

Communication Markets Division

3M™ Fiber Optic Splice Closure 2178 Family

Flexible Fiber Management Solutions



More flexibility for your complex fiber optic network

A full line of closures and accessories designed to protect fiber optic facilities. The 3M™ Fiber Optic Splice Closure 2178 family has earned its reputation for reliable protection of fiber optic facilities.

Now, the 2178 family includes many models and configurations for more flexibility to help meet the complex needs of today's fiber optic networks.

Growing technologies require growing solutions.

You want to build reliable FTTP networks faster and cheaper. The expanded 3M™ Fiber Optic Splice Closure 2178 family can help you meet these needs for most applications (including aerial, buried, underground, vault and building entrance) and cables (including loose buffer tube, tight buffer tube, central tube, discrete fiber, ribbon fiber, armored or dielectric).



3M™ Fiber Optic Splice Closure 2178 Family

Multiple solutions for evolving networks.

The 3M Fiber Optic Splice Closure 2178 family provides multiple real-world solutions with five key aspects:

1

A complete product family

The 3M Fiber Optic Splice Closure 2178 family includes seven distinct models (XSB, XLB, S, SL, LS, LL and XL) in both flame-retardant and non-flame-retardant versions, each with flexibility built-in for growing networks.

2

Future-proof solutions

The 2178 family has scalability and flexibility, allowing you to expand the system based on splicing capacity and the number of cable entry ports. It also allows you to defer your investment until it is required.

3

Easily re-enterable designs

A reusable gasket makes re-entry easy, while bolted halves provide greater security. With the 2178 family, you can re-enter, re-configure and add or remove cables in most outside plant and inside plant environments.

4

Flexible environment applications

The 3M™ Fiber Optic Splice Closure 2178 family can be effectively used in nearly any application including aerial (pole and strand) mount, central office vault, manhole, pedestal and handhole. It can also accommodate most splicing methods (mechanical and fusion) as well as inline and butt splicing configurations.

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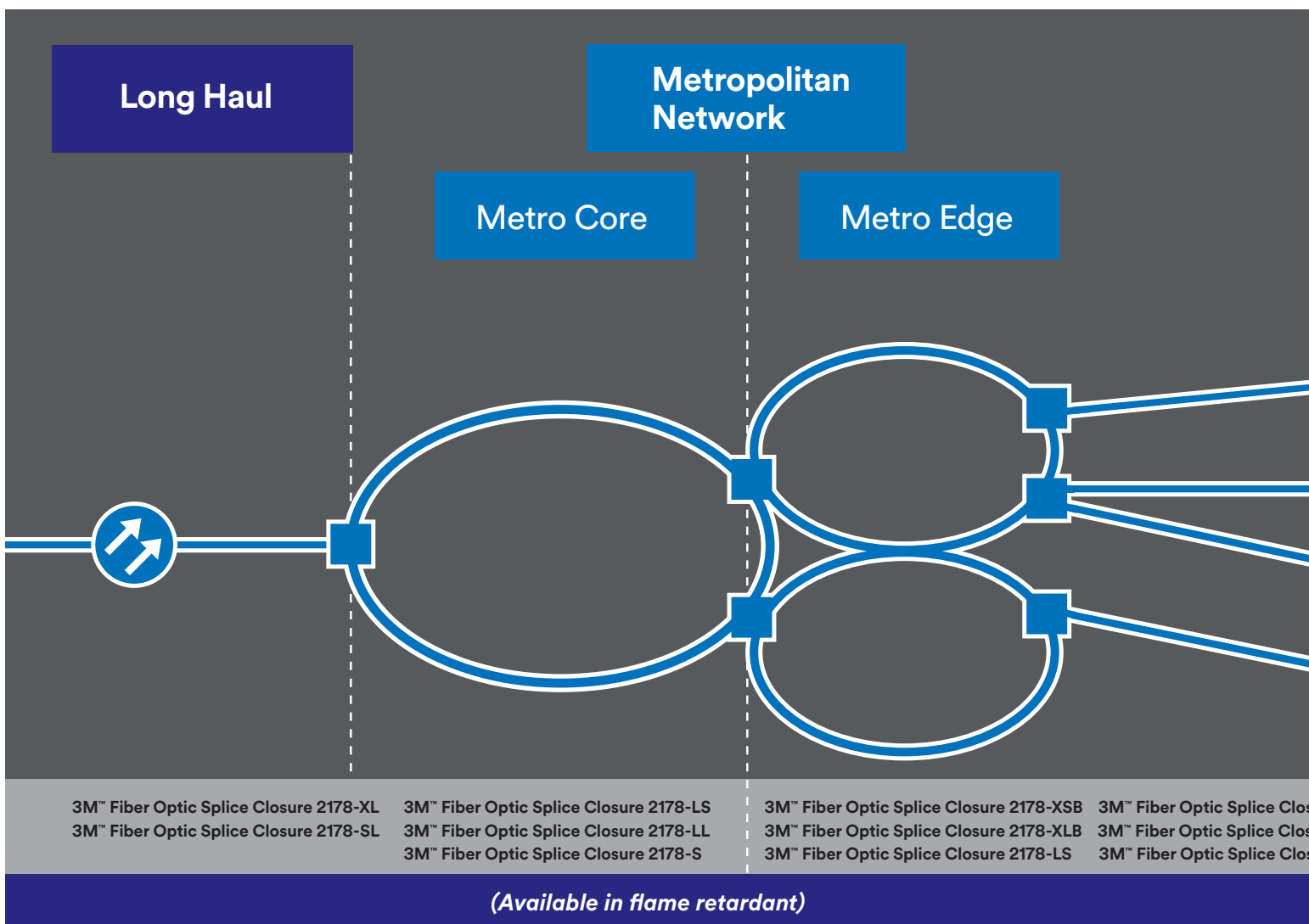
Network flexibility

