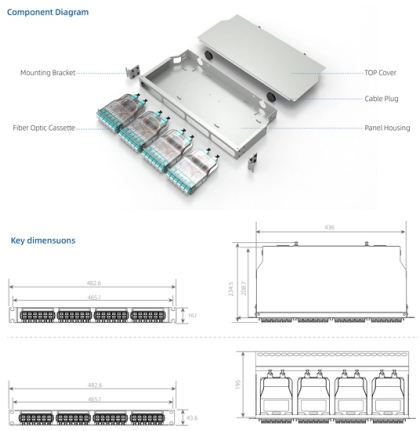
Cables outside the cable tray



Overview

The Ultimate Guide to Tray Cables: Types, Applications and When it comes to powering, automating and protecting facilities from factories and petrochemical.

Key Takeaways

Cables are generally required to remain within cable trays, but limited exceptions exist for short transitions or outdoor installations with proper support.

General Rule

Cables are designed to be supported and routed within cable trays, ladders, or mesh trays to ensure mechanical protection, maintain spacing, and prevent damage from environmental or electrical stresses. Running cables outside the tray is generally not permitted, as it can compromise safety, increase the risk of physical damage, and violate electrical codes.

Exceptions

Certain types of cables and situations allow for limited installation outside a tray: Type TC-ER (Tray Cable – Extra-Rated): These cables can transition freely between cable trays and equipment for distances up to six feet without continuous support, provided they are not subject to physical damage. Outdoor installations with messenger wire support: Cables can be suspended outside a tray if supported by a messenger wire, ensuring mechanical stability and protection from environmental forces.

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Best Practices

Secure cables at intervals: Even when outside a tray, cables should be fastened at regular intervals (typically no more than six feet for TC-ER cables) to prevent sagging or strain. Maintain minimum bend radius: When exiting a tray, ensure the cable bend radius meets manufacturer specifications to avoid conductor damage. Use protective accessories: Employ covers, barrier strips, or cable protection rings where cables are exposed to potential mechanical or environmental hazards.

Follow standards: Installations should comply with BS EN 61537 or relevant local codes, ensuring that cable support systems are used as intended and not overloaded.

Summary

While the preferred practice is to keep cables within trays, limited exceptions exist for short transitions or outdoor applications with proper support. Always ensure cables are mechanically secured, protected from damage, and compliant with applicable standards to maintain safety and system reliability.

Article Content

The Ultimate Guide to Tray Cables: Types, Applications and

When it comes to powering, automating and protecting facilities—from factories and petrochemical plants to data centers and high-rises—the right cable makes all the difference. Among

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