

Optical Cable Vibration Damper



Overview

ADSS/OPGW Optical Cable Vibration Damper Because of the concentrated stress, vibration damper will cause some damages to the cable. The armor rods provide.

Key Takeaways

Vibration dampers for optical cables are configured to reduce wind-induced fatigue by dissipating energy across the cable's natural frequency range, using devices such as Stockbridge, spiral, or viscous dampers. Types of Dampers¹.

Stockbridge-

Type Dampers: These consist of a clamp attached to the cable with two masses at the ends of a short messenger cable. The masses are designed to excite multiple resonance modes within the cable's dangerous frequency range, flattening resonance peaks and providing wide frequency coverage for maximum energy dissipation. Asymmetrical designs, like SAPREM D5s or VORTX dampers, improve power dissipation and frequency response compared to symmetrical designs.

2. Spiral Vibration Dampers (SVD): SVDs are made of UV-stabilized PVC and are wrapped around the cable. They are effective for high-frequency, low-amplitude aeolian vibrations and are easy to install on ADSS, OPGW, or bare conductors.

3. Internal and External Viscous or Friction Dampers: External viscous dampers connect the cable directly to the supporting structure, providing effective damping for long spans. Internal viscous dampers transmit forces through a housing into the cable, suitable for various positions along the cable.



Internal rubber or elastomeric dampers dissipate energy via shear deformation, effective for short to medium cable lengths. Internal friction dampers use rotational friction elements to dissipate energy, suitable for medium to long cables.

Configuration and Placement

Cable Length Consideration: Cables longer than 80 meters often require additional damping devices. **Mode Coverage:** Dampers should target the first two to three vibration modes, achieving at least 3-4% logarithmic decrement to prevent excessive vibration. **Span Positioning:** Dampers are typically installed near points of maximum vibration amplitude, often at 1/3 and 2/3 of the span length.

Frequency Tuning: Masses and stiffness are selected to match the cable's natural frequencies, ensuring efficient energy dissipation.

Installation Notes

Clamps should allow for thermal expansion and contraction of the cable. Break-away bolts or flexible attachments facilitate proper torque and prevent damage during installation. Laboratory testing or project-specific vibration studies can optimize damper selection and placement for specific environmental conditions.

Summary

Proper configuration of optical cable vibration dampers involves selecting the appropriate damper type, tuning it to the cable's natural frequencies, and placing it at strategic points along the span. This ensures reduction of aeolian vibration, prevention of fatigue, and long-term reliability of overhead fiber optic cables.

Article Content

ADSS/OPGW Optical Cable Vibration Damper

Because of the concentrated stress, vibration damper will cause some damages to the cable. The armor rods provide proper stress distribution on the optical cable and protect the cable.

ADSS Cable Vibration Dampers

Vibration dampers are widely used to control aeolian vibration of the ADSS cable and earth wires including optical ground wires (OPGW). When the damper is placed on a vibrating conductor,

Vibration Damper for ADSS OPGW Cables

Clamp Type Vibration Damper for ADSS/OPGW cables, with tuning fork structure of Damper Weight, is validated by China Electric Power Research Institute that

AVD Series Spiral Vibration Dampers | AFL Global

AFL's AVD Series Spiral Vibration Dampers are designed to eliminate the damage caused by Aeolian vibration and reduce overall vibration on bare All-Dielectric

Spiral Vibration Dampers for ADSS Cables

Effective spiral vibration dampers to protect ADSS and aerial fiber optic cables from wind-induced fatigue, ensuring long-term reliability.

AVD Series Spiral Vibration Dampers

AFL's AVD Series Spiral Vibration Dampers are designed to eliminate the damage caused by Aeolian vibration and reduce overall vibration on bare All-Dielectric Self-Supporting (ADSS) cables. Made of

FIBERLIGN® Dielectric Damper

Using the recommended number of dielectric dampers minimizes aeolian vibration and increases cable longevity. The FIBERLIGN Dielectric Damper is a motion

Stockbridge Damper

The VORTX Vibration Damper responds to wind-induced line vibration that is characterized by high-frequency, low-amplitude motion commonly known as

ADSS Fiber Cable Guide: Selection, Installation & Span

Vibration dampers are mandatory for spans $\geq 150\text{m}$. Aeolian vibration — high-frequency oscillation caused by wind passing over the cable — is

What Is ADSS Cable? Complete Guide to Self

For utilities operating in high-voltage environments, ADSS fiber optic cable offers a practical solution for establishing long-distance communication

ADSS OPGW Fiber Optic Cable Hardware

Preformed Overhead Line Damper When the optical cable vibrates in the breeze, the hammerhead of the anti-vibration hammer suspended on the cable can

ADSS Fiber Optic Cable Specifications Explained | Structure ...

Explore the complete specifications of ADSS fiber optic cables, including structure details, mechanical performance, optical characteristics, and environmental resistance. Learn how to choose

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The Most Comprehensive Guide To Figure 8 Fiber

In the ever-expanding universe of fiber optic networks, where speeds reach 800G and beyond while global FTTH connections surpass 2.2 billion by

All Dielectric Self Supporting Fibre Cable(ADSS)

ADSS cable's full name is All Dielectric Self Supporting Cable, which is also called non-metallic all-dielectric self-supporting fiber optic cable. It is widely used in power communication systems for its

Dampers for fibre optic cable | SAPREM

Stockbridge vibration dampers asymmetrical with four resonances for OPGW cable fibre optic cables DOWNLOAD PDF DAMPERS Aeolian vibration Several oscillatory phenomena are induced by the

Spiral Vibration Damper

Vibration Damper for electric power cable is divided into two types, including spiral vibration damper and 4D vibration damper. It can restrain the Aeolian vibration and wave of the optic fiber cable.

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