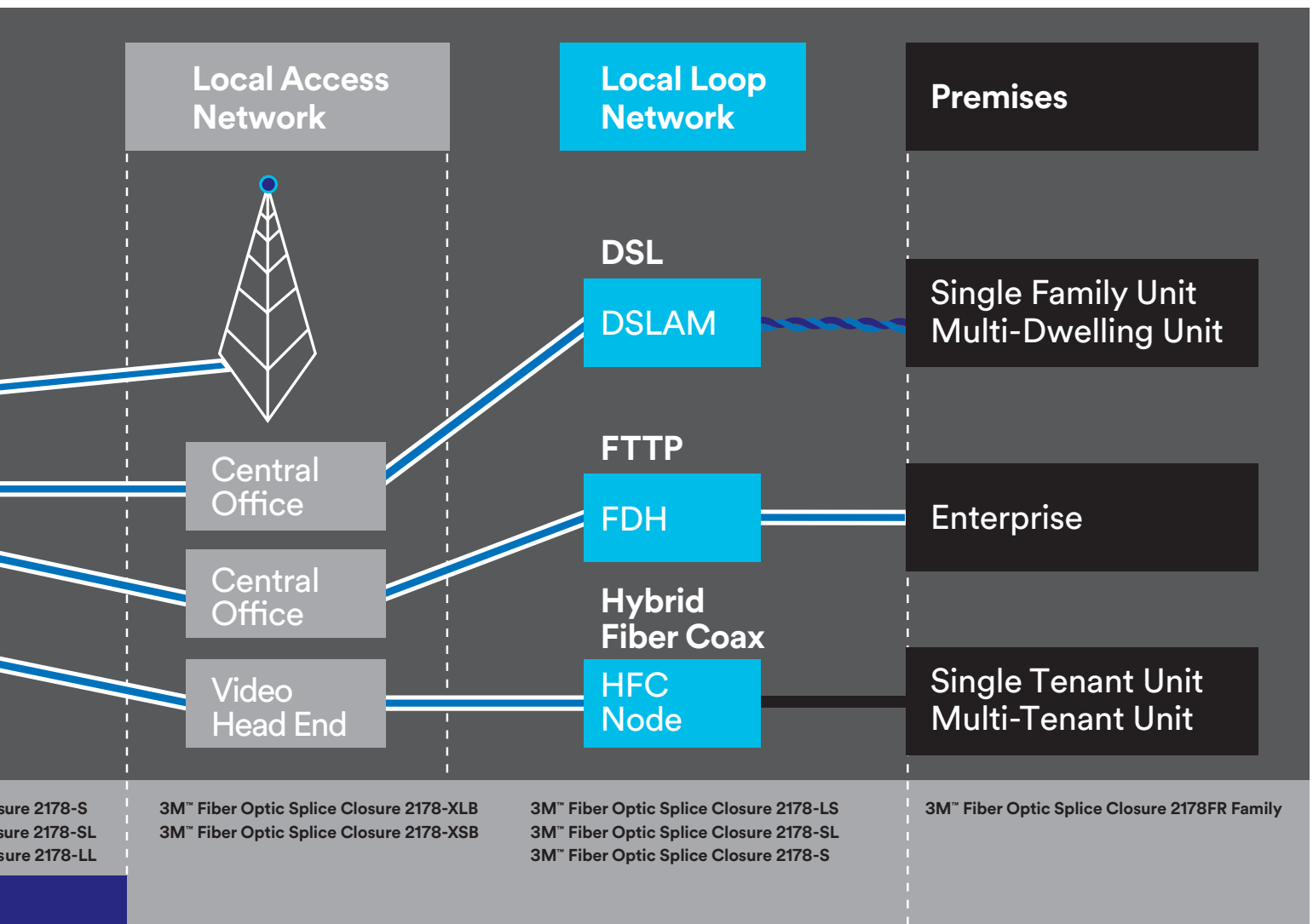
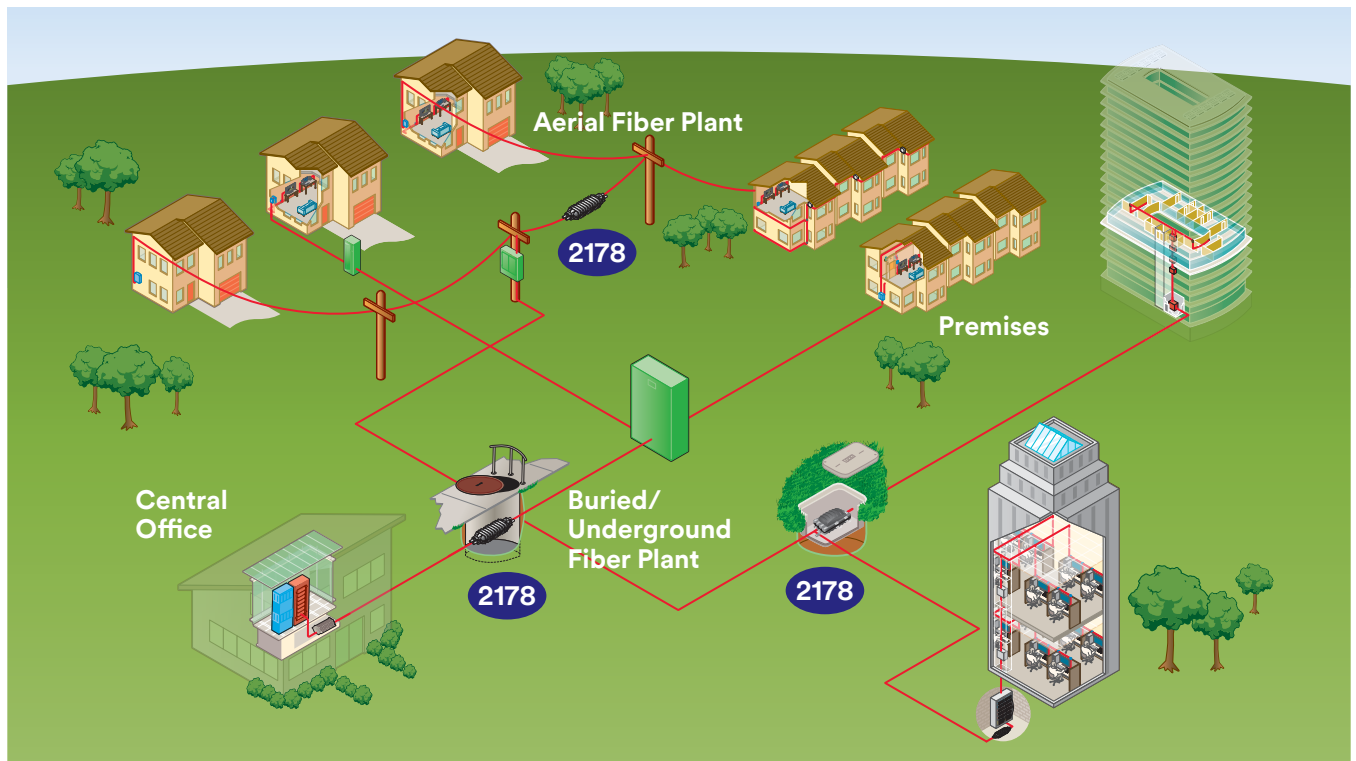
3M designs a variety of sizes, materials (flame retardant vs. non flame retardant) and configuration options so that our fiber optic splice closures can be used in almost every segment of the network. A single product family meets a range of needs.



Fully assembled 3M™ Fiber Optic Splice Closure 2178-S with two LBT cables

A flexible solution for different applications





More advantages with a complete solution

Flexibility that can save you time and money.

The 3M™ Fiber Optic Splice Closure 2178 family provides excellent system flexibility for both existing and new fiber deployments. Products in the 2178 family are industry-proven. The flexible design and common accessories allow you to maintain a reduced inventory, which can save time and money.

Smart design makes your job easier.

All 2178 closures are designed to be easy to install, easy to use and easy to re-enter. The reusable gasket helps make re-entry as easy as any other system with almost no training necessary.

The 2178 family accommodates most splicing configurations (inline or butt).



3M™ 4- and 6-Port Grommets for 3M™ Fiber Optic Splice Closure 2178 Series

Features to meet network demands.

