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(See Cable Assemblies & Backplane Interconnects Section 2, pages 123-137)

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Expanded SECURE Connector Product Line Includes MPO and LC Interfaces

Ten variants in ten colors offered in two new interfaces

Tyco Electronics has expanded its SECURE connector product offering to include both MPO and LC interfaces. Through the use of ten different color/key variations, customers operating multiple networks in common areas can physically segregate their network throughout the system, from the backbone to the equipment panel.

Primary colors and keys are available in red, blue, yellow and green, with additional, secondary options for up to ten different color/keying configurations. Only connectors and adapters of the same color will intermate, and no standard product can plug into a secure adapter.

The LC SECURE product is compatible with both jacketed and buffered fiber. It is available in both LIGHTCRIMP PLUS and standard epoxy/polish styles for singlemode and multimode fibers. Each connector features a color-coded key that will only mate with like-colored adapters to minimize connection to the wrong networks. Standard colors include red, blue, green and yellow. An additional six colors are available as needed.

The MPO SECURE products are available in the same colors and are compatible with color-coded MPO SECURE cassettes. Standard MPO SECURE trunk cables are available in fiber counts to 72 fibers. MPO SECURE cassettes are available as twelve or twenty-four fiber assemblies. Cables and cassettes are available with 50µm, XG and 62.5µm multimode fiber.

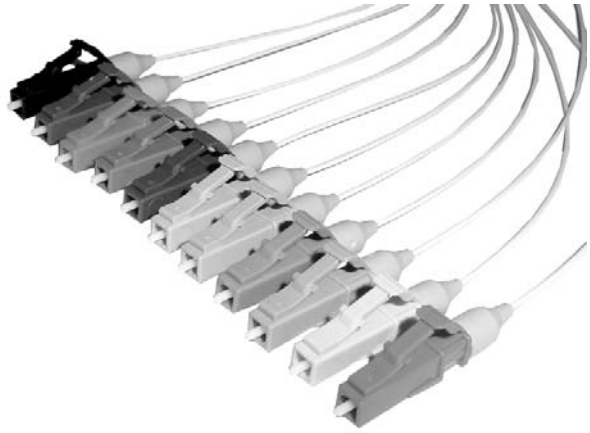
The success of the MT-RJ SECURE product line has fostered growing interest in the SECURE product concept. The addition of the LC and MPO interfaces to the AMP NETCONNECT SECURE product portfolio will allow a wider adoption of the concept and allow more customers to take advantage of the benefits the system offers.

A complete line of connectivity, cable assemblies, and cables are available for MT-RJ SECURE, LC SECURE and MPO SECURE. See pages 9-13 for details.

LC SECURE Product Offering

LIGHTCRIMP PLUS and Epoxy Style LC Product Facts

- LIGHTCRIMP PLUS—No Epoxy/No Polish strip, cleave and crimp
- LC small form factor design is half the size of SC
- 10 exclusive connector variants
- Color coded plugs & adapters match MT-RJ & MPO SECURE offerings
- LIGHTCRIMP PLUS—Termination to 250 or 900 μm tight-buffered fiber using standard tooling
- Epoxy Style—Termination to 250 or 900 μm tight-buffered fiber 1.6 – 2.0 mm jacketed fiber
- Epoxy Style—Suitable for use with heat-cured or anaerobic (quick cure) epoxies (See instruction sheet for recommended anaerobic epoxies)
- Product qualification to TIA/EIA 568-B.3
- Field installable duplex clip (black) for polarity correction if needed
- Plug nose features can provide up to 70 mutually exclusive keying combinations
- Distinct keyway geometry on plug nose & color coding assures identifiable key-type
- Extended lugs on plug side-walls prevent SECURE connectors from mating with non-secure adapters
- Molded internal geometry produces tamper resistant system
- Key placement allows SECURE plugs to interface with standard 1.25 mm test equipment, inspection microscopes and application tooling



LIGHTCRIMP PLUS LC SECURE Kits

Color	Simplex 50/125 MM SECURE	Simplex 50/125 XG MM SECURE	Simplex 62.5/125 MM SECURE	Simplex SM SECURE	Notes
Red	1828853-1	1828854-1	1828855-1	1828856-1	Primary
Yellow	1828853-2	1828854-2	1828855-2	1828856-2	Primary
Green	1828853-3	1828854-3	1828855-3	1828856-3	Primary
Blue	1828853-4	1828854-4	1828855-4	1828856-4	Primary
Rose	1828853-5	1828854-5	1828855-5	1828856-5	
Aqua	1828853-6	1828854-6	1828855-6	1828856-6	
Brown	1828853-7	1828854-7	1828855-7	1828856-7	
Violet	1828853-8	1828854-8	1828855-8	1828856-8	
Orange	1828853-9	1828854-9	1828855-9	1828856-9	
Slate	1-1828853-0	1-1828854-0	1-1828855-0	1-1828856-0	

Highlighted Part Numbers are routinely stocked for shortest lead times.

Epoxy Style LC Kits

Color	Simplex Jumper Multimode	Simplex Jumper Singlemode	Simplex Buffer Multimode	Simplex Buffer Singlemode	Notes
Red	1828078-1	1828079-1	1828861-1	1828862-1	Primary
Yellow	1828078-2	1828079-2	1828861-2	1828862-2	Primary
Green	1828078-3	1828079-3	1828861-3	1828862-3	Primary
Blue	1828078-4	1828079-4	1828861-4	1828862-4	Primary
Rose	1828078-5	1828079-5	1828861-5	1828862-5	
Aqua	1828078-6	1828079-6	1828861-6	1828862-6	
Brown	1828078-7	1828079-7	1828861-7	1828862-7	
Violet	1828078-8	1828079-8	1828861-8	1828862-8	
Orange	1828078-9	1828079-9	1828861-9	1828862-9	
Slate	1-1828078-0	1-1828079-0	1-1828861-0	1-1828862-0	

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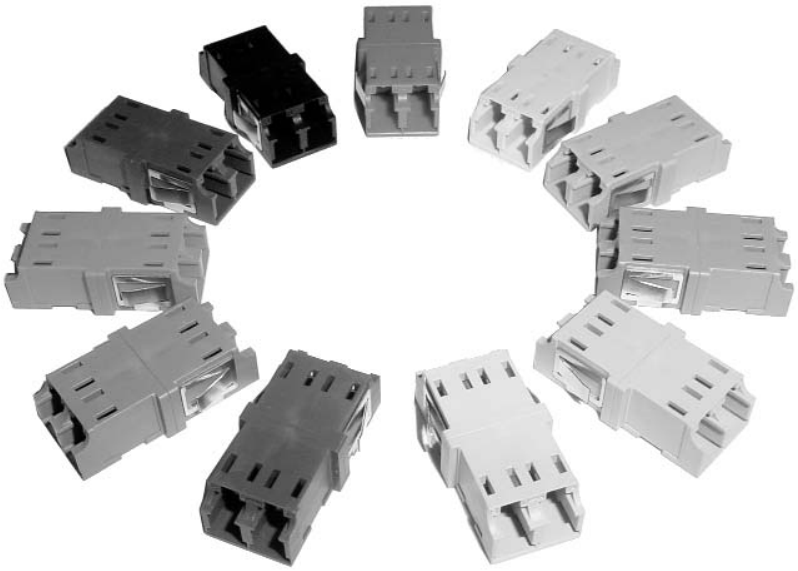
LC SECURE Product Offering (Continued)

LC Duplex Adapters Product Facts

- Flange mount, flangeless, and SL Series configurations
- High quality ceramic sleeves
- Suitable for singlemode and multimode
- Key and color compatible to Epoxy Style and LIGHTCRIMP PLUS Product
- Universal Hybrid Adapters: includes universal adapter half, allows standard LC plugs to be used Behind The Wall or Inside The Box



LC Duplex Adapters

Color	SECURE Adapter Flanged	SECURE Adapter Flangeless	SECURE Adapter SL	Notes
Red	1828073-1	1828074-1	1828075-1	Primary
Yellow	1828073-2	1828074-2	1828075-2	Primary
Green	1828073-3	1828074-3	1828075-3	Primary
Blue	1828073-4	1828074-4	1828075-4	Primary
Rose	1828073-5	1828074-5	1828075-5	
Aqua	1828073-6	1828074-6	1828075-6	
Brown	1828073-7	1828074-7	1828075-7	
Violet	1828073-8	1828074-8	1828075-8	
Orange	1828073-9	1828074-9	1828075-9	
Slate	1-1828073-0	1-1828074-0	1-1828075-0	

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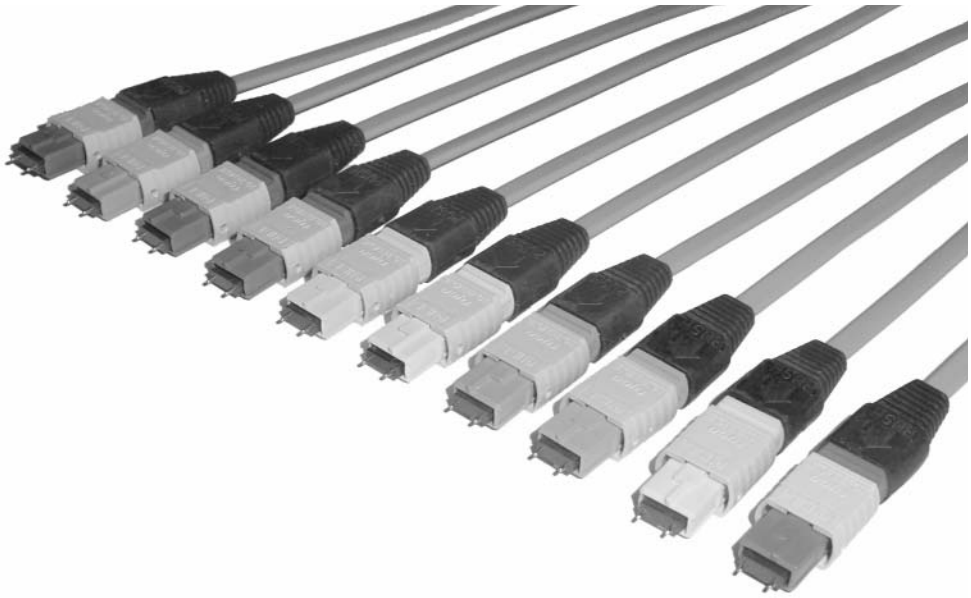
MPO SECURE Fiber Optic Products

MPO SECURE Trunk Cable Assemblies

Product Facts

- Feature color-coded, keyed designs to limit improper connections in segregated or SECURE networks
  - MPO SECURE plug only mates with same color MPO SECURE port
- Trunk cable fiber polarity is pair-flipped (AB/BA)
  - Trunk cables with straight-through polarity (AB/BA) are available
- Pulling socks protect MPO terminations during installation
- Twelve (12) fibers per MPO SECURE plug
- Trunk cables come pre-tested and ready for immediate use
- MPO SECURE trunk cables are plenum cables
  - Plenum cables can be used in riser spaces
- Additional counts and lengths are available
- For use with MPO SECURE Cassettes listed on this page only



Description	Fiber Type	SECURE Color/Keying	Part Number
12-Fiber	50/125 µm Multimode	Red	6754273-X
		Yellow	6754276-X
		Green	6754274-X
		Blue	6754275-X
	XG (850 nm LO 50/125 µm) Multimode	Red	6754420-X
		Yellow	6754421-X
		Green	6754422-X
		Blue	6754423-X
	62.5/125 µm Multimode	Red	6754269-X
		Yellow	6754272-X
		Green	6754270-X
		Blue	6754271-X
24-Fiber	50/125 µm Multimode	Red	6754281-X
		Yellow	6754284-X
		Green	6754282-X
		Blue	6754283-X
	XG (850 nm LO 50/125 µm) Multimode	Red	6754424-X
		Yellow	6754425-X
		Green	6754426-X
		Blue	6754427-X
	62.5/125 µm Multimode	Red	6754277-X
		Yellow	6754280-X
		Green	6754278-X
		Blue	6754279-X

X denotes length in feet: -1 = 10, -2 = 20, -3 = 30, -4 = 40, -5 = 50, -6 = 60, -7 = 70, -8 = 80, -9 = 90, 1- -0 = 100, 1- -1 = 110, 1- -2= 120, 1- -3 = 130, 1- -4 = 140, 1- -5 = 150, 1- -6 = 160, 1- -7 = 170, 1- -8 = 180, 1- -9 = 190, 2- -0 = 200, 2- -1 = 210, 2- -2 = 220, 2- -3 = 230, 2- -4 = 240, 2- -5 = 250, 2- -6 = 260, 2- -7 = 270, 2- -8 = 280, 2- -9 = 290, 3- -0 = 300

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

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MPO SECURE Fiber Optic Products (Continued)

MPO SECURE Optical Fiber Cassettes

Product Facts

- Cassette fiber polarity is pair-flipped (AB/BA)
  - Cassettes with straight-through polarity (AB/AB) are available
- Cassettes have one MPO connection (12-Fiber) or two MPO connections (24-Fiber) on the back of each cassette
- Cassettes house MPO one or two 12-fiber break-out assemblies
- Cassettes have same footprint as Snap-in Adapter Plates
  - Mount in all AMP NETCONNECT enclosures that accept Snap-in Adapter Plates
- Cassettes come pre-tested and ready for immediate use
- MPO SECURE cassettes accept one or two MPO SECURE connectors and transition to the same color MT-RJ SECURE connectors
- MPO SECURE plug only mates with same color MPO SECURE port
- For use only with MPO SECURE Trunk Cable Assemblies on this page

Description	Fiber Count	Duplex Port Count	Part Number
50/125 µm Multimode	12	6	1754286-X◆
	24	12	1754288-X◆
62.5/125 µm Multimode	12	6	1754285-X◆
	24	12	1754287-X◆

X denotes: -1 = Standard, -2 = Red, -3 = Green, -4 = Blue, -5 = Yellow

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MT-RJ SECURE Product Expansion — Now 10 Variants of the MT-RJ SECURE Products

In response to several customers, the MT-RJ SECURE product line has been expanded with an additional six color/key versions. In addition to the original four colors (blue, green, red and yellow), the six new colors (brown, rose, aqua, violet, slate and orange) now make for ten variations. In keeping with the MT-RJ SECURE products features, only plugs and jacks of the same color will mate, and none of the MT-RJ SECURE products will mate with the standard versions. A complete line of jacks, cable assemblies and colored cables are available. For more information see pages 64, 65, 101 and 102.

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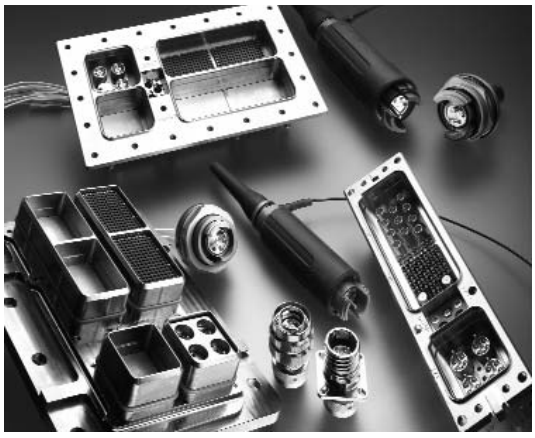
Rugged Fiber Optic Products

Product Facts

- Expanded Beam
  - PRO BEAM Sr.Connectors
  - PRO BEAM Jr.Connectors
  - PRO BEAM Mini Connectors
  - Mini 38999
  - Mini ARINC
  - Mini GPRC
- LuxCis Optical Termini
  - One common terminus for GPRC, 38999, ARINC, Quadrax Cavity Reducers
- Sealed Circular LC ODVA



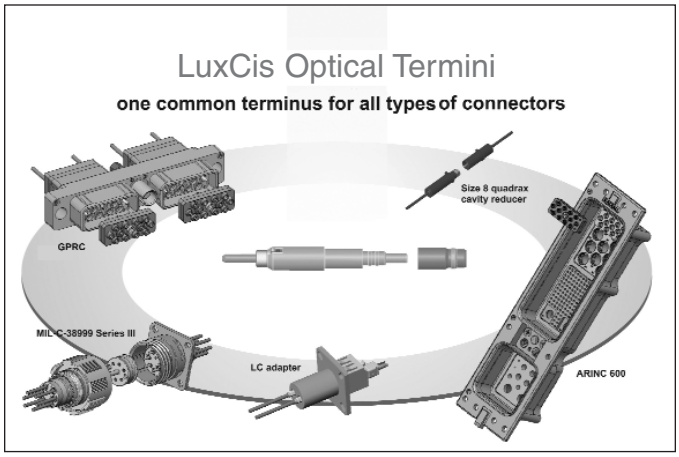
Expanded Beam Products

PRO BEAM Sr., Jr. & Mini Connectors

Tyco Electronics is proud to offer a full rugged fiberoptic product family.

With Tyco Electronics' Expanded Beam, LuxCis Optical Termini, and the Sealed Circular LC ODVA, the end user is guaranteed a complete choice that meets their cost and optical performance needs in multiple industries.

For specific information, please contact your local Tyco Electronics Sales Representative.



LuxCis Optical Termini

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ASSEMBLY CAPABILITIES

Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

Sealed Circular LC ODVA

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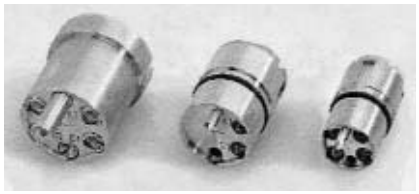
Rugged Fiber Optic Products (Continued)

Expanded Beam Products

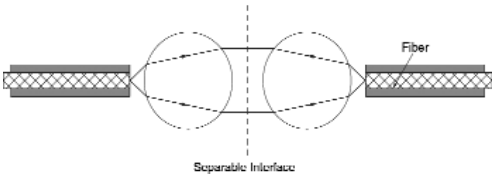
Product Facts

- PRO BEAM Sr., PRO BEAM Jr. and PRO BEAM Mini Connector field deployable interconnects
- ARINC 600 connectors, with inserts/holder blocks designed for Mini-Expanded Beam — up to 128 channels on size 3 ARINC 600
- MIL-C-38999 Series III shell size 11 style circular connectors — Cable assemblies up to 4 fibers
- Common insert for 1- through 4-channels
- Unique Modular Design, for use with multimode and singlemode fiber
- Tactical cables, cable reels, backpacks
- Cable assembly and termination services
- Ball lens expands cross-sectional area of light over 200 times for multimode and over 2000 times for singlemode
- Rugged hermaphroditic construction (i.e., same insert mates to each other)
- Physically non-contacting mating conditions; no wear, installed fiber ferrule protected by ball lens

Expanded Beam Technology



From left to right: PRO BEAM Sr., PRO BEAM Jr. & Mini Expanded Beam inserts.



Expanded Beam Principle

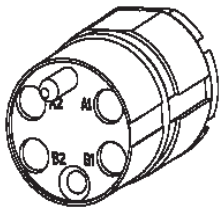
Fiber Optic Interconnect/ Cable System using Expanded Beam technology, which physically expands and collimates the transmission signal into an optical beam over 14 times its original diameter (the cross sectional area of the light beam increases over 200 times for multimode optical signals. For singlemode signals, the collimated beam is over 45 times its original diameter (the cross-sectional area of the light beam increases over 2,000 times.). It is then refocused back down onto the core of the receiving fiber. This approach provides ease of alignment and low sensitivity to thermal changes and contamination. High strength, precision connector housings enhance a durable connection, optimizing low loss and repeatable performance. Suitable for aerospace, avionics, field-deployable communications, marine ship-to-shore applications, security systems, mobile diagnostic units, oil and gas exploration and other harsh environment applications demanding strength, durability and reliable performance in conditions of multiple coupling/ decouplings, blindmate situations, and high vibration.

Product Facts

- No wear on fiber optic interface; Very vibration resistant
- Easy to handle, easy to clean. Durable connection that is highly resistant to dirt/debris
- Singlemode or multimode
- Common 850/1300 Dual Wavelength, 1310, or 1550 nm wavelengths
- Easy alignment for low-loss, repeatable performance
- Consistent overall optical "link budget" assured
- Low sensitivity to thermal fluctuations and interface contamination
- Repeatable low-loss performance in harsh environments

ASSEMBLY CAPABILITIES
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

Expanded Beam Inserts



- PRO BEAM Sr. — the original, larger format, Field Tactical, hermaphroditic Connector System
- PRO BEAM Jr. — the second generation, reduced size, Field Tactical Connector System
- Mini-Expanded Beam insert for multi-channel small form factor — the smallest expanded beam multi-channel insert in the industry, a Tyco Electronics exclusive

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Rugged Fiber Optic Products (Continued)

PRO BEAM Jr. Connectors

Performance Specifications

Optical, Multimode

Insertion Loss, Typical — 0.7 - 1.0 dB @ 1300 nm*

Optical, Singlemode Version

Insertion Loss, Typical — 0.8 - 1.0 dB @ 1310 nm*

Return Loss — > 34 dB @ 1310 nm or 1550 nm

*Against referenced lead

Mechanical

Vibration, Sinusoidal — 10 - 500 Hz, 3 directions; 0.75 mm amplitude @ 10g acceleration

Bump — 4,000 Bumps, 6 directions @ 50g acceleration

Free Fall — 500 falls on concrete; Severity 1.2 m

Coupling Endurance — 3,000 couplings

Weight —
Plug — 123 grams, typical
D-Hole bulkhead — 102 grams, typical

Temperature

Operational Temperature — -40°C/+85°C

Storage Temperature — -55°C/+85°C

Temperature, Cyclic — -55°C/+85°C

Humidity (Damp Heat) —95% RH

Immersion

Water — 5 m depth (plug) - 2 m (Bulkhead)

Material and Finish

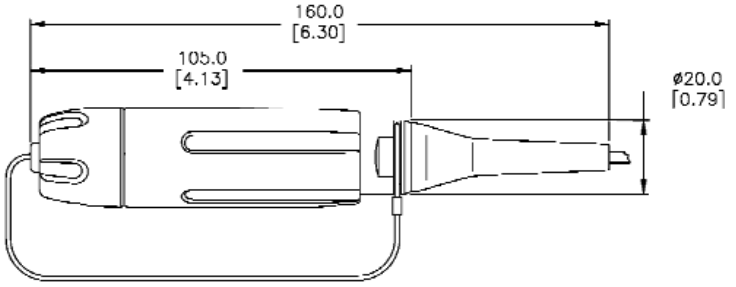
Shell Alloy — Aluminum; or nickel aluminum bronze (high saline environment)

Plating (For Aluminum Shells Only) — clear hard anodized; or green chromate conversion zinc (PRO BEAM Jr. Bulkheads only)

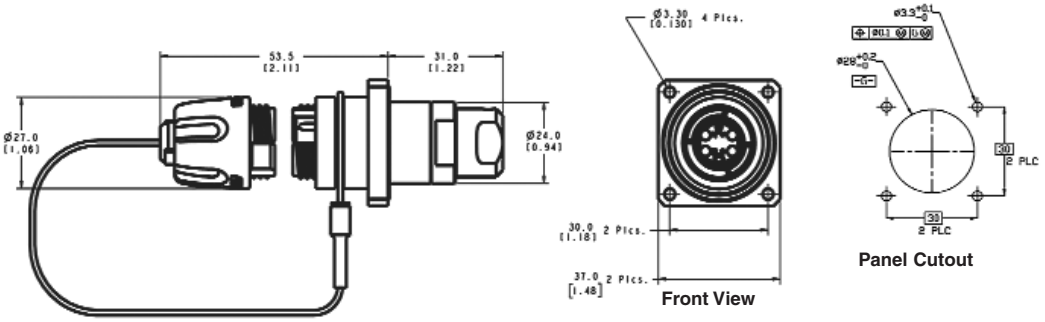
Bulkhead Connector Panel Thicknesses

PRO BEAM Jr. Bulkhead Connector D-Hole — 4 mm max.

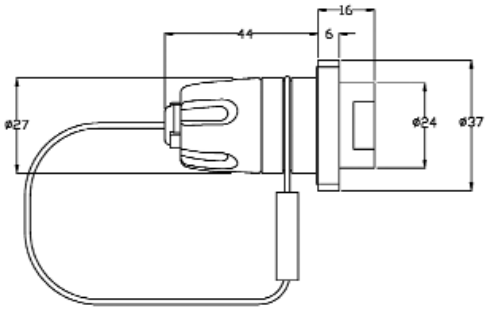
PRO BEAM Jr. Bulkhead Connector Square Flange — 6 mm max.



