

# Charles Fiber Optic Dome Closure FODCAS Series General Description and Installation

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**Figure 1 FODCAS**

## 1. GENERAL INTRODUCTION

### 1.1 Document Purpose

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

-NOTE-

*Hereafter the Charles Fiber Optic Dome Closure Series will be referred to as the “FODCAS” or “closure.”*

### 1.2 Product Purpose

The FODCAS is a sealed splice closure (IP68 rated) that is used to link or break down fiber connections.

### 1.3 Product Mounting and Location

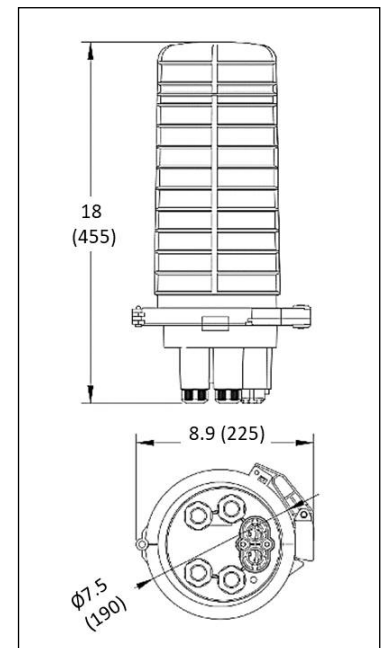
The FODCAS is a sealed, IP68 rated unit that can be mounted on an aerial strand, a pole, or below grade in a hand-hole or pedestal. Brackets for aerial and pole mounting are sold separately.

## 2. PRODUCT DESCRIPTION

The FODCAS is a small dome closure designed for distributed split FTTH applications. It can accommodate up to 36 splices when populated with a splitter tray. The FODCAS can be ordered with a 1x8 or 1x4 splitter installed at the factory.

The FODCAS comes with one splitter tray that can accommodate one 1x16 or two 1x8 or 1x4 loose PLC optical splitters. The splitter tray can accommodate up to twelve single fusion splices. The unit comes with a second tray that can hold up to 24 splices.