The closures accommodate cables of varying sizes and provide flexibility to add ports with the cable addition kit. The 3M™ Cable Addition Kits 2181-XL, 2181-XB and 3M™ 4- and 6-Port Grommets make system expansion even easier. A flexible tray system allows positionable or fixed splice inserts. Technicians can re-enter and swap out splice holders, and mix and match splice types (fusion and mechanical). The same tray can be used for discrete or mass splicing.

All of these features combine to give you an enhanced ability to offer optimum bandwidth for triple play services of voice, data and video.

3M™ Fiber Optic Splice Closure 2178 Family

Features and Benefits

Full range of sizes	Fits your specific application
No special tools required (standard torque wrench)	Easy installation and re-entry
Constructed of a highly chemical-resistant material	Can be deployed in most applications: buried, underground and aerial
Gasket seals	Reusable for easy re-entry
Unique strength member clamp assembly	Prevents cable sheath movement with temperature changes
Spacious fiber management areas	All closures provide separate areas for routing, protecting, and expressing buffer tubes and ribbon fibers
Flexible drop or cable addition	Multiport grommets provide entry for drops or cables
Flame-retardant materials	All 2178 closures are available in a flame-retardant model, giving you even more application choices Flame Retardant Material: UL-94V-0

Reliable protection for your application

The 3M™ Fiber Optic Splice Closure 2178 family provides secure protection for a broad range of fiber cables. The 2178 family is engineered to meet common needs and field conditions, with different sizes to accommodate varying splice counts, ideal for wide varieties of applications.



3M™ Fiber Optic Splice Closure 2178-XSB
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-XLB
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-S
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-SL
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-LS
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-LL
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-XL
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178

Product Number	Size in. (mm) (L x W x H)	Splice Configuration	Cable Entry Ports	Maximum Splice Capacity
2178-XSB	14.6 × 10.1 × 4.6 (369.8 × 256.5 × 117.3)	Butt	3 Butt	48 Single Fusion 288 Mass Fusion
2178-XLB	14.6 × 10.1 × 5.8 (369.8 × 256.5 × 147)	Butt	3 Butt	96 Single Fusion 432 Mass Fusion
2178-S	21.9 × 8.5 × 4.7 (556.3 × 215.9 × 119.4)	Inline Butt	4 Inline 2 Butt	96 Single Fusion 288 Mass Fusion
2178-SL	21.9 × 8.5 × 8.0 (556.3 × 215.9 × 203.2)	Inline Butt	4 Inline 2 Butt	96 Single Fusion 288 Mass Fusion
2178-LS	21.9 × 8.5 × 8.0 (556.3 × 215.9 × 203.2)	Inline Butt	4 Inline 2 Butt	288 Single Fusion 864 Mass Fusion
2178-LL	21.9 × 8.5 × 11.3 (556.3 × 215.9 × 287.0)	Inline Butt	4 Inline 2 Butt	288 Single Fusion 864 Mass Fusion
2178-XL	27.0 × 13.3 × 11.0 (660.4 × 337.8 × 279.4)	Inline Butt	8 Inline 4 Butt	576 Single Fusion 1728 Mass Fusion

Grow as you go with multiple entry port configurations

3M™ Fiber Optic Splice Closure 2178

	Size (L x W x H)	Splice Application	Max Cable Entry Ports	
			Main	Branch
	2178-XSB (14.6" x 10.1" x 4.6")	Butt	2 Butt	1 Butt
	2178-XSB with one 2181-XB (14.6" x 10.1" x 6.73")	Butt	2 Butt	4 Butt
	2178-XLB (14.6" x 10.1" x 5.8")	Butt	2 Butt	1 Butt
	2178-XLB with one 2181-XB (14.6" x 10.1" x 7.93")	Butt	2 Butt	4 Butt
	2178-S (21.9" x 8.5" x 4.7")	Butt or Inline	2 Butt, 2 Inline	0 Butt, 2 Inline
	2178-S with one 2181-LS (21.9" x 8.5" x 6.2")	Butt or Inline	2 Butt, 2 Inline	2 Butt, 6 Inline
	2178-S with two 2181-LS (21.9" x 8.5" x 7.7")	Butt or Inline	2 Butt, 2 Inline	4 Butt, 10 Inline
	2178-S with three 2181-LS (21.9" x 8.5" x 9.2")	Butt or Inline	2 Butt, 2 Inline	4 Butt, 10 Inline
	2178-SL (21.9" x 8.5" x 8.0")	Butt or Inline	2 Butt, 2 Inline	0 Butt, 2 Inline
	2178-SL with one 2181-LS (21.9" x 8.5" x 9.5")	Butt or Inline	2 Butt, 2 Inline	2 Butt, 6 Inline
	2178-SL with two 2181-LS (21.9" x 8.5" x 11.0")	Butt or Inline	2 Butt, 2 Inline	4 Butt, 10 Inline

3M™ Fiber Optic Splice Closure 2178

	Size (L x W x H)	Splice Application	Max Cable Entry Ports	
			Main	Branch
	2178-SL with three 2181-LS (21.9" x 8.5" x 12.5")	Butt or Inline	2 Butt, 2 Inline	6 Butt, 14 Inline
	2178-LS (21.9" x 8.5" x 8.0")	Butt or Inline	2 Butt, 2 Inline	0 Butt, 2 Inline
	2178-LS with one 2181-LS (21.9" x 8.5" x 9.5")	Butt or Inline	2 Butt, 2 Inline	2 Butt, 6 Inline
	2178-LS with two 2181-LS (21.9" x 8.5" x 11.0")	Butt or Inline	2 Butt, 2 Inline	4 Butt, 10 Inline
	2178-LS with three 2181-LS (21.9" x 8.5" x 12.5")	Butt or Inline	2 Butt, 4 Inline	6 Butt, 14 Inline
	2178-LL (21.9" x 8.5" x 11.3")	Butt or Inline	2 Butt, 2 Inline	0 Butt, 2 Inline
	2178-LL with one 2181-LS (21.9" x 8.5" x 12.8")	Butt or Inline	2 Butt, 2 Inline	2 Butt, 6 Inline
	2178-LL with two 2181-LS (21.9" x 8.5" x 14.3")	Butt or Inline	2 Butt, 2 Inline	4 Butt, 10 Inline
	2178-LL with three 2181-LS (21.9" x 8.5" x 15.8")	Butt or Inline	2 Butt, 4 Inline	6 Butt, 14 Inline
	2178-XL (27.0" x 13.3" x 11.0")	Butt or Inline	2 Butt, 2 Inline	2 Butt, 6 Inline
	2178-xl with one 2181-XL (27.0" x 13.3" x 14.25")	Butt or Inline	2 Butt, 2 Inline	6 Butt, 14 Inline

Flexible fiber management

One of the greatest advantages of the 3M™ Fiber Optic Splice Closure 2178 family is flexibility. With seven different closures and several tray choices and expansion kits, there are more configuration choices than ever.

