Layered Fiber Demarcation Box Installation Instruction

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1.0 General Product Information

Description

All Systems Broadband offers a Layered Fiber Demarcation Box designed for high-density fiber connectivity and splicing for indoor wall mount applications.

This compact demarcation fiber enclosure can accommodate SC-UPC or SC-APC style adapters and mass fusion splice sleeve holders. Incorporated in a layered, split-housing design are separate carrier and customer areas with individual security bolts and padlock hasps. This enclosure is available with or without a feeder cable stub for ease and speed of installation. The flexible enclosure layout enables a variety of splicing and patching combinations as well as cable entrance/exit ports top and bottom.

2.0 Safety Precautions

⚠ Danger: Direct eye exposure to laser light will cause serious eye damage. Avoid looking directly into an optical fiber, optical connector or optical adapter that is connected to an active source.

⚠ Warning: Wear safety glasses to prevent accidental eye injury. Wear protective gloves and clothing to prevent accidental injury.

⚠ Warning: Observe company policies and procedures regarding personal safety.

⚠ Warning: Follow local and national safety and construction codes.

⚠ Caution: Handle fiber optic cable per manufacturer's recommendation for minimum bend radius, maximum tensile loading, and maximum crush resistance.

3.0 Tools Required

- 216 Tool
- #2 Phillips Screwdriver
- Fiber Optic Cleaning Supplies
- Cable Preparation Tools

4.0 Package Contents

- Layered Fiber Demarcation Box
- LFD Box Standard Sub-Assembly Kit

  - Cable gland kit

  - Tie-wraps

  - Mounting template

  - Mounting screws

  - Installation Instructions

- Additional component kits per ordered configuration

  Components may be selected at time of order using the ordering guide section of the product datasheet.

Accessory kits are also available and can be ordered separately. See product datasheet for details. These kits are also listed on the Accessory List found on www.allsystemsbroadband.com

Installing the Product

5.0 Unpacking

Ensure all components are available per the configuration ordered.

6.0 Mounting

⚠️ Caution: Exercise care when mounting box to avoid damaging ribbons.

Box Assembly without Cable Stub

> Locate mounting template and four 1 inch mounting screws.
>
> Tape template to wall in desired position and mark four screw locations.
>
> Install screws into wall at the four [4] locations on template, keeping head of screws ~ 1/8 inch from wall.
>
> Position the keyhole on back of box over screws and tighten against wall (Fig. 1).

Box Assembly with Cable Stub

> Place cable coil near mounting location.
>
> Start with the outside [free end] of cable coil and route all cable to splice point.
>
> Leave enough cable slack to properly position box on wall.
>
> Locate mounting template and four 1 inch mounting screws.
>
> Tape template to wall in desired position and mark the four screw locations.
>
> Install screws into wall at the four [4] locations on template, keeping the head of screws ~ 1/8 inch from wall.
>
> Position the keyholes over screws and tighten against wall (Fig. 1).

7.0 Cable Preparation

This procedure focuses on cable preparation of indoor/outdoor ribbon cables with flexible dielectric strength members. Refer to the strength member bracket accessory kit for cables with rigid strength members.

> Determine the cable entrance direction into the box.
>
> Reference Recommended Cable Prep Length table and mark cable sheath accordingly.
>
> Prep cable by removing sheath and cable elements to the mark.
>
> Locate cable compression seal assembly from Sub-Assembly Kit and remove nut.

Fig. 1

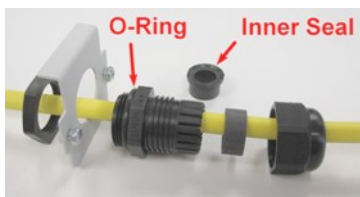| Recommended Cable Prep Length		
Box Capacity	**Top Entry**	**Bottom Entry**
24		
48	108"	86"
72		

Fig. 2 (cable port plates)

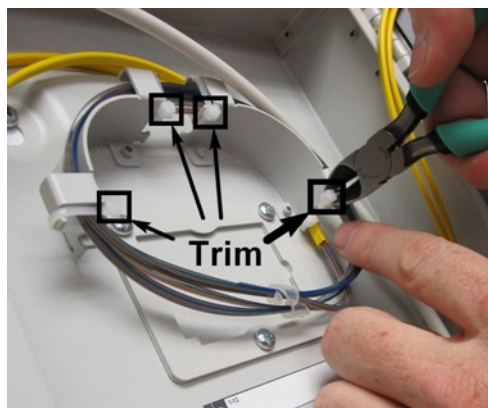

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Slide compression cap, rubber seal and coupler body (with installed O-ring) onto cable.