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



**Figure 2  
FODCAS Dimensions  
in inches(mm)**

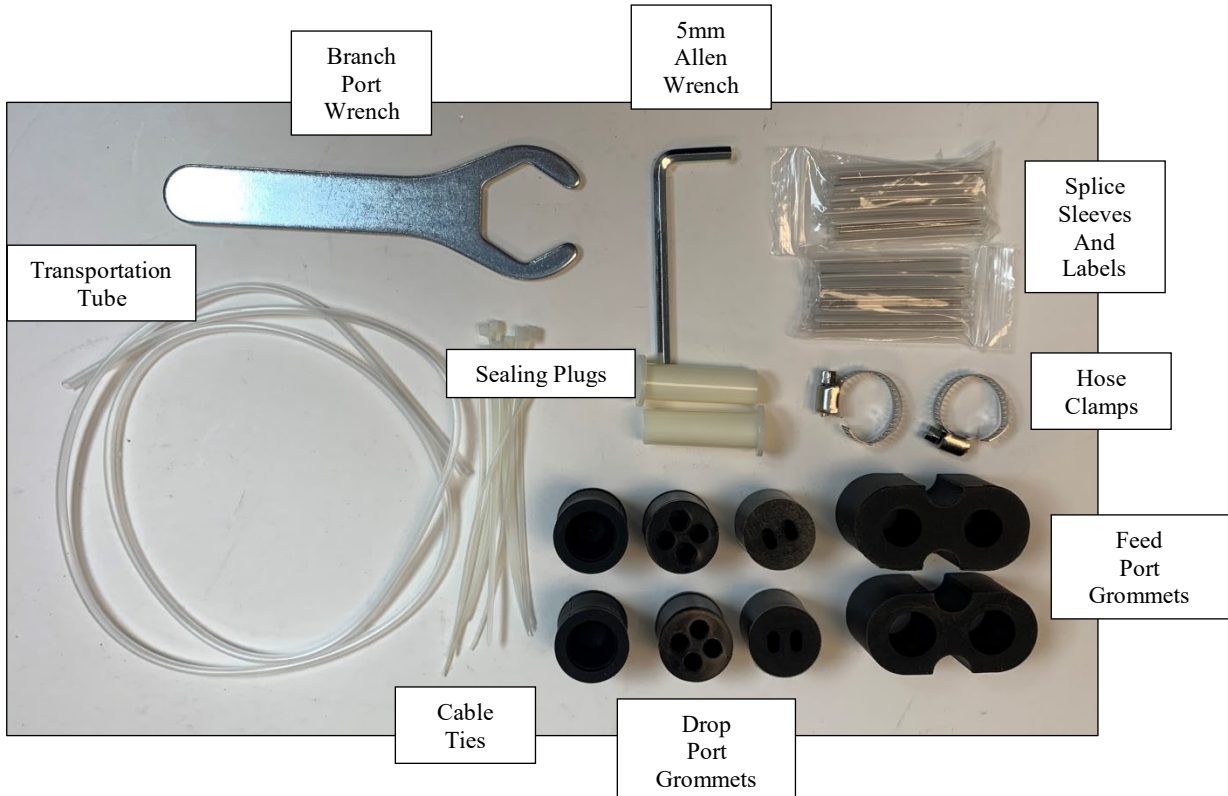


Figure 2 Tools and Accessories

### 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.

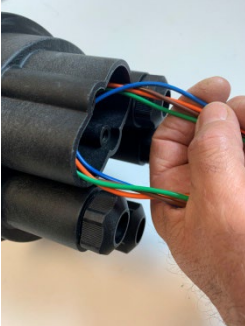

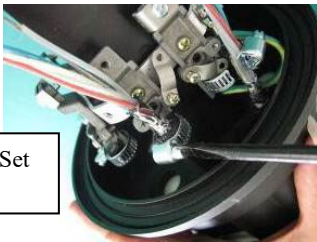

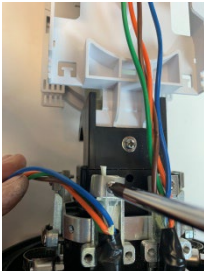
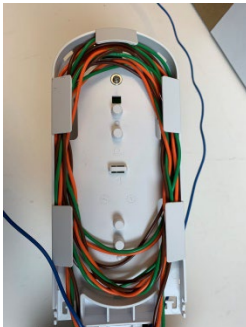

## 4. INSTALLATION

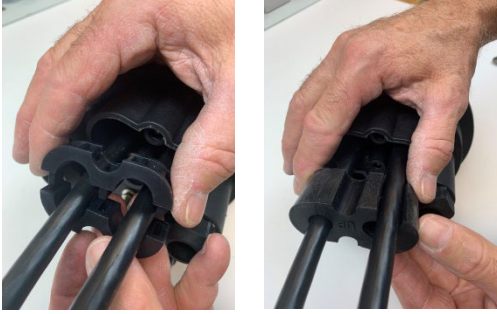

Gather the following equipment to perform the FODCAS installation.

- 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 FODCAS)
- 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


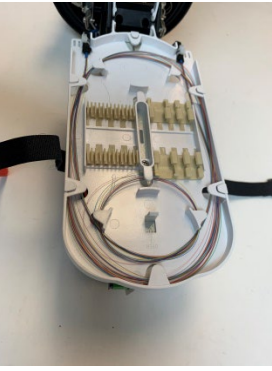
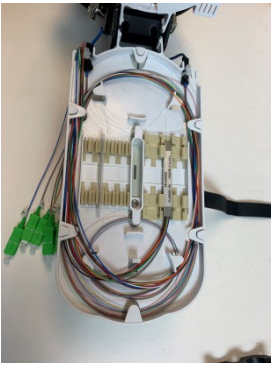
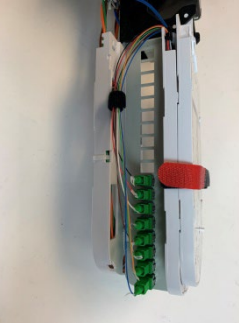
Step #	Instruction	
1	<p>Open the clamp at the base of the dome. Remove the clamp.</p> <p>Slide the dome off of the FODCAS assembly. It may be convenient to remove the O-ring that fits inside the base of the FODC.</p> <p>Set the clamp, dome, and O-ring aside for later use.</p> <p>When viewed from the side, note that the FODCAS has an adapter frame in between the trays and the slack storage basket. The standard FODCAS ships with eight SC/APC adapter ports installed in this frame. The frame can hold up to 18 adapter ports total. Units with additional adapters can be special ordered.</p>	
2	<p>Locate the express port (oval port) on the base of the FODCAS.</p> <p>Use a 5 mm (or 3/16") Allen wrench to remove the screws securing the express port closed.</p> <p>Remove the sealing components. The hard plastic inner and outer grommets are shipped inside the express port. The soft rubber middle grommet is included in the tools and accessories kit.</p> <p>At this time, select the appropriately sized middle grommet from the bag.</p> <ul style="list-style-type: none"> <li>• Small rubber grommet: for 10-14mm cable</li> <li>• Large rubber grommet: for 14-17.5mm cable</li> </ul> <p>Place the chosen grommet alongside the plastic inner and outer gaskets for later use.</p>	

