



CommScope XPND

INSTALLATION INSTRUCTION



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Installation Instructions

table of contents

1.	Introdu	uction	2	
	1.1.	Panel configurations overview	2	
	1.2.	Cassettes overview	3	
	1.3.	Important safety cautions	4	
	1.4.	Precautions	4	
2.	Product description			
	2.1.	General description	4	
	2.2.	Main product features	4	
	2.3.	Specifications and dimensions	5	
3.	Unpac	king the panels	5	
4.	Overvi	Overview of installation		
	4.1.	Installing the panel	6	
		4.1.1. Orientation of the panel	6	
		4.1.2. Installing the panel doors	7	
		4.1.3. Installing the mounting brackets	8	
		4.1.4. Mounting the panel in the rack	8	
	4.2.	Opening and removing the doors	10	
	4.3.	Grounding	10	
	4.4.	Installing cassettes	11	
		4.4.1. Installing the jumper clip	11	
		4.4.2. Installing a cassette in the panel	11	
		4.4.3. Extending a cassette	12	
		4.4.4. Redi Casselle Cabling	12	
		4.4.4.1. Real casselle cabling: Falch casselle	. 13	
	15	Routing cables and natch cords in the nanels	15	
	4.J.	A 5.1 Front cable management	15	
		4.5.2 Rear cable management	16	
	46	Cable tie-off bracket	17	
5	Traden	Parks.		
6.	Contact information			
	0000		-	

Introduction 1.

The panel, offered in the configurations outlined in the overview below, is a modular fiber connection platform. It supports the installation of Patch, Splice, Splitter, Cabled Module, and MPO cassettes in any available position within the panel.

This installation guide provides detailed instructions on unpacking the panel, mounting it on a rack, and installing cassettes. Additionally, it covers how to route and secure cables and patch cords, as well as how to obtain technical assistance if required.

1.1. Panel configurations overview The panels are available in 3 different heights being 1RU, 1.5RU and 3U which can each house up to 4, 6 or 12 cassettes respectively. For reference, the 1.5RU panel will be used in all the subsequent images in this document.



1.2. Cassettes overview

There are different types of cassettes e.g. fiber pass-through adapter packs (patch), patch-splice or splitter cassette. All these cassettes can come in different configurations depending on the adapter types, fiber types, splitter count, etc. The images below show the SC versions of these cassettes. For reference, the SC version of the patch cassette will be shown in all subsequent images in this document except for the images in chapters specifically targeting each individual cassette type.



1.3. Important safety cautions

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

- 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.
- 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.

1.4. 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.

2. Product description

2.1. General description

There are three sizes of fiber optic connector panels: 1RU, 1.5RU and 3RU, all with a depth of 12". Each panel is 19" rack-mountable and suitable for indoor use and for environmentally-controlled huts, CEVs and remote active cabinets. If needed, all panels include a 23" bracket kit as a ship along item for mounting into a 23" rack. Each panel can hold four cassettes per rack unit (RU) of space.

Panel size	Cassette quantity
1RU	4 cassettes
1.5RU	6 cassettes
3RU	12 cassettes

Cassettes can be mixed and matched within the panels without any reduction in connector density.

2.2. Main product features

- A. Panel doors:
 - Front and rear doors provide access to cassettes inside the panel.
 - Doors can be removed for better access.
 - Door hinges and door latches are replaceable.
 - Circuit identification labels are included inside both front and rear doors for recording port designations.
- B. Mounting panels in frames/cabinets:
 - One mounting bracket on each side of the panels provide for mounting the panels in a frame or cabinet.
 - Panels are shipped with 19" mounting brackets pre-installed
 - 23" mounting brackets are included with each panel as a ship along item.
 - Mounting brackets are shipped in a 2" recessed position and can be moved to a 5" position if needed.
 - Mounting brackets are compatible with EIA and WECO hole spacing.

C. Cable management:

- Panels are designed for jumper sizes:
- * SC: Ø1.6 to 2.0 mm
- * LC: Ø1.6mm
- * MPO: Ø3mm (rear only)

- Cable entry area is the portal through which cables are routed into the rear of the panel.
- Integral patch cord entry managers are used to manage patch cords on the front.
- Cassettes contain cable management feature in front of the adapters.
- Panels are shipped with a cable mounting bracket. This bracket can be mounted on the rack.
- Optional cable mounting bracket for rear of the panels, sold separately.
- D. A grounding point option is available on the left and right side of the panels.
- E. 1RU, 1.5RU and 3RU panels can hold 4, 6 and 12 cassettes respectively.

2.3. Specifications and dimensions

The overall width and length of the panels is shown in the picture below.



The width of the panels, including the mounting brackets, is consistent across all models, measuring either 19" [482.6mm] or 23" [584.2mm] depending on the installed brackets. The height of the panels is detailed in the following table:

Panel size	Panel Height
1RU	1.75" [44.45mm]
1.5RU	2.62" [66.55mm]
3RU	5.25" [133.35mm]

3. Unpacking the panels

Open the box and remove the panel and other items from the box. Check the parts list to ensure all items are present.



