

SUMITOMO RECOMMENDED PROCEDURE**SRP SP-F04-036****FIELD TERMINATION KIT PROCEDURE FOR
FT24FBK 900µm SUB-UNIT KIT**

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1.0 General

1.1 This procedure describes the standard techniques for installing FutureFLEX Air-Blown Fiber (ABF) 24-fiber bundle using a FT24FBK Field Termination Kit with 900µm sub-units / colored-coded tubes.

1.2 Field Termination Kits are used at locations where fiber bundles containing 250µm fibers are to be terminated and connectorized at fiber optic patch panels, switches, or transmitter / receiver locations.

2.0 Safety Precautions

2.1 When stripping jacketing materials from fiber bundles, use care and properly dispose of any individual fiber ends that are removed. The fiber ends are easily misplaced and can pierce the skin resulting in splinters that are not easily removed.

2.2 The use of safety glasses is strongly recommended during this procedure.

3.0 Reference Documents

3.1 Sumitomo Recommended Procedure, *FutureFLEX Fiber Bundle Stripping Procedure*, SRP SP-F04-006 and Sumitomo FT24FBK Drawing SD-F04-053.

4.0 Equipment / Tools Required

The following equipment, tools, and materials are required to complete this procedure:

4.1 FT24FBK Field Termination Kit with 900µm sub-units

4.2 Adhesive Tape

4.3 Appropriate clean work surface / table

5.0 Preparing the Fiber Bundle

5.1 Provide at least 6" – 8" of additional fiber bundle strip-length beyond the actual fiber length required. SEL's FT24FBK Field Termination Kit has an approximate 36" buffer tube length. Therefore, the 24-fiber bundle jackets should be stripped back at least 42" – 44".

5.2 Refer to SRP SP-F04-006 for detailed fiber bundle stripping procedures and techniques on how to remove the outer foam jacket, access sub-unit ripcords, and remove inner nylon jackets.

5.3 Once the fiber bundle has been stripped, secure outer foam jacket to work surface with adhesive tape

5.4 Separate and organize fiber bundle strands. At the point where the strands exit the nylon sub-unit, carefully arrange them so they are not crossed and carefully separate them along their entire length. **See Figures 1, 2**

5.4.1 There are two (2) different construction styles used for the 24-fiber bundle. The original style which is now discontinued was constructed using 24 strands contained within four (4) **clear** nylon sub-units. The method for Sub-Unit Identification of the original style bundle required examination of the 6th fiber strand which used a unique color identifier, Red for Sub-Unit 1, Yellow for Sub-Unit 2, Violet for Sub-Unit 3 and Rose for Sub-Unit 4. The current 24-fiber bundle is constructed using four (4) **colored** nylon sub-units each containing 6 strands of fiber and adhere to the TIA-598-C Optical Fiber Cable Color Coding of Blue, Orange, Green, Brown, Slate, and White.

5.4.2 Sumitomo also produced two (2) styles of Breakout Kits for the 24-fiber bundle. The original style "Method 2" uses the unique color identifier for the 6th strand within each of the sub units and is supplied with four (4) unique color identifier sleeves, the identifier colors are Red for Sub-Unit 1, Yellow for Sub-Unit 2, Violet for Sub-Unit 3 and Rose for Sub-Unit 4. The new style "Method 1" uses the TIA-598-C Optical Fiber Cable Color Coding of Blue, Orange, Green, Brown, Slate, and White. Please adhere to one of the methods illustrated below to help identify the details of construction applicable to the style of Breakout Kit you are installing. **See Figure 1 and Figure 2**

