SEL-2242 Chassis/Backplane

The SEL-2242 Chassis/Backplane is a 10-slot chassis for SEL Axion® systems. This data sheet provides installation instructions and specifications.

Front and Rear View

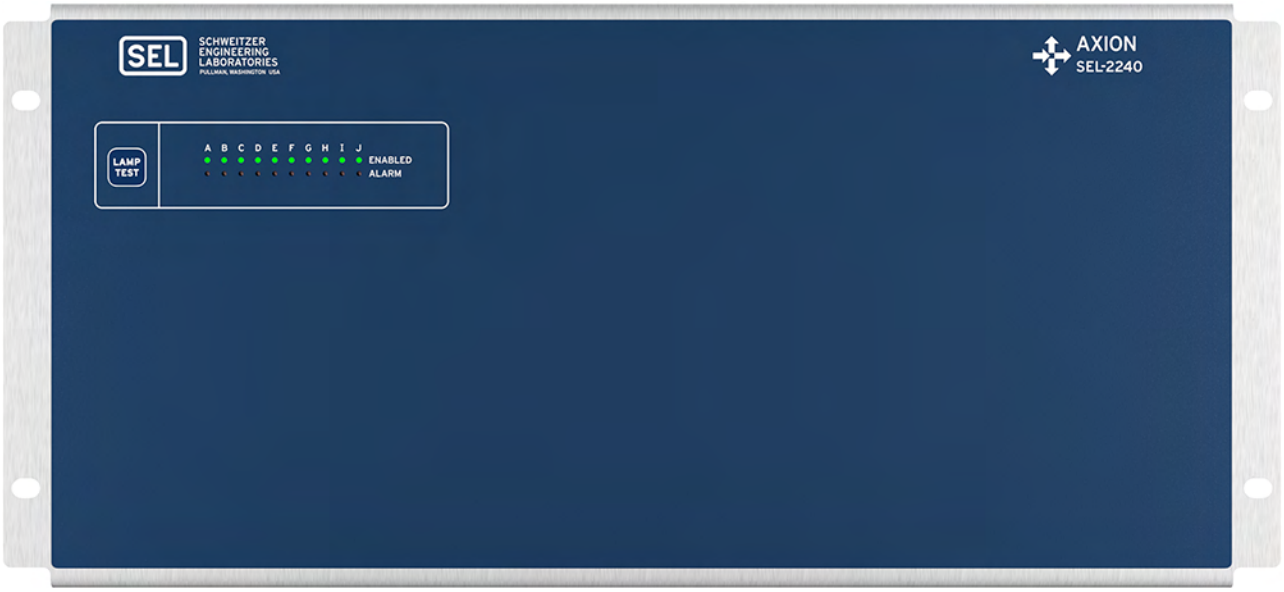

Figure 1 SEL-2242 10-Slot Front Panel, Rack-Mount

Figure 2 SEL-2242 10-Slot Front Panel 7-Inch Touchscreen Display

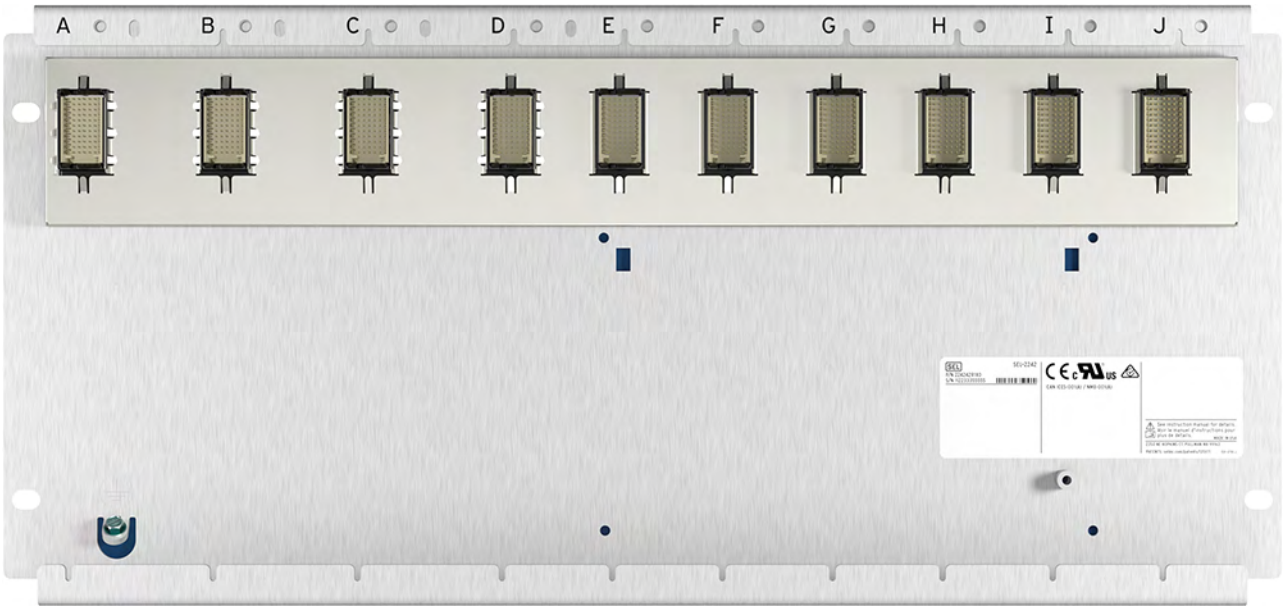

Figure 3 SEL-2242 10-Slot Rear View, Panel-Mount

Figure 4 SEL-2242 4-Slot Front Panel, Rack-Mount

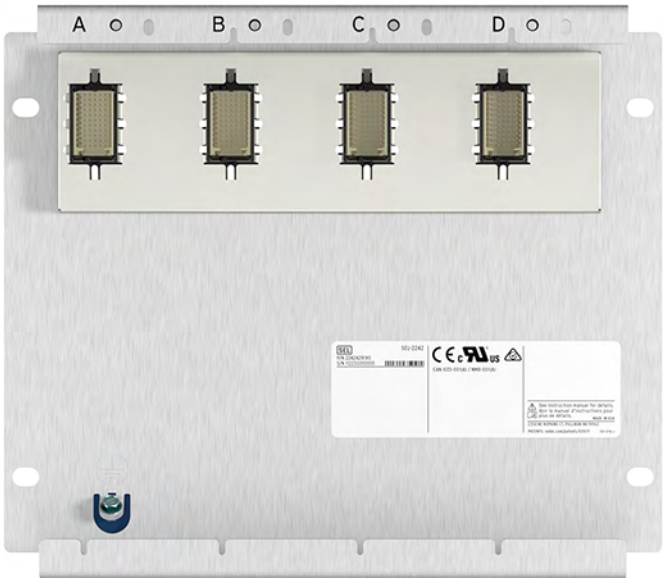

Figure 5 SEL-2242 4-Slot Rear View, Panel-Mount

