Automation and Computing Platform Accessories





Accessories for Automation

Completing an automation solution requires more than automation and computing platforms. SEL provides peripherals, components, cables, and adapters essential for the completion and success of automation projects.



Peripherals

Rack-Mount Keyboards

These keyboards provide a convenient, reliable input device that can be stowed in the rack when not in use. Made for 19" rack-mount installations, they require only 1 rack unit of space.

Rack-Mount USB Keyboard With Mouse

- Model: Synergy Global LCDK1034-bk-U-MS
- Input Devices: 88-key keyboard, optical mouse
- Interface: 2 USB ports (keyboard, mouse)
- Cables Included: 2 USB (keyboard, mouse)
- Mounting Depth: 23" min.
- Operating Temperature: 0° to 50°C (32° to 122°F)
- Warranty: 1 year (manufacturer)
- Details: www.rackmountmart.com/rmLCD/lcdK1034.htm

Rack-Mount USB Keyboard With Touchpad

- Model: Kendall Howard CRP-0321-0032
- Input Devices: 104-key Adesso AKB-425UB keyboard, 2-button touchpad
- Interface: 1 USB port (keyboard, touchpad)
- Cables Included: Single USB cable with one plug
- Mounting Depth: 12.50"
- Operating Temperature: 0° to 50°C (32° to 122°F)
- Warranty: 1 year (manufacturer)
- Details: selinc.com/api/download/140519



91610050: USB Keyboard With Mouse



91610075: USB Keyboard With Touchpad

Part Number	Description	
91610050	Rack-mount USB keyboard with mouse	
91610075	Rack-mount USB keyboard with touchpac	

Touchscreen Monitors

These touchscreen monitors provide a high-quality display and user-friendly touch interface for your automation applications. Their PCAP (capacitive) touch interface has multitouch capability, with a scratch-resistant glass surface and drift-free accuracy.

The touchscreen monitors are designed for panel mounting, but they can also be mounted in a 19" rack using the rack-mount brackets.

The touchscreen kits include a touchscreen monitor, rack-mount bracket, DisplayPort cable, and power supply.

19" Touchscreen Monitor

- Model: ELO 1991L, PCAP, P/N E331019
- Display: 19" diagonal 5:4, active matrix TFT LCD (LED)
- Resolution: 1280 × 1024 @ 60 Hz
- Details: www.elotouch.com/open-frame-touchscreens-1991l.html

19.5" Touchscreen Monitor

- Model: ELO 2094L, PCAP, P/N E331214
- Display: 19.5" diagonal 16:9 (widescreen), active matrix TFT LCD (LED)
- Resolution: 1920 × 1080 @ 60 Hz
- Details: www.elotouch.com/open-frame-touchscreens-2094l.html

19" and 19.5" Touchscreen Monitor Specifications

- Brightness: 225 nits
- Input Power: 12 Vdc, 17 W
- Video Inputs: HDMI, VGA, DisplayPort
- Touch Interface: USB
- Cables Included: HDMI, VGA, USB, RJ45 OSD remote
- Operating Temperature: 0° to 40°C (32° to 104°F)
- MTBF: 50,000 hours
- Warranty: 3 years (manufacturer)

19" Touchscreen Rack-Mount Bracket

- Dimensions: 19.00" × 15.72" × 1.25" (19" rack, 9 rack units, 0.13" protrusion)
- Material: aluminum with textured semigloss black finish

19.5" Touchscreen Rack-Mount Bracket

- Dimensions: 19.70" × 12.00" × 1.50" (19" rack, 7 rack units, 1.50" protrusion)
- Material: aluminum with brushed black anodized finish

Power Supply

- Model: Wall Industries DTA-080A4 series
- Input Voltage Range: 90–264 Vac (47–63 Hz), 100–300 Vdc⁺
- Output Power: 12 Vdc, 80 W
- Output Connector: 5.5 mm barrel jack, center positive
- Cables Included: 7.5' NEMA 5-15P to IEC C13 line cord
- Operating Temperature: 0° to 40°C (32° to 104°F)
- MTBF: >120,000 hours
- Warranty: 2 years (manufacturer)
- Details: www.wallindustries.com/products/ac-series/dta-080a4

Power supply label lists ac ratings only; however, dc sources are also supported.