3M™ Fiber Optic Splice Trays

	Product Number	Description	Splices Accommodated	Splice Capacity Per Tray	2178 Closure
	2522*	Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders	Single Fusion (3.0 mm x 60 mm) Single Mechanical (Fibrolk™) Mass Fusion	24 12 120	S, LS, LL, SL
	2522-24-SF	Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders	Single Fusion (3.0 mm x 60 mm)	24	S, LS, LL, SL
	2523*	Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders	Single Fusion (3.0 mm x 60 mm) Single Mechanical (Fibrolk™) Mass Fusion	48 24 144	S, LS, LL, SL, XL
	2523-48-SF	Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders	Single Fusion (3.0 mm x 60 mm)	48	S, LS, LL, SL, XL
	2524*	Stackable, hinged tray lid, side entry, fixed splice holders	Single Fusion (3.0 mm x 60 mm) Single Mechanical (Fibrolk™)	24 24	S, LS, LL, SL, XL
	2524-FT	Stackable, hinged tray lid, side entry, fixed splice holders	Single Fusion (3.0 mm x 60 mm)	24	S, LS, LL, SL, XL
	2527	Stackable, fiber entry/exit both ends of tray, positionable splice holders	Single Fusion (3.0 mm x 60 mm) Single Mechanical (Fibrolk™) Mass Fusion	24 12 144	S, LS, LL, SL, XL
	2527-48-SF	Stackable, fiber entry/exit both ends of tray, positionable splice holders	Single Fusion (3.0 mm x 60 mm)	48	S, LS, LL, SL, XL
	2532	Stackable, fiber entry/exit both ends of tray, positionable splice holders	Single Fusion (3.0 mm x 60 mm) Single Mechanical (Fibrolk™) Mass Fusion	24 12 144	XLB XSB
	2539-12-SF	Hinged, fixed spliced holders	Single Fusion (2.4 mm x 60 mm)	12	XLB XSB
	2540-12-SF/36-MF	Hinged, fixed spliced holders	Single Fusion (2.4 mm x 60 mm) Single Mechanical (Fibrolk™) Mass Fusion	12 12 36	XLB XSB
	2543	Stackable, fiber entry/exit both ends of tray, positionable splice holders	Single Fusion (3.0 mm x 60 mm) Single Mechanical (Fibrolk™) Mass Fusion	24 12 144	S, LS, LL, SL, XL

* Requires additional kit

Select the right combination for your specific application

As the chart below demonstrates, 3M provides several options for configuring the products you need today, with room to grow tomorrow. Follow the example to the right to find the components for your particular application.

Specifications — 3M™ Fiber Optic Splice Closure 2178

Product Configuration	Cable Entry Ports per Splicing Configuration					
	1 Butt		Inline		Size	
	Main	Branch	Main	Branch		
2178-S or SL	2	0	2	2	1.0"	
2178-S or SL w/ one 2181-LS	2	0	2	2	1.0"	
2178-S or SL w/ one 2181-LS	2	2	2	6	1.0"	
2178-S or SL w/ two 2181-LS	2	0	2	2	1.0"	
2178-S or SL w/ two 2181-LS	2	2	2	6	1.0"	
2178-S or SL w/ two 2181-LS	2	4	2	10	1.0"	
2178-S or SL w/ three 2181-LS	2	2	2	6	1.0"	
2178-S or SL w/ three 2181-LS	2	4	2	10	1.0"	
2178-S or SL w/ three 2181-LS	2	6	2	14	1.0"	
2178-LS	2	0	2	2	1.0"	
2178-LS w/ one 2181-LS	2	2	2	6	1.0"	
2178-LS w/ two 2181-LS	2	4	2	10	1.0"	
2178-LS w/ two 2181-LS	2	2	2	6	1.0"	
2178-LS w/ three 2181-LS	2	4	2	10	1.0"	
2178-LS w/ three 2181-LS	2	6	2	14	1.0"	
2178-LL	2	0	2	2	1.0"	
2178-LL w/ one 2181-LS	2	2	2	6	1.0"	
2178-LL w/ two 2181-LS	2	4	2	10	1.0"	
2178-LL w/ two 2181-LS	2	2	2	6	1.0"	
2178-LL w/ three 2181-LS	2	4	2	10	1.0"	
2178-LL w/ three 2181-LS	2	6	2	14	1.0"	
2178-XSB	2	1	-	-	1-1.4" 2-1.0"	
2178 XSB w/ one 2181 XB	4	2	-	-	2-1.4" 4-1.0"	
2178 XLB	2	1	-	-	1-1.4" 2-1.0"	
2178 XLB w/one 2181	4	2	-	-	2-1.4" 4-1.0"	
2178-XL	2	2	2	6	4-1.4" 4-1.0"	
2178-XL w/ one 2181-XL	2	6	2	14	8-1.4" 8-1.0"	

How to use chart:

1. Select your splice configuration
2. Determine # of branch ports
3. Choose type of tray (p. 16)
4. Select appropriate splice capacity

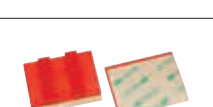
Configuration Example — If your application requires:

- 1 Butt splice configuration
- 2 2 branch ports
- 3 Fixed-position splice holder
- 4 96 single fusion splices

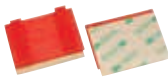
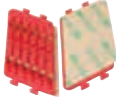
Then you would need the 3M™ Fiber Optic Splice Closure 2178-S with one 3M™ Cable Addition Kit 2181 and 3M™ Splice Tray 2523.

	Splice Capacity per Splice Tray																							
	2527				2522			3	2523			2524		2532			2539-12-Sf		2540-12-Sf/36-Mf			2543		
	Trays	Sf 24	Sf 48	Mf 144	Trays	Sf 24	Mf 144		Trays	Sf 48	Mf 144	Trays	Sf 24	Trays	Sf 24	Mf 144	Trays	Sf 12	Trays	Sf 12	Mf 36	Trays	Sf 24	Mf 144
	2	48	96	288	2	48	288	2	96	288	2	48	-	-	-	-	-	-	-	-	-	2	48	288
	5	120	240	720	5	120	720	4	192	576	4	96	-	-	-	-	-	-	-	-	-	5	120	720
	2	48	96	288	2	48	288	2	96	288	2	48	-	-	-	-	-	-	-	-	-	2	48	288
	8	192	384	864	8	192	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	8	192	864
	5	120	240	720	5	120	720	4	192	576	4	96	-	-	-	-	-	-	-	-	-	5	120	720
	2	48	96	288	2	48	288	2	96	288	2	48	-	-	-	-	-	-	-	-	-	2	48	288
	8	120	384	864	8	192	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	8	192	864
	5	120	240	720	5	120	720	5	240	720	5	120	-	-	-	-	-	-	-	-	-	5	120	720
	2	48	96	288	2	48	288	2	96	288	2	48	-	-	-	-	-	-	-	-	-	2	48	288
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	10	240	480	864	9	216	864	9	432	864	9	216	-	-	-	-	-	-	-	-	-	10	240	864
	10	240	480	864	9	216	864	9	432	864	9	216	-	-	-	-	-	-	-	-	-	10	240	864
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	7	168	336	864	6	144	864	6	288	720	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	10	240	480	864	9	216	864	9	432	864	9	216	-	-	-	-	-	-	-	-	-	10	240	864
	10	240	480	864	9	216	864	9	432	864	9	216	-	-	-	-	-	-	-	-	-	10	240	864
	7	168	336	864	6	144	864	6	288	864	6	144	-	-	-	-	-	-	-	-	-	7	168	864
	-	-	-	-	-	-	-	-	-	-	-	-	2	48	288	6	72	4	48	144	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	2	48	288	6	72	4	48	144	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	4	96	432	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	4	96	432	-	-	-	-	-	-	-	-	
	12	288	576	1728	12	288	1728	12	576	1728	12	288	-	-	-	-	-	-	-	-	-	12	288	1728
	12	288	576	1728	12	288	1728	12	576	1728	12	288	-	-	-	-	-	-	-	-	-	12	288	1728

