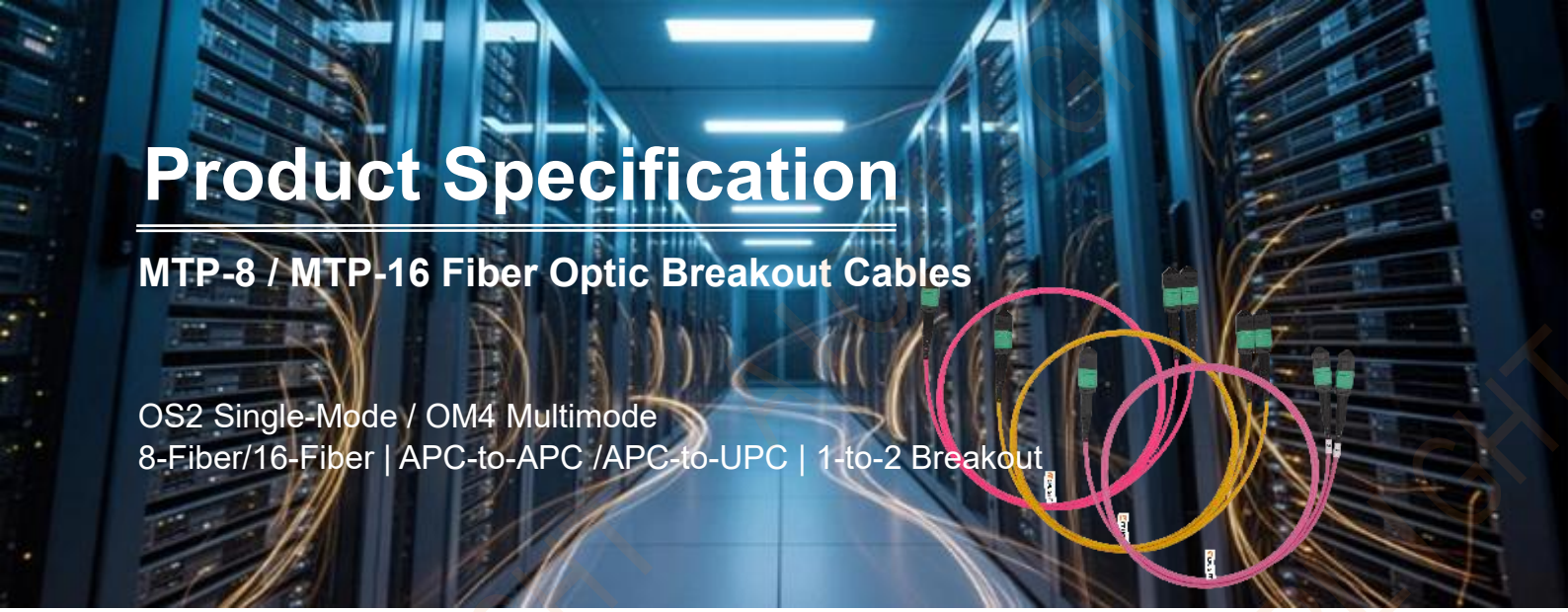


Product Specification

MTP-8 / MTP-16 Fiber Optic Breakout Cables

OS2 Single-Mode / OM4 Multimode
8-Fiber/16-Fiber | APC-to-APC /APC-to-UPC | 1-to-2 Breakout

Features

- US Conec MTP® connectors
- Corning SMF-28® Ultra single-mode fiber
- Corning ClearCurve® multimode fiber
- Maximum insertion loss of 0.75 dB for OS2 and 0.35 dB for OM3/OM4
- High return loss and reliable optical performance
- Factory terminated and individually tested
- Female connectors at both ends
- Type B polarity for consistent fiber mapping
- MTP-16 connectors feature an offset keying design
- OFNP Plenum-rated cable jacket
- Supports high-speed InfiniBand and Ethernet networks

Compliance

- RoHS Directive 2011/65/EU and (EU) 2015/863
- ANSI/TIA-568.3-E Optical Fiber Cabling and Components Standard
- ANSI/TIA-604-5-F (FOCIS 5) for MTP-12 connectors
- ANSI/TIA-604-18-A (FOCIS 18) for MTP-16 connectors
- IEC 61754-7-1 for MTP-12 connector interfaces
- IEC 61754-7-4 for MTP-16 connector interfaces
- IEC 60793-2-10 for OM3/OM4 multimode fibers
- IEC 60793-2-50 for OS2 single-mode fibers
- OFNP Plenum Rating (NFPA 262 / UL 910)

Applications

- Hyperscale Data Centers
- AI and High-Performance Computing (HPC) Clusters
- InfiniBand and High-Speed Ethernet Networks
- High-Density Fiber Backbone Cabling
- MTP/MPO Patch Panels and Fiber Distribution Systems

Description

AICPLIGHT MTP-12 and MTP-16 Fiber Optic Trunk Cables are designed to provide reliable, high-density optical connectivity for modern data centers, AI computing clusters, and high-performance networking environments.