900-0048: 19" Touchscreen Monitor

900-0046-P09: 19" Touchscreen Rack-Mount Bracket



91610073: 19.5" Touchscreen Monitor



91610074: 19.5" Touchscreen Rack-Mount Bracket

Part Number	Description	
91610054	19" Touchscreen kit (includes 900-0048, 900-0046-P09, 91610070, and 91610051)	
900-0048	19" Touchscreen monitor (panel-mount)	
900-0046-P09	19" Touchscreen rack-mount bracket	
91610072	19.5" Touchscreen kit (includes 91610073, 91610074, 91610070, and 91610051)	
91610073	19.5" Touchscreen monitor (panel-mount)	
91610074	19.5" Touchscreen rack-mount bracket	
91610051	Power supply	
91610070	DisplayPort 1.2 M/M cable with ferrite chokes, black, 6 ft	

Components

Memory Modules (RAM)

You can field-upgrade the system memory (RAM) on rack-mount computing platforms and Real-Time Automation Controllers (RTACs) like the SEL-3355 and the SEL-3555 RTAC. Surfacemount platforms like the SEL-3360 and the SEL-3560 RTAC must be returned to the factory for RAM upgrades.

The SEL-3355 and SEL-3555 (both the base and the -2 models) have two memory module slots. The number of slots currently in use depends on the configuration; systems with 4 GB of RAM only have one slot in use, and systems with greater than 4 GB may use one or two slots. Check your system configuration before purchasing additional modules, as upgrading may require removal of lower-capacity modules to make room for highercapacity ones. Refer to the product instruction manual for instructions.

DDR3 RAM

- Applicable Models: SEL-3355, SEL-3555 (Intel Core i7 CPU)
- Type: 244-pin DDR3 error-correcting code (ECC) mini-DIMM
- Speed: PC3-10600 (1,333 MHz)

DDR4 RAM

- Applicable Models: SEL-3355-2, SEL-3555-2 (Intel Xeon CPU)
- Type: 288-pin DDR4 ECC mini-DIMM
- Speed: PC4-17000 (2,133 MHz)

General

- Operating Temperature: -40° to +85°C (-40° to +185°F)
- Conformal Coating: Yes
- Warranty: 10 years (SEL)

Part Number	Description	
91611001-01C	Memory, 4 GB DDR3 RAM	
91611001-02C	Memory, 8 GB DDR3 RAM	
91611018-01	Memory, 4 GB DDR4 RAM	
91611018-02	Memory, 16 GB DDR4 RAM	
91611018-03*	Memory, 32 GB DDR4 RAM	

*Note: Only compatible with systems with serial number higher than 1203260001. Contact SEL to upgrade older systems to support 32 GB RAM modules.



Memory Module

Solid-State Drives (SSDs)

Add storage capacity and/or redundancy to your SEL automation and computing platforms by installing additional SSDs. To learn about single-level cell (SLC), pseudo-SLC (pSLC), and 3D triple-level cell (3D TLC) SSDs, read the application note AN2016-03, "Determining Solid-State Drive (SSD) Lifetimes for SEL Computing Platforms," on the SEL website.

SLC SSDs

- Endurance: 100,000 program/erase cycles
- Operating Temperature: -40° to +85°C (-40° to +185°F)
- Conformal Coating: Yes
- Warranty: 10 years (SEL)

pSLC SSDs

- Endurance: 20,000 program/erase cycles
- Operating Temperature: -40° to +85°C (-40° to +185°F)
- Conformal Coating: Yes
- Warranty: 5 years (SEL)

3D TLC SSDs

- Endurance: 3,000 program/erase cycles
- Operating Temperature: -40° to +85°C (-40° to +185°F)
- Conformal Coating: Yes
- Warranty: 5 years (SEL)

