Connectors

- Multi-fiber optical connector
- Field installable optical connector
- Backplane connector
- Mechanical splices
- Multi-fiber connectorized cords
- Connectorized optical fiber circuits
An easy and reliable connection can be achieved by simply attaching connectors to optical fiber cords or cables. A variety of connectorized optical fiber cords, cables and adapters are available. For details on optical fiber cords and cables, please refer to "Optical Fiber Telecommunication Cables" catalog.

**Features**

- All conform with JIS and international standards.
- Connectors that are appropriate to your requirements can be selected from among many options.
- A variety of combinations is available with a selection of single fiber, tape fiber, and polishing method.
### SC CONNECTOR

- Compliant standard: F04 (JIS C5973), IEC 60874-14
- Compatible optical fiber: SM, GI
- Cord type: 2mm/2.8mm cord; 0.9mm fiber

#### PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat polishing</td>
<td>≤ 0.6dB</td>
<td>≤ 0.7dB</td>
</tr>
<tr>
<td>PC polishing</td>
<td>≤ 0.3dB</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Super PC polishing</td>
<td>–</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Angled PC polishing</td>
<td>–</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Super PC polishing</td>
<td>–</td>
<td>≥ 40dB</td>
</tr>
</tbody>
</table>

### SC2 CONNECTOR

- Compliant standard: F04 (JIS C5973), IEC 60874-14
- Compatible optical fiber: SM, GI
- Cord type: 2mm/2.8mm cord; 0.9mm fiber

NOTE: A dedicated tool is required for mating and unmating connectors.

### SCH Connector

- Compliant standard: F04 (JIS C5973), IEC 60874-19
- Compatible fiber: SM, GI
- Cord type: 2mm/2.8mm cord

### SCF Connector

- Compliant standard: F04 (JIS C5973), IEC 60874-19
- Compatible fiber: SM, GI
- Cord type: 2mm/2.8mm cord

#### PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat polishing</td>
<td>≤ 0.6dB</td>
<td>≤ 0.7dB</td>
</tr>
<tr>
<td>PC polishing</td>
<td>≤ 0.3dB</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Super PC polishing</td>
<td>–</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Angled PC polishing</td>
<td>–</td>
<td>≥ 40dB</td>
</tr>
</tbody>
</table>

- Insertion loss
- Return loss
MU Connector

Compliant standard: F14 (JIS C5983), IEC 61754-6
Compatible optical fiber: SM, GI
Cord type: 2mm cord; 0.9mm fiber

MUJ Connector

Compliant standard: F14 (JIS C5983), IEC 61754-6
Compatible optical fiber: SM, GI
Cord type: 2mm cord; 0.9mm fiber

MU Connector (Duplex Type)

Compliant standard: F14 (JIS C5983), IEC 61754-6
Compatible optical fiber: SM, GI
Cord type: 2mm cord; 0.9mm fiber

LC Connector

Compliant standard: TIA/EIA-604-10
Compatible optical fiber: SM, GI
Cord type: 2mm cord; 0.9mm fiber

LC Connector (Duplex Type)

Compliant standard: TIA/EIA-604-10
Compatible optical fiber: SM, GI
Cord type: 2mm cord

PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>G62.5/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>PC polishing</td>
<td>≤ 0.3dB</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td></td>
<td>Super PC polishing</td>
<td>–</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Return loss</td>
<td>Super PC polishing</td>
<td>–</td>
<td>≥ 40dB</td>
</tr>
</tbody>
</table>

Fiber Type
- G50/125
- G62.5/125
- SM10/125

Insertion loss
- PC polishing ≤ 0.3dB ≤ 0.5dB
- Super PC polishing – ≤ 0.5dB

Return loss
- Super PC polishing – ≥ 40dB
PANDA Connectors (Polarization Maintaining Fiber Connectors)

PM-SC Connector

Compliant standard: F04 (JIS C5973), IEC 60874-14
Compatible optical fiber: SM.15-P, SM.13-P
Cord type: 0.4mm fiber, 0.9mm fiber

