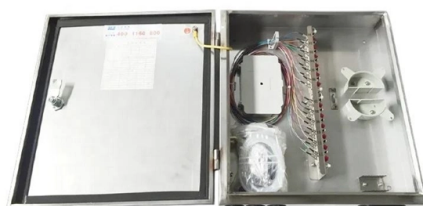


RIVO MULTITRADE OPTICAL SYSTEMS

Install lightning protection strips on distribution boxes



Overview

Lightning protection provides a path of least resistance for the lightning strike, preventing damage to the structure and its contents.

Key Takeaways

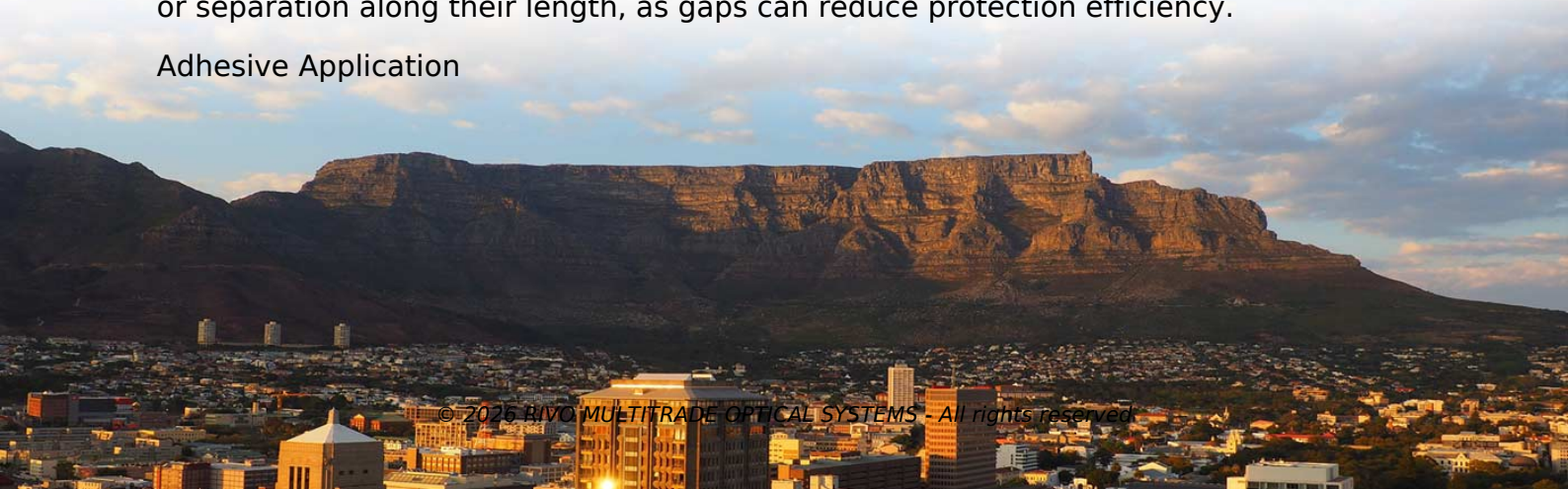
Lightning protection strips should be installed with proper spacing, secure bonding, and grounding to ensure effective surge protection for distribution boxes. Preparation and Surface Requirements

Before installation, clean the surface of the distribution box to remove paint, dust, or debris, ensuring maximum adhesive contact and bond strength . Use tools like Teflon or phenolic instruments to avoid damaging the strips during handling . Mark the intended location of the strips with a pencil or marker to guide precise placement.

Strip Placement and Spacing

Lightning protection strips are typically mounted on a thin dielectric substrate. The recommended spacing between strips is 12 to 24 inches, depending on the size and dielectric strength of the enclosure . Ensure that the strips are applied without voids or separation along their length, as gaps can reduce protection efficiency.

Adhesive Application



Apply a conventional adhesive compatible with both the strip and the substrate. The adhesive should be applied at temperatures between 70°F and 100°F, and installation below 50°F is not recommended . Use tape to limit adhesive spread and maintain alignment during curing. Ensure full contact along the strip edges for optimal bonding.

Electrical Bonding and Grounding

All lightning protection strips must be connected to the building's equipotential bonding system. The earthing wire should be as short as possible with a large cross-section, as longer wires increase residual voltage and reduce protection effectiveness . For type I arresters, both earth terminals must be connected: one to the equipotential bonding and the other to the PE conductor . Proper bonding prevents voltage differences that could damage equipment or create fire hazards.

Integration with Surge Protection Devices

Lightning protection strips work in conjunction with SPDs (Type I, II, III) installed in the main or sub-distribution boards . Type I arresters are installed upstream or downstream of the electricity meter if external lightning protection exists, while Type II and III devices protect sub-distribution boards and end devices, respectively . Ensure that connecting lines to SPDs are ≤ 0.5 m to minimize voltage drop and maintain effective protection .

Final Checks

After installation, verify that all strips are securely bonded, properly spaced, and electrically connected to the grounding system. Inspect for any voids, misalignment, or loose connections. Proper installation ensures that lightning surges are safely diverted to the earth, protecting both the distribution box and connected equipment . By following these steps, lightning protection strips can provide reliable surge protection and enhance the safety of electrical distribution systems.

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The system includes: strike termination devices, conductors, ground terminals, interconnecting bonding, and surge

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The National Fire Protection Assoc. (NFPA) publishes document # 780 titled Standard for the Installation of Lightning Protection

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