Part Number	Description			
91610055	SEL-3350 empty SSD sled			
91610059	SEL-3350 SSD, 32 GB SLC w/ sled			
91610060	SEL-3350 SSD, 64 GB SLC w/ sled			
91610061	SEL-3350 SSD, 128 GB SLC w/ sled			
91610062	SEL-3350 SSD, 256 GB SLC w/ sled			
91610063	SEL-3350 SSD, 120 GB pSLC w/ sled			
91610064	SEL-3350 SSD, 240 GB pSLC w/ sled			
91610065	SEL-3350 SSD, 480 GB pSLC w/ sled			
91610066	SEL-3350 SSD, 240 GB 3D TLC w/ sled			
91610067	SEL-3350 SSD, 480 GB 3D TLC w/ sled			
91610068	SEL-3350 SSD, 960 GB 3D TLC w/ sled			
91610069	SEL-3350 SSD, 1,920 GB 3D TLC w/ sled			
91610076	SEL-3350 SSD, 7,680 GB 3D TLC w/ sled			
91611002-00	SEL-3355/3555 empty SSD sled			
91611002-01C	SEL-3355/3555 SSD, 32 GB SLC w/ sled			
91611002-02C	SEL-3355/3555 SSD, 64 GB SLC w/ sled			
91611002-03C	SEL-3355/3555 SSD, 128 GB SLC w/ sled			
91611002-04C	SEL-3355/3555 SSD, 256 GB SLC w/ sled			
91611013-03C	SEL-3355/3555 SSD, 120 GB pSLC w/ sled			
91611013-02C	SEL-3355/3555 SSD, 240 GB pSLC w/ sled			
91611013-01C	SEL-3355/3555 SSD, 480 GB pSLC w/ sled			
91611016-01	SEL-3355/3555 SSD, 240 GB 3D TLC w/ sled			
91611016-02	SEL-3355/3555 SSD, 480 GB 3D TLC w/ sled			
91611016-03	SEL-3355/3555 SSD, 960 GB 3D TLC w/ sled			
91611016-04	SEL-3355/3555 SSD, 1,920 GB 3D TLC w/ sled			
91611002-05C	SEL-3355/3555 SSD, 7,680 GB 3D TLC w/ sled			



91611002-00: SEL-3355 SSD Sled

91611010-00: SEL-3360 SSD Sled

Part Number	Description		
91611010-00	SEL-3360/3560 empty SSD sled		
91611010-01C	SEL-3360/3560 SSD, 32 GB SLC w/ sled		
91611010-02C	SEL-3360/3560 SSD, 64 GB SLC w/ sled		
91611010-03C	SEL-3360/3560 SSD, 128 GB SLC w/ sled		
91611010-04C	SEL-3360/3560 SSD, 256 GB SLC w/ sled		
91611015-03C	SEL-3360/3560 SSD, 120 GB pSLC w/ sled		
91611015-02C	SEL-3360/3560 SSD, 240 GB pSLC w/ sled		
91611015-01C	SEL-3360/3560 SSD, 480 GB pSLC w/ sled		
91611017-01	SEL-3360/3560 SSD, 240 GB 3D TLC w/ sled		
91611017-02	SEL-3360/3560 SSD, 480 GB 3D TLC w/ sled		
91611017-03	SEL-3360/3560 SSD, 960 GB 3D TLC w/ sled		
91611017-04	SEL-3360/3560 SSD, 1,920 GB 3D TLC w/ sled		
91611010-05C	SEL-3360/3560 SSD, 7,680 GB 3D TLC w/ sled		

Power Supplies

The SEL-9331 Power Supply is a high-output +12 Vdc, 200 W fanless power supply designed for the SEL line of automation and computing platforms and can also be configured as a general-purpose standalone power supply module. Capable of producing 11 A of continuous current (from –40° to +85°C [–40° to +185°F]) and 17 A of maximum current, the SEL-9331 can provide ample power in environments where many supplies cannot.

The SEL-9325 is a power supply module for the SEL-3350 platform with 3U chassis configuration only; it cannot be used as a stand-alone power supply.

