1.0 General Product Information

AIR FOSC B aerial in-line re-enterable fiber optic splice closure is designed for strand mounted applications. The closure combines CommScope GelGuard sealing technology and FOSC 100 fiber management systems in a strong, rodent-resistant body.

AIR FOSC B closure system can accommodate one cable up to 1.25” in diameter, and two cables .75” in diameter in each end of the closure. Loose buffer tube or central core tube fiber cables and power copper cable can be accommodated. Single fusion, single mechanical, or mass fusion splices can be stored in the closure’s splice organizer trays. At maximum capacity the AIR FOSC closure can contain four splice organizer trays, which can accommodate up to 96 single splices, or multiple mass fusion splices.

Important: Use company-approved safety practices and equipment when installing the AIR FOSC closure.

2.0 Kit Contents

- Housing
- Frame/hanger assembly
- Bond straps
- Splice organizer tray
- Velcro strap
- Gel-filled end pieces
- 1/8”-diameter spiral tubing
- 3/16”-diameter spiral tubing
- Tie wraps
- TRAC tape
- Installation Instructions

3.0 Required Materials

- Snips and sheath knife
- Buffer tube cutter
- Crescent wrench, can wrench
- White marking pencil
- Tape measure
- Company approved cleaning solution
- Clean, dry rags
- Aeroseal clamps
- 20’ of 3/16”-diameter spiral tubing (for central core tube loose fiber applications)
- Extra 1/8”-diameter spiral tubing for multiple drops

Aerial In-Line Re-Enterable Fiber Optic Splice Closure
4.0 Supplementary Kits

**FOSC-ACC-B-TRAY Kit:** Additional splice organizer trays.

**AIR FOSC Closure Taut Sheath Kit:** required for taut sheath splicing applications.

**AIR FOSC Closure Extension Kit:** used in combination with two standard AIR FOSC Closure Kits to create an extended closure for repair applications or for a bi-directional taut sheath splice in a loop-architecture application.

**FOSC-ACC-Sprl Tube 1/8:** 500’ of 1/8” spiral tubing required for multiple drop cables.

**FOSC-ACC-Sprl Tube 3/16:** 200’ of 3/16” spiral tubing required for central core tube loose fiber applications.

5.0 Installation Instructions

5.1 Mark Cables

Locate a loop of fiber optic cable roughly 8 feet in circumference. Mark strand and cables as shown (Figure 1).

*Note: For loose buffer tube cable, it may be desirable to locate the reverse oscillation point at the bottom of the loop.*

5.2 Open Copper Cable (if present)

1. Measure and mark the copper cable 7.5” on each side of the mark created in Section 1. Ring cut and remove cable sheath, shield, and mylar wrapping from the conductors between the marks. (See Figure 1)

2. Refer to Figure 2:
   A. Create a 4” tab in the copper cable at each end of the cable opening. Install a bond clamp in each tab per company approved practices. The stud must be at least 3” from the ring cut.
   B. Wrap the cable surrounding the installed bond clamp and up to the ring cut with vinyl tape.

5.3 Open Main Fiber Cable

1. Measure and mark the fiber optic cable 10” on each side of the loop’s intersection (Figure 1). Ring cut and remove the cable sheath and shield between the marks.

2. Refer to Figure 3 or 4:
   A. Cut strength members 5” from each sheath ring cut.
   B. Remove all but 6” of central core tube (if present) at each sheath ring cut. Clean exposed ribbons, loose fibers, or loose buffer tubes with a clean rag and company approved degreaser.
   C. If bonding the cable, install a company approved bond clamp per locally approved practice.
5.4 Hang Frame

1. Hang the frame on the strand as shown, centering it at the mark on the strand. (Figure 5) Secure with supplied nuts.

2. If necessary, open the tray holder so that it hinges down from the frame.

5.5 Attach Cables to Frame and Bond

5.5.1 Attach Fiber Cable to Frame

1. Align the fiber cable over the “burrs” on the appropriate slot on the frame. (If copper power cable will be used, leave the upper slots open.) Attach strength member(s) to nearest bottle cap washer. Cut each strength member so that the end of the strength member will be trapped under the lip of the frame. (Figure 6 inset)

   Note: Do not place any tape around cables.

2. Thread an Aeroseal clamp through the slot on either side of the “burred” area and secure the fiber cable to the frame. Repeat for the opposite end of the splice opening.

3. Close the routing rings around the central core tubes or loose buffer tubes. (Figure 6)

4. Attach the bond straps to the bond studs of both the copper and fiber cables (if applicable) at each end of the splice opening, and to the bonding hardware on top of the frame. Secure the straps in place with the supplied nuts. (Figure 6)

   Note: The AIR FOSC closure can accommodate external grounding hardware installed per locally approved practice. Contact your CommScope representative for recommendations regarding special grounding requirements.

5.5.2 Attach Copper Power Cable to Frame (if present)

1. If a copper cable is used, it must be attached to the uppermost slots in the frame (Figure 6). Position cable over “burrs” for sheath retention. Thread an Aeroseal clamp through the slot and secure the copper cable to the frame. Repeat for the opposite end of the splice opening.