With cable diameters greater than 0.3 inches, the inner, smaller gasket seal should be removed.

Locate cable port plate with hole (Fig. 2) and slide it and compression seal locking nut onto cable (Fig. 3).

Orientation of cable plate should be checked.

Assemble components of cable compression seal (Fig. 4).

Attach to cable port plate with locking nut, keeping them finger tight until final cable assembly in box.

Position the assembly approximately 2 inches below end of sheath ring cut.

Reference the Cable Grounding section now if grounding a non-dielectric cable is required (page 7).

Insert cable retention assembly into access port of box. Ensure cable port plate rests flat against the inside wall and screw heads protrude out keyholes.

Slide cable port toward rear of box and secure cable port plate with two screws provided (Fig. 5).

Position sheath clamp over cable and secure with provided screws (Fig. 6).

Tighten compression nut to create a seal on cable.

Remove the stored ribbons from the bend control and store them in the lower fiber clips prior to routing and securing the cable fiber tube.

Cut and remove the four installed tie-wraps holding ribbon loops to the bend limiting brackets (Fig 7).

Note: Care must be taken to ensure the ribbons do not get damaged. Push the ribbons slightly away from the tie-wrap head, and cut the head of the tie-wraps off flush, and remove. The tie-wrap heads should always be located inside the bend limiting brackets away from the ribbon.

Remove the group of ribbon loops and temporarily reposition/hang them over one of the white plastic clips below.

Route the central core tube around inside of box perimeter (large loop) and mark approximately 1/4 inch beyond the left bend limiting bracket .

Ring cut the central core tube at the mark and expose optical ribbons.
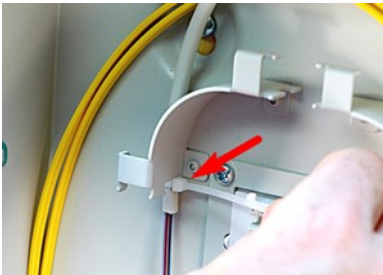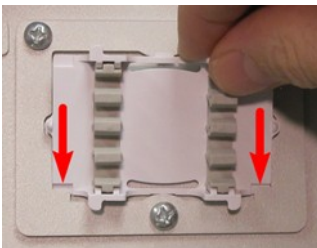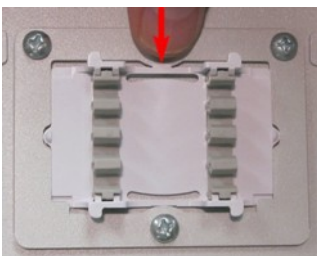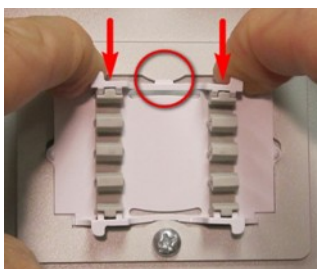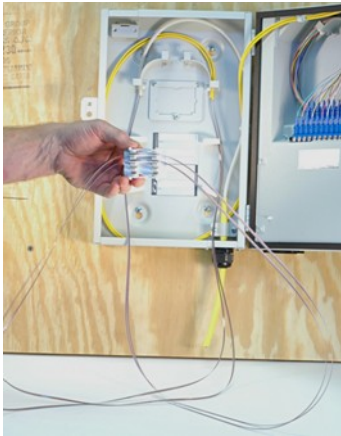
Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Install a tie wrap loosely around fiber tube (Fig. 8), then position tube against rear wall at **bottom** of bracket and tighten tie wrap (Fig. 9).

