

EPX Panel

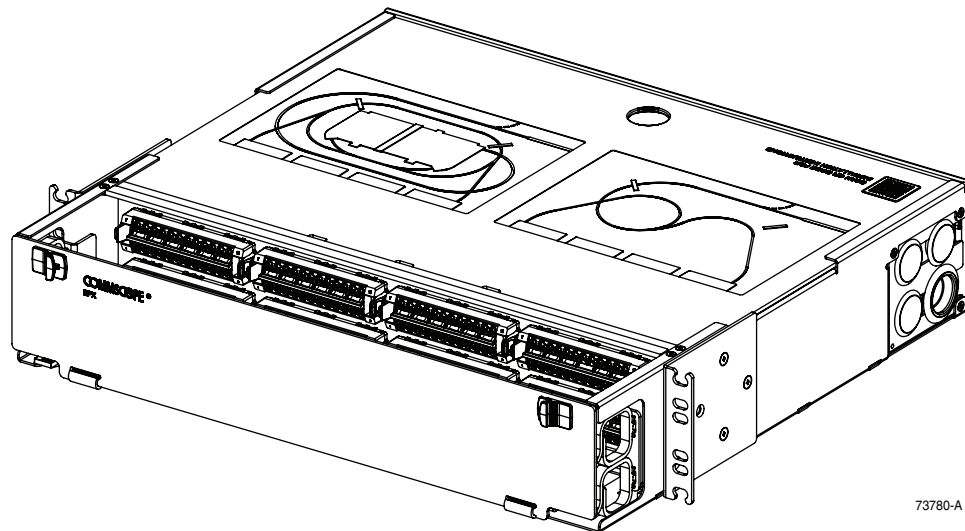


Figure 1. EPX Panel (2U Shown)

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1 INTRODUCTION

The CommScope EPX Fiber Panel line is a flexible solution which allows interchangeable MPO modules, adapter packs, and splice cassettes, including in-panel splicing using splice trays. It is available in G2 or LGX/1000 bulkheads in 1U, 2U, and 4U sizes, sliding or fixed. This user manual describes the EPX panel and provides procedures to unpack the panel, mount the panel on a rack, install modules, and route cables. In addition, this manual tells how to operate the panel and how to obtain technical assistance if needed.

1.1 EPX G2 Panel Configurations Covered by This User Manual

Table 1 lists the EPX G2 panel configurations covered in this user manual.

Table 1: EPX G2 Configurations

Material ID (MID)	Catalog Number
760249998	EPX-1U-MOD-ENC
760251042	EPX-1U-MOD-ENC-FX
760251044	EPX-2U-MOD-ENC
760251046	EPX-2U-MOD-ENC-FX
760251048	EPX-4U-MOD-ENC
760251050	EPX-4U-MOD-ENC-FX
760251098	EPX-1U-MOD-OPEN-FX

1.2 EPX LGX/1000 Configurations Covered by This User Manual

Table 2 lists the EPX LGX/1000 panel configurations covered in this user manual.

Table 2: EPX LGX/1000 Configurations

Material ID (MID)	Catalog Number
760249997	EPX-1U-PNL-ENC
760251043	EPX-1U-PNL-ENC-FX
760251045	EPX-2U-PNL-ENC
760251047	EPX-2U-PNL-ENC-FX
760251049	EEXP-4U-PNL-ENC
760251051	EPX-4U-PNL-ENC-FX
760251099	EPX-1U-PNL-OPEN-FX

1.3 Available Accessories

For a listing of the available EPX accessories, see Table 3.

Table 3: Available EPX Accessories

Material ID (MID)	Catalog Number	Description
760241378	AGL-SPLICE-48	48f stranded splice tray
760243494	AGL-MF-SPLICE-12	12f ribbon splice tray
760039875	G2-SRF	Liquid-tight cable fitting kit for small-diameter cables
760039883	G2-23BRKT	Frame mounting bracket kit for 23" frames and ETSI frames
760058677	RMB-6-1/2	InstaPATCH Plus attachment bracket, rack mounted, six 1/2-inch fittings
760058685	RMB-6-3/8	InstaPATCH Plus attachment bracket, rack mounted, six 3/8-inch fittings
760058701	RMB-5-3/4	3/4" Rack MTG bracket – 5X
760122895	BAF-1/2-NPT	Bracket for Armor Fitting, 1/2 NPT
760122903	BAF-3/4-NPT	Bracket for Armor Fitting, 3/4 NPT
760122911	BAF-1-NPT	Bracket for Armor Fitting, 1 NPT
760122929	BAF-1-1/4-NPT	Bracket for Armor Fitting, 1-1/4 NPT
760122937	BAF-1-1/2-NPT	Bracket for Armor Fitting, 1-1/2 NPT

1.4 Parts List

Verify parts against [Table 4](#) below.

Table 4: Parts List

Quantity	Description
1	Shelf assembly (fixed or sliding)
4	#12-24 x 1/2-inch screws for 19-inch (483mm) rack mounting
4	M6 x 12 mm screws for ETSI rack mounting
2	Liquid-tight strain relief fittings (black)
4	Cable ties
1	Hook and loop kit
4	Snap-Fit Gland Washers (1U ENC only). See Section 6.2 on page 23

1.5 Important Safety Cautions

When installing or operating the panel, observe the safety cautions:

- To reduce the risk of fire, electric shock, and injury to persons, read, understand, and adhere to the following instructions as well as any warnings marked on the product.
- This product has a remote risk of electric shock. Never install the product in wet conditions or during lightning storms. Never touch uninsulated communication wires or terminals.
- Disconnected optical components may emit invisible optical radiation that can damage your eyes. Never look directly into an optical component that may have a laser coupled to it. Serious and permanent retinal damage is possible. If accidental exposure to laser radiation is suspected, consult a physician for an eye examination.
- Wearing safety glasses during installation of this panel is recommended. Although standard safety glasses provide no protection from potential optical radiation, they offer protection from accidental airborne hardware and cleaning solvents

1.6 Precautions

When installing or operating the panel, observe the following precautions:

- Fiber optic trunk cable and jumper performance is sensitive to bending, pulling, and crushing. Minimum bend radius must be maintained during installation per the manufacturer's specification. Appropriate pulling grips must be used during installation, and pulling forces shall not exceed manufacturer's recommendations.
- All wiring that connects to this equipment must meet applicable local and national building codes and network wiring standards for communication cable.
- **IMPORTANT:** Dust covers are installed in the ports to protect the fibers connected to the back of the ports. Do not remove a dust cover from a port until you connect a patch cord to that port. If you remove a patch cord later, replace the dust cover in the port.
- **Prior** to installation, clean the trunk cable and jumper connectors per the manufacturer's recommendations.
- Isopropyl alcohol is flammable, and can cause eye irritation on contact. If eye contact occurs, flush with water for at least 15 minutes. In case of ingestion, consult a physician. Use only in well ventilated areas.
- Care should be taken not to compromise the stability of the rack by installation of this equipment.

1.7 Related Publications

The following publication is available by contacting the CommScope Support Center at <https://www.commscope.com/SupportCenter>

Title	Number
EPX Panel Quick Start	TC-96301-IP

2 PRODUCT DESCRIPTION

2.1 General Description

The EPX Panel is a 19-inch rack- or cabinet-mount fiber optic patch panel intended for indoor use. Frame adapter kits are available which enable the EPX panel to be mounted in a 23-inch or ETSI equipment rack or cabinet. The panel is available in one, two, or four rack unit size (abbreviated as 1U, 2U, or 4U), on either fixed or sliding trays, per customer order. Recess mounting options for the EPX panel are 3-inch recess and 5-inch recess.

Transitions from patch cords to cable are accomplished through the customer choice of connection modules including adapter packs, MPO modules, or splice cassettes. In-panel splicing is possible using Agile splice trays. The EPX bulkhead may be either LGX/1000 style with three modules per rack unit, or G2 Style with four modules per rack unit.

2.2 EPX Panel as Shipped

Figure 2 shows product features of interest to the user in the EPX panel as shipped. All panels are shipped with no modules or splice trays installed. Module installation and splicing are accomplished on-site following the instructions provided in this user manual.

