

MTP®/MPO Harnesses

For Storage Area Network (SAN), Local Area Network (LAN) switch, and Equipment Distribution Area (EDA) patch field applications



MTP®/MPO Harnesses

MTP®/MPO harnesses are factory terminated and tested to deliver verified optical performance and reliability for improved network integrity. They comprise 8, 12, 16, or 24 fibers cables that terminate in an MTP®/MPO connector on one end and 4, 6, 8, or twelve pairs of LC/SC/ST/FC/MDC connectors on the other. MTP®/MPO connectors minimize insertion loss, decrease equipment wear and tear, and ensure a physically secure connection. This enables seamless migration from duplex-based 10G systems to 40G and 100G MTP® applications based on parallel optics for Storage Area Network (SAN), Local Area Network (LAN) switch, and Equipment Distribution Area (EDA) patch field applications.

Features

- US Conec MTP® Connector with Optimal 0.35dB Low Insertion Loss
- Corning Bend-insensitive Fiber Allows Tighter Cable Bends for Slack Storage and Routing
- Color-Coded Connector Boots for Easy Identification
- Available in OS2, OM3, and OM4 Fiber
- MTP®/MPO-12 Available in 8, 12, 24, 36, 48, 72, 96, and 144 Fiber Counts
- MTP®-24 Available in 24, 48, 72, 96, and 144 Fiber Counts
- Available in Plenum (OFNP) and LSZH Cable Jacket
- Available in Female (Pinless) and Male (Pinned)
- Available in Type A and Type B Standard Polarity
- Pulling Eyes are Provided As An Option To Protect the Fiber Ends During Installation

Standards Compliance

| Component | Governing Body | Standard Code |
|------------------------|----------------|-----------------------------|
| Cable | EIA/TIA | 568 |
| Single Mode Fiber | ITU-T | G.657-A1 |
| Connectors | IEC | 61754-7 |
| Connectors | TIA | 604-5 |
| Multi-Fiber Connectors | Telcordia | GR-1435-CORE |
| Fiber and Connectors | RoHS | 2011/65/EU and (EU)2015/863 |

Transmission Distance

Multimode fiber backbone cabling distances for 10 Gbps, 40 Gbps, and 100 Gbps applications.

| Backbone Application | Standard Specified Max. Distance | | |
|---------------------------|----------------------------------|---------------|---------------|
| | OM3 | OM4 | OM5 |
| 10GBASE-SR (850nm) | 300m (984ft) | 400m (1312ft) | 400m (1312ft) |
| 40GBASE-SR4 | 100m (328ft) | 150m (492ft) | 150m (492ft) |
| 40G BiDi | 100m (328ft) | 150m (492ft) | 200m (689ft) |
| 40GBASE-eSR4 | 300m (984ft) | 400m (1312ft) | 400m (1312ft) |
| 40G SWDM4 | 240m (787ft) | 350m (1148ft) | 440m (1444ft) |
| 100GBASE-SR10 | 100m (328ft) | 150m (492ft) | 150m (492ft) |
| 100GBASE-SR4 | 70m (230ft) | 100m (328ft) | 100m (328ft) |
| 100GBASE-eSR4 | 200m (689ft) | 300m (984ft) | 300m (984ft) |
| 100G SWDM4 | 75m (246ft) | 100m (328ft) | 150m (492ft) |

Construction

| Connector Type | |
|-----------------------------|--|
| Connector A | MTP®, MPO |
| Connector B | LC Duplex, SC Duplex, LC Simplex, SC Simplex, FC Simplex, ST Simplex, MDC Duplex |
| Connector Gender (MTP®/MPO) | Female, Male |
| Connector Brand (MTP®) | US Conec |
| Polish Type | UPC, APC |
| Cable Jackets | |
| OS2 9/125 µm | Yellow |
| OM4 50/125 µm | Magenta |
| OM3 50/125 µm | Aqua |
| MTP® Connectors | |
| OS2 9/125 µm | Green |
| OM4 50/125 µm | Aqua (UPC), Green (APC) |
| OM3 50/125 µm | Aqua |
| LC/MDC Connectors | |
| OS2 9/125 µm | Blue (UPC), Green (APC) |
| OM4 50/125 µm | Beige |
| OM3 50/125 µm | Beige |
| Connector Boots | |
| MTP®-8 | Gray |
| MTP®/MPO-12 | Black |
| MTP®-16 | Black |
| MTP®-24 | Red |

| | OS2 9/125 μm | OM4 50/125 μm | OM3 50/125 μm |
|---------|---|--|---|
| MTP®-8 |  |  |  |
| MTP®-12 |  |  |  |
| MTP®-16 |  |  | - |
| MTP®-24 |  |  |  |
| MPO-12 |  |  | - |
| LC |  |  |  |
| MDC |  | - | - |

