

# CATALOGUE

TILCOM  
20 YEARS RELIABLE PARTNER

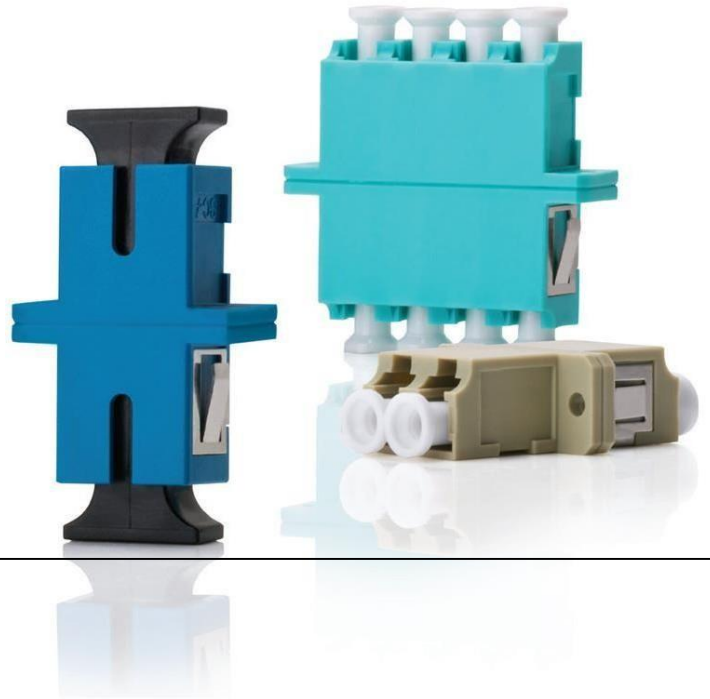
# FIBER OPTIC PRODUCTS

## Fiber Optic Adapter

### Description

Fiber optic adapter, sometimes also named coupler, is a small device used to connect two fiber optic connectors in the fiber optic lines. The adapters offer more precise alignment of the tips of the connectors (ferrules), and ensure light sources to be transmitted at most and with lower loss.

Available in a variety of interfaces including FC, SC, ST, LC, MU, E2000, MTRJ, MPO, MTP, etc. Most of the options are offering with a choice of zirconia or phosphor bronze sleeves for singlemode or multimode applications.



### APPLICATIONS

- > **CATV System**
- > **Local Area Networks**
- > **Telecommunication Networks**
- > **FTTH and FTTx**
- > **Optical communication equipment**
- > **Fiber LAN**
- > **Data processing networks**

### FEATURES

- > **Compatible and works with all rack-mount and wall-mount enclosures**
- > **Available without flange or with flange for duplex, saving panel space**
- > **High Precision of Mechanical Dimensions**
- > **Available Ceramic or PB Sleeves**
- > **Available Hybrid Adaptors/Shutter Adaptor**
- > **Available in several standard colors**
- > **Compliant with Telcordia GR26-Core, IEC, TIA**

## Fiber Optic Adapter

Optical Performance	Unit	Single Mode	Multi-Mode
Insertion Loss (IL)	dB	$\leq 0.20$	
Exchangeability	dB	$\leq 0.2$	
Repeatability (500 remates)	dB	$\leq 0.3$	
Sleeve Material	-	Zirconia&Phosphor Bronze	
Housing Material	-	Plastic&Metalic	
Operating Temperature	° C	- 20 ~ +75°C	
Storage Temperature	° C	- 40 ~ +85°C	

## Fiber Optic Attenuator

### Description

Fiber optic attenuator is a passive device used to reduce the amplitude of a light signal without significantly changing the wave form itself. This is often a requirement in Dense Wave Division Multiplexing (DWDM) and Erbium Doped Fiber Amplifier (EDFA) applications where the receiver cannot accept the signal generated from a high-power light source.



### APPLICATIONS

- > **Simple structure**
- > **Low Insertion Loss and Back Reflection**
- > **Definable Attenuation from 1dB to 30dB**
- > **PC,UPC and APC Polish Types**
- > **Available with FC,SC,ST,LC and MU Terminations**
- > **Compact design**

### FEATURES

- > **Telecommunications Applications**
- > **Local Area Network**
- > **FTTH and FTTx**
- > **DWDM Applications**
- > **EDFA**
- > **Test & Measurement**
- > **Optical Fiber Sensors**
- > **CATV system**