PM-FC Connector

Compliant standard: F01 (JIS C5970)
Compatible optical fiber: SM.15-P, SM.13-P
Cord type: 0.4mm fiber, 0.9mm fiber

PM-SUS Ferrule

Compatible optical fiber: SM.15-P, SM.13-P
Cord type: 0.25mm fiber, 0.9mm fiber

<table>
<thead>
<tr>
<th>PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polishing</td>
</tr>
<tr>
<td>Insertion loss</td>
</tr>
<tr>
<td>Return loss</td>
</tr>
<tr>
<td>Polarization crosstalk</td>
</tr>
<tr>
<td>Axial alignment</td>
</tr>
</tbody>
</table>

NOTE: Can accommodate a variety of polarization maintaining fibers.

SM.85-P is also available. For more detail, please contact us.

* Unless otherwise ordered, the stress applying axis (X axis) is aligned to the key of the connector.
## Optical Connectors

### FC Connector
- Compliant standard: F01 (JIS C5970), IEC 60874-7
- Compatible optical fiber: SM, GI
- Cord type: 2mm/2.8mm cord; 0.9mm fiber

### ST Connector
- Compliant standard: IEC 60874-10
- Compatible optical fiber: SM, GI
- Cord type: 2mm/2.8mm cord

*Compatible with AT&T products*

### Performance

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>G62.5/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>Flat polishing</td>
<td>≤ 0.6dB</td>
<td>≤ 0.7dB</td>
</tr>
<tr>
<td></td>
<td>PC polishing</td>
<td>≤ 0.3dB</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td></td>
<td>Super PC polishing</td>
<td>–</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td></td>
<td>Angled PC polishing</td>
<td>–</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td>Return loss</td>
<td>Super PC polishing</td>
<td>–</td>
<td>≥ 40dB</td>
</tr>
<tr>
<td></td>
<td>Angled PC polishing</td>
<td>–</td>
<td>≥ 60dB</td>
</tr>
</tbody>
</table>

### SMA Connector
- Compliant standard: IEC 874-2
- Compatible optical fiber: GI
- Cord type: 2.8mm cord

### D4 Connector
- Compliant standard: F02 (JIS C5971), IEC 60874-8
- Compatible optical fiber: SM, GI
- Cord type: 2.8mm cord

### MIC Connector
- Compatible optical fiber: GI
- Cord type: 2.8mm cord

### DP Connector
- Compliant standard: F11 (JIS C5980), IEC 60874-15
- Compatible optical fiber: SM, GI
- Cord type: 2mm cord

### DJ Connector
- Compliant standard: F11 (JIS C5980), IEC 60874-15
- Compatible optical fiber: SM, GI
- Cord type: 2mm cord; 0.9mm fiber

**NOTE:** The shape of the connector for SM is different from that for GI.

**NOTE 1:** A 906D type connector is used.
**NOTE 2:** Not compatible with a 905D type connector.
MT Connector

Compliant standard: F12 (JIS C5981), IEC 60874-16
Compatible optical fiber: SM (2-fiber, 4-fiber, 8-fiber, 12-fiber), GI (2-fiber, 4-fiber, 8-fiber, 12-fiber)
Cord type: Fiber ribbon, ribbon cord

PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>Standard grade (Note 1)</td>
<td>≤ 0.5dB</td>
</tr>
<tr>
<td></td>
<td>Low loss grade (Note 2)</td>
<td>–</td>
</tr>
</tbody>
</table>

NOTE1: Insertion loss condition: matching grease used.
NOTE2: For 12-fiber connector, please contact us.
NOTE3: Matching grease (SC-107) is an optional material.