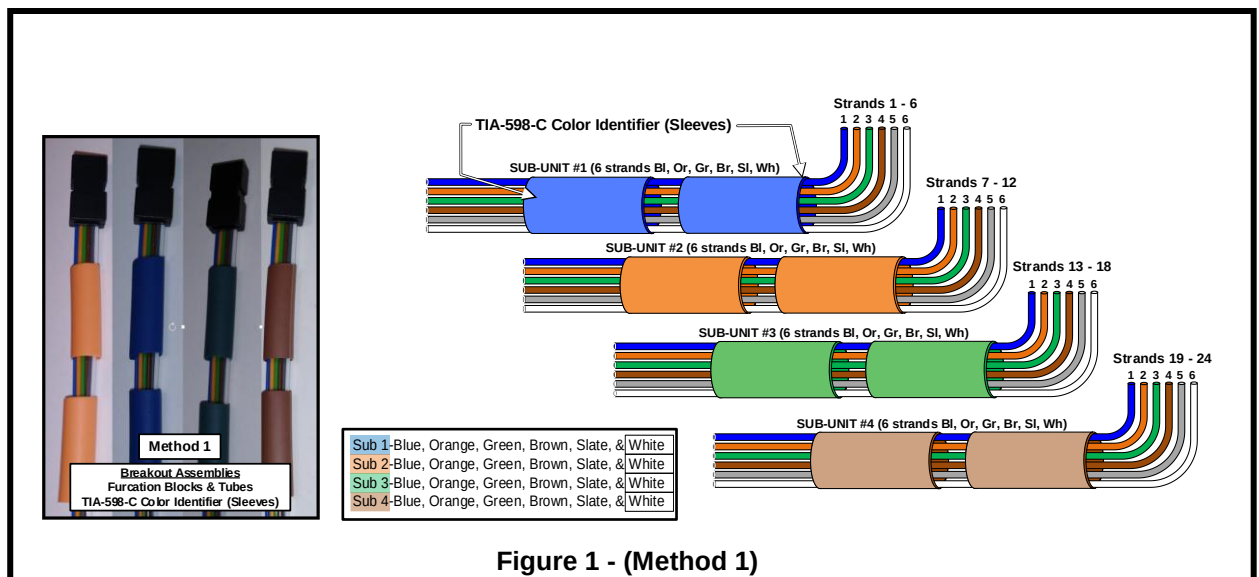
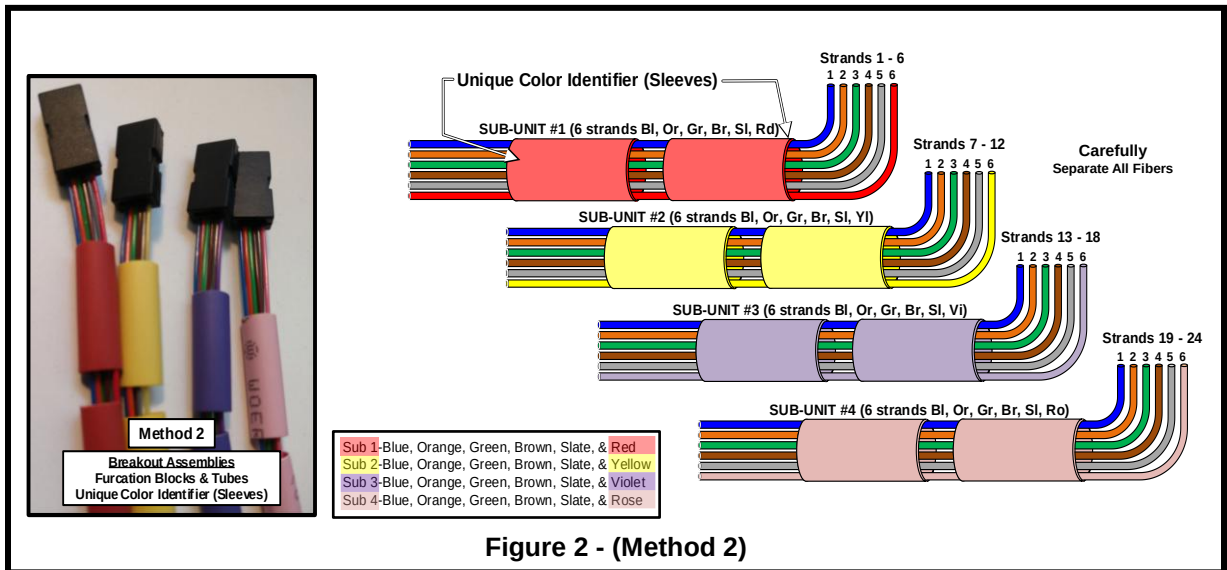


Figure 1 - (Method 1)



6.0 FT24FBK Field Termination Kit

6.1 FT24FBK Field Termination Kit consists of a Base Unit, Cover Unit, four (4) Breakout Unit Assemblies, and a 3mm bushing. **See Fig. 3.**

