Charles Flex™ Compact Hub Enclosure
General Description and Installation

Front View of the Open Enclosure

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the Charles Industries' Flex™ Compact Hub (FCH) enclosures.

1.2. Product Purpose

The FCH line of flexible, compact indoor/outdoor non-metallic enclosures accommodate a wide variety of fiber hub applications (PON), fiber splice storage, multi-dwelling units (MDUs), Fiber-to-the-Business (FTTB), campuses, malls, etc. The flexible splicing area and bulkhead design allow for splicing or termination of various fiber types and connectors, and can accommodate multiple mounting methods, cable types and applications.

1.3. Product Mounting and Location

The FCH enclosures can be mounted on a wall or pole. There are two pole/wall-mount tabs at the top and bottom of the enclosures. Four "drill through" holes, two at the top and two at the bottom, on the inside of the enclosure accommodate pole-mount kits, wall-mount accessories, etc.

2. PRODUCT DESCRIPTION

The FCH is a compact enclosure with the following features:

- Interchangeable, removable bottom "feed and drop" cable port plates with variable entry grommets maximize in/out flexibility while maintaining environmental protection integrity
- Accepts a variety of cable sizes and types
- Top knockouts for indoor use
- Hinged security door
- Swinging fiber bulkhead allows easy access to feed and drop fibers and provides bend radius control and strain relief.
- Efficient internal cable management and routing with multiple tie-down locations.
- Feed pass-through capability
- Universal backplane provides ultimate flexibility to accommodate a broad range of applications. Single-snap door post for ease of opening/closing the enclosure
- Backplane accommodates three small hinged splice trays and cable attachments for fiber splicing.
- 216-tool lockable door with a padlock hasp for enhanced security
- Molded-in mounting brackets for pole or wall mount

3. SAFETY PRECAUTIONS

— WARNING—

Risk of serious eye damage! Never look into the end of a fiber optic line or use a magnifier in the presence of laser light or radiation. Exercise caution when installing, testing or maintaining live circuits. If eyes are exposed to laser light or radiation occurs, immediately seek treatment by a medical professional.

— WARNING —

Cable and fiber cleaning solvents may contain hazardous or harmful materials. Maintain good housekeeping practices and refer to the MSDS when working with cleaning solvents or similar products.

Shards and cleaved glass fibers are very sharp and can easily pierce the skin. Use tweezers to pick up cut glass fibers and place them in a specifically designated container. Do not consume any food products near the cable installation site.

Corrugated metal or armor in feed cables is very sharp when cut or exposed. Exercise extreme caution to prevent personal injury. Use protective work gloves when handling armored cable.

— CAUTION —

Perform all bonding and grounding prior to making any electrical and communications connections.

4. INSTALLATION

4.1. Tools and Equipment Required

- 216-tool/can wrench
- Hose clamps (2 provided)
- Level
- Double-sided Velcro tape
- Grounding equipment and tools
- Included hardware
- Knife or snips (to cut grommets)
- Tape measure
- Cable bond clamps (optional)
- Marker pen
- Wall-mounting hardware
- Safety glasses & work gloves

4.2. Mounting the Enclosure

1. Inspect the panel thoroughly upon delivery. If any damage to the equipment has occurred, immediately notify the transportation company.
2. Use a 216-tool or can wrench, turn the two bolts counterclockwise (CCW) to open the door. If bulkhead is installed, use the can wrench to open the bulkhead.

Open the Door

3. Mount the enclosure per company practice. The mounting hardware and surface must support the weight of the enclosure and all contents. FCH mounting tabs are designed for wall or pole-mount applications.
   - When mounting to a wall, hold the enclosure into mounting position on the wall and install the mounting hardware through the mounting tabs and/or optional drill-through holes.
   - When mounting to a pole, straps and/or bolts are used to attach the enclosure to the pole.

Wall Mount Tab

Flex Mount to a Pole

4.3. Installing Cable Splitter

1. Close the swinging bulkhead. Use the can wrench to secure the bulkhead.
2. Locate the cable splitter and connectorized distribution cables that shipped with the unit. This splitter must be installed on the bulkhead, under the splitter cover.
3. Pull out the pin on the front of the bulkhead to remove the splitter cover.
4. Insert the splitter into the slot on the bulkhead.
5. Reattach the splitter cover.
6. Connect the splitter input cable to one of the adapters on the bulkhead labeled 1 through 4.
7. Route the distribution cables around the cable management device and insert the connectors into the adapters on the bulkhead labeled 1 through 16.

Cable Splitter

Insert the Splitter

Loosen the Pin to Remove Splitter Cover

Replace Splitter Cover

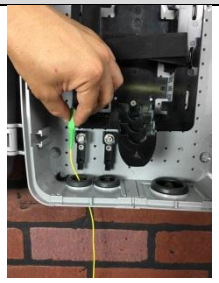
Distribution Cables Connected to Bulkhead

8. Use the can wrench to open the swinging bulkhead.

Open the Bulkhead

4.4. Installing Pre-connectorized Cables

1. Cut a small hole in one of the grommets at the bottom of the enclosure. Route the connectorized feed cable through this grommet.
2. Verify that there is sufficient feed cable slack to route fiber to the swinging bulkhead panel.
3. Trim the strength members to fit beneath the strength member clamp. Leave enough sheathing so that the hose clamp can secure the cable to the cable bracket.
4. Secure the feed cable to the cable attachment hardware.
5. Route the feed cable up along the left side of the fiber storage basket and into the top of the basket. Make a loop inside the basket and then run the feed cable out of the basket and to the right. Use Velcro to secure the feed cable to the basket and to the inside of the swinging bulkhead as shown.
6. Connect the feed cable to one of the top 4 feed cable adapters on the inside of the swinging bulkhead. The adapter used for this feed cable must correspond to the adapter on the outside of the bulkhead where the splitter input is connected.
7. Cut a small hole in a second grommet at the bottom of the enclosure. Route 16 connectorized distribution cables through this grommet.
8. Route these distribution cables through the basket and secure them to the basket and the bulkhead in the same manner used for the feed cable.
9. Connect these distribution cables to the 16 adapters on the inside of the bulkhead.