The product family offers 12-fiber MTP-12 and 16-fiber MTP-16 configurations, supporting OS2 single-mode and OM3/OM4 multimode fiber types. Both ends are terminated with female MTP connectors, available in APC or UPC polish options, with Type B polarity to ensure consistent fiber mapping and reliable optical interconnection.

The MTP-12 configurations support parallel-optics applications such as 40GBASE-SR4, 100GBASE-SR4, and 400GBASE-DR4, while the 16-fiber OM4 configuration is suitable for high-speed multimode applications including 400GBASE-SR8 and 800GBASE-SR8.

Featuring low insertion loss, high return loss, factory termination, and an OFNP plenum-rated jacket, these trunk cables provide efficient and organized fiber connectivity while reducing cable congestion and supporting improved airflow in high-density data center environments.

Product Performance Specifications

1、Model Configuration

Parameter	S2-8F-MTPA-2MTPA	M4-8F-MTPA-2MTPA	M4-16F-MTPA-2MTPA	M4-16F-MTPA-2MTPU
Fiber Mode	Single-mode	Multimode	Multimode	Multimode
Fiber Type	OS2	OM4	OM4	OM4
Fiber Count	8 Fibers	8 Fibers	16 Fibers	16 Fibers
Main Connector	MTP-8 Female	MTP-8 Female	MTP-16 Female	MTP-16 Female
Branch Connectors	2 × MTP-4 Female	2 × MTP-4 Female	2 × MTP-8 Female	2 × MTP-8 Female
Main Connector Polish	APC	APC	APC	APC
Branch Connector Polish	APC	APC	APC	UPC
Connector Gender	Female	Female	Female	Female
Connector Key Orientation	Up-to-Down	Up-to-Down	Up-to-Down	Up-to-Down
Cable Jacket	OFNP	OFNP	OFNP	OFNP
Cable Color	Yellow	Magenta	Magenta	Magenta

2、Basic Characteristics

Parameter	Specification
Fiber Brand	OS2: Corning SMF-28® Ultra; OM4: Corning ClearCurve®
Connector Brand	US Conec MTP® / SENKO MPO-PLUS®
Cable Jacket Options	Plenum (OFNP); Low Smoke Zero Halogen (LSZH)
Cable Construction	Bunch / Ribbon

3、Color Characteristics

Parameter	Specification
OS2 Cable Jacket	Yellow
OM4 Cable Jacket	Magenta

4、Physical and Mechanical Characteristics

Parameter	Specification
Main Cable Diameter	3.0 mm
Breakout Leg Length	0.5 m
Minimum Bend Radius (Optical Fiber)	OS2: 10 mm; OM4: 7.5 mm
Minimum Bend Radius (Fiber Cable)	OS2: 10/5D (Dynamic/Static); OM4: 20/10D (Dynamic/Static)

5、Optical Characteristics

Parameter	OS2 Single-Mode	OM4 Multimode
Core / Cladding Diameter	9/125 μm	50/125 μm
Operating Wavelength	1310 / 1550 nm	850 / 1300 nm
Maximum Fiber Attenuation	≤0.32 dB/km @1310 nm; ≤0.18 dB/km @1550 nm	≤2.3 dB/km @850 nm; ≤0.6 dB/km @1300 nm
Minimum Overfilled Launch (OFL) Bandwidth		≥3500 MHz·km @850 nm; ≥500 MHz·km @1300 nm
Minimum Effective Modal Bandwidth (EMB)		≥4700 MHz·km @850 nm