2. Identify, separate, and cut the appropriate copper pair as close to the dead-to-the-field end of the splice opening as possible.

3. Install four large tie wraps through the holes at the top of the frame (heads inside the frame). Bind the uncut conductors to the frame tightly with the tie wraps. (Figure 6)
5.6 Prepare Fibers for Splicing

5.6.1 Ribbon Cable

1. Identify the ribbon containing the fibers to be spliced, and separate it from the other ribbons. Push the unused ribbons through the window in the frame and allow them to hang in a loop behind the frame. (Figure 7)
2. Split out the desired fibers per company approved practice, separating them from the remainder of the ribbon up to within 2" of each central core tube.
   a. If cutting the fibers dead-to-the-field, cut the fibers as close to the field side (ONU side) of the splice opening as possible.
   b. If the fibers are part of a loop architecture, cut them in the middle of the splice opening.
3. Cut a 2" section of 3/16"-diameter spiral tubing and wrap it around the uncut fibers from the selected ribbon.
4. Cut a 20" length of 1/8"-diameter spiral transportation tube and slide it over the cut fibers from the selected ribbon.
5. Slide both tubes up the ribbon/fibers until they are positioned as shown (Figure 7 inset)
6. Insert small tie wraps through two holes in the frame and secure the transportation tubes to the frame with the tie wraps. Be careful not to crush the ribbon by overtightening the tie wrap.
7. Leaving the cut fibers in the transportation tube in front of the frame, route the uncut fibers from the selected ribbon through the window in the frame and combine it with the other uncut ribbons.
8. Organize, coil, and store the slack, uncut ribbons on the back of the frame. Close the routing rings around the ribbons, being careful not to pinch any fibers in the rings. (Figure 8)
9. Attach one spiral tube to each end of the splice organizer tray and store the fiber on the tray. (See Figure 12)

5.6.2 Loose Buffer Tube Cable

1. Separate the buffer tube containing the fibers to be spliced from any remaining buffer tubes. Push the unused loose buffer tubes through the window in the frame and allow them to hang in a loop behind the frame. (Figure 9)
2. Remove the two routing rings from the back of the frame (used with ribbon cable only), and coil and store the express buffer tubes as shown in Figure 8. Be careful not to kink the tubes.
3. Mark the buffer tube containing the desired fiber(s) 15" from each sheath opening. Remove the buffer tube from the fibers between the marks per company-approved practice, or cut the entire tube dead to the field. Clean the exposed fibers with a clean rag and company-approved degreaser.
4. Cut two 15” lengths of 1/8”-diameter spiral tubing and install them over the fibers at each end of the splice opening. The spiral tubing should overlap the remaining buffer tube by 1.5”. (Figure 9 inset)

5. Insert small tie wraps through the holes in the frame and secure the spiral-wrapped fibers to the frame with the tie wraps.

6. Close a routing ring around the buffer tube (locate routing rings as required).

7. Attach one spiral tube to each end of the splice organizer tray and store the fiber on the tray. (See Figure 12)

5.6.3 Central Core Tube Loose Fiber Cable

Note: Unlike Ribbon and Loose Buffer Tube cable, expressed fibers in Central Core Tube Loose Fiber Cable must be stored on organizer trays. Each splice organizer tray can store up to 24 loose fiber slack loops (2 binder groups). Therefore, for cables containing more than 24 fibers, a FOSC-ACC-B/TK kit must be purchased to supply the extra storage tray(s) required to store the loose fibers. Each FOSC-ACC-B/TK kit contains three splice storage trays.

1. For every two binder groups in the cable, cut two 24” sections of 3/16”-diameter spiral tubing (not included in this kit). Install the tubing around the selected two binder groups near each central core tube. (Figure 10)

2. Route the spiral tubing from each side of the cable across the frame and onto the opposite side of a splice storage tray. The tubes should form an “X” in front of the frame.

3. Secure each spiral tube to the tie-down slots in the tray with tie wraps. Coil the fibers and store them on the tray. Replace the clear plastic tray cover.

4. Install a splice organizer tray from the FOSC-ACC-B/TK kit on top of the existing tray(s).

5. Repeat Steps 1-4 until every two binder groups from the cable are stored on a splice storage tray.

6. Insert small tie wraps though the four holes in the frame and secure the spiral-tube wrapped fibers to the frame with the tie wraps.

7. Close the routing rings around the central core tubes.

5.7 Prepare Copper and Fiber Drop Cables

1. Ring cut and remove 10” of cable sheath from the copper drop cable (if present).

2. Ring cut the fiber optic cable sheath 60” from the end of the cable. Remove 60” of cable sheath, and strip the insulation and aramid yarns away from the buffer tube and strength member.

3. Cut the strength member 3.5” from the sheath ring cut.

4. Ring cut and remove the buffer tube from the fibers 15” from the sheath ring cut.
5.8 Attach Drop Cables to Frame

1. Drop cables must be attached to the lowest slots in the frame. Loosen one of the lower bottle cap washers, and slide the strength member from the fiber drop cable under it. Trim the end of the strength member so that it is trapped under the lip of the frame. (Fig. 11)

2. Two drop cables (copper or fiber) can be attached to the lower slot in the frame with an Aeroseal clamp. Thread the straps or clamp through the lower slot and secure the cables to the frame.