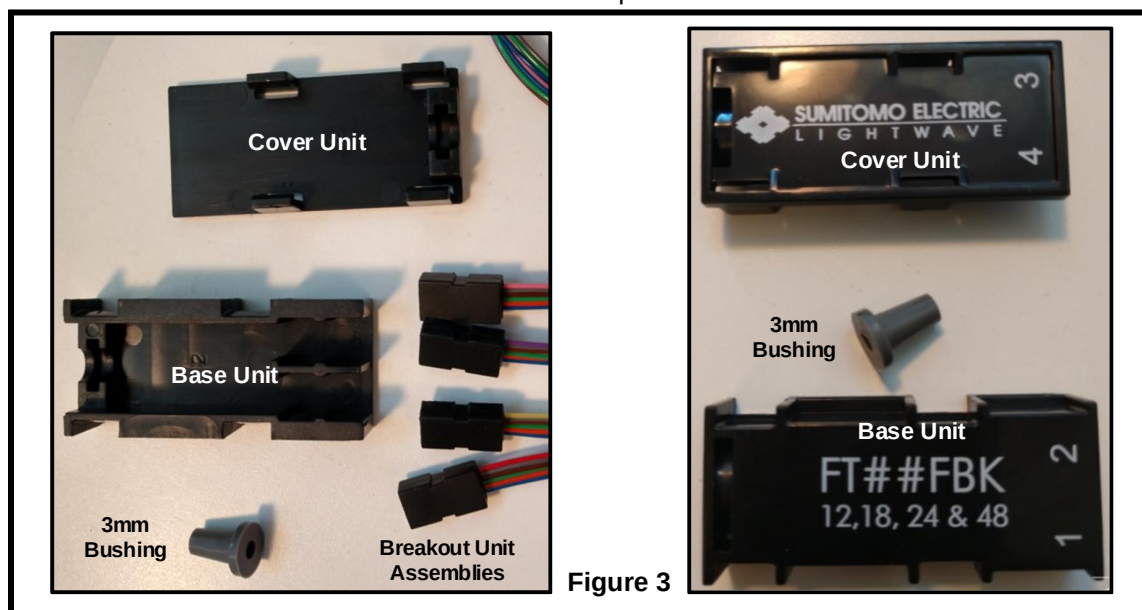
6.2 The Base Unit cavity holds up to four (4) stackable Breakout Unit Assemblies.

6.3 Breakout Unit Assemblies consist of four (4) rectangular black plastic break-out blocks, each with 6 color-coded 900µm OD tubing installed

into the appropriately dedicated holes. Fiber strands are threaded through the tubes, by color, then terminated using standard fiber optic termination procedures and connectors. These units stack, one on top of the other, into the Base Unit cavity. (2 units inside each of the 2 cavities)

6.4 One (1) 3mm Bushing to secure the fiber bundle into the assembled breakout housing.

6.5 The Cover Unit snaps onto the Base Unit to secure the Breakout Unit Assembly and protect exposed bare fibers.



6.6 Detailed Specifications for the FT24FBK Breakout Kit components (Base Unit, Cover Unit, Tubing and Mechanical) **See Figure 4**

Base Unit Specifications

Dimensions (in.): 2.25" L x 1.0" W x 0.6" H
 Material: ABS Plastic
 Color: Black
 Logo: FT##FBK 12, 18, 24 & 48 / Pos. 1 & 2

Cover Unit Specifications

Dimensions (in.): 2.25" L x 1.0" W x 0.6" H
 Material: ABS Plastic
 Color: Black
 Logo: Sumitomo Electric Lightwave / Pos. 3 & 4

Tubing Specifications

Dimensions: mm / (in.):
 ID: 0.50mm +/- 0.05mm (0.020 +/- 0.002)
 OD: 0.90mm +/- 0.05mm (0.035 +/- 0.002)
 Length: Approximately 36 inches

Mechanical:

Max. Tensile Load: 45 Newtons / 10 lbs.
 Min. Bend Radius: 1.3 cm / 0.5 inch
 Crush Resistance: 52 N/cm Max. / 0.03 lbs/in
 Temp. Rating: -40°C - +85°C (-40°F - +175°F)
 Material: Thermoplastic Elastomer

Figure 4

6.7 The Breakout Unit Assembly configurations for FT24FBK utilize two (2) methods. Method 1 adheres to the TIA/EIA-598 Optical Fiber Color Coding recommendations that SEL adheres to in the construction of the 24-Fiber Bundle.