Mechanical Characteristics

| Fiber Count | Outside Diameter | | | Tensile Load | |
|------------------------------|------------------|-------------------|--------------------|--------------|------------|
| | Trunk | Breakout (Duplex) | Breakout (Simplex) | Long-term | Short-term |
| MTP®/MPO-12 Harnesses | | | | | |
| 8 Fibers | 3.0mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 12 Fibers | 3.0mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 24 Fibers | 7.2mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 36 Fibers | 9.3mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 48 Fibers | 9.5mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 72 Fibers | 11.7mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 96 Fibers | 12.0mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 144 Fibers | 17.3mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| MTP®-16 Harnesses | | | | | |
| 16 Fibers | 3.0mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| MTP®-24 Harnesses | | | | | |
| 24 Fibers | 3.0mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 48 Fibers | 7.2mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 72 Fibers | 9.3mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 96 Fibers | 9.5mm | 2.0mm | 2.0/0.9mm | 80N | 240N |
| 144 Fibers | 11.7mm | 2.0mm | 2.0/0.9mm | 80N | 240N |

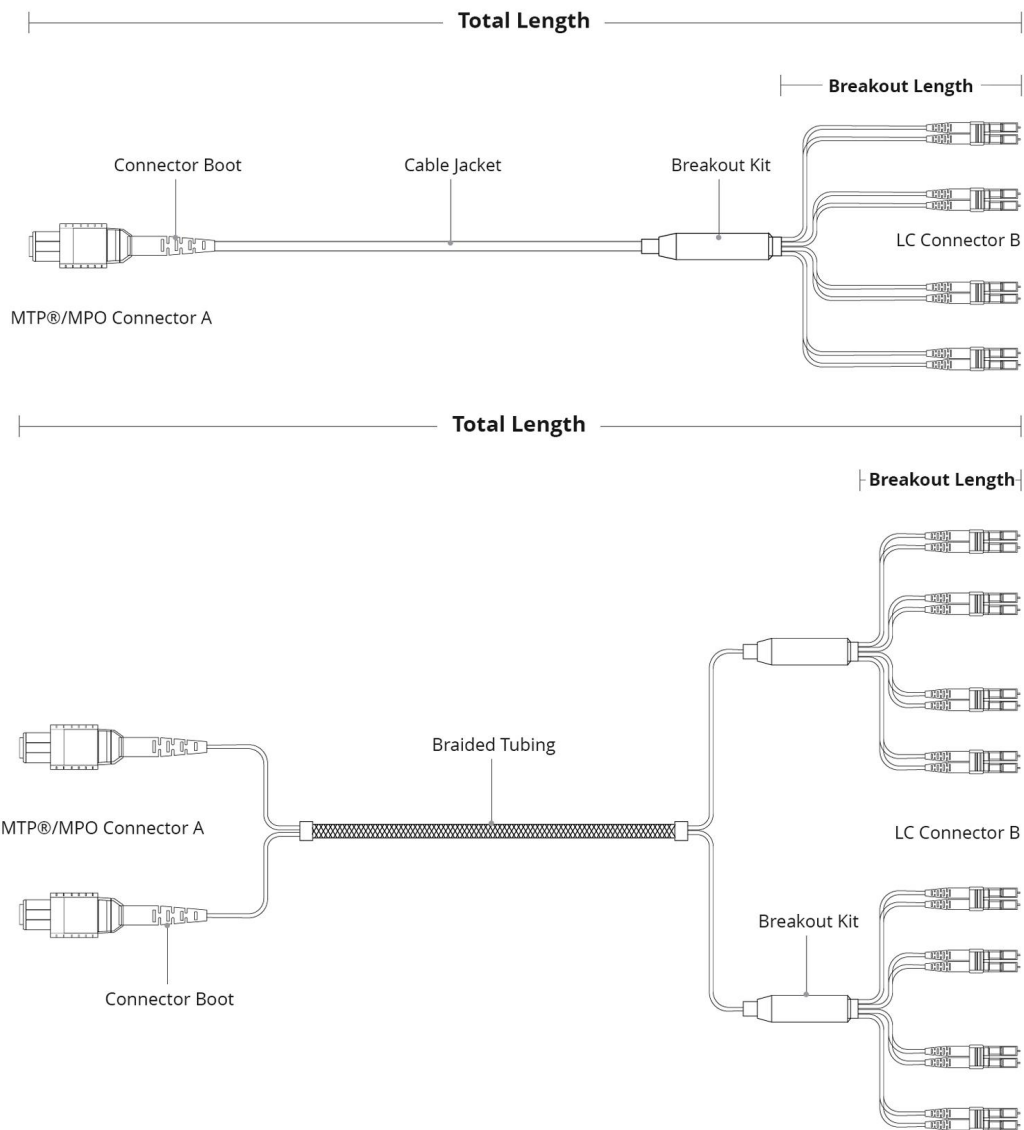
Note:

- As for MTP®/MPO-12 cables, the 24 fibers indicate 2 bundles (2x 12F). And as for MTP®/MPO-24 cables, the 48 fibers indicate 2 bundles (2x 24F). The 'bundle' means a combination of several fibers.

Performance Characteristics

| | OS2 | OM4 | OM3 |
|----------------------------------|---|-------------------------------------|-------------------------------------|
| Polarity | Type A | Type A | Type A |
| | Type B | Type B | Type B |
| Cable Jacket | Plenum (OFNP) | Plenum (OFNP) | Plenum (OFNP) |
| | LSZH | LSZH | LSZH |
| Fiber Core Diameter | 9/125µm | 50/125µm | 50/125µm |
| Glass Fiber | Corning SMF-28® Ultra Fiber | Corning ClearCurve® Multimode Fiber | Corning ClearCurve® Multimode Fiber |
| Minimum Bend Radius | 10mm | 7.5mm | 7.5mm |
| Wavelength | 1310/1550nm | 850/1300nm | 850/1300nm |
| Insertion Loss (MTP®/MPO) | ≤0.35dB | ≤0.35dB | ≤0.35dB |
| Return Loss (MTP®/MPO) | ≥65dB | ≥20dB | ≥20dB |
| Insertion Loss (LC) | UPC≤0.2dB | UPC≤0.2dB | UPC≤0.2dB |
| | APC≤0.3dB | | |
| Return Loss (LC) | UPC≥50dB | UPC≥30dB | UPC≥30dB |
| | APC≥60dB | | |
| Insertion Loss (MDC) | UPC≤0.3dB | - | - |
| Return Loss (MDC) | UPC≥50dB | - | - |
| Attenuation (1310/1550nm) | ≤0.32dB/km at 1310nm | - | - |
| | ≤0.18dB/km at 1550nm | | |
| Attenuation (850/1300nm) | - | ≤2.3dB/km at 850nm | ≤2.3dB/km at 850nm |
| | | ≤0.6dB/km at 1300nm | ≤0.6dB/km at 1300nm |
| Operating Temperature | Plenum (OFNP): -10 to 60°C (14 to 140°F) LSZH: -10 to 70°C (14 to 158°F) | | |
| Storage Temperature | Plenum (OFNP): -10 to 70°C (14 to 158°F) LSZH: -20 to 70°C (-4 to 158°F) | | |