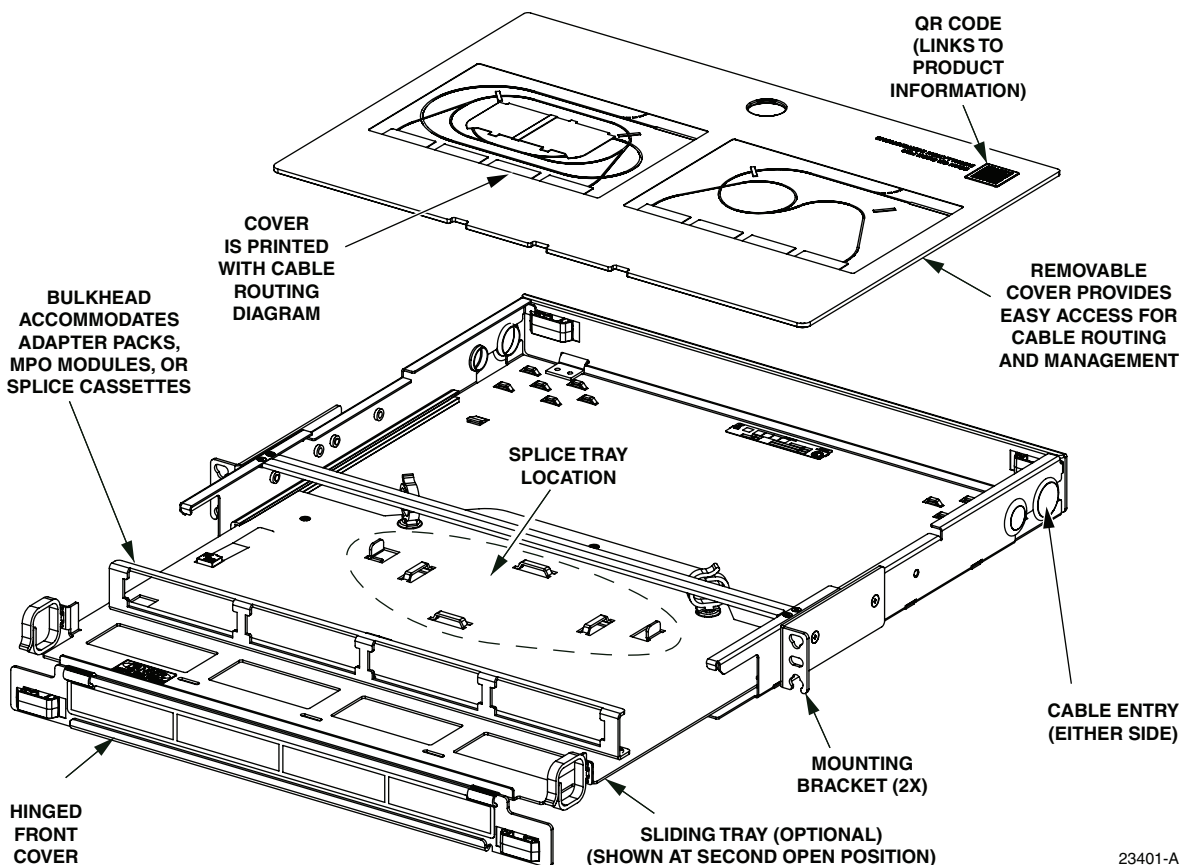
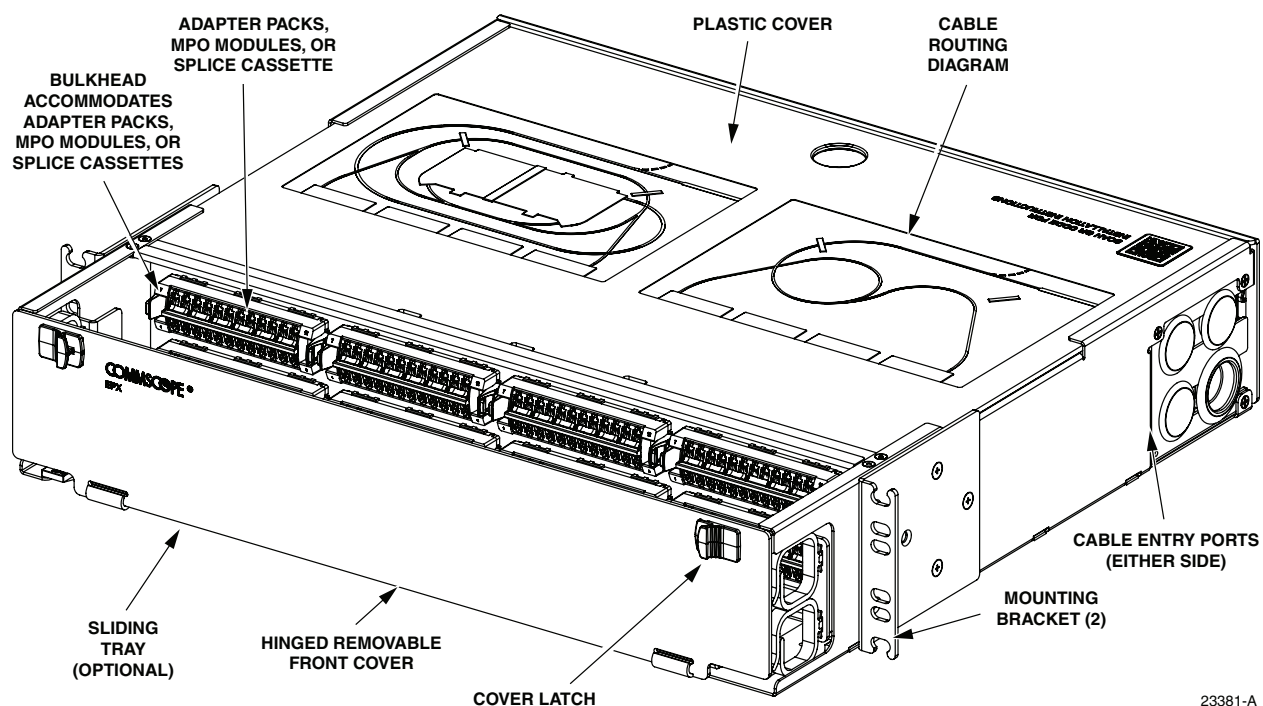


Figure 2. EPX 1U Panel as Shipped

2.3 Main Product Features

Figure 3 shows a loaded panel. The main features include the following (clockwise from top right call-out).

- **Plastic Cover**—can be removed providing top access to the panel.
- **Cable Routing Diagram**—is printed on cover for guidance in installing cables.
- **Cable Entry Ports**—are available for securing rear entry cables. The panel is designed for use of cable glands that mount within the cable entry holes. Refer to [Section 2.4 on Page 8](#).
- **Mounting Bracket (one on each side)**—provide mounting of the panel in a frame or cabinet. The panel is shipped with 19-inch mounting brackets. Kits are available permitting mounting in a 23-inch or ETSI rack or cabinet.
- **Cover Latch**—when slid toward center, releases cover so it can swing into open position.
- **Hinged Removable Front Cover**—drops down 90 degrees to provide open access to the panel interior. For operation refer to [Section 7 on Page 26](#).
- **Sliding Tray (Optional)**—slides out to provide additional access for connector module and splice tray installation. For operation refer to [Section 5.4 on Page 15](#).
- **Bulkhead**—supports connection modules per customer order. Options include adapter packs, MPO modules, and splice cassettes. The EPX bulkhead may be either LGX/1000 style with three modules per rack unit, or G2 Style with four modules per rack unit.
- **Adapter Packs (or MPO Module or Splice Cassette)**—interface between patch cords and facility cables.



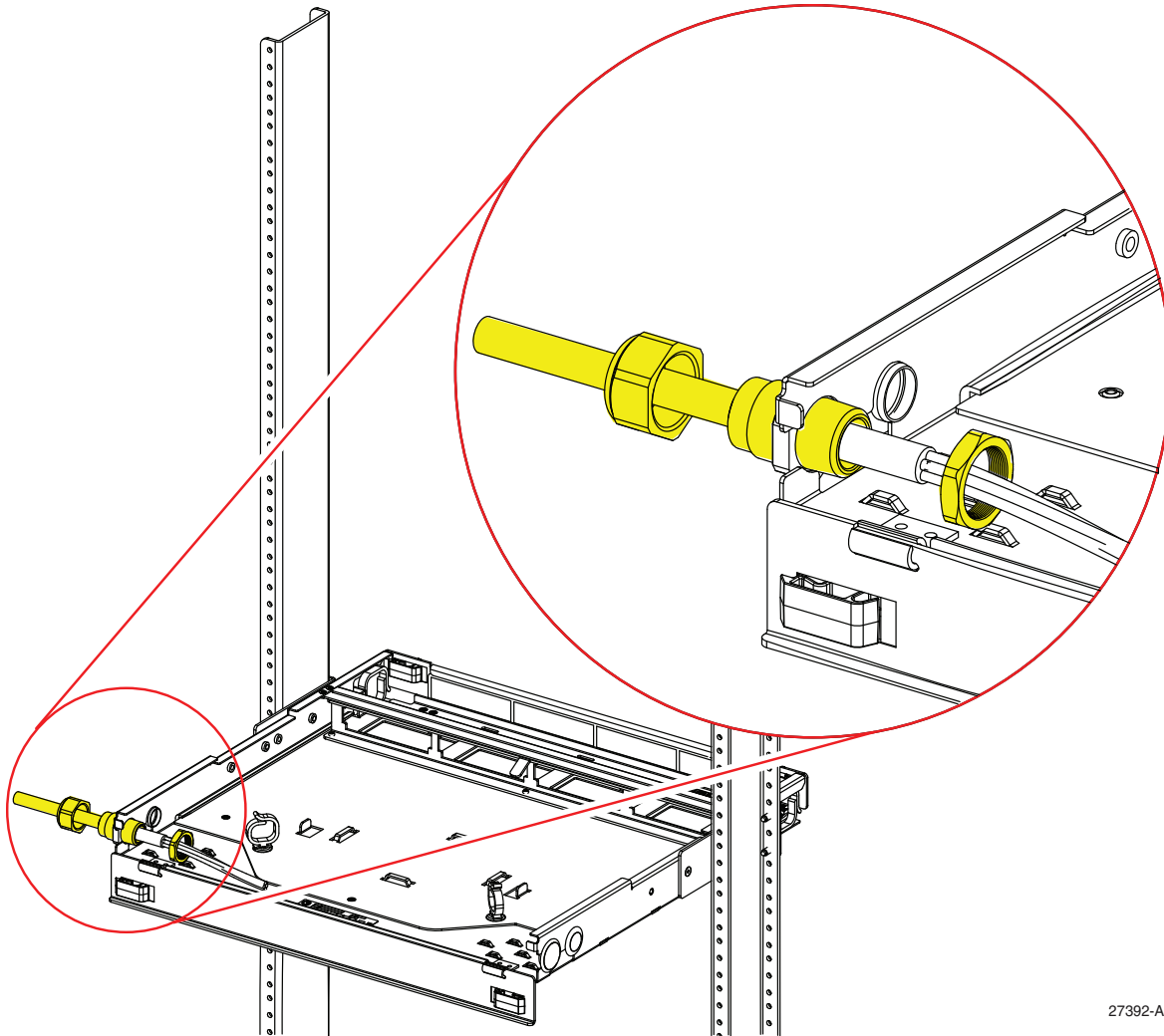
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Figure 3. EPX panel (2U Shown)

2.4 Cable Gland Feature

The EPX panel is designed for connection of fiber cables using cable glands inserted into cable entry slots provided (see [Figure 4](#)). For more information, refer to [Section 6.2 on page 23](#)

Note: Another method for securing fiber cables is the use of optional rack mounted brackets, which is not covered here. Cables can also be secured with tie wraps and the lances provided in the back of the panel.