Figure 6 SEL-2242 Dual 4-Slot Front Panel, Rack-Mount

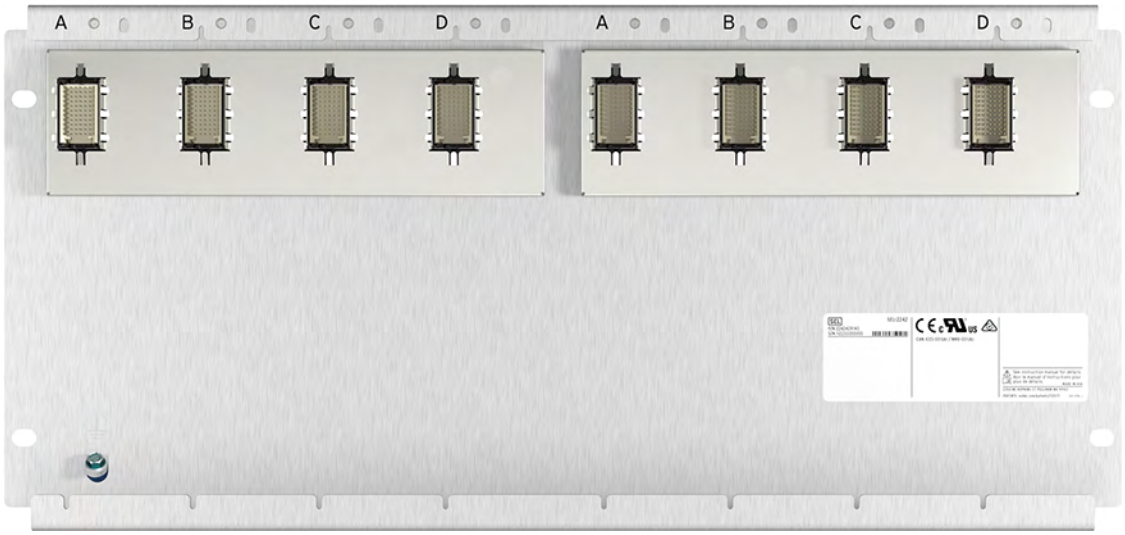

Figure 7 SEL-2242 Dual 4-Slot Rear View, Panel-Mount

Device Placement

You can mount the Axion in a sheltered indoor environment (a building or an enclosed cabinet) that does not exceed the temperature and humidity ratings for the modules. Equipment must be installed in an enclosure that protects against shock and fire to meet UL requirements.

NOTE: For applications compliant with IEC-60255-27, surface-mount units must be installed in IP4X enclosures.