<p>3</p> <p>Prepare a feed cable per company practice. A ring cut (unsheathed length) of 6 feet is recommended.</p> <p>Route this loop into the FODCAS.</p> <p>FODCAS has cable clamps with teeth that are pre-installed into the attachment plate. These are used for armored cable.</p> <p>For dielectric cable, remove these cable clamps and set aside.</p> <p>If using armored cable, push the clamp to the side to install the cable, and then re-apply the clamp to attach to the cable armor.</p> <p>Insert a hose clamp into (or around) the slots on the cable attachment bracket. Tighten the hose clamp to secure the cable.</p>		    <p>Clamp Set Aside</p> <p>Clamp on Armored Cable</p>
<p>4</p> <p>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.</p>		
<p>5</p> <p>Separate the buffer tube(s) that will be routed into the splice tray(s).</p> <p>Loop the buffer tubes inside the slack storage basket, managing as needed using cable ties.</p> <p>Note: The fiber basket on the FODCAS can store a maximum of eight 6-ft buffer tubes (96-fiber cable) Take care to avoid kinking the cable as it is being stored. Some users may only be comfortable fitting six buffer tube (72-fiber) cable. Buffer tube diameter might determine whether 72 or 96 fiber can be stored in the transport tray.</p>		
<p>7</p> <p>Inspect the rubber middle grommet selected previously. Cut a slit on each side using scissors or snips.</p>		


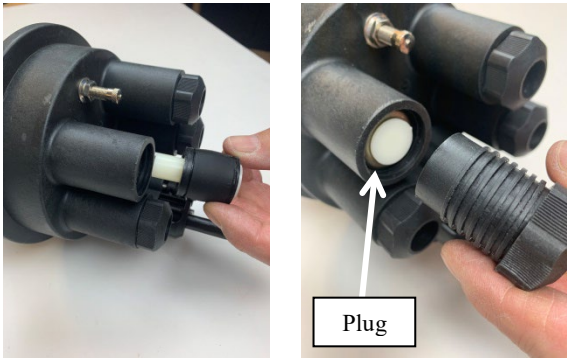
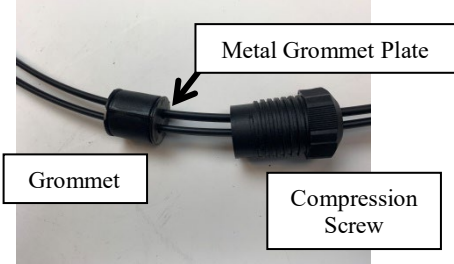

<p>8</p>	<p>Take the plastic inner grommet and connect the pieces around both cable jackets. Push this grommet inward into the express loop port.</p> <p>Fit the rubber middle grommet around the cables. Push this grommet inward into the express loop port.</p>	
<p>9</p>	<p>Reassemble the plastic outer grommet around the cables.</p> <p>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 port. Tighten the screws until they are firmly seated.</p>	





### 4.2 Route Fibers in Tray

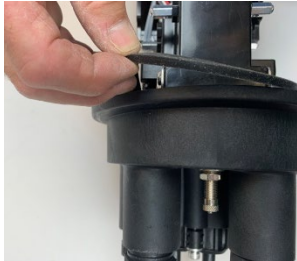

Step #	Instruction
1	<p>The FODCAS includes one splice tray in the top position with 12 slots to hold splice sleeves. The tray can accommodate 12 splices single stacked or 24 splices double stacked. Before splicing, remove the tray cover and set it aside.</p> <p>The FODCAS also includes one splitter tray in the bottom position. The wide slot in the splitter tray can hold one 1x16 splitter, and the two narrow slots hold 1x4 or 1x8 splitters. The FODCAS can be ordered with a pre-installed splitter in this tray. The splitter tray also includes a splice holder than can hold 6 or 12 splices sleeves.</p>
2	<p>Place the separated buffer tube into the tray, marking the points on each side where the buffer tube enters the tray.</p> 
3	<p>Remove the buffer tube sheathing between the two marks. Route the loose fibers inside the tray.</p> <p>Use felt and cable ties to secure the buffer tube at both entry points on the tray.</p> 
4	<p>Splice the incoming fiber to the splitter's input fiber.</p> 
5	<p>Route the splitter output connectors to the ports on the adapter frame.</p> <p>When complete, use the Velcro strip to secure both trays in a closed position.</p> 