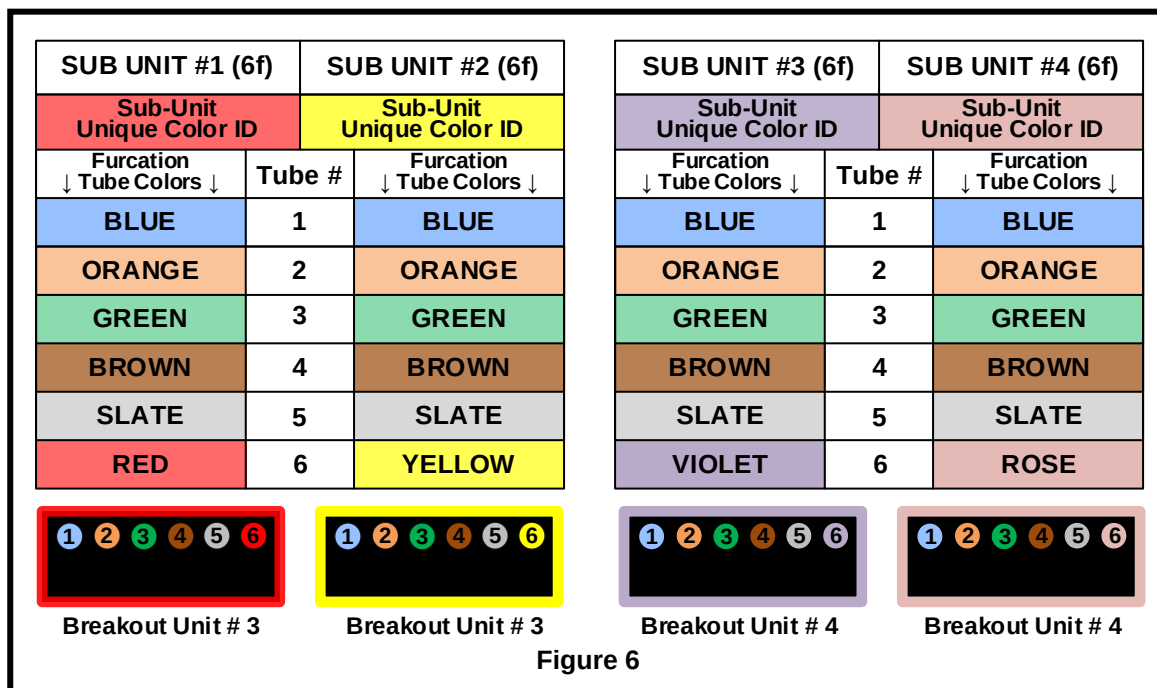
See Fig. 5

SUB UNIT #1 (6f)		SUB UNIT #2 (6f)		SUB UNIT #3 (6f)		SUB UNIT #4 (6f)	
Sub-Unit TIA-598-C Color ID		Sub-Unit TIA-598-C Color ID		Sub-Unit TIA-598-C Color ID		Sub-Unit TIA-598-C Color ID	
Furcation ↓ Tube Colors ↓	Tube #	Furcation ↓ Tube Colors ↓	Tube #	Furcation ↓ Tube Colors ↓	Tube #	Furcation ↓ Tube Colors ↓	Tube #
BLUE	1	BLUE	1	BLUE	1	BLUE	1
ORANGE	2	ORANGE	2	ORANGE	2	ORANGE	2
GREEN	3	GREEN	3	GREEN	3	GREEN	3
BROWN	4	BROWN	4	BROWN	4	BROWN	4
SLATE	5	SLATE	5	SLATE	5	SLATE	5
WHITE	6	WHITE	6	WHITE	6	WHITE	6

			
Breakout Unit # 1	Breakout Unit # 2	Breakout Unit # 3	Breakout Unit # 4

Figure 5

6.8 Method 2 does not adhere to the TIA-598-C Standard Color Coding recommendations and instead uses the unique identifier colors as described in section 5.4.2. Method 2 it is clearly marked for ease of identification and construction. **See Fig. 6**



7.0 Assembling the Field Termination Kit

7.1 Prepare the four (4) Sub Units first.

7.2 Begin with the first (Blue or Red) sub-unit. Insert each fiber into its colored-coded tube. Begin with the blue strand first, followed by the orange, green, brown, slate, when you get to the white or unique fiber, insert it into either of the following tube colors based on the Method 1 or Method 2 style kit that you are using, see (Pages 3-6) i.e., (sub-unit.1 → White or Red Tube, sub-unit.2 → White or Yellow Tube, sub-unit.3 → White or Violet Tube, sub-unit.4 → White or Rose Tube) until all fibers are inserted into the Breakout Unit Assembly tubes. Work carefully and comb the fibers, and ensure strands are not crossed or twisted. **See Fig. 7.**