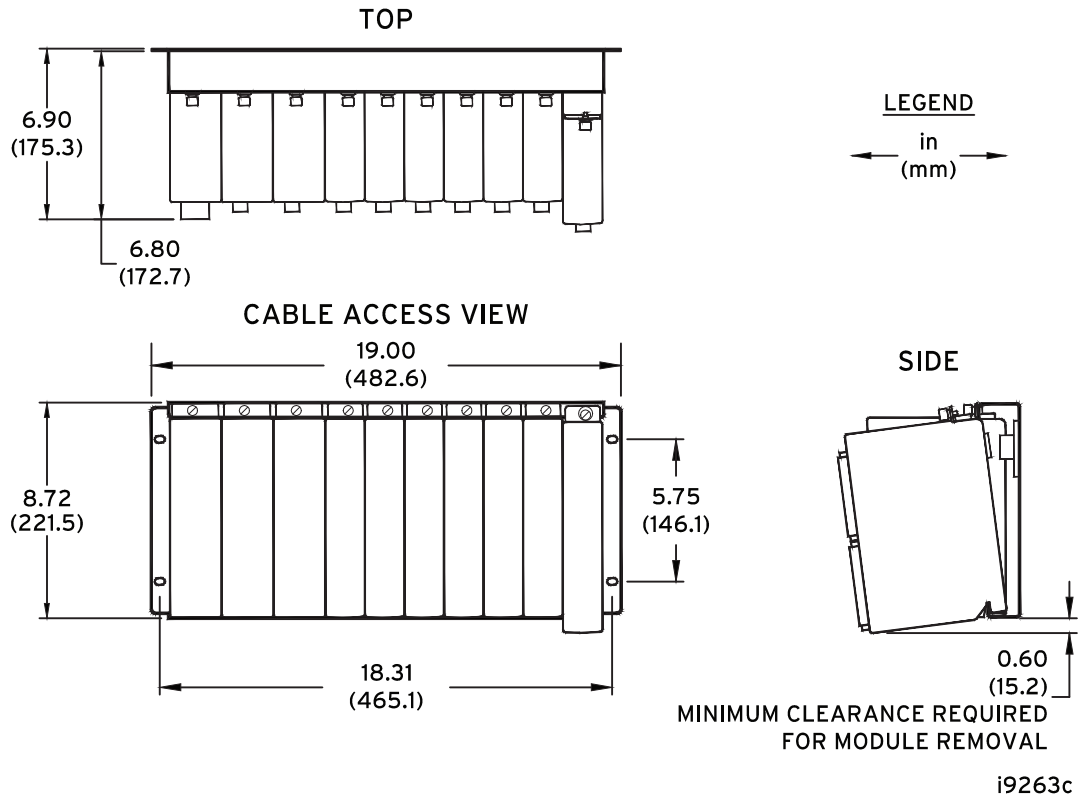

Figure 8 SEL-2240 10-Slot Rack- and Surface-Mount Dimensions

Note: The 10-slot backplane equipped with LDM is not compatible with surface mount.