SEL-9331A High-Voltage, Input

- DC Voltage Rating: 125/250 Vdc
- DC Range: 100-300 Vdc
- AC Voltage Rating: 120/220/240 Vac; 50/60 Hz
- AC Range: 85–264 Vac, 45–64 Hz

SEL-9331B Low-Voltage, Input

- DC Voltage Rating: 48 Vdc
- DC Voltage Range: 38–58 Vdc

SEL-9331A/B, Output

Part Number

- Nominal Output Voltage: 12.1 Vdc
- Max Output Current: 17 A @ 40°C (104°F), 11 A @ 85°C (185°F)

Description

SEL-9325A001 High-Voltage, Input

- DC Voltage Rating: 125-250 Vdc
- DC Range: 85–300 Vdc
- AC Voltage Rating: 110-240 Vac; 50/60 Hz
- AC Range: 85–264 Vac, 30–120 Hz

SEL-9325A002 Medium-Voltage, Input

- DC Voltage Rating: 48–125 Vdc
- DC Range: 38–140 Vdc
- AC Voltage Rating: 110–120 Vac; 50/60 Hz
- AC Range: 85–140 Vac, 30–120 Hz

SEL-9325A003 Low-Voltage, Input

- DC Voltage Rating: 24-48 Vdc
- DC Range: 16–60 Vdc

SEL-9325A001/2/3, Output

Max Burden: 62 W, 150 VA

General

- Operating Temperature: -40° to +85°C (-40° to +185°F)
- Conformal Coating: Yes (optional)
- Warranty: 10 years (SEL)

Details: selinc.com/products/9331 Details: selinc.com/products/3350



SEL-9331 Module for SEL-3355



SEL-9331 With DIN Rail Mount



SEL-9331 With Wall/Panel Mount



SEL-9331 With IEC C14 Input

Configure Online*	SEL-9331 Power Supply		
91611011-01	SEL-9331 wall-/panel-mount conversion kit		
91611011-02	SEL-9331 DIN rail-mount conversion kit		
9325A001	SEL-9325 Power Supply, high-voltage		
9325A001C	SEL-9325 Power Supply, high-voltage, conformal coating		
9325A002	SEL-9325 Power Supply, medium-voltage		
9325A002C	SEL-9325 Power Supply, medium-voltage, conformal coating		
9325A003	SEL-9325 Power Supply, low-voltage		
9325A003C	SEL-9325 Power Supply, low-voltage, conformal coating		

*Configure at selinc.com/products/configure/9331.

Expansion Cards

SEL-3390 PCI Express (PCIe) Expansion Cards are designed, built, and tested for use in harsh industrial and substation environments, providing a wide operating temperature range and immunity to ESD, shock, and vibration. They can also be ordered with conformal coating for corrosion immunity. These expansion cards are PCIe-compliant and have a standard PCIe form factor, so they are compatible with most PCIe-compliant automation controllers, computers, and servers.

SEL-3390S8 Serial Adapter Card

- Ports: Six EIA-232/422/485 serial, up to 921 kbps
- Features: IRIG-B input/output, +5 V dc port power
- Conformal Coating: Yes (optional)
- Details: selinc.com/products/3390S8

SEL-3390E4 Ethernet Adapter Card

- Ports: Four 10/100/1000 Mbps Ethernet
- Features: Optional RJ45 copper or small form-factor pluggable (SFP) fiber ports
- Conformal Coating: Yes (optional)
- Details: selinc.com/products/3390E4

SEL-3390T Time and Ethernet Adapter Card

- Ports: IRIG-B BNC input and output, two 10/100/1000 Mbps Ethernet
- Features: Optional RJ45 copper or small form-factor pluggable (SFP) fiber ports
- Conformal Coating: Yes (optional)
- Details: selinc.com/products/3390T

Small Form-Factor Pluggable (SFP) Modules

Details: selinc.com/products/sfp

General

- Operating Temperature: -40° to +85°C (-40° to +185°F)
- Warranty: 10 years (SEL)



