Amphenol Charles Fiber Optic Dome Closure

FODCA Series

General Description and Installation

Figure 1   FODCA

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides installation instructions for the Charles Fiber Optic Dome Closure, size A (FODCA). The FODCA is shown in Figure 1.

-NOTE-

Hereafter the Charles Fiber Optic Dome Closure Series will be referred to as the "FODCA" or "closure."

1.2. Product Purpose

The FODCA is a sealed splice closure (IP68 rated) that is used protect and store fiber optic connections

1.3. Product Mounting and Location

The FODCA is a fully sealed unit that can be used below grade. The unit can also be aerial strand, pole, or pedestal mounted. Brackets for aerial and pole mounting are sold separately.

2. PRODUCT DESCRIPTION

The FODCA is a Dome form factor fiber splice closure. The FODCA includes 4 splice trays. Each can accommodate 36 single fusion splices (double stacked) for a total maximum of 144 splices.

The FODCA dimensions are shown in Figure 2. The FODCA ships with a number of tools and accessories, shown in Figure 3.
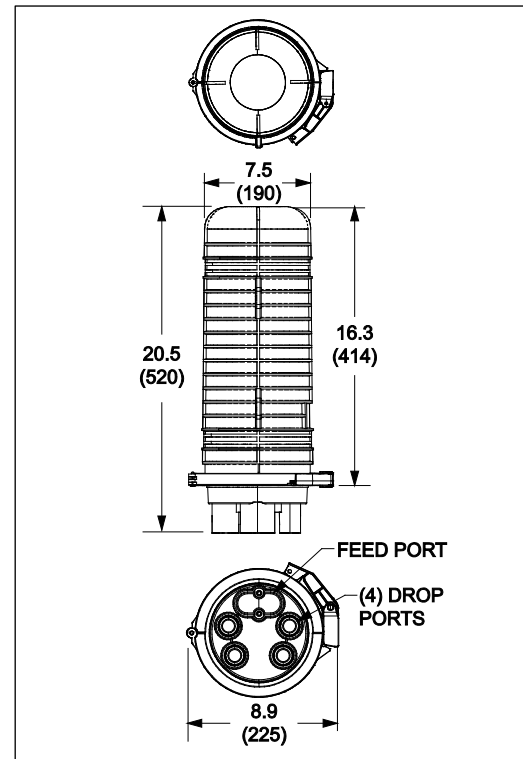

Figure 2   FODCA Dimensions in inches(mm)

Figure 3   Tools and Accessories

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 SDS 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.
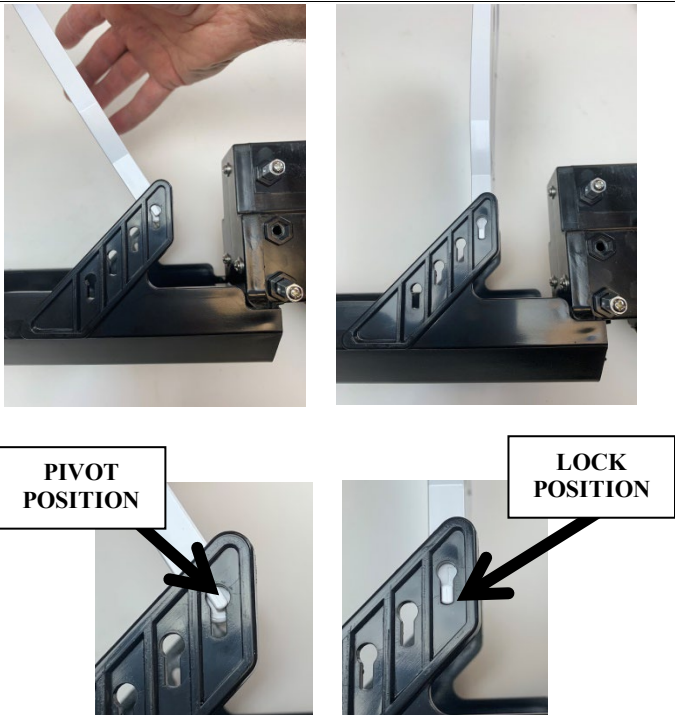
Be careful not to damage any buried cables or service wires while digging either to expose cables or to prepare a hole or trench, or while driving stakes. Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking of buffer tubes and fiber damage or breakage, exercise great care when working with fiber, and do not exceed or violate minimum bend radius requirements for fibers, buffer tubes, and cables.
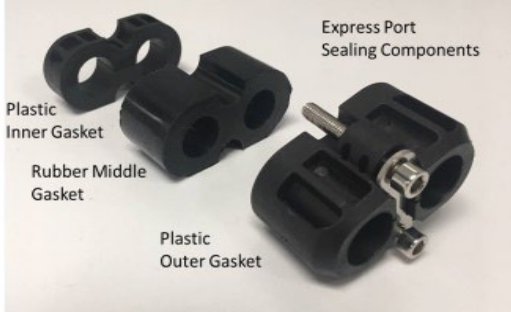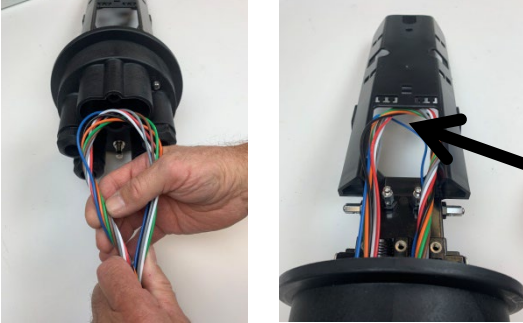
4. INSTALLATION
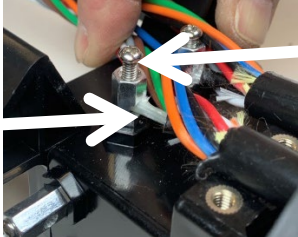
Gather the following equipment to perform the FODCA installation.

