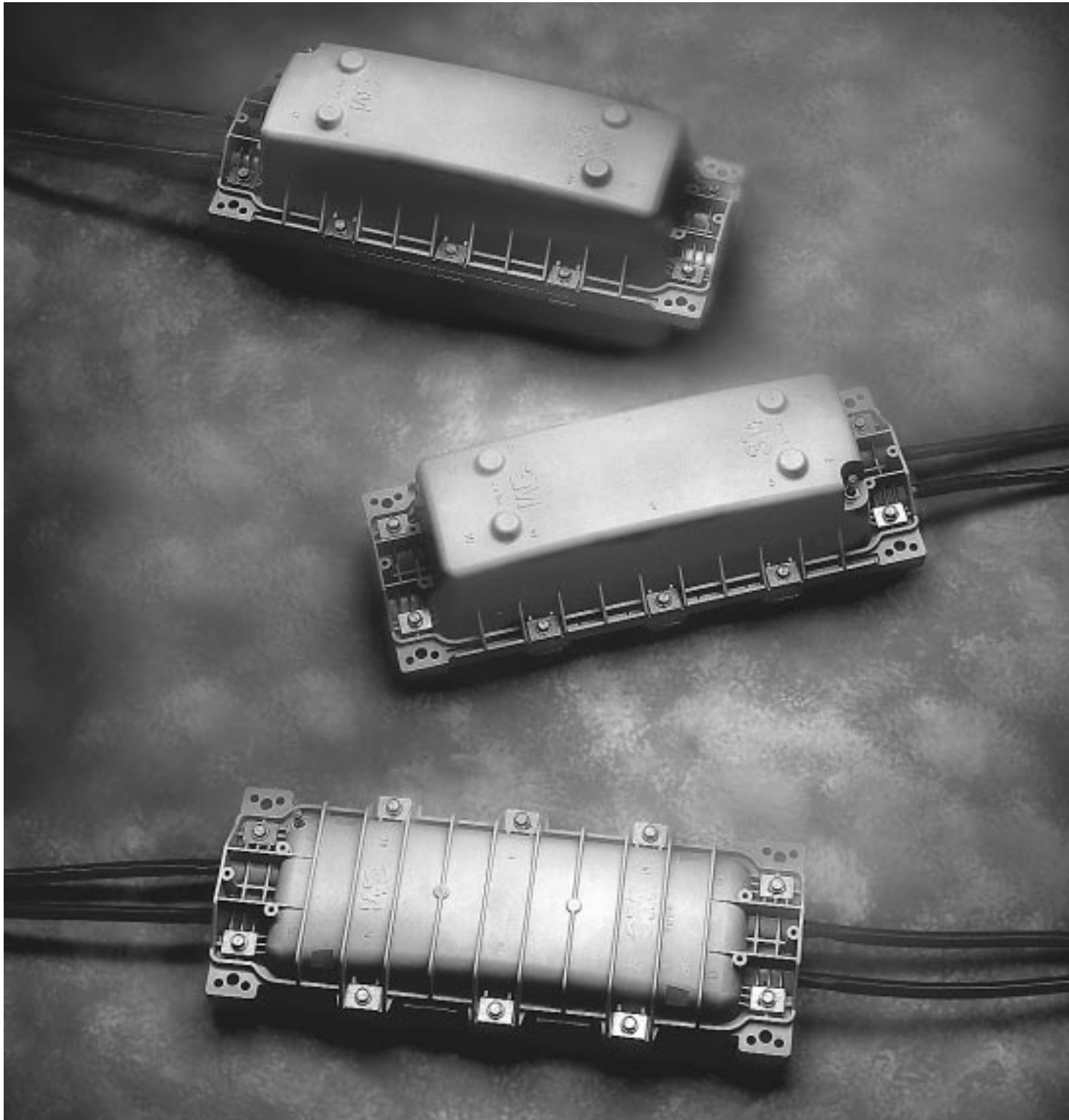


3M

2178-L/S-FR Series Flame Retardant Fiber Optic Splice Cases and Accessories



3M™ Fiber Optic Splice Cases

Flame Retardant

Designed for use in vault and building applications, the 2178-L/S-FR series splice cases are molded with a flame retardant material that allows these closures to pass Telcordia Technologies (Bellcore), UL and various global specifications that require a flame retardant rating. This new material also increases the resistance of the closure to the effects of sprays and release agents used for easier reentry.