SEL-3390S8 Serial Adapter Card



SEL-3390E4 Ethernet Adapter Card



SEP Modules

Part Number	Description	
3390S8A001	SEL-3390S8	
3390S8A001C	SEL-3390S8, conformal coating	
3390E4A001	SEL-3390E4, 4 RJ45	
3390E4A001C	SEL-3390E4, 4 RJ45, conformal coating	
3390E4A002	SEL-3390E4, 2 RJ45 + 2 SFP	
3390E4A002C	SEL-3390E4, 2 RJ45 + 2 SFP, conformal coating	
3390E4A003	SEL-3390E4, 4 SFP	
3390E4A003C	SEL-3390E4, 4 SFP, conformal coating	
3390TA001	SEL-3390T, 2 RJ45	
3390TA001C	SEL-3390T, 2 RJ45, conformal coating	
3390TA002	SEL-3390T, 1 RJ45 + 1 SFP	
3390TA002C	SEL-3390T, 1 RJ45 + 1 SFP, conformal coating	
3390TA003	SEL-3390T, 2 SFP	
3390TA003C	SEL-3390T, 2 SFP, conformal coating	

SEL-3390T Time and Ethernet Adapter Card

Part Number Description			
8104-01	SFP, 100BASE-LX, (*		

8104-01	SFP, 100BASE-LX, (1,310 nm, single-mode, 20 km)
8104-02	SFP, 100BASE-EX, (1,310 nm, single-mode, 50 km)
8104-03	SFP, 100BASE-ZX, (1,550 nm, single-mode, 80 km)
8104-04	SFP, 100BASE-ZX, (1,550 nm, single-mode, 120 km)
8104-05	SFP, 100BASE-ZX, (1,550 nm, single-mode, 160 km)
8109-01	SFP, 100BASE-FX, (1,310 nm, multimode, 2 km)
8130-01	SFP, 1000BASE-LX, (1,310 nm, single-mode, 10 km)
8130-02	SFP, 1000BASE-LX, (1,310 nm, single-mode, 20 km)
8130-03	SFP, 1000BASE-LX, (1,310 nm, single-mode, 30 km)
8130-04	SFP, 1000BASE-LX, (1,310 nm, single-mode, 40 km)
8130-05	SFP, 1000BASE-XD, (1,550 nm, single-mode, 50 km)
8130-06	SFP, 1000BASE-ZX, (1,550 nm, single-mode, 80 km)
8131-01	SFP, 1000BASE-SX, (850 nm, multimode, 0.3 km)

Cables and Adapters

Reliably connect SEL products to other devices, including relays, information processors, automation controllers, computers, I/O modules and controllers, meters, digital fault recorders (DFRs), programmable logic controllers (PLCs), remote terminal units (RTUs), time clocks, phone switches, and modems.

The cables and adapters listed here are specific to SEL automation and computing platforms. For additional general-purpose cables and adapters, see the SEL website.

Part Number	Description		
91610070	DisplayPort 1.2 M/M cable with ferrite chokes, black, 6 ft		
91610029	Internal USB adapter for SEL-3355/3360		
91611005-01	Panel-mount conversion kit for SEL-3355		
91610056	Panel-mount conversion kit for SEL-3350 1U		
91610057	Rack-mount conversion kit for SEL-3350 1U		
91611019-01	Panel-mount conversion kit for SEL-3350 3U		
91611007-01	Line cord for SEL-3355/3360/9331, 8 ft, Euro connector		
91611007-02	Line cord for SEL-3355/3360/9331, 8 ft, IEC C13 connector		
91610058	Line cord for the SEL-3350, 6 ft		
2902#LE5E	Adjustable rack-mount SEL-2902 RJ45 to DB9 Adapter Panel		
2902#P7EK Surface-mount SEL-2902 RJ45 to DB9 Adapter Panel			

Accessory Cables and Adapters



91610029: Internal USB Adapter



91611005-01: Panel-Mount Conversion Kit for SEL-3355



91610070: DisplayPort 1.2 M/M Cable With Ferrite Chokes, Black, 6 ft



91611007-01: Line Cord, Euro Connector



2902#LE5E: SEL-2902 RJ45 to DB9 Adapter Panel

Data Cables

- Lengths available are subject to change; please check online.
- Details: selinc.com/products/cables