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Figure 4. Direct Connection of Fiber Cables Using Fiber Glands

SMALLER DIAMETER CABLES

For smaller diameter cables, the G2-SRF kit (ordered separately) (shown in [Figure 5](#)) provides two liquid-tight fittings with a smaller inside diameter. Smaller diameter fittings would be more appropriate for these cables.

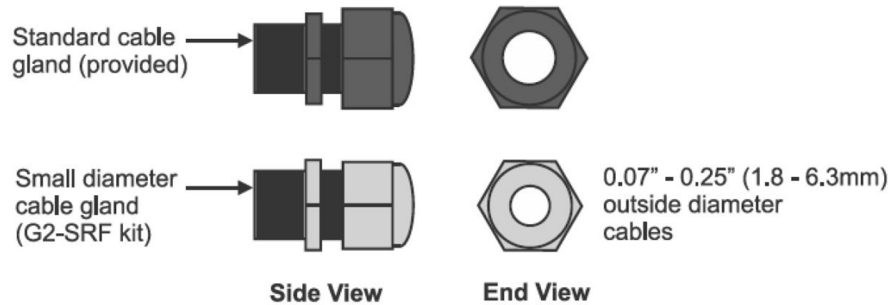


Figure 5. Fittings for Smaller Diameter Cable

2.5 Specifications and Dimensions

[Figure 6](#) shows dimensions for an EPX open fixed panel. [Figure 7](#) shows dimensions for an EPX enclosed panel. [Table 5](#) lists specifications for the EPX panel except for weight. [Table 6](#) lists weights for all configurations of the EPX panel.

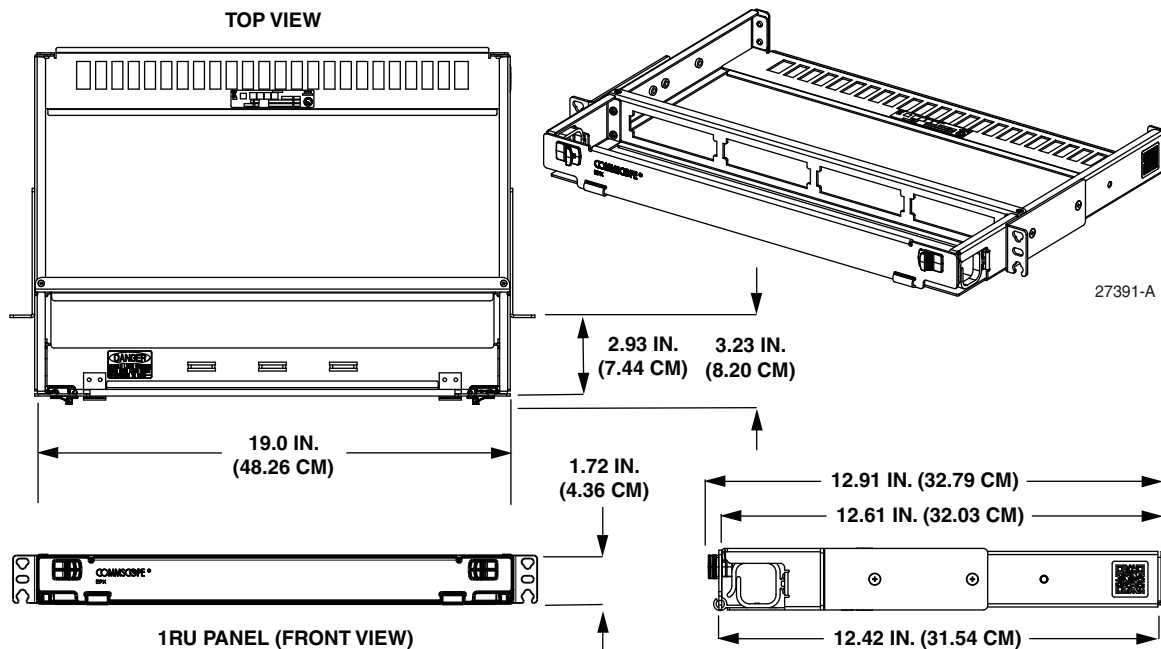


Figure 6. Dimensions of EPX Open Fixed Panel

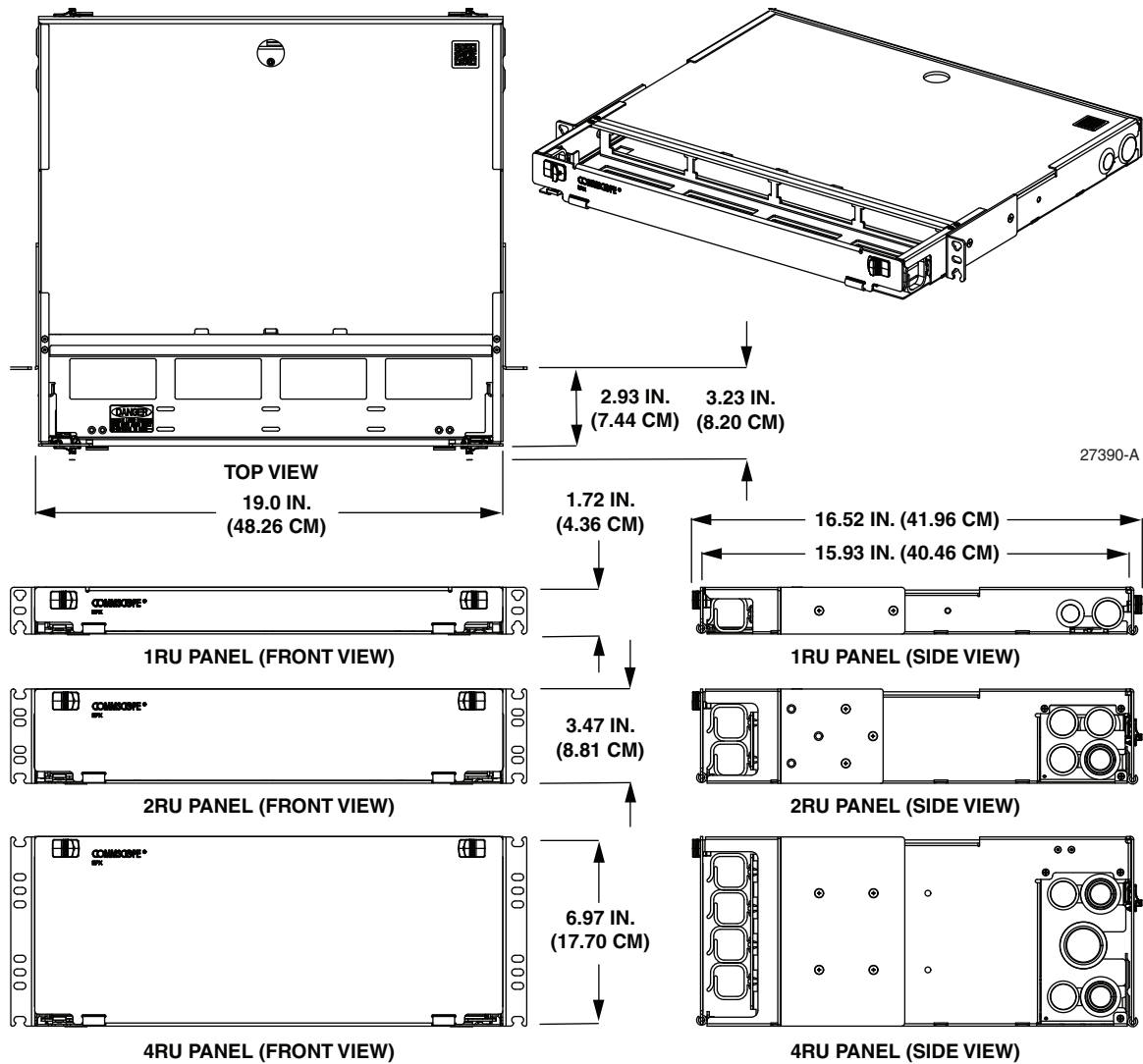


Figure 7. Dimensions of EPX Enclosed Panel

Table 5: EPX Panel Specifications (Except Weight)

Parameter	EPX 1U	EPX 2U	EPX 4U
Height	1.72 in (4.36 cm)	3.47 in. (8.81 cm)	6.97 in (17.70 cm)
Width	19.0 in. (48.26 cm)	19.0 in. (48.26 cm)	19.0 in. (48.26 cm)
Depth	16.52 in. (41.96 cm)	16.52 in. (41.96 cm)	16.52 in. (41.96 cm)
Side ports	4	8	10

Table 6: EPX Panel Weight

MID (Part Number)	Catalog Number (ecatalog)	Net Weight (lb.)	Gross Weight (lb.)
760251098	EPX-1U-MOD-OPEN-FX	2.33	4.91
760251099	EPX-1U-PNL-OPEN-FX	2.60	5.18
760249997	EPX-1U-PNL-ENC	7.91	10.58
760249998	EPX-1U-MOD-ENC	7.78	10.45
760251042	EPX-1U-MOD-ENC-FX	6.60	9.27
760251043	EPX-1U-PNL-ENC-FX	6.70	9.37
760251044	EPX-2U-MOD-ENC	9.88	12.84
760251045	EPX-2U-PNL-ENC	10.15	13.11
760251046	EPX-2U-MOD-ENC-FX	7.98	10.94
760251047	EPX-2U-PNL-ENC-FX	8.34	11.30
760251048	EPX-4U-MOD-ENC	16.40	20.60
760251049	EPX-4U-PNL-ENC	16.90	21.10
760251050	EPX-4U-MOD-ENC-FX	14.30	18.52
760251051	EPX-4U-PNL-ENC-FX	14.88	19.10

3 UNPACKING AND INSPECTION

Use the following procedure to unpack and inspect the product.