## Fiber Optic Attenuator

Optical Performance	M-F Plug Type/ In line Type	F-F Adaptor Type
Operating Wavelength	SM 1260-1600nm MM 1260-1320nm	
Testing Wavelength	SM: 1310nm / 1550nm	1310nm
	MM: 850nm / 1300nm	
Attenuation Accuracy	1-9 dB 0.5dB	
	10-30dB 10%of Attenuation Value	
Return Loss	≥50 dB (UPC)	N/A
	≥ 60 dB (APC)	
Input Power (Max.)	200mW	
Durability	<0.20 dB Typical, 1000 matings	
Operating Temperature	- 20 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

## Fiber Optic Connector

### Description

Fiber optic connector is a mechanical device used to align and join two or more fibers together to provide a means for attaching to and decoupling from a transmitter, receiver, or any other fiber optic equipment or devices. Ferrules are used to do the precise alignment for the connectors. Single mode needs higher precision for alignment.



### APPLICATIONS

- > CATV Networks
- > Telecommunication Networks
- > Local Area Networks
- > FTTH and FTTx
- > Active Device Termination
- > Testing Instruments

### FEATURES

- > Superior Quality Standard UPC/APC Polishing
- > Low cost
- > Customer Defined Specifications
- > Ease of installation
- > Environmental Stable
- > Low Insertion Loss & back Reflection
- > Connector Kits is also available

## Fiber Optic Connector

Optical Performance	Single Mode	Multi Mode
Insertion Loss	≤0.25dB	≤0.25dB
Return Loss	≥50dB(UPC)	≥30dB
	≥60dB(APC)	
Ceramic Ferrule Spec	125.5um concentricity deviations:<1um	127um concentricity deviations:<3um
Insert-Pull Test	500 times < 0.3dB	
Operation Temperature	- 20 ~ +75°C	
Suitable Fiber	UPC/APC(9/125um)	UPC(50/125um,62.5/125um)

## Field Installable Connector (Fast connector)-SC Type

### Description

Field Installable Connector (Fast connector) is a perfect solution for field working and FTTH connection. It is widely used for where need to quick connection, providing a quickly assembling and stable performance. When engineers work in field for installation, maintenance, repair of optical fiber, or FTTH indoor terminate, they can use it easily because it has no epoxy, no polishing. FIC is designed inside ferrule with fiber stuff and pre-polishing in the factory. It provides a perfect ferrule endface quality. This has great help to protect user's equipment interface and reduce the connector loss.



### Applications

- >Telecom Distribution and Local Area Networks
- >FTTH and FTTx
- >Passive optical networks [ATM, WDM, Ethernet]
- >Broadband, Cable TV(CATV)
- >Maintenance or emergency restoration of fiber networks
- >Optical access network
- >Optical cable interconnection

### Features

- >No epoxy and polishing required
- >Quick and easy fiber termination
- >High success rate of connections
- >No special tools required.
- >Fiber can be reseated.
- >Precision mechanical alignment insures low insertion loss
- >Uses proven, molded v-groove technologies
- >Comply with TIA/EIA and IEC



# Field Installable Connector (Fast connector)-SC Type

## Product length

50mm ≤L≤60mm(≈60mm)

## Optical Characteristics

Category	Specification		
Applicable for	Drop cable. Indoor cable		
Fiber mode	Single mode or Multi mode		
Operation time	S	About 50(no fiber cut)	
Insertion Loss	dB	≤0.5	
Insertion Loss Typical value	dB	0.3	
Return Loss	dB	≥45	
Fastening strength of naked fiber	N	≥5	
Tensile strength	N	≥50	
Reusable	Time	≥10 times	
Operating Temperature	°C	-40~+85	
On-line tensile strength(20N)	dB	ΔIL≤0.3	
Mechanical durability(500 times)	dB	ΔIL≤0.3	
Drop-off test(drop-off height4m,once per direction, totally 3 times)	dB	ΔIL≤0.3	

## Environmental performance requirements

Category	Specification			
	Condition	IL Variation	RL Variation	Appearance
High TEMP	110°C , 200H	≤0.5	≤5	No mechanical damage, like deformation, cracking and untight
Low TEMP	-40°C , 200H	≤0.5	≤5	
TEMP Cycling	-40~85°C , 3.5H/Cle, 100C	≤0.5	≤5	
HAST	110°C , 90%RH,200H	≤0.5	≤5	