7.3 Repeat the process with the second Sub-Unit into the second breakout unit.

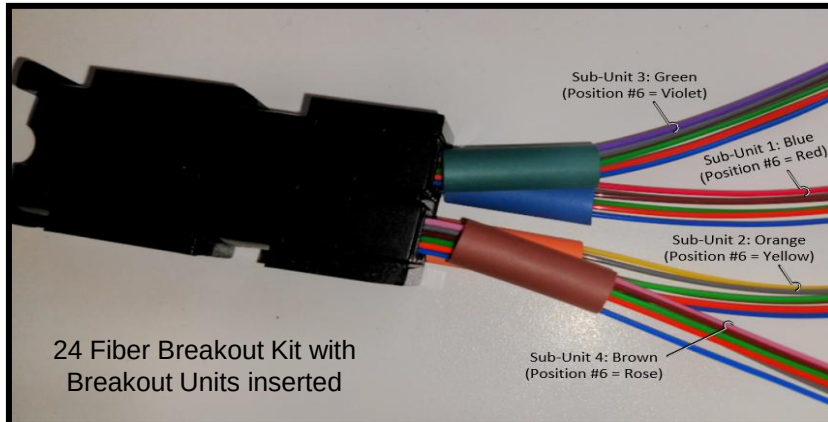
7.4 Once all the strands of the first two (2) sub-units are inserted, carefully grasp and push all fibers through the Breakout Unit Assembly tubing as a group.

7.5 Prepare the third and fourth breakout unit assemblies next.

7.6 Begin with the third sub-unit fibers, then prepare the fibers in the forth sub-unit to complete all four (4) breakout unit assemblies.

7.7 Once all fibers are inserted into Breakout Unit Assembly tubes, re-confirm that fiber strands are not crossed or twisted over each other between the end of the nylon jackets and the Breakout Unit Assembly block. Crossed fibers may cause additional optical attenuation due to macro-bending. If fibers are crossed, they should be carefully removed from the Breakout Unit Assembly tubes, straightened out, and re-installed.

7.8 Carefully place each Breakout Unit Assembly into Base Unit cavity. Notice that both the cover unit and base unit are provided with numbers that instruct where each sub-unit should be installed, Positions 1-4. **See Fig. 7 for Sub-Unit placement**



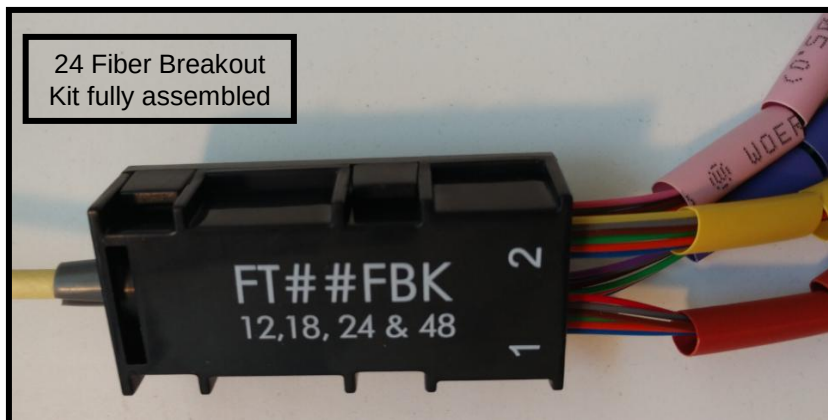
Please refer to pages 3-6 to properly identify the Method of Construction (Coloring)

Figure 7

7.9 Carefully push all the fibers as a group into Breakout Unit Assemblies until ends of fiber bundle outer foam and inner nylon jackets are even with or, just forward of Base Unit's Inner Wall.

7.10 Insert the 3mm bushing over the PEF jacketing and position it in both top and bottom covers

7.11 Complete FT24FBK Field Termination Kit assembly by snapping the Cover Unit onto the Base Unit for a Fully Assembled Breakout Kit. **See Fig. 8**



Please refer to pages 3-6 to properly identify the Method of Construction (Coloring)

Figure 8