Meets your changing network needs

The 2178-L/S-FR series cases are designed with larger and smaller interchangeable closure halves so you can select the size case that meets your needs today with the flexibility to expand for the future. Cable ports and space for trays can be added at reentry with the 3M™ 2181-L/S-FR Cable Addition Kit.

The ease of installation is unsurpassed, requiring no special tools or complicated training procedures. The closures are easily reenterable to allow access to the splices.

The ultimate protection for fiber optic connections

The 2178-L/S-FR series features tough, rigid non-filled cases, tested under real-world conditions, that stand up to even the most severe conditions of moisture, vibration and extreme temperatures.

Design improvements to the 2178-L/S-FR series include changes to improve the cable strain relief and a movable tray support. The closures hold cables of varying sizes and provide flexibility to add ports on both ends with the cable addition kit. Both the 2178-L/S series and the 2178-L/S-FR series splice cases can be used with the 3M 2522 or 2523 Fiber Splice Organizer Trays or the 3M Fibrlok™ 2524 Fiber Splice Organizer Tray and most other commercially available trays.

3M™ 2178-L/S-FR Series Flame Retardant Fiber Optic Splice Cases

Features	Benefits
Constructed of flame retardant materials	Increases resistance of closure to effects of sprays and release agents
Gasket seal	Easy reentry and reusable seal
Unique strength member clamp assembly	Prevents cable sheath movement with temperature changes
Several sizes with interchangeable parts	Expandable system to fit capacity and space requirements
Multiple cable entry options	Butt or in-line configuration for splicing
No special tools required	Easy installation and reentry
Non-filled closure	No compound required; easy reentry
Multiple ground studs	Isolated grounding capability
Pressurization valve	Provides ability to flash test
Expandable from two cable entries per end up to eight	Add cable with minimum disturbance; eliminates splice rebuilding when adding lines
Same design and installation practice as 2178-L/S Series	Use in vault and building applications
Tested to various global specifications	Extends capabilities of 2178-L/S series family

3M 2522 and 2523 Fiber Optic Splice Organizer Trays

Features	Benefits
Meets Telcordia Technologies (Bellcore) requirement for bend diameter	Easy maintenance
Trays allow entry and exit of buffer tubing at any of the four corners	Provides flexibility in fiber management of the four corners
Extra tray depth	Ribbon fiber may be coiled without twisting
Modular design of the splice holder	Accommodates many types of splices

3M Fibrlok 2524 Fiber Optic Splice Organizer Tray

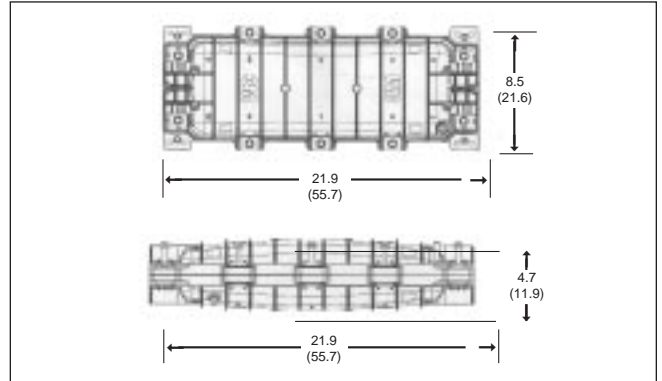
Features	Benefits
Single entry point	Controls fiber management
Hinged trays snap together	Stackable; individual tray access
Flame retardant/isopropyl alcohol resistant	Meets fire codes and industry standards
4-inch (10.16 cm) bend diameter	Individual fiber access; allows easy maintenance



2178-S/FR Splice Case (gray)

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2178-S/FR Fiber Optic Splice Case