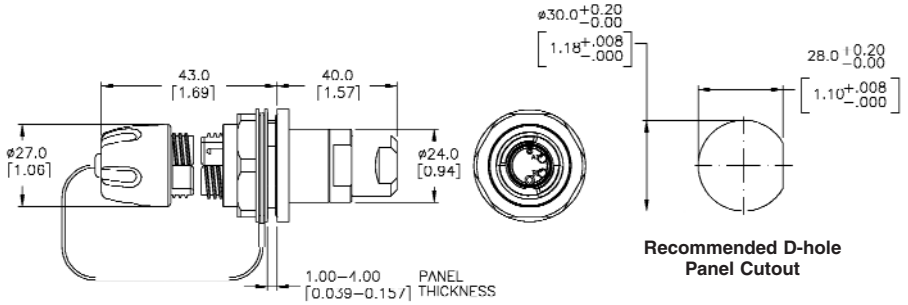
PRO BEAM Jr. Cable Connector, Plug



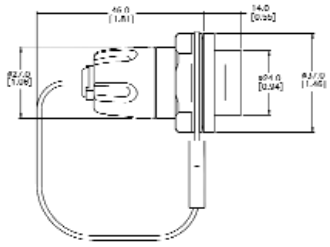
PRO BEAM Jr. Square Flange Mount Bulkhead



PRO BEAM Jr., Low Profile, Square Flange Mount Bulkhead



PRO BEAM Jr. D-Hole Bulkhead, Standard Cable Adapter



PRO BEAM Jr. Low Profile D-Hole Bulkhead

Catalog 1307895
Revised 3-06

www.tycoelectronics.com

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
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C. America: 57-1-254-4444

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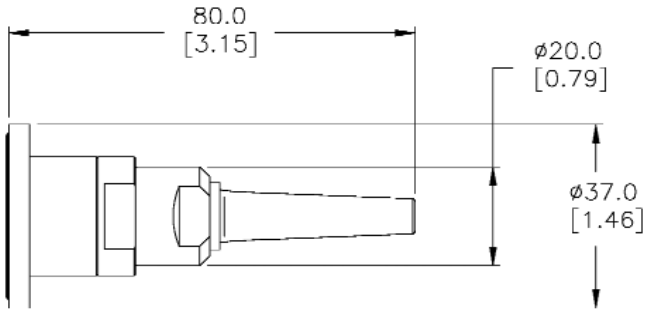
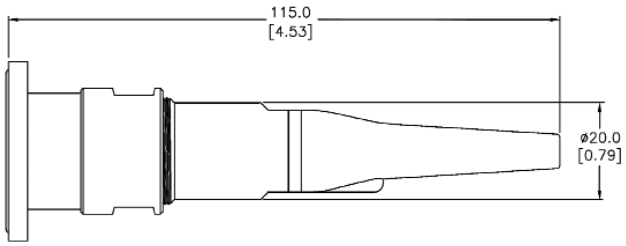
Rugged Fiber Optic Products (Continued)

PRO BEAM Jr. Connectors
(Continued)



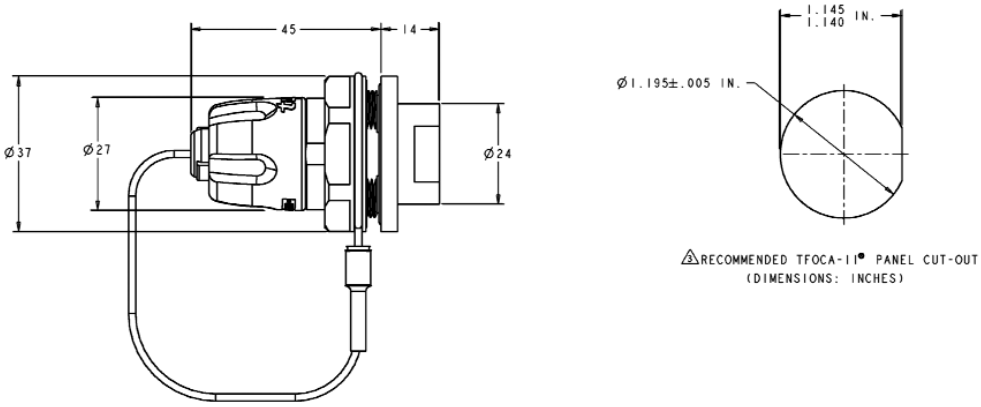
Standard Bulkhead Cable Adapter, with Boot



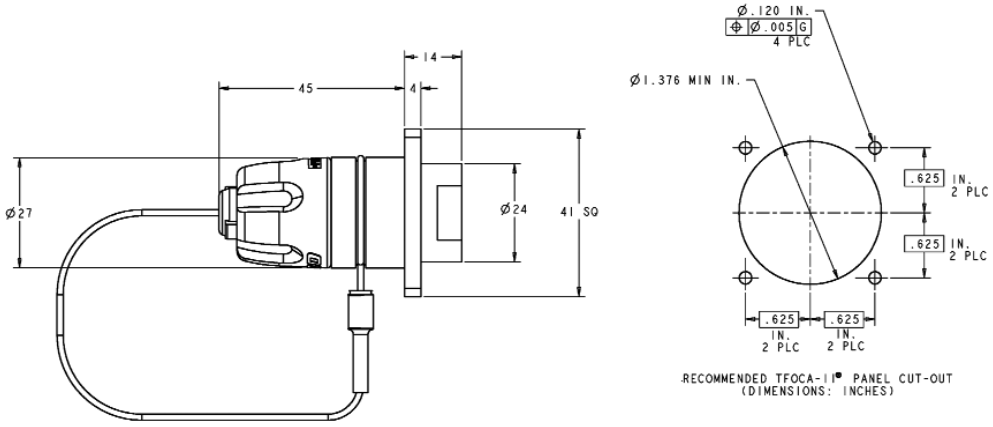
Environmentally Sealed Bulkhead Cable Adapter, with Boot

PRO BEAM Jr. Replacement Receptacles for TFOCA-II Panel Mount Connector Applications
(see page 18 for Part Numbers)

Panel Cutout Dimensions



PRO BEAM Jr. D-Hole Low Profile Buffered Fiber Bulkhead Replacement Connector for TFOCA-II Product



TFOCA-II is a registered trademark of Amphenol Fiber Systems International.

PRO BEAM Jr. Square Flange, Low Profile, Buffered Fiber Bulkhead Replacement for TFOCA-II Product

Catalog 1307895
Revised 3-06

www.tycoelectronics.com

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Rugged Fiber Optic Products (Continued)

PRO BEAM Jr. Connectors
(Continued)

Connector Assembly
1 Shell Kit
1 Insert Kit
1 Cable Adapter Kit*
X Ferrule Kits (X = No. of optical channels)

Part Numbers listed are Shell alloy = aluminum Plating = hard anodized. Consult Tyco Electronics for other plating/material options such as NiAlBz for Naval applications.

PRO BEAM Jr. Connector Shell Kits

Description	Part Number
PRO BEAM Jr. Plug w/EPDM rubber	1754436-1
PRO BEAM Jr. Plug w/Fluorosilicone rubber	1754436-2
PRO BEAM Jr. D-Hole Low Profile, Buffered Fiber Bulkhead	1693741-1
PRO BEAM Jr. D-Hole Standard Bulkhead	1754437-1
PRO BEAM Jr. D-Hole Sealed Bulkhead	1754438-1
PRO BEAM Jr. Square Flange Low Profile Buffered Fiber Bulkhead	1754439-1
PRO BEAM Jr. Square Flange Standard Bulkhead	1754440-1
PRO BEAM Jr. Square Flange Sealed Bulkhead	1754441-1

PRO BEAM Jr. Replacement Receptacles for TFOCA-II Panel Mount Connector Applications

Description	Part Number
PRO BEAM Jr. TFOCA-II Replacement D-Hole Low-Profile Buffered Fiber Bulkhead	1754445-1◆
PRO BEAM Jr. TFOCA-II Replacement D-Hole Sealed Bulkhead	1754446-1◆
PRO BEAM Jr. TFOCA-II Replacement Square Flange Low-Profile Buffered Fiber Bulkhead	1754447-1◆
PRO BEAM Jr. TFOCA-II Replacement Square Flange Sealed Bulkhead	1754448-1◆

PRO BEAM Jr. Insert Kits

Description	Part Number
2 x 850 / 1300nm Multimode	1515743-1
2 x 1310nm Singlemode	1515739-1
2 x 1550nm Singlemode	1516040-1
4 x 850 / 1300nm Multimode	1515747-1
4 x 1310nm Singlemode	1515740-1
4 x 1550nm Singlemode	1516041-1

ASSEMBLY CAPABILITIES
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

Ferrule Kits

Fiber Hole Size	Mode	PRO BEAM	Part Number
125 µm	SM	Jr.	1588908-2
126 µm	SM	Jr.	1588908-1
126 µm	MM	Jr.	1588700-1

PRO BEAM Jr. Connector Plug & Sealed Bulkhead Cable Adapter Kits

Cable Dia. (Max.)	Part Number
3.10 .122	1515814-1
3.60 .142	1515781-3
4.10 .161	1515848-2
4.60 .181	1516147-1
5.10 .201	1515834-2
5.65 .222	1515827-2
6.10 .240	1515859-3
6.70 .264	1588116-1
7.50 .295	1828168-1

PRO BEAM Jr. Connector Standard Bulkhead Cable Adapter Kits*

Cable Dia. (Max.)	Part Number
3.10 (.122)	1515791-2
3.60 (.142)	1515808-1
5.10 (.201)	1515835-1
5.65 (.222)	1515829-1
6.10 (.240)	1515796-2
4 x 3.00 (4 x .118)	1515749-1

Standard Cable Adapter
Not applicable for Low Profile.*

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

Technical Documents

Product Specification
108-2177 Design Objectives

Application Specification
114-13099

Instruction Sheets
408-8791 Grounding D-Hole Bulkhead
408-8797 Plug
408-8798 Standard D-Hole Bulkhead
408-8811 Sealed D-Hole Bulkhead
408-8834 Low Profile Square Flange Bulkhead
408-8840 Low Profile D-Hole Bulkhead
408-8841 Standard Square Flange Bulkhead

Catalog 1307895
Revised 3-06

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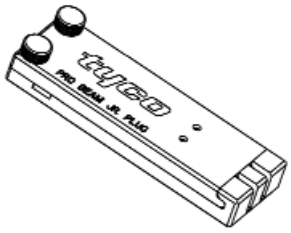
Rugged Fiber Optic Products (Continued)

PRO BEAM Jr. Connectors
(Continued)

Spare Parts & Tools



Curing Fixtures

Connector	Part Number
PRO BEAM Jr. Cable Plug (having cable with KEVLAR strength member fiber)	1693797-1
PRO BEAM Jr. Sealed D-Hole Bulkhead	
PRO BEAM Jr. Standard D-Hole and Square Flange Bulkhead	1693800-1
PRO BEAM Jr. Low Profile Buffered Fiber Bulkhead	1754122-1

Instruction Sheet 408-8857. Available at www.tycoelectronics.com

Cable Crimp Components

Description	Part Number
Crimp Sleeve (use with all PRO BEAM Jr. Connector Crimp Support sizes)	1515269-2
2.2 mm Crimp Support	1515567-1
3.1 mm Crimp Support	1515568-1
3.6 mm Crimp Support	1515569-1
3.8 mm Crimp Support	1515570-1
4.1 mm Crimp Support	2-1515270-0
4.6 mm Crimp Support	1516142-1
5.1 mm Crimp Support	1515571-1
5.65 mm Crimp Support	1515572-1
6.1 mm Crimp Support	1515573-1
6.5 mm Crimp Support	1515574-1
6.7 mm Crimp Support	1515575-1
Square Crimp Support for (4) 3 mm Cables	1515632-1

Ferrule Kits

Fiber Hole Size	Mode	PRO BEAM	Part Number
125 µm	SM	Jr.	1588908-2
126 µm	SM	Jr.	1588908-1
126 µm	MM	Jr.	1588700-1

Protective Caps

Description	PRO BEAM	Part Number
Standard cap, for D-Hole Bulkhead	Jr.	1515868-1
Standard cap, for Flange Mount Bulkhead	Jr.	1515787-2
Standard cap, for connector plug	Jr.	1515867-1

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

Technical Documents

Product Specifications

408-8857 Curing Fixtures for PRO BEAM Jr. and Sr.
408-8828 Cleaning Procedure for EB C/A's

Tooling Specifications

408-8795 Crimp Tool with Die Set for PRO BEAM Jr. and Sr.
408-10022 Die Assembly for Mini and Jr. Circular Crimps

KEVLAR is a trademark of E. I. Dupont de Nemours and Company.

Catalog 1307895
Revised 3-06

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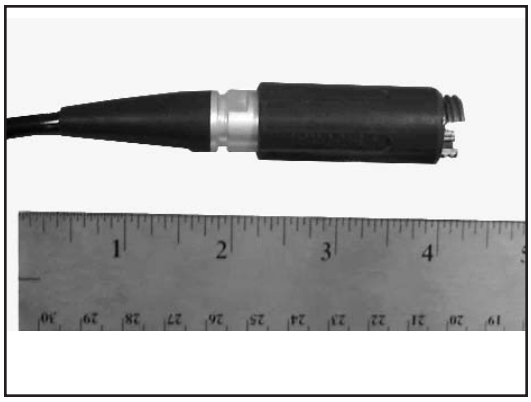
Rugged Fiber Optic Products (Continued)

PRO BEAM Mini Connectors

Tyco Electronics is pleased to announce the natural extension from our PRO BEAM Sr. and Jr. Connector product lines.

The PRO BEAM Mini Connector saves space and weight and is perfect for high density applications. The product offers the same durability as its larger counterparts.

PRO BEAM Sr., Jr. & Mini Connectors



PRO BEAM Mini Plug Connector

Connector Assembly
1 Shell Kit
1 Insert Kit
1 Cable Adapter Kit*
X Ferrule Kits (X = No. of optical channels)

*Not applicable for Low Profile

PRO BEAM Mini Connector Shell Kits

Type	Mount Style	Attributes	P/N (HA Alum)	P/N (OD Alum)	P/N (NiAlBz)
Plug			1828698-1	*	1828698-2
Bulkhead	D-Hole	Low Profile - Buffered Fiber	1828699-1	1828699-2◆	1828699-3
		Low Profile - 1.8mm Jacketed	*	*	*
		Sealed	1918185-1	*	1918185-2
	Sq-Flg	Low Profile - Buffered Fiber	1828826-1	*	*
		Low Profile - 1.8mm Jacketed	*	*	*
		Sealed	*	*	*

*Contact Tyco Electronics for availability.

PRO BEAM Mini Insert Kits

Description	Part Number
2 x 850 / 1300nm Dual Multimode	1754888-1
2 x 1310nm Singlemode	1588129-2
2 x 1550nm Singlemode	1588128-2
4 x 850 / 1300nm Dual Multimode	1754888-2
4 x 1310nm Singlemode	1588129-3
4 x 1550nm Singlemode	1588128-3

Ferrule Kits

Fiber Hole Size	Mode	PRO BEAM	Part Number
125 µm	SM	Mini	1754700-1
126 µm	SM	Mini	1754700-2
126 µm	MM	Mini	1754699-1

ASSEMBLY CAPABILITIES
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

PRO BEAM Mini Cable Adapter Kits For Plug

Cable Diameter	Part Number
5 mm	1828700-1
5.5 mm	1828700-2
6 mm	1828700-3

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

Catalog 1307895
Revised 3-06

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UK: 44-208-420-8341

Rugged Fiber Optic Products (Continued)

PRO BEAM Mini Connectors
(Continued)

Performance Specifications

Optical, Multimode
Insertion Loss, Typical —
0.5 - 1.0 dB @ 1300 nm*

Optical, Singlemode Version
Insertion Loss, Typical —
0.5 - 1.0 dB @ 1310 nm*

Return Loss — > 34 dB @ 1310 nm or 1550 nm

*Against referenced lead

Mechanical
Vibration, Sinusoidal —
10 - 500 Hz, 3 directions;
0.75 mm amplitude @ 10g acceleration

Bump — 4,000 Bumps, 3 directions @ 40g acceleration

Free Fall — 500 falls on concrete; Severity 1.2 m

Coupling Endurance —
3,000 couplings

Weight —
Plug — 50 grams, typical
D-Hole bulkhead — 39 grams, typical

Temperature
Operational Temperature —
-40°C/+85°C

Storage Temperature —
-55°C/+85°C

Temperature, Cyclic —
-55°C/+85°C

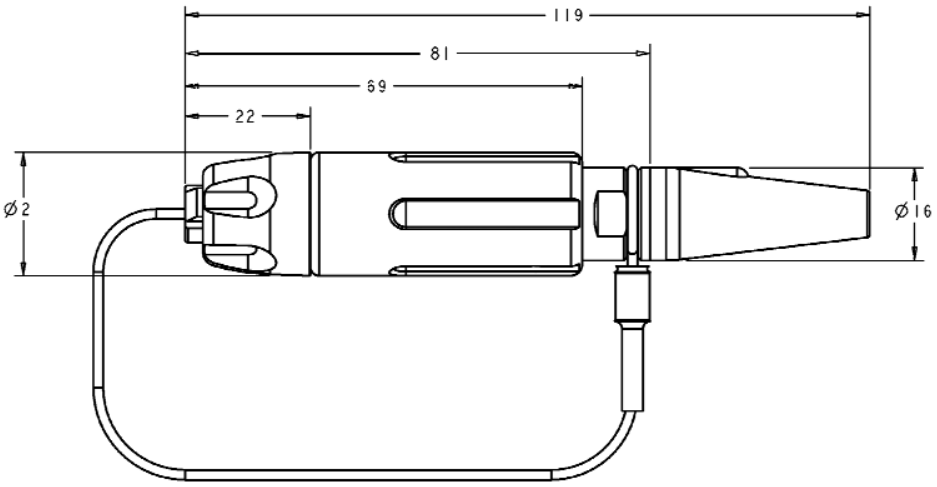
Humidity (Damp Heat) —95% RH

Immersion
Water — 5 m depth (plug) -
2 m (Bulkhead)

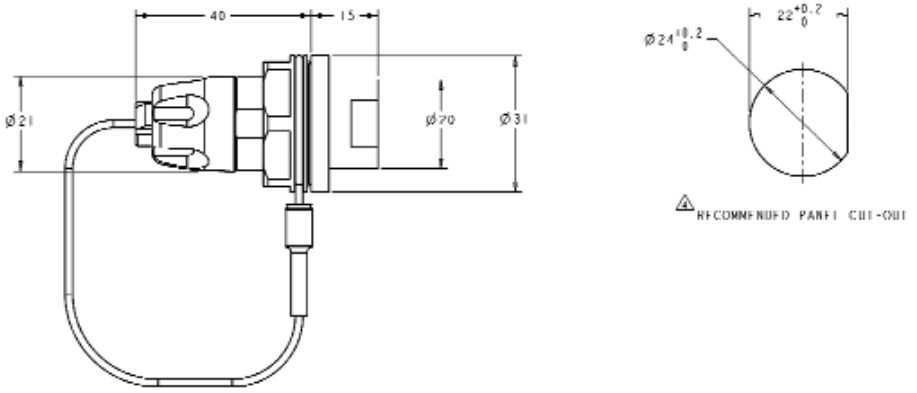
Pressure
Low Pressure — 25 kPa @ -55°C

Material and Finish
Shell Alloy — Aluminum; or nickel aluminum bronze (high saline environment)

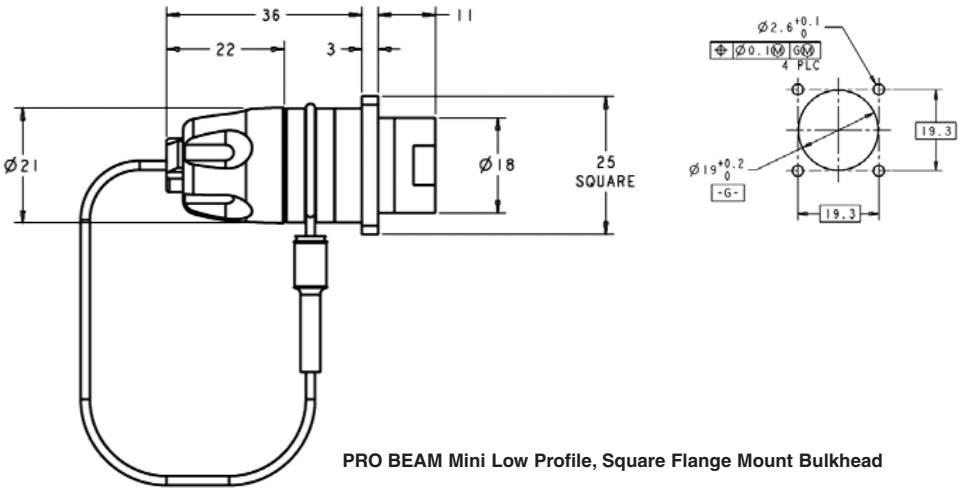
Plating (For Aluminum Shells Only) — clear hard anodized; or green chromate conversion zinc (PRO BEAM Jr. Bulkheads only)



PRO BEAM Mini Cable Connector, Plug



PRO BEAM Mini D-Hole Bulkhead



PRO BEAM Mini Low Profile, Square Flange Mount Bulkhead

Catalog 1307895
Revised 3-06

www.tycoelectronics.com

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Rugged Fiber Optic Products (Continued)

PRO BEAM Sr. Connectors

Performance Specifications

Optical, Multimode

Insertion Loss, Typical — 0.7 - 1.0 dB @ 1300 nm*

Optical, Singlemode

Insertion Loss, Typical — 0.8 - 1.0 dB @ 1310 nm*

Return Loss — > 34 dB @ 1310 nm or 1550 nm

*When tested with reference quality launch/receive cable assemblies.

Mechanical

Vibration, Sinusoidal — 10 - 500 Hz, 3 directions; 0.75 mm amplitude @ 10g acceleration

Bump — 4,000 Bumps, 6 directions, @ 50g acceleration

Free Fall — 500 falls on concrete; Severity 1.2 m

Coupling Endurance — 3,000 couplings

Weight — Plug — 290 grams, typical Chassis bulkhead — 150 grams, typical

Temperature

Operational Temperature — -40°C/+85°C

Storage Temperature — -55°C/+85°C

Temperature, Cyclic — -55°C/+85°C

Humidity (Damp Heat) —95% RH

Immersion

Water — 5 m depth (plug), 2 m (Bulkhead)

Material and Finish

Shell Alloy — Aluminum; or nickel aluminum bronze (high saline environment)

Plating (For Aluminum Shells Only) — clear hard anodized

Bulkhead Connector Panel Thicknesses

PRO BEAM Sr. D-Hole — 6.5 mm max.

PRO BEAM Sr. Square Flange — 8.5 mm max.

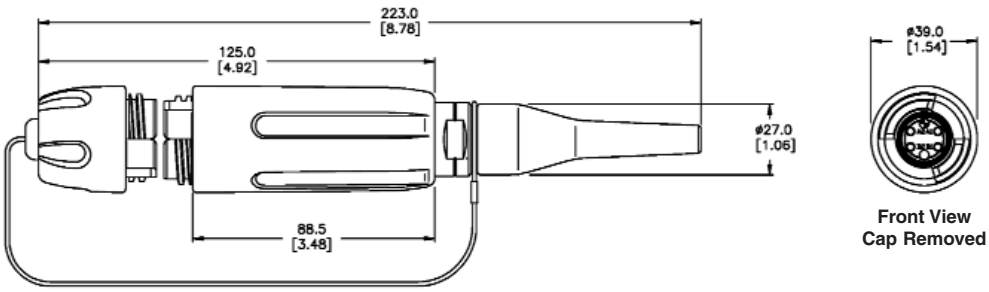
Technical Documents

Product Specifications

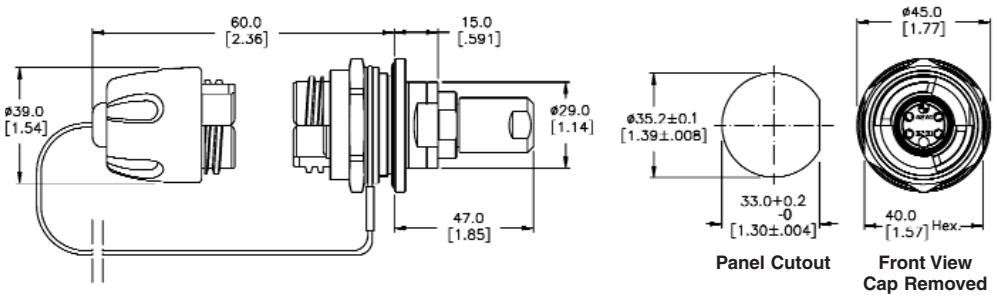
408-8799 Plug
408-8800 D-Hole Bulkhead
408-8877 Square Flange Bulkhead

Application Specification

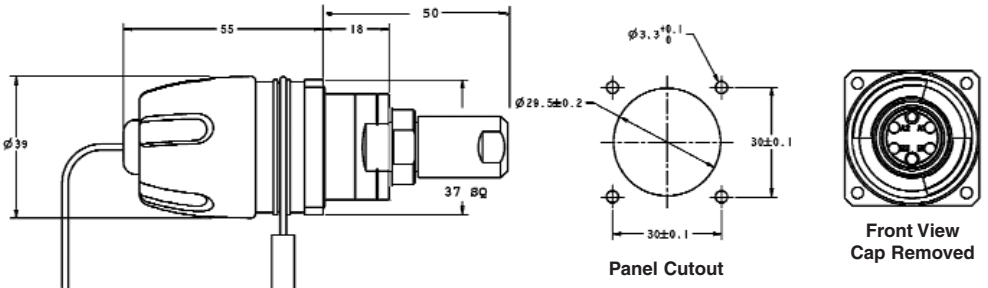
114-13122



PRO BEAM Sr. Cable Connector, Plug



PRO BEAM Sr. D-Hole Bulkhead with Standard Cable Adapter



PRO BEAM Sr. Square Flange Mount Bulkhead with Standard Cable Adapter

Please contact your local Tyco Electronics Sales Representative for Part Numbers and availability.

Catalog 1307895
Revised 3-06

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Rugged Fiber Optic Products (Continued)

PRO BEAM Sr. Connectors
(Continued)

Connector Assembly
1 Shell Kit
1 Insert Kit
1 Cable Adapter Kit*
X Ferrule Kits (X = No. of optical channels)

*Not applicable for Low Profile

Part numbers listed are Shell alloy = aluminum Plating = hard anodized. Consult Tyco Electronics for other plating/material options such as NiAlBz for Naval applications.

PRO BEAM Sr. Connector Shell Kits	Part Number
PRO BEAM Sr. Plug w/EPDM rubber	1754842-1
PRO BEAM Sr. D-Hole Standard Bulkhead	1754843-1
PRO BEAM Sr. Square Flange Standard Bulkhead	1754844-1

PRO BEAM Sr. Insert Kits	Part Number
2 x 850 / 1300nm Multimode	1693001-1
2 x 1310nm Singlemode	1515734-2
4 x 850 / 1300nm Multimode	1693001-2
4 x 1310nm Singlemode	1515739-1

Ferrule Kits

Fiber Hole Size	Mode	PRO BEAM	Part Number
125 µm	SM	Sr.	1515941-1
126 µm	SM	Sr.	1515941-2
126 µm	MM	Sr.	1588801-1

ASSEMBLY CAPABILITIES
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PRO BEAM Sr. Connector Plug & Sealed Bulkhead Cable Adapter Kits

Cable Dia. (Max.)	Part Number
5.10 .201	1515940-1
5.65 .222	1515940-3
6.20 .244	1515940-5

Technical Documents

Product Specifications
408-8857 Curing Fixtures for PRO BEAM Jr. and Sr.
408-8828 Cleaning Procedure for EB C/A's

Tooling Specifications
408-8795 Crimp Tool with Die Set for PRO BEAM Jr. and Sr.
408-10022 Die Assembly for Mini and Jr. Circular Crimps

PRO BEAM Sr. Connector Standard Bulkhead Cable Adapter Kits*

Cable Dia. (Max.)	Style	Part Number
5.10 .201	Standard Cable Adapter	1515847-1
5.65 .222	Standard Cable Adapter	1515724-2

*Not applicable for Low Profile

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

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Rugged Fiber Optic Products (Continued)

Cable Assemblies and Accessories

Product Facts

- Ruggedized cable assemblies custom tailored for field use in harsh environments
- Heavy-duty light-weight cable reel organizes and protects connectors and cable for easy pay-out and safe storage
- Reels available up to 2000 meters
- Options for 500 meter reels include special backpack harnesses, a separate reel stand, or a combination reel and reel stand

NEW

PRO BEAM Jr. Termination Kit 1828650-1

Cleaning Kit 1828335-2

Featured Cable Assemblies

TFOCA to PRO BEAM Jr. Cable Assy
1828536-1◆

LPBHD w/1.8mm cable
1828454-1◆

Plug to Plug (100 meters)
6754475-2

Typical Reels and Reel Stands for Field-Deployable Cable Assemblies

1515900-1

Tactical Reel/Drum Options

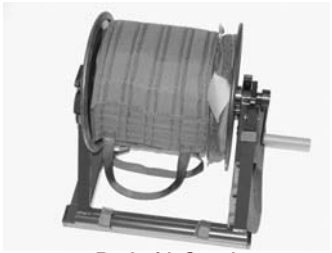
Cable Reels

Reel Capacity (Random Lay)			
Cable Diameter		Notes/Description	Part Number
5.0mm	5.5mm		
225 M	186 M	Reel & Reel Stand Combination Reel can be detached from stand without tools	1515900-1
297 M	247 M	Reel*	1754515-1
570 M	462M	Reel*	1754515-2
998M	816M	Reel*	1754515-3
1271 M	1052 M	Reel*	1754515-4

* See Accessories options below

ASSEMBLY CAPABILITIES
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

Backpack with Reel



Reel with Stand "Static Frame"

Backpack Harness

Accessories

Description	Reel Diameter	Part Number
Backpack	370mm Dia. Reel	1754516-1*
Backpack	460mm Dia. Reel	1754516-2*
Backpack	510mm Dia. Reel	1754516-3*
Static Frame	500mm Dia. Max	1754517-1*
Static Frame	700mm Dia. Max	1754517-2*

* Reel must be ordered separately.

