

Cable Assemblies & Connectors

Cable assemblies used in patch panels (Fiber Distribution Units) are an essential interface between fiber outside plant cable and optical equipment.

They also provide interconnect capabilities between equipment and distribution panels and equipment to equipment.



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Standard Cable Assemblies

Cable assemblies are single-mode or multimode optical fiber cable terminated on both ends with a connector. 3M factory mounting capabilities assure the highest transmission quality.

Pre-Connectorized Multi-Fiber Cable

3M offers a variety of cables terminated at one or both ends with the connector of your choice for easy installation in vault to frame applications.

Fanouts

The 12-fiber Accuribbon* Fanout is pre-connectorized for easy termination in the Fiber Distribution Frame by mechanical or fusion splicing.

Cable Assembly Connector Materials

Product	Connector		Alignment Sleeve		Boot
	Housing	Ferrule	Single-mode	Multi-mode	
SC	engineering thermoplastic	zirconia ceramic	zirconia ceramic	zirconia ceramic	polyester
SC Angled	engineering thermoplastic	8° angle zirconia ceramic	zirconia ceramic	—	polyester
ST*	nickel plated zinc	zirconia ceramic	zirconia ceramic	zirconia ceramic	Estane®
ST* Push Pull	engineering thermoplastic	zirconia ceramic	zirconia ceramic	zirconia ceramic	santoprene
FC/PC	engineering thermoplastic	zirconia ceramic	zirconia ceramic	zirconia ceramic	polyester
FC Angled	engineering thermoplastic	8° angle zirconia ceramic	zirconia ceramic	zirconia ceramic	polyester

Note: The plug of the Biconic style connector is composed of 70% silica filled epoxy.

Number of matings for all products is 500 (except the Multimode Biconic, which is 1000 matings).

Operational Temperature for all products is from -40° to 80° C. (Operational temperature is for the connector only and is cable dependent.)

Storage Temperature for all products is from -40° to 85° C.

SC Cable Assemblies

These assemblies are designed for the most advanced fiber optic systems requiring exceptional stability, low reflections (single-mode) and high density. They can be converted from simplex to duplex quickly and easily using the SC Duplex Clip.

Specifications

Attenuation 1300 (dB):

Single-mode: mean 0.25, sigma 0.1

Multimode: mean 0.15, sigma 0.05

Reflection (dB):

Single-mode: -50, mean -58

Multimode: -25, mean -27

Connection durability (dB):

Single-mode: <0.2 change

Multimode: <0.2 change

SC Angled PC Cable Assemblies

This style of single-mode 8° angle-polished connector was designed to minimize reflections to a mean of -80 dB, meeting the system requirements of the cable TV industry and other high-speed digital systems.

Specifications

Attenuation 1300 (dB):

Single-mode: mean 0.25, sigma 0.1

Reflection (dB):

Single-mode: -70, mean -80

Connection durability (dB):

Single-mode: <0.1 change

3M™ Fiber Optic Products

ST* Bayonet Connector Cable Assemblies

These bayonet style cable assemblies are supplied with a high quality PC finish on zirconia ceramic ferrules. The finish results in a positive contact of two mated fibers and assures low attenuation and reflected power. This product line provides high repeatability and low light loss for premises, LAN, and telco applications. They are compatible with the Systimax® components as well as other ST* products.

Specifications

Attenuation 1300 (dB):

Single-mode: mean 0.25, sigma 0.15

Multimode: mean 0.15, sigma 0.05

Reflection (dB):

Single-mode: -50, mean -58

Multimode: -25, mean -27

Connection durability (dB):

Single-mode: <0.1 change

Multimode: <0.2 change

ST* Push-Pull Connector Cable Assemblies

These connector assemblies are designed to incorporate a push-pull latching mechanism that allows insertion straight into the coupling using the housing or boot. It is resistant to lateral and axial pull giving increased reliability. Field conversion to duplex is quick and easy using the Push-Pull Duplex Clip.

Specifications

Attenuation 1300 (dB):

Single-mode: mean 0.25, sigma 0.1

Multimode: mean 0.15, sigma 0.05

Reflection (dB):

Single-mode: -50, mean -58

Multimode: -25, mean -27

Connection durability (dB):

Single-mode: <0.2 change

Multimode: <0.2 change

FC/PC Cable Assemblies

These are factory polished assemblies that provide high optical performance and minimize reflected power to -50 dB, use 3M's pre-radiused PC zirconia ceramic technology.

Specifications

Attenuation 1300 (dB):

Single-mode: mean 0.25, sigma 0.1

Multimode: mean 0.15, sigma 0.05

Reflection (dB):

Single-mode: -50, mean -58

Multimode: -25, mean -27

Connection durability (dB):

Single-mode: <0.2 change

Multimode: <0.2 change

FC Angled Cable Assemblies

These are single-mode FC 8° angle-polished connectors that minimize reflections to a mean of -80 dB. They are designed to meet the system requirements of the cable TV industry and other high-speed digital systems.