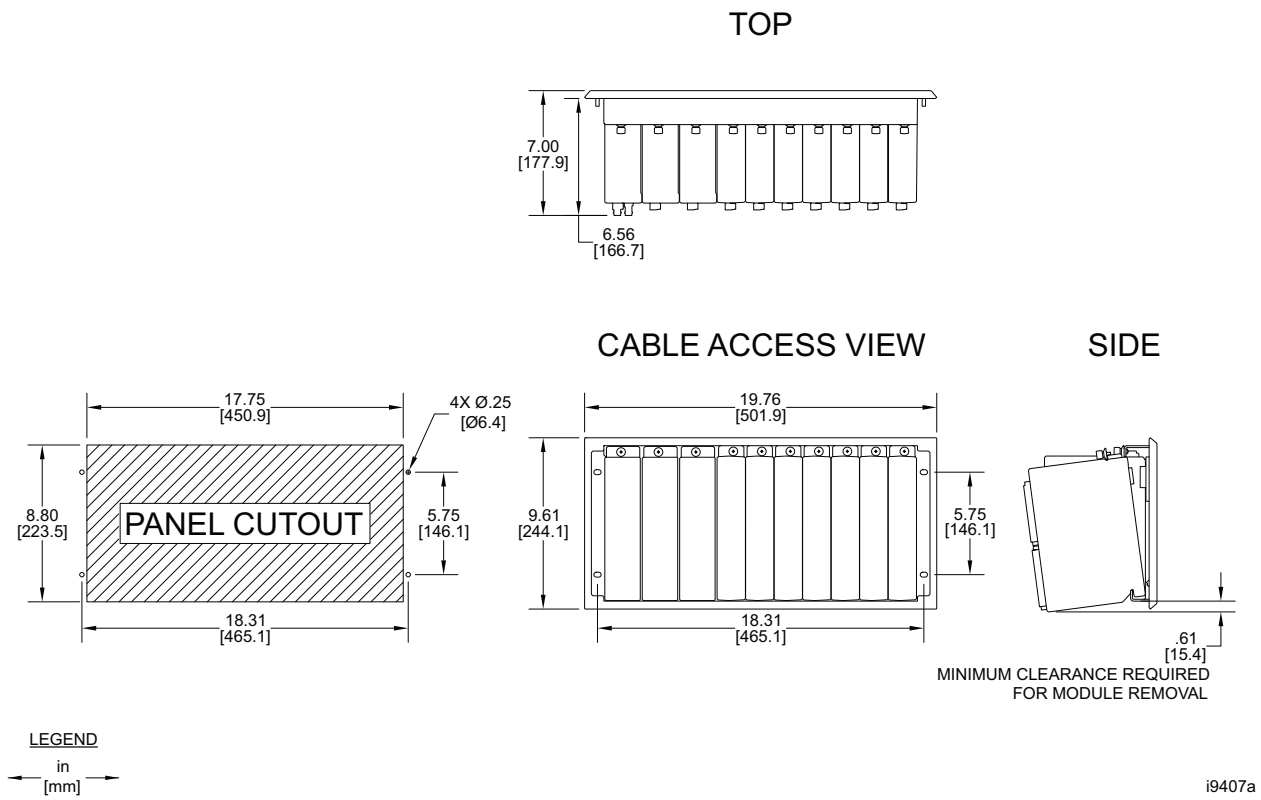

Figure 9 SEL-2240 for 10-Slot Panel-Mount Chassis

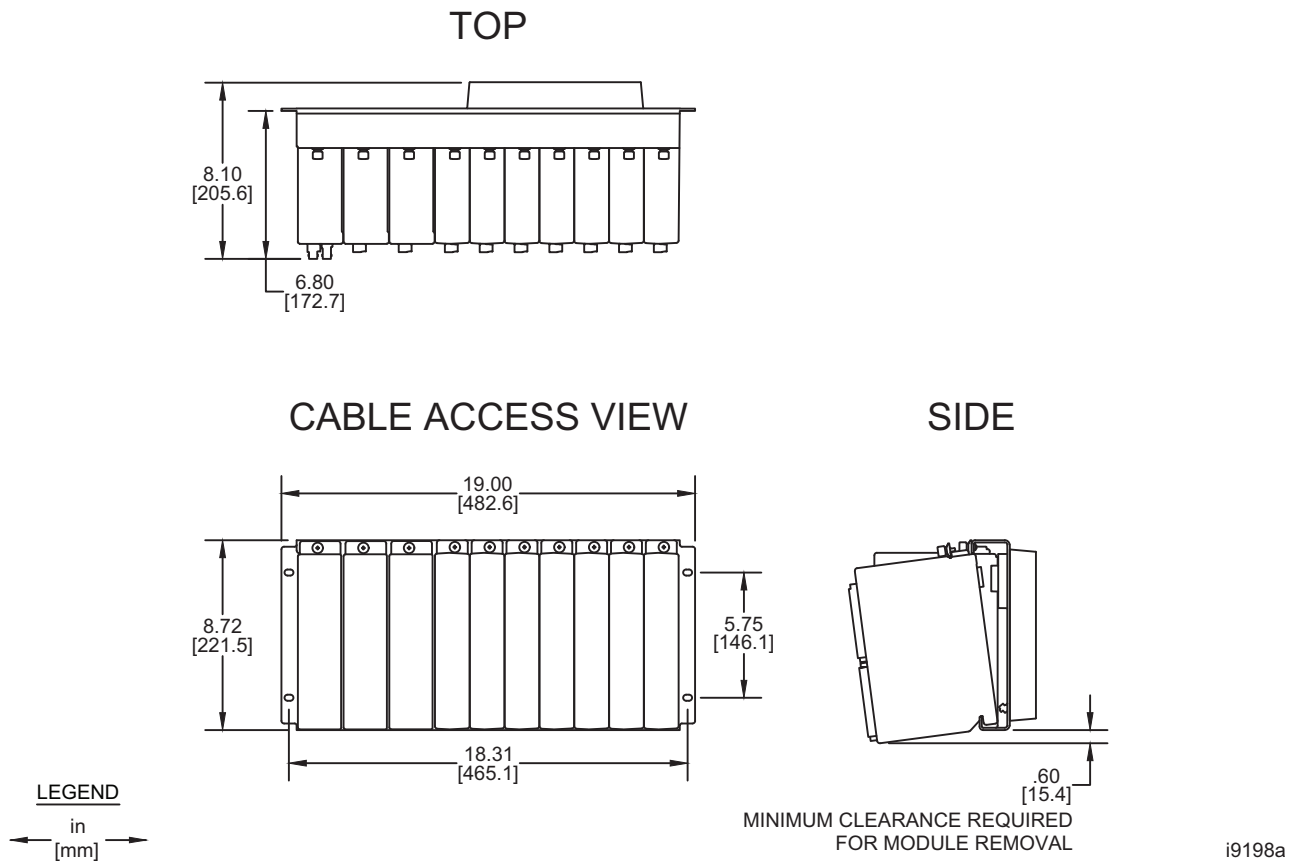

Figure 10 SEL-2240 Dimensions for 10-Slot Rack With 7-Inch, Color Touchscreen Display (Rack Mount)