8.0 Splice Module

Installation

Position the module into frame (Fig. 10), with bottom corners aligned to interlock inside frame corners.

While in position (Fig. 11), press down against top center top tab (arrow) until it locks into metal frame of box.

Note: Check to make sure the module is securely installed .

Removal

Push down on splice module (Fig. 12) to disengage center top tab and remove from metal frame of box.
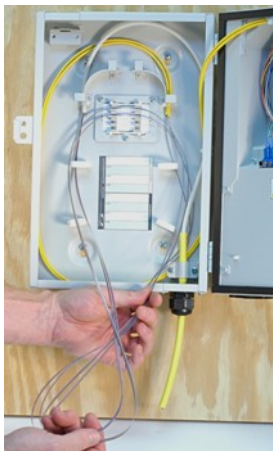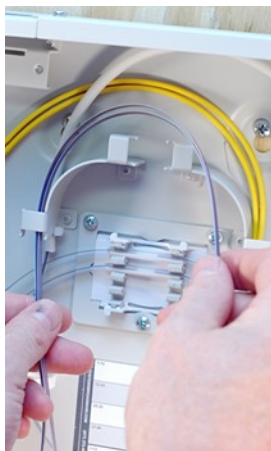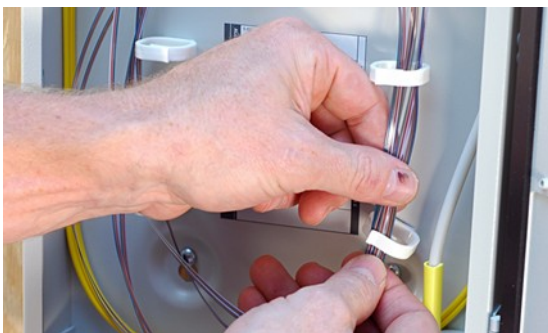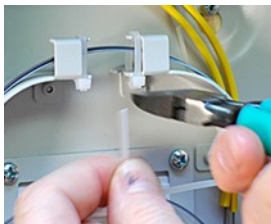
Fig. 13

9.0 Splicing

Trim all ribbons as follows:

24 Fiber Box – 48"

48 & 72 Fiber Box – 54"

Remove the splice module as described above.

Remove all twists that may exist in ribbons all the way up to splice point.

Splice ribbons and install splices into the module.

10.0 Storing Spliced Ribbons

To store ribbons flip module counter-clockwise (to left), creating a cross in the ribbons (Fig. 13), and snap module into metal frame of box as described in Section 8.0 – Splice Module.

Grasp remaining shorter ribbon loops and flip them clockwise creating a cross in the other direction (Fig. 14).

Store the end of the loops over the bend limiters (Fig. 15).

Grasp ribbon group on each side and store them into the white plastic retaining clips (Fig. 16), making sure all ribbons are retained on each side.

Secure ribbons at the bend limiters (4 places total) with tie wraps and trim the excess tie wrap length (Fig. 17 & 18).

Note: Secured tie wraps do not put pressure onto the ribbons when positioned correctly around metal work tabs (Fig. 15).

Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18

Fig. 19

Fig. 20

Fig. 21

Fig. 22

11.0 Cable Grounding

All grounding should follow local codes and practices.

When grounding the box and a non-dielectric cable, the components required for this procedure are provided in the grounding kit.

> Attach supplied B-bond clamp to cable per company approved practice.

> Attach stranded #6 AWG jumper ground wire to B-bond clamp (Fig. 19).

Box Grounding can be done after ribbons are spliced and stored.

12.0 Box Grounding

> Locate and remove small metal knock-out nearest to cable or external ground wire .

Note: Ensure that the masking around the inside of the ground feed - thru knock-out hole is removed before installing the ground feed - thru stud.

> Attach Ground Feed – through lug into hole making sure the internal nut is sufficiently tight (>40in-lb)(Fig. 20 & 21). Star washer is positioned between nut and inside of box.

