

Patch cords for fiber optic cables and switches



Overview

Get low-loss fiber patch cables & cords with various connector options that support fiber optic cabling up to 400G. 100% tested.

Key Takeaways

Fiber optic patch cords are short, flexible cables with connectors on both ends, used to connect switches, patch panels, and other optical devices for reliable signal transmission. What Are Fiber Optic Patch Cords?

A fiber optic patch cord (also called a fiber jumper) is a terminated fiber cable with connectors on both ends, designed for short-distance, flexible connections between devices such as switches, routers, servers, and patch panels . They act as the “last meter” connection in fiber networks, bridging devices and enabling optical signal transmission . Unlike pigtailed, which have a connector on only one end, patch cords are ready to use out of the box .

Types of Fiber

- Single-mode (SM, OS1/OS2): Has a small core ($\sim 9\mu\text{m}$) for long-distance transmission, ideal for telecom, long-haul networks, and enterprise backbones .
- Multimode (MM: OM1/OM2/OM3/OM4/OM5): Larger core ($50\text{--}62.5\mu\text{m}$) for short-distance, high-bandwidth applications like data centers and LANs .

- Bend-insensitive fibers (G.657A1/A2): Suitable for tight spaces and FTTH installations .

Connector Types

The connector ensures precise alignment and low signal loss. Common types include:

- LC (Lucent Connector): Small form factor, duplex, widely used in modern data centers .
- SC (Subscriber Connector): Snap-in, common in PON and enterprise networks .
- ST (Straight Tip): Bayonet mount, less common today.
- MPO/MTP: Multi-fiber connectors for high-density applications. Tip: Match the connector type to your switch or patch panel ports to avoid compatibility issues .

Configurations

- Simplex: Single fiber, one-way transmission.
- Duplex: Two fibers, supporting bidirectional communication.
- Color coding: Yellow for single-mode, orange for OM1/OM2, aqua for OM3/OM4, lime green or violet for OM5 .

Jacket Types and Installation Considerations

- PVC: Standard indoor use.
- Plenum (OFNP): Fire-resistant, suitable for air ducts.
- Riser (OFNR): For vertical shafts between floors.
- LSZH (Low Smoke Zero Halogen): Emits minimal smoke/toxic gas, common in Europe and high-safety areas .

Choosing the Right Patch Cord

- Distance and speed: Use single-mode for long reach; multimode for short intra-data center runs .
 - Connector type: Ensure compatibility with your switch or patch panel.
 - Polish type: UPC (Ultra Physical Contact) vs. APC (Angled Physical Contact) affects signal loss; do not mix types .
 - Future-proofing: OM3/OM4 fibers support 10G-40G speeds over longer distances than OM1/OM2 .
 - Durability: Kevlar or aramid yarn inside the jacket improves strength and handling .
- Fiber optic patch cords are essential for reliable, high-speed network connections, and selecting the correct type, connector, and fiber mode ensures optimal performance and scalability in your network infrastructure .

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