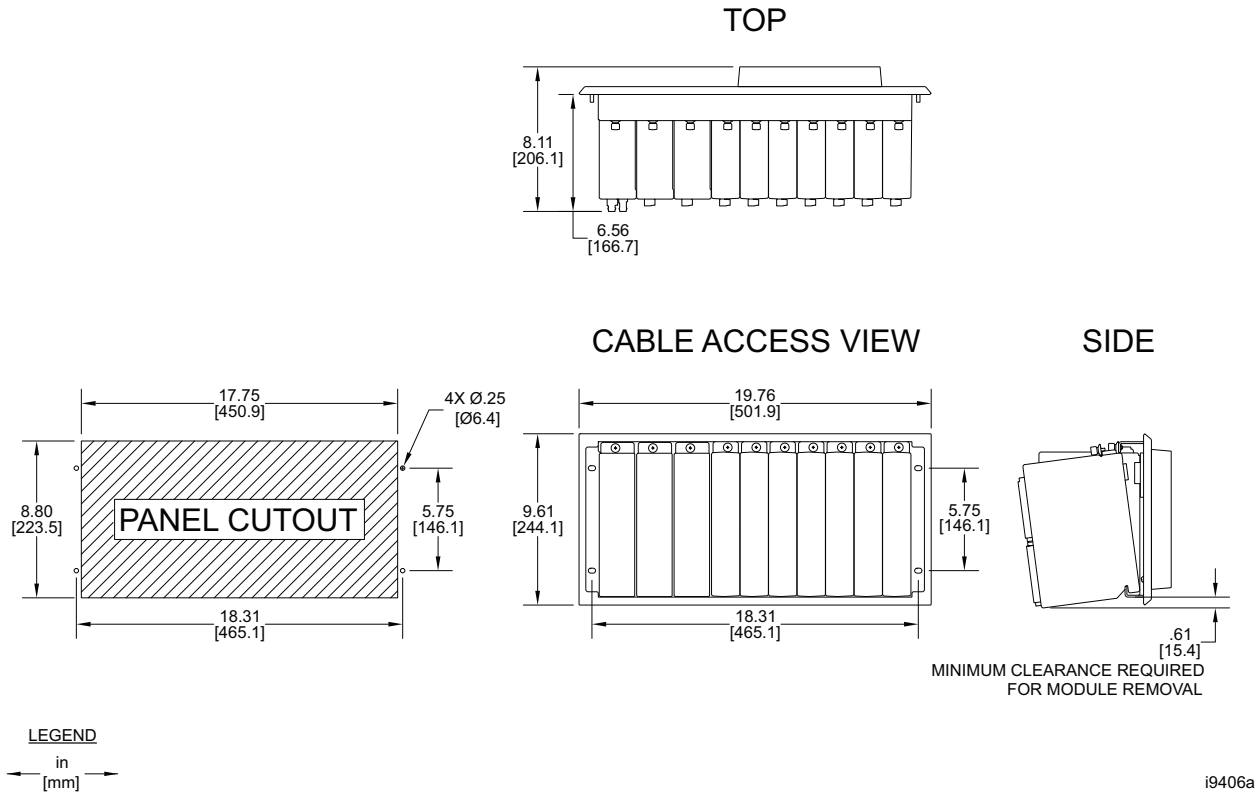

Figure 11 SEL-2240 Dimensions for 10-Slot Rack With 7-Inch, Color Touchscreen Display (Panel Mount)