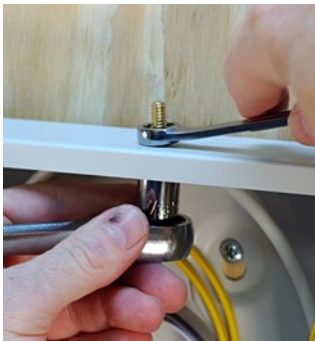> Attach the external ground wire and torque external nut to company approved practices (Fig. 22).

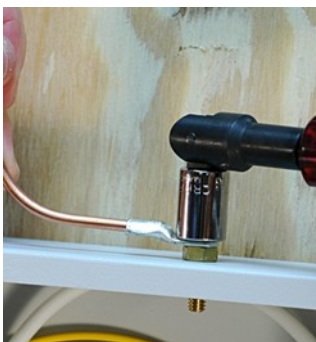| Jumper Lengths [Inches]			
	Top Routing		**Bottom Routing**	
24	45		25	
48				
72	Left Bank	Right Bank	Left Bank	Right Bank
	48	42	28	22

Fig. 23

13.0 Jumper Routing

Note: It is recommended to route jumpers with optimal accessibility and in compliance with the fibers minimum bend radius. If additional service slack is desired the provided table lists ideal jumper lengths per box capacity.

Slit length-wise and trim raised thin section of grommet to allow cords to pass through as needed.

Place rubber grommet in either the top or bottom jumper port of the access side of box; full insertion will cause raised buttons on grommet to fit into keyhole (see arrows Fig.23).

Route jumpers out the top or bottom grommet locations, leaving appropriate jumper slack for handling and reaching the adapter. (Figures 24, 25, & 26 show typical jumper routing for the various size boxes available.)

Clean connectors and insert into appropriate adapter.

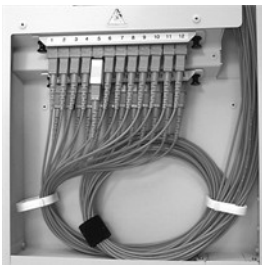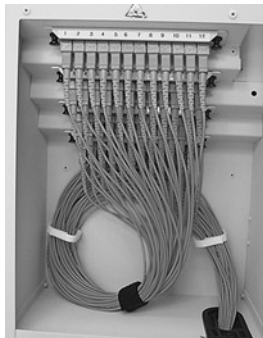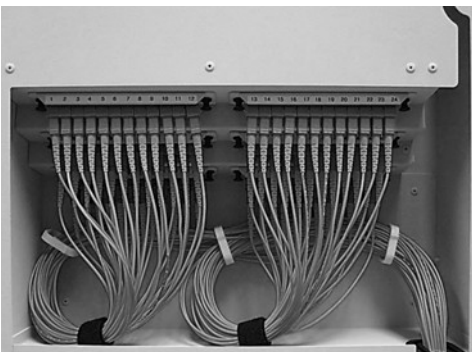Manage jumper slack using routing rings inside access panel.

Fig. 24

Fig. 25

Fig. 26

14.0 Customer Service

1-877-272-4984

customerservice@allsystemsbroadband.com

www.allsystemsbroadband.com

15.0 Connector Cleaning

- Recommended prior to product usage

Note: Utilize connector and adapter protective caps whenever possible; however, this practice does not guarantee cleanliness of the optical interface.

Before connecting, or after each disconnect, it is recommended to perform the following cleaning procedure. A connector inspection scope, lint-free wipes and optical cleaning solvent are necessary equipment.

This procedure conforms to the IPC 8491-1, "Cleaning Methods and Contamination Assessment for Optical Assembly."

- Make sure the fiber is not active.

- Remove the protective caps.

- Gently wipe connector ferrule end with a lint-free wipe.

- Verify cleanliness of the connector with an inspection scope.

- If necessary, gently wipe the fiber end with a lint-free wipe moistened with a small amount of cleaning solvent. Then dry with a clean, lint-free wipe.

- Verify the cleanliness of the connector with an inspection scope.