

FC Fiber Optic Connectors

This connector was first developed by Japan NTT. FC is the abbreviation of Ferrule Connector, indicating that the external reinforcement method is to use a metal sleeve, and the fastening method is a screw buckle. The earliest, FC type connector, the mating end face of the ceramic pin used is a planar contact method (FC). This type of connector is simple in structure, easy to operate, and easy to manufacture, but the fiber end is more sensitive to dust, and Fresnel reflection is easy to produce, and it is more difficult to improve the return loss performance. Later, this type of connector was improved, using a spherical pin (PC) with a mating end face, and the external structure was not changed, which made the insertion loss and return loss performance greatly improved.



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Introduction:

FC Fiber Channel has its own protocol layers, which are:

FC-0: interface to connect physical media, cables, etc .; definition of encoding and decoding standards.

FC-1: transport protocol layer or data link layer, encoding or decoding signal.

FC-2: Network layer, the core of Fiber Channel, defines frames, flow control, and quality of service.

FC-3: Defines common services such as data encryption and compression.

FC-4: Protocol mapping layer, which defines the interface between Fiber Channel and upper layer applications. The upper layer applications such as serial SCSI protocol and HBA driver provide the interface functions of FC-4. FC-4 supports multi-protocol, such as: FCP-SCSI, FC-IP, FC-VI.

The main part of Fiber Channel is actually FC-2. Among them from FC-0 to FC-2 is called FC-PH, namely "physical layer". Fiber Channel is primarily transported over FC-2, so Fiber Channel is also often referred to as "Layer 2" or "Ethernet-like."

Parameters:

Insertion Loss	$\leq 0.20\text{dB(APC)}$, $\leq 0.30\text{dB(PC)}$
Return Loss	$\geq 60\text{dB(APC)}$, $\geq 50\text{dB(PC)}$
Durability	$\leq 0.20\text{dB}$ typical change, 1000 matings
Operating Temperature	-40°C to $+85^{\circ}\text{C}$
Ferrule Hole Sizes	$125.0+1/-0\mu\text{m}$, Concentricity: $\leq 0.5\mu\text{m}$
	$125.5+1/-0\mu\text{m}$, Concentricity: $\leq 0.5\mu\text{m}$
	$126.0+1/-0\mu\text{m}$, Concentricity: $\leq 0.5\mu\text{m}$

2.Feature

- 1).Low insertion loss
- 2).High return loss (low amounts of reflection at the interface)
- 3).Ease of installation
- 4).Low cost
- 5).Reliability
- 6).Low environmental sensitivity
- 7).Ease of use

3.Application

- 1).CATV
- 2).Active device termination
- 3).Telecommunication networks
- 4).Metro
- 5).Local Area Networks (LANs)
- 6).Data processing networks
- 7).Test equipment
- 8).Premise installation
- 9).Wide Area Networks(WANs)

The Advantages And Disadvantages Of FC Connectors And Other Connectors:

ST, SC, FC, fiber optic jumper connectors were developed by different companies in the early days, and the use effect is the same, each has its own advantages and disadvantages.

FC fiber jumper connectors are generally used in telecommunication networks. A screw cap is screwed onto the adapter. The advantages are reliable, dust-proof, and the disadvantage is that the installation time is slightly longer.

The ST fiber jumper connector belongs to the general network. After insertion, there is a buckle for rotation half a cycle. The disadvantage is that it is easy to break.

The SC fiber jumper connector is also commonly used in general networks. The SC jumper connector is directly pluggable and easy to use. The disadvantage is that it is easy to fall out.

MPO fiber jumper is composed of a multi-core multi-channel pluggable connector and optical cable. The external parts of the connector are precision plastic parts, which are suitable for dense wiring in buildings, active device equipment, and fiber optic communication systems.

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