3M™ Fiber Optic Splice Closure 2178 Accessories

Splice Trays		
	Product Number/ Packaging Info	Description
	2170 Pkg: 50 each Min. Order: 50 each 3M ID: 80-6102-8138-0	Fiber Optic Splice Sleeve, 3.0 mm x 60 mm Transparent plastic tube and stainless steel rod designed to help prevent stress and protect fusion fiber optic splices in field and factory operations.
	2171 Pkg: 50 each Min. Order: 50 each 3M ID: 80-6111-4669-9	Fiber Optic Splice Sleeve, 2.4 mm x 60 mm Transparent plastic tube and stainless steel rod designed to help prevent stress and protect fusion fiber optic splices in field and factory operations.
	2519 Pkg: 10 kits Min. Order: 10 kits 3M ID: 80-6109-3259-4	Cable Fanout Kit Transitions cable buffer tubes or single tube to fiber tube.
	2519-X Pkg: 10 kits Min. Order: 10 kits 3M ID: 80-6109-3260-2	Cable Fanout Expander Kit Transitions one fiber tube to two fiber tubes.
	2520 Pkg: 50 each Min. Order: 50 each 3M ID: 80-6108-5927-6	Fiber Transition Tubing, 1 ft. Protects 12 single or four 12-fiber ribbon between trays; cut in one-foot lengths.
	2520-3FT Pkg: 24 each Min. Order: 24 each 3M ID: 80-6108-6110-8	Fiber Transition Tubing, 3 ft. Protects 12 single or four 12-fiber ribbon between trays; cut in three-foot lengths.
	2520-100FT Pkg: 1 each Min. Order: 1 each 3M ID: 80-6113-2636-6	Fiber Transition Tubing, 100 ft. Protects 12 single or four 12-fiber ribbon between trays; cut in 100-foot lengths.
	2518 Pkg: 6 each Min. Order: 6 each 3M ID: 80-6113-2634-1	Fiber Transition Tubing Kit for Loose Buffer Tube The 3M Fiber Transition Tubing Kit 2518 is a 2 MM fiber transition tube kit for loose buffer tube cables. It is used to transition the fibers from the splice closure slack storage area to the splice tray.
	2521-F Pkg: 12 pkgs. Min. Order: 12 pkgs. 3M ID: 80-6108-5926-8	Fusion Splice Insert, 2 Pack Holds 12 single fusion splices in each insert, used in 3M™ Fiber Splice Organizer Trays 2538/2522/2523 3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).
	2521-FL Pkg: 12 pkgs. Min. Order: 12 pkgs. 3M ID: 80-6108-5926-8	3M™ Fibrlok™ Splice Insert, 2 Pack Holds six Fibrlok or mass fusion splices in each insert, used in 2538/2522/2523 trays. Accommodates single ceramic rod 12 fiber mass fusion sleeves or double ceramic rod 4 to 6 fiber mass fusion sleeves.
	2521-R-12RF-MF-A Pkg: 24 each Min. Order: 24 each 3M ID: 80-6113-3204-2	12RF Mass Fusion Splice Insert, Adhesive Back Adhesive backed splice insert that holds six 3M™ Fibrlok™ Splices or Mass Fusion Splices, used in 2532 and 2543 trays. Accommodates single ceramic rod 12 fiber mass sleeves or double ceramic rod 4 to 6 fiber mass fusion sleeves.
	2521-R-2.4MM-SF-A Pkg: 24 each Min. Order: 24 each 3M ID: 80-6113-3202-6	2.4MM Single Fusion Splice Insert, Adhesive Back Adhesive backed splice insert that holds twelve single fusion splices in each insert, used in 2532 and 2543 trays. 2.4 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2171 or equivalent).

3M™ Fiber Optic Splice Closure 2178 Accessories

Splice Trays (continued)		
	Product Number/ Packaging Info	Description
	2521-R-3.0MM-SF-A Pkg: 24 each Min. Order: 24 each 3M ID: 80-6113-3203-4	3.0MM Single Fusion Splice Insert, Adhesive Back Adhesive backed splice insert that holds twelve single fusion splices in each insert, used in 3M Fiber Splice Organizer Tray 2532 and 2543. 3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).
	2521-MF Pkg: 12 pkgs. Min. Order: 12 pkgs. 3M ID: 80-6108-5924-3	3M™ Fibrlok™ Multi-Fiber Splice Insert, 2 Pack Holds four multi-fiber splices in each insert, used in 3M Fiber Splice Organizer Tray 2522/2523.
	2521-RF Pkg: 12 pkgs. Min. Order: 12 pkgs. 3M ID: 80-6108-5928-4	Ribbon Fusion Splice Insert, 2 Pack Holds five ribbon fusion splices in each insert, used in 2522/2523 trays. Accommodates double ceramic rod 8 to 12 fiber mass fusion sleeves.
	2521-F-A Pkg: 24 pkgs. Min. Order: 24 pkgs. 3M ID: 80-6113-2632-5	Single Fusion Splice Insert with Adhesive, 2 Pack Holds 12 single fusion splices in each insert, used in 3M™ Fiber Splice Organizer Trays 2527/2532. 3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).
	2521-FL-A Pkg: 24 pkgs. Min. Order: 24 pkgs. 3M ID: 80-6113-2604-4	Ribbon Fusion Splice Insert with Adhesive, 2 Pack Holds six Fibrlok or mass fusion splices in each insert, used in 3M Fiber Splice Organizer Tray 2527/2522. Accommodates single ceramic rod 12 fiber mass fusion sleeves or double ceramic rod 4 to 6 fiber mass fusion sleeves.
	2522 Pkg: 2 each Min. Order: 2 each 3M ID: 80-6108-5990-4	Small Fiber Splice Organizer Tray Holds two 3M™ Splice Inserts 2521 family.* The 2522 tray stores and protects single and mass, mechanical and fusion splices. The 2521 family splice inserts are easily added to secure splices into the trays. Fibers are routed into the trays using 3M™ Transition Tubing 2520 that zips over the fibers. *Splice inserts must be ordered separately.
	2522-24-SF Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-1655-7	Small Fiber Splice Organizer Tray, 24SF Holds 24 single fusion splices. 3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 or equivalent).
	2523 Pkg: 2 each Min. Order: 2 each 3M ID: 80-6108-5991-2	Large Fiber Splice Organizer Tray Holds four 2521 family splice inserts.* The 2523 tray stores and protects discrete and mass, mechanical and fusion splices. The 3M Fiber Splice Organizer Tray 2521 inserts are easily added to secure splices into the trays. Fibers are routed into the trays using 3M Fiber Transition Tubing 2520 that zips over the fibers. *Splice inserts must be ordered separately.
	2523-48-SF Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-1651-6	Large Fiber Splice Organizer Tray, 48SF Holds 48 single fusion splices. 3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).

