AR Products

Solutions for Galloping and Vibration Control

MOD2 Spacer Damper

Galloping Protection for Bundled Conductors
Horizontal and Vertical Transmission Lines



APPLICATIONS

Tested to 625kV phase-to-phase, the MOD2 Spacer Damper controls galloping and rolling of the bundled conductor. Installed at specified distances, the MOD2 Spacer Damper system provides proper separation of the bundle, increased torsional stiffness, effective vibration damping, and galloping control on twin bundled lines. Galloping control is achieved by allowing the conductors to twist independently as each starts to gallop up and down. Twisting is the primary method for galloping control in all AR Products.

Expert engineering customizes the product application and installation to features of the bundled line. This galloping control system is specified for voltage and line by optimizing the diameter of the hoop, the size of the clamps that attach to the conductor, the number of clamps, the spacing of the spacer dampers, and occasionally the composition of the material.

Available in models with ring diameters and clamp sizes to fit a wide range of twin bundles, the MOD2 Spacer Damper installs over line guards or Armor Rods.

HOW IT WORKS

Articulating Clamp Feature. Articulated clamps swivel about the spacer damper ring, allowing the unit to rotate and twist the conductors while maintaining separation of the bundles. The design provides stress relief in three degrees of freedom in high-frequency Aeolian vibration and low-frequency galloping. When installed on the bundle, this feature allows clamp articulation at +/-90° from initial position.

Increased Torsional Stiffness of the Line. Alternating how the spacer dampers are attached along the line (inside the bundle|outside the bundle) creates increased stiffness of the bundle for control of both galloping and rolling.

Strength. A steel spring ring increases the compressive strength of the unit. By test, it was found that compressive strength exceeds 1,800 lbs.

Galloping Control. The twisting feature of AR Product line controls the gallop to safe limits. More than merely reducing or synchronizing the motion, the MOD2 Spacer Damper acts to arrest galloping as it is induced. The large rotation angles effectively change the wind angle of attack during galloping, a proven technology and method.

PERFORMANCE TESTED

MOD2 Spacer Dampers have been in service for more than 15 years, with no reported failures. The product has been tested at NEETRAC for strength, corona, RIV and vibration control.

AR Clamps have been strength tested at Helical Line Products. Slipping tests found clamp strength to exceed 4000 lbs.

SPECIFICATIONS

- Steel Spring Ring — 12” 18” 24” Models
- Articulating Clamps — Six (6) sizes scaled for conductor sizes with O.D. ranging from <1.0 to 1.80
  Ring assembly may holds 2 clamps to handle a range of bundle designs

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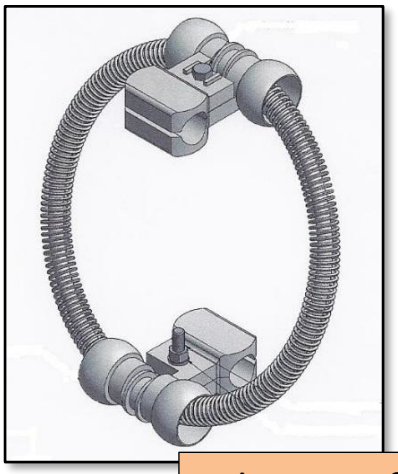
Construction and Impact on the Line

MOD2 Spacer Dampers are constructed of a steel spring ring and aluminum clamps for weight and strength. There is minimal structural loading on the line because of its low profile, compact design and weight. Two or more clamps are positioned at equal intervals around the structural hoop. Distance between the clamps is maintained by the spring covered steel hoop.

The smooth outer edges of the AR Clamps and the recessed placement of hardware guard against corona. The smooth, round inner edges of the clamp and flexibility in Armor Rod choices makes the MOD2 Spacer Damper suitable for a range of line voltages and conductor sizes. Total weight is 15 lbs.



Articulating Clamps
MOD2 Spacer Damper

AR Clamp size		Conductor OD Range
2.125	Horizontal	1.46 – 1.80
	Vertical	
1.93	Horizontal	1.25-1.55
	Vertical	
1.81	Horizontal	1.10 – 1.40
	Vertical	
1.68	Horizontal	1.00 – 1.20
	Vertical	
1.56	Horizontal	0.95 – 1.15
	Vertical	
1.43	Horizontal	0.85 – 1.00
	Vertical	

AR Products spacer damper product line	
Ring Diameter	Bundled Conductor
12”	Twin
18”	Twin, Triple



Installed MOD2 Spacer Damper

Asymmetric clamps rotate independently to control galloping while maintaining separation of both horizontal and vertical bundles.

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