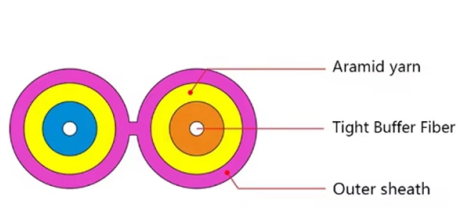


RIVO MULTITRADE OPTICAL SYSTEMS

400-core optical fiber splicing



Overview

FOSC-400 The FOSC 400 D5 closure is the largest in the FOSC 400 series. It can terminate seven cables (or up to twelve cables with the use Fiber Optic Fusi).

Key Takeaways

Splicing 400-core optical fiber requires high-capacity ribbon fusion splicers and robust splice closures to ensure low-loss, high-integrity connections. Fusion Splicing Equipment

For 400-core fiber, ribbon fusion splicers like the KL-400 or NT-FSPLICE-400 are commonly used. These splicers support multi-core ribbon fibers, with automatic alignment and fusion cycles as fast as 9-18 seconds per splice . Key features include:

- High-precision V-groove alignment for multi-core cladding
- Automatic heating for protective sleeves
- Battery-powered operation for field deployment
- Compatibility with single-core and 2-12-core ribbons, scalable for larger fiber counts Fusion splicing creates a molecular bond between fiber ends, eliminating air gaps and ensuring low insertion loss (≤ 0.02 dB) and high mechanical integrity ($>95\%$ of fiber tensile strength) . This is critical for long-haul, FTTH, 5G backhaul, and data center interconnects.

Splice Closures

Managing 400 fibers requires high-capacity splice closures like the FOSC-400 series . These closures provide:

- Environmentally sealed enclosures for outdoor deployment
 - Flexible cable port configurations for main distribution and branch cables
 - Slack storage baskets for ribbon and loose fibers
 - Mechanical and heat-shrink sealing systems for reliable re-entry and maintenance
- Closures are designed for aerial, pedestal, buried, handhole, or manhole installations, supporting various splice types including expressed, tap-off, branch, and repair splices.

Splicing Process Overview

- **Fiber Preparation:** Strip the coating using precision tools, clean, and cleave fibers to ensure smooth end faces.
- **Alignment:** Place fibers in the splicer's V-groove or ribbon holder for automatic core alignment.
- **Fusion:** Apply an electric arc to fuse fiber ends, forming a permanent, low-loss joint.
- **Protection:** Slide a heat-shrink sleeve over the splice and activate the splicer's heater.
- **Storage:** Organize spliced fibers in the closure's slack storage trays to prevent bending or stress.

Best Practices

- Use high-quality cleavers and strippers to minimize end-face defects.
- Maintain a clean environment to prevent dust or moisture contamination.
- Test splices with an OTDR to verify insertion loss and return loss.
- Plan fiber routing and slack management carefully to accommodate 400 fibers without exceeding bend radius limits. By combining high-speed ribbon fusion splicers with robust FOSC-400 closures, technicians can efficiently splice and manage 400-core optical fiber networks while maintaining signal integrity and long-term reliability .

Article Content

Fiber Optic Fusion Splicer Kit

dirt/dust and water resistant. The Fusion Splicer employs high-speed image processing and special positioning technology allowing

Related Video Reference

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