Route Connectorized Feed Cable Through Grommet

Secure Feed Cable with Hose Clamp

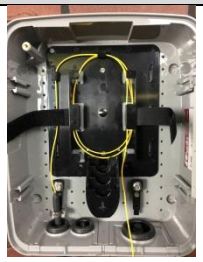
Completed Connections

Run Feed Cable Through Grommet

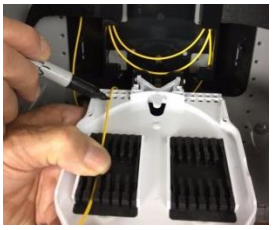
Route Feed Cable in Basket

4.5. Installing Cable Using Splice Trays

1. Cut a small hole in one of the grommets at the bottom of the enclosure. Route the feed cable through this grommet.
2. Verify that there is sufficient feed cable slack to perform splicing operations.
3. Trim the strength members to fit beneath the strength member clamp. Leave enough sheathing so that the hose clamp can secure the cable to the cable bracket.
4. Secure the feed cable to the cable attachment hardware.
5. Route the feed cable by looping it in the basket, and then run it into the top-most splice tray. Use Velcro to secure the cable to the basket.
6. Mark where the feed cable enters the splice tray.
7. Cut the feed cable jacket at the mark and strip the jacket off to the end of the feed cable. Route the fibers inside the splice tray.
8. Use felt and cable ties to secure the buffer tube where it enters the splice tray.
9. Obtain a connectorized cable and plug the connector into one of the top 4 feed cable adapters on the inside of the swinging bulkhead. The adapter used for this feed cable must correspond to the adapter on the outside of the bulkhead where the splitter input is connected. Use Velcro to secure the cable to the bulkhead.
10. Route this cable through the basket and into the top-most splice tray. Mark where it enters the tray, and then cut and strip the jacket as described previously. Use felt and cable ties to secure the buffer tube where it enters the splice tray. These fibers are spliced together in the top tray. Insert a clear plastic cover onto the splice tray.
11. Cut a small hole in a second grommet at the bottom of the enclosure. Route a distribution cable through this grommet, through the basket and into the second splice tray, as described previously for the feed cable.
12. Obtain a fanout with connectors on the fibers. Connect the fibers to the adapters marked 1 through 8 on the inside of the swinging bulkhead.
13. Route the fanout buffer tube through the basket and into the second splice tray. Mark where it enters the tray, and then cut and strip the jacket as described previously. Use felt and cable ties to secure the buffer tube where it enters the splice tray. Insert a clear plastic cover onto the splice tray.
14. Repeat previous three steps with a second distribution cable and fanout. Use the bottom splice tray for these fibers. Connect the fibers on the fanout to the adapters labeled 9 through 16.



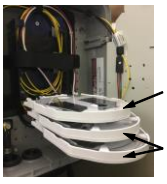
Route Cable Through Basket

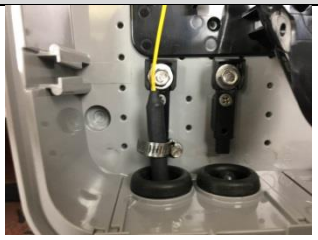


Mark Where Cable Enters the Splice Tray

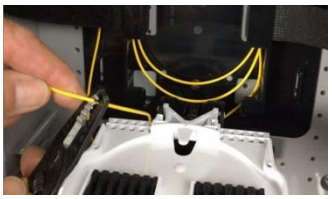
Route Fibers in the Splice Tray

Connect Fibers to Adapters

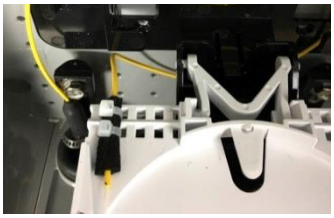




Secure Cable with Hose Clamp



Cut and Remove the Jacket



Felt and Cable Ties to Anchor the Buffer Tube

Insert Cover

5. SPECIFICATIONS

Feature	U.S.	Metric
Height (panel only)	15 in.	38 cm
Depth, base (front to back)	5.5 in.	14 cm
Width	12 in.	30.5 cm
Weight	7 lbs.	3.2 kg
Construction	Rugged UL94-5VA Gray Polycarbonate	
Supported Fiber Connector Types	SC/APC	
Compliance	Designed to meet GR-950, GR2898, NEMA 4, IP66	
Splicing Capacity	Up to three 4”x6” hinged splice trays	
Bulkhead Capacity	16 Distribution Adapters	

6. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support at:

847-806-8500
800−607−8500
847−806−8556 (FAX)
techserv@charlesindustries.com (email)
http://www.charlesindustries.com/main/tech_support.htm