Note: For lower cost alternative options. Please contact your local Tyco Electronics' Sales Representative or Tyco Electronics Product Information Center at 1-800-522-6752.

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

TFOCA-II is a registered trademark of Amphenol Fiber Systems International.

Rugged Fiber Optic Products (Continued)

Optical Test Set for Fiber Optic Cables — Designed for harsh environments

Product Facts

- Especially designed to support the installation of optical links in the field
- Able to test both cable drums and entire links
- Powered by batteries with high autonomy
- Suitable for diagnostics and construction teams
- Easy to use, ergonomic, rugged design
- Suitable for cable length up to 10 km
- Supports up to 4 fibers per cable with various types of connectors

Diagnostic Features

Power Meter

The optical power from any source can easily be measured with the power meter function.

Optical Source

A continuous optical signal is generated and transmitted with selectable output power.

Drum Test / Cable Test

Test of an entire cable drum with automatic good/bad indication. The test of an entire cable is realized with a 2nd KPG-opt or a loop connector.

Test Frames (optional)

The KPG-opt can generate specific test frames as used in optical networks and LOS systems.

Optical Tester

Description	Part Number
850nm 38999 III Size 11 Optical Test Kit	1918016-1
850/1300nm PRO BEAM Jr. Optical Test Kit	1918016-2

For Singlemode and additional wavelength testers, contact your local Tyco Electronics Sales Representative.

Protective Case
1918082-1

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

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Rugged Fiber Optic Products (Continued)

Tactical Field Deployable Fiber Optic Cable for Extreme Environments (Metallic for Rodent Proof)

The Rochester Corporation

1- 4 Fiber Singlemode

Technical Data:

Attenuation	0.4 dB/km @ 1310 nm / 0.25 dB/km @ 1550 nm
Diameter	3.76 mm
Weight	24 kg/km
Recommended Bend Radius	13.2 cm
Breaking Strength	3.1 kN

1- 4 Fiber Multimode – 50 µm

Technical Data:

Attenuation	3.2 dB/km @ 850 nm / 1.0 dB/km @ 1300 nm
Diameter	3.76 mm
Weight	26 kg/km
Recommended Bend Radius	13.2 cm
Breaking Strength	3.3 kN

1- 4 Fiber Multimode – 62.5 µm

Technical Data:

Attenuation	3.0 dB/km @ 850 nm / 1.0 dB/km @ 1300 nm
Diameter	3.76 mm
Weight	26 kg/km
Recommended Bend Radius	13.2 cm
Breaking Strength	3.3 kN

Non-Metallic Tactical Field Deployable Fiber Optic Cable

Product Facts

- **All terrain field deployable cable, up to 4 fibers, singlemode or multimode**
- **Developed for deployment under the most demanding conditions**
- **Tight buffered fibers are protected by Aramid yarns and a tough ruggedized polyurethane sheath**
- **Tested in accordance with DEF STAN 60-1 (PART 0) and MILPRF 85045**
- **Flexible, water resistant, high crush resistant, and lightweight,**
- **Designs available to be resilient against radiation exposure**

Other fibers (i.e. Polyimide, Silicon buffer, Carbon coated, radiation hardened, etc.) are available upon request.

Contact Tyco Electronics or your local Tyco Electronics Sales Representative for part numbers, pricing, and availability.

Mil-Standard Distribution Cable - 1 Fiber Singlemode and Multimode

Technical Data:

Attenuation	≤ 0.5 dB/km @ 1310nm / ≤ 0.5 dB/km @ 1550nm
Diameter	43.0mm - 4.0mm
Weight	15 kg/km
Minimum Bending Radius	32mm
Crush Resistance	440N/cm
Operating Temperature	-55° C to +85° C

Mil-Standard Distribution Cable - 2 Fiber Singlemode

Technical Data:

Attenuation	≤ 0.5 dB/km @ 1310nm / ≤ 0.5 dB/km @ 1550nm
Diameter	5.0mm
Weight	31 kg/km
Minimum Bending Radius	40mm
Crush Resistance	440N/cm
Operating Temperature	-55° C to +85° C

Mil-Standard Distribution Cable - 4 Fiber Singlemode

Technical Data:

Attenuation	≤ 0.5 dB/km @ 1310nm / ≤ 0.5 dB/km @ 1550nm
Diameter	5.5mm
Weight	42 kg/km
Minimum Bending Radius	44mm
Crush Resistance	440N/cm
Operating Temperature	-55° C to +85° C

Mil-Standard Distribution Cable - 2 Fiber Multimode

Fiber Type	50µm/125µm and 62.5/125
Attenuation	≤ 3.0 dB/km @ 850nm / ≤ 1.0 dB/km @ 1300

Mil-Standard Distribution Cable - 4 Fiber Multimode

Fiber Type	50µm/125µm and 62.5/125
Attenuation	≤ 3.0 dB/km @ 850nm / ≤ 1.0 dB/km @ 1300

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Rugged Fiber Optic Products (Continued)

"Mini" Expanded Beam for Harsh Environments

Product Facts

- **Available in shell size 11, housed on D38999 Series III style shells for harness applications**
- **Multiple options available for backshells. Consult your local Tyco Electronics Sales Representative**

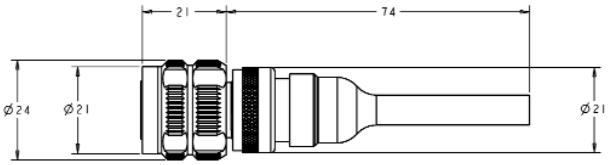
Standard Material and Finish

Shell Alloy — Aluminum

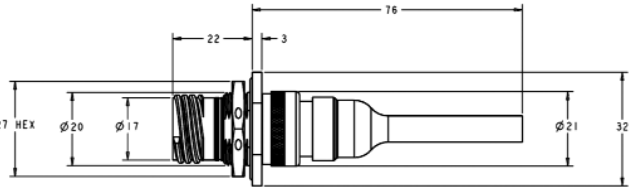
Plating — Nickel & green chromate

*Refer to customer drawing for dash number designation

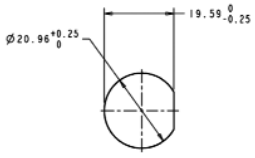
For part number details and plating options, contact your local Tyco Electronics Sales Representative.



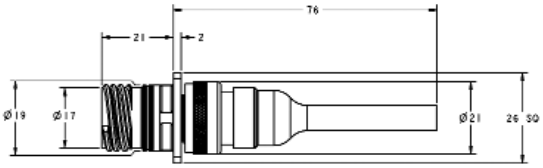
Plug Shell Kit

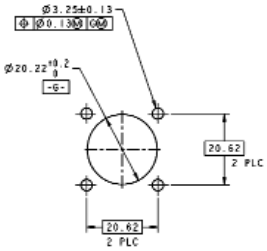


D-Hole Receptacle Shell Kit



Receptacle Panel Cut-Out (shell size 11) per MIL-DTL-38999K, figure 11





Square Flange Receptacle Shell Kit

ASSEMBLY CAPABILITIES
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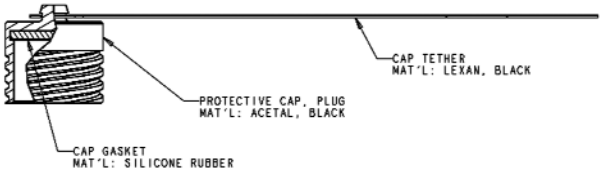
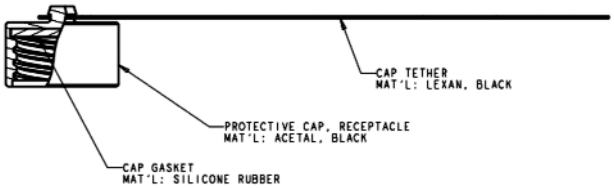


38999 Plug Cap
1918024-1



38999 Receptacle Cap
1918025-1 = Jam Nut Receptacle
1918025-2 = Square Flange Receptacle

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

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Rugged Fiber Optic Products (Continued)

Expanded Beam Avionics-Related Standards and Specifications for ARINC 600, 664, 763 and 801

ARINC 664 — Aircraft Data Network

Tyco Electronics' ARINC Connectors with Mini-Expanded Beam inserts will meet/exceed all 100 Base-FX Ethernet LAN applications

ARINC 763 — Avionics Network Server System — Tyco Electronics' ARINC 600 Connectors are designed to meet/exceed 100 Base-FX Ethernet LAN applications.

Network Server Unit (NSU) — can use ARINC 600 Size 1 connector with up to 8 Expanded Beam fiber optic channels (two Mini-Expanded Beam inserts in cavity C)

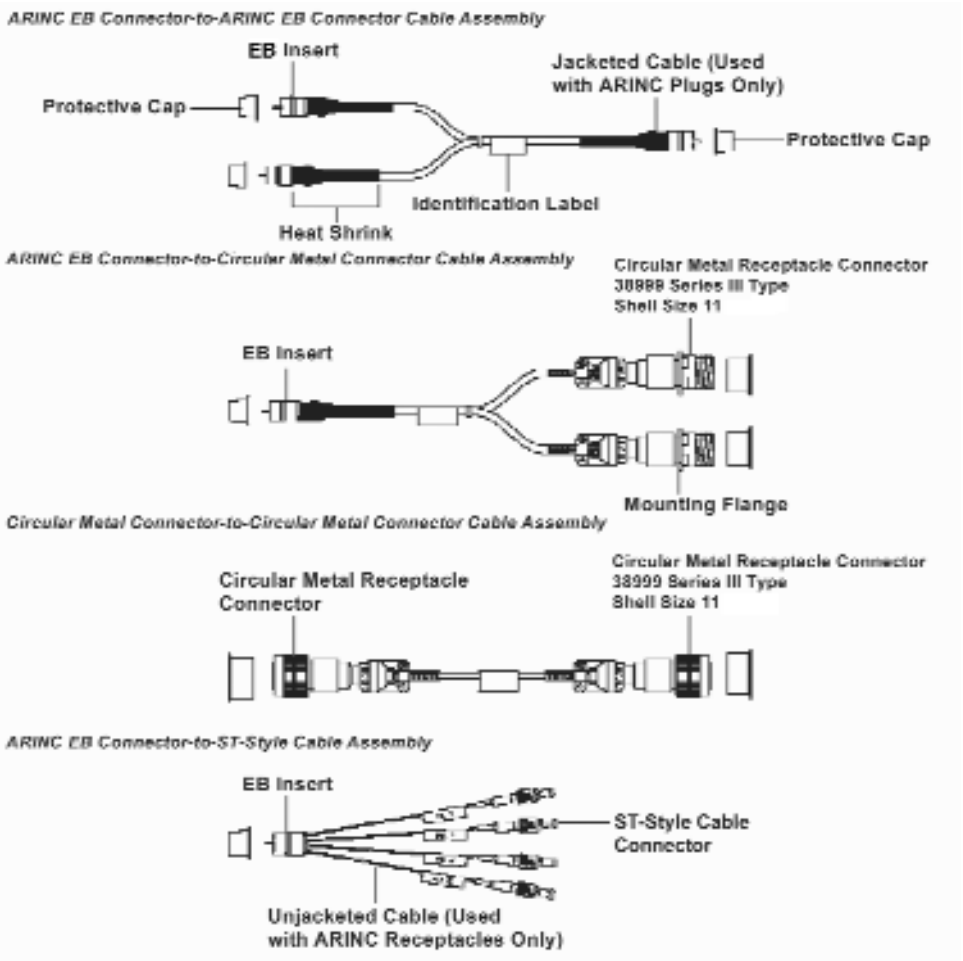
Server Interface Unit (SIU) — can use ARINC 600 Size 3 connector with up to 16 Expanded Beam fiber optic channels (four Mini-Expanded Beam inserts in cavity F)

Integrated Network Server Unit (INSU) — can use ARINC 600 Size 3 connector with up to 16 Expanded Beam fiber optic channels (four Mini Expanded Beam inserts in cavity F)

ARINC 801 — Fiber Optics Working Group

Tyco Electronics provides a single reference point for Flight Level Optics that are multi-sourced.

Typical Assemblies for In-Flight Network Applications



Typical Assemblies

ASSEMBLY CAPABILITIES
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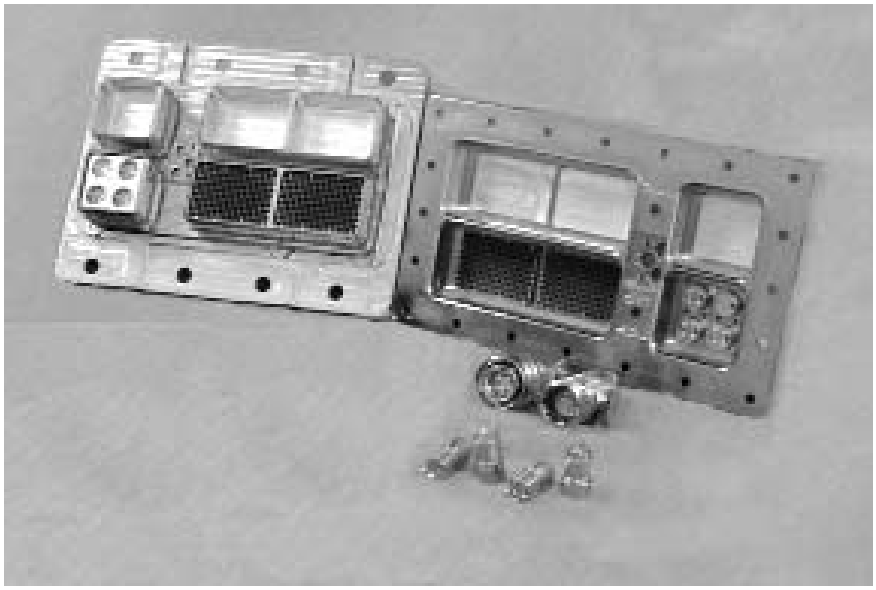
Rugged Fiber Optic Products (Continued)

ARINC 600 AND 404

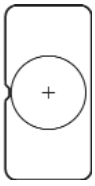
Product Facts

- For use in 100 base-FX Ethernet LAN applications per ARINC 664 and ARINC 763
- Insert holders designed to ARINC 600, Supplement 13 or to specific customer needs for Mini Expanded Beam inserts
- Drop-In Insert Holders utilize Standard ARINC 600 Retainers
  - Hard Stop on Plug Side
  - Spring-Loaded Stop on Receptacle Side
  - Captive Hardware
- Facial Sealing — Optional
  - Bonded to Receptacle Block Mating Face
  - Raised Collar Seal around Optics Insert compresses against Chamfer on Plug Block Mating Face

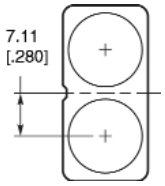


ARINC 600 Insert Holders for Mini-Expanded Beam Contacts

Size 1
Power Cavities

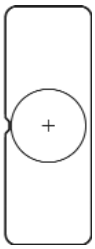


ARINC 600, 1 Position
1MP

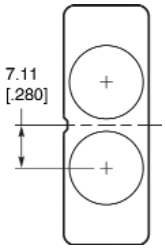


ARINC 600, 2 Position
2MP

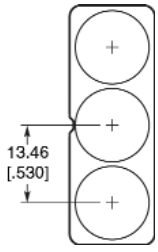
Size 1
Signal Cavities



ARINC 600, 1 Position
1MS



ARINC 600, 2 Position
2MS



ARINC 600, 3 Position
3MS

ASSEMBLY CAPABILITIES
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See next page (30) for Size 2 / 3 Power and Signal Cavities

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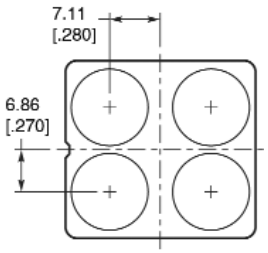
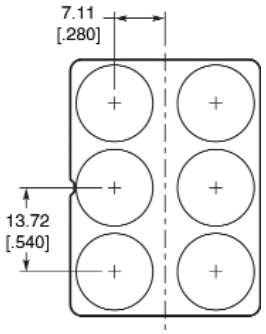
Rugged Fiber Optic Products (Continued)

Size 2 / 3
Power and Signal Cavities

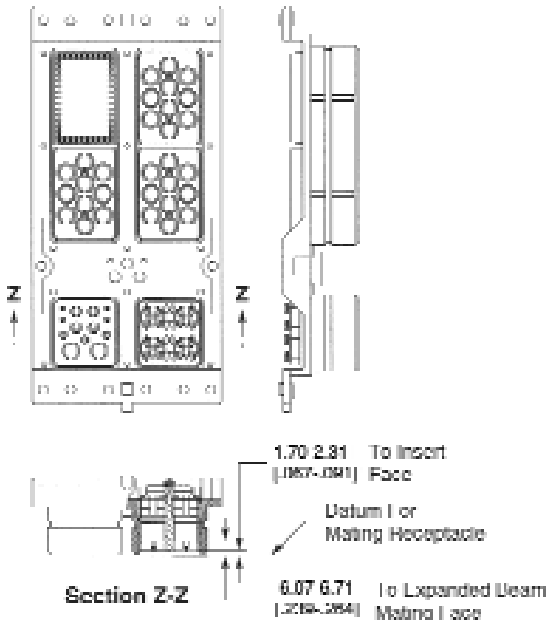


ARINC 600, 4 Position
4MP

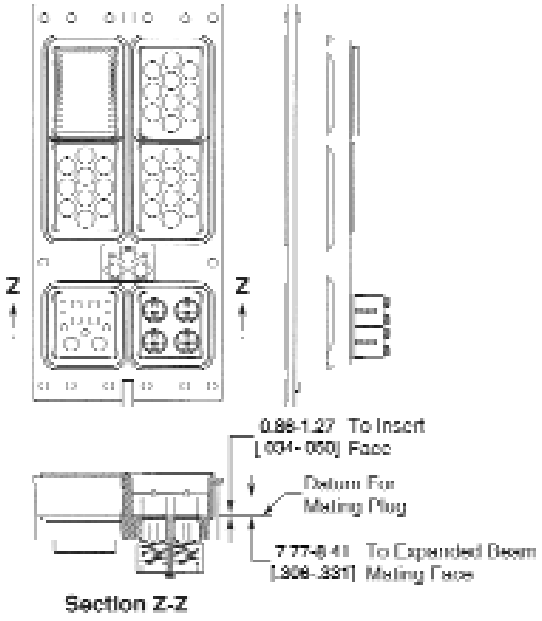


ARINC 600, 6 Position
6MS

ARINC 600 Insert Holders for Mini-Expanded Beam Contacts



Typical Layout for Plug



Typical Layout for Receptacle

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Rugged Fiber Optic Products (Continued)

Comparative on Expanded Beam Inserts

Comparative on Expanded Beam Inserts' weight and Insertion Forces when applied to an ARINC housing

- ARINC 600 connector mated pair size 2 = 440 grams (without copper contacts)
- ARINC style Mini and Junior size Expanded Beam inserts = 5 pounds insertion force each when applied to the Rack and Panel ARINC Connector inserts
- Signal Cavity Optical Holder insert (i.e.: holds up to six mini inserts with four fiber ball lenses each or up to 24 fibers each insert set) = @ 30 grams
- Power Cavity Optical Holder insert (i.e.: holds up to four mini inserts with four fiber ball lenses each or up to 16 fibers each insert set) = @ 20 grams
- Insert mated pair PRO BEAM Jr. Connector insert set = @ 41.79 grams
- Insert mated pair PRO BEAM mini Connector insert set = @ 16.17 grams
- Fiber = single fiber ≤ 4 kg / km
- Fiber = four fiber jacketed with a support member ≤ 24 kg / km
- Static spring force per mated Expanded Beam insert pair = 5 lbs.

LuxCis Optical Termini Notes

LuxCis is a trademark of Radiall, S.A. Product is manufactured under license from Radiall, S.A.

Sealed Circular LC ODVA Notes

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Rugged Fiber Optic Products (Continued)

LuxCis Optical Termini

Product Facts

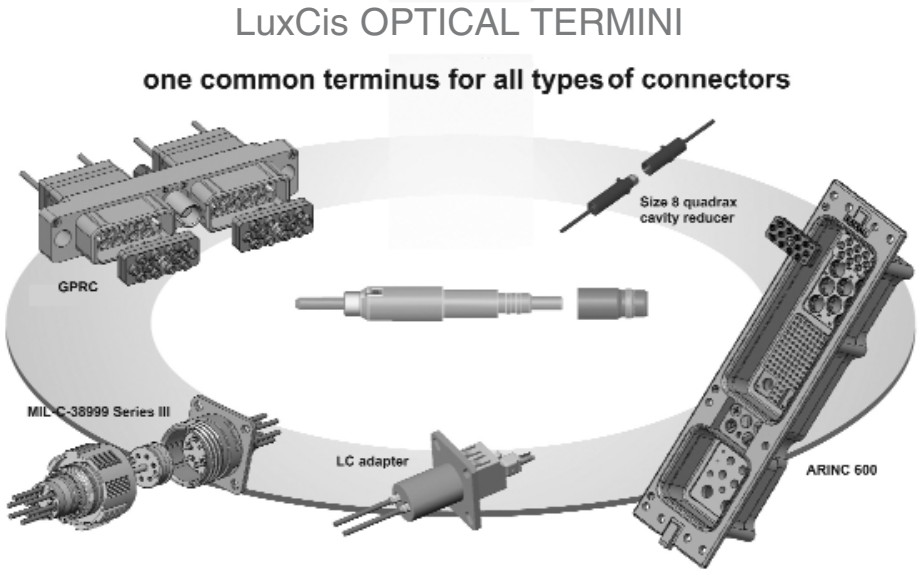
- **Optical termini for use with GPR, ARINC 600, circular MIL-DTL-38999 connectors.**
- **Industry Standard 1.25mm ceramic ferrule**
- **Compatible with 1.5-2.2mm Tight jacket and loose tube cable construction:**
  - **MT - Tight jacket cable**
  - **ML - Loose tube cable**
- **SM / MM versions**

Materials

Housings — Nickel Plated Copper
Ferrule — Zirconia
Spring — Stainless Steel
Crimp Sleeve — Nickel Plated Copper
Protective Cover — Silicone

Optical Performance

Singlemode, 1310nm/1550nm (UPC):
Attenuation, Mean — 0.15dB
Return Loss — > 50dB
Multimode, 850nm/1310nm:
Attenuation, Mean — 0.10dB
Return Loss — > 20dB



Mechanical / Environmental Performance

Test Description	Standard	HD 1.25mm Termini in GPR A & B Connector	HD 1.25mm Termini in 38999 Connector	HD 1.25mm Termini in ARINC 600 Connector
Thermal Shock	SAE-AS-13441 met 1003.1	-55C /+100C	-55C /+100C	-55C /+100C
Temperature Life	TIA/EIA 455-20A	500h @ +100C	500h @ +100C	500h @ +100C
Vibration	TIA/EIA 455-11	8h/axis 3.8g²/Hz 43 G rms	8h/axis 3.8g²/Hz 43 G rms	8h/axis 0.2g²/Hz 16.4 G rms
Shock	TIA/EIA 455-14A	300 G - 3ms	300 G - 3ms	50G - 11ms
Mate/Unmate (GPR/ARINC 600)	SAE-AS-13441 met 2016	100 Cycles	N/A	100 Cycles
Mate/Unmate (38999)	TIA/EIA 455-21A	N/A	500 Cycles	N/A
Maint. Aging	SAE-AS-13441 met 2002-1	10 Cycles	10 Cycles	10 Cycles
Salt Spray	SAE-AS-13441 met 1001.1 cond C	96 hr	500 hr	48 hr
Cable Ret. (1.8mm)	SAE-AS-13441 met 2009-1	68N	68N	68N
Humidity (GPR/38999)	TIA/EIA 455-5 met B7A	10 cycles / 24h 90% RH -25C/+65C	10 cycles / 24h 90% RH -25C/+65C	N/A
Humidity (ARINC 600)	TIA/EIA 455-5 met B	N/A	N/A	10 cycles / 24h 90% RH -25C/+65C
Altitude Imm.	TIA/EIA 455-15	10,000 ft (69.6kPa)	10,000 ft (69.6kPa)	10,000 ft (69.6kPa)

ASSEMBLY CAPABILITIES
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Rugged Fiber Optic Products (Continued)

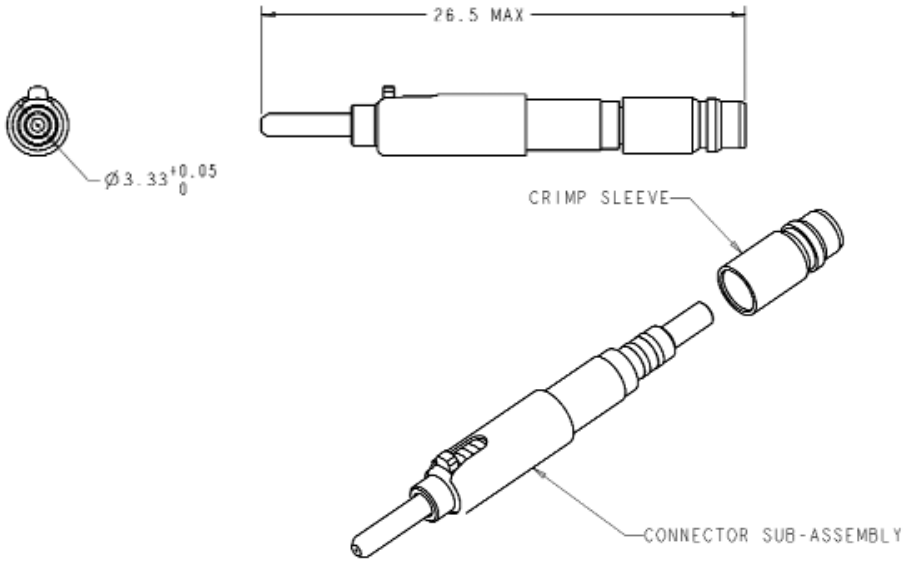
LuxCis Optical Termini

There are three types of LuxCis Optical Termini available dependent upon cable structure.