Immersion	25°C,200H	≤0.5	≤5	
Salt Mist	5% Nacl, 6.5<PH<7.5, 35°C ,200H	≤0.5	≤5	

## Field Installable Connector (Fast connector)-SC TYPE

### Mechanical Performance Requirements

Category	Specification			
	Condition	IL Variation	RL Variation	Appearance
Impact	Height: 4m; 1 drop each axis; 3 cycles	≤0.5	≤5	No mechanical damage, like deformation, cracking and untight
Vibration	Frequency: 10 ~ 50HZ; Sweep: 45 times / min; amplitude: 0.75mm; Duration:30min each axial	≤0.5	≤5	
Torsional	Pull: 15N; The distance between Loading location and fast connector: L = 22- 28cm; Rate: 10times / min.Times: 200	≤0.5	≤5	
Tensile	Pull: 50N; The distance between Loading location and fast connector: L = 22-28cm; Duration:1min.	≤0.5	≤5	

## Fiber Optic SC Auto Shutter Adapter

### Description

Fiber optic adapter, sometimes also named coupler, is a small device used to connect two fiber optic connectors in the fiber optic lines. The adapters offer more precise alignment of the tips of the connectors (ferrules), and ensure light sources to be transmitted at most and with lower loss.

Auto shutter adapter developed to offer the highest level of dust and laser protection available, the SC Auto Shutter Adapter is ideal for the FTTH application. It is easy-to-use and is safe enough for unskilled workers.



### APPLICATIONS

- > CATV System
- > Local Area Networks
- > Telecommunication Networks
- > FTTH and FTTx

### FEATURES

- > Shutter open and close automatically;
- > 2. The shutters are designed to prevent ingress of dust and also to prevent accidental exposure to laser;
- > 3. Easy assembling, with the push type shutter, it's more convenient for assembling, also keep the function of protective dust cap.

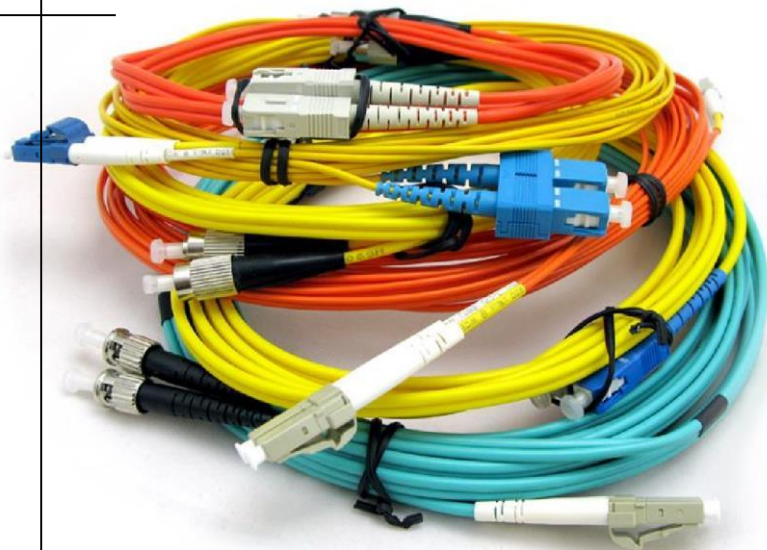
## Fiber Optic SC Auto Shutter Adapter

Optical Performance	Unit	Single Mode
Insertion Loss (IL)	dB	$\leq 0.20$
Exchangeability	dB	$\leq 0.2$
Repeatability (500 remates)	dB	$\leq 0.3$
Sleeve Material	-	Zirconia
Housing Material	-	Plastic&Metalic
Operating Temperature	° C	- 20 ~ +75°C
Storage Temperature	° C	- 40 ~ +85°C

## Fiber Optic Patch Cord

### Description

TILCOM provides an extensive line of high performance fiber optic passive products. Using up-to-date technology, advanced manufacturing equipment, and strict quality control & management ensures long life and excellent quality of our products, deliver high stability under a range of application conditions for todays stringent optical networks. All the passive products comply with Telcordia GR -326 -Core, TIA/EIA and IEC.



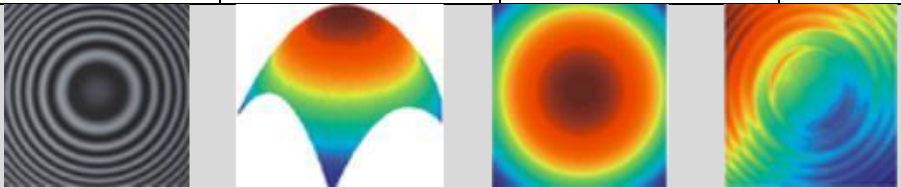
### APPLICATIONS

- > Telecommunication network
- > CATV system
- > Local Area Network
- > Active/Passive device
- > FTTH and FTTx
- > Data Center
- > Enterprise