### 4.3 Install Plugs and Branch Cable into FODCAS

Step #	Instruction
1	Determine which branch cable ports will be used for cable and which will not be used in this installation.
2	<p>Locate the branch cable ports on the bottom of the closure. Open the ports by removing the compression screw by hand or using the branch port wrench included with the FODCAS.</p> 
3	<p><b>Follow this step for all branch cable ports that will not be used.</b></p> <p>The FODCAS accessories bag includes plugs for any unused 8-14mm branch cable ports. Insert a plug through the hole in the branch port grommet and slide the grommet back into the branch port.</p> <p>The 8-14mm branch port grommets ship with metal plates integrated into the grommet to aide in proper grommet compression when tightened.</p> 
4	<p>Locate a branch cable grommet from the tool bag that is the appropriate size for the branch cable used. See Section 7 for grommet information.</p> <p>The multi-hole branch cable grommets have separate metal plates. Place a plate on either side of the grommet.</p> <p>Route the end of the branch cable through the compression screw, then the metal plate-grommet-metal plate assembly and into and through the closure branch port.</p> 
5	<p>Determine the length of branch cable needed for routing into the splice tray. Unsheat this section.</p> <p>Route the unsheathed branch fiber through the branch cable port into the FODCAS.</p> 

<p>6</p>	<p>The FODCAS base has attachment plates and strength member brackets on the sides, similar to those shown in section 4.1.</p> <p>Depending on the size of the branch cable, a different cable securing method can be used. Use hose clamps for larger branch cables, or the cable clamp for flat drop cables. Cable ties can be used for smaller drop cables. Note that the majority of strain relief is provided by the branch port compression grommets.</p> <p>Attach connectors to the drop cables. Follow company practice for the type of connector used.</p>	
<p>7</p>	<p>Route the branch fiber(s) to the other side of the adapter frame and connect the fibers to the adapter port(s).</p>	

#### 4.4 Closing the FODCAS

Step #	Instruction		
<p>1</p>	<p>Replace the O-ring in the groove on the FODCAS base.</p> <p>Replace and tighten the clamp around the FODCAS.</p>		



## 4.5 Mounting the FODCAS

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

### 4.5.1 Pole Mounting

The pole mounting kit includes four mounting straps and a pair of offset mounting brackets.

1. Use two straps to secure the brackets to the FODCAS.
2. Use two straps to secure the FODCAS to the pole.

The pole mounting assembly is shown in Figure 4.

### 4.5.2 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 FODCAS using hardware included with the kit.
2. Loosen the screws on the tap brackets so that the clamps can be hung over the strand.
3. Tighten the clamps around the strand to suspend the FODCAS.

The aerial strand kit is shown in Figure 5.

## 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](mailto:techserv@charlesindustries.com) (email)

<http://www.charlesindustries.com/techserv.htm>



**Figure 4**  
**Pole Mounted FODCAS**



**Figure 5**  
**Aerial Strand Kit**

**6. SPECIFICATIONS**

Physical	
Dimensions and Weight	18"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 grommet options
Environmental	
Ambient Temperature Range	- 40°F to + 149°F (- 40°C to + 65°C)






**Table 1 FODCAS Specifications**

**7. PART NUMBER INFORMATION**

Model	Description
FODCAS488SA104F	Fiber Optic Dome Closure, A size, with 1x4 fiber splitter, B, D, F grommets included (four each)
FODCAS488SA108F	Fiber Optic Dome Closure, A size, with 1x8 fiber splitter, B, D, F grommets included (four each)
FODCAS488SADF	Fiber Optic Dome Closure, A size, no splitter included, B, D, F grommets included (four each)
Optional Equipment	
97-FODCAMKT	Aerial mount kit
97-FODCPLKTA	Pole mount kit

**Table 2 Part Numbers**

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

Branch Port Grommets			
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-FODCGRF4	2x 8x4 mm	