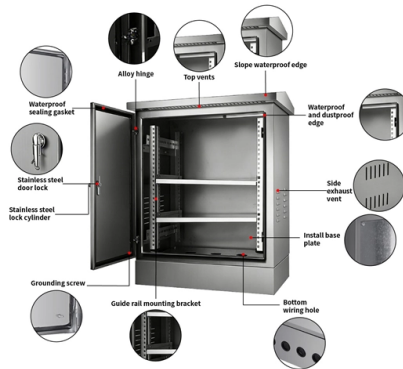


Cable tray balancing and adjustment



Article Overview

Proper cable tray balancing and adjustment ensure mechanical stability, even load distribution, and compliance with standards like IEC 61537 and NEC 392.

Key Principles of Cable Tray Balancing

Load Distribution: Cable trays must be supported at intervals that prevent excessive sagging or deflection. The span between supports depends on tray type (ladder, ventilated trough, or solid-bottom) and cable weight. IEC 61537 specifies testing for deflection and yield strength at spans such as 1m, 1.5m, and 2m to ensure trays can handle the intended load without deformation . **Center of Gravity Alignment:** When multiple trays or heavy cables are installed, the center of gravity should be considered to avoid tilting. Trays should be aligned horizontally and vertically using adjustable supports or hangers to maintain balance . **Support Adjustment:** Support elements like wall brackets, suspended supports, and center suspensions can be adjusted to level the tray. Fine-tuning involves raising or lowering supports to achieve a uniform slope or horizontal alignment, especially at bends, T-pieces, or crossovers . **Cable Placement:** Evenly distributing cables along the tray prevents localized overloading. Ladder trays allow free airflow and easier balancing, while solid-bottom trays require careful spacing to avoid heat buildup and uneven weight .

Adjustment Techniques

- **Leveling with Adjustable Hangers:** Use threaded rods or adjustable brackets to raise or lower tray sections. Ensure each section is level before securing fasteners.
- **Shimming and Spacer Use:** For minor height corrections, shims or spacers can be inserted between the tray and support brackets to maintain alignment....

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