Tyco Electronics has multiple connector types/families available for the LuxCis Optical Termini System.

These are:

- **General Purpose Rectangular Connectors**
  - **F5 & F12 Inserts**
- **MIL-DTL-38999 connectors n 13-04, 15-06, 21-16**
- **ARINC 600**
  - **F12 combinations and F36**
- **Quadrax Cavity Reducers**
- **Motherboard & Daughtercard Solutions**



LuxCis Optical Termini Part Numbers

Cable Dia.	Cable Structure ML (loose & tight) MT (ultra tight)	S/M Fiber 125,3 µm PC/UPC	S/M Fiber 125,3 µm APC	M/M Fiber 128 µm PC
0.9mm Buffer	—	*	*	*
1.5 - 2.2mm	ML	*	*	1828199-1
1.5 - 2.2mm	MT	*	*	1828200-1

Consult your local Tyco Electronics Sales Representative for additional options.
* Contact Tyco Electronics for availability.

Accessories	Part Number
Dust Cap (bag of 10)	1828221-1

Connector Options:

For part numbers, details, and / or additional connector types and arrangements, contact your local Tyco Electronics Sales Representative.

Cable Structure

	Loose Structure	Tight Structure	Ultra Tight Structure
Movement between fiber & 900 µm buffer	Yes	No	No
Movement between 900 µm & cable jacket	Yes	Yes	No

Adapters

Type	Version	Alignment Sleeve	Part Number	Dim.
LuxCis Termini to LuxCis Termini	Simplex Bulkhead Feedthrough Type	Ceramic Zirconia	1828996-1	Fig. 1
LuxCis Termini to LuxCis Termini	Simplex Straight	Ceramic Zirconia	1828997-1	Fig. 2
LuxCis Termini to LC	Simplex LC Panel Cutout	Ceramic Zirconia	1828979-1	Fig. 3
LuxCis Termini to LC	Duplex LC Panel Cutout	Ceramic Zirconia	1828980-1	Fig. 4
LuxCis Termini to LC	Duplex MIL-DTL-38999 Panel Cutout	Ceramic Zirconia	1828995-1	Fig. 5

ASSEMBLY CAPABILITIES
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

Tools

Description/Function	Part Number
Metal Extraction Tool (M81 969/1-03)	91066-3
Plastic Extraction Tool (M81 969/1403)	M81969/14-03
Daniels Right Angle Insertion Tool	DAK83-16*
Daniels Right Angle Removal Tool	DRK83-16*

* Contact Daniels Manufacturing

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

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Revised 3-06

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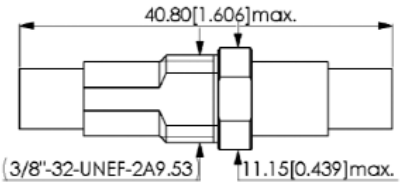
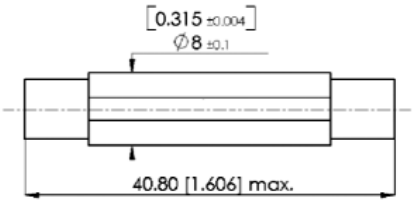
Rugged Fiber Optic Products (Continued)

NEW

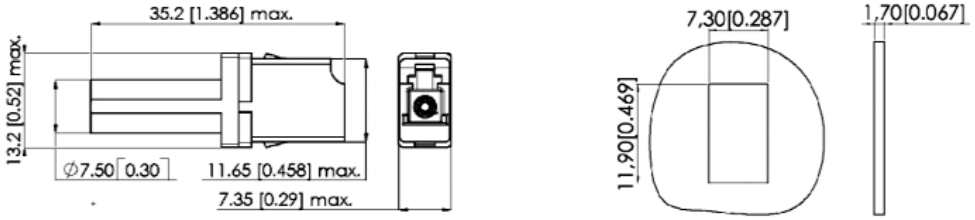
LuxCis Optical Termini Adapter Dimensions



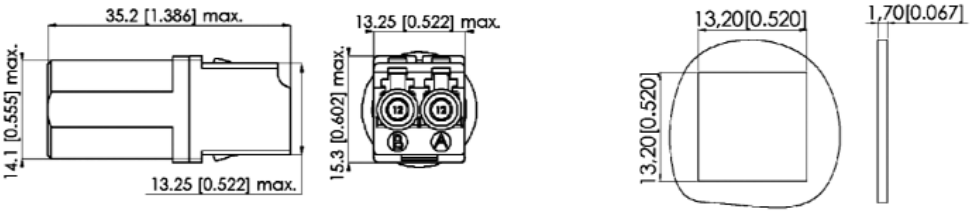
Terminus to Terminus Bulkhead Feedthrough



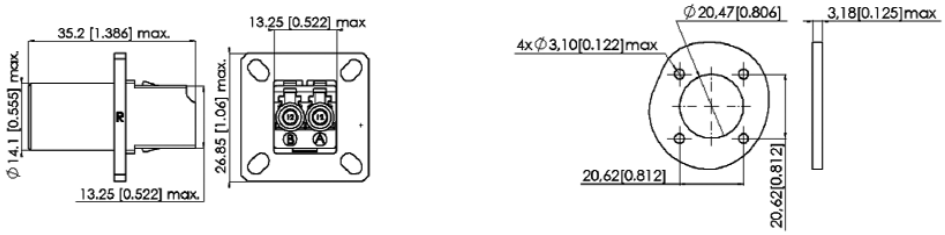
Terminus to Terminus Straight



Terminus to LC Simplex



Terminus to LC Duplex, LC Panel



Terminus to LC Duplex, MIL-DTL-38999 Panel Cutout

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Rugged Fiber Optic Products (Continued)

Most of the tools included in the Termination Kit are commonly used in the fiberoptic industry (strippers, cutting pliers and all accessories for fiber and cable preparation). The items in the table below are specially made for the LuxCis Optical Termini System. Their use is highly recommended to achieve mechanical and optical performances.

NEW

LuxCis Optical Termini Termination Kit

1828644-1

Description	Qty
Ceramic scissors	1
Cutting pliers for aramid members (HS 6000)	1
T-stripper outer jacket stripper	1
Miller primary stripper (for coating 900µm)	1
Waste container	1
Inner ferrule insertion and shaping tool	1
Alcohol dispenser	1
Bag of 6 353 ND epoxy resin	1
Resin injector	1
Pack for resin injector (capillaries)	1
Crimping tool	1
Curing oven	1
Scoring blade	1
Bag of 10 abrasive strips 12µm	1
Bag of 10 cleaning pipes 1.25 mm	1
Bag of 10 cleaning sticks 1.25 mm	1
Manual Polishing tool (standard LC)	1
Soft rubber polishing base	1
Bag of 10 polishing 3 µm films (Alumina)	1
Bag of 10 polishing 1 µm films (Alumina)	1
Bag of 10 polishing 0.3 µm films (Alumina)	1
Bag of 6 pockets cleaning papers	1
Microscope X100	1
Resin applicator	1
Metal insertion and extraction tool ((Mil M81 969/1 -03)	1
Plastic insertion and extraction tool (Mil M81 969/14-03	1
Hexagonal key 5/64 inch(2mm) / flats	1

Other accessories available include ruler, tweezers, cleaning tips, roller adhesive tape, moss cable support, goggles, thermometer, permanent ink markers. Necessary material not included in the kit: Alcohol, canned air, and clean cloth.

NEW

LuxCis Optical Termini Service Tool Kit (Inspection, testing & cleaning)
1828335-1

LuxCis Optical Termini Service Tool Kit (Cleaning only)
1828335-2

LuxCis Optical Termini Service Tool Kit (Testing only)
1828335-3

LuxCis Optical Termini Service Tool Kit (Hand Held Digital Probe Kit)
1828335-4

Tool Kit Contents

Item #	Comp Part Number	Description	-1	-2	-3	-4
1	1278540-1	Soft Carry Bag	1	—	—	—
2	1754767-1	200x Microscope	1	—	—	—
3	1754765-1	LC Microscope adapter	1	—	—	—
4	6374613-5	LC - SC 50/125 cable assembly	2	—	—	—
5	6374615-5	LC - SC 62.5/125 cable assembly	2	—	—	—
6	1828355-1	1.25mm swab	2	2	—	—
7	1828354-1	Connector Cleaning Pad	2	5	—	—
8	1828349-1	Optical Loss Test Set	1	—	1	—
9	1828350-1	OLTS 1.25 mm detector cap	1	—	1	—
10	1828352-1	Visual Fault Locator	1	—	1	—
11	1828353-1	VFL 1.25 mm Adapter	1	—	1	—
12	1828465-1	Label, Service Kit	1	—	1	—
13	1918222-1	Inspection, Hand Held Digital Probe Kit	—	—	—	1
14	1918223-1	1.25 mm Adapter, Digital Probe	—	—	—	1

-1 inspection, cleaning & testing
-2 cleaning
-3 testing
-4 Hand Held Digital Probe Kit

Note: Part Numbers are RoHS compliant except::◆ Indicates non-RoHS compliant.

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Rugged Fiber Optic Products (Continued)

Sealed Circular LC ODVA

Product Facts

- IP67 rated to ensure protection from dust and water immersion
- LC connector qualified to Telcordia GR-326 and TIA/EIA 568B.3
- Temperature range of –408C to 858C
- Bayonet-style mechanical lock
- Flame retardant materials per UL 94 V-0
- Dual mounting bulkhead design
- Singlemode and multimode fiber
- LC to LC internal to the box Jumpers
- ODVA Compliant Plug to X interface on tactical with break out
- ODVA Compliant Plug to Plug on tactical cable
- Build to customer need

Applications

The LC ODVA Compliant is ideal for:

- Harsh environments where chemicals, corrosive gases and liquids are commonplace
- Inside and outside industrial plant and equipment that interface with industrial Ethernet networks
- Remote interface applications such as towers and antennae as well as FTTX in PON and at the home applications
- Mobile routers and internet hardware

ASSEMBLY CAPABILITIES
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

Plug Part Numbers:
1828618-1 (Multimode)
1828618-2 (Singlemode)

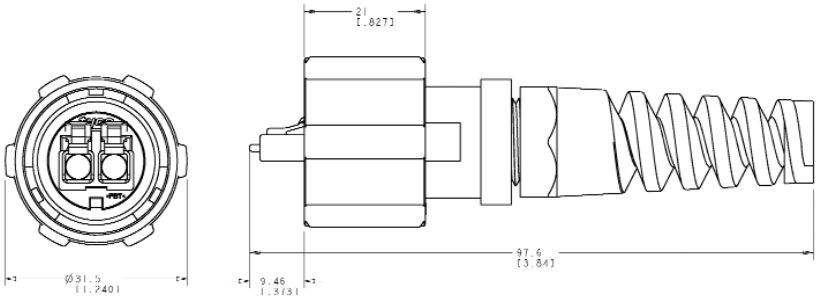
Receptacle Part Numbers:
1828619-1 (Multimode)
1828619-2 (Singlemode)

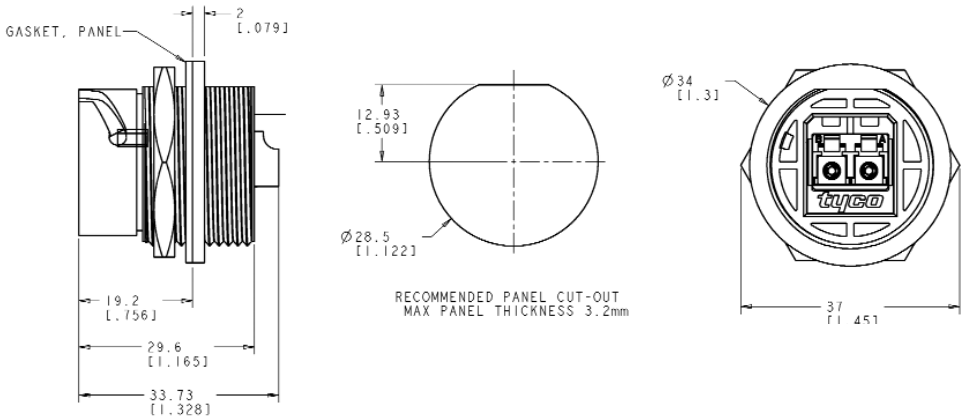
Featured Assembly Base Part Numbers:

1828708◆	1828709◆
1828710◆	1878711◆

Plug & Receptacle Cap Part Numbers:

Plug Cap	1828740-1
Receptacle Cap	1918177-1





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Rugged Fiber Optic Products (Continued)

Rugged Media Converter & Ethernet Link Extender Solutions

NEW

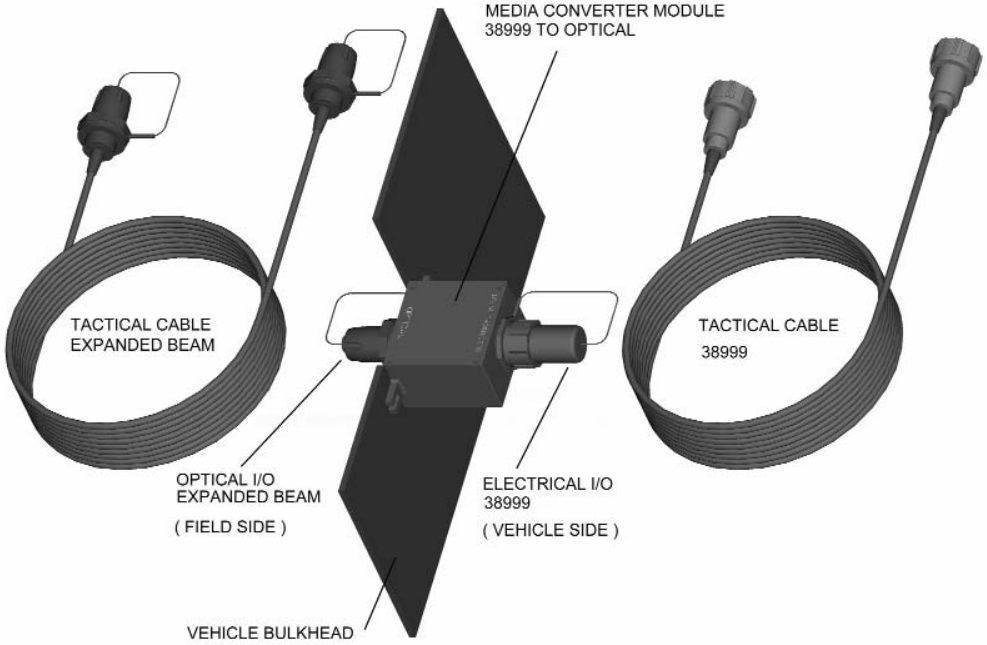
Harsh Environment Optical Media Converter Assemblies allowing blind mate field applications over one, two, or four fibers

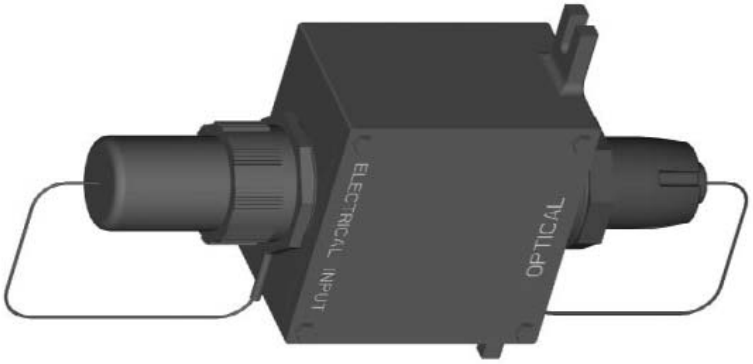
Tyco Electronics offers solutions for Harsh Environment applications of Ethernet Media Converters.

This page demonstrates Tyco Electronics' capabilities for Advanced Optical Modules. These include Fast, Gigabit, and Ethernet Link Extenders.

For additional Advanced Optical Modules, see Fiber Management & Packaged Solutions, Catalog 1307895, Section 3.

Contact your local Tyco Electronics Sales Representative with your specific design needs.





Design Objectives

Specifications	Results
Standard	IEEE802.3, IEEE802.3u Ethernet @ 10/100 Mb/s
Data Rates	10 and 100 Mb/s auto negotiation (option to force 10 Mb/s for legacy systems
Duplex Mode	Full or half-duplex auto-negotiation and N-Way support
Max. Forward Rate	14,880 packets per second (pps) @ 10 Mb/s, 148,800 pps @ 100 Mb/s
Fiber Connector	Multimode
Fiber Working Range	TBD
Optical Budget	TBD
Optical Wavelength	Multimode
Emissions	Complies with FCC Class A and CE Class A
Safety	UL, CE
Temperature Range	-40° - 85°C with humidity 10% to 90% non-condensing
Dimensions	Ø 2.0" (51mm) X 7.7" (195mm) from cap to cap Ø 2.0" (51mm) X 6.6" (168mm) X 7.6" (194mm) for 90 assembly
Power Consumption	TBD
Power	5VDC
Qualification	Complies with MIL-STD-810D environmental requirements

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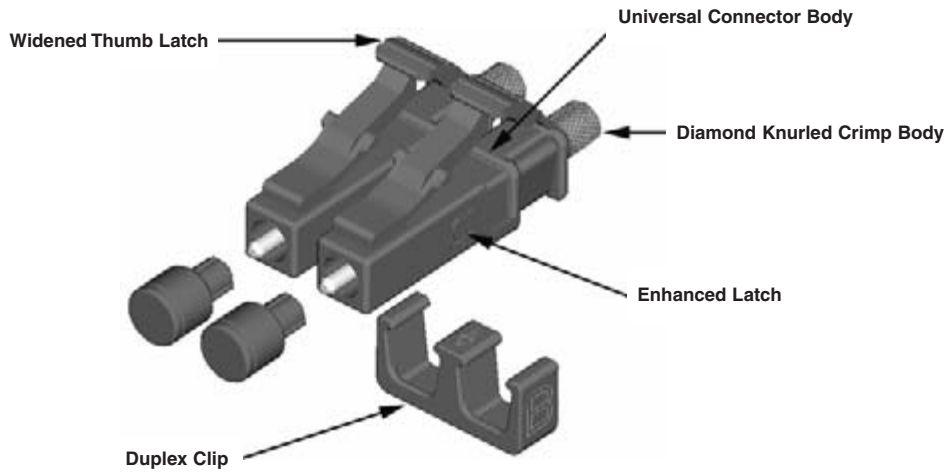
LC Connectors

Product Facts

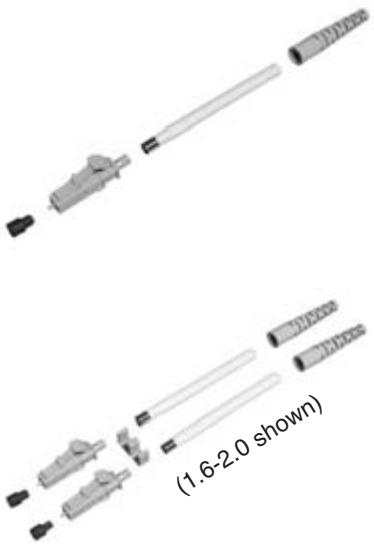
- Singlemode Telecordia GR-326 tested (Report #501-582)
- Multimode TIA/EIA 568-B.3 tested (Report #501-580)
- Singlemode and Multimode are compatible with both anaerobic adhesives and heat cure epoxy adhesives
- Universal Connector Body
  - Common body for simplex or duplex
  - Common body for jumper or buffer applications
  - Fewer parts to inventory
- Duplex Clip
  - Field installable
  - Makes simplex assemblies duplex
  - Correct polarity errors
  - Used for both jumpers and buffered fiber applications
- Enhanced Latch
  - Improved rigidity
  - Stronger Body
  - Improved side-load strength



- Widened Thumb Latch
  - Increased hit area
  - Increased bend strength
  - Ramped front latch for snag resistance
- Diamond Knurled Crimp Body
  - Increased tensile proof strength
  - Identical to Tyco Electronics' SC/FC design

Performance Characteristics

Insertion Loss — 0.5 dB Typical
Reflectance — -58 dB Typical
Operating Temperature — -40°C to +75°C
Durability — 500 Cycles



LC Connector Kits

Fiber Type	Kit Part Number	Description
Singlemode (blue body & straight boot)	6588709-X	Simplex,1.6-2.0 mm
	6588710-X	Simplex, 900 µm
	6588711-X	Duplex, 1.6-2.0 mm
	6588712-X	Duplex, 900 µm
	6754723-X	Simplex, 2.4mm
	6693482-X	Simplex, 3.0mm
	6693481-X	Duplex, 3.0mm
Multimode (beige body & straight boot)	6588705-X	Simplex, 1.6-2.0 mm
	6588706-X	Simplex, 900 µm
	6588707-X	Duplex,1.6-2.0 mm
	6588708-X	Duplex 900 µm
	6754724-X	Duplex, 2.4mm
	6693480-X	Simplex, 3.0mm
	6693479-X	Duplex, 3.0mm

Note: X = -1 for individual package, -2 for bulk package.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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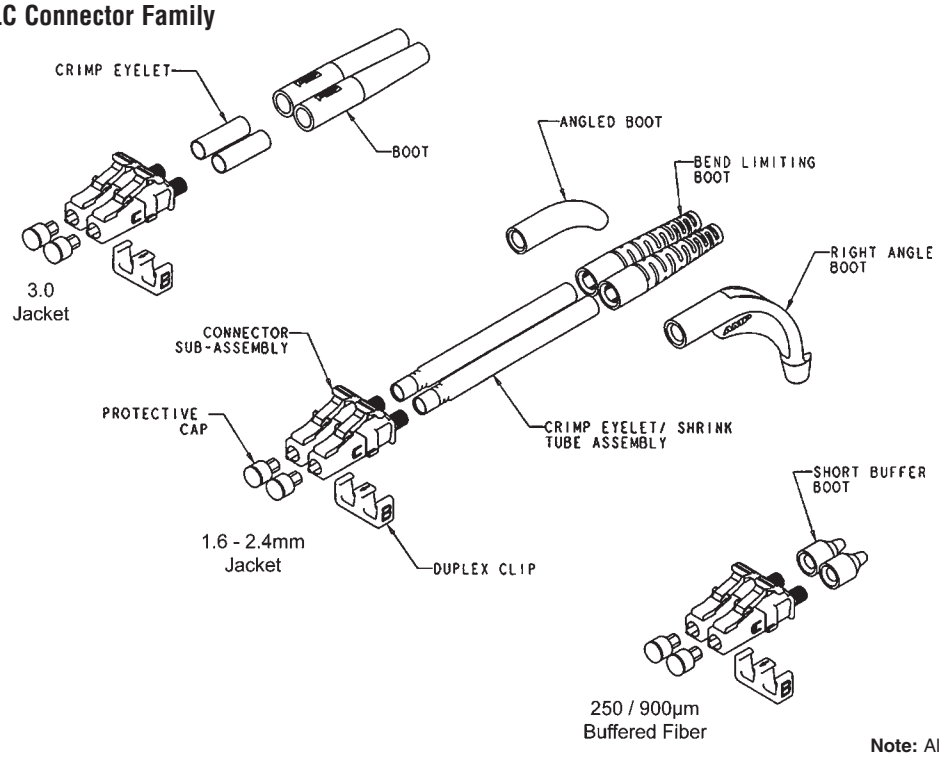
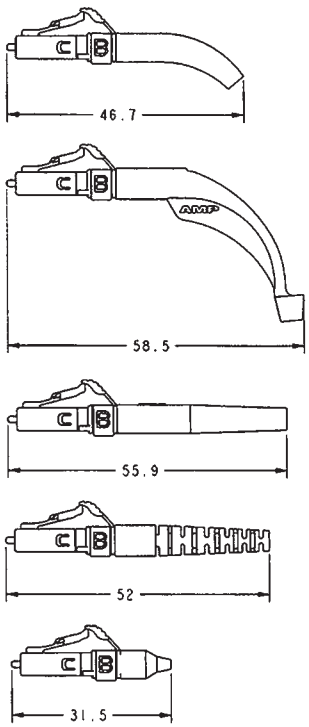
LC Connectors (Continued)

LC Connector Family





Note: All of the above are also available in simplex.