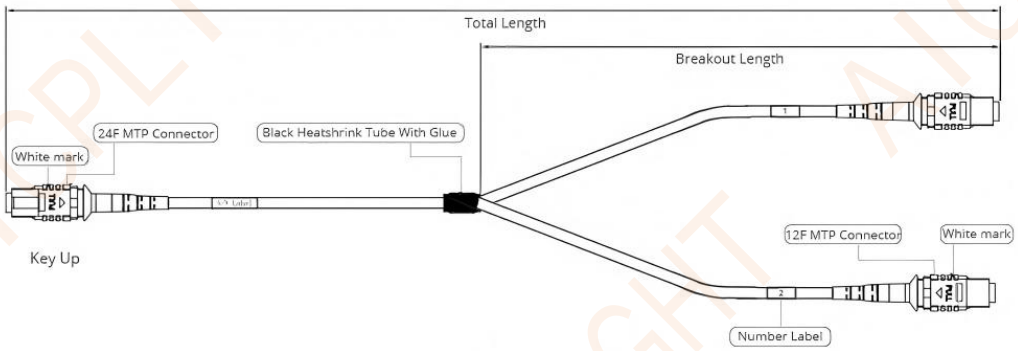
6、Connector Optical Performance

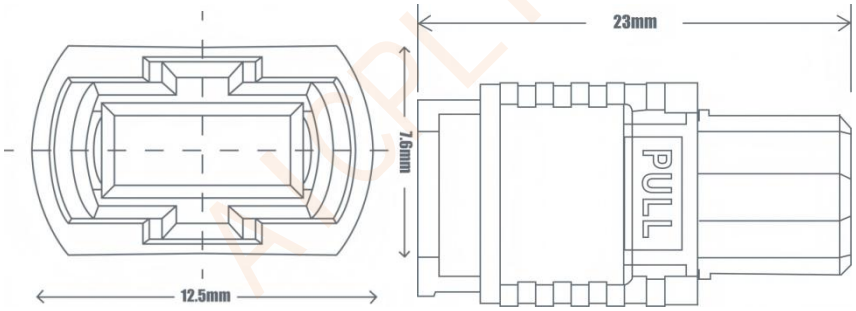
arameter	OS2 Single-Mode APC	OM4 Multimode APC / UPC
Maximum Insertion Loss (Low Loss)	≤0.35 dB	≤0.35 dB
Maximum Insertion Loss (Standard Loss)	≤0.75 dB	≤0.60 dB
Minimum Return Loss	≥60 dB	≥20 dB

7、Environmental Characteristics

Parameter	Specification
Operating Temperature	-10°C to +70°C (14°F to 158°F)
Storage Temperature	-40°C to +85°C (-40°F to 185°F)
Cable Jacket Ratings	OFNP / LSZH

Mechanical Dimension





Note:

Length tolerance: L ≤ 1 m: ±0.05 m; 1 m < L < 20 m: ±0.10 m; L ≥ 20 m: ±1% of the nominal length. Overall length is measured from the front mating face of Connector A to the front mating face of.

Handling and Safety Precautions:

- **Bend Radius:** Do not bend the cable below the specified minimum bend radius. Avoid sharp bends, tight loops, or excessive bending during installation and operation.
- **Cable Handling:** Avoid excessive pulling, twisting, crushing, stretching, or other mechanical stress that may damage the optical fibers or cable structure.
- **Installation and Removal:** Handle connectors by their housings. Do not pull directly on the cable or apply excessive force when mating or unmating connectors. Ensure proper connector key alignment before connection.
- **Connector Protection:** Keep connector endfaces clean and protected with dust caps when not in use. Avoid touching the fiber endfaces or exposing them to dust, oil, moisture, or other contaminants.
- **Cleaning and Inspection:** Inspect and clean connector endfaces using appropriate fiber optic cleaning tools before mating.

Always verify connector cleanliness to minimize insertion loss and prevent endface damage.

- **Optical Safety:** Never look directly into fiber connector endfaces or exposed optical fibers, especially when connected to active optical equipment. Invisible laser radiation may be present and can cause eye injury

Ordering Information

PN	Description
S2-8F-MTPA-2MTPA	MTP-8 APC Female to 2 × MTP-4 APC Female OS2 Single-Mode Fiber Optic Breakout Cable, 8 Fibers, Plenum (OFNP), Yellow
M4-8F-MTPA-2MTPA	MTP-8 APC Female to 2 × MTP-4 APC Female OM4 Multimode Fiber Optic Breakout Cable, 8 Fibers, Plenum (OFNP), Magenta
M4-16F-MTPA-2MTPA	MTP-16 APC Female to 2 × MTP-8 APC Female OM4 Multimode Fiber Optic Breakout Cable, 16 Fibers, Plenum (OFNP), Magenta
M4-16F-MTPA-2MTPU	MTP-16 APC Female to 2 × MTP-8 UPC Female OM4 Multimode Fiber Optic Breakout Cable, 16 Fibers, Plenum (OFNP), Magenta

Note：

Standard lengths are available in 1 m, 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, and 50 m.

Custom lengths are available upon request. Non-standard lengths are generally not held in stock and are