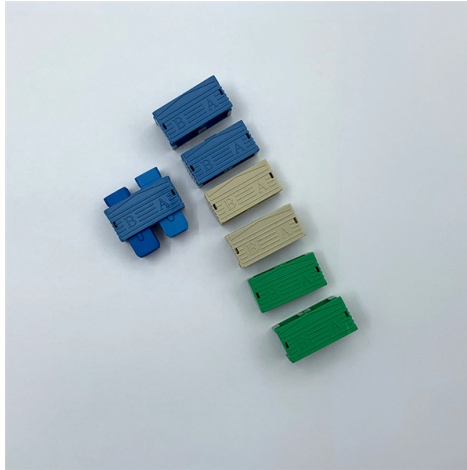


A pair of fiber optic transceiver FC interfaces



Overview

An overview of common single-fiber connector types is provided, including ST, FC, SC, and the compact LC connectors.

Key Takeaways

FC (Ferrule Connector) interfaces are screw-on fiber optic connectors used in transceivers for secure, high-stability connections, especially in high-vibration environments. Overview of FC Connectors

The FC connector is a fiber optic interface featuring a circular screw thread with a metal sleeve, which ensures a strong and stable connection between the transceiver and the fiber optic cable. Unlike push-pull connectors like LC or SC, the FC connector is screwed into place, providing excellent mechanical stability and minimizing signal loss due to vibration or movement. This makes FC connectors ideal for industrial, railway, aviation, and other high-vibration applications.

Structure and Design

An FC connector typically consists of:

- Ferrule: A precision-aligned cylinder, usually made of ceramic, that holds the fiber core in place.
- Metal sleeve and screw thread: Provides secure attachment to the transceiver port.

- Protective housing: Shields the fiber end face from dust and mechanical damage. The connector is sensitive to dust and requires careful handling to avoid Fresnel reflections, which can degrade signal quality .

Applications in Transceivers

In optical transceivers, FC interfaces are used to link the transceiver module to fiber optic cables, ensuring stable data transmission . They are compatible with both single-mode and multi-mode fibers, though they are more commonly used with single-mode fibers for long-distance, high-quality signal transmission . A pair of FC interfaces typically refers to two transceivers connected via an FC patch cable, forming a duplex link for bidirectional communication.

Comparison with Other Connectors

- LC connectors: Smaller, push-pull design, ideal for high-density data centers.
- SC connectors: Square, push-pull, widely used in FTTH and enterprise networks.
- ST connectors: Bayonet-style, used in legacy or industrial networks.
- FC connectors: Screw-on, highly stable, preferred in high-vibration or precision environments .

Key Considerations

- Ensure clean fiber end faces to prevent signal loss.
- Use compatible patch cables with matching FC connectors.
- FC connectors are less common in modern high-density data centers but remain relevant in industrial and long-distance optical networks. A pair of FC interfaces in a transceiver setup provides a reliable, low-loss optical connection suitable for environments where mechanical stability is critical .

Article Content

Fiber Optic Connector Types: LC, SC, FC, ST, MPO Guide

Identify fiber optic connector types by ferrule size, coupling, and color: LC, SC, FC, ST, and MPO with photos, a

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This comprehensive guide visually maps and compares all major types of fiber optic connectors (LC, SC, ST, FC, and MPO/MTP) by

FC Connector Explained

The FC Connector offers a durable, threaded design for secure fiber optic connections. It is cost-effective and

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