

Fiber Optic Cable Connection Method 86-type Junction



Overview

The document discusses methods for joining optical fibers, including fusion splicing and mechanical splicing.

Key Takeaways

The 86-type fiber optic junction typically uses SC-family connectors, requiring precise termination, alignment, and adherence to IEC standards for reliable optical performance.

Overview of 86-Type Junctions

The 86-type junction refers to a standardized SC 86B fiber optic interconnecting device, which is part of the SC connector family. These junctions are designed to ensure mechanical, optical, and environmental compatibility across fiber optic networks, supporting both single-mode and multi-mode fibers . They are commonly used in patch panels, distribution frames, and network interconnects where high reliability and low insertion loss are critical.

Connection Methods1. Connector Termination

SC 86-type junctions use plug or male connectors with ceramic ferrules to align fibers accurately. The connection process involves:

- Cable Preparation: Strip the outer jacket, Kevlar, and buffer layers to expose the fiber core without damaging it .

- Cleaving: Use a precision cleaver to create a flat fiber end for optimal light transmission .
- Connector Attachment: Install the SC 86 connector using adhesive or mechanical crimping, ensuring the fiber is centered in the ferrule .
- Polishing: For single-mode fibers, polish the ferrule tip to reduce reflectance and insertion loss. Multi-mode fibers may use pre-polished connectors for field termination .
- Mating: Insert the connector into the SC 86B receptacle or adapter, which may use a push-pull or snap-in mechanism for secure alignment .

2. Splicing (Optional)

For permanent connections, fusion splicing can be used:

- Align the fiber cores using a fusion splicer.
- Apply heat to fuse the fibers, creating a low-loss, permanent joint.
- Protect the splice with a heat-shrink sleeve or splice tray .

Standards Compliance

The SC 86B junction adheres to IEC 61754-4:2021 and related IEC 61753 series standards, which define:

- Interface dimensions for SC connectors.
- Mechanical and environmental requirements for plug-pigtail and plug-receptacle configurations.
- Testing procedures for insertion loss, return loss, and durability under controlled and outdoor conditions .

Best Practices

- Always clean fibers and connectors before mating to prevent signal loss.
- Maintain the minimum bend radius and avoid excessive pulling forces on the cable.
- Use OTDR testing to verify the integrity of the connection after installation.
- For outdoor or harsh environments, select connectors rated for OP, OPHD, or OP+HD categories to ensure protection against moisture, dust, and mechanical stress .

Summary

Connecting a fiber optic cable to an 86-type junction involves careful preparation, termination, and alignment using SC-family connectors, optionally supplemented by splicing for permanent joints. Adhering to IEC standards ensures low optical loss, high mechanical strength, and environmental reliability, making SC 86B junctions suitable for both indoor and outdoor fiber optic networks.

Article Content

Termination of Fiber Optic Cables

This fiber optic installation method statement covers the termination of fiber optic cables with patch panel, network distribution

The FOA Reference For Fiber Optics

Fiber optic joints or terminations - where cables are terminated - are made two ways:
1) connectors that mate two fibers to create a

Optical Fiber Jointing Methods

The document discusses methods for joining optical fibers, including fusion splicing and mechanical splicing. Proper preparation of

Installation in an 86 mm Junction Box (AC Type)

Route the optical fiber through the square cable hole on the bracket, and route the DC power line terminal of the power bracket

Installation in an 86 mm Junction Box (DC Type)-Power Supply by a

Route the fiber through the bracket and connect it to the PoF port. For details, see Connecting Cables. Use screws to secure the

Fiber Optics III

The second course, Fiber Optics II – Cable Design, explains the basic construction of fiber optic cables including the types of cables,

Comprehensive Guide to Fiber Optic Connector Types and Their

Fiber optic connectors are precision-engineered components that ensure accurate alignment and efficient light transmission between

Standard for Installing and Testing Fiber Optics

Fiber optic cables installed without connectors may be terminated by field termination by installing connectors onto the fibers using

What is Optical Fiber?

Optical fiber is a cabling technology that can be used in both long and short distances and carries different types of messages. Learn

Fiber Optic Connectors Selection Guide: Types, Features,

Fiber optic connectors are used to align and join two or more fibers together to provide a means for attaching to, or decoupling from,

Fiber Optic Cable Splicing Explained

Splicing in optical fiber is the joining two fiber optic cables together. There are 2 methods of cable splicing, mechanical

Types of Fiber Optic Cable Connectors and Their Uses

Choosing the correct connector type ensures ideal performance of the fiber optics cables and devices. Learn more about the types of

101 Guidelines for Fiber Optic Cable Installation

A fiber optic cable should be tested three separate times during an installation: on the reel, the splicing test, and the final acceptance

Fibre Optic Cable & Connector Guide

Choices must be made in selecting fibre optic cables and connectors for high-reliability applications. This white paper provides the

Fiber Optic Cables

FiberMart provides various types of fiber optic patch cables including singlemode, multimode, multi-core, armored patch cables, as

Fiber Optic Connector Types: Visual Identification Guide

Fiber Optic Connector Types: Visual Identification Guide LC is small rectangular with a latch tab you press to release -

Fiber Optic Junction Box Installation Guide

When fibre optic cable is used, glands must be suitably certified for use with the type of cable so as to maintain the type of protection

Fibre Optic Patch Panels

Fibre optic patch panels provide a centralised location in your network for all the fibre cable routes to pass through. They host and

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: <https://coetzerinvestments.co.za>

Technical inquiry: <https://coetzerinvestments.co.za/contact.html>

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