2D-MT Connector

Compatible optical fiber: SM (8-fiber x 2, 12-fiber x 2), GI (8-fiber x 2, 12-fiber x 2)
Cord type: Fiber ribbon, ribbon cord

PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>Flat polishing</td>
<td>≤ 0.6dB</td>
</tr>
<tr>
<td></td>
<td>Angled PC polishing</td>
<td>≤ 1.0dB</td>
</tr>
</tbody>
</table>

MPO Connector

Compliant standard: F13 (JIS C5982), IEC 61754-7
Compatible optical fiber: SM (2-fiber, 4-fiber, 8-fiber, 12-fiber), GI (2-fiber, 4-fiber, 8-fiber, 12-fiber)
Cord type: Fiber ribbon, ribbon cord

PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>Standard grade</td>
<td>≤ 1.0dB</td>
</tr>
<tr>
<td></td>
<td>Low-loss grade (Note 1)</td>
<td>–</td>
</tr>
</tbody>
</table>

NOTE1: The low-loss type is available with 8 fibers at maximum.
NOTE2: The connector is available with two types: one with guide pin and the other without.

LIGHTRAY MPX Connector

Compatible optical fiber: SM (2-fiber, 4-fiber, 8-fiber, 12-fiber), GI (2-fiber, 4-fiber, 8-fiber, 12-fiber)
Cord type: Fiber ribbon, ribbon cord

PERFORMANCE

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>Standard grade</td>
<td>≤ 1.0dB</td>
</tr>
<tr>
<td></td>
<td>Low-loss grade (Note 1)</td>
<td>–</td>
</tr>
</tbody>
</table>

NOTE1: The low-loss type is available with 8 fibers at maximum.
NOTE2: The connector is available with two types: one with guide pin and the other without.
NOTE3: LIGHTRAY MPX is a trademark of Tyco Electronics Corporation.
MT-RJ Connector

**Performance**

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>G50/125</th>
<th>G62.5/125</th>
<th>SM10/125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss PC polishing</td>
<td>≤ 0.4dB</td>
<td>≤ 0.7dB</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: The connector is available with two types: one with guide pin and the other without.

Compatible optical fiber: SM, GI
Cord type: 2-fiber dedicated cord

MT Clamp Spring and Guide Pins

Tool for MT Connector

ADAPTERS FOR MULTIFIBER CONNECTORS

MPO Adapter (MPO-A)

MT-RJ Adapter (MTRJ-A)

LIGHTRAY MPX Adapter

NOTE: LIGHTRAY MPX is a trademark of Tyco Electronics Corporation.
**SC Adapter (FSC-A)**

NOTE: Other adapter for Angled PC polished Connector is available.

**SC Adapter (Metal Housing / FSC-AM)**

NOTE: Other adapter for Angled PC polished Connector is available.

**SC2 4-port Adapter (FSC2-4A)**

**SCH Adapter (FSCH-A)**

**SCF Adapter (FSCF-A)**

**FC/SC Conversion Adapter (FFC-FSC-A)**

**SC/ST Conversion Adapter (FSC-FST-A)**

**MU Adapter (MU-A)**

**LC Duplex Adapter (LCW-A)**

NOTE: Adapter for LC BTW (Behind the wall) Connector is also available.

**LC Adapter (LCS-A)**

**FC Adapter (FFC-A)**

**FC/ST Conversion Adapter (FFC-FST-A)**

**ST Adapter (FST-A)**

**SMA Adapter (FSMA-A)**

**D4 Adapter (FD4-A)**

**MIC Adapter (MIC-A)**
The following explains the model name and display tables on polishing methods and cords applicable to individual connector.

1. **Optical connector name**
   - Indicates a connector to be attached.
   - When attaching two different connectors to both ends, indicate them like FFC/FSC.

2. **Distinction between single end and both ends, and fiber type**
   - Indicates a single end or both ends. Also shows a fiber type.
     - Single end: 1; Both ends: 2
     - GI type: P; SM type: PS

3. **Polishing method**
   - Indicates a polishing method.
     - Flat polishing: Blank or PF; PC polishing: PC, Super PC: SPC; Angled PC: APC
   - When different polishing methods are used at both ends:
     - They are indicated like PF/PC, the order of which is required to correspond to connectors.

   Examples:
   - FFC-2PS-PF/PC-3M-SMC10/125 (Shows one end is the Flat polishing, and the other end the PC polishing.)
   - FFC/FSC-2PS-PC/SPC-5M-SMC10/125-S (Shows the FC type connector is PC polished, and the SC type connector is Super PC polished.)