Part Number	Termination	Length	Notes
C256	BNC	1 to 500 ft	DB-9 serial cable for IRIG-B
C429	RJ45 Male	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45/DB-9 M)
C432	RJ45	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45/RJ45 M, hardware flow control)
C477	DB-9 Male	1 to 150 ft	SEL RJ45 serial cable to GE DNP I/O (RS-485, RJ45 M/DB-9 M)
C478A**	DB-9 Female	1 to 6 ft	SEL RJ45 serial adapter cable (RS-232, DTE-DCE, RJ45 M/DB-9 F, IRIG-B, Pin 1 power, hardware flow control)
C478N**	DB-9 Female + BNC	1 to 6 ft	SEL RJ45 serial adapter cable (RS-232, DTE-DCE, RJ45 M/DB-9 F/BNC F, IRIG-B, Pin 1 power, hardware flow control)
C481	25-Pin Female	1 to 100 ft	SEL RJ45 serial cable (RS-232, DCE) for modem
C489	DB-9 Male	1 to 100 ft	SEL RJ45 serial cable to SEL DNP (RS-232, DTE-DTE, RJ45 M/DB-9 M, IRIG-B)
C605	DB-9 Male	1 to 6 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45 M/DB-9 M, IRIG-B, Pin 1 power, hardware flow control)
C605R*	DB-9 Male	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45 M/DB-9 M, IRIG-B, hardware flow control)
C605A	DB-9 Male	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ-45 M/DB-9 M, IRIG-B, hardware flow control)
C607	Tinned Wires	1 to 330 ft	SEL RJ45 serial cable for terminal server (RJ45 M/tin wires)
C616	DB-9 Male	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DCE, RJ45 M/DB-9 M, IRIG-B, Pin 1 power, hardware flow control)
C618	DB-9 Male	1 to 100 ft	SEL RJ45 serial cable (RS-232, DCE) for modem
C629A	RJ45	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45 M/RJ-45 M, IRIG-B)
C629R*	RJ45	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45 M/RJ-45 M, IRIG-B, hardware flow control)
C659	DB-9 Male + BNC	1 to 100 ft	SEL RJ45 serial cable (RS-232, DTE-DTE, RJ45 M/DB-9 M/BNC M, IRIG-B, Pin 1 power, hardware flow control)
C972	BNC	1 to 130 ft	SEL RJ45 serial cable (modulated IRIG, RJ45 M/BNC M)
CA605	RJ45	1 to 330 ft	Ethernet cable (RJ-45 M/RJ-45 M)
C808	LC	300 m	Fiber-optic cable (62.5/125 um, multimode)
C809	LC	300 m	Fiber-optic cable (9 um, single-mode)

*This cable is double-shielded (contains both foil and braid shields) with the shield connected to the shell at both ends of the cable for improved immunity to electrical disturbances that can cause data loss.

**These cables are for connecting to existing SEL serial cables with a DB-9 connector and fiber-optic SEL-2800 series transceivers.



Ordering and Customer Support

Online Configuration and Ordering

Configure products to meet your exact application needs and order them online with an SEL account. Once logged in, select "Configure and Order" on a product webpage to choose from available model options, including items like power supply voltages, inputs and outputs, communications ports and protocols, and conformal coating. Save individual products to your cart, create projects to house specific product orders, and request a quote—all online. For products that do not require configuration or have been identified as common product configurations, select "Popular Models" on a product webpage to quickly and easily find the model you want.

Ordering Support

Our sales representatives and customer service teams are always happy to answer questions and help configure the right SEL solution for your application. Visit selinc.com/support for regional sales contact information.

Popular Models

The Popular Models program makes selecting and ordering SEL products simple, fast, and convenient. SEL popular models are products preconfigured for popular applications and available for many SEL devices. Specific popular models may ship from stock. When available, the popular model configurations are displayed on the related SEL product webpage, where you can also view their technical details and popular applications. You can order these models directly from SEL or through your SEL sales representative.

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SEL SCHWEITZER ENGINEERING LABORATORIES

+1.509.332.1890

info@selinc.com

selinc.com