LC Connector Component Selection Chart (bulk packaged)

Fiber Type	Simplex Connector Assembly & Dust Cap	Duplex Clip	Cable Size	Crimp Eyelet with Heat Shrink	Crimp Eyelet	Strain Relief Description	Strain Relief Part Number (see chart below)
Singlemode (blue hsg.)	6588239-1	1374728-1	1.6-2.0 mm	6374150-1	—	Straight/Bend Limiting	1588153-X
			1.6-2.0 mm	6374150-1	—	Angled	1374737-X
			1.6-2.0 mm	6374150-1	—	50 Degree Angle	6457543-X
			2.4 mm	6588189-1	—	Straight/Bend Limiting	1588153-X
			2.4 mm	6588189-1	—	Angled	1374737-X
			2.4 mm	6588189-1	—	50 Degree Angle	6457543-X
			3.0 mm	—	5504118-3	Straight	502716-X
			900 µm	—	—	900 µm Buffer, 10mm	6588612-X
Multimode (beige hsg.)	6588240-1	1374728-2	1.6-2.0 mm	6374150-1	—	Straight/Bend Limiting	1588153-X
			1.6-2.0 mm	6374150-1	—	Angled	1374737-X
			1.6-2.0 mm	6374150-1	—	50 Degree Angle	6457543-X
			2.4 mm	6588189-1	—	Straight/Bend Limiting	1588153-X
			2.4 mm	6588189-1	—	Angled	1374737-X
			2.4 mm	6588189-1	—	50 Degree Angle	6457543-X
			3.0 mm	—	5504118-3	Straight	502716-X
			900 µm	—	—	900 µm Buffer, 10mm	6588612-X

1374737-X

6457543-X

6588612-X

1588153-X

Crimp Tool Dieset only - 1588175-1
Crimp Tool with Dieset - 1588176-1
Instruction Sheet: 408-8675

Termination Kit - 1754462-1
Upgrade Kit for Anaerobic terminations - 1754603-1

Strain Relief Color

Base Part Number	Beige	Blue	Black	Red
1588153	-5	-2	-3	—
1374737	-2	-1	-3	-4
6457543	-1	-2	-4	—
502716	-3	-4	-1	-5
6588612	-1	-2	-5	-4

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LC Connectors (Continued)

"NEW" Tight Jacketed LC Connectors

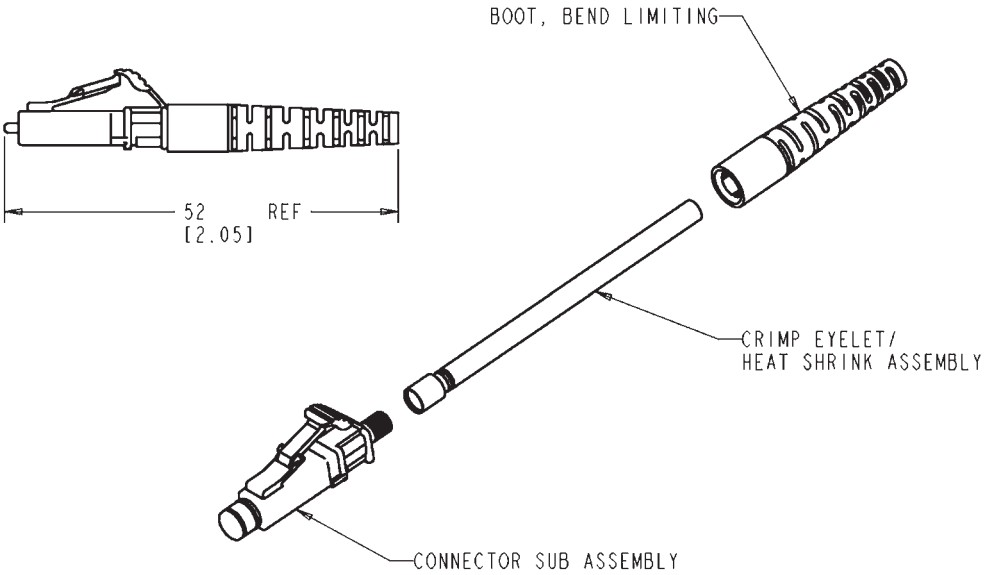
Product Facts

- **Multimode or singlemode**
- **Simplex or duplex**
- **Tested using MIL-PRF-85045/16 2.0mm cable**

Application

- **In Flight Networks**
- **Shipboard Applications**
- **Aero Market**

The tight jacketed LC Connectors are non pull-proof versions of the standard connectors that are designed for use with tight construction cable. Unlike standard connectors, this design allows the jacket and buffer to move together, reducing the chances of micro-bends and fiber breakage.



Fiber Type	Kit Part Number	Description
Singlemode (blue body & straight boot)	6828095-X	Simplex, 1.6–2.0mm
	6828130-X	Duplex, 1.6–2.0mm
	1918228-1	Simplex, 2.4mm
Multimode (beige body & straight boot)	6828094-X	Simplex, 1.6–2.0mm
	6828129-X	Duplex, 1.6–2.0mm
	1918153-X	Simplex, 2.4mm

Note: X = -1 for individual package, -2 for bulk package.
Instruction Sheet 408-10014

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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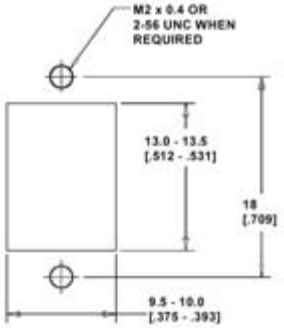
LC Adapters

LC Duplex Adapter for SC Cutout — Plastic

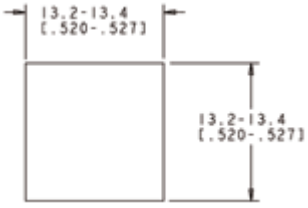
Alignment Sleeve Material	Housing Color	Description	Part Numbers
Ceramic	Blue	Flangeless	6457567-1
Ceramic	Beige	Flangeless	6457567-2
Ceramic	Green	Flangeless	6457567-3
Ceramic	Blue	Flanged	6457567-4
Ceramic	Beige	Flanged	6457567-5
Ceramic	Green	Flanged	6457567-6
Metal	Beige	Flangeless	6457567-7
Metal	Beige	Flanged	6457567-8
“NEW” Ceramic	Aqua	Flanged	1918150-1
“NEW” Ceramic	Aqua	Flangeless	1918151-1



Recommended Panel Cutout
Max. Panel Thk. 1.70 [.067]

LC Duplex Adapter for LC Cutout — Plastic

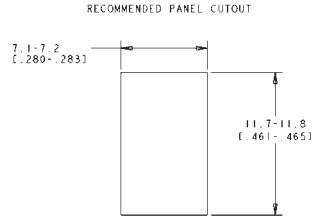
Alignment Sleeve Material	Housing Color	Description	Part Numbers
Ceramic	Blue	Duplex, Square Cutout	1374352-1
Ceramic	Beige	Duplex, Square Cutout	1374352-2



Recommended Panel Cutout
Panel Thk. 1.2/1.7 [.047/.067]

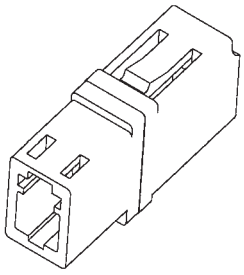
LC Adapter for SC Cutout — Metal

Alignment Sleeve Material	Housing Color	Description	Part Numbers
Ceramic	Electroless Nickel	Flangeless	1754682-1
Ceramic	Electroless Nickel	Flanged	1754683-1
Ceramic	Electroless Nickel	Flangeless w/ EMI Shielding	1754727-1



Recommended Panel Cutout
Panel Thk. 1.2/1.7 [.047/.067]

LC Simplex Adapter — Plastic

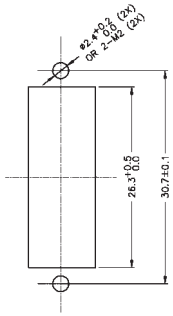


Alignment Sleeve Material	Housing Color	Part Numbers
Ceramic	Blue	1457062-1
Ceramic	Beige	1457062-2

LC Quad Adapter — Plastic Flanged

Alignment Sleeve Material	Housing Color	Part Numbers
Ceramic	Blue	1695790-4
Metal	Beige	1695790-5

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



Recommended Panel Cutout
Max. Panel Thk. 1.7 [.067]

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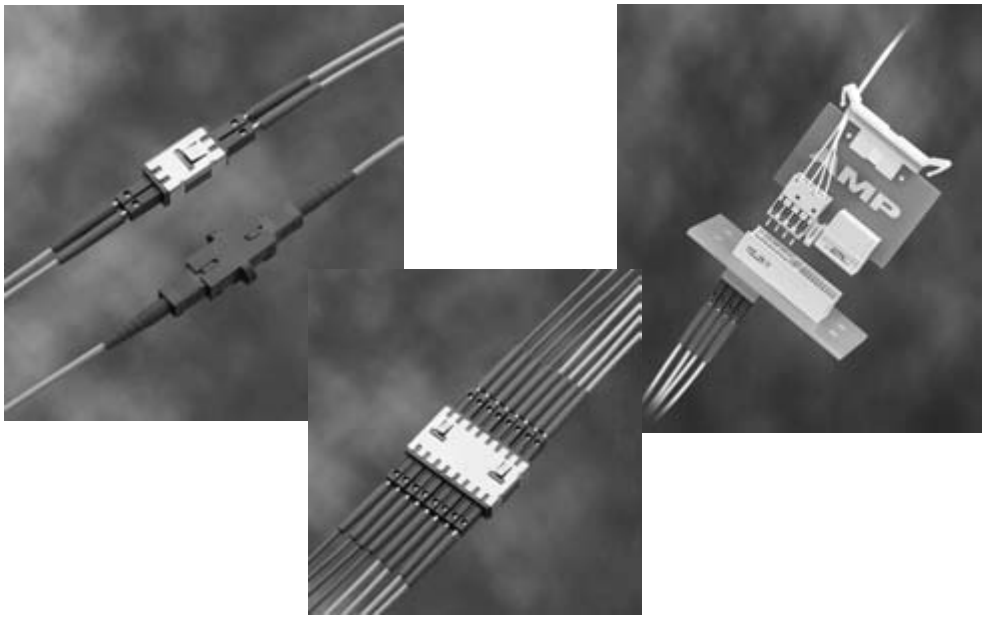
MU High Density Connectors

Product Facts

- **Singlemode and multimode product range**
- **For digital network applications PC end face available on both singlemode and multimode connectors**
- **For analog network applications, APC end face available on singlemode connectors (8°)**
- **Connector design uses 1.25mm ceramic ferrule technology**
- **Polarized for precise insertion**
- **Factory terminated cable assemblies**
- **LSZH sheathed cable available**
- **High optical performance (low insertion, high return loss)**
- **High density (up to 8 lines per module)**

Performance Characteristics

Insertion Loss — 0.1 dB Typical
Reflectance — -55 dB Typical
Operating Temperature — -25°C to +75°C
Durability — 500 Cycles



Tyco Electronics' MU high density fiber optic interconnection system offers a solution for high performance telecommunications networking.

The system centers around the fully standardized MU connector, which is also sometimes known as the Mini SC. The MU connector is at least half the size of the standard SC connector. It can offer twice the port density but all the optical performance of traditional fiber optic connectors.

Featuring a similar latching mechanism to the SC connector, the MU is just as easy to connect and disconnect.

The MU system includes a complete range of multimode and singlemode pre-terminated cable assemblies; bulkhead adapters; backplane housings; system card housings; connector kits; termination tooling and customer polishing processes.

Key Applications

Front Panel I/O and High Density Patch Panels for Optical Transmission Equipment, Optical Distribution Frames and Optical Network Units.

- **Full range of simplex, duplex and 8 position bulkhead adapters**
- **Color coded adapters for ease of identification**
- **Tuneable versions available to achieve lower insertion losses**
- **"Push-pull" type latching mechanism**
- **Fully compliant with relevant IEC standards (IEC 60874-1, CECC 86 305 801)**
- **Exceeds ETSI performance requirements (ETSI Grade P)**

Back Panel I/O in Optical Transmission and Switching Equipment

- **8 position Type L optical modules available**
- **2.0mm misalignment pickup tolerance during mating**
- **Zero force on backplane when fully mated**
- **Zero tensile load on daughter card when fully mated**
- **Constant mating force during 2.5mm free float**
- **Fully compliant with IEC 60917 and IEC 61076-4-101**

Description	Part Number
FOKIT MU SM PC 0.9 125/1.0	1348982-1♦
FOKIT MU SM PC 0.9 126/1.0	1348982-2♦
FOKIT MU SM PC 125µm, 2,0 mm	106875-1♦
FOKIT MU SM PC 126µm, 2,0 mm	106875-2♦

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

MU Standards Compliance

Product range —
MU cable assembly

Applicable standards —
IEC 60874-1
CECC 86 305 801 (MU-APC)
I-ETS 300 671
IEC 61300

Product range —
Z-PACK 2mm HM Product

Applicable standards —
IEC 60917
IEC 61076-4-101

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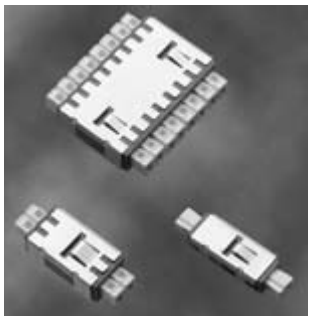
MU High Density Connectors (Continued)

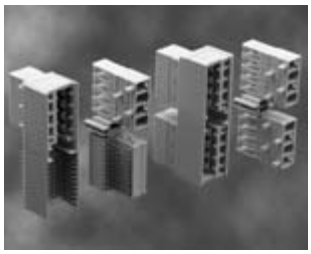


MU Bulkhead Adapter

The MU bulkhead adapter is designed to help save valuable panel space in high density applications. The adapter enables the interconnection of two MU connectors and features a 1.25mm ceramic alignment sleeve to ensure precise fiber alignment and low insertion loss, both during and after the interconnection process.

The MU bulkhead adapter is available in PC and APC versions for both digital and analog network applications. It is also available in a choice of simplex, duplex and 8 position versions.

Description	Part Number
PC finish	
Simplex MU Adapter	233263-1 ♦
Duplex MU Adapter	233263-3 ♦
Duplex MU Adapter with SC cut-out	1348840-2
APC finish	
Duplex MU Adapter with SC cut-out	1348840-1



Z-PACK 2mm HM[1] Type L and M Connector Housings

Z-PACK 2mm HM connector housings offer a solution to the demand for discrete fiber lines, allowing single disconnects and routing on the backplane.

The 8 position Type L connector housing is fully optical and can accommodate up to 8 fiber lines. These connector housings are available in female configurations and are designed for use on the system card.

The hybrid Type M connector housing combines optical and electrical contacts in one housing, with 55 signal contact positions and 4 fiber optic lines. It allows easy migration from combined optical / electrical to full optical backplane inter-connections. Female Type M connector housings are suitable for use on the system card while male Type M connector housings are designed for back panel application.

Tyco Electronics also designs and manufactures a range of MT based fiber optic backplane connectors, LIGHTRAY MPX fiber optic backplane connectors. For further information, see Cable Assemblies & Backplane Interconnects Section 2, pages 122-136.

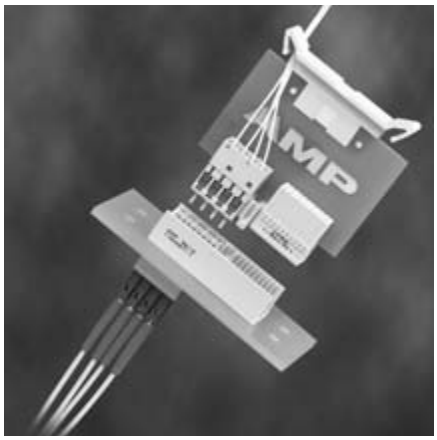
Description	Part Number
Type L	
Male	106743-1 ♦
Female	106744-1

[1]HM : Hard Metric

MU Backplanes

Product Facts

- **Complies to IEC 60917 and IEC 61076-4-101**
- **Constant mating force during 2.5 mm free float**
- **Zero tensile load on system card and backplane when fully mated**
- **Low insertion / extraction forces**
- **Scalable system allows easy implementation of future upgrades**
- **Low loss**
- **High return loss**
- **APC versions available**
- **Float in all directions (including x and y)**
- **Misalignment pick up tolerances 2.0 horizontal, 2.5 mm vertical, and 2 degrees angular**



Description	Part Number
2 Position	
Backplane Housing (includes mounting bracket)	1391160-1 ♦
Systemcard Housing	1391095-1
4 Position	
Backplane Housing (includes mounting bracket)	1391161-1 ♦
Systemcard Housing	1391094-1

Note: Future product extensions planned: 6 position and 8 position versions. Please contact your local Sales Engineer for additional information.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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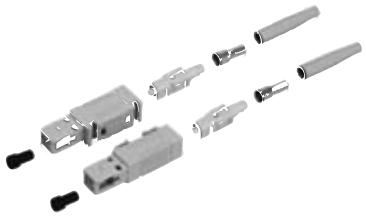
SC Connectors

Product Facts

- One-piece connector body:
  - Fastest assembly
  - Field installable
  - Anaerobic epoxy compatible
- Compliant with
  - JIS C-5973
  - Fibre Channel
  - TIA FOCIS-3
- Pre-radiused ferrules
- For 125 μm cladding diameter

Simplex Connector



Duplex Connector

SC 1.6mm to 2.0mm Connector

Performance Characteristics

Insertion Loss — <0.2 dB Typical
Return Loss — <-55 dB Typical
Durability — 200 Cycles

Singlemode SC Connector Kits - Polymer Crimp Body

Ferrule Type	Crimp Body Material	Jacket Size	Simplex / Duplex	Indiv. Pack w/ Strain Relief	Bulk Pack No Strain Relief	Bulk Pack w/ Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Polymer	3.0 mm	Simplex	5504646-1	5504646-5	5504646-3	503911-1	408-8674
Ceramic	Polymer	3.0 mm	Duplex	5504655-1	5504655-3	5504655-2	503911-1	408-8674
Ceramic	Polymer	900μm	Simplex	5492123-1	5492123-7	5492123-2	n/a	408-8674
Ceramic	Polymer	2.0 mm	Simplex	504934-1 ♦	—	504934-2 ♦	503911-1	408-4208

Performance Characteristics for GR-326 Style Product

Insertion Loss — <0.2 dB Typical
Return Loss — <-59 dB Typical
Durability — 200 Cycles
Tested to GR-326 (Test Report 501-584)
Tunable — 6 positions

GR-326 Style Singlemode SC Connector Kits - Metal Crimp Body

Ferrule Type	Crimp Body Material	Jacket Size	Simplex / Duplex	Indiv. Pack w/ Strain Relief	Bulk Pack w/ Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Metal	3.0 mm	Simplex	6457215-4	6457215-2	(1) 492131-1 (1) 58532-1	408-8674
Ceramic	Metal	3.0 mm	Duplex	1754599-2	1754599-4	(1) 492131-1 (1) 58532-1	408-8674
Ceramic	Metal	2.4 mm	Simplex	6588714-5	6588714-6	1588176-1	408-8674
Ceramic	Metal	2.4 mm	Duplex	6693776-5	6693776-6	1588176-1	408-8674
Ceramic	Metal	1.6-2.0 mm	Simplex	6588714-2	6588714-4	1588176-1	408-8674
Ceramic	Metal	1.6-2.0 mm	Duplex	6693776-2	6693776-4	1588176-1	408-8674

Performance Characteristics

Insertion Loss — <0.2 dB Typical
Durability — 500 Cycles
TIA 586B Compliant

Multimode SC Connector Kits

Ferrule Type	Crimp Body Material	Jacket Size	Simplex / Duplex	Indiv. Pack w/ Strain Relief	Bulk Pack No Strain Relief	Bulk Pack w/ Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Polymer	3.0 mm	Simplex	5503948-1	5503948-3	5503948-2	503911-1	408-8674
Ceramic	Polymer	3.0 mm	Duplex	5504657-1	5504657-3	5504657-2	503911-1	408-4211
Ceramic	Metal	2.4 mm	Simplex	6588715-3	6588715-4	—	1588176-1	408-8674
Ceramic	Metal	2.4 mm	Duplex	6693775-3	6693775-4	—	1588176-1	408-8674
Ceramic	Metal	1.6-2.0 mm	Simplex	6588715-1	6588715-2	—	1588176-1	408-8674
Ceramic	Metal	1.6-2.0 mm	Duplex	6693775-1	6693775-2	—	1588176-1	408-8674
Ceramic	Polymer	900 μm	Simplex	5504932-1	503948-7	5504932-2	n/a	408-8674

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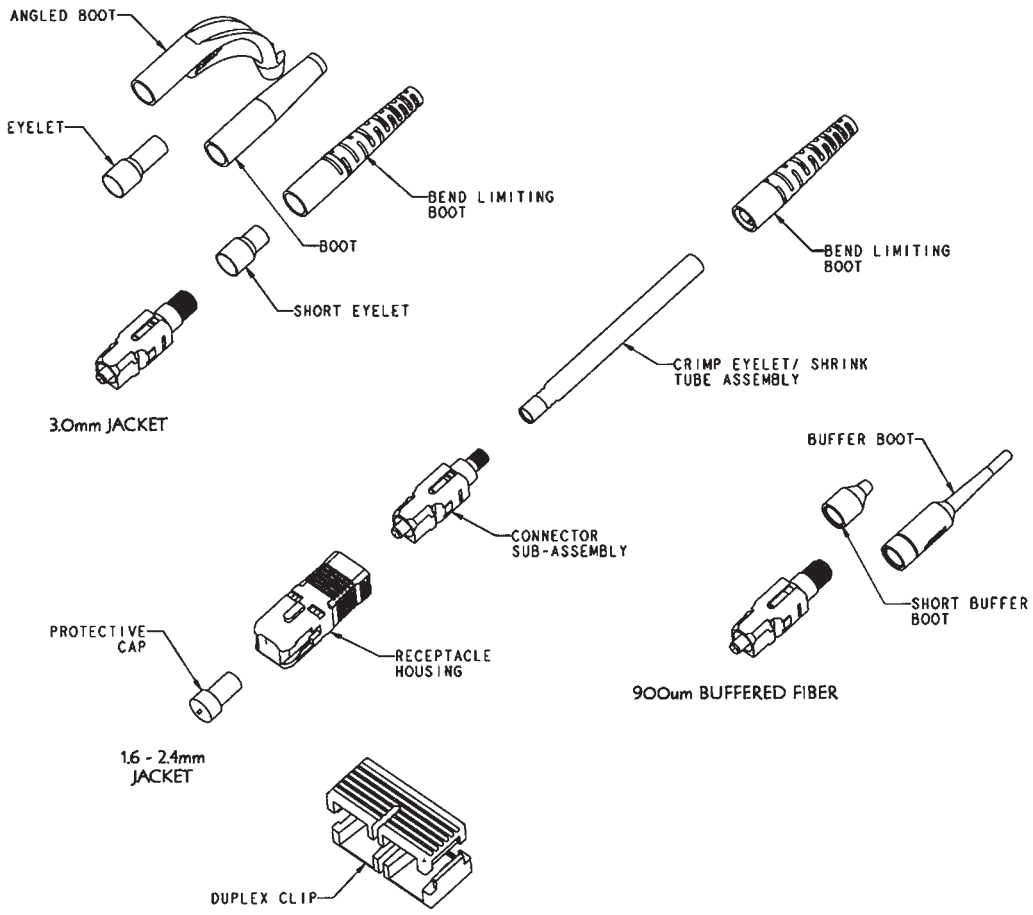
SC Connectors (Continued)

SC Connector Components



SC Duplex Clip (Black) Part Number 1348522-1

SC Connector Component Selection Chart (bulk packaged)

Fiber Type	Simplex Connector Sub-Assembly	Duplex Clip*	Cable Size	Crimp Eyelet w/ Heat Shrink	Crimp Eyelet	Strain Relief Part Number**
Singlemode - GR-326 Style	6588714-3	(2) 6348522-1	1.6-2.0 mm	6374150-1	—	1588153-X
			2.4 mm	6588189-1	—	1588153-X
	6457215-5	(2) 6348522-1	3.0 mm	—	504973-3	1588491-X
Singlemode - Polymer Crimp Body	492123-7	(2) 6348522-1	2.4 mm	—	503970-6	5503971-X
			3.0 mm	—	503970-3	5503971-X
			900 µm	—	—	6457493-X (long) 6278309-X (short)
Multimode - Ceramic Ferrule	6588715-5	(2) 6348522-1	1.6-2.0 mm	6374150-1	—	1588153-X
			2.4 mm	6588189-1	—	1588153-X
	5503948-7	(2) 6348522-1	3.0 mm	—	503970-3	5503971-X
			900 µm	—	—	6457493-X (long) 6278309-X (short)

* For Fibre Channel compliant assemblies, use one (1) piece each of pn 503487-Y and 503488-Y. (Dash refers to color - refer to customer drawing for details).
** Strain relief dash number indicates color - see page 46 for details.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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SC Connectors (Continued)

SC Strain Reliefs — Jacketed Cable

3.0mm - GR-326 Style

Description	GR-326 Style	Part Number / Color				
		Black	Yellow	Red	Beige	Blue
3.0 mm	No	1-5503971-0	5503971-7	1-5503971-1	5503971-1	5503971-2
2.4 mm	No	1-5503971-2	5503971-8	1-5503971-3	5503971-3	5503971-4
3.0 mm	Yes	—	—	—	1588491-5	1588491-2
1.6 mm - 2.4 mm	Yes	1588153-3	1588153-4	—	1588153-5	1588153-2
2.0 mm	No	2-5503971-3	5503971-9	2-5503971-7	5503971-5	5503971-6

3.0mm Angled

SC Strain Reliefs — Angled

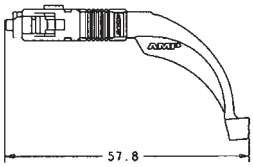
Description		Part Number / Color			
		Black	Red	Beige	Blue
3.0 mm	Simplex	1278705-3	1278705-4	1278705-2	1278705-1
2.0 mm	Simplex	1374737-3	1374737-4	1374737-2	1374737-1
2.0 mm	45° Simplex	6457543-4	6457543-3	6457543-1	6457543-2

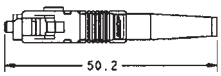
900µm Short

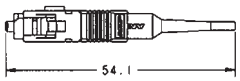
SC Strain Reliefs — 900 micron

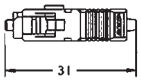
Description	Part Number / Color				
	Black	Yellow	Red	Beige	Blue
Long (33mm) 900µm	6457493-3	6457493-5	6457493-4	6457493-9	6457493-1
Short (10 mm) 900µm	6278309-1	—	6278309-3	—	6278309-2

900µm









SC Low Loss Loopback Connector

Part Number 5503141-1

Product Facts

- 62.5/125 Multimode
- Use for Equipment Testing
- 0.6 dB Insertion Loss
- 0.5" Ferrule Centerline

Part Number 5503141-2

Product Facts

- 50/125 Multimode
- Use for Equipment Testing
- 0.8 dB Insertion Loss
- 0.5" Ferrule Centerline

Part Number 5504883-1

Product Facts

- Singlemode
- Use for Equipment Testing
- 1.5 dB Insertion Loss
- 0.5" Ferrule Centerline

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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SC Connectors (Continued)

"NEW" Tight Jacketed SC Connectors

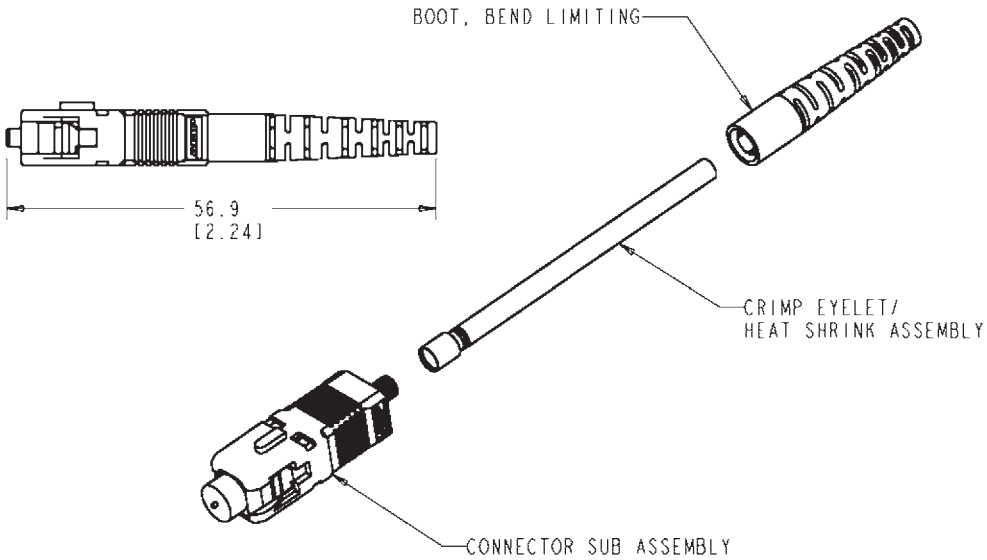
Product Facts

- **Multimode or singlemode**
- **Simplex or duplex**
- **Tested using MIL-PRF-85045/16 2.0mm cable**

Application

- **In Flight Networks**
- **Shipboard Applications**
- **Aero Market**

The tight jacketed SC Connectors are non pull-proof versions of the standard connectors that are designed for use with tight construction cable. Unlike standard connectors, this design allows the jacket and buffer to move together, reducing the chances of micro-bends and fiber breakage.



