vac	В	В
3 DI / 4 DO / 1 AO (4-20 mA Range)   48 Vdc/Vac	В	С
3 DI / 4 DO / 1 AO (4-20 mA Range)   110 Vdc/Vac	В	D
3 DI / 4 DO / 1 AO (4-20 mA Range)   220 Vdc/Vac	В	G
3 DI / 4 DO / 1 AO (4-20 mA Range)   250 Vdc/Vac	В	Н
4 DI / 4 DO Electromechanical   125 Vdc/Vac	1	A
4 DI / 4 DO Electromechanical   24 Vdc/Vac	1	В
4 DI / 4 DO Electromechanical   48 Vdc/Vac	1	С
4 DI / 4 DO Electromechanical   110 Vdc/Vac	1	D
4 DI / 4 DO Electromechanical   220 Vdc/Vac	1	G
4 DI / 4 DO Electromechanical   250 Vdc/Vac	1	Н
4 DI / 4 DO Fast High Current Hybrid   125 Vdc/Vac	C	Α
4 DI / 4 DO Fast High Current Hybrid   24 Vdc/Vac	C	В
4 DI / 4 DO Fast High Current Hybrid   48 Vdc/Vac	C	С
4 DI / 4 DO Fast High Current Hybrid   110 Vdc/Vac	C	D
4 DI / 4 DO Fast High Current Hybrid   220 Vdc/Vac	C	G
4 DI / 4 DO Fast High Current Hybrid   250 Vdc/Vac	C	Н
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   125 Vdc/Vac	D	A
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   24 Vdc/Vac	D	В
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   48 Vdc/Vac	D	С
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   110 Vdc/Vac	D	D
4 DI / 3 DO Electromechanical (2 Form C, 1 Form B)   220 Vdc/Vac	D	G

(2 Form C, 1 Form B)   250 Vdc/Vac 8 DO Electromechanical (Form A) 8 DO Electromechanical (Form B) 8 DO Electromechanical (6 Form A, 2 Form B)	2	A
8 DO Electromechanical (Form B) 8 DO Electromechanical		
8 DO Electromechanical		В
(6 Form A, 2 Form B)	2	С
8 DO Electromechanical (2 Form A, 6 Form B)	2	D
8 DO Electromechanical	2	G
(4 Form A, 4 Form B)		
8 DI   125 Vdc/Vac	3	Α
8 DI   24 Vdc/Vac	3	В
8 DI   48 Vdc/Vac	3	С
8 DI   110 Vdc/Vac	3	D
8 DI   220 Vdc/Vac	3	G
8 DI   250 Vdc/Vac	3	H
14 DI   125 Vdc/Vac	4	A
14 DI   24 Vdc/Vac	4	В
14 DI   48 Vdc/Vac	4	С
14 DI   110 Vdc/Vac	4	D
14 DI   220 Vdc/Vac	4	G
14 DI   250 Vdc/Vac	4	Н
8 AI (±20 mA or ±10 V Range)	5	X
4 AI / 4 AO (±20 mA or ±10 V	6	X
Selectable)	0	^
o To achieve 2-5 ms operate times for Arc-Flash Protection a 4 DI / 4 DO Fast High Current Interrupting Card is required o Requires 4 ACI / 3 AVI card in Slot Z LEA Vsync (8Vac) / Vbat (300 Vdc) /		
4 Arc-Flash Detection Inputs o To achieve 2-5 ms operate times for Arc-Flash Protection a 4 DI / 4 DO Fast High Current Interrupting Card is required o Requires 4 ACI / 3 AVI card in Slot Z	<u>  L</u>	0
8 Arc-Flash Detection Inputs	7	7
o To achieve 2-5 ms operate times for Arc-Flash Protection a 4 DI / 4 DO Fast High Current Interrupting Card is required		
Vsync (300 Vac) / Vbat (300 Vdc) / 7 DI   125 Vdc/Vac	7	A
o Requires 4 ACI / 3 AVI card in Slot Z		
Vsync (300 Vac) / Vbat (300 Vdc) / 7	7	В
DI   24 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z		
Vsync (300 Vac) / Vbat (300 Vdc) / 7	7	C
DI   48 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z		
Vsync (300 Vac) / Vbat (300 Vdc) / 7 DI   110 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z	7	D
Vsync (300 Vac) / Vbat (300 Vdc) / 7 DI   220 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z	7	G
Vsync (300 Vac) / Vbat (300 Vdc) / 7 DI   250 Vdc/Vac	7	Н
o Requires 4 ACI / 3 AVI card in Slot Z LEA Vsync (8 Vac) / Vbat (300 Vdc) / 7 DI   125 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z	L	A

