

Product Specification

MPO-8 / MPO-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

- MPO connectors for high-density multi-fiber connectivity
- Available in OS2 single-mode and OM4 multimode fiber
- 8-fiber and 16-fiber configurations
- 1-to-2 fiber breakout design
- APC-to-APC and APC-to-UPC connector configurations
- Low insertion loss of up to 0.35 dB
- Factory terminated and individually tested
- OFNP Plenum-rated cable jacket
- Available in lengths from 1 m to 50 m

Compliance

- RoHS Directive 2011/65/EU and (EU) 2015/863
- ANSI/TIA-568.3-E
- IEC 61754-7-1 / ANSI/TIA-604-5-F (FOCIS 5) for MPO-4 and MPO-8
- ANSI/TIA-604-18-A (FOCIS 18) for MPO-16
- NFPA 262 / UL 910 (OFNP Plenum Rating)

Applications

- Data Center Fiber Interconnections
- AI and HPC Cluster Networks
- High-Speed Ethernet and InfiniBand Networks
- Parallel Optical Breakout Connections

Description

AICPLIGHT MPO-8 and MPO-16 Fiber Optic Breakout Cables are designed to provide flexible, high-density optical connectivity for data centers, AI computing clusters, and high-performance networking environments.

The product family features a 1-to-2 breakout design, converting a single multi-fiber MPO connector into two independent MPO branch connectors. The 8-fiber configuration connects one MPO-8 connector to two MPO-4 connectors, while the 16-fiber configuration connects one MPO-16 connector to two MPO-8 connectors.

Available in OS2 single-mode and OM4 multimode fiber options, the series supports APC-to-APC and APC-to-UPC connector configurations. All connectors are female, providing flexible connectivity for different parallel optical interfaces and fiber distribution requirements.

Featuring low insertion loss, factory termination, and an OFNP Plenum-rated jacket, these breakout cables simplify fiber routing, improve cable management, and support efficient port distribution in high-density optical networks.

Product Performance Specifications

1、Model Configuration

Parameter	S2-8F-MPOA-2MPOA	M4-8F-MPOA-2MPOA	M4-16F-MPOA-2MPOA	M4-16F-MPOA-2MPOU
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	MPO-8 Female	MPO-8 Female	MPO-16 Female	MPO-16 Female
Branch Connectors	2 × MPO-4 Female	2 × MPO-4 Female	2 × MPO-8 Female	2 × MPO-8 Female
Main Connector Polish	APC	APC	APC	APC
Branch Connector Polish	APC	APC	APC	UPC
Connector Gender	Female	Female	Female	Female
Cable Jacket	OFNP	OFNP	OFNP	OFNP
Cable Color	Yellow	Magenta	Magenta	Magenta
Available Length	1–50 m	1–50 m	1–50 m	1–50 m

2、Optical Fiber 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 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
Minimum Bend Radius (Optical Fiber)	10 mm	7.5 mm

3、MPO Connector Optical Performance

Parameter	OS2 APC	OM4 APC	OM4 UPC
Maximum Insertion Loss (Low-Loss Grade)	≤0.35 dB	≤0.35 dB	≤0.35 dB
Minimum Return Loss	≥60 dB	≥35 dB	≥30 dB

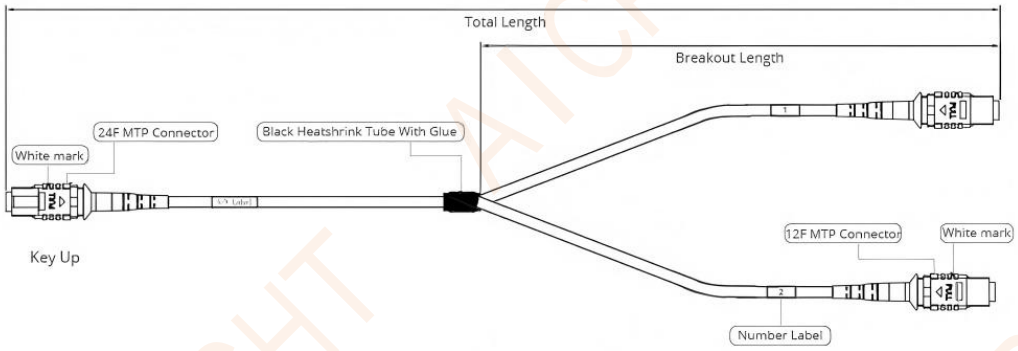
4、Physical and Mechanical Characteristics

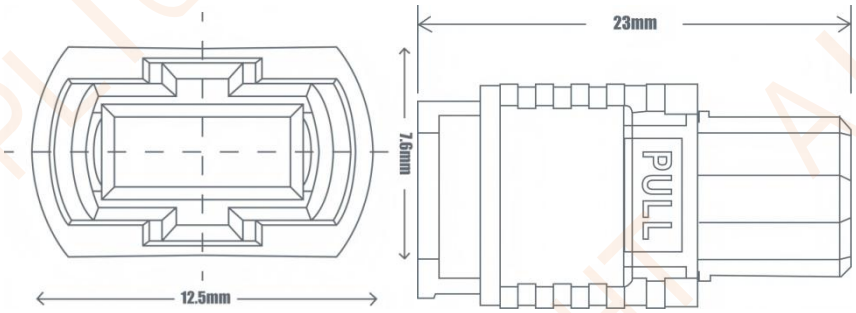
Parameter	Specification
Cable Construction	Round Cable
Main Cable Diameter	3.0 mm
Minimum Bend Radius (Optical Fiber)	OS2: 10 mm; OM4: 7.5 mm

5、Environmental Characteristics

Parameter	Specification
Cable Jacket Rating	OFNP (Plenum)
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Storage Temperature	-10°C to +70°C (14°F to 158°F)

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-MPOA-2MPOA	MPO-8 APC Female to 2 × MPO-4 APC Female OS2 Single-Mode Fiber Optic Breakout Cable, 8 Fibers, Plenum (OFNP), Yellow
M4-8F-MPOA-2MPOA	MPO-8 APC Female to 2 × MPO-4 APC Female OM4 Multimode Fiber Optic Breakout Cable, 8 Fibers, Plenum (OFNP), Magenta
M4-16F-MPOA-2MPOA	MPO-16 APC Female to 2 × MPO-8 APC Female OM4 Multimode Fiber Optic Breakout Cable, 16 Fibers, Plenum (OFNP), Magenta
M4-16F-MPOA-2MPOU	MPO-16 APC Female to 2 × MPO-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