Tight Jacketed SC Connector Kits

Fiber Type	Kit Part Number	Description
Singlemode (blue body & straight boot)	6828100-X	Simplex, 1.6–2.0mm
	1828573-X	Duplex, 1.6–2.0mm
	1918227-1	Simplex, 2.4mm
Multimode (beige body & straight boot)	6828099-X	Simplex, 1.6–2.0mm
	1828574-X	Duplex, 1.6–2.0mm
	1918154-X	Simplex, 2.4mm

Note: X = -1 for individual package, -2 for bulk package.
Instruction Sheet 408-10015

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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SC Connectors (Continued)

SC Adapters

Product Facts

- Suitable for any SC connector
- Available with metal or ceramic alignment sleeves
- Choice of housing materials and colors
- Duplex adapters accept two simplex connectors or one duplex connector
- Assortment of hybrid configurations available
- Mounting screws available Part Number 503663-1
- Slide-on cover available
- EMI gasketed parts available

SC Simplex Adapter - Plastic

SC Simplex Adapter - Plastic

Alignment Sleeve Material/Application	Housing Color	Part Numbers
Metal/MM only	Beige	5504614-1
Metal	Black	5502632-7
Metal	Blue	5502632-8
Metal	Beige	5502632-9
Metal	Aqua	2-5502632-3
Ceramic	Black	1-5502632-0
Ceramic	Blue	1-5502632-1
Ceramic	Beige	1-5502632-2
"NEW" Ceramic	Aqua	2-5502632-4
Ceramic/APC	Green	1828028-2

Flangeless SC Simplex Adapter - Plastic

Flangeless SC Simplex Adapter - Plastic

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Black	5504632-1
Ceramic	Black	5504632-2
Metal	Blue	5504632-3
Ceramic	Blue	5504632-4

SC Simplex Adapter - Metal

SC Simplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278348-1
Ceramic	Electroless Nickel	6278348-3

Flangeless SC Simplex Adapter - Metal

Flangeless SC Simplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278348-5
Ceramic	Electroless Nickel	6278348-7

SC Duplex Adapter - Plastic

SC Duplex Adapter - Plastic

Alignment Sleeve Material/Application	Housing Color	Part Numbers
Metal/MM only	Black	5504640-4
Metal/MM only	Beige	5504640-1
Metal	Black	5502776-7
Metal	Blue	5502776-8
Metal	Beige	5502776-9
"NEW" Metal	Aqua	2-5502776-5
Ceramic	Black	1-5502776-0
Ceramic	Blue	1-5502776-1
Ceramic	Beige	1-5502776-2
"NEW" Ceramic	Aqua	2-5502776-6
Ceramic/APC	Green	2-5502776-3

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

Catalog 1307895
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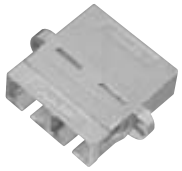
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

SC Connectors (Continued)

SC Adapters (Continued)



SC Duplex Adapter

SC Duplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278049-1
Ceramic	Electroless Nickel	6278049-3

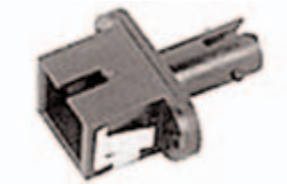
SC Duplex Metal Adapter w/ EMI Shielding

Shielded SC Duplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6374223-1
Ceramic	Electroless Nickel	6374223-3

- **Designed to help prevent EMI leak**
- **Ideal for high-speed applications**

SC to ST Hybrid Adapters



SC to ST Simplex Adapter - Plastic

SC to ST Simplex Adapter - Plastic

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Black	5502780-1
Metal	Blue	5502780-2
Metal	Beige	5502780-3
Ceramic	Black	5502780-4
Ceramic	Blue	5502780-5

SC to ST Simplex Adapter - Metal

SC to ST Simplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Ceramic	Electroless Nickel	6278350-3
Metal	Electroless Nickel	6278350-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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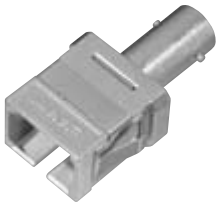
SC Connectors (Continued)

SC to ST Hybrid Adapters
(Continued)



Flangeless SC to ST Simplex Adapter - Metal

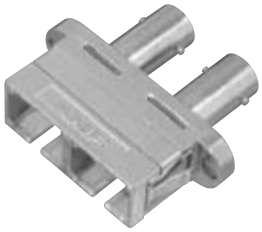
Flangeless SC to ST Simplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Ceramic	Electroless Nickel	6278350-7
Metal	Electroless Nickel	6278350-5

SC to ST Duplex Adapter - Plastic

SC to ST Duplex Adapter - Plastic

Alignment Sleeve Material	Housing Color	Part Numbers
Metal (MM Only)	Beige	5504663-4
Metal	Black	5503137-1
Metal	Blue	5503137-2
Metal	Beige	5503137-3
Ceramic	Black	5503137-4
Ceramic	Blue	5503137-5
Ceramic	Beige	5503137-6



SC to ST Duplex Adapter - Metal

SC to ST Duplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278051-1
Ceramic	Electroless Nickel	6278051-3

Slide-on Retractable Cover for SC Simplex or Duplex Applications

The Tyco Electronics slide-on retractable cover is used for simplex or duplex SC applications. These retractable doors slip onto the end of existing Tyco Electronics adapters and can be mounted after the adapter has already been installed.

1693539-1 — Blue Simplex SC

1693539-3 — Green Simplex SC

1693540-1 — for use on all Tyco Electronics SC Duplex Adapters

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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ST Connectors — Epoxy Type

Product Facts

- **Epoxy type connector**
- **Pre-radiused ferrule finish**
- **Available in bulk packages**

Singlemode Ceramic

Performance Characteristics

Insertion Loss — 0.3 dB typical
Back Reflection — <-40 dB typical
Durability — 200 cycles

Ceramic

Materials

Ferrule Material — Ceramic
Body Material — Nickel Plated Brass
Coupling Nut Material — Plated Die Cast
Nominal Fiber Size — 126

Singlemode ST Connector Kits

Ferrule Type	Body Material	Jacket Size*	Strain Relief Type & Color	Indiv. Pack w/ Strain Relief	Bulk Pack w/ Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Metal	3.0 mm (900µm, 2.4mm)	Bend Limiting/ Yellow	5502579-2	—	58433-4	408-9645
Ceramic	Metal	3.0 mm (900µm, 2.4mm)	Short/Yellow	5502580-2	5502580-4	58433-4	408-9645
Ceramic	Metal	900µm	Bare Buffer/ Yellow	5503613-2	—	58433-4	408-9645

* Jack sizes in parentheses can be accommodated with no additional purchases by using build-up tubing included in the kit part numbers listed.

Multimode Ceramic

Performance Characteristics

Insertion Loss — 0.3dB typical
Durability — 500 cycles

Ceramic

Multimode ST Connector Kits - Ceramic Ferrule

Ferrule Type	Body Material	Coupling Nut Material	Jacket Size*	Strain Relief Type & Color	Indiv. Pack w/ Strain Relief	Bulk Pack No Strain Relief	Bulk Pack w/ Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Polymer	Polymer	3.0 mm	Short/Black	—	503569-1	503569-2	58433-4	408-9971
Ceramic	Polymer	Polymer	3.0 mm (900µm, 2.4mm)	Short/Black	503571-1	—	—	58433-4	408-9971
Ceramic	Polymer	Polymer	3.0 mm (900µm 2.0mm, 2.4mm)	Bare Buffer/Black	5503571-3	—	—	58433-4	408-9971
Ceramic	Polymer	Metal	3.0 mm	Short/Black	503677-2	503676-1	503677-1	58433-4	408-9971
Ceramic	Metal	Metal	3.0 mm (900µm, 2.4mm)	Right Angle/Black	5502674-1	—	—	58433-4	408-9645
Ceramic	Metal	Metal	3.0 mm	Short/Black	—	5492458-3	5492458-2	58433-4	408-9645
Ceramic	Metal	Metal	3.0 mm, 900µm	Bare Buffer/Black Bend Limiting/Black	5492458-1	—	—	58433-4	408-9645
Ceramic	Metal	Metal	3.0 mm (900µm, 2.4mm)	Bare Buffer/Black	5501380-1	—	—	58433-4	408-9645
Ceramic	Metal	Metal	3.0 mm (900µm, 2.4mm)	Short/Black	1-5501380-6	—	—	58433-4	408-9645
Ceramic	Metal	Polymer	3.0 mm	None	—	6374332-2	—	58433-4	408-9645
Ceramic 140µm	Metal	Polymer	3.0 mm	Short/Black	—	—	6374332-1	58433-4	408-9645
Ceramic 140µm	Metal	Metal	3.0 mm (900µm, 2.4mm)	Bend Limiting/Black	5501380-6	—	—	58433-4	408-9645

* Jacket sizes in parentheses can be accommodated with no additional purchases by using build-up tubing included in the kit part numbers listed.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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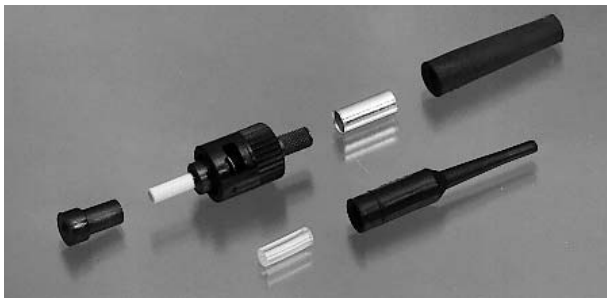
ST Connectors — Epoxy Type (Continued)

Polymer Composite

Multimode Polymer Composite

Performance Characteristics
Insertion Loss — 0.3dB Typical
Durability — 500 Cycles

Materials
Ferrule — Composite Polymer
Body — Polymer
Coupling Nut — Polymer



Multimode ST Connector Kits - Polymer Ferrule

Ferrule Type	Body Material	Coupling Nut Material	Jacket Size	Strain Relief Type & Color	Indiv. Pack w/ Strain Relief	Bulk Pack w/ Strain Relief	Crimp Tool	Instruction Sheet
Polymer	Polymer	Polymer	3.0 mm, 900µm	Short/Black Bare Buffer/Black	5503415-1	—	58433-4	408-9971
Polymer	Polymer	Polymer	3.0 mm	Short/Beige	—	503424-3	58433-4	408-9971

Stainless Steel

Multimode Stainless Steel

Performance Characteristics
Insertion Loss — 0.3dB Typical
Operating Temp. Range — -30°C to +70°C
Durability — 500 cycles

Multimode ST Connector Kits - Stainless Steel Ferrule

Ferrule Type	Ferrule Designation	Body Material	Coupling Nut Material	Jacket Size	Strain Relief Type & Color	Indiv Pack w/ Strain Relief	Bulk Pack No Strain Relief	Crimp Tool	Instruction Sheet
Stainless Steel	125	Metal	Metal	3.0 mm	Bend Limiting/ Black	5504008-3	5-5504008-4	58551-1	408-4151
Stainless Steel	140	Metal	Metal	3.0 mm	Bend Limiting/ Black	5504008-7	—	58551-1	408-4151
Stainless Steel	231	Metal	Metal	3.0 mm	Bend Limiting/ Black	1-5504008-4	—	58551-1	408-4151
Stainless Steel	240	Metal	Metal	3.0 mm	Bend Limiting/ Black	1-5504008-3	—	58551-1	408-4151
Stainless Steel	125	Metal	Metal	4.3 mm	Long/ Black	5504008-4	—	58551-1	408-4151
Stainless Steel	280	Metal	Metal	3.0 mm	Bend Limiting/ Black	4-5504008-6	—	58551-1	408-4151

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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ST Connectors — Epoxy Type (Continued)

ST Connector Component Selection Chart (Bulk Packaged)

Fiber Type	Connector Sub-Assembly	Cable Size	Crimp Eyelet	Tubing	Strain Relief Part Number*
Singlemode - Ceramic Ferrule Metal Body, Metal Nut	5502578-2	1.6-2.0mm	501971-3	5502275-1	502128-X
		1.6-2.0mm	501971-3	5502275-1	501457-X
		1.6-2.0mm	501971-3	5502275-2	503219-X
		1.6-2.0mm	501971-3	5502275-1	5502667-X
		2.4mm	501971-3	5501275-1	502128-X
		2.4mm	501971-3	5501275-1	501457-X
		2.4mm	501971-3	5501275-1	5502667-X
		3.0mm	501971-3	—	502128-X
		3.0mm	501971-3	—	501457-X
		3.0mm	501971-3	—	5502667-X
		900um	501971-3	502179-7	5503628-X
Multimode - Ceramic Ferrule Metal Body, Metal Nut	5492458-5	1.6-2.0mm	501971-3	5502275-1	502128-X
		1.6-2.0mm	501971-3	5502275-1	501457-X
		1.6-2.0mm	501971-3	5502275-2	503219-X
		1.6-2.0mm	501971-3	5502275-1	5502667-X
		2.4mm	501971-3	5501275-1	502128-X
		2.4mm	501971-3	5501275-1	501457-X
		2.4mm	501971-3	5501275-1	5502667-X
		3.0mm	501971-3	—	502128-X
		3.0mm	501971-3	—	501457-X
		3.0mm	501971-3	—	5502667-X
		900um	501971-3	502179-7	5503628-X
Multimode - Ceramic Ferrule Metal Body, Polymer Nut	5501458-8	1.6-2.0mm	501971-3	5502275-1	502128-X
		1.6-2.0mm	501971-3	5502275-1	501457-X
		1.6-2.0mm	501971-3	5502275-2	503219-X
		1.6-2.0mm	501971-3	5502275-1	5502667-X
		2.4mm	501971-3	5501275-1	502128-X
		2.4mm	501971-3	5501275-1	501457-X
		2.4mm	501971-3	5501275-1	5502667-X
		3.0mm	501971-3	—	502128-X
		3.0mm	501971-3	—	501457-X
		3.0mm	501971-3	—	5502667-X
		900um	501971-3	502179-7	5503628-X
Multimode - Ceramic Ferrule Polymer Body, Metal Nut	503676-5	1.6-2.0mm	501971-3	5502275-1	502128-X
		1.6-2.0mm	501971-3	5502275-1	501457-X
		1.6-2.0mm	501971-3	5502275-2	503219-X
		1.6-2.0mm	501971-3	5502275-1	5502667-X
		2.4mm	501971-3	5501275-1	502128-X
		2.4mm	501971-3	5501275-1	501457-X
		2.4mm	501971-3	5501275-1	5502667-X
		3.0mm	501971-3	—	502128-X
		3.0mm	501971-3	—	501457-X
		3.0mm	501971-3	—	5502667-X
		900um	501971-3	502179-7	5503628-X
Multimode - Ceramic Ferrule Polymer Body, Polymer Nut	503676-4	1.6-2.0mm	501971-3	5502275-1	502128-X
		1.6-2.0mm	501971-3	5502275-1	501457-X
		1.6-2.0mm	501971-3	5502275-2	503219-X
		1.6-2.0mm	501971-3	5502275-1	5502667-X
		2.4mm	501971-3	5501275-1	502128-X
		2.4mm	501971-3	5501275-1	501457-X
		2.4mm	501971-3	5501275-1	5502667-X
		3.0mm	501971-3	—	502128-X
		3.0mm	501971-3	—	501457-X
		3.0mm	501971-3	—	5502667-X
		900um	501971-3	502179-7	5503628-X

* Strain relief dash number indicates color - see chart on page 54 for details.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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ST Connectors — Epoxy Type (Continued)

Bend Limiting

Short

Right Angle

Bare Buffer

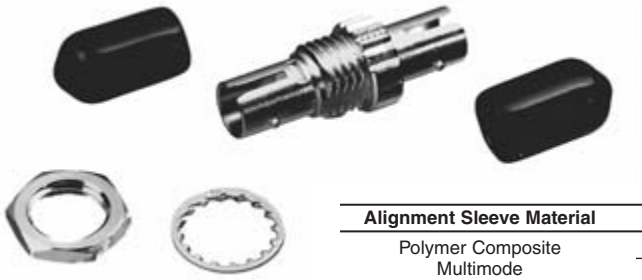
Strain Relief Bulk packages (100 pcs./package)

Color	Bend Limiting	Short (3.0mm)	Right Angle	Bare Buffer	Short (2.0mm)
Black	502128-1	501457-1	5502667-1	5503628-2	503219-1
Red	502128-3	501457-3	5502667-4	2-5503628-4	—
Blue	502128-7	501457-5	5502667-2	5503628-9	503219-5
Beige	502128-4	502457-4	5502667-3	2-5503628-9	503219-4

Product Facts

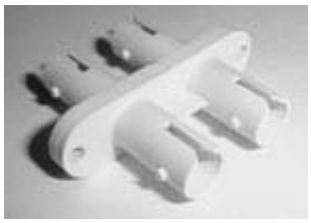
- **Free-hanging or panel mount design**

ST Coupling Receptacles



Alignment Sleeve Material	Packaging	Part Number
Polymer Composite Multimode	Single	501381-1
	Bulk (1000)	501381-2
Metal Multimode	Single	504021-1
	Bulk (50)	504021-2
Zirconia Ceramic Singlemode	Single	502750-1
	Bulk (50)	502750-2

ST Polymer Duplex Receptacle



Alignment Sleeve Material	Color	Part Number
Metal/MM Only	Beige	504662-2
Metal/MM Only	Lt. Almond	504662-1

ST Active Device Mounts — Multimode

Product Facts

- **Designed to accept multimode TO-18, TO-46 and TO-52 active devices**
- **Nickel plated, die cast zinc**
- **Mount to PCB or through panel**
- **Includes positioning ring**

Description	Packaging	Height	Part Number
Standard height	Single	.410	5501474-1
Low profile	Single	.280	5502585-2
Low profile	Single (100)	.314	5504022-2
Low profile	Bulk (50)	.314	5504022-3

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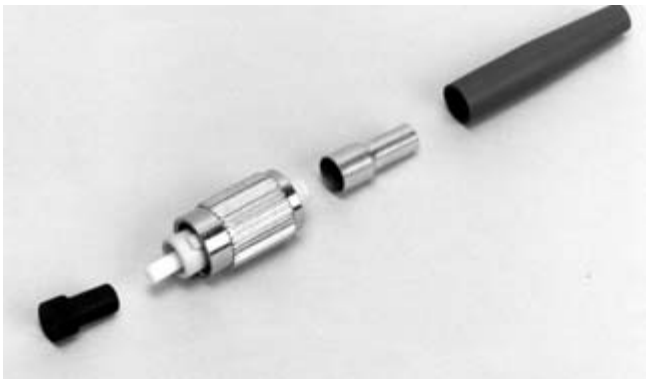
FC Connectors

Product Facts

- **One-piece connector body:**
  - **Fastest assembly**
- **Compliant with:**
  - **JIS C-5970**
- **Pre-radiused ferrule**



Singlemode FC Connector Kits - Polymer Crimp Body

Performance Characteristics

Insertion Loss — <0.2 dB Typical
Return Loss — <-59 dB Typical
Durability — 200 Cycles

Singlemode FC Connector Kits - Polymer Crimp Body

Ferrule Type	Crimp Body Material	Jacket Size	Indiv. Pack w/Strain Relief	Bulk Pack w/Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Polymer	3.0 mm	5504649-1	5504649-8	503911-1	408-8674
Ceramic	Polymer	900µm	5492052-1	5492052-4	n/a	408-8674

GR-326 Style FC Connector Kits - Metal Crimp Body Singlemode

Performance Characteristics

Insertion Loss — <0.2 dB Typical
Return Loss — <-59 dB Typical
Tested to GR-326
Tuning — 6 position

GR-326 Style Singlemode FC Connector Kits - Metal Crimp Body

Ferrule Type	Crimp Body Material	Jacket Size	Indiv. Pack w/Strain Relief	Bulk Pack w/Strain Relief	Crimp Tool	Instruction Sheet
Ceramic	Metal	3.0 mm	6457216-4	6457216-2	(1) 492131-1 (1) 58532-1	408-8674
Ceramic	Metal	2.4 mm	6754264-5	6754264-6	1588176-1	408-8674
Ceramic	Metal	1.6 - 2.0 mm	6754264-4	6754264-7	1588176-1	408-8674
Ceramic	Metal	900µm	6754264-2	—	1588176-1	408-8674

3.0mm - GR-326 Style

3.0mm Angled

900µm Short

900µm

FC Strain Reliefs — Jacketed Cable

Description	GR-326 Style	Part Number Color Black	Yellow	Red	Beige	Blue
3.0 mm	No	1-5503971-0	5503971-7	1-5503971-1	5503971-1	5503971-2
2.4 mm	No	1-5503971-2	5503971-8	1-5503971-3	5503971-3	5503971-4
3.0 mm	Yes	—	—	—	1588491-5	1588491-2
1.6 mm - 2.4 mm	Yes	1588153-3	1588153-4	—	1588153-5	1588153-2
2.0 mm	No	2-5503971-3	5503971-9	2-5503971-7	5503971-5	5503971-6

FC Strain Reliefs — Angled

Description		Part Number Color Black	Red	Beige	Blue
3.0 mm	Simplex	1278705-3	1278705-4	1278705-2	1278705-1
2.0 mm	Simplex	1374737-3	1374737-4	1374737-2	1374737-1
2.0 mm	45° Simplex	6457543-4	6457543-3	6457543-1	6457543-2

FC Strain Reliefs — 900 micron

Description	Part Number Color Black	Yellow	Red	Beige	Blue
Long (33mm) 900µm	6457493-3	6457493-5	6457493-4	6457493-9	6457493-1
Short (10 mm) 900 µm	6278309-1	—	6278309-3	—	6278309-2

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

Catalog 1307895
Revised 3-06

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

FC Connectors (Continued)

FC Connector Component Selection Chart (bulk packaged)

Fiber Type	Simplex Connector Sub-Assembly	Cable Size	Crimp Eyelet w/ Heat Shrink	Crimp Eyelet	Strain Relief Part Number*
Singlemode - GR-326 Style	6754264-8	1.6-2.0 mm	6374150-1	—	1588153-X
		2.4 mm	6588189-1	—	1588153-X
	6457216-5	3.0 mm	—	504973-3	1588491-X
Singlemode Polymer Crimp Body	5504649-9	2.4 mm	—	503970-6	5503971-X
		3.0 mm	—	503970-3	5503971-X
		900 µm	—	—	6457493-X (long) 6278309-X (short)
Multimode - Ceramic Ferrule	6374778-2	1.6-2.0 mm	6374150-1	—	1588153-X
		2.4 mm	6588189-1	—	1588153-X
	5504922-3	3.0 mm	—	503970-3	5503971-2
		900 µm	—	—	6457493-9 (long) 6278309-1 (short)

* Strain relief dash number indicates color - see page 55 for details.

