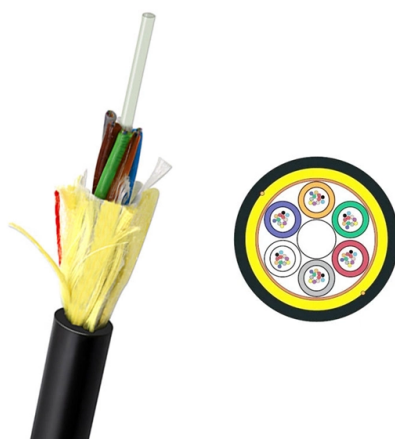


RIVO MULTITRADE OPTICAL SYSTEMS

Which jumper should I use for the optical module



Overview

We test 100% of our jumpers for proper end-face clarity, insertion loss, and return loss to provide superior optical performance.

Key Takeaways

The type of fiber jumper required depends on the optical module's interface, transmission mode, and distance, typically using LC, SC, ST, or MPO/MTP connectors in simplex or duplex configurations.

Connector Type and Module Compatibility

- LC connectors: Commonly used with SFP, SFP+, XFP, X2, and XENPAK modules. They feature a modular jack latch mechanism for easy operation and are widely used in routers and switches ().
- SC connectors: Typically used with GBIC modules. They have a rectangular shell and a plug-in pin latch fastening method, suitable for patch panels and network equipment ().
- ST connectors: Often used in fiber distribution frames and older 10Base-F connections. They have a round shell and a turnbuckle fastening method ().
- MPO/MTP connectors: Used for high-speed 40G/100G optical transceivers. These multi-fiber connectors are required for modules with MTP/MPO interfaces ().

- MT-RJ connectors: Square transceiver connectors used in some duplex fiber transceivers ().

Simplex vs Duplex

- Duplex fiber jumpers: Required for modules with two ports (one for transmitting, one for receiving), such as standard LC or SC duplex modules ().
- Simplex fiber jumpers: Required for BiDi (bidirectional) optical modules, which use a single port for both transmitting and receiving signals ().

Fiber Mode and Color Coding

- Single-mode fiber (SMF): Thinner core ($\sim 9\text{ }\mu\text{m}$), suitable for long-distance transmission (10 km or more), typically yellow jacket ().
- Multimode fiber (MMF): Thicker core ($50\text{ }\mu\text{m}$ or $62.5\text{ }\mu\text{m}$), suitable for short-distance transmission (up to 2 km), typically orange jacket ().

Selection Considerations

When choosing a fiber jumper for an optical module, consider:

- Transmission distance: Short, medium, or long distance determines single-mode or multimode fiber.
- Data rate: Higher-speed modules (10G, 25G, 40G, 100G) may require MPO/MTP or LC duplex jumpers.
- Interface type: Ensure the jumper connector matches the module port (LC-LC, SC-SC, LC-SC, MPO-MPO, etc.).
- Module type: Hot-swappable modules like SFP/SFP+ typically use LC duplex; GBIC modules use SC; XFP/X2/XENPAK use LC ().

Choosing the correct fiber jumper ensures low insertion loss, high return loss, and reliable optical signal transmission, which is critical for maintaining network performance and efficiency.

Article Content

How to choose the fiber jumper of the optical module?

Different optical modules correspond to different optical fiber interfaces. The interface of a common optical module

ChallengerOptics / Wavelength Optical Testing and Measurement

We test 100% of our jumpers for proper end-face clarity, insertion loss, and return loss to provide superior optical performance. Our

How to choose the fiber jumpers when using optical module

Summary: The right choice of fiber jumper will determine the quality of the using optical module, so be sure need to interface type

Types of Fiber Optic Jumpers

Generally, the short-wave optical module uses multimode fiber (orange fiber), and the long-wave optical module uses

Fiber Jumpers

Plugin Optics provides the latest solutions for fiber optic networking including best in class jumper cables, fiber pigtails, and cable

What the Tech: Fiber Jumpers Part 1

The good news is that there are standards that broadly dictate the colors certain fiber types should use. The bad news

Types of Fiber Optic Jumpers

6. Strong tensile performance The difference between optical fiber jumper and optical fiber pigtail Fiber optic jumpers

How to Select The Perfect Fiber Jumper Cables?

Nowadays, optical fiber jumpers are varied in cables and connector types. It is hard to determine the differences

Fiber Optic System Testing Tutorial

Both industry standards and Corning Optical Communications recommend the use of a mandrel wrap to ensure that a stable and

Fiber Patch Cord Types: How to Choose the Correct One?

What is Fiber Patch Cord? A Fiber patch cord, also named as a fiber patch cable or fiber jumper, is a fiber optic cable

How to Select the Perfect Fiber Jumper Cables?

It is hard to determine the differences between one fiber optic cable jumper and another. This article would put

What is a fiber optic jumper? What are the types and differences?

However, single-mode optical fiber uses solid-state laser diodes as the light source, which is far more expensive than the light source

How to Install and Remove Optical Modules Safely

Install optical modules safely with ESD protection, proper handling, and dust control. Follow these steps to avoid

What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals,

How should the SFP optical module correctly select the fiber jumper ...

Although the SFP optical module can be connected with PC and UPC optical fiber jumper, it is recommended that you

Jumper Planning Guide

It is important to use proper methods when removing jumpers from a populated bay line-up to prevent temporary attenuation or

Fiber Jumpers vs. Pigtails: What's the Difference? How Do They

This guide breaks down the key differences between fiber jumpers and pigtails, their applications, and how to choose the right one

Cisco Transceiver Modules

When the received power is measured above -3dBm, a 5-dB attenuator for 1300nm should be used and plugged at the

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