- Philips and flathead screwdrivers
- 5 mm (or 3/16") Allen wrench
- Measuring tape
- Cable marking tool
- Assorted cable ties

- Tools and Accessories kit (provided with the FODCA)
- Knife or snips (to cut grommets)
- Buffer tube stripper tool (score/cut buffer tubes)
- Fiber optic stripper tool
- Fiber splicing tools and equipment
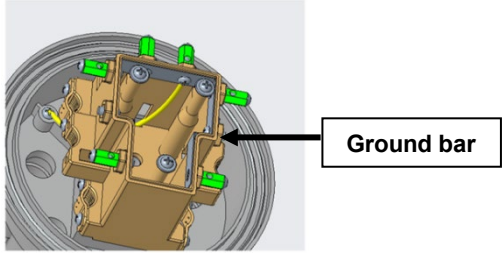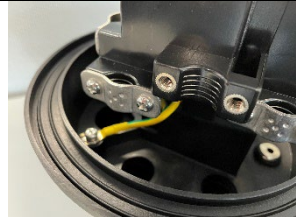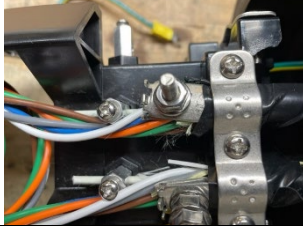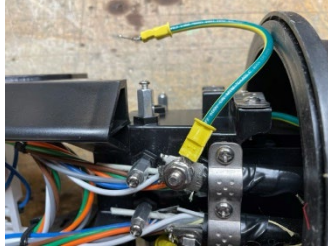- Safety glasses and work gloves
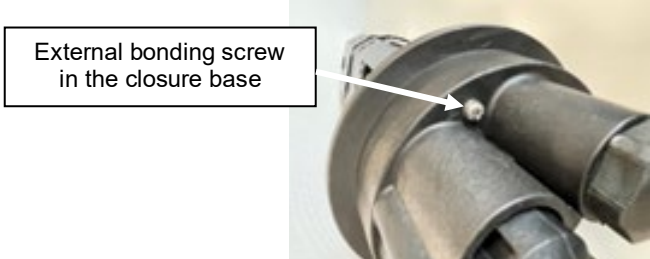
4.1. Route Express Cable Loop into Closure

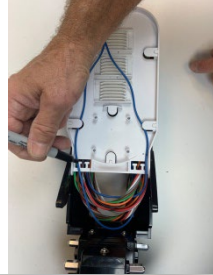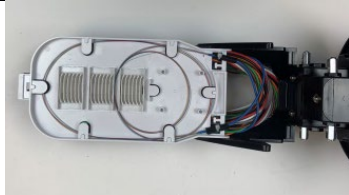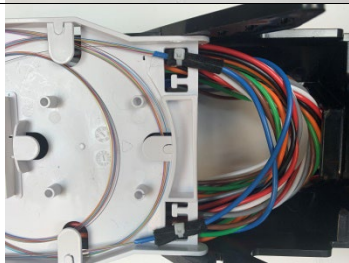| Step #	Instruction	
1	Open the clamp at the base of the dome. Remove the clamp. Remove the O-ring that fits inside the base of the FODC. Slide the dome off of the FODCA assembly. Set the clamp, dome, and O-ring aside for later use.	
2	The splice trays are attached to a pair of tray brackets on the FODCA. The tray tabs on each side fit into the keyholes on the tray bracket. To pivot the tray, ensure that the tabs are in the pivot position (the upper, round section of the keyhole. To lock the tray upright, slide the tabs downward into the lock position (the lower, narrow section of the keyhole. **Warning: If the tray is in the lock position, and the user attempts to pivot the tray without re-positioning the tabs, the tabs WILL break off. ALWAYS reposition the tabs before pivoting the tray.** Remove the splice trays from the transport tray and set aside.	 **PIVOT POSITION** **LOCK POSITION**