FC Adapters

FC Square Flange Adapter

FC Simplex Square Flange Adapter - Metal

Alignment Sleeve Material	Panel Cut-out	Keyway Slot (Nom.)	Part Numbers
Metal	Square Flange	Std. 2.33 mm	5501506-2
Ceramic	Square Flange	Std. 2.33 mm	5501506-1

FC 8mm/9mm Dia. Round

FC Simplex 8mm/9mm Dia. Round (D-Hole) Adapter - Metal

Alignment Sleeve Material	Panel Cut-out	Keyway Slot (Nom.)	Part Numbers
Metal (Copper)	D-Hole	Std. 2.33 mm	5504407-1
Ceramic	D-Hole	Std. 2.33 mm	5504407-3
Ceramic/APC	D-Hole	2.05 mm Type R	5504407-8
Ceramic/APC	D-Hole	Prec. 2.02 mm	5504407-7

FC 8mm Dia. Round (Double D)

FC Simplex 8mm Dia. Round (Double D-Hole) Adapter - Metal

Alignment Sleeve Material	Panel Cut-out	Keyway Slot (Nom.)	Part Numbers
Metal	Double D-Hole	Std. 2.33mm	5504013-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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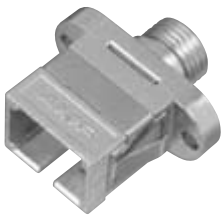
FC Connectors (Continued)

Hybrid Adapters - SC/FC/ST

FC to ST Simplex Adapter - Metal

Hybrid FC to ST Simplex Adapter - Metal

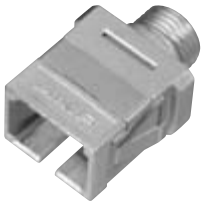
Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	5503640-1
Ceramic	Electroless Nickel	5503640-2



SC to FC Simplex Adapter - Metal

SC to FC Simplex Adapter - Metal

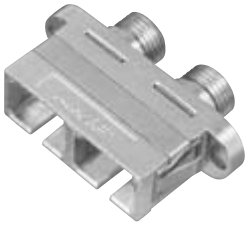
Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278349-1
Ceramic	Electroless Nickel	6278349-3



Flangeless SC to FC Simplex Adapter - Metal

Flangeless Simplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278349-5
Ceramic	Electroless Nickel	6278349-7



SC to FC Duplex Adapter - Metal

SC to FC Duplex Adapter - Metal

Alignment Sleeve Material	Housing Color	Part Numbers
Metal	Electroless Nickel	6278050-1
Ceramic	Electroless Nickel	6278050-3

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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FSD Connector Components — Multimode

Product Facts

- **Meets specifications of FDDI PMD - ANSI X3.166**
- **Ceramic or polymer composite ferrules**
- **Designed in polarization and user defined keying**

Performance Characteristics

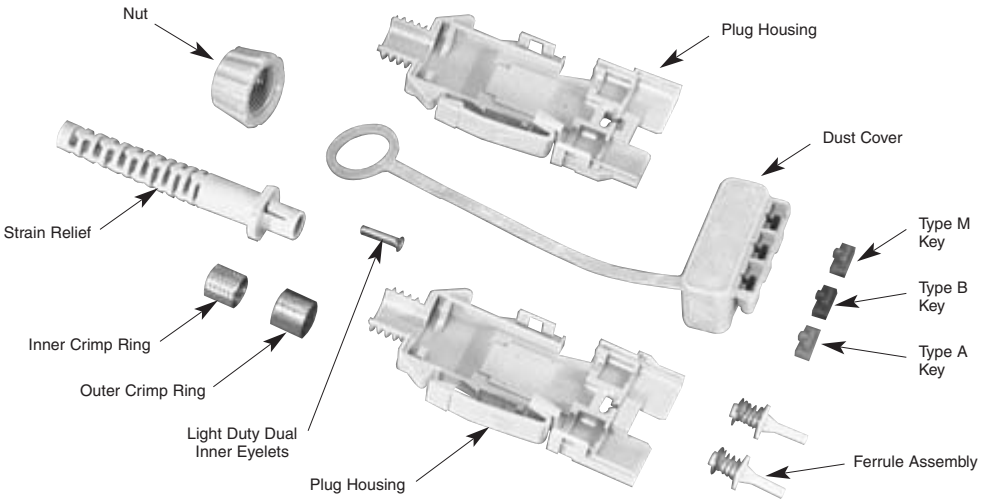
Insertion Loss — 0.5dB typical
Durability —
Ceramic Ferrules 500 cycles
Polymer Ferrules 250 cycles

Ceramic Instruction Sheet

408-9373

Polymer Instruction Sheet

408-9972



FSD

Diameter (μm)	Part Number				
	Cable Type				Replacement Ferrules
	DUALAN Cable		Light Duty DUALAN Cable		
	Single Packed	Bulk Packed	Single Packed	Bulk Packed	
Ceramic Ferrules					
125	5501780-1	501780-3* ♦	5502015-1	502015-3* ♦	5501779-1
Polymer Ferrules					
125	503347-1	503347-4	503347-5	503347-7	—

Termination Kit: 503746-6
* Bulk packed, 200 per package.
Assembly Fixtures: with Polishing Tool: 501795-1; without Polishing Tool: 502023-1

Field Keyable FSD Receptacles and Adapters

Multimode Receptacles

Description	Sleeve Material	
	Metal	Ceramic
FSD to FSD	502806-2	502806-4
FSD to ST	502808-2	502808-4

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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ESCON Connector Components

ESCON Connector Plug

Product Facts

- **Multimode**
- **IBM Approved**
- **Simple field assembly**

Performance Characteristics
Assembly Loss — 0.2 dB Typical
Durability — 200 cycles

Instruction Sheet
408-9808

Description 125 µm	Part Number Black
DUALAN Cable	5492181-1
DUALAN Cable	5492181-2*

* Bulk packed, 50 per package
Termination Kit: 503746-6.

ESCON Receptacles

Product Facts

- **Multimode**

Description	Part Number Black
ESCON to ESCON	502825-2
ESCON to ST	502826-2

Receptacle Dust Cover

Description	Part Number Black
Without Mounting Strap	503004-3

ESCON Assembly Fixture Kit

Used to hold ferrules during assembly, epoxy curing, and polishing. Allows simultaneous polishing of both ferrules.

Description	Part Number Black
Without Polishing Bushing	492236-2
Polishing Bushing	492269-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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FSMA Products — Multimode

Product Facts

- **Industry compatible with 905 (FSMA-I) and 906 (FSMA-II) style connectors**
- **Terminates fiber sizes from 125 through 1000 microns in diameter**
- **Design parameters conform to NATO and IEC interface standards**

Performance Characteristics

Insertion Loss — 1.5 dB Typical

Temperature Range — -55°C to +105°C

Durability — 200 cycles

Instruction Sheet

FSMA 905 & 906 — 408-9863

FSMA Connectors

Ferrule Material	Connector Body Material	Fiber Diameter (µm)	Nominal Jacket O.D.		
			3.1mm		4.3mm
			905	906	905
Stainless Steel	Nickel-Plated Brass	125	5504566-1	5504014-1	5504567-1
		140	5504566-2	1-5504014-0	5504567-2
		231	5504566-7	—	—
		1000	3-5504566-0	—	—
		336	1-5504566-4	—	—
		720	—	—	3-5504566-9
		1050	3-5504566-1	—	2-5504566-9
		2050	—	—	3-5504566-3

Adapter Product Facts

- **Precision mating adapter for all FSMA connectors**
- **In-line splice or panel mount design**

Description	Part Number
FSMA Adapters	
Hex Flange, Stainless Steel	501049-1
Hex Flange, Stainless Steel, Counterbore, Sealed	501050-1
Fixed Flange, Nickel-Plated Brass	5504026-1
In-Line, Stainless Steel	504028-1
In-Line, Nickel-Plated Brass, Counterbore	5504030-1
In-Line, Stainless Steel, Counterbore, Short	504031-1

Active Device Mount Product Facts

- **Designed to house TO-18, TO-46, and TO-52 devices**
- **Constructed of nickel plated die cast zinc alloy or stainless steel**
- **Mounts to PC board or through panel**

Description	Part Number
FSMA Active Device Mounts	
PC Mount Receptacle, Die Cast	5502136-1
PC Mount Receptacle, Die Cast, Bulk Packaged	5502136-2
PC Mount Receptacle, Stainless Steel	501055-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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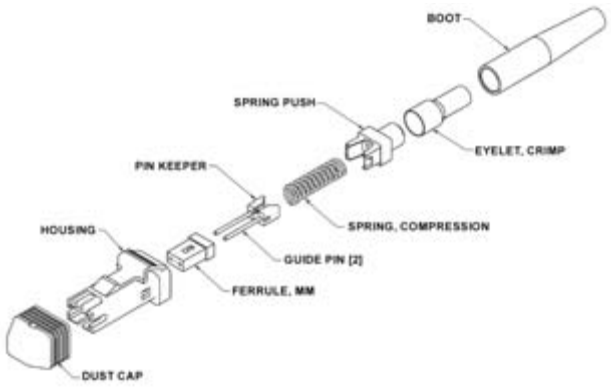
MT-RJ Connectors

MT-RJ Plugs

Product Facts

- **Designed to meet TIA/EIA 568-B.3**
- **Each MT-RJ Connector houses two fibers**
- **Half the size of duplex SC and ST Connectors**
- **Options available include:**
  - **Multimode or singlemode**
  - **Mini DUALAN or Mini Zipcord cable**
  - **With or without guide pins**



Performance Characteristics

Insertion Loss — Typical (dB) 0.2dB
Operating Temperature — -10°C to 60°C
Durability — 500 Cycles

Instruction Sheet

408-4540

Fiber Type	Cable Type	Pins	Figure	Part Number
Singlemode	3.0mm DUALAN	Without Guide Pins	A	6278399-1
	3.0mm DUALAN	With Guide Pins	B	6278399-2
	1.8mm Mini Zipcord	Without Guide Pins	A	6278751-1
	1.8mm Mini Zipcord	With Guide Pins	B	6278751-2
Multimode	3.0mm DUALAN	Without Guide Pins	A	6278398-1
	3.0mm DUALAN	With Guide Pins	B	6278398-2
	1.8mm Mini Zipcord	Without Guide Pins	A	6278750-1
	1.8mm Mini Zipcord	With Guide Pins	B	6278750-2

MT-RJ to MT-RJ Adapter

Simplex Part Number:
1278017-1 (light almond)

Duplex Part Number:
6374906-X

6374906-1 (Almond)
6374906-3 (Black)
6374906-5 (Blue)

MT-RJ to MT-RJ Simplex Adapter

MT-RJ to MT-RJ Duplex Adapter

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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MT-RJ Connectors (Continued)

SL Series Outlets

Product Facts

- **Front-loading modules snap in and out for easy access**
- **Modular approach for flexibility**
- **"Invisible" icon holes stay hidden until used**
- **Individual jacks and inserts increase configuration and color-coding options**
- **MT-RJ SL Series housing accepts one MT-RJ Jack sold separately (See pages 99-103)**

MT-RJ SL Series Housing

Color	Part Number
Almond	1374416-1
Black	1374416-2
White	1374416-3
Gray	1374416-4
Orange	1374416-5
Blue	1374416-6
Red	1374416-7
Yellow	1374416-8
Green	1374416-9
Violet	1-1374416-0
Electrical Ivory	1-1374416-1
Rose	2-1374416-3
Aqua	2-1374416-4
Brown	2-1374416-5
Slate	2-1374416-6

MT-RJ Optical Patch Panel

Tyco Electronics' MT-RJ optical patch panels feature 24-port (48 fiber) capacity in a 1U high rack mounted enclosure and offer twice the fiber density of conventional patch panels. Features include pre-installed cable management, rugged cable entry strain relief, and a sliding, tilt-out drawer for easy termination of tight buffer or loose tube cable. Adjustable mounting brackets allow the user to mount the enclosure in forward, flush or recessed positions. The patch panel is supplied ready for MT-RJ jack installation.

Description	Part Number
1U Patch Panel with four, six-position MT-RJ interface housing Cable Management Rings (2 pieces), Cable Glands PG16, PG13.5, Dust Caps (24 pieces). (Jack modules not included)	1206704-4

MT-RJ Snap-In Adapter Plate

The MT-RJ snap-in adapter plate manages six MT-RJ Patch panel jacks (ordered separately, see page 64). The adapter plate is designed to fit into existing rack and wall mount enclosures with the benefit of industry standard labels and icons for port identification.

Description	Part Number
MT-RJ Snap-In Adapter Plates (Jack modules not included)	1278328-3

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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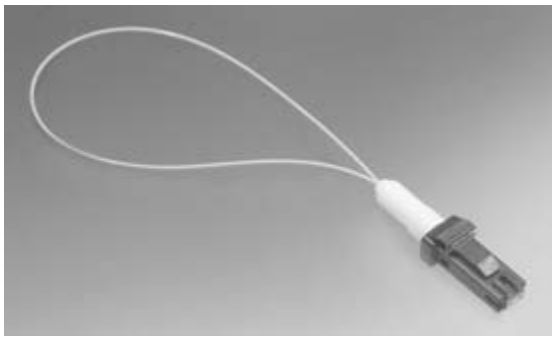
MT-RJ Connectors (Continued)

MT-RJ Loopbacks



Description	Part Number
MT-RJ to Singlemode Loopback	6278358-1
MT-RJ to Multimode Loopback, 50/125µm	6278357-1
MT-RJ to Multimode Loopback, 62.5/125µm	6278153-1

MT-RJ Cable Assemblies

See Cable Assemblies & Backplane Interconnects Section.

MT-RJ Bend Limiting Boots

Part Number 1374208-X

Product Facts

- **Compatible with all MT-RJ Jacks (see pages 99-103)**

Color	Part Number
Black	6374208-4
Beige	6374208-5
Blue	6374208-6

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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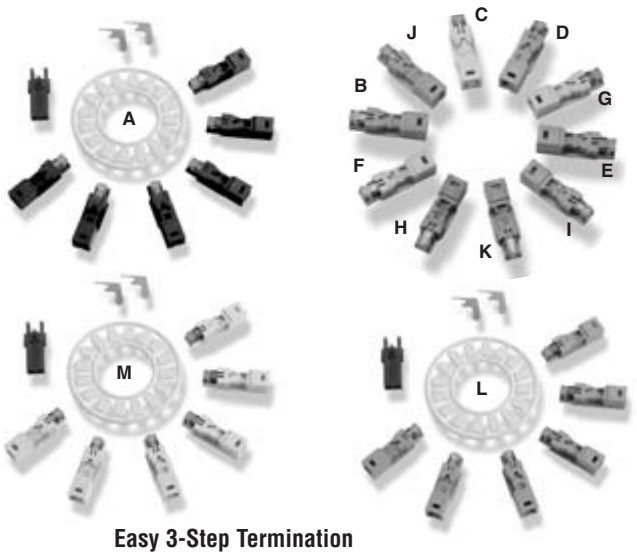
MT-RJ Patch Panel Jacks, No Epoxy, No Polish

Product Facts

- Patch panel jacks terminate either two 900 µm tight-buffered fibers or two 250 µm coated fibers (select appropriate part number):
  - No epoxy, no polishing, no crimping
  - Two (2) fibers in one ferrule
  - Re-terminatable – improves yield
  - Tunable
  - No bench tool required
- Each part number includes:
  - Six (6) patch panel jacks
  - Two (2) actuation tools
  - Fiber guide
  - Icon wheel
- Jack design eliminates need for MT-RJ Coupler
- Match fiber type of cable to fiber type of MT-RJ Jack
- Small form factor design is half the size of SC duplex
- Six (6) patch panel jacks fit in the MT-RJ Snap-in Adapter Plate (see page 63)
- SL Series Housings and bend-limiting boots sold separately (see pages 61, 63 and 68)
- MT-RJ Cable Assemblies on pages 101-103
- MT-RJ SECURE Jacks feature color-coded, keyed designs to limit improper connections in segregated or SECURE networks
- MT-RJ SECURE Plug only mates with same color MT-RJ SECURE Jack
- MT-RJ SECURE Cable Assemblies on pages 101 and 102
- Singlemode MT-RJ pigtail jacks on page 104



Easy 3-Step Termination

Strip Cleave Lock

Fiber Type		Jack Color	Figure	Part Number	
				250 µm Coated Fiber	900 µm Tight-buffered Fiber
50/125 µm Multimode	Standard	Black	A	6278303-1	6588880-1
	SECURE	RED	B	6278807-1	6588879-1
		YELLOW	C	6278807-2	6588879-2
		GREEN	D	6278807-3	6588879-3
		BLUE	E	6278807-4	6588879-4
		ROSE	F	6278807-5	6588879-5
		AQUA	G	6278807-6	6588879-6
		BROWN	H	6278807-7	6588879-7
		VIOLET	I	6278807-8	6588879-8
		ORANGE	J	6278807-9	6588879-9
		SLATE	K	1-6278807-0	1-6588879-0
XG (850 nm LO 50/125 µm) Multimode	Standard	Gray	L	6278303-4	6588880-3
	SECURE	RED	B	6693951-1	6693949-1
		YELLOW	C	6693951-2	6693949-2
		GREEN	D	6693951-3	6693949-3
		BLUE	E	6693951-4	6693949-4
		ROSE	F	6693951-5	6693949-5
		AQUA	G	6693951-6	6693949-6
		BROWN	H	6693951-7	6693949-7
		VIOLET	I	6693951-8	6693949-8
		ORANGE	J	6693951-9	6693949-9
		SLATE	K	1-6693951-0	1-6693949-0
62.5/125 µm Multimode	Standard	Beige	M	6278303-2	6588880-2
	SECURE	RED	B	6278808-1	6588878-1
		YELLOW	C	6278808-2	6588878-2
		GREEN	D	6278808-3	6588878-3
		BLUE	E	6278808-4	6588878-4
		ROSE	F	6278808-5	6588878-5
		AQUA	G	6278808-6	6588878-6
		BROWN	H	6278808-7	6588878-7
		VIOLET	I	6278808-8	6588878-8
		ORANGE	J	6278808-9	6588878-9
		SLATE	K	1-6278808-0	1-6588878-0

Note: Highlighted part numbers are routinely stocked for shortest lead times.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Japan: 81-44-844-8013
UK: 44-208-420-8341

MT-RJ Outlet Jacks, No Epoxy, No Polish

Product Facts

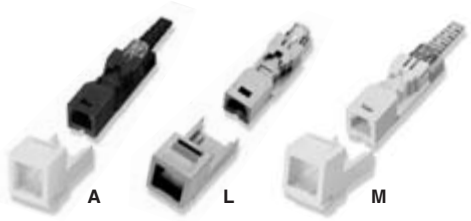
- Outlet jacks terminate two 900 µm tight-buffered fibers
  - No epoxy, no polishing, no crimping
  - Two fibers in one ferrule
  - Re-terminatable - improves yield
  - Tunable
  - No bench tool required
- Each part number includes:
  - One (1) outlet jack
  - Actuation tool
  - Bend-limiting boot
  - SL Series Housing
- Match fiber type of cable to fiber type of MT-RJ Jack
- Jack design eliminates need for MT-RJ Coupler
- Small form factor design is half the size of SC duplex
- SL Series Housing allows use in any faceplate or outlet that accepts SL Series Jacks
- MT-RJ Cable Assemblies on pages 101-103
- MT-RJ SECURE Jacks feature ten color-coded, keyed designs to limit improper connections in segregated or SECURE networks
  - MT-RJ SECURE plug only mates with same color MT-RJ SECURE Jack
- MT-RJ SECURE Cable Assemblies on pages 101 and 102

Easy 3-Step Termination

Strip

Cleave

Lock



Fiber Type			Jack Color	Housing Color	Figure	Part Number
50/125 µm Multimode	Used with 900 µm Tight-buffered Fibers	Standard	Black	—	A	6278414-X
		SECURE	RED	RED	B	6278811-1
			YELLOW	YELLOW	C	6278811-2
			GREEN	GREEN	D	6278811-3
			BLUE	BLUE	E	6278811-4
			ROSE	ROSE	F	6278811-5
			AQUA	AQUA	G	6278811-6
			BROWN	BROWN	H	6278811-7
			VIOLET	VIOLET	I	6278811-8
			ORANGE	ORANGE	J	6278811-9
			SLATE	SLATE	K	1-6278811-0
XG (850nm LO 50/125 µm) Multimode	Used with 900 µm Tight-buffered Fibers	Standard	Gray	—	L	1-6278414-2
		SECURE	RED	RED	B	6754252-1
			YELLOW	YELLOW	C	6754252-2
			GREEN	GREEN	D	6754252-3
			BLUE	BLUE	E	6754252-4
			ROSE	ROSE	F	6754252-5
			AQUA	AQUA	G	6754252-6
			BROWN	BROWN	H	6754252-7
			VIOLET	VIOLET	I	6754252-8
			ORANGE	ORANGE	J	6754252-9
			SLATE	SLATE	K	1-6754252-0
62.5/125 µm Multimode	Used with 900 µm Tight-buffered Fibers	Standard	Beige	—	M	6278415-X
		SECURE	RED	RED	B	6278810-1
			YELLOW	YELLOW	C	6278810-2
			GREEN	GREEN	D	6278810-3
			BLUE	BLUE	E	6278810-4
			ROSE	ROSE	F	6278810-5
			AQUA	AQUA	G	6278810-6
			BROWN	BROWN	H	6278810-7
			VIOLET	VIOLET	I	6278810-8
			ORANGE	ORANGE	J	6278810-9
			SLATE	SLATE	K	1-6278810-0

X denotes housing color: -1 = Almond, -2 = Black, -3 = White, -4 = Gray, -5 = Orange, -6 = Blue, -7 = Red, -8 = Yellow, -9 = Green, 1- - 0 = Violet, 1- -1 = Electrical Ivory

Note: Highlighted part numbers are routinely stocked for shortest lead times.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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LIGHTCRIMP PLUS No Epoxy, No Polish LC, SC and ST Connectors

Product Facts

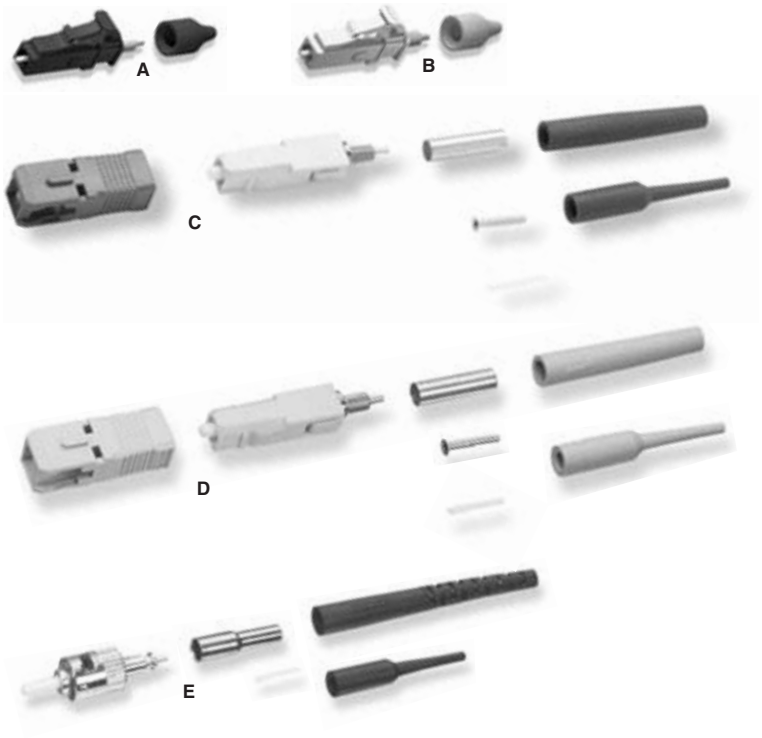
- Multimode connector kits come with accessories needed to terminate to 250 µm fiber, 900 µm tight-buffered fiber, 900 µm easy-strip, and buffer tube splitter kits
  - SC and ST multimode kits also terminate 3 mm cables
- Singlemode connector kits terminate to 250 µm fiber, 900 µm tight-buffered fiber, 900 µm easy-strip and buffer tube splitter kits
- Easy installation:
  - No epoxy, no polishing
  - No bench tool required
  - Strip, cleave and crimp
- Easy identification:
  - Singlemode is blue
  - XG is gray — 10 Gb/s applications
  - 50/125 µm and 62.5/125 µm are beige
- Match fiber type of cable to fiber type of LIGHTCRIMP PLUS
- Mates with standard couplers, adapters and adapter plates
- LC small form factor design is half the size of SC
- Meets TIA/EIA 568-B.3
- Termination tool kits on page 70

Performance Characteristics

Insertion Loss — Typical (dB)
0.2 dB SM; 0.3 dB MM

Temperature Range —
-10°C to 60°C

Durability — 500 cycles



Connector Type	Fiber Type	Housing Color	Used With	Figure	Part Number	IS Sheet
Simplex LC	Singlemode	Blue	900 µm & 250 µm Fibers	A	6754482-1	408-8925
	50/125 µm Multimode	Beige	900 µm & 250 µm Fibers	B	6754483-2	408-8925
	XG (850 nm LO 50/125 µm) Multimode	Gray	900 µm & 250 µm Fibers	–	6754483-3	408-8925
	62.5/125 µm Multimode	Beige	900 µm & 250 µm Fibers	B	6754483-1	408-8925
Duplex LC	Singlemode	Blue	900 µm & 250 µm Fibers	–	6754484-1	408-8725
	50/125 µm Multimode	Beige	900 µm & 250 µm Fibers	–	6754485-2	408-8725
	XG (850 nm LO 50/125 µm) Multimode	Gray	900 µm & 250 µm Fibers	–	6754485-3	408-8725
	62.5/125 µm Multimode	Beige	900 µm & 250 µm Fibers	–	6754485-1	408-8725
Simplex SC	Singlemode	Blue	900 µm & 250 µm Fibers	C	6693276-1	408-4471
	50/125 µm Multimode	Beige	900 µm & 250 µm Fibers, 3 mm Cable	D	6278079-1	408-4471
	XG (850 nm LO 50/125 µm) Multimode	Gray	900 µm & 250 µm Fibers, 3 mm Cable	–	6588291-1	408-4471
	62.5/125 µm Multimode	Beige	900 µm & 250 µm Fibers, 3 mm Cable	D	5492643-1	408-4471
Duplex SC	Singlemode	Blue	900 µm & 250 µm Fibers	–	6693278-1	408-8603
	50/125 µm Multimode	Beige	900 µm & 250 µm Fibers, 3 mm Cable	–	6278080-1	408-8603
	XG (850 nm LO 50/125 µm) Multimode	Gray	900 µm & 250 µm Fibers, 3 mm Cable	–	6588292-1	408-8603
	62.5/125 µm Multimode	Beige	900 µm & 250 µm Fibers, 3 mm Cable	–	6278009-1	408-8603
ST	50/125 µm Multimode	Metallic	900 µm & 250 µm Fibers, 3 mm Cable	E	6278082-1	408-4457
	62.5/125 µm Multimode	Metallic	900 µm & 250 µm Fibers, 3 mm Cable	E	5492642-1	408-4457

Note: Highlighted part numbers are routinely stocked for shortest lead times.

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LIGHTCRIMP No Epoxy, Polish SC and ST Connectors

Product Facts

- **No epoxy needed**
- **Easy installation: strip, cleave, crimp and polish**
- **Each connector kit comes with accessories needed to terminate to 250 µm fiber, 900 µm tight-buffered fiber, and 3 mm cables**
  - **Duplex part numbers contain two connectors**
- **Multimode connectors are suitable for use with 50/125 µm, XG (850 nm LO 50/125 µm) and 62.5/125 µm fibers**
- **Mates with standard couplers, adapters and adapter plates**
- **Meets TIA/EIA 568-B.3**

Performance Characteristics

Insertion Loss — 0.4 dB typical
Temperature Range — -40°C to 65°C
Durability — 500 cycles

Description			Figure	Part Number	IS Sheet
Simplex SC	Multimode	Ceramic Ferrule	A	5503692-1	408-4066
Duplex SC	Multimode	Ceramic Ferrule	—	5503693-1	408-4066
ST	Singlemode	Ceramic Ferrule	B	5504000-1	408-9860
	Multimode	Stainless Steel Ferrule	C	5504034-1	408-9860
		Ceramic Ferrule	B	5504001-1	408-9860
		Polymer	—	5492168-1	408-9860

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CORELINK Optical Fiber Splices

Product Facts

- Each CORELINK splice mates two 900 µm tight-buffered fibers or two 250 µm coated fibers
- Easy to install
- Reusable
- No bench tool required
- Splices sold in packs of 12
  - Includes 2 actuator keys
- Optional CORELINK installation tool shown below
- Designed to TIA/EIA 568-B.3

Replacement Keys

Performance Characteristics

Mean Splice Loss — < 0.3dB
Mean Return Loss — -26dB
Temperature Range — -0°C to 60°C

Instruction Sheet

408-4019

Description			Part Number
CORELINK Splice	Singlemode	Clear	503577-1
	Multimode	Blue	503901-1
2 Replacement keys in key holder		—	503681-1

Note: Highlighted part numbers are routinely stocked for shortest lead times.