LEA Vsync (8 Vac) / Vbat (300 Vdc) / 7 DI   24 Vdc/Vac							L	В				
o Requires 4 ACI / 3 AVI card in Slot Z LEA Vsync (8 Vac) / Vbat (300 Vdc) /							l L	С				
7 DI   48 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z												
LEA Vsync (8 Vac) / Vbat (300 Vdc) / 7 DI   110 Vdc/Vac							L	D				
o Requires 4 ACI / 3 AVI card in Slot Z LEA Vsync (8 Vac) / Vbat (300 Vdc) /								G				
7 DI   220 Vdc/Vac o Requires 4 ACI / 3 AVI card in Slot Z							L	G				
LEA Vsync (8 Vac) / Vbat (300 Vdc) / 7 DI   250 Vdc/Vac							L	Н				
o Requires 4 ACI / 3 AVI card in Slot Z												
Slot Z Current and Voltage In	outs											
3-Phase 1 Amp AC Current Input / 1									Α	1		
Amp Neutral AC Current Input 3-Phase 1 Amp AC Current Input / 5									Α	2		
Amp Neutral AC Current Input												
3-Phase 1 Amp AC Current Input / 200 mA Neutral AC Current Input									Α	3		
3-Phase 5 Amp AC Current Input / 5									Α	5		
Amp Neutral AC Current Input  3-Phase 5 Amp AC Current Input / 1									Α	6		
Amp Neutral AC Current Input												
3-Phase 5 Amp AC Current Input / 200 mA Neutral AC Current Input									Α	7		
3-Phase 1 Amp AC Current Input / 1 Amp Neutral AC Current Input / 3-									8	1		
Phase AC Voltage (300 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 1 Amp AC Current Input / 5									8	2		
Amp Neutral AC Current Input / 3- Phase AC Voltage (300 Vac) (SELECT 4												
ACI / 3 AVI)												
3-Phase 1 Amp AC Current Input / 200 mA Neutral AC Current Input / 3-									8	3		
Phase AC Voltage (300 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 5 Amp AC Current Input / 5 Amp Neutral AC Current Input / 3-									8	5		
Phase AC Voltage (300 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 5 Amp AC Current Input / 1									8	6		
Amp Neutral AC Current Input / 3- Phase AC Voltage (300 Vac) (SELECT 4												
ACI / 3 AVI)												
3-Phase 5 Amp AC Current Input / 200 mA Neutral AC Current Input / 3-									8	7		
Phase AC Voltage (300 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 1 Amp AC Current Input / 1 Amp Neutral AC Current Input / 3-									L	1		
Phase LEA AC Voltage (8 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 1 Amp AC Current Input / 5									L	2		
Amp Neutral AC Current Input / 3- Phase LEA AC Voltage (8 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 1 Amp AC Current Input /									L	3		
200 mA Neutral AC Current Input / 3- Phase LEA AC Voltage (8 Vac) (SELECT 4 ACI / 3 AVI)												
3-Phase 5 Amp AC Current Input / 5 Amp Neutral AC Current Input / 3-									L	5		
Phase LEA AC Voltage (8 Vac) (SELECT 4 ACI / 3 AVI)												
. ,												

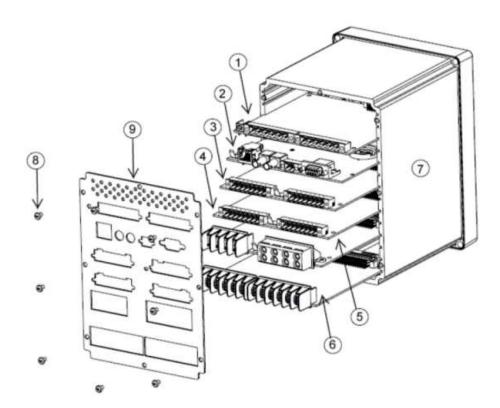
Amp Neutral AC C	C Current Input / 1 urrent Input / 3- cage (8 Vac) (SELECT	L 6
3-Phase 5 Amp AC	Current Input /	
	C Current Input / 3-	L 7
Phase LEA AC Volt 4 ACI / 3 AVI)	age (8 Vac) (SELECT	
3-Phase Rogowski	Coil or Low Power	7 L
Current Transform 200 mA Neutral (1 input), 3-Phase LE (RJ45 inputs) (SEI	Terminal Block	
<b>Conformal Coa</b>	at	
None		
Conformally Coate	ed Circuit Boards	
Accessories Literature		
	Configurable Label	
	Kit for SEL-710-5, SEL-751, SEL-787-	
	2, -3, -4, SEL- 700BT, SEL-787L,	9 2 6 0 1 3 6
	SEL-787Z and 8	
	PB SEL-700G (2 Sheets)*	
	Configurable Label	
	Kit for SEL-710-5, SEL-751, SEL-787-	
	2, -3, -4, SEL-	
	700BT, SEL-787L,	9 2 6 0 1 3 7
	SEL-787Z and 8 PB SEL-700G (25 Sheets)*	
SEL Cables	jeee.e)	
	SEL-C804	
	Multimode Fiber-	
	Optic Arc-Flash Detection (AFD) Sensors*	Please see Online MOT or contact SEL REP or CSR for ordering information.
	SEL-C814 Arc-	
	Flash Detection (AFD) Fiber Cables	
	and Accessories	Please see Online MOT or contact SEL REP or CSR for ordering information.
	(configurable length and number of splices)*	
	SEL-C234 Serial	
	Cable (RS-232,	Please see Online MOT or contact SEL REP or CSR for ordering information.
	DTE-DTE, DB9 M/DB9 F)*	
	SEL-C227A Serial	
	Cable for PC (RS-	
	232, DTE-DTE,	Please see Online MOT or contact SEL REP or CSR for ordering information.
	DB9 M/DB25 F, Hardware Flow	State of Salaring mornadon
	Control)*	
	SEL-C222 Serial	
	Cable for Modem (RS-232, DTE-	
	DCE, DB9 M/DB25	Please see Online MOT or contact SEL REP or CSR for ordering information.
	M, Hardware Flow	
	Control)*	