1. Inspect the exterior of the shipping container(s) for evidence of rough handling that may have damaged the components in the container.
2. Unpack each container while carefully checking the contents for damage.
3. If damage is found or parts are missing, contact the CommScope Support Center using the URL: <http://www.commscope.com/SupportCenter>
4. Save any damaged cartons for inspection by the carrier.

4 OVERVIEW OF INSTALLATION

Installing the panel and accessories involves the following activities:

- Determining rack size and mounting hardware (covered in [Section 5.1 on Page 12](#))
- Mounting the panel in an equipment rack or cabinet (covered in [Section 5.2 on Page 13](#))
- Opening the front door of the panel (covered in [Section 5.3 on Page 14](#))
- Operating the sliding tray if panel has sliding tray (covered in [Section 5.4 on Page 15](#))
- Installing adapter packs if used (covered in [Section 5.5 on Page 16](#))
- Installing MPO modules if used (covered in [Section 5.6 on Page 17](#))
- Installing splice cassettes if used (covered in [Section 5.7 on Page 19](#))
- Installing Agile splice trays if used (covered in [Section 5.8 on Page 20](#))
- Installing field-terminated cables if used (covered in [Section 5.9 on Page 22](#))

5 INSTALLING THE PANEL

5.1 Determining Rack Size and Mounting Hardware

The panel is shipped with mounting brackets suitable for mounting on a 19-inch equipment rack or cabinet. Accessory kits are available for 23-inch or ETSI mounting.

Refer to the following guidelines.

- **For 23-inch (584mm) rack** – Use the G2-23BRKT accessory kit (available separately) and install two conversion brackets to pre-installed mounting brackets, using the four #10-32 x 3/8-inch conversion screws included in accessory kit. Use one conversion bracket and two screws per side. Mount panel to rack using four #12-24 x 1/2-inch screws (provided as part of basic panel).
- **For ETSI rack** – Use the G2-23BRKT accessory kit (available separately) and install one conversion bracket to either of the pre-installed mounting brackets, using two of four #10-32 x 3/8-inch conversion screws included in accessory kit. Shelf will not be centered when mounted in rack. Mount panel to rack using four M6 x 12mm screws (provided as part of basic panel).

5.2 Mounting Panel on Rack

The panel is shipped with mounting brackets suitable for mounting on a 19-inch equipment rack or cabinet. If mounting on a 23-inch or ETSI equipment rack or cabinet, see [Section 5.1 on Page 12](#). Install two screws on each side of the panel.

Use the following procedure, referring to [Figure 8](#).

1. Install the bottom two screws at the desired panel location.
2. Set the panel into position on the screws just installed.
3. Secure the panel to the rack by installing the remaining two mounting screws.

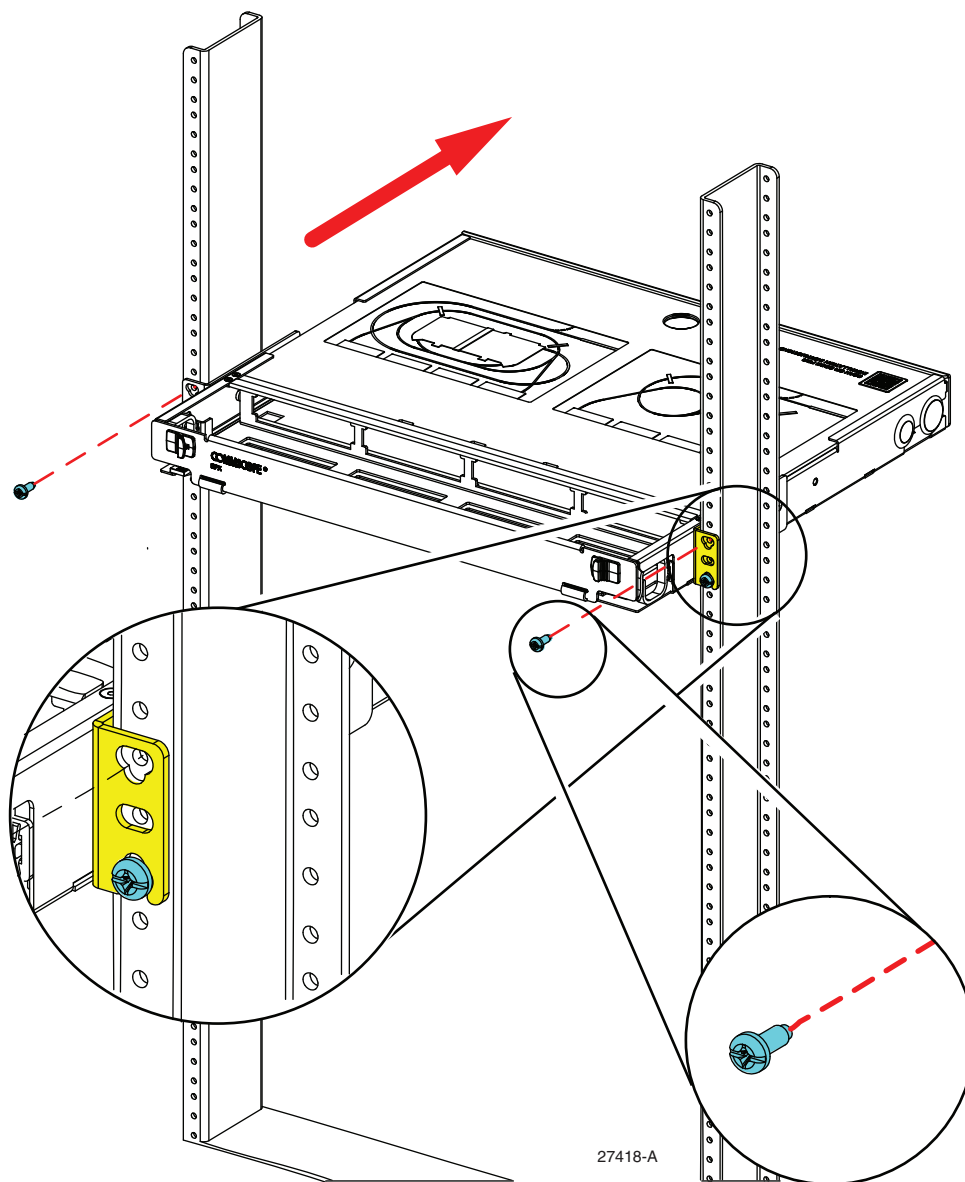
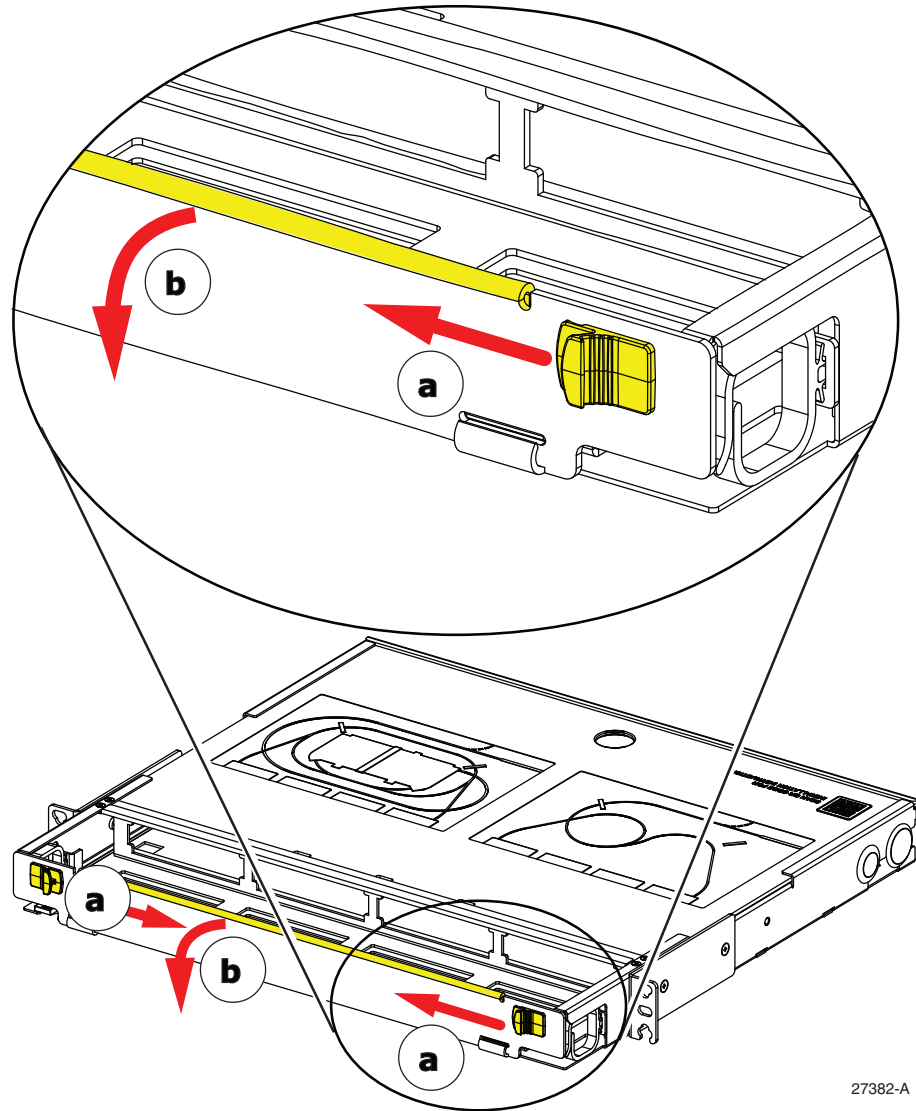