Specifications

Attenuation 1300 (dB):

Single-mode: mean 0.20, sigma 0.1

Reflection (dB):

Single-mode: -70, mean -80

Connection durability (dB):

Single-mode: <0.1 change

Standard Cable Assembly Ordering Jumpers & Pigtails

XXXXX-XXXXXX

<p>Mode:</p> <p>A=Single-mode 3M supplied connector and cable</p> <p>B=Multimode 3M supplied connector and cable</p> <p>Connector End #1:</p> <p><i>Single-mode</i></p> <p>AA=Biconic</p> <p>AM=ST* (Bayonet)</p> <p>DA=SC, Standard Density</p> <p>DG=SC, High Density</p> <p>EP=SC 8° Angle, Standard Density</p> <p>EJ=Push/Pull ST*</p> <p>EN=FC/PC</p> <p>EU=FC 8° Angle</p> <p><i>Multimode (125 μm)</i></p> <p>AB=Biconic</p> <p>AN=ST* (Bayonet)</p> <p>DB=SC, Standard Density</p> <p>AZ=FDDI</p> <p>EK=Push/Pull ST*</p> <p>EM=FC/PC</p> <p>Connector End #2:</p> <p>(Use same codes as End #1)</p> <p>00=Pigtail</p>	<p>Cable Lengths:</p> <p>0001=1 meter</p> <p>02.5 =2.5 meters</p> <p>0003=3 meters</p> <p>0005=5 meters</p> <p>0010=10 meters</p> <p>Cable Type:</p> <p><i>Siecor Single-mode Cable/Corning Fiber</i></p> <p>AT=Jacketed</p> <p>AU=Unjacketed</p> <p>BW=Jacketed duplex</p> <p><i>AT&T Single-mode Fiber and Cable</i></p> <p>MK=Jacketed</p> <p>MQ=Unjacketed</p> <p><i>Berktek Multimode</i></p> <p>GA=62.5/125 Duplex Jacketed FDDI</p> <p><i>Siecor Multimode Cable/Corning Fiber</i></p> <p>ZJ=50/125 Jacketed</p> <p>AX=50/125 Jacketed Duplex</p> <p>AF=62.5/125 Jacketed</p> <p>AQ=62.5/125 Jacketed Duplex</p>
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Example:

AEPEP-MK0010

Single-mode

SC 8° angle to SC 8° angle, Standard density,

AT&T jacketed cable, 10 meters

Pre-connectorized, Multi-fiber Cable Assembly Ordering

These assemblies are pre-terminated for use in applications such as intra-building networks and military field applications. They are manufactured with your choice of connector at one or both ends of the cables. These single-mode assemblies are tested to meet specific fiber connector requirements.

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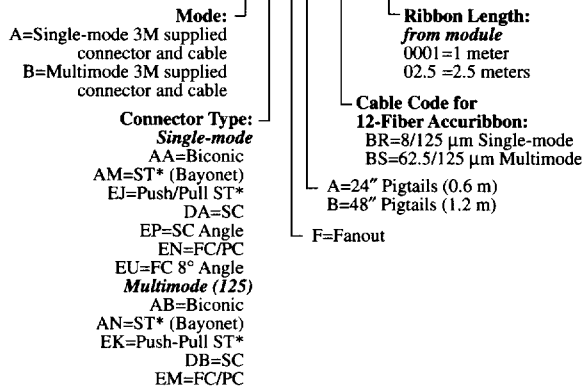
<p>Cable Assembly Information:</p> <p>A=Single-mode 3M supplied connector and cable</p> <p>Connector End #1:</p> <p><i>Single-mode</i></p> <p>AA=Biconic</p> <p>AM=ST* (Bayonet)</p> <p>EJ=Push/Pull ST*</p> <p>DA=SC</p> <p>EP=SC Angle</p> <p>EN=FC/PC</p> <p>EU=FC 8° Angle</p> <p>Connector End #2:</p> <p>(Use same codes as End #1)</p> <p>00=Pigtail</p>	<p>Cable Lengths:</p> <p>0010=10 meters</p> <p>20.5 =20.5 meters</p> <p>0025=25 meters</p> <p>Cable 1:</p> <p><i>Single-mode</i></p> <p><i>Siecor, 900 μm sub-units</i></p> <p>EA=4 fiber</p> <p>EB=6 fiber</p> <p>GY=12 fiber</p> <p>EC=24 fiber</p> <p>ED=36 fiber</p> <p>EE=72 fiber</p> <p><i>Siecor, 2.4 mm sub-units</i></p> <p>GJ=6 fiber</p> <p>FW=1 fiber</p>
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Accuribbon® Fanout Ordering

This is a pre-connectorized assembly which can be mechanically or fusion spliced to 12-fiber ribbon for termination in the fiber distribution frame. It is separated into individual fibers which are protected with 1.7 mm PVC tubing and terminated with connections.