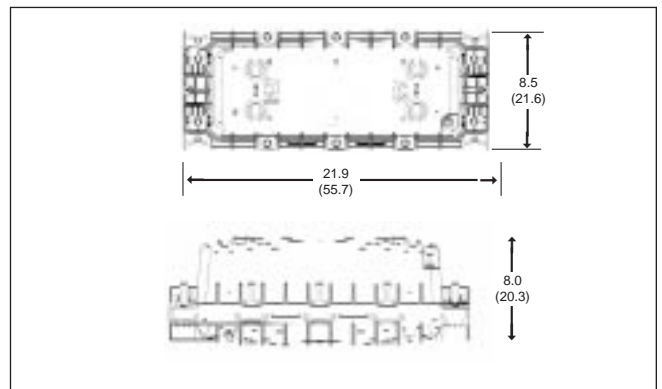
Dimensions Shown: Inches (Centimeters)



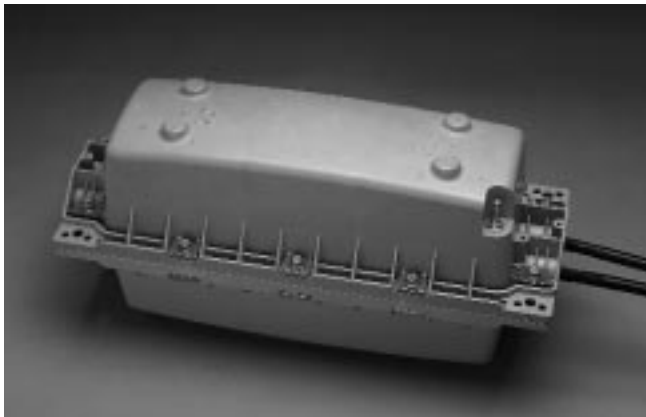
2178-LS/FR Splice Case (gray)

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2178-LS/FR Fiber Optic Splice Case



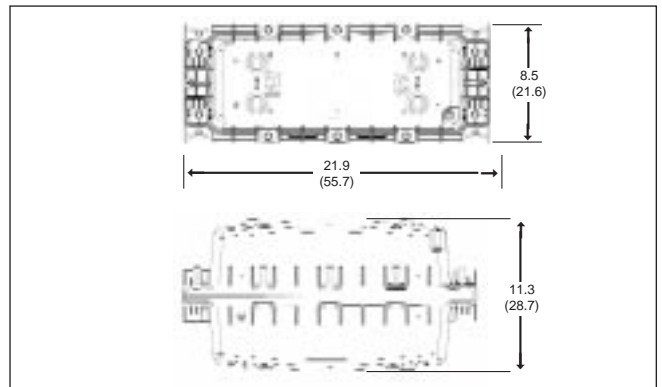
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2178-LL/FR Splice Case (gray)

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2178-LL/FR Fiber Optic Splice Case



Dimensions Shown: Inches (Centimeters)



2181-L/S-FR Cable Addition Kit

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3M™ Splice Cases and Accessories Ordering Information