   See the following tables for polishing methods applicable to individual connectors.

4. **Cord length**
   - Indicates the cord length in meter unit.
     - Length tolerance: less than 1m +10cm . 0
     - more than 1m and less than 10m +10% . 0
     - more than 10m and less than 100m +1m . 0
     - more than 100m +2% . 0

5. **Fiber type**
   - Indicates a fiber type.
     - GI cord: GC (cord color: light green)
     - SM cord: SMC (cord color: yellow)
     - PANDA: SM.13-P, SM.15-P

* Connectorized cords with dispersive shift fibers are also available. Please contact us.

6. **Fiber size**
   - Indicates a fiber size.
     - Write the core diameter (mode field diameter) and the cladding diameter only.
     - Transmission loss and transmission frequency band are not included in the model name.

7. **Cord**
   - Indicates a cord size.
     - ø2, single fiber: S
     - ø2, zip cord: 2SR
     - ø2.8, single fiber: Blank
     - ø2.8, zip cord: 2R
     - PANDA 400µ: UV/UV-400
     - PANDA 900µ: UV/NY-900

For fibers and cords applicable to each connector, see the tables below.

* Please contact us about items not referred to above.
* There are cases when the connector shapes and colors are different from those indicated above depending on a combination of fiber and cord types and polishing methods.
* Connection loss and return loss are measured conforming with JIS C5961

---

### Polishing methods and cords applicable to each connector

#### GI

<table>
<thead>
<tr>
<th>Connector</th>
<th>Polishing</th>
<th>Fiber/cord diameter</th>
<th>Cord</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC</td>
<td>PF</td>
<td>ø0.9</td>
<td>ø2</td>
</tr>
<tr>
<td>SC</td>
<td>PC</td>
<td>ø0.9</td>
<td>ø2</td>
</tr>
<tr>
<td>ST</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>LC</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>MU</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>MUU</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>D4</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DP</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DJ</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SMA</td>
<td>O</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SCF</td>
<td>O</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SCH</td>
<td>O</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Mic</td>
<td>O</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

#### SM

<table>
<thead>
<tr>
<th>Connector</th>
<th>Polishing</th>
<th>Fiber/cord diameter</th>
<th>Cord</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC</td>
<td>PF</td>
<td>ø0.9</td>
<td>ø2</td>
</tr>
<tr>
<td>SC</td>
<td>PC</td>
<td>ø0.9</td>
<td>ø2</td>
</tr>
<tr>
<td>SC2</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>ST</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>LC</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>MU</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>D4</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DP</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DJ</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SMA</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SCF</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SCH</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Mic</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

SCF : Duplex SC (horizontal), SCH : Duplex SC (vertical)
DP : D type plug, DJ : D type jack
MU : MU type plug, MUJ : MUJ type plug

## Optical fiber ribbon cord with multi-fiber connector assembled.

### Features

- Can accommodate 2-fiber, 4-fiber and 8-fiber tapes.
- A batch connection shortens plugging time.
- Enhances the storage efficiency in termination boxes, termination racks, etc.

### Model Name

<table>
<thead>
<tr>
<th>Model Name</th>
<th>4MPOM - 2PS - LM - SMC 10/125 - 4T</th>
</tr>
</thead>
</table>

1. **Optical connector name**
   - Indicates a connector to be attached.
   - When attaching two different types of connector to both ends, specify them like 4MT/4MPOM. Polishing methods are indicated as follows:
     - MT: Flat polishing
     - MPO: Angled PC polishing
     - MTRJ: PC polishing
     - For the MPO connector, with guide pin and without are indicated as follows:
       - MPOM: with guide pin
       - MPOF: without guide pin

2. **Cord length**
   - Indicates the cord length in meter unit. Tolerances are as follows:
     - Length tolerance: less than 1m: ±10cm
     - more than 1m and less than 10m: ±10%
     - more than 10m and less than 100m: ±1m
     - more than 100m: ±2%

3. **Fiber type**
   - Indicates a fiber type.
     - GI cord: GC (cord color: light green)
     - GI fiber: G
     - SM cord: SMC (cord color: yellow)
     - SM fiber: SM

4. **Fiber size**
   - Indicates a fiber size.
     - Write the core diameter (mode field diameter) and the cladding diameter only. Transmission loss and transmission frequency band are not included in the model name.