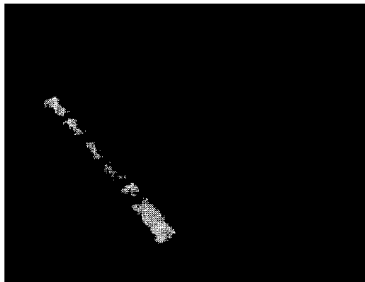
The Accuribbon fiber is transitioned through a small plastic module. The terminated ends of the fibers are spaced 24 or 48 inches from the fanout module. The length of the Accuribbon extending from the module is specified by the customer.

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Note: Order Accuribbon Fanouts in multiples of two for the same cable code.

SC Connectors and Accessories



3M SC Connectors are for advanced fiber optic systems requiring exceptional stability, low reflections (single-mode), and high density. They are designed to enhance performance and cable retention and to

provide a readily field mountable connector. SC connectors have a push-pull coupling mechanism for easy insertion and high repeatability. This versatile connector offers easy installation in both long and short transmission lines, subscriber networks, and premise environments.

SC connectors are available in three styles: epoxy, Hot Melt, and Crimplok™. The Hot Melt and Crimplok SC connectors are specifically intended for ease of termination in local area networks (LANs), and meet the requirements of system and cabling level standards. SC connectors comply with NTT, JIS, ISO/IEC, and TIA/EIA component and ISO/IEC, CENELEC, ANSI, TIA/EIA-568A and BISC system and cabling level standards.

Epoxy SC Connectors are available in single-mode and multimode utilizing epoxy adhesive.

Hot Melt SC Connectors are in multimode, preloaded with hot melt adhesive, enabling a field termination in less than two minutes for multiple terminations.

Crimplok SC Connectors combine the speed of non-adhesive connectors with the performance characteristics of epoxy and hot-melt connectors. They

are the ideal solution for emergency restoration work or for quickly making fiber connections at a desk.

Crimplok SC connectors were designed to save time in installation, to provide rugged, reliable performance, and to install cleanly and simply with fewer parts and tools. Additionally, since there is no fiber splice or second joint inside the connector, there is no added attenuation at the connection.

Specifications

Connector Durability (after 500 matings): <0.2 change (SC Connector 6900 is <0.22 change)

Temperature (operating and storage): -40 to 85°C/-40 to 185°F

(SC Connector 6300 and 6900 operating range is -40 to 60°, 6900 storage is C-40 to 80°C.)

Cable Tension (in service)

Straight Pull: <0.5 dB increase at 7.5 lb. (SC Connector 6900 is <0.12 dB increase at 20 lb.)

Side Pull: <0.5 dB increase at 3 lb. (Crimplok has no side pull statistics.)

Material:

Connector Ferrule: zirconia ceramic

Connector Housing & Body: engineering thermoplastic

Boot: polyester (SC Connector 6900 is elastomer resin)

Flame Retardancy: UL-94 V-O

SC Connectors

Product	UPC	Mode	Type	Size	Attenuation	Reflection
6300	91725	Multi	Hot Melt	125 μm	<0.2 dB typical	≤25 dB typical
6306	91724	Multi	Epoxy	125 μm	<0.2 dB typical	≤25 dB typical
6900	92815	Multi	Crimplok	125 μm	<0.3 dB typical	≤27 dB typical
8306	91722	Single-	Epoxy	126 μm	<0.3 dB typical	≤45 dB typical
8307	91723	Single-	Epoxy	127 μm	<0.3 dB typical	≤45 dB typical

UPC prefix 054007..

SC Couplings

Product	UPC	Description	Operating Temperature	Material
8310	48713	standard density	-40 to 85°C/-40 to 185°F	*
8313	92464	duplex, standard density	-40 to 75°C/-40 to 167°F	*

UPC prefix 054007..

* Housing material is engineering thermoplastic. Sleeve material is zirconia ceramic.

SC Single-Mode Attenuators

Product	UPC	Housing	Attenuation	Reflection	Operating Temperature
8315	92465	Buildout block	—	-40 dB typical	-40 to 149°F (-40 to 65°C)
8312	92463	Buildout	0	-40 dB typical	-40 to 149°F (-40 to 65°C)
8325	92466	Buildout	5 ± 1 dB	-40 dB typical	-40 to 149°F (-40 to 65°C)
8326	92467	Buildout	10 ± 1 dB	-40 dB typical	-40 to 149°F (-40 to 65°C)
8327	92468	Buildout	15 ± 1.5 dB	-40 dB typical	-40 to 149°F (-40 to 65°C)
8328	92469	Buildout	20 ± 1 dB	-40 dB typical	-40 to 149°F (-40 to 65°C)

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