Figure 8. Mounting the EPX Panel (1U Panel Shown)

5.3 Opening the Front Door

To open the front door: (a) move the door latch inward and (B) open the door allowing it to hang down until flat with the frame. Refer to [Figure 9](#).



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Figure 9. Opening the Front Door

5.4 Operating the Sliding Tray (If Panel Has Sliding Tray)

Some panels are equipped with a sliding tray (optional). Panels with a sliding tray have a tray release button and tray retainer clip designed to ensure that the drawer is opened carefully and remains open until work in the drawer is completed. This item looks the same and operate the same on the 1U, 2U, and 4U panels.

To release a closed drawer, press the release button down, as shown in [Figure 10](#) (c), and slide the drawer out to the first detent (d).

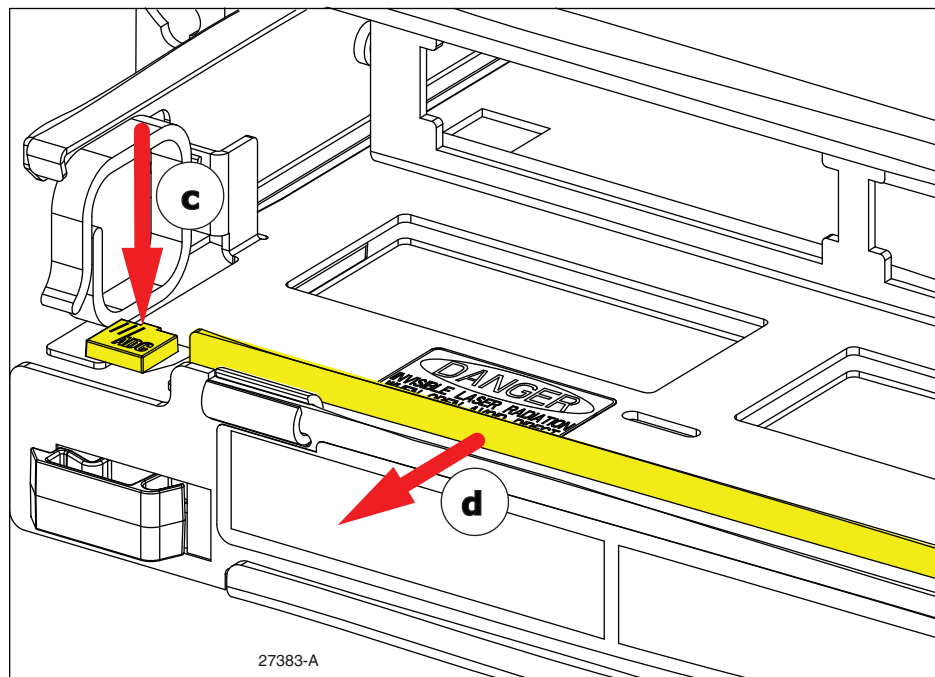


Figure 10. Releasing Closed Drawer to Open It

5.5 Installing Adapter Packs

Align the adapter pack with the selected location in the bulkhead. Push in and secure with push in pin if present (LGX/1000 only). Refer to [Figure 11](#) and [Figure 12](#).

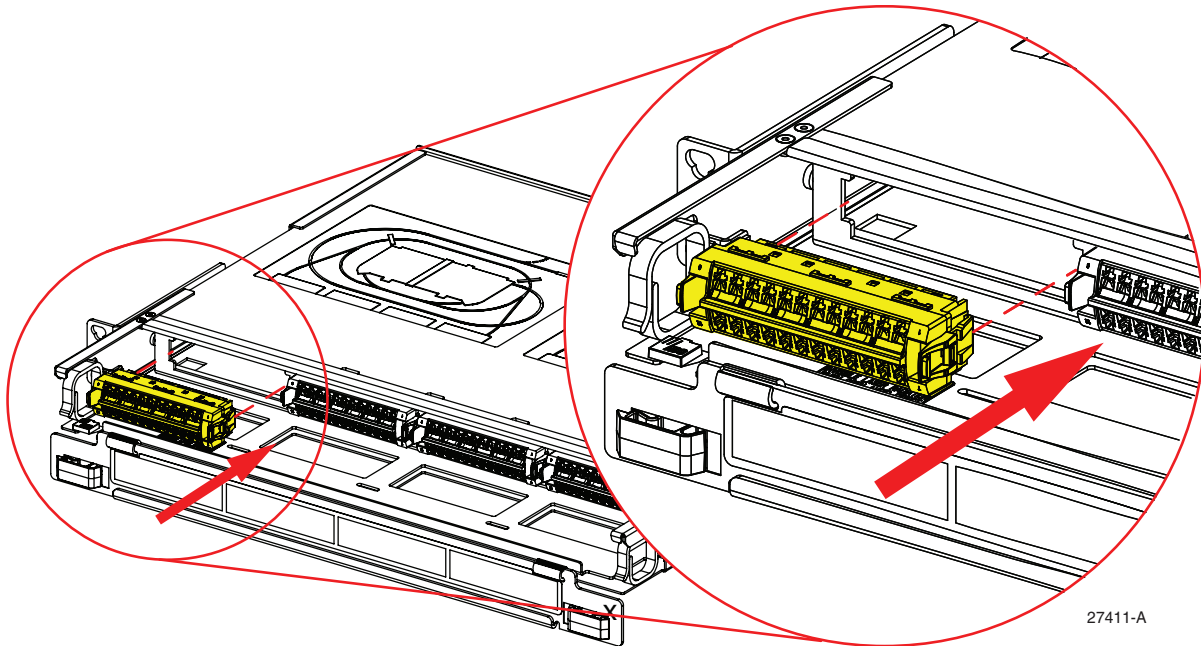


Figure 11. Installing Adapter Packs (G2)

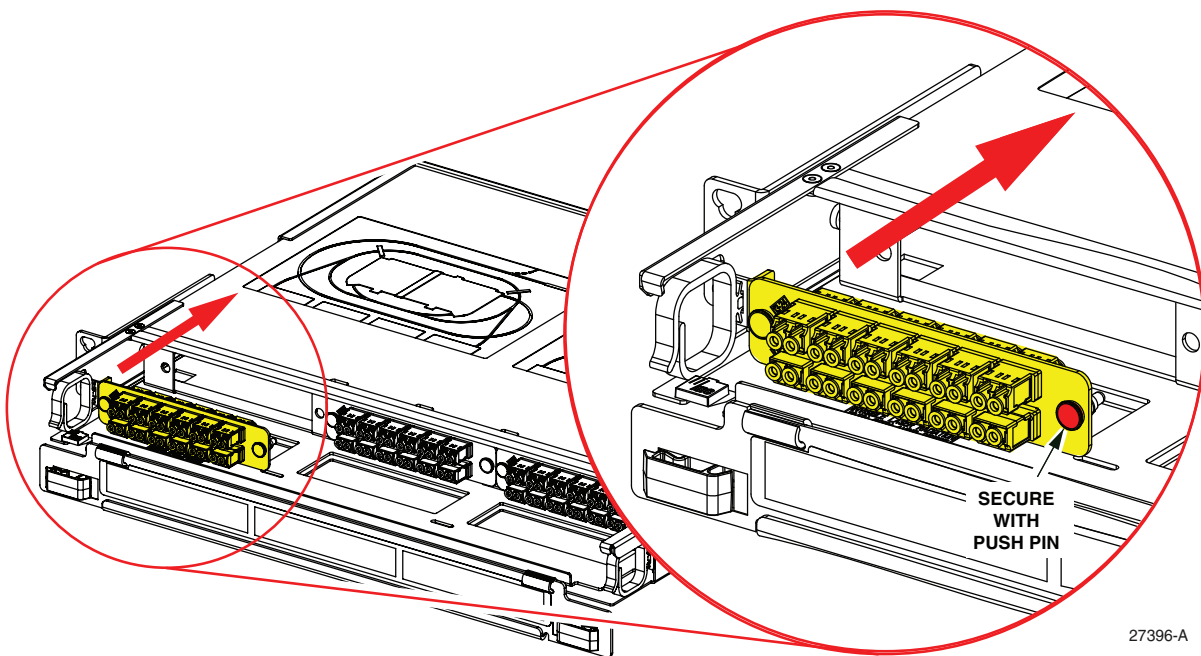


Figure 12. Installing Adapter Packs (LGX/1000)

5.6 Installing MPO Modules

1. Align the MPO module with the selected location in the bulkhead. Push in and secure with push in pin if present (LGX/1000 only). Refer to [Figure 13](#) and [Figure 14](#).