3	Locate the express port (oval port) on the base of the FODCA. Use a 5 mm (or 3/16") Allen wrench to remove the screws securing the express port closed. Remove the sealing components. The plastic inner and outer gaskets are shipped inside the express port. The rubber middle gasket ships in the tools and accessories kit. At this time, select the appropriately sized middle gasket from the bag. • Small gasket: for 8-14mm cable • Large gasket: for 14-17.5mm cable Place the chosen gasket alongside the plastic inner and outer gaskets for later use.	
4	Locate and remove the attachment plate just above the FODCA base. The attachment plate is held in place by three Phillips screws. Save these screws for later reuse. Two strength member brackets are located above the attachment plate. These brackets have a hole for inserting the strength member with a set screw to secure the strength member in place.	 **(2) Strength Member Brackets with Set Screws** **Attachment Plate**
5	Insert a length of unsheathed cable into the express loop hole. • If using a 96-fiber cable, insert an 8 ft. length. • If using a 144-fiber cable, insert a 6 ft. length. Route this loop through the opening in the transport tray.	 **Route loop thru transport tray opening**
6	Separate the buffer tube(s) that will be routed into the splice tray(s). Loop the buffer tubes inside the transport tray, managing as needed using cable ties.	

7	Secure both strength members using strength member bracket set screws. The strength member brackets have a hole through the center for inserting the strength member. A set screw in the top of the bracket applies pressure to the strength member to hold it in place.	**Insert strength member into hole in bracket.** **Tighten set screw to hold strength member in**
8	Replace the attachment plate, securing with the three screws removed previously.	
9	Inspect the rubber middle gasket selected previously. Some gaskets have a factory-cut slit. If this gasket does not have a slit on the side, cut a slit using scissors or snips.	
10	Take the plastic inner gasket and connect the pieces around the sheathed cables. Push this grommet inward into the express loop port. Fit the rubber middle gasket around the cables. Push this gasket inward into the express loop port.	
11	Reassemble the plastic outer gasket around the cables. Put the metal compression plate back in place on the outer gasket. Use the 5 mm (or 3/16") Allen wrench and the screws removed previously to secure the express port sealing components back together in the express loop port.	

4.2. For Use with Armored Cables
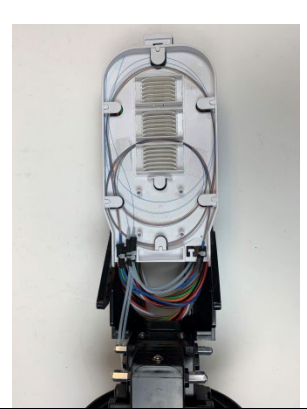
Step #	Instruction	
1	FODCA has an internal ground bar in the plastic tray bracket assembly.	**Ground bar**
2	A pre-installed ground wire from the ground bar to ground has been inserted in the base.	
3	Install feed cable as described in Section 4.1. Attach the cable armor to a bonding connector (the bond shield connectors are customer supplied. For example, 3M Scotch Lock shield bond connectors).	
4	Attach one end of the ground wire to the shield bond connector.	
5	Attach the other end of the ground wire to one of the metal strength member posts and tighten the screw. Repeat this procedure on the second cable loop opening, as well as for any armored branch cables.	
6	Following deployment of the splice case, attach a ground strap or wire to the external bonding screw.	External bonding screw in the closure base