5.9 Splice Copper Drop Wires (if present)

1. Splice the power pair from the drop to the power pair from the main cable per company approved practice.

2. Fold and store the spliced copper pair against the frame between the main copper cable and the drops. (Figure 11)

5.10 Prepare and Organize Drop Fibers for Splicing

1. Cut and install a 15" length of 1/8"-diameter spiral transportation tube over the drop fibers, overlapping the remaining buffer tube by 2".

2. Route the spiral-wrapped drop fibers onto the splice organizer tray and attach the tube to the frame with two tie wraps. (Figure 11 inset)

*Note: Be careful not to trap extra loose buffer tubes or ribbons from the back of the frame when installing the tie wraps around the spiral tubes.*

3. Close the lower routing rings around the spiral tube-wrapped fibers.

5.11 Butt Splice/Reel End Splice

1. Strip six feet of cable jacket from cable ends.

2. Strip all but 15" of loose buffer tubes from fibers, or remove all but 11" of central core tube.

3. Secure cables to top and bottom ports.

4. Secure 15" length of 1/8"-diameter spiral tubing from top cable fibers to top slot of splice organizer tray. Secure 15" length of 1/8"-diameter spiral tubing from bottom cable to bottom slot of splice organizer tray. (Both tubes are attached to the same end of the tray.)

5. Proceed as in Section 5.12.
5.12 Splice Fibers and Store on Tray

Since the drop cable(s) can be attached to either side of the frame, and the main cable fibers can enter the splice organizer tray in one spiral tube (ribbon cable) or in two spiral tubes (loose fiber or loose buffer tube cable,) the spiral tubes can be attached to the splice organizer tray in several configurations. Figures 12 and 13 illustrate examples of proper fiber attachment, though other arrangements are possible. In general:

- If it is necessary to splice very short pieces of fiber, the splice trays can be secured directly to the frame with velcro or tie wraps. Transportation tube attachment locations remain as shown in Figures 12 and 13. Contact your CommScope representative for recommendations regarding special tray attachment requirements.

- The provided splice organizer tray is secured to the bracket with velcro. It can be moved from side to side to make spiral tube attachment easier.

- If using central core tube loose fiber or loose buffer tube cable, attach the two spiral tubes containing the fibers from the main cable to the top slots or the bottom slots of the splice organizer tray. (The bottom slots are preferable.) Secure the tubing to the selected slot with two tie wraps. (Figure 12 shows two spiral tubes from the main cable secured to the bottom slots.)

- Attach the spiral tubing containing the fibers from the drop cable to the top or bottom slot of the splice organizer tray. (Again, the bottom slot is preferable.) Secure the tubing to the selected slot with two tie wraps. (Figure 12 shows the drop fiber tube secured to the bottom slot.)

- Fibers must be routed from the top of the arcs through the top splice module insert, or from the bottom of the arcs through the bottom splice module insert. Do not exceed the maximum bend radius.

- When all splices have been completed and stored, install plastic tray tabs on the arcs to help hold down the fibers. Replace the clear plastic tray cover, and secure the trays to the bracket with the velcro strap.
5.13. Install Closure Body

1. Lift the tray bracket so that it snaps closed against the frame. Avoid pinching ribbons, buffer tubes, transportation tubes, etc. in the bracket.

2. If the top cable is more than 3/4” in diameter, trim the upper ports in the end pieces at the trim line. The lower two ports are not trimmed. (Figure 14)

3. Position the two end pieces on the frame as shown. (Figure 16)

4. If two drops enter one port, hold the drops together so that their sheath ring cuts are in the same place, and position them against the frame. Mark the cables in the center of the end pieces. Remove the end pieces and set them aside temporarily.

5. Wrap one lap of TRAC tape around one drop cable, centering the tape over the mark created in Step 4. With the second lap of TRAC tape, catch the second drop cable, again centering the tape over the mark. (Figure 15) This step combines the two cables into one so that they can be positioned within the lower port of the end piece.

6. Re-install the end pieces as in Figure 17. Center the cables through the ports of the end pieces. Compress the end pieces to engage the latches.

7. Install cable spacers per company approved practice on either side of the closure, so that the cables are spaced properly and parallel to the strand as they enter the end pieces.

8. Hang the closure body from the end pieces with two tie wraps as shown. (Figure 16)

9. Wrap the closure up and around the frame, and close it over the spliced cables, making sure that the ends align properly with the end pieces. Fasten the supplied bolts to secure the body in place. (Figure 17)

6.0 Reentry

To re-enter the AIR FOSC splice closure, unfasten the bolts that hold the body in place, and cut the tie wraps from the end pieces. The end pieces snap open to expose the cables. Additional cables can be added if the end pieces can accommodate them.

Note: End pieces must be replaced in their original positions. If the cables that were initially installed have been rearranged, it may be necessary to use new end pieces. The addition of new cables without rearranging the old cables should not require new end pieces.