4. Overview of installation

4.1. Installing the panel

4.1.1. Orientation of the panel

This section will illustrate the front, rear, left, right, top, and bottom of the panel. It explains how to identify each face of the panel as discussed in the instructions:

- The product manufacturing label is located inside the panel, towards the middle of the rear (See first figure below).
- The front of the panel can be identified by the larger cut-out in the chassis from a top view along with the mounting brackets positioned towards the front on the left and right sides (See second image below).



4.1.2. Installing the panel doors Each panel comes with two identical doors: one for the front and one for the rear. While standing in front of the panel, hold the door horizontally with the port numbering label facing up. Attach both hinges to the sides of the panel as illustrated.



To close the door, rotate it upwards until the two latches on each side of the panel click into place. Repeat this process to install the door on the rear of the panel.



4.1.3. Installing the mounting brackets Determine the rack size (19" or 23") and the required panel recess. The panels are pre-installed with 19" mounting brackets in a 2" recessed position. The 23" mounting brackets are included in the packaging as a ship along item.

To replace the 19" mounting brackets, simply remove all the screws securing them, swap them out for the 23" mounting brackets, and reattach using the same screws. A TX20 Torx screwdriver is needed to remove and tighten these screws.



To adjust the panel recess to a 5" position, remove all the screws securing the brackets. Then, remount the brackets using the holes located 3" further back on the panel.



4.1.4. Mounting the panel in the rack

Once the mounting brackets are correctly positioned, the panel can be mounted in the rack. The screws and washers for mounting the panel in the rack are included with the 23" mounting bracket kit. Two screws and two washers should be used for each bracket (left and right). A phillips-head screwdriver is needed to tighten these screws.



The mounting brackets have several hole patterns for accommodating both EIA and WECO frame standards. See table below to see which holes are recommended to be used in each situation.



4.2. Opening and removing the doors

The door is opened by pushing down the latches at the top (left and right) and pulling the top of the door downward.



To remove the doors, follow these steps:

- 1. Open the door.
- 2. Locate the hinge pieces with the locking feature (a).
- 3. Push in the locking feature (a) while simultaneously pulling the hinge forward (b).
- 4. Ensure both left and right hinge locking features are loosened before moving the hinge piece out completely.
- 5. Once both locking features are loose, pull the door out entirely.



4.3. Grounding

A grounding kit (ordered separately) can be installed at the rear of the panel, either on the left or right side. The kit includes a grounding lug, washers, and bolts. A grounding wire (customer provided) can be crimped onto the grounding lug. At the rear, there are grounding symbols on both sides of the panel indicating three press-nuts on each side for attaching the lug. The image below shows an exploded view of the recommended installation of the grounding lug. This image shows a horizontal installation (using the two holes that are horizontally aligned). The grounding lug could also be installed vertically (using the two holes that are vertically aligned).



4.4. Installing cassettes 4.4.1. Installing the jumpe

4.4.1. Installing the jumper clip When unpacking a new cassette, detach the jumper clip found taped inside of the cassette. On the front side of the cassette, in the middle of the row of adapters, there is a cavity specifically designed for the jumper clip. The clip should be orientated with the open side of the loop pointing upward and then slid into the cavity. Push the clip into the cavity as shown in the accompanying picture, until a "click" is heard.



4.4.2. Installing a cassette in the panel

Open the front or rear door of the panel. The cassette is installed by sliding it into an available slot from either the front or rear. It is important to orient the cassette so that the side with the jumper clip faces the front side of the panel. The cassette should be pushed further into the panel until a "click" is heard.



Once the cassette is inserted into the panel, the door can be closed by rotating it back into place until the two latches on each side click into position.

4.4.3. Extending a cassette

A cassette can be extended out of the panel partially for better access during patching or can be removed altogether. To extend a cassette, begin by opening the front or rear door and remove all cables from the panel cable managers (see also Section 4.5) to avoid overbending or pinching. To extend the cassette from the panel, the handle on the side of the cassette must be pushed sideways (to the right for front access and to the left for rear access) while pulling on the cassette. To ease the sliding movement from the front side, the jumper clip can be utilized simultaneously to pull the cassette.

Note: Be careful when extending a loaded cassette as the movement of the cassette must not exceed the available slack in the cables.

4.4.4. **Rear cassette cabling**

4.4.4.1. Rear cassette cabling: Patch cassette Patch cords can be routed inside the patch cassette from the rear side by sliding the patch cords underneath the containment lips. The first image below shows how to route around each of the containment lips on the left half of the cassette while the second image shows how the patch cord will lay underneath the containment lips when installed. Routing a patch cord on the right half of the cassette is handled similarly.

4.4.4.2. Rear cassette cabling: Splice cassette Splice cassettes are pre-fibered and are available in different configurations (SC/LC, APC/UPC, stranded/ ribbon). Loose tubes or flexible tubes with either stranded or ribbonized fibers (depending on cassette configuration) can be routed via the rear of the splice cassette. To splice incoming loose tubes or flexible tubes, follow these steps:

A. Open the cover of the splice cassette by slightly pushing the 2 snap-hooks in the rear and rotating the cover upwards as indicated in the image below.