3	**Follow this step for all branch cable ports that will not be used. Ports that are not being used must be plugged to seal the unit** The FODCA tool bag includes plugs for any unused branch cable ports. Insert a plug through the hole in the branch port grommet and slide the grommet back into the branch port. Note: some grommets have integrated metal end rings, and some have separate metal end rings. Be sure to place the metal rings on either side of the grommet in the branch port when installing	
4	Locate a branch cable grommet from the tool bag that is the proper size for the cable to be installed into that port. See Section 7 for grommet information. The holes in the grommet are sealed with a thin membrane. Use a narrow pointed object to pierce this membrane. Route the cable through the branch cable port screw, then through the hole in the grommet.	
5	Determine the length of branch cable needed for routing into the splice tray. Un-sheath this section. Route the unsheathed branch fiber through the branch cable port into the FODCA.	
6	The FODCA base has attachment plates and strength member brackets on the sides, similar to those shown in section 4.1. Use the set screws in the strength member brackets to secure the branch cable as described in that section. Tighten the branch port screw. Use the included wrench and tighten as much as will easily tighten. Note that some grommets have multiple openings for multiple cable depending on the cable size. One need not use all of the holes to seal the unit. By tightening the port screw completely, the grommet will compress and seal the cable. Even if only one cable is installed.	
7	Route the branch fibers into the splice tray (both branch fibers enter the tray on the same side). Route fibers inside the tray. Secure the fibers as described in section 4.2.	
8	Perform splicing operations inside the tray.	

9	When all splicing operations are complete, replace the tray cover(s). Use the Velcro included with the FODCA to secure the splicing trays into the transport tray.	

4.5. Closing the FODCA

Step #	Instruction	
1	Replace the O-ring in the groove on the FODCA base. Replace and tighten the clamp around the FODCA.	

4.6. Mounting the FODCA

The FODCA can be mounted on a pole or on an aerial strand using an appropriate mounting kit (purchased separately, see Table 1).

4.6.1. Pole Mounting

The pole mounting kit includes four mounting straps (2 large, 2 small) and a pair of offset mounting brackets.

1. Use the smaller straps to secure the brackets to the FODCA.
2. Use the larger straps to secure the FODCA to the pole.

The pole mounting assembly is shown in Figure 4.

4.6.2. Aerial Strand Mounting

The aerial strand mounting kit is compatible with a 1/4" to 3/8" aerial strand.

1. Affix the aerial strand mounting brackets and the tap brackets to the FODCA using hardware included with the kit.
3. Loosen the screws on the tap brackets so that the clamps can be hung over the strand.
4. Tighten the clamps around the strand to suspend the FODCA.

The aerial strand kit is shown in Figure 5.

4.6.3. Pedestal Mounting

The FODC may be mounted in a number of Amphenol Charles Broadband Pedestals .A few different options can be used. The FODCA can be attached to the mounting stake using the pole mounting kit and banding the dome. In addition, the unit can be attached to the mounting stake simply with Zip ties.

4.6.4. Hand-hole Mounting

The FODC is generally placed loose in the hand-hole or vault.

Figure 4
Pole Mounted FODCA

Figure 6
FODCA in a pedestal

Figure 5
Aerial Strand Kit

5. TECHNICAL ASSISTANCE AND REPAIR SERVICE

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

847-806-8500
techserv@charlesindustries.com (email)
http://www.charlesindustries.com/techserv.htm

6. SPECIFICATIONS

Physical	
Dimensions and Weight	21"H, dome: Ø7.5", clamp: Ø8.9"; approximately 9.2 lbs. (4.2kg) as shipped
Feed Cable Ports	0.315 to 0.689 inch O.D. (8 to 17.5 mm)
Four branch port cable entries: Grommet options	Each port can accommodate 0.315" to 0.669" (8 to 17 mm) cable or multiple smaller cables per port. See Part Number Information for additional grommet options
Environmental	
Ambient Temperature Range	- 40°F to + 149°F (- 40°C to + 65°C)

Table 1   FODCA Specifications

7. PART NUMBER INFORMATION

Model	Description
FODCA144BBCEF	FODC, A size, four 36-splice trays, 144 splice capacity; four 1-hole, 8-14mm, two 4-hole 5-7mm, two 2-hole 4x8mm (flat), two 9-hole 3mm, branch port grommets
FODCA144BCEFN	FODC, A size, four 36-splice trays, 144 splice capacity; four 1-hole, 8-14mm, two 4-hole 5-7mm, two 2-hole 4x8mm (flat), two 9-hole 3mm, branch port grommets, internally bonded and 2 ground wires
Optional Equipment	
97-FODCAMKT	Aerial mount kit
97-FODCPLKTA	Pole mount kit

Table 2   Part Numbers

The FODCA ships with a selection of grommets for the branch cable ports. If the cables to be used require different sizes or quantities, please contact Charles with your required configuration. The full list of available grommet options is shown below:

Label	P/N	Size	View
A	97-FODCGRA4	14-17 mm	
B	97-FODCGRB4	8-14 mm	
C	97-FODCGRC4	4x 8 mm	
D	97-FODCGRD4	4 x 5mm	
E	97-FODCGRE4	9 x 3 mm	
F	97-FODCGRFL4	2x 8x4 mm	