SEL-C272 Serial Cable (RS-232, DTE-DTE, DB9 M/DB9 M, Hardware Flow Control)*	Please see Online MOT or contact SEL REP or CSR for ordering information.
SEL-C273 Serial Cable (RS-232, DTE-DTE, DB9 M/DB9 M, IRIG- B)*	Please see Online MOT or contact SEL REP or CSR for ordering information.
SEL-CA605 Ethernet Cable (RJ45 M/RJ45 M)*	Please see Online MOT or contact SEL REP or CSR for ordering information.
SEL-C807 Fiber- Optic Cable (62.5/200 um, Multimode)*	Please see Online MOT or contact SEL REP or CSR for ordering information.
SEL-C809 Fiber- Optic Cable (9 um, Singlemode)*	Please see Online MOT or contact SEL REP or CSR for ordering information.

### **Additional Information**

- Base unit includes slots A, B (EIA-232), Z, HMI, and Front EIA-232 Port.
  Order 2 AVI / 4 AFDI Card for Vsync, VBat, Arc Flash Detection Input.
  The protocols SNTP, IEEE 1588-2008 firmware-based PTP and Modbus TCP are included in the standard offering with Single Ethernet option.
- The protocols SNTP, IEEE 1588-2008 firmware-based PTP, PRP, Rapid Spanning Tree Protocol (RSTP), and Modbus TCP are included in the standard offering with Dual Ethernet option.
- DNP3 LAN/WAN are included with DNP3 and Ethernet option.
- Download AcSELerator QuickSet SEL-5030 software for free at https://www.selinc.com/softwaresolutions/. AcSELerator QuickSet on CD (503001WX4) is available upon request.
- A configuration kit is provided for the front panel configurable labels (packaged in the shipping box). For additional kits, order SEL part number 9260136 (2 sheet kit) or 9260137 (25 sheet kit).
- The SEL-787L option cards are orderable separately for field installation. Use WI-12625 and contact your SEL representative to order option cards.
- For Arc-Flash Detection Point Sensors, Bare-Fiber Sensors, or Cable Accessories, see SEL-C804 Multimode Fiber-Optic Arc-Flash Detection (AFD) Sensors and C814 Arc-Flash Detection (AFD) Fiber Cables and Accessories.
- For relay wire termination kits, please see Application Note AN2014-08 on the SEL website or contact SEL REP or CSR for ordering information.
- For SEL-787L Mounting Accessories including adapter plates, dust protectors, etc go to https://selinc.com/applications/mountingselector/.
- ACSELERATOR Bay Screen Builder SEL-5036 software is available with touchscreen models.
- All Digital Outputs are Form-A unless noted otherwise.

# Chassis Card Slot Configuration Example



- SELECT Power Supply Card with I/O (Slot A)
   SELECT Processor and Communications Card (Slot B)
   SELECT I/O Expansion Card (Slot C)
- SELECT I/O Expansion Card (Slot D)
   SELECT I/O Expansion Card (Slot E)

- 6 SELECT ACI/AVI Card (Slot Z)
- 7 Device Case
- Rear Panel Mounting Screws
- (9) Rear Panel

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

SEL SCHWEITZER ENGINEERING LABORATORIES, INC.

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