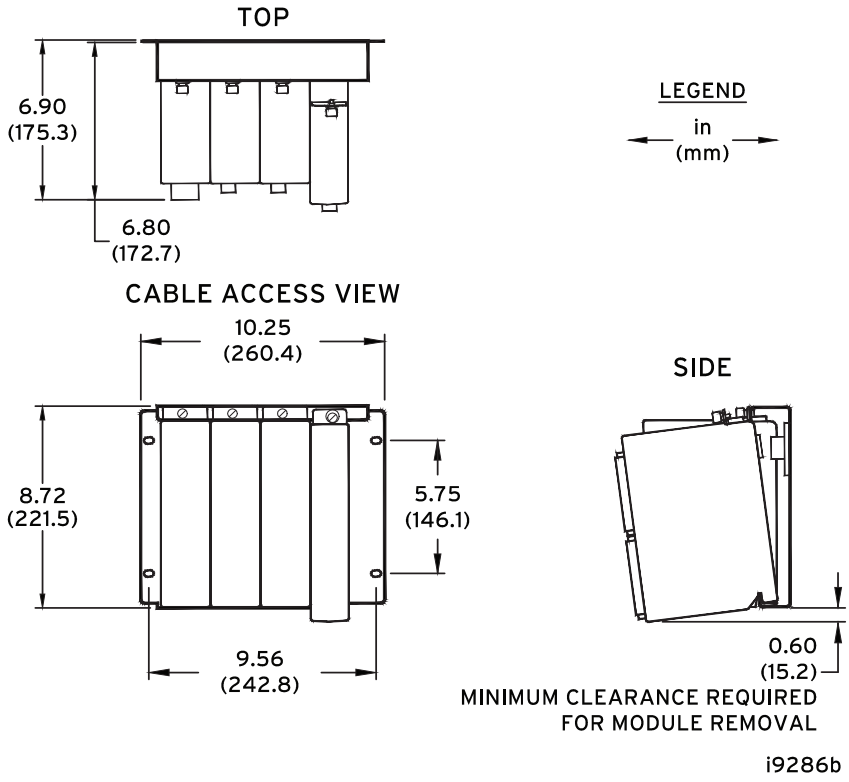

Figure 12 SEL-2240 4-Slot Rack- and Surface-Mount Dimensions

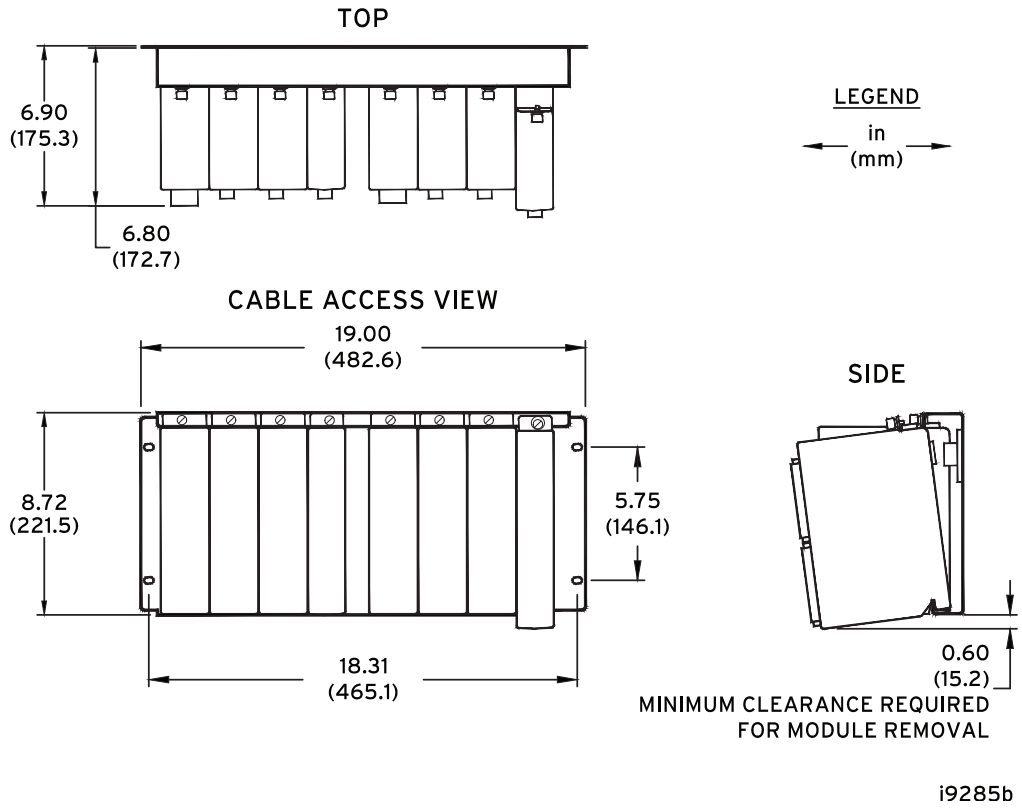

Figure 13 SEL-2240 Dual 4-Slot Rack- and Surface-Mount Dimensions

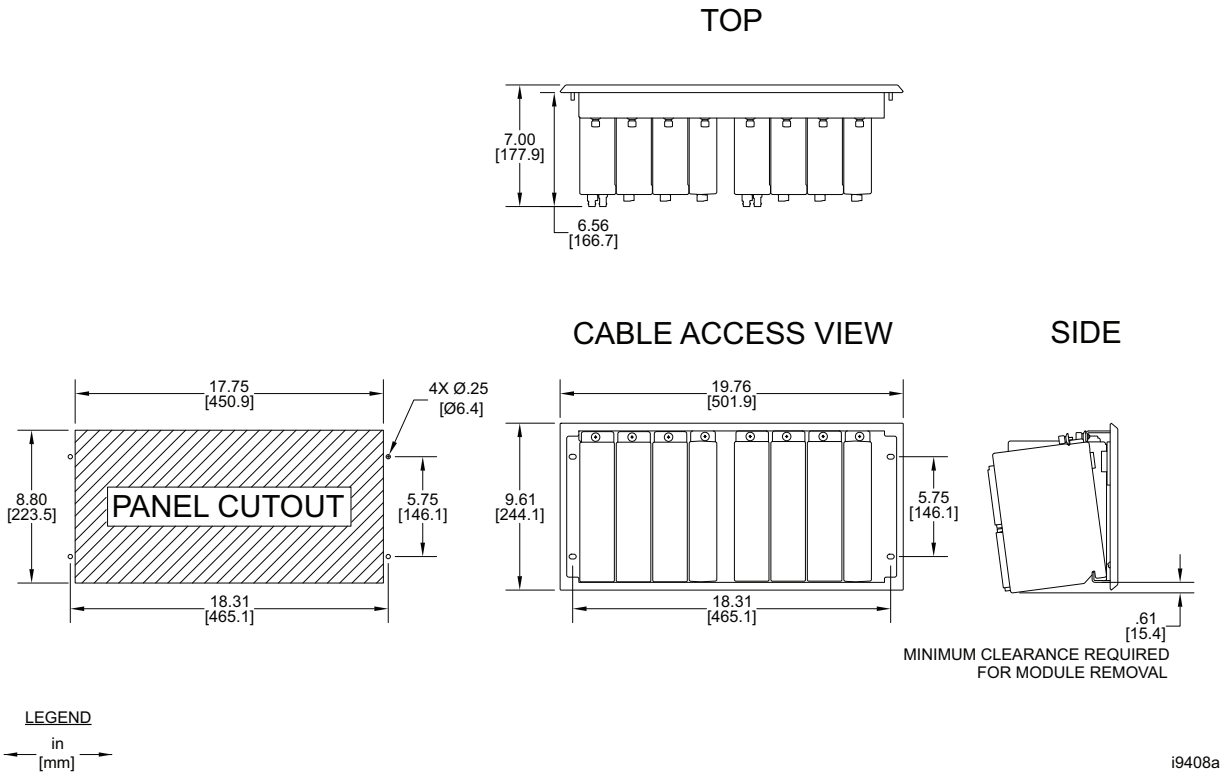

Figure 14 SEL-2240 for Dual 4-Slot Panel-Mount Dimensions

Protective Connector Covers

The SEL-2242 is shipped with protective covers installed in each backplane connector. Prior to installing any Axion modules, grasp either side of the connector cover and pull it straight out of the connector. We suggest that you leave the covers inserted in any unused slots in order to provide dust and mechanical protection.

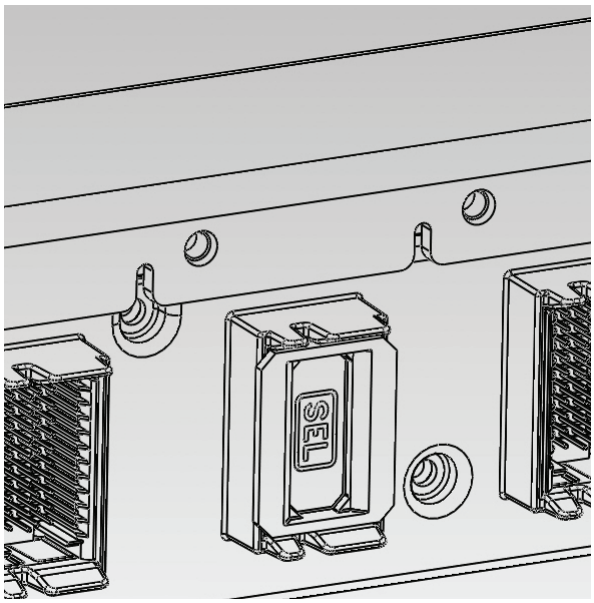

Figure 15 Protective Connector Cover

Specifications

Compliance

Designed and manufactured under an ISO 9001 certified quality management system

UL Listed to U.S. and Canadian safety standards (File E220228; NRAQ, NRAQ7)

CE Mark

UKCA Mark

Product Standards

IEC 60255-26:2013 - Relays and Protection Equipment: EMC
IEC 60255-27:2014 - Relays and Protection Equipment: Safety
IEC 60825-2:2004 +A1:2007 +A2:2010 for fiber-optic communications
IEC 61850-3:2013 - Comm Systems for Power Utility Automation

General

Operating and Storage Temperature Range

–40° to +85°C (–40° to +185°F)
Units should be stored and transported in their original packaging.

Note: Operating temperature evaluated for UL ambient 0° to 40°C.
Note: The optional front-panel LCD is impaired for temperatures below –20°C and above +70°C.