3M™ Fiber Optic Splice Closure 2178 Accessories

Splice Trays (continued)		
	Product Number/ Packaging Info	Description
	2524 Pkg: 2 each Min. Order: 2 each 3M ID: 80-6106-1688-2	3M™ Fibrlok™ Splice Organizer Tray Holds 24 3M™ Fibrlok™ Splices and eight buffer tubes. The 3M™ Fibrlok™ Splice Organizer Tray 2524 holds 24 Fibrlok splices. The 2524 tray can be adapted for fusion splice storage using the 2524F tray insert. Buffer tubes are secured with channel snaps so that cable ties are not required. The fibers all enter the tray in one corner eliminating the need for figure 8's in the fiber. An important design feature of these stackable trays is the snap-on hinge cover on each tray. Individual trays may be accessed without disassembly of the trays above or below — and without kinking buffer tubes.
	2524-F Pkg: 24 each Min. Order: 24 each 3M ID: 78-8070-2884-6	Fusion Splice Insert Adapts the 2524 tray for fusion splices. 3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).
	2524-FT Pkg: 2 each Min. Order: 2 each 3M ID: 80-6106-1687-4	Fusion Splice Organizer Tray Holds 24 single fusion splices. Holds up to 24 fusion splices. Buffer tubes are secured with channel snaps so that cable ties are not required. The fibers all enter the tray in one corner eliminating the need for figure 8's in the fiber. An important design feature of these stackable trays is the snap-on hinge cover on each tray. Individual trays may be accessed without disassembly of the trays above or below — and without kinking buffer tubes. 3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).
	2524-MF Pkg: 2 each Min. Order: 2 each 3M ID: 80-6106-1688-2	Multi-Fiber Splice Organizer Tray Holds three 3M™ Fibrlok™ Multi-Fiber and four single Fibrlok splices.
	2527 PKg: 2 each Min. Order: 2 each 3M ID: 80-6111-7558-1	Fiber Splice Organizer Tray The 3M Fiber Splice Organizer Tray 2527 accommodates up to 24 single fusion or 144 mass splices and has entry from all corners. It maintains the minimum bend radius of fiber. The tray has a clear cover and splice holders included. 3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).
	2527-48-SF PKg: 2 each Min. Order: 2 each 3M ID: 80-6113-2587-1	Fiber Splice Organizer Tray The 2527 tray accommodates up to 48 single fusion splices and has entry from all corners. It maintains the minimum bend radius of fiber. The tray has a clear cover and splice holders included. 3.0 mm x 60 mm single fusion heat shrink sleeve required.
	2532 PKg: 2 each Min. Order: 2 each 3M ID: 80-6113-0480-1	Fiber Splice Organizer Tray Tray is stackable and accommodates 24 single and 72 mass fusion splices. 3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).
	2539-12-SF PKg: 2 each Min. Order: 2 each 3M ID: 80-6113-1715-9	Fiber Optic Splice Tray with 12 Single Fusion Splices Hinged tray that accommodates 12 single fusion splices. Only for 2178-XSB closures. 2.4 mm x 60 mm single fusion heat shrink sleeves required (2171 sleeve or equivalent).
	2540-12-SF/36-MF PKg: 2 each Min. Order: 2 each 3M ID: 80-6113-1716-7	Fiber Optic Splice Tray with 12 Single/36 Mass Fusion Hinged tray that accommodates up to 12 single fusion and 36 mass fusion splices. Only for 2178-XSB closures. 2.4 mm x 60 mm single fusion heat shrink sleeves required (2171 sleeve or equivalent).
	2543-S-144-MF PKg: 2 each Min. Order: 2 each 3M ID: 80-6113-3199-4	Fiber Optic Splice Tray Tube Entry, 144 Mass Fusion Accommodates up to 144 mass fusion splices and has entry from all corners for standard transition or LBT tubes.

3M™ Fiber Optic Splice Closure 2178 Accessories

Splice Trays (continued)		
	Product Number/ Packaging Info	Description
	2543-S-24-SF-2.4MM Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-3195-2	Fiber Optic Splice Tray Tube Entry, 24SF 2.4MM Accommodates up to 24 single fusion splices and has entry from all corners. The single fusion splice inserts accommodate the 3M™ Fiber Optic Splice Sleeve 2171 or equivalent 2.4 mm x 60 mm heat shrink sleeve.
	2543-S-24-SF-3.0MM Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-3196-0	Fiber Optic Splice Tray Tube Entry, 24SF 3.0MM Accommodates up to 24 single fusion splices and has entry from all corners. The single fusion splice inserts accommodate the 3M™ Fiber Optic Splice Sleeve 2170 or equivalent 3.0 mm x 60 mm heat shrink sleeve.
	2543-T-144-MF Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-3198-6	Fiber Optic Splice Tray 2520 Tube Entry, 144MF Accommodates 144 mass fusion splices. Fibers are routed into the trays using 3M Fiber Transition Tubing 2520-6RF that zips over the fibers. The tray has entry from all corners.
	2543-U-24SF-3MM/144MF Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-3197-8	Fiber Optic Splice Tray 2520 Tube Entry 24SF 3MM/144MF Accommodates 24 single fusion (3.0 mm x 60 mm) or 144 mass fusion splices. Fibers are routed into the trays using 2520-6RF tubing that zips over the fibers on one end of the tray. Standard transition tube or LBT securing is available on the other end of the tray.
	2527-1X32PLC-01-SF2-AA Pkg: 1 each Min. Order: 1 each 3M ID: 80-6113-3088-9	1X32 PLC 2527 Splitter Tray Input Splicing 3M Fiber Optic Organizer Tray 2527 with one 1x32 PLC Splitter, SM discrete 250 µm input/output fibers, with 12-splice holder.