MTP®/MPO Harnesses Options



MTP®-12 Harnesses Options

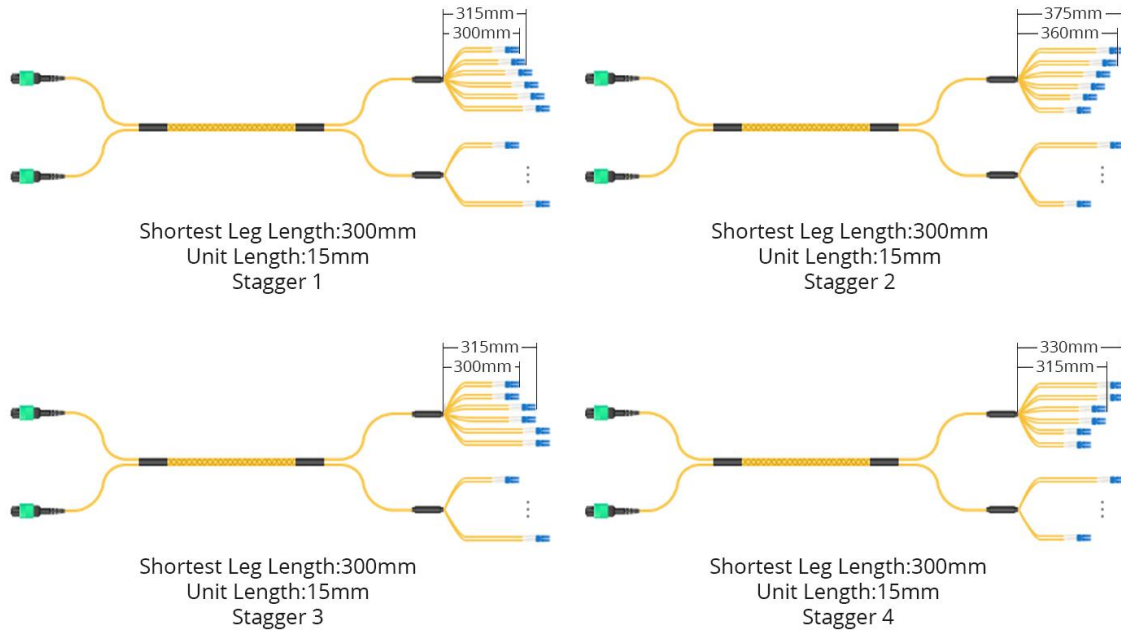
| Fiber Type | Fiber Count | Cable Jacket | Connector A | Connector B | Polarity | Pulling Eye |
|------------|-------------|-----------------|-------------------|------------------|----------|-------------|
| • OS2 | • 8 | • Plenum (OFNP) | • MTP® Female UPC | • LC UPC Duplex | • Type A | • None |
| • OM4 | • 12 | • LSZH | • MTP® Female APC | • LC UPC Simplex | • Type B | • End A |
| • OM3 | • 24 | | • MTP® Male UPC | • SC UPC Duplex | | • End B |
| | • 36 | | • MTP® Male APC | • SC UPC Simplex | | • Both Ends |
| | • 48 | | | • FC UPC Simplex | | |
| | • 72 | | | • ST UPC Simplex | | |
| | • 96 | | | • LC APC Duplex | | |
| | • 144 | | | • LC APC Simplex | | |
| | | | | • SC APC Duplex | | |
| | | | | • SC APC Simplex | | |
| | | | | • FC APC Simplex | | |
| | | | | • ST APC Simplex | | |

MTP®-24 Harnesses Options

| Fiber Type | Fiber Count | Cable Jacket | Connector A | Connector B | Polarity | Pulling Eye |
|------------|-------------|-----------------|-------------------|------------------|----------|-------------|
| • OS2 | • 24 | • Plenum (OFNP) | • MTP® Female UPC | • LC UPC Duplex | • Type A | • None |
| • OM4 | • 48 | • LSZH | • MTP® Female APC | • LC UPC Simplex | • Type B | • End A |
| • OM3 | • 72 | | • MTP® Male UPC | • SC UPC Duplex | | • End B |
| | • 96 | | • MTP® Male APC | • SC UPC Simplex | | • Both Ends |
| | • 144 | | | • FC UPC Simplex | | |
| | | | | • ST UPC Simplex | | |
| | | | | • LC APC Duplex | | |
| | | | | • LC APC Simplex | | |
| | | | | • SC APC Duplex | | |
| | | | | • SC APC Simplex | | |
| | | | | • FC APC Simplex | | |
| | | | | • ST APC Simplex | | |

MPO-12 Harnesses Options

| Fiber Type | Fiber Count | Cable Jacket | Connector A | Connector B | Polarity | Pulling Eye |
|------------|-------------|-----------------|------------------|------------------|----------|-------------|
| • OS2 | • 8 | • Plenum (OFNP) | • MPO Female UPC | • LC UPC Duplex | • Type A | • None |
| • OM4 | • 12 | • LSZH | • MPO Female APC | • LC UPC Simplex | • Type B | • End A |
| | • 24 | | • MPO Male UPC | • SC UPC Duplex | | • End B |
| | • 36 | | • MPO Male APC | • SC UPC Simplex | | • Both Ends |
| | • 48 | | | • FC UPC Simplex | | |
| | • 72 | | | • ST UPC Simplex | | |
| | • 96 | | | • LC APC Duplex | | |
| | • 144 | | | • LC APC Simplex | | |
| | | | | • SC APC Duplex | | |
| | | | | • SC APC Simplex | | |
| | | | | • FC APC Simplex | | |
| | | | | • ST APC Simplex | | |