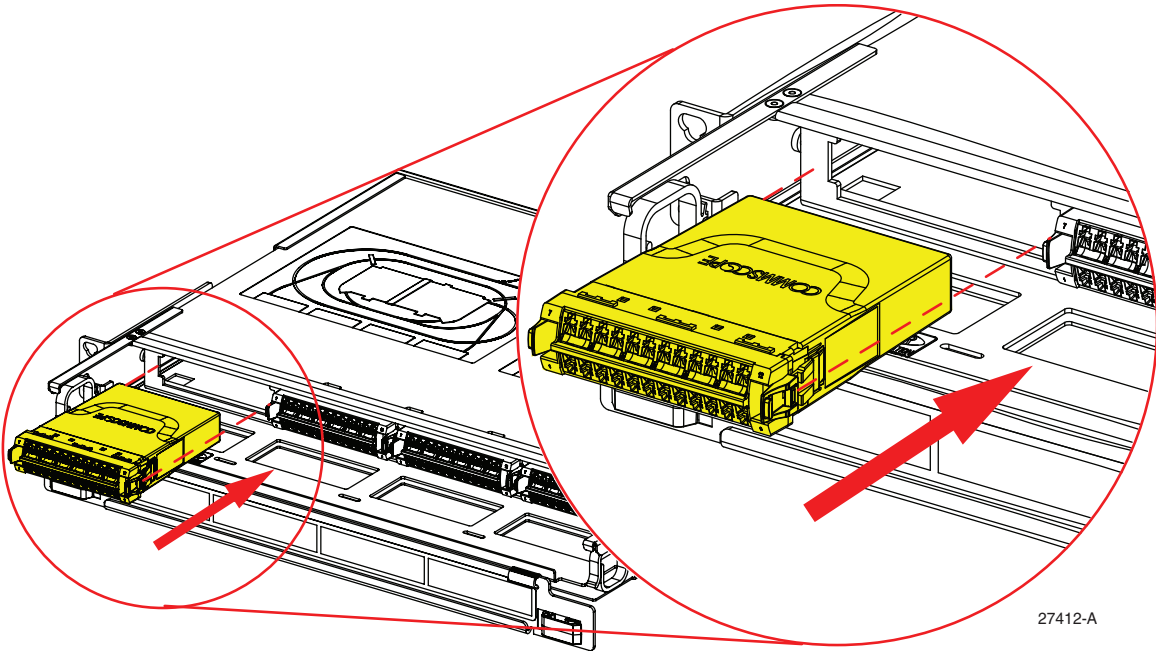


Figure 13. Installing MPO Modules (G2)

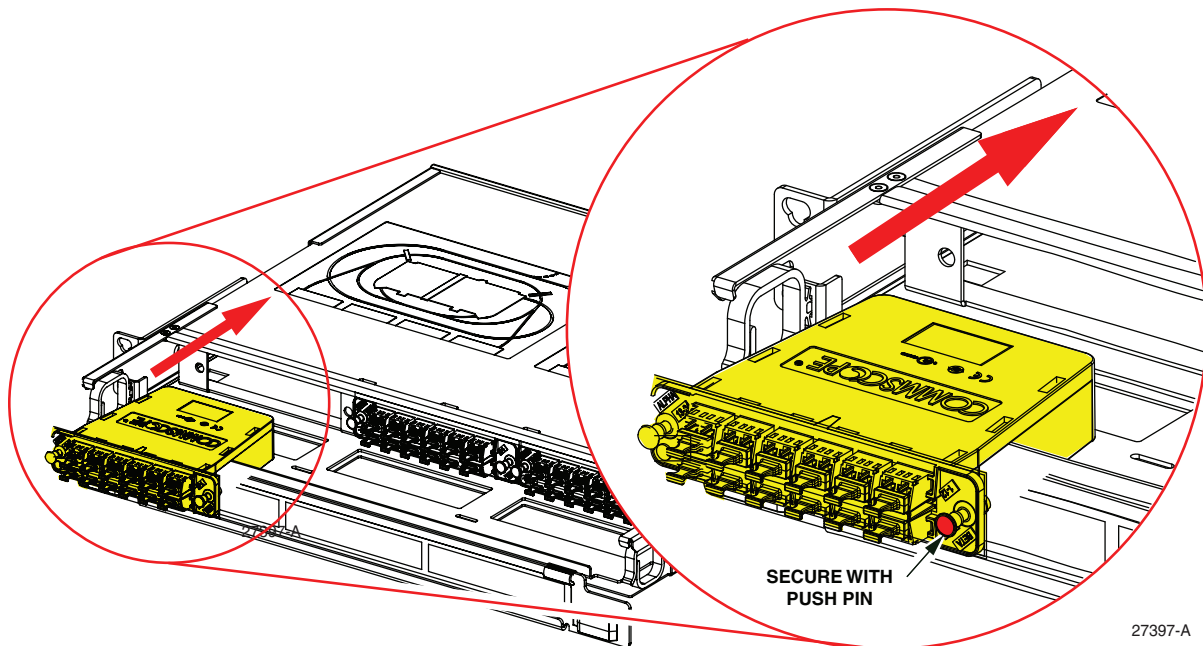


Figure 14. Installing MPO Modules (LSX/1000)

2. Secure the cable and cable gland to the panel as shown in [Figure 15](#). Route the cable as shown in [Figure 16](#).

Note: For details and other options, refer to [Section 6.3 on page 25](#).

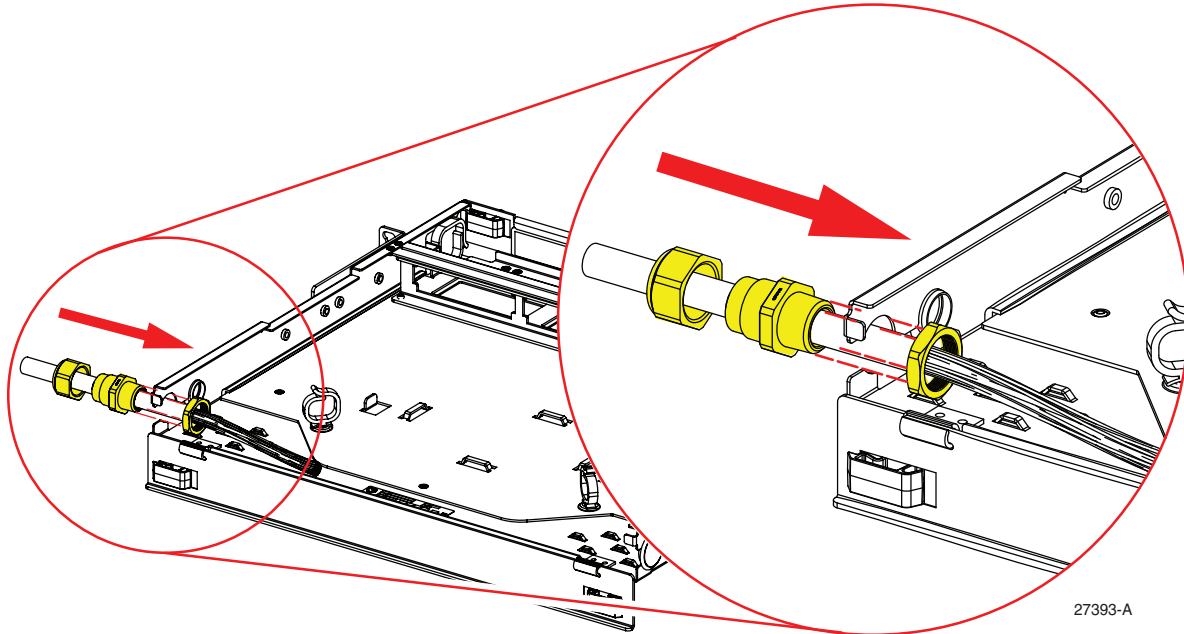


Figure 15. Installing Cable Gland (Standard 1/2-inch Cable Gland, Provided)