5. **Number of fibers**
   - Indicates how many fibers are used.
     - 2T: 2 fibers
     - 2T1: 2 fibers (only for MTRJ)
     - 4T: 4 fibers
     - 8T: 8 fibers (only for SM)

### Polished shape of single-fiber connectors

- **Flat polishing:** (Blank or PF)
- **PC polishing:** (PC)
- **Super PC polishing:** (SPC)
- **Advanced PC polishing:** (AdPC)
- **Ultra PC polishing:** (UPC)
- **Angled PC polishing:** (APC)

* The Angled PC is available with two types: 8˚ and 9˚. Specify which when ordering.
FO (Fan-out) cords are batch fusion-possible termination cords to be attached to tape fiber cables.

**Features**
- Accommodate 2-fiber, 4-fiber, and 8-fiber ribbons.
- A batch connection shortens plugging time.
- Enhance the storage efficiency in termination boxes, termination racks, etc.

### Model Name

<table>
<thead>
<tr>
<th>Number of fibers</th>
<th>Fiber type</th>
<th>Optical connector name</th>
<th>Polishing method</th>
<th>Single-fiber cord length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4FO - SM - FFC/PC/L1M - 4MPOM/L2M - S</td>
<td>2FO: 2 fibers</td>
<td>GI type: GI; SM type: SM</td>
<td>Flat polishing: Blank (PF); Super PC polishing: SPC</td>
<td>Dia.8mm x L40mm</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Multi-fiber connector**
- Indicates a type of multi-fiber connector.
  - 2MT, 4MT, 8MT
  - MTRJM, MTRJF
  - MTRJM: with guide pin
  - MTRJF: without guide pin
- 2MPOF, 4MPOF, 8MPOF
- MPOM: with guide pin
- MPOF: without guide pin
- For MTRJ/MPO connectors, specify "with guide pin" or "without."
Polishing methods are indicated as follows:
- MT: Flat polishing
- MTRJ: PC polishing
- MPO: Angled PC polishing

**Tape length**
- Indicates tape length in meter unit.
- The maximum available length is 1000m (provided in reel form)

**Branched end size**
- Indicates branched end sizes.
  - S for 2FO/4FO: Dia.8mm x L40mm
  - M for 8FO: Dia.10mm x L50mm

When branching at both ends, the model name will be like this:

2-4FO - SM - FFC/PC/L1M - L2M - FFC/PC/L3M-S

(Example) 2-4FO - SM - FFC/PC/L1M - L2M - FFC/PC/L3M-S
Optical fiber cable with connectors assembled.

**Features**

- Plugging in optical fiber cables can be achieved in a remarkably shorter time.
- Directly connectable to transmission equipment, thus making the use of termination boxes unnecessary.

Please specify cable name, cable length, lead length, connector type and polishing method when ordering.

The cable length refers to an end-to-end length (see the illustration).

Connectors are available in various types such as FC and SC. For more information, refer to the section “Single-fiber Connectorized Optical Fiber Cords” and “Multi-fiber Connectorized Optical Fiber Cords”.

(Polishing methods are also tabulated in those sections for your selection.)

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**End Processing of Connectorized Optical Fiber Cables**

For connectorized cables, the following processings are available to protect connectors and leads. Specify the desired ones when ordering.

- **B-processing (pay)**
  
  Leads put in protective pipes and simplified tensile termination processing (300N) applied to the ends.

- **C-processing (pay)**
  
  Leads put in protective pipes and the ends covered with water proof caps.

- **E-processing (free)**
  
  Cable is coiled, connectors covered with air caps and fixed with lapping.

**Tensile Termination Processing (pay)**

Tensile termination can be attached to the ends of non-connectorized cables for cable installation.