Operating Environment

Pollution Degree:	2
Overvoltage Category:	II
Insulation Class:	1
Relative Humidity:	5–95%, noncondensing
Maximum Altitude:	2000 m
Vibration, Earth Tremors:	Class 1

Backplane (SEL-2242)

Ethernet Port

Port:	1
Data Rate:	10/100 Mbps
Connector:	RJ45 Female
Protocol:	Engineering Access

Note: SEL-2242 Ethernet port is included with the optional touchscreen, 10-slot model only.

Fuse Rating

Non-Serviceable:	2.5 A, 125 V, time lag T

Type Tests

Note: To ensure protection-level EMI and EMC performance, type tests were performed using shielded Ethernet cables with the shield grounded at both ends of the cable.

Electromagnetic Compatibility Emissions

Conducted and Radiated Emissions (Class A):	CISPR 11:2009+A1:2010 CISPR 22:2008 FCC 15.107:2014 FCC 15.109:2014 47 CFR Part 15.109 47 CFR Part 15.107 ICES-003, Issue 6 Canada ICES-001 (A) / NMB-001 (A)

Electromagnetic Compatibility Immunity

Conducted RF Immunity:	IEC 61000-4-6:2013 Severity Level: 10 Vrms
Electrostatic Discharge Immunity:	IEC 61000-4-2:2008 IEEE C37.90.3-2001 Severity Level: 2, 4, 6, 8 kV contact discharge 2, 4, 8, 15 kV air discharge

Fast Transient/Burst Immunity:	IEC 61000-4-4:2012 Severity Level: 2 kV, 5 kHz on communications lines
Magnetic Field Immunity:	IEC 61000-4-8:2009 Severity Level: 1,000 A/m for 3 s 100 A/m for 60 s IEC 61000-4-9:2016 Severity Level: 1,000 A/m IEC 61000-4-10:2016 Severity Level: 100 A/m for 2 s at 100 kHz and 1 MHz
Power Supply Immunity:	IEC 61000-4-11:2004 IEC 61000-4-17:1999+ A1:2001+A2:2008 IEC 61000-4-29:2000
Radiated Radio Frequency:	IEC 61000-4-3:2006+A1:2007+A2:2010 Severity Level: 10 V/m IEEE C37.90.2-2004 Severity Level: 20 V/m
Slow Damped Oscillatory Waves:	IEC 61000-4-18:2006+A1:2010 Severity Level: Communications ports 1.0 kV peak common mode
Surge Withstand Capability:	IEEE C37.90.1-2012 Severity Level: 2.5 kV oscillatory 4 kV fast transient
Surge Immunity:	IEC 61000-4-5:2005 Severity Level per IEC 60255-26:2013*: Zone A: 2 kV line-to-line 4 kV line-to-earth

Environmental

Change of Temperature:	IEC 60068-2-14:2009 Severity Level: 5 cycles, 1°C per minute ramp –40° to +85°C
Cold, Operational and Cold, Storage:	IEC 60068-2-1:2007 Severity Level: 16 hours at –40°C
Damp Heat, Cyclic:	IEC 60068-2-30:2005 Severity Level: 12 + 12-hour cycle 25° to 55°C, 6 cycles, >93% RH
Damp Heat, Steady:	IEC 60068-2-78:2012 Severity Level: 40°C, 240 hours, >93% RH
Dry Heat, Operational and Dry Heat, Storage:	IEC 60255-1:2009 IEC 61850-3:2013 IEC 60068-2-2:2007 Severity Level: 16 hours at 85°C
Change of Temperature:	IEC 60068-2-14:2009 1 deg. per minute, –40° and +85°C, 5 cycles
Free Fall:	IEEE 1613-2009 Severity Level: 100 mm
Vibration:	IEC 60255-21-1:1988 Severity Level: Endurance Class 2 Response Class 2 IEC 60255-21-2:1988 Severity Level: Shock Withstand, Bump Class 1 Shock Response Class 2 IEC 60255-21-3:1993 Severity Level: Quake Response Class 2

Safety

Enclosure Protection*:	IEC 60529:1989+A1:1999+A2:2013 Severity Level: IP4X on all sides
Dielectric Strength:	IEC 60255-27:2013 IEEE C37.90-2005 Severity Level: 2000 Vdc Ethernet ports Type tested for one minute
Impulse:	IEC 60255-27:2013 IEEE C37.90-2005 Severity Level: 1.5 kV Ethernet ports

* Self declared rating.

Technical Support

We appreciate your interest in SEL products and services. If you have questions or comments, please contact us at:

Schweitzer Engineering Laboratories, Inc.
2350 NE Hopkins Court
Pullman, WA 99163-5603 U.S.A.
Tel: +1.509.338.3838
Fax: +1.509.332.7990
Internet: selinc.com/support
Email: info@selinc.com

Notes

SCHWEITZER ENGINEERING LABORATORIES, INC.
2350 NE Hopkins Court • Pullman, WA 99163-5603 U.S.A.
Tel: +1.509.332.1890 • Fax: +1.509.332.7990
selinc.com • info@selinc.com

PDS2242-01