

Various Fiber Optic Patch Cord Connectors



Overview

Our 2.8mm mini-zip duplex fibre patch cables are available in singlemode (OS2) and multimode (OM1, OM2, OM3 & OM4).

Key Takeaways

Fiber optic patch cord connectors come in various types including LC, SC, FC, ST, MPO, MU, MT-RJ, E2000, and DIN, each suited for specific applications and network environments.

Common Connector Types

- LC (Lucent Connector): Small form factor, push-pull mechanism, widely used in high-density data centers and modern network equipment for duplex connections .
- SC (Subscriber Connector): Square, snap-in design, reliable and simple, commonly used in telecom, FTTH, and enterprise networks .
- FC (Ferrule Connector): Screw-on thread mechanism, ideal for high-vibration environments, often used in industrial or legacy LAN applications .
- ST (Straight Tip): Bayonet mount, older design, still found in some legacy networks and campus LANs .
- MPO/MTP (Multi-Fiber Push-On): Handles 8, 12, or 24 fibers in a single connector, essential for high-density, parallel optics in data centers and backbone links .
- MU (Miniature Unit): Compact connector for high-density applications, often used in telecom and FTTH deployments .

- MT-RJ (Mechanical Transfer Registered Jack): Duplex connector with two fibers in a single ferrule, used in some LAN and data center applications .
 - E2000: High-performance connector with spring-loaded shutter, used in telecom and long-distance networks .
 - DIN: Round connector, sometimes used in industrial or specialized optical systems .
- Fiber Modes and Sheath Colors
- Single-mode (SM): Yellow jacket, small core ($\sim 9\mu\text{m}$), supports long-distance transmission with low attenuation .
 - Multimode (MM): Larger core ($50\text{--}62.5\mu\text{m}$), supports short-distance, high-bandwidth applications. OM1/OM2 (orange), OM3 (aqua), OM4 (violet), OM5 (lime green) for different performance levels .

Connector Polish Types

- PC (Physical Contact): Slightly spherical end-face, reduces air gap, return loss $\sim -40\text{dB}$.
- UPC (Ultra Physical Contact): Refined polish, better surface finish, return loss $\sim -55\text{dB}$, common in digital networks .
- APC (Angled Physical Contact): 8° angled end-face, minimizes back reflection, preferred for high-performance or long-distance systems; should not be mixed with UPC .

Summary

Choosing the right connector depends on network type, fiber mode, density requirements, and environmental conditions. LC and SC dominate modern deployments, MPO/MTP is critical for high-density backbones, and FC/ST/E2000/DIN are used in legacy or specialized applications. Proper selection ensures low signal loss, high return loss performance, and reliable optical connections .

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