3M™ Fiber Optic Splice Closure 2178 Accessories

Expansion		
	Product Number/ Packaging Info	Description
	2172 PKg: 100 each Min. Order: 100 each 3M ID: 80-6108-6076-1	Strength Member Clamp for Fiber Cable Clamps strength member to cable sheath for 2178-L/S closures.
	2178-LS/GSKT Pkg: 10 kits Min. Order: 10 kits 3M ID: 80-6109-3321-2	Gasket Kit for 2178-L/S Family Replaceable gasket kit.
	2178-XLB-TOP PKg: 1 each Min. Order: 1 each 3M ID: 80-6114-8670-7	Fiber Closure 2178 XLB Top XLB Closure Top
	2178-XSB-1.4B PKg: 5 each Min. Order: 5 each 3M ID: 80-6113-1460-2	Cable Branch Port Kit for 2178-XSB and XLB Single cable entry for 1.4" cable entry port.
	2178-4PGA PKg: 5 each Min. Order: 5 each 3M ID: 80-6113-1459-4	4-Port Grommet Compatible with most flat drop cable available. For use with all 2178 models. For use with 1.0" ports.
	2178-6PGA PKg: 5 each Min. Order: 5 each 3M ID: 80-6113-1458-6	6-Port Grommet Compatible with most flat drop cable available. For use only with the 2178-XSB, 2178-XLB, and 2178-XL closures. For use with 1.4" ports.
	2181-B Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6114-8677-2	Double Adapter Bolt Kit Contains bolts for installation of two 3M™ Cable Addition Kits 2181-LS or 2181-LS/FR.
	2181-C Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6114-8678-0	Triple Adapter Bolt Kit Contains bolts for installation of three, 2181-LS or 2181-LS/FR cable addition kits.
	2181-LS Pkg: 1 each Min. Order: 1 each 3M ID: 80-6114-8679-8	Cable Addition Kit Contains gasket and materials for installing additional cables. For use with 2178-L/S family closures.
	2181-LS/FR Pkg: 1 each Min. Order: 1 each 3M ID: 80-6110-1285-9	Cable Addition Kit, Flame Retardant Contains gasket and materials for installing additional cables and is flame retardant. For use with 2178-L/S fire retardant closures.
	2181-XL/CAK Pkg: 1 each Min. Order: 1 each 3M ID: 80-6114-8685-5	Cable Addition Kit for 2178-XL Contains gasket and materials for installing additional cables. For use with 2178-XL closure.
	2181-XL/FR-CAK Pkg: 1 each MIN. ORDER: 1 each 3M ID: 80-6113-2682-0	Cable Addition Kit for 2178-XL Contains gasket and materials for installing additional cables. For use with 2178-XL/FR flame retardant closure.
	2181-XB Pkg: 1 each Min. Order: 1 each 3M ID: 80-6114-8684-8	Cable Addition Kit for 2178-XB Contains gasket and materials for installing additional cables. For use with 2178-XSB and -XLB closures.
	2181-XB/FR Pkg: 1 each Min. Order: 1 each 3M ID: 80-6113-3386-7	Cable Addition Kit for 2178-XSB/FR & 2178-XLB/FR Cable addition kit for the 2178-XLB/FR and 2178-XSB/FR Closures. Allows for the addition of 3 cable ports. Contains three cable entry hardware kits.

3M™ Fiber Optic Splice Closure 2178 Accessories

Expansion (continued)		
	Product Number/ Packaging Info	Description
	2178-LS-CSB-SMC-BRKT Pkg: 10 each Min. Order: 10 each 3M ID: 80-6113-2761-2	Cable Strain Relief Bracket Contains materials for installing additional cables. For use with 2178-L/S family of closures.
	2178-1.0-PORT-CRPX Pkg: 5 each Min. Order: 5 each 3M ID: 80-6113-2711-7	Cable Grommet for Corning RPX Cable To be used in the 2178 1.0" cable entry port.
	2178-XL/XSB-FR-3PG-0.52 Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-2944-4	Flame Retardant 3-Port 0.52" Grommet This grommet can only be used with the 2178-XSB/FR, 2178-XLB/FR and 2178-XL/FR closures. For use with 1.4" port only.
	2178-XL/XSB-FR-2PG-0.60 Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-2186-2	Flame Retardant 2-Port 0.60" Grommet This grommet can only be used with the 2178-XSB/FR, 2178-XLB/FR and 2178-XL/FR closures. For use with 1.4" port only.

Grounding		
	Product Number/ Packaging Info	Description
	2178-EGI Pkg: 5 each Min. Order: 5 each 3M ID: 80-6109-3322-0	External Ground Isolation Kit Provides a means to ground each cable shield with waterproof isolation. The 2178-EGI housing can be used with any 2178 closure utilizing the 1.0" port. Contents: two 2178-EGI housing assemblies and caps, two ground wire assemblies, two O-rings, two bolts and two 4460-D/FO shield bond connectors.
	25T-BBE6 Pkg: 1 each Min. Order: 1 each 3M ID: 80-6100-9615-0	Bond Braid With 6" eyelets.
	4460-D/FO Pkg: 100 each Min. Order: 100 each 3M ID: 80-6108-4444-3	3M™ Scotchlok™ Shield Bond Connector Assembly Provides grounding and strength member clamp for armored fiber cables.

3M™ Fiber Optic Splice Closure 2178 Accessories

Mounting Hardware		
	Product Number/ Packaging Info	Description
	2183-UHB Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6107-6137-3	Universal Aerial Hanger Bracket Kit Hardware for aerial installation of the 2178-LS family splice closures (S, SL, LS, LL). The kit also accommodates the 2178 splice closure with one or two 3M™ Cable Addition Kits 2181. Contents: four nylon stop nuts, two corner inserts with studs, two universal hanger bracket assemblies.
	2184 Pkg: 10 kits Min. Order: 10 kits 3M ID: 80-6113-1769-6	Adjustable Aerial Hanger Bracket Kit Adjustable aerial hanger bracket kit for the 2178-XSB, 2178-XLB, 2178-S, 2178-LS, and 2178-SL closures.
	2184-LL Pkg: 10 kits Min. Order: 10 kits 3M ID: 80-6113-2559-0	Aerial Offset Hanger Bracket Kit Lightlinker 3M™ Aerial Offset Hanger Bracket 2184-LL is designed to work with the 3M™ Fiber Splice Closure System LL Series and the 3M™ Fiber Optic Splice Closure 2178-XL.
	2197 Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6107-5610-0	Aerial Hanger Bracket Kit Contains hardware for aerial installation with hinged cover. For 2178-L/S family splice closures (S, SL, LS, LL). The kit also accommodates the 2178 splice closure with one or two 2181 cable addition kits. It provides additional hardware to attach the splice closure cover to its base. Contents: six corner inserts, 12 nuts, two flexible hinges, two “L” brackets, two bonding/hanger brackets and two bolts with washers.
	2198 Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6108-6077-9	Wall Mount Bracket For use with 2178-XSB, 2178-XLB, 2178-S, 2178-SL, 2178-LS and XL fiber closures.
	2199 Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6109-3320-4	Wall Mount Bracket For use with 2178-S, LS and LL fiber closures.
	AC-HB4 Pkg.(lbs.): 10 sets (4.00) Min. Order: 10 sets 3M ID: 80-6113-1470-1	Aerial Offset Hanger Bracket, 4.0" For overlashing application.
	2178-S/LS-OPGW Pkg: 2 each Min. Order: 2 each 3M ID: 80-6113-3047-5	OPGW Cable Bracket For use with 2178-S and 2178-LS fiber closures.