Corelink Splice Workstation

Part Number 503605-1

Product Facts

- Optional tool for installing CORELINK mechanical splices
- Convenient fiber and splice holder for easy installation
- Works with singlemode and multimode CORELINK mechanical splices

Instruction Sheet

408-4131

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Tooling

Tool Kit Compatibility Chart

	Part Number	MT-RJ Jacks	MT-RJ SECURE Jacks	MT-RJ Plugs	LIGHTCRIMP PLUS			LIGHTCRIMP		Expoxy/Polish					
					LC	SC	ST	SC	ST	LC	SC	ST	FC	FSD	FSMA
Deluxe Premises Termination Tool Kit	1278949-2	X	X		X	X	X	X	X						
MT-RJ Jack Tool Kit	1278346-1	X	X												
LIGHTCRIMP PLUS No Epoxy/ No Polish Universal Tool Kit	1278118-4	X	X		X	X	X								
MT-RJ Plug Termination Kit	1278745-1			X											
LIGHTCRIMP PLUS No Epoxy/ No Polish LC Tool Kit	1754845-1				X										
LIGHTCRIMP PLUS No Epoxy/ No Polish SC Tool Kit	1278022-1					X									
LIGHTCRIMP PLUS No Epoxy/ No Polish ST Tool Kit	492697-1						X								
LIGHTCRIMP SC/ST No Epoxy/Polish Tool Kits	503957-1							X	X						
	503957-3							X	X						
	492543-1							X	X						
LIGHTCRIMP SC No Epoxy/ Polish Tool Kits	503706-1							X							
	503706-2							X							
LIGHTCRIMP ST No Epoxy/ Polish Tool Kits	503330-1								X						
	503330-3								X						
	492322-1								X						
Pro-installer Epoxy/ Polish Tool Kits	501258-7									X[1]	X	X	X	X	X
	501258-8									X[1]	X	X	X	X	X
	501258-9									X[1]	X	X	X	X	X
Epoxy/Polish SC/FC Tool Kit (no microscope, no curing oven)	503746-7									X[2]	X		X		
Epoxy/Polish ST Tool Kit (no microscope, no curing oven)	503746-1									X[2]		X			
Epoxy/Polish FSMA Tool Kit (no microscope, no curing oven)	503746-2									X[2]					X
Epoxy/Polish FSD Tool Kit (no microscope, no curing oven)	503746-6									X[2]				X	

[1] For LC terminations, also order Part Number 1754462-1.
[2] For LC terminations, also order Part Number 1754603-1.

Epoxy/Polish Connector Consumables/Compatibility Chart

	Epoxies			Polishing Films					Consumable Package*
	EPO-TEK 504035-1	TRA-CON 501195-4	HYSOL 502418-1	9 µm 1374484-1	5 µm 228433-8	Diamond Film 503887-1	0.3 µm 228433-5	Final Polishing Film 502748-2	
LC Singlemode	X	X	X	X	X	X	X	—	502306-4
LC Multimode	X	X	X	X	X	X	X	—	502306-4
SC Singlemode	X	X	X	—	X	—	X	X	502306-2
SC Multimode	X	X	X	—	X	—	X	X	502306-2
ST Singlemode	—	X	X	—	X	—	X	X	502306-2
ST Multimode	—	X	X	—	X	—	X	—	502306-1

*Epoxy & film for » 100 connectors.

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Tooling (Continued)

Deluxe Premises Termination Tool Kit

Part Number 1278949-2

Product Facts

- Includes all tools need for installing popular field-installable connectors
  - MT-RJ and MT-RJ SECURE Jacks
  - LIGHTCRIMP PLUS SC, LC and ST connectors
  - LIGHTCRIMP SC and ST connectors
- Convenient carrying case
- Includes consumables for LIGHTCRIMP connector terminations
  - For additional LIGHTCRIMP connector terminations, order additional polishing films 228433-9, 228433-8, 228433-7 and 228433-5 (page 76)
- Includes instructional CD-ROM video

MT-RJ Jack Termination Tool Kit

Part Number 1278346-1

Product Facts

- Includes all tools needed for installing MT-RJ and MT-RJ SECURE Jacks

MT-RJ Plug Termination Tool Kit

Part Number 1278745-1

Product Facts

- Includes all tools needed to terminate MT-RJ Plug in handy plastic case
- Contents: Cleave pen, Jacket/Buffer/Coating Stripper, KEVLAR Shears, Strip Template, Cable Clamps, Cure Fixtures, Crimp Tool, Die Sets, Epoxy Dispensers

LIGHTCRIMP PLUS Termination Tool Kits

Product Facts

- Includes all tools needed for installing the listed type LIGHTCRIMP PLUS no epoxy/no polish connectors, MT-RJ and MT-RJ SECURE Jacks
- LIGHTCRIMP PLUS Connector Termination Video CD-Rom also available separately, Part Number 1374503-1
- Convenient carrying case

Description	Part Number
Universal LIGHTCRIMP PLUS No epoxy/No polish Tool Kit (SC, LC and ST)	1278118-4
LIGHTCRIMP PLUS LC Connector Termination Tool Kit	1754845-1
LIGHTCRIMP PLUS SC Connector Termination Tool Kit	1278022-1
LIGHTCRIMP PLUS ST Connector Termination Tool Kit	492697-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Tooling (Continued)

No Epoxy/No Polish Upgrade and Adaptive Termination Tool Kits

Product Facts

- **Upgrade Tool Kit supplements existing LIGHTCRIMP PLUS Tool Kits with tools needed to install LC connectors**
- **Adaptive Tool Kits supplements existing fiber optic tool kits with the tools needed to terminate**

LIGHTCRIMP PLUS connectors

- **Saves money on full tool kit by reusing tools from currently owned tool kits**

Description	Terminates	Includes	Cost Savings	Part Number
LC LIGHTCRIMP PLUS Upgrade Kit	LIGHTCRIMP PLUS LC	LC Die Set and Cable Holder	Low Cost Upgrade for Current Tool Kit	1754847-1
LC LIGHTCRIMP PLUS Adaptive Kit	LIGHTCRIMP PLUS LC	Crimp Tool, LC Die Set, LC Cable Holder, Cleave Tool and Instruction Sheet	Fiber and Cable Strippers in Current Tool Kit	1754846-1
SC LIGHTCRIMP PLUS Adaptive Kit	LIGHTCRIMP PLUS SC	Crimp Tool, SC Die Set, SC Cable Holder, Cleave Tool and Instruction Sheet	Fiber and Cable Strippers in Current Tool Kit	1754737-1
Combination LIGHTCRIMP PLUS Adaptive Kit	LIGHTCRIMP PLUS SC and ST	Crimp Tool, SC and ST Die Sets, SC and ST Cable Holders, Cleave Tool and Instruction Sheets	Fiber and Cable Strippers in Current Tool Kit	1754739-1
ST LIGHTCRIMP PLUS Adaptive Kit	LIGHTCRIMP PLUS ST	Crimp Tool, ST Die Set, ST Cable Holder, Cleave Tool and Instruction Sheet	Fiber and Cable Strippers in Current Tool Kit	1754738-1

LIGHTCRIMP PLUS Cable Holders

Product Facts

- **Used in LIGHTCRIMP PLUS connector terminations (included in LIGHTCRIMP PLUS Tool Kits)**

Description	Figure	Part Number
LC	—	1754138-1
SC	B	1278023-1
ST	A	492703-1

Fiber Optic Cleave Tool

Part Number 492674-1

Product Facts

- **Cleave fibers for LIGHTCRIMP PLUS connectors, MT-RJ and MT-RJ SECURE Jacks**
- **One is included in most tool kits for MT-RJ Jacks and LIGHTCRIMP PLUS connectors (not the LC Upgrade Kit)**
- **Easy to use: clamp, score and bend**
- **Blade life-span is » 1000 cleaves**

"New" Fiber Optic Cleave Tool

Part Number 1871696-1

Product Facts

- **Operator independent**
- **Cleaving length 4mm, 6mm and 8mm**
- **More than 10k cleaves**
- **Cleaved surface angle < 1.5 degree**
- **No fracture**
- **No roll off**
- **No lip**

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Tooling (Continued)

LIGHTCRIMP Termination Tool Kits

Product Facts

- Includes all tools needed for installing the listed type LIGHTCRIMP no epoxy/ polish connectors
- Convenient carrying case
- Includes consumables for installing 60 LIGHTCRIMP connectors
  - For additional LIGHTCRIMP terminations, order additional polishing films 228433-9, 228433-8, 228433-7 and 238433-5 (page 76)
- Note: photo is representative of kits — contents may vary by Part Number

Description		Microscope (if listed)	Part Number
LIGHTCRIMP SC	Termination Kit	—	503706-1
		Premium Microscope	503706-2
LIGHTCRIMP ST	Termination Kit	—	503330-1
		Premium Microscope	503330-2
	Mini Tool Kit	—	492322-1
LIGHTCRIMP SC and ST	Termination Kit	—	503957-1
		Premium Microscope	503957-2
	Mini Tool Kit	—	492543-1

LIGHTCRIMP Cleave Tool

Part Number 503705-1

Product Facts

- Used in both SC and ST LIGHTCRIMP Connector terminations
- Included in the Deluxe and LIGHTCRIMP Tool Kits

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Tooling (Continued)

Pro-Installer Epoxy/Polish Connector Termination Tool Kits

Product Facts

- Includes all tools necessary to install SC, ST, and FC Connectors
  - For LC terminations, also order Part Number 1754462-1
- Tool kits include:
  - Pro-Crimper II Hand Tool and crimping dies
  - Polishing bushings
  - Polishing film (also sold separately, page 76)
  - Cable and fiber strippers
  - Scissors
  - Scribe tool
- Includes polishing films to install 60 epoxy/polish connectors
  - Epoxy is sold separately (see page 75)
- Kits available with curing oven and microscope or without
- Convenient carrying case
- Photo is representative of kits — contents vary by Part Number

Professional Installer Kit

Description	Part Number
With 110 V Curing Oven and Microscope	501258-7
With 220 V Curing Oven and Microscope	501258-8
Without Curing Oven or Microscope	501258-9

Epoxy/Polish Connector Termination Tool Kits

Product Facts

- Includes all tools necessary to install the listed epoxy/polish connectors
  - For LC terminations, also order Part Number 1754603-1
- Tool kits include:
  - Pro-Crimper II Hand Tool and crimping dies
  - Polishing bushings
  - Polishing film (also sold separately, page 76)
  - Cable and fiber strippers
  - Scissors
  - Scribe tool
- Includes polishing films to install » 60 epoxy/polish connectors
  - Epoxy is sold separately (see page 75)
- Does not include curing oven or microscope
- Convenient carrying case

Description	Part Number
SC and FC	503746-7
ST	503746-1
FSMA	503746-2
FSD	503746-6

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Tooling (Continued)

Cable Stripper
Part Number 1375317-1

Product Facts

- **Cyclops Stripper ideal for stripping twisted pair (UTP and STP) and fiber optic cables up to 10.92 [0.43] diameter**

Sapphire-Tipped Scribe Tool and Accessories

Product Facts

- **Long-lasting sapphire blade**
- **Pen-type casing**
- **Used to install all Epoxy/ Polish Connectors**
- **Included in Epoxy/Polish Tool Kits**

Description	Part Number
Sapphire-tipped Scribe Tool	504064-1
Replacement Blades	504290-1

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Tooling (Continued)

Epoxy/Polish LC Termination Accessories

Product Facts

- Supplement epoxy/polish tool kits on page 73 with these components to terminate LC Epoxy/Polish Connectors
- Different polishing films are required for LC polishing (see table on page 69 and films on page 76)

Description	Part Number
LC Polishing Puck — Polymer	1915196-1
LC Polishing Puck — Metal	1754074-1
LC Cable Preparation Template	1588756-1
LC Hand Tool and Die Set	1588176-1
LC 1.25mm Ferrule Microscope Adapter	1278997-1
LC Oven Block Assembly	1457628-1
LC Adaptive Kit — Anaerobic Epoxy Style	1754603-1
LC Adaptive Kit — Heat Cure	1754462-1

EPO-TEK 353ND Epoxy

Part Number 504035-1

Product Facts

- For use with SC and LC Connectors
- Pre-measured two-part packets for consistent results
- Long pot life once mixed (4 hours)
- Heat-cured epoxy
- Supplied in 4-gram packets
- Cures in 15 minutes at 115° C

TRA-CON Epoxies

Part Number 501195-4

Product Facts

- For use with SC, LC, ST, FSD, FC, and FSMA Connectors
- Pre-measured two-part packets for consistent results
- Can be heat-cured or cured at ambient temperature
- Supplied in 2-gram packets
- Each packet terminates » 250 connectors
- 25 packets per pack
- Pot life = 30 minutes
- Cures in:
  - 24 hours @ 25° C
  - 2 hours @ 65° C
  - 10 minutes @ 110° C

HYSOL Epoxy-Tubes

Part Number 502418-1

Product Facts

- For use with SC, LC, ST, FSD, FC, and FSMA Connectors
- Two-part epoxy in two tubes
- Heat-cured epoxy
- Terminates » 400 connectors
- One set of two (2) tubes per part number
- Pot life = 30 minutes
- Cures in 30 minutes at 100° C

QC Quick Cure Adhesive

Product Facts

- One-part adhesive eliminates the hassle and mess of mixing
- Applies easily and cures in minutes without heat or UV light
- Works with standard multimode epoxy-style connectors without performance degradation
- Faster procedure for time-saving productivity and lower installed costs
- Not for use with singlemode terminations

Tube Size	Typical Connector Terminations Per Tube*	Part Number
3 grams	100	492508-1

*Your individual termination techniques will affect the number of terminations per tube.

Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Tooling (Continued)

Epoxy Applicator Syringe Part Number 501473-3

Product Facts

- 3 cc capacity

Epoxy Curing Oven

Product Facts

- Reduces time required to cure epoxy
- Provides a uniform, controlled curing environment
- Used for all epoxy/polish connectors
- Comes equipped to cure up to four Duplex Connectors and 12 Simplex Connectors at once
  - Optional blocks reconfigure to 8 Duplex or 24 Simplex Connectors
- Variable temperature control (60°C to 125°C)
- Includes thermometer and cable support bracket
- Two voltage options
- Curing sleeves on page 79

Description	Part Number
110 VAC	502134-1
220 VAC	502134-2
Adapter Block for 8 Duplex Connectors	502222-1
Adapter Block for 24 Single Connectors	502129-1
Block Assembly for 1.6, 2.0 & 2.4mm SC and FC (metal crimp body) and LC Connectors	1757628-1

Polishing Films

Description	Part Number							
	FSMA	Multimode ST	Singlemode ST	FC	FSD/RSD	SC	LIGHTCRIMP XTC	LC
Hand Polishing Film: (Pack of 10 sheets)								
15µm	—	—	—	—	—	—	228433-9	—
9 mm***	—	—	—	—	—	—	—	1374484-1
5µm	228433-8	228433-8	228433-8	228433-8	228433-8	228433-8	228433-8	228433-8
1µm	228433-7	228433-7	—	—	228433-7	—	228433-7	—
Fine Diamond Film*	—	—	—	—	—	—	—	503887-1
0.3µm	228433-5	228433-5	228433-5	228433-5	228433-5	228433-5	228433-5	228433-5
Final Polish Film*	—	—	502748-2	502748-2	—	502748-2	—	—
Consumables Kit**	502306-1	502306-1	502306-2	502306-2	502306-1	502306-2	—	—

*Pack of 5.
**Contains all consumable supplies for at least 100 connectors.
***Pack of 15.

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Tooling (Continued)

Inspection Microscope

Product Facts

- Optimal visual examination of terminated ends
  - 500um field of view
- Dual illumination
  - Coaxial for inspecting polish quality
  - Oblique for general conditions
- Pre-centered, threaded adapter mount provides easy focusing and changing of connectors
- Field and laboratory examination for multimode and singlemode fibers
- Portable
- Integral infrared filter for safety
  - Do NOT use any microscope to view active fiber signals
- Disposable, Type LR44 batteries
- Long-life LED (approximately 100,000 hours of operation)
- Each Kit includes:
  - 10-power objective microscope with an impact resistant ergonomic rubber shell and high quality glass optics
  - 20-power eyepiece
  - Padded carrying case with an integrated belt loop and internal adapter storage pocket
  - Neck lanyard with safety breakaway feature
  - Universal 2.5mm ferrule adapter (for SC, ST and FC)
- Other adapters available are:
  - Universal 1.25mm (adapts LC and MU)
  - MT-RJ
  - MPO
  - MPO APC
  - MPX
  - MPX APC

Description			Part Number
Inspection Microscope			1754767-1
Adapters	1.25 mm Universal	LC and MU	1754765-1
	2.5 mm Universal	SC, ST and FC	1754766-1
	MT-RJ		1754768-1

DANGER: Active fibers should never be viewed through a microscope.

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Tooling (Continued)

Inspection Microscope Kits

The Inspection Microscope is designed specifically for visual examination of terminated or cleaved ends of singlemode and multimode fibers in both field and laboratory applications. This portable, hand-held unit provides magnification for optimum detection of flaws. It operates on battery power. The complete microscope kit includes a handy carrying case, tripod stand, and all adapters needed to inspect the following connectors: FSMA, FSD, ST, FC, F07 and SC.

See chart below for specific Microscope Part Numbers.

Product Facts

- **Pre-centered adapter mount provides quick, easy focusing, and changing of connectors**
- **Kg-3 infrared filter to protect the user**
- **Durable, lightweight A.B.S. plastic microscope body**
- **Lockable, high-density polyethylene, double-well carrying case with anti-static foam cutouts**

Microscope with 10x Objective Kits

Components Description	Part Number	Qty.	Adapter Markings	Microscope Kit	
				502970-1	502970-3
100x Microscope (10x Eyepiece)	502978-1	1	—	yes	—
200x Microscope (20x Eyepiece)	502978-2	1	—	—	yes
FSMA	502971-1	1	FSMA	yes	yes
D4	502975-1	1	D4	yes	yes
Universal 2.5 mm**	502977-1	1	—	yes	yes
LC 1.25 ferrule adapter	1278997-1	1			
FC/APC adapter (not included with kit)	504617-1	1	—	—	—
SC/APC adapter (not included with kit)	504618-1	1	—	—	—
Batteries					
"AA" Alkaline	—	2	—	yes	yes
Bulb, 2.8V Lamp Red on/off Switch	502964-1	1	—	yes	yes
Bulb, 2.5V Lamp Green on/off Switch	1278471-1	1	—	—	—
Tripod	502965-1	1	—	yes	yes
Carrying Case	—	1	—	yes	yes
Accessories					
20x Eyepiece	502969-2	—	—	—	Included
10-20x Zoom Eyepiece	502969-3	—	—	—	—
10x Eyepiece	502969-1	—	—	Included	—
Adapters 100x Microscope Version					
F07	492547-1	—	—	—	—
MT-RJ	492749-1	—	—	—	—
MPO	492414-1	—	—	—	—
MPO APC	492415-1	—	—	—	—
LIGHTRAY MPX Connectors	492526-1	—	—	—	—
LIGHTRAY MPX APC Connectors	492527-1	—	—	—	—
ESCON	492477-1	—	—	—	—

** Inspects ST, SC, FC, FSD and RSD connectors.

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Hand Tools

Tooling (Continued)

PRO-CRIMPER II Hand Tool
Instruction Sheet 408-4020

PRO-CRIMPER II Hand Tool

Connector	Cable Jacket Diameter (mm)	Part Number		
		Hand Tool w/ Die Set	Hand Tool Only	Die Set Only
FSMA	3.0	58551-1	58532-1	58552-1 (hex die)
ST Ceramic	3.0	58433-4	58532-1	58424-1
ST Stainless Steel	3.0	58433-4	58532-1	58424-1
ST Polymer Composite	3.0	58433-4	58532-1	58424-1
ST Ceramic Used with Loose Tube	3.8	—	58532-1	503890-1
ST Stainless Steel (504XXX series only)	3.0	58551-1	58532-1	58552-1
SC/FC (Polymer crimp body)	3.0	503911-1	58532-1	503910-1
	2.4 & 3.0	492026-1	58532-1	492025-1
SC, FC (Metal crimp body)	1.6-2.0, 2.4	1588176-1	58532-1	1588175-1
SC/FC (Metal crimp body)	3.0	—	58532-1	492131-1
MPO		1588698-1	—	—
FSD - Ceramic	DUALAN & LDD	58519-1	58532-1	58510-1
FSD - Polymer	DUALAN & LDD	58519-1	58532-1	58510-1
FSD/MC - Ceramic	DUALAN & LDD	58519-1	58532-1	58510-1
FSD Breakout Kit	DUALAN & Protection Kit	58519-1	58532-1	58510-1
LIGHTCRIMP Plus and LIGHTCRIMP ST	3.0	492623-1	58532-2	492622-1
LIGHTCRIMP Plus and LIGHTCRIMP SC	3.0	492782-1	58532-2	492783-1
LIGHTCRIMP Plus LC		1754137-1	58532-1	1754136-1
MT-RJ Plug	1.8	1278632-1	58532-1	1278627-1
LC	3.0, 2-4, 1.6-2.0	1588176-1	58532-1	1588175-1

Polishing Bushing, Curing Sleeves and Strip Card Kits

Connector	Cable Jacket Diameter (mm)	Part Number		
		Polishing Bushing	Curing Sleeves/Pieces	Strip Card Kit
FSMA	3.0	228025-1	502249-1 (12 pcs.)	501818-1
ST				
Ceramic, Stainless Steel	3.0	503337-1 (Metal) 503304-1 (Black Polymer)	502259-1 (12 pcs.)	501818-1
Polymer Composite	3.0	503304-1 (Beige Polymer)	502259-1 (12 pcs.)	501818-1
FC	3.0	504862-1	502862-2 (6 pcs.)	1754636-1
SC	3.0	502631-1 (Black Polymer)	502656-1 (1 pc.)	1754636-1
LC		1754074-1 (Metal) 1918196-1 (Black Polymer)	1457630-X[1] (12 pcs.)	1588756-1
FSD - Ceramic & Polymer	DUALAN & LDD	501795-1*	502023-1**	501818-1

* Curing Assembly Kit with polishing bushing.
** Curing Assembly Kit without polishing bushing.
[1] -1 LC 900µm
-2 LC jacketed cable

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MPO Connectors

Product Facts

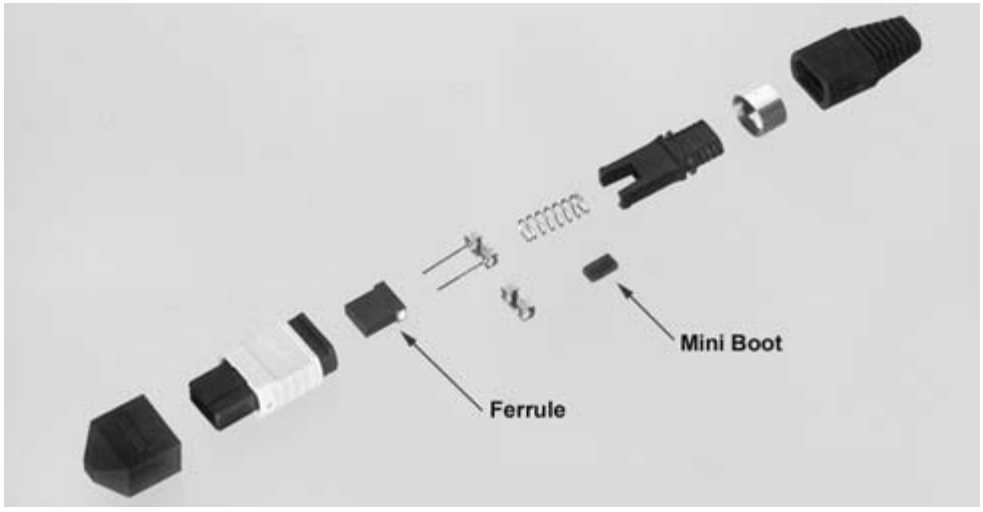
- Tested to Telecordia GR-1435
- Push Pull Latching
- 4, 8, 12, OR 24 fibers
- Color-coded housings differentiate singlemode and multimode:
  - Multimode - Beige
  - Singlemode - Green
- Manufactured to IEC Standards 1754-7 and TIA/EIA 604-5

Industry Standard

Performance Characteristics

Singlemode
Insertion Loss (Typ) — 0.25 dB
Insertion Loss (Max) — 0.75 dB
Return Loss — > 55 dB

Multimode
Insertion Loss (Typ) — 0.2 dB
Insertion Loss (Max) — 0.5 dB
Return Loss — > 20 dB



MPO Connector Kit Selection - Plug Kits

Fiber Type	Female (no pins)	Male (with pins)
Singlemode	6457981-1	6457981-2
Multimode	6457983-1	6457983-2

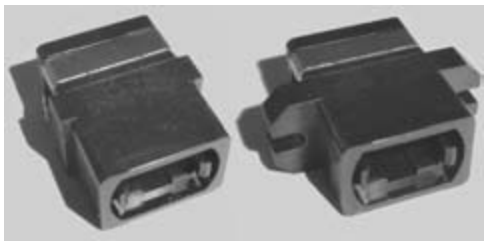
Note: Ferrules and Mini-Boots are sold separately. See chart below for proper part numbers.

MPO Ferrule Kit with Mini-Boot

Fiber Type	4 Position	8 Position	12 Position
Singlemode	5492221-1	5492221-2	5492221-3
Multimode	5503839-1	5503839-2	5503839-3

Crimping Tool with Dieset

1588698-1



MPO Adapters

Adapter Type	Single Pack	50 pc Bulk Pack
Adapter w/flange	1588172-1	1588172-5
Adapter w/flange and clip	1588172-2	1588172-6
Adapter w/o flange	1588172-3	1588172-7
Adapter w/o flange and clip	1588172-4	1588172-8

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