### FEATURES

- >100 % optically tested (Insertion loss)
- > Perfect random mating performance
- > Customer length
- > Various connector types available
- > Singlemode (OS2) and multimode (OM1, OM2, OM3, OM4, OM5) are available
- > Environmental stable

## Fiber Optic Patch Cord

Optical Performance	Single Mode		Multi Mode	
Insertion Loss	≤0.20dB		≤0.30dB	
Return Loss	≥50dB(UPC)		≥30dB	
	≥60dB(APC)			
Repeatability	≤0.10dB			
Durability	≤0.2dB typical change,1000 matings			
Operating Temperature	- 20 ~ +75°C			
Storage Temperature	- 40 ~ +85°C			
Endface Geometry				
Parameter	2.5μm ferrule		1.25μm ferrule	
	UPC	APC	UPC	APC
Radius of Curvature	10~25mm	5~12mm	7~25mm	5~12mm
Apex Offset	0~50μm	0~50μm	0~50μm	0~50μm
Fiber Height	-100~50nm	-100~100nm	-100~50nm	-100~100nm
Angle	--	7.7 - 8.3degree	--	7.7 - 8.3degree
3D - Geometry (Customer request)				

## Fiber Optic Patch Cord

### 1. LC



#### Long Form

- Lucent Connector/Little Connector/Local Connector
- Typical Applications
- High-density connections, SFP and SFP+ transceivers, XFP transceivers

### 2. SC



#### Long Form

- Subscriber Connector/Square Connector/Standard Connector
- Typical Applications
- Datacom and telecom; GPON; EPON; GBIC



### 3. FC

#### Long Form

- Ferrule Connector or Fiber Channel
- Typical Applications
- Datacom, telecom, measurement equipment, single-mode lasers

### 4. ST



#### Long Form

- Straight Tip
- Typical Applications
- Datacom

6. LSH



**Long Form**

- Miniature Unit

**Typical Applications**

- LANs and telecommunication network



**Typical Applications**

- Telecom, DWDM systems



## Fiber Optic PLC Splitter

### Description

Fiber optic splitter is a network component that distributes incoming light (one or two input fibers) in equal parts towards multiple output fibers (2-64). Splitters are available with 250  $\mu\text{m}$  bare fibers, 900 $\mu\text{m}$  buffered fibers and 2.0 mm cords. Input and output cords and fibers can have various lengths and can be terminated by optical connectors. TILCOM fiber optic splitters can be integrated inside several products and/or applications in combination with keel fiber or cable management systems.



All products meet Telcordia 1209 and 1221 reliability requirements and are certified by TLC for network deployment.

### APPLICATIONS

- > Telecommunications networks
- > CATV system
- > Optical equipment
- > Fiber optic sensors
- > FTTH & FTTx

### FEATURES

- > Wide Operating wavelength from 1260-1650nm
- > Low excess loss & High performance
- > Good uniformity & Low PDL
- > Small package size
- > Various connector type & Package Size available

## Fiber Optic PLC Splitter

Parameters	1x2 Port	2x2 Port	1x4 Port	2x4 Port	1x8 Port	2x8 Port	1x16 Port	2x16 Port	1x32 Port	2x32 Port	1x64 Port	2x64 Port
Operating Wavelength(nm)	1260 ~ 1650											
Fiber Type	G652D/G657A1/G657A2											
Insertion Loss(dB)	3.8	4.1	7.1	7.4	10.2	10.8	13.5	14.3	16.8	17.3	20.5	21
Uniformity(dB)	0.4	1	0.6	1.5	0.8	1.5	1.2	2	1.5	2	2	2.5
Return Loss(dB)	55	55	55	55	55	55	55	55	55	55	55	55
PDL(dB)	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.35	0.5
Directivity (dB)	55	55	55	55	55	55	55	55	55	55	55	55
Temperature Stability(-40 ~ 85°C)(dB)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Operating Temperature (°C)	-25 ~ 70											
Storage Temperature (°C)	-25 ~ 70											
Mini Module Dimension (LxWxH)	60x7x4	60x7x4	60x7x4	60x7x4	60x7x4	60x7x4	60x12x4	60x12x4	80x20x6	80x20x6	100x40x6	100x40x6
ABS Box Dimension (LxWxH)	100x80x10	100x80x10	100x80x10	100x80x10	100x80x10	100x80x10	120x80x18	120x80x18	120x80x18	120x80x18	140x115x18	140x115x18
Bare Fiber Dimension (LxWxH)	40x4x4	40x4x4	40x4x4	40x4x4	40x4x4	40x4x4	50x7x4	50x7x4	50x7x4	50x7x4	60x12x4	60x12x4

Note: Add an additional 0.3dB loss per connector.