3M™ Fiber Optic Splice Closure 2178 Accessories

General		
	Product Number/ Packaging Info	Description
	2178-XB/XL-T-INSERT-G Pkg: 10 each Min. Order: 1 pack 3M ID: 80-6113-3110-1	Plastic Threaded Inserts Threaded inserts for the 2178-XSB, XLB, XL splice closures.
	2178-L/S-T-INSERT Pkg: 10 each Min. Order: 1 pack 3M ID: 80-6113-2093-0	Stainless Steel Threaded Inserts Threaded inserts for the 2178-S, SL, LS and LL splice closures.
	2178-L/S-T-INSERT-G Pkg: 10 each Min. Order: 1 pack 3M ID: 80-6113-3111-9	Plastic Threaded Inserts Inserts for 2178-S, SL, LS, LL splice closures.
	2178-L/S-375-BOLTS Pkg: 10 each Min. Order: 1 pack 3M ID: 80-6113-2094-8	Cable Addition Replacement Bolts Bolts used with a single 3M Cable Addition Kit 2181-LS.
	2178-L/S-248-BOLTS Pkg: 10 each Min. Order: 1 pack 3M ID: 80-6113-2095-5	Standard Closure Bolts Bolts for the 2178-S, LS, LL, XSB, XLB and XL splice closures.
	4415 Pkg: 10 kits Min. Order: 10 kits 3M ID: 80-6105-8223-3	Cable Cleaning Kit Provides all the necessary materials for cleaning the filling compound from filled copper and fiber optic cables in an easy-to-transport kit.
	5005-KIT Pkg: 1 kit Min. Order: 1 kit 3M ID: 80-6105-8080-7	Reflective Lettering System Kit Each kit contains 25 each A-Z, 0-9, blank and dash characters packaged in a clear, 36-compartment box, including an application tool.
	2178-2T-LL-CLTK Pkg: 1 each Min. Order: 1 kit 3M ID: 80-6113-2187-0	Tool Kit with Torque Wrench Kit includes sockets, extension and torque wrench.

3M™ Fiber Optic Splice Closure 2178 Configurations

FEATURES	2178-XSB	2178-XLB	2178-S	2178-S4	2178-S6	
CABLE ENTRY PORTS & SIZE						
INLINE	0	0	4	8	12	
BUTT	3	3	2	4	6	
SIZE - INCHES (MM)	2 - 1.0" (25 mm) 1 - 1.4" (35 mm)	2 - 1.0" (25 mm) 1 - 1.4" (35 mm)	1.0" (25 mm)	1.0" (25 mm)	1.0" (25 mm)	
SPLICE CAPACITY (MAXIMUM) AND TRAY INFORMATION						
SINGLE FUSION	72	96	96	96	96	
MASS FUSION	288	432	288	288	288	
TRAYS *Most Popular	2532* 2539 2540	2532* 2539 2540	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	
BONDING & GROUNDING						
# OF GROUND LUGS	0, 2, 3 or 6	0, 2, 3 or 6	0, 2, or 4			
DIMENSIONS (INCHES)						
LENGTH	14.6" (370 mm)	14.6" (370 mm)	21.9" (556 mm)	21.9" (556 mm)	21.9" (556 mm)	
WIDTH	10.1" (257 mm)	10.1" (257 mm)	8.5" (216 mm)	8.5" (216 mm)	8.5" (216 mm)	
HEIGHT	4.6" (117 mm)	5.8" (147 mm)	4.7" (119 mm)	6.2" (158 mm)	7.7" (196 mm)	
KEY ACCESSORIES						
CABLE PORT OR SPLICE CAPACITY EXPANSION	2181-XB	2181-XB	2181-LS 2181-B 2181-C	2181-LS 2181-B 2181-C	2181-LS 2181-C	
GROMMETS	2178-4PGA 2178-6PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-6PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	
MOUNTING HARDWARE						
AERIAL STRAND MOUNT	2184	2184	2183, 2184, or 2197			
MANHOLE	2198	2198	2198			
HANDHOLE	2198	2198	2198			
AERIAL POLE MOUNT	2198	2198	2198			
WALL MOUNT	2198	2198	2198 or 2199			
FLAME/FIRE RETARDANT SOLUTION (UL LISTED*)						
PRODUCT	2178-XSB/FR* 2181-XB/FR*	2178-XLB/FR* 2181-XB/FR*	2178-S/FR* 2181-LS/FR*	2178-S4/FR 2181-LS/FR*	2178-S6/FR 2181-LS/FR*	

Note: The deeper base of the 2178-SL and 2178-LL closures provides for additional slack storage for buffer tubes and ribbons.
The 2181 Cable Addition Kits can be used to increase splice capacity or port capacity.
Maximum splice capacity varies per the splice tray selected for each closure.

	2178-SL	2178-LS	2178-LS4	2178-LS6	2178-LL	2178-LL4	2178-XL
	4	4	8	12	4	8	8
	2	2	4	6	2	4	4
	1.0" (25 mm)	1.0" (25 mm)	1.0" (25 mm)	1.0" (25 mm)	1.0" (25 mm)	1.0" (25 mm)	4 - 1.0" (25 mm) 4 - 1.4" (35 mm)
	96	288	288	288	288	288	576
	288	864	864	864	864	864	1728
	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	2522* 2523 2524 2527 2543	2522* 2523 2527 2543
	0, 2, or 4	0, 2, or 4			0, 2, or 4, 8		0, 4, or 8
	21.9" (556 mm)	21.9" (556 mm)	21.9" (556 mm)	21.9" (556 mm)	21.9" (556 mm)	1.9" (556 mm)	27.0" (660 mm)
	8.5" (216 mm)	8.5" (216 mm)	8.5" (216 mm)	8.5" (216 mm)	8.5" (216 mm)	8.5" (216 mm)	13.3" (337 mm)
	8.0" (203 mm)	8.0" (203 mm)	9.5" (241 mm)	11.0" (279 mm)	11.3" (287 mm)	12.8" (325 mm)	11.0" (279 mm)
	2181-LS 2181-B 2181-C	2181-LS 2181-B 2181-C	2181-LS 2181-B 2181-C	2181-LS 2181-C	2181-LS 2181-B 2181-C	2181-LS 2181-B 2181-C	2181-XL/CAK
	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-1.0-PORT-CRPX	2178-4PGA 2178-6PGA 2178-1.0-PORT-CRPX
	2183, 2184, or 2197	2183, 2184, or 2197			2183 or 2197		2184-LL
	2198	2198			2198		2198
	2198	2198			2198		2198
	2198	2198			2198		2198
	2198 or 2199	2199			2199		2198
	na	2178-LS/FR* 2181-LS/FR*	2178-LS4/FR 2181-LS/FR*	2178-LS6/FR 2181-LS/FR*	2178-LL/FR* 2181-LS/FR*	2178-LL4/FR 2181-LS/FR*	2178-XL/FR* 2178-XL/CAK-FR

*RoHS 2011/65/EU” means that the product or part does not contain any of the substances in excess of the maximum concentration values (“MCVs”) in EU RoHS Directive 2011/65/EU. The MCVs are by weight in homogeneous materials. This information represents 3M’s knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.

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80-6116-2024-8