MTP®/MPO Harnesses Options (Breakout Length)

| Bundle Count | Total Length (m) | Breakout Length |
|--------------|------------------|---|
| 1 Bundle | [0.5, 0.7) | 0.3m |
| 1 Bundle | [0.7, 1.7) | 0.3m, 0.5m, Stagger1, Stagger 2, Stagger 3, Stagger 4 |
| 1 Bundle | [1.7, 3.2) | 0.3m, 0.5m, 1m, 1.5m, Stagger1, Stagger 2, Stagger 3, Stagger 4 |
| 1 Bundle | [3.2, +∞) | 0.3m, 0.5m, 1m, 1.5m, 2m, 3m, Stagger1, Stagger 2, Stagger 3, Stagger 4 |
| 2-12 Bundles | [2, 3.3) | 0.3m, 0.5m, Stagger1, Stagger 2, Stagger 3, Stagger 4 |
| 2-12 Bundles | [3.3, 4.8) | 0.3m, 0.5m, 1m, 1.5m, Stagger1, Stagger 2, Stagger 3, Stagger 4 |
| 2-12 Bundles | [4.8, +∞) | 0.3m, 0.5m, 1m, 1.5m, 2m, 3m, Stagger1, Stagger 2, Stagger 3, Stagger 4 |

Products Listing

| ID | Description |
|----|-------------|
|----|-------------|

MTP®-8 Harnesses

| | |
|--------|--|
| 68048 | MTP®-8 F to LC Harness, 8F, OS2, OFNP, 0.35dB, Type B, 1m (3ft) |
| 68047 | MTP®-8 F to LC Harness, 8F, OM4, OFNP, 0.35dB, Type B, 1m (3ft) |
| 139611 | MTP®-8 F to MDC Harness, 8F, OS2, OFNP, 0.35dB, Type B, 1m (3ft) |

MTP®-12 Harnesses

| | |
|-------|---|
| 31099 | Customized MTP®-12 Harness, 8-144F, OS2 |
| 31097 | Customized MTP®-12 Harness, 8-144F, OM4 |
| 31098 | Customized MTP®-12 Harness, 8-144F, OM3 |

MTP®-16 Harnesses

| | |
|--------|--|
| 150166 | MTP®-16 F to LC Harness, 16F, OS2, OFNP, 0.35dB, Crossover, 1m (3ft) |
| 118108 | MTP®-16 F to LC Harness, 16F, OM4, OFNP, 0.35dB, Crossover, 1m (3ft) |

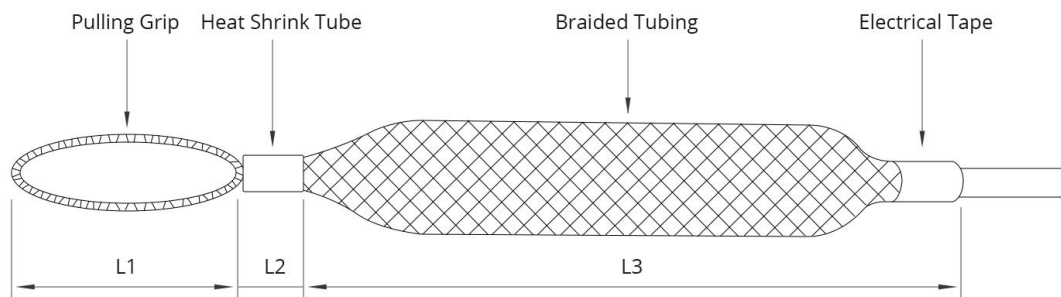
MTP®-24 Harnesses

| | |
|-------|--|
| 31066 | Customized MTP®-24 Harness, 24-144F, OS2 |
| 25884 | Customized MTP®-24 Harness, 24-144F, OM4 |
| 31065 | Customized MTP®-24 Harness, 24-144F, OM3 |

MPO-12 Harnesses

| | |
|--------|--|
| 226643 | Customized MPO-12 Harness, 8-144F, OS2 |
| 226641 | Customized MPO-12 Harness, 8-144F, OM4 |

Pulling Eye Information



| Bundle Count | Total Length (Cable) | L1 Length (Pulling Eye) | L2 Length (Pulling Eye) | L3 Length (Pulling Eye) |
|--------------|----------------------|-------------------------|-------------------------|---|
| 1 Bundle | <1m | 100±20mm | 50-60mm | 400mm |
| 1 Bundle | ≥1m | 100±20mm | 50-60mm | Depending on the total length of the cable. |
| 2-24 Bundles | - | 100±20mm | 50-60mm | 300/500+350mm |