Page 14 of 20 © 2025 CommScope, Inc. All Rights Reserved

- B. One or 2 tubes can be installed in the cassette depending on the configuration of the cassette. One tube in case of SC adapters (12f) and 2 tubes in case of LC adapters (24f).
- C. Strip the tubes so that there is 55.1" [1.4m] of bare fiber on the cassette end.
- D. Mount the tubes to the cassette by wrapping 1½ loops of foam strip and a tie-wrap around them securing them to the two T-shaped features in the cassette. Align the end of the tubes with the edge of the containment lip as shown in the image below. The foam strip and tie-wraps are supplied with the cassette.

- E. Note how the pre-installed fibers are routed inside the cassette to see which fibers from the tubes must go to the left or right side of the cassette. Work on each side separately so the fibers don't get mixed. Next steps must be done on 1 side only before these same steps should be repeated for the other side of the cassette.
- F. Uncoil 1 or 2 loops of the pre-installed fibers such that there is enough length to reach the splice tooling.
- G. Splice all fibers as needed.
- H. Route the loops of fiber (on the pre-installed side of the SMOUVs) back around the island and slide all SMOUVs into the SMOUV-holder. Make sure the first bend, near the SMOUV-holder, and the loops are as big as possible to minimize optical losses.
- I. Coil the fibers from the other end of the SMOUV-holder, then place the coils around the island. Make sure the first bend, near the SMOUV-holder, and the loops are as large as possible to avoid any optical loss. Check if all fibers are underneath all the containment lips of the cassette to avoid pinched fibers when closing the cover.
- J. Repeat steps F-I for the other side if necessary.
- K. To close the cassette cover, slide the 3 tabs at the front (one on each side and one in the middle) in the openings between the cassette base and the adapter holder. When in position, rotate the cover down in the rear until both locking features have clicked into place.

Note: The cassette can also accommodate mesh-tubing ending on a fiber sleeve (see example in images below) provided the fiber sleeve is of a small enough size to fit inside the cassette. Installing a mesh-tubing with fiber sleeve is very similar to the instructions above. The mesh-tubing is taped over the fiber sleeve and the fiber sleeve is tied with a tie-wrap to one of the tie-wrap mounting slot features in the cassette. No foam strip is used in this case. The length of the bare fiber measuring from the edge of the containment lip as shown in the instructions above should still be 55.1" [1.4m]. The rest of the installation is done the same as the installation of loose tube and flexible tubes (see instructions above).

4.5. Routing cables and patch cords in the panels4.5.1. Front cable management

The front of the panels is designed to accommodate patch cords of Ø1.6-2.0mm for SC and Ø1.6mm for LC. Each cassette has a jumper clip which serves as a cable manager and there are also cable retaining features on the left and right side of the panels. This means patch cords can exit the panel on the left or on the right side. It is recommended to have patch cords from the left column of cassettes routed to the left side and patch cords from the right side.

The sides of the panels have a retaining feature on each cassette level. So, the 1.5RU for example has 3 cassettes in the right half of the panel and has 3 retaining features on the right as well (one for each cassette). The image below shows a 1.5RU panel with cabled top row cassettes.

Routing all cassettes to the same side is possible with some configurations but each retaining feature is limited to contain 48x ø1.6mm patch-cords.

The retaining features on the side of the panels have a V-shaped groove through which patch cords can be routed (see detailed view below). When routing patch-cords, make sure all are secure behind the retaining features before closing the front door of the panel.

4.5.2. Rear cable management

The rear of the panels is designed to accommodate patch cords, loose tubes, flexible tubes and mesh-tubes. The opening in the retaining features on the sides of the panels is around 3.2mm, which is the limiting factor for what diameter of patch cords, tubes, etc. can be routed in the panel. There are retaining features on the left and right side and in the middle of the panels. This means patch cords and loose tubes can exit the panel on the left or on the right side. It is recommended to have patch cords or loose tubes from the left column of cassettes routed to the left side and patch cords or loose tubes from the right column of cassettes routed to the right side.

The 1RU and 1.5RU panels have one retaining feature on each side of the panel. The 3RU panel has two retaining features on each side (one for the top 3 cassettes of that side and one for the bottom 3 cassettes of that side). The image below shows a 1.5RU panel with cabled second row cassettes.

Routing all cassettes to the same side is also possible. When routing over to the other side of the panel, make sure to route cables through the retaining feature in the middle of the panel too as shown in the next image.

The retaining features on the side of the panels have a slanted groove through which cables can be routed (see detailed view below). When routing cables, make sure all are secure behind the retaining features before closing the rear door of the panel.

4.6. Cable tie-off bracket

The cable tie-off bracket (ordered separately) can be installed on the rear frame rails to secure incoming cables. It is mounted to the rack using the washers and screws supplied with the bracket. The images below show an exploded view of the installation process. The orientation of the bracket depends on the type of frame (19" or 23").

Install the bracket above or below the panel, depending on the direction of the incoming cables. Secure the cables to the bracket according to local practice. Ensure the cable subunits have a small service loop to allow the cassettes to be pulled out from the front of the panel for access.

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