Product	Packaging	Min. Order
3M™ 2178-L/S-FR Series Splice Cases		
2178-S/FR Small Fiber Optic Splice Case Contains materials for installation of 3 cables	1 kit/cs.	1 each
2178-LS/FR Large Fiber Optic Splice Case Contains materials for initial installation of 4 cables	1 kit/cs.	1 each
2178-LL/FR Extra-Large Fiber Optic Splice Case Contains materials for initial installation of 4 cables	1 kit/cs.	1 each
2181-LS/FR Cable Addition Kit Contains gasket and materials for installing additional cables in 2178-S/FR, 2178-LS/FR, or 2178-LL/FR Fiber Optic Splice Cases	1 kit/cs.	1 each
3M™ 2178-L/S-FR Series Splice Case Accessories		
2172 Strength Member Clamp for fiber cable Clamps strength member to cable sheath	100/cs.	100 each
2178-LS/EGI External Ground Isolation Kit	5/cs.	5 each
2178-LS/GSKT Gasket for 2178-LS/FR Series Fiber Optic Splice Cases	10/cs.	10 each
2181-LS/FR Cable Addition Kit		
2181-B Fiber Optic Double Butt Adapter Kit Contains bolts for installation of two 2181-LS/FR Cable Addition Kits	1/cs.	1 kit
2181-C Triple Adapter Kit Contains bolts for installation of three 2181-LS/FR Cable Addition Kits	1/cs.	1 kit
2183 Universal Hanger Bracket Hardware for aerial installation	1/cs.	1 each
2197 Aerial Hanger/Hinge Kit Contains hardware for aerial installation with hinged cover	1/cs.	1 each
2198 Mounting Bracket for 2178-S/FR or 2178-LS/FR Hardware mounts any small bottom 2178-S/FR to wall or pole	1 kit/cs.	1 each
2199 Mounting Bracket for 2178-LS/FR and 2178-LL/FR Fiber Optic Splice Cases Hardware mounts any large bottom 2178-LS/FR or 2178-LL/FR to wall	1 kit/cs.	1 each
Scotchlok™ 4460-D/FO Shield Bond Connector Assembly Provides grounding and strength member clamp	100/cs.	100 each
2519 Cable Fanout Kit Transitions cable buffer tubes or single tube to FibrTube	10 kits/cs.	10 kits
2519-X Cable Fanout Expander Kit Transitions one FibrTube to two FibrTubes	10 kits/cs.	10 kits
2520 FibrTube Transport Tubing Protects single or ribbon fiber between trays; cut in one-foot lengths	50/cs.	50 each
2521-F Fusion Splice Insert Holds 12 single fusion splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2521-FL Fibrlok™ Splice Insert Holds six Fibrlok™ Splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2521-MF Fibrlok™ Multi-Fiber Splice Insert Holds four Fibrlok Multi-Fiber Splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2521-RF Ribbon Fusion Splice Insert Holds five ribbon fusion splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2522 Small Fiber Splice Organizer Tray Holds two 2521 Series Splice Inserts (sold separately)	3/cs.	3 each
2523 Large Fiber Splice Organizer Tray Holds four 2521 Series Splice Inserts (sold separately)	3/cs.	3 each
2524 Splice Organizer Tray Holds 24 Fibrlok splices and eight buffer tubes	3/cs.	3 each

Maximum Splice Capacities with 3M™ Splice Organizer Trays

Product Number	Fibrlok™ Splices	Fibrlok™ Multi-Fiber Splices	Fusion	Ribbon Fusion	Comments
2178-S/FR Series					
2178-S/FR w/2 2522	24	16 (192 fibers)	48	20 (240 fibers)	
2178-S/FR w/2 2523	48	24 (288 fibers)	96	24 (288 fibers)	
2178-S/FR w/2 2524	48				
2178-S/FR w/2 2524-A			48	8 (96 fibers)	
2178-S/FR w/2 2524-FT			48		
2178-S/FR w/2 2524-MF	4	6 (72 fibers)			
2178-S/FR w/4 2522	48	32 (384 fibers)	96	40 (480 fibers)	One 2181-LS/FR cable addition kit
2178-S/FR w/4 2523	96	48 (576 fibers)	192	48 (576 fibers)	One 2181-LS/FR cable addition kit
2178-S/FR w/4 2524	96				One 2181-LS/FR cable addition kit
2178-S/FR w/4 2524-A			96	16 (192 fibers)	One 2181-LS/FR cable addition kit
2178-S/FR w/4 2524-FT			96		One 2181-LS/FR cable addition kit
2178-S/FR w/4 2524-MF	8	12 (144 fibers)			One 2181-LS/FR cable addition kit
2178-LS/FR Series					
2178-LS/FR w/5 2522	72	48 (576 fibers)	144	50 (600 fibers)	
2178-LS/FR w/5 2523	144	72 (864 fibers)	288	60 (720 fibers)	
2178-LS/FR w/7 2524	168				
2178-LS/FR w/7 2524-A			168	28 (336 fibers)	
2178-LS/FR w/7 2524-FT			168		
2178-LS/FR w/7 2524-MF	14	21 (252 fibers)			
2178-LS/FR w/8 2522	108	72 (864 fibers)	216	80 (960 fibers)	One 2181-LS/FR cable addition kit
2178-LS/FR w/8 2523	216	108 (1296 fibers)	432	96 (1296 fibers)	One 2181-LS/FR cable addition kit
2178-LS/FR w/10 2524	240				One 2181-LS/FR cable addition kit
2178-LS/FR w/10 2524-A			240	40 (480 fibers)	One 2181-LS/FR cable addition kit
2178-LS/FR w/10 2524-FT			240		One 2181-LS/FR cable addition kit
2178-LS/FR w/10 2524-MF	20	30 (360 fibers)			One 2181-LS/FR cable addition kit
2178-LS/FR w/10 2522	132	80 (960 fibers)	264	100 (1200 fibers)	Two 2181-LS/FR cable addition kits
2178-LS/FR w/10 2523	264	120 (1440 fibers)	528	120 (1440 fibers)	Two 2181-LS/FR cable addition kits
2178-LS/FR w/13 2524	312				Two 2181-LS/FR cable addition kits
2178-LS/FR w/13 2524-A			312	52 (624 fibers)	Two 2181-LS/FR cable addition kits
2178-LS/FR w/13 2524-FT			312		Two 2181-LS/FR cable addition kits
2178-LS/FR w/13 2524-MF	26	39 (468 fibers)			Two 2181-LS/FR cable addition kits

