

Socket Fiber Optic Cable



Overview

Fiber Optic Connectors are in stock with same-day shipping at Mouser from industry leading manufacturers.

Key Takeaways

Fiber optic sockets are connection points that terminate fiber optic cables, providing a secure interface for network devices while protecting the delicate fiber ends.

Overview
A fiber optic socket (also called a fiber wall socket, optical termination outlet, or FTTH outlet) is the endpoint where a fiber optic cable connects to devices like an Optical Network Terminal (ONT) or router. It ensures a stable, low-loss connection and protects the fiber from dust, bends, and physical damage . Sockets can be used indoors or outdoors, with outdoor versions offering waterproof and dustproof protection (IP67 rating) for harsh environments .

Components of a Fiber Socket

- Faceplate: Mounts flush on the wall for a clean finish.
- Adapter: Holds the fiber connector (e.g., SC/APC, SC/UPC, LC, MPO). Green typically indicates SC/APC, while blue indicates SC/UPC .
- Back Box: Conceals slack fiber and splices, maintaining proper bend radius (>30mm).
- Pigtail: Pre-terminated fiber linking the socket to the ONT or network device.

Types of Fiber Connectors

- SC (Subscriber Connector): Common in FTTH installations.

- LC (Lucent Connector): Smaller form factor, often used in high-density applications.
- MPO (Multi-Fiber Push-On): Supports multiple fibers in a single connector, ideal for data centers.
- APC vs. UPC: APC (Angled Physical Contact) has lower reflection loss (-60dB) and is critical for GPON networks, while UPC (Ultra Physical Contact) has slightly higher loss (-50dB) and suits most LANs .

Outdoor Fiber Sockets

Outdoor sockets, such as OPT plug and OPTH floating sockets, integrate standard indoor connectors within a rugged, waterproof housing. They use screw-threaded locks and rubber gaskets to prevent dust and moisture ingress, making them suitable for industrial or telecom installations . These can accommodate various cable diameters (2–8mm) and provide durable, high-reliability connections.

Installation Guidelines

- Mount the Back Box: Cut wall opening and secure the box with screws.
- Prepare the Fiber: Strip ~30cm of cable, clean with alcohol, and cleave at $\leq 0.5^\circ$ angle.
- Splice the Pigtail: Fusion-splice the incoming fiber to the pigtail inside the box.
- Secure Connections: Insert the pigtail connector into the adapter and snap the faceplate onto the box.
- Test: Verify light levels (GPON ideal: -27 dBm to -8 dBm).
- Dust Management: Always use dust caps on unused ports.
- Grounding: Bond metallic components if using armored cable . Improper installation can cause permanent damage, so professional installation is recommended for most users.

Lifespan and Maintenance

Fiber optic sockets can last 20+ years if undisturbed. Maintaining proper bend radius, avoiding loops, and keeping connectors clean are essential for optimal performance . Fiber optic sockets are not directly compatible with Ethernet; a media converter is required to bridge fiber connections to Ethernet devices . By selecting the appropriate socket type, connector, and installation method, fiber optic sockets provide reliable, high-speed connectivity for both residential and industrial networks.

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It integrates fiber termination, storage, and cable connection in one solid protection box. The Fiber termination outlet is used for wall

Fiber Wall Socket & FTTH Optical Outlets: SC/LC

BWNFiber supplies indoor fiber wall socket, fiber optic faceplate and pre-terminated outlet configurations

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