3. Loop the MPO cable around through the cable retainers as shown in [Figure 16](#).

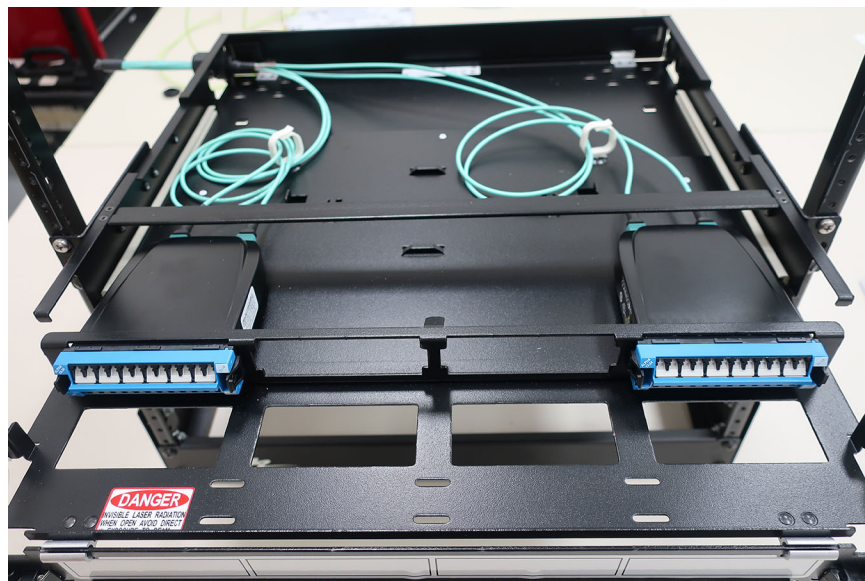
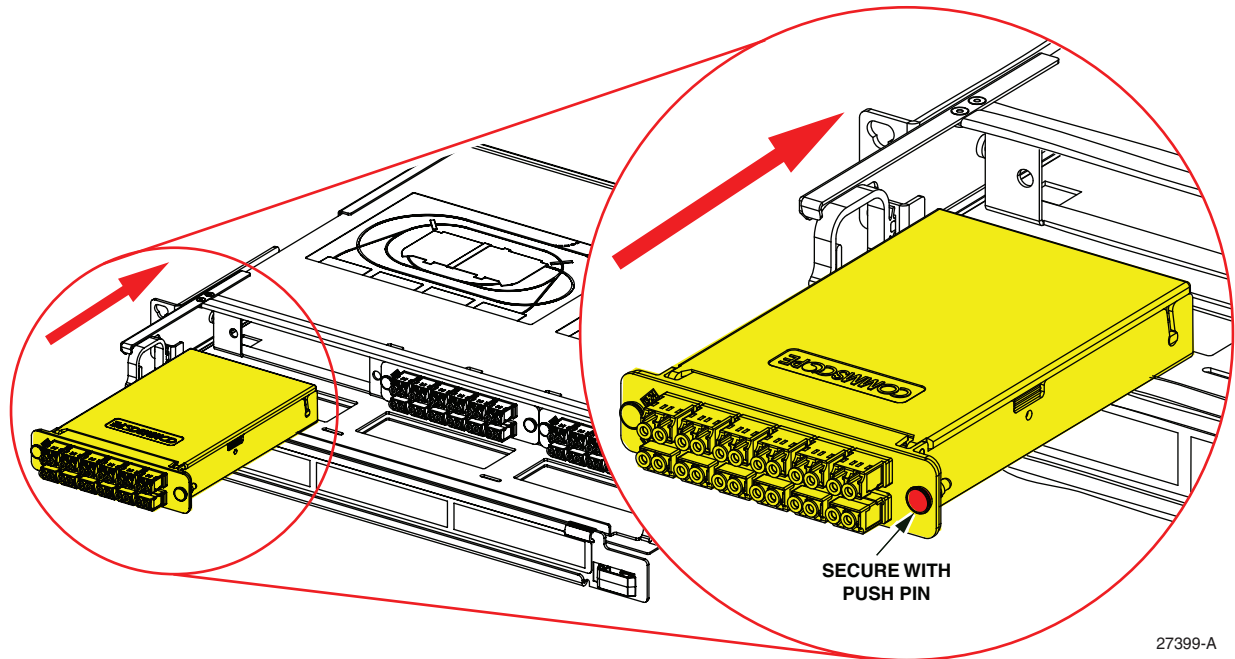


Figure 16. Cable Routing to MPO Modules

5.7 Installing Splice Cassettes

1. Insert the splice cassette into the opening provided in the bulkhead, oriented so that the rear side passes through the opening first. Secure using push pins identified in [Figure 17](#).



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Figure 17. Installing Splice Cassette (LSX/1000 shown)

2. Route cables from rear of panel to splice cassettes as shown in [Figure 18](#) below.



Figure 18. Cable Routing to Splice Modules (G2 shown)

3. Splice fibers from cable to splice cassette per instructions included with the splice cassettes.

5.8 Installing AGILE Splice Trays

The splice tray provides a splice interface between a facility cable and pigtails terminated at adapter packs on the EPX bulkhead. Refer to the instructions enclosed with that kit for all details not covered here. Up to two splice trays may be installed per U height.

1. Install the splice tray as shown in [Figure 19](#).

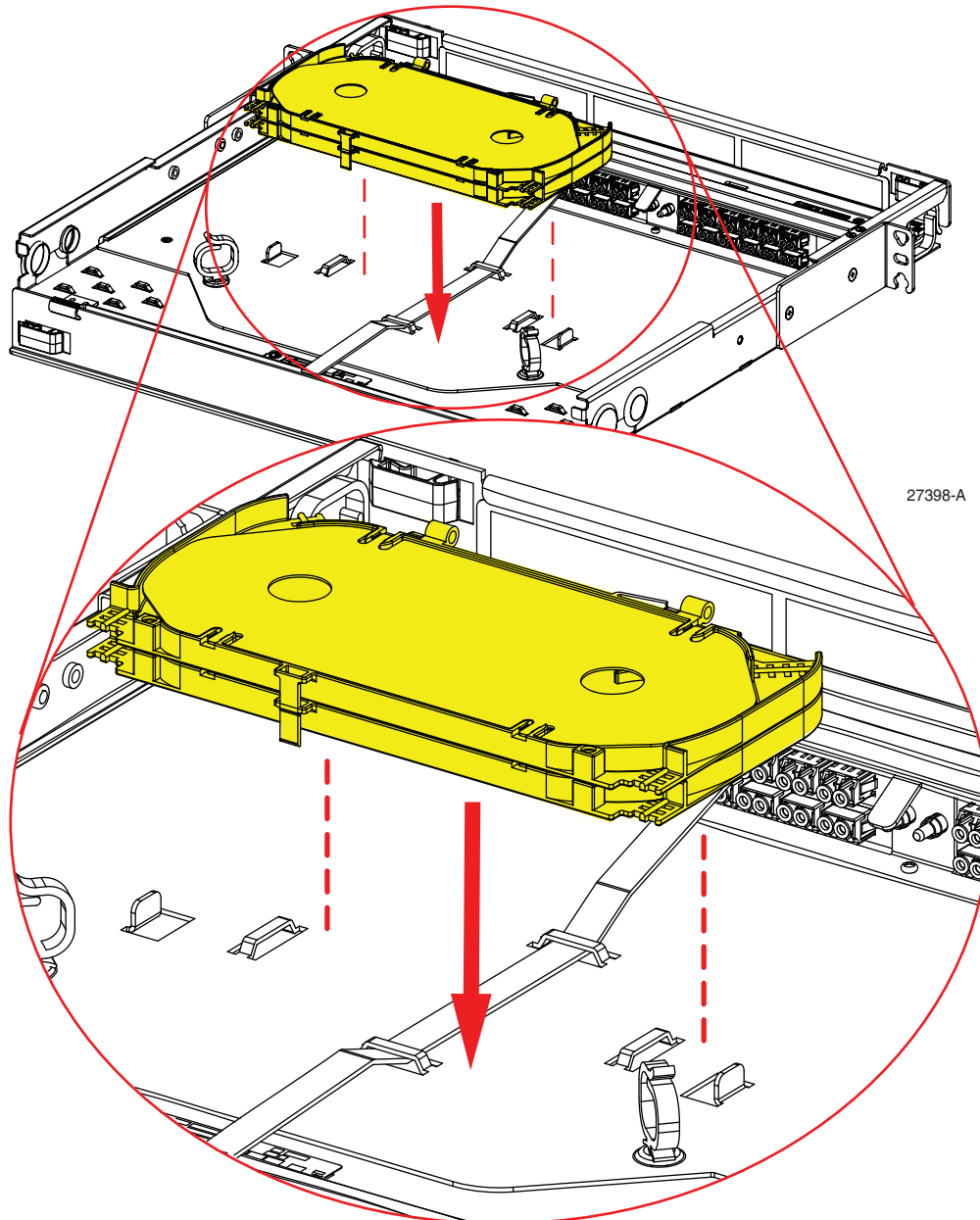


Figure 19. Installing Splice Trays

2. Route pigtails to the panel and terminate the pigtail connectors at the assigned adapter pack, as shown in [Figure 20](#). Cable slack shall be spooled inside the perimeter of chassis and restrained with cable ties at tie-down points provided, as necessary.
3. Route the facility cable to the panel and secure it in a cable entry port using a gland connector as shown in [Figure 20](#).

Note: For more information on cable glands, refer to [Section 6 on page 23](#).

4. Route the pigtails and facility cable within the EPX panel in the opposite direction and into the opposite side of the Agile splice tray as shown in [Figure 20](#).