NOTE: 2178-LL/FR has the same splice capacity as 2178-LS/FR with additional space for buffer storage. Capacity may be affected by the cable size and number of cables installed. Please call Customer Service for more information at 1-800-426-8688.

Organizer Trays

2522 Small Tray	12	8 (96 fibers)	24	10 (120 fibers)	
2523 Large Tray	24	12 (144 fibers)	48	12 (144 fibers)	
2524 Tray	24				
2524-A Tray			24	4 (48 fibers)	
2524-FT Tray			24		
2524-MF Tray	2	3 (36 fibers)			

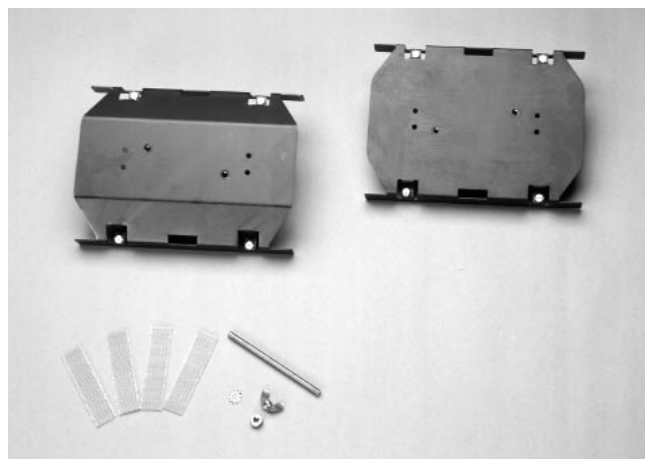
3M™ Splice Cases and Accessories Ordering Information, continued

Product	Packaging	Min. Order
2178-L/S-FR Series Splice Case Accessories, continued		
2524-A Splice Organizer Tray Holds four mass fusion or 24 single fusion splices, or a combination of 20 single fusion and four mass fusion	3/cs.	3 each
2524-FT Fusion Splice Organizer Tray Holds 24 single fusion splices and eight buffer tubes	3/cs.	3 each
2524-MF Fibrlok™ Multi-Fiber Splice Organizer Tray Holds three Fibrlok Multi-Fiber Splices and four single Fibrlok Splices	3/cs.	3 each
2524-F Fusion Splice Insert Adapts the 2524 Tray for fusion splices	24/cs.	24 each
2526 Strap Kit for Organizer Trays Holds 2522 and 2523 Trays in place in closure	24 kits/cs.	24 kits



2198/2199 Mounting Brackets

6



Tray Supports

8



External Ground Isolation Kit

7

Important Notice

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