Note: On 2U and 4U shelves splice trays may be installed stacked on top of each other. Ensure that suitable slack is provided to allow tray on sliding versions to fully extend

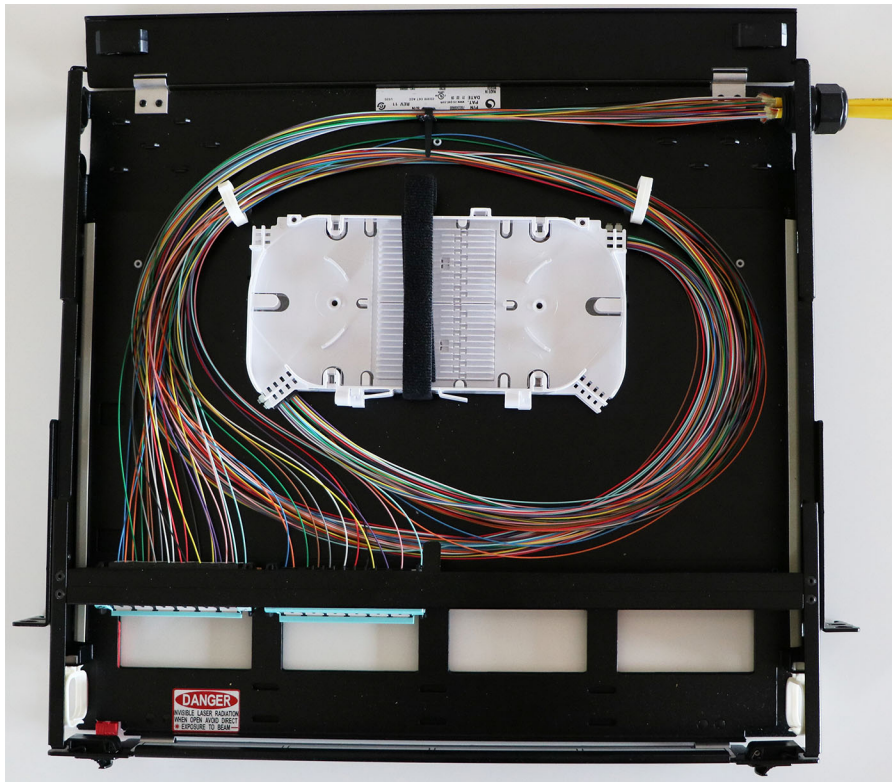


Figure 20. Cable Routing to AGILE Splice Tray (G2 shown)

5.9 Field Termination

Use the following procedure referring to [Figure 21](#) for an example of correct cable routing in the EPX panel.

1. Insert adapter pack into opening provided in bulkhead, oriented so that adapters pass through opening first. Refer to [Section 5.5 on Page 16](#).

Note: On a 2U panel, start on bottom row first.

2. After connectorization, route buffered fibers from cable toward front of tray.
3. Terminate connector end of pigtails into module adapter openings in standard sequence.
4. Spool excess fiber slack length.
5. Repeat items 1-4 for all remaining locations.



Figure 21. Cable Routing in EPX Panel

6 CABLE ROUTING

6.1 Cable Routing

When routing cables, follow the routing path indicated on the top cover of the panel.

6.2 Cable Gland Capacities

Table 7 lists cable gland capacities for EPX 1U, 2U, and 4U panels for different diameter cables.

Table 7: EPX Panel Gland Capacities

# Gland Openings	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
1U	2	2	0	0
2U	0	12	2	0
4U	0	16	4	2

Cable glands of the appropriate size are included with the different sized cable assemblies when shipped. All of these standard cable glands have the same basic components and are installed in the same way, as shown in Figure 22.

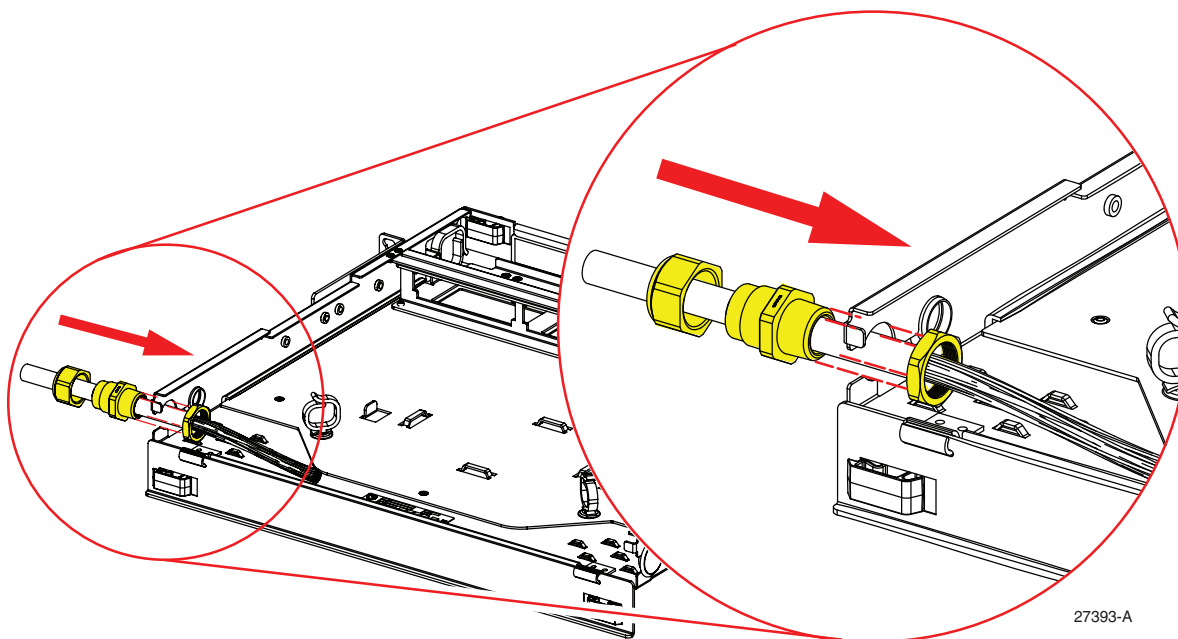


Figure 22. Installing Standard Cable Gland
(1/2-inch Gland in EPX 1U Panel Shown)

The EPX-1U panel has two 3/8-inch gland openings and two 1/2-inch gland openings. For smaller cable sizes, the 1U panels include snap-fit washers to reduce the 1/2-inch opening to 3/8-inch, as shown in [Figure 23](#).

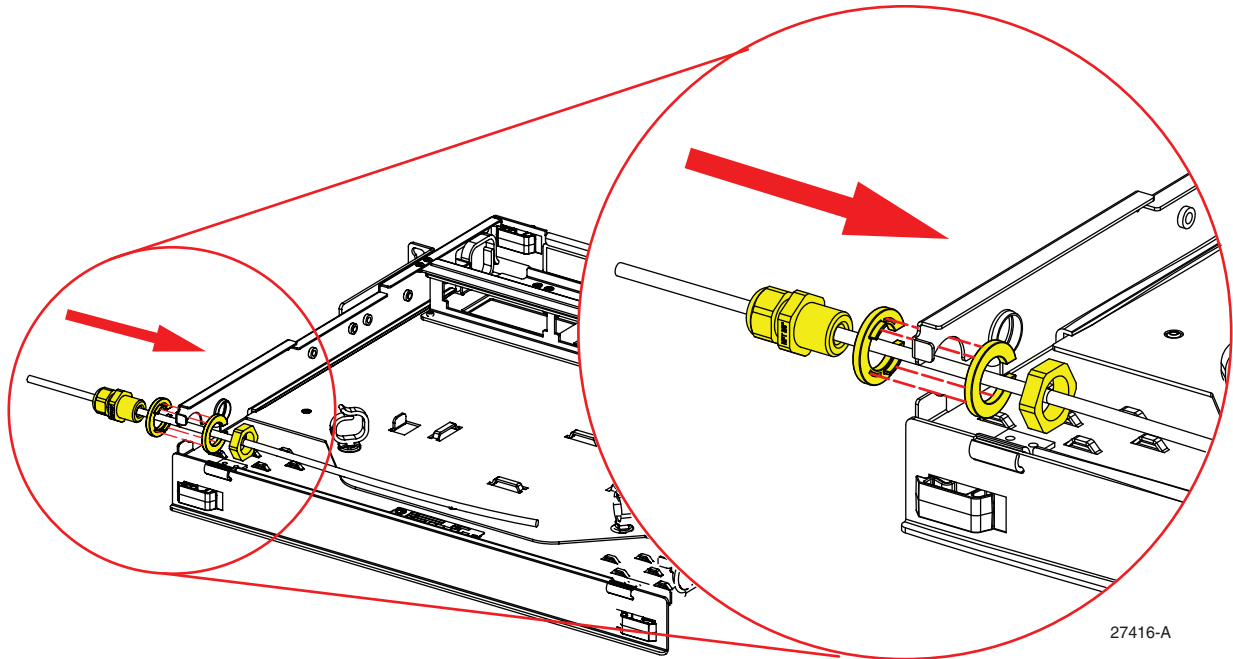


Figure 23. Installing 3/8-inch Cable Gland With Snap-Fit Washers (EPX 1U Panel Only)

For additional information on smaller diameter cables, refer to [Section 2.4 on page 8](#).

6.3 Installing a Cable

Note: These instructions cover only the cable gland method of securing fiber cables.

1. Loosely secure fiber cable to equipment rack upright approximately 3 inches (76mm) above or below panel, using cable tie or hook-and-loop strip. Leave approximately 48-inch (2.1m) length of cable to route into panel.
2. Fiber cables may enter panel from either right side, left side or rear apron. Carefully loop fiber cable to rear of panel on either side and continue to feed cable over top of rear apron.
3. Temporarily store slack fibers in panel.
4. Remove plug from appropriate size opening in panel to accommodate cable gland on fiber cable. Select an opening on rear apron or either right or left side that will be most advantageous for cable entry.
5. Completely loosen gland nut from cable gland.
6. Feed fibers and subunit tubes through panel opening. Temporarily coil fibers loosely in panel.
7. Insert threaded body of cable gland into opening and tighten gland nut onto threaded section to secure cable gland unit to panel.

7 CONTACT INFORMATION

- To find out more about CommScope® products, visit us on the web at www.commscope.com
- For technical assistance, customer service, or to report any missing/damaged parts, visit us at <http://www.commscope.com/SupportCent>

COMMSCOPE®