

VORTX™ VIBRATION DAMPER

The **VORTX Vibration Damper** responds to wind-induced line vibration that is characterized by high frequency, low amplitude motion commonly known as aeolian vibration. The large and small weights of the VORTX damper can achieve greater power dissipation and frequency response performance than “symmetrical weight” Stockbridge damper designs. Wider frequency coverage translates into better protection as energy is more effectively dissipated over the entire range of cable frequencies.

FEATURES AND BENEFITS

- Extruded aluminum alloy contoured clamp offers a “precision” fit to evenly capture the OPGW and uniformly distribute pressure along the surface of the cable.
- Meets IEC standard requirements
- Precision-manufactured galvanized steel messenger strand efficiently dissipates vibration energy
- Open, galvanized ductile iron weights do not enclose the messenger, reducing the possibility of corrosion.
- Damper can be ordered with a breakaway bolt that has a bolt head designed to shear off when the bolt is tightened to the proper torque
- Number and placement of dampers in each span is determined by a proprietary, internally-developed computer program that utilizes the results of ongoing field and laboratory research
- VORTX Dampers are tested in accordance with IEC 61897: Overhead Lines – Requirements and Tests for Stockbridge Type Aeolian Vibration Dampers.

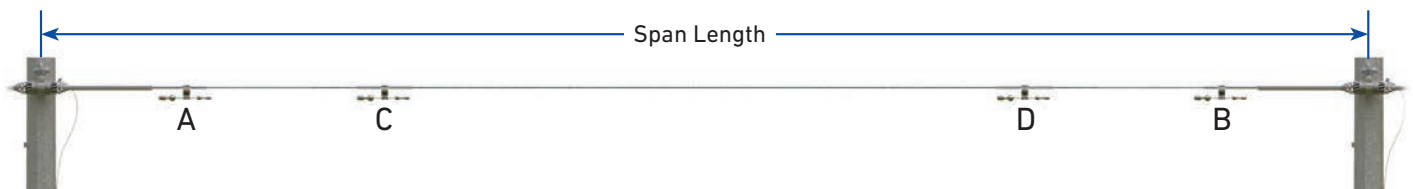
DAMPER SELECTION

OPGW Diameter	Damper Type
≤0.75" (19 mm)	Spiral Vibration Damper
>0.75" (19 mm)	VORTX Vibration Damper

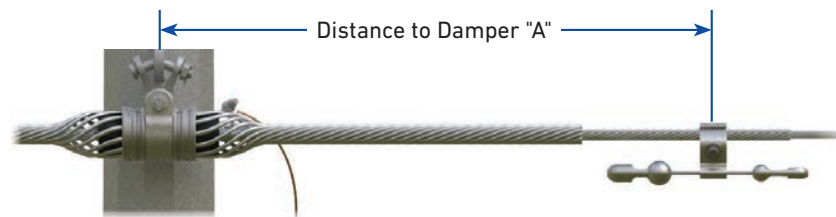
DAMPER QUANTITY & PLACEMENT

- The number of dampers required per span is dependent upon wind energy exposure and the OPGW's characteristics, such as self-damping which is determined by the OPGW construction and the amount of applied tension.
- Single dampers are capable of a predetermined amount of energy dissipation that can protect spans approximately 1,000 ft (300 m) long or more considering self damping.
- Longer spans, such as river crossings, need additional protection and may require more than one damper within the span, including dampers that are placed midspan.
- Refer to the images below for the general placement sequence and measurement references for VORTX vibration dampers. **NOTE:** For dead-end hardware locations, dampers must be placed at locations "A" and "C" ("B" and "D").
- Dampers cannot be installed directly onto OPGW and must be secured to the protective rods of the attachment hardware at locations "A" and "B" or PLP Protector Rods (ordered separately) that are installed on the OPGW at locations "C" and "D."

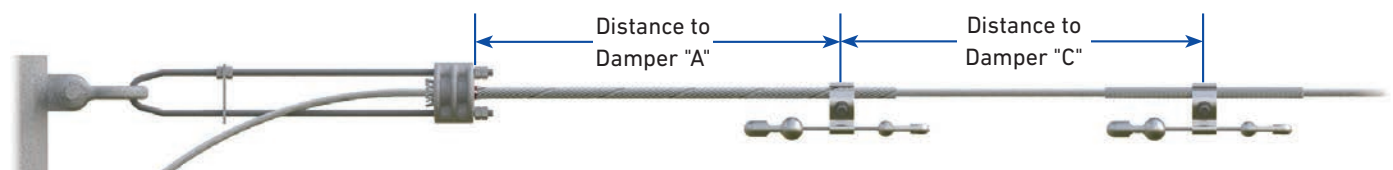
General Placement Sequence



Damper Placement at Tangent Hardware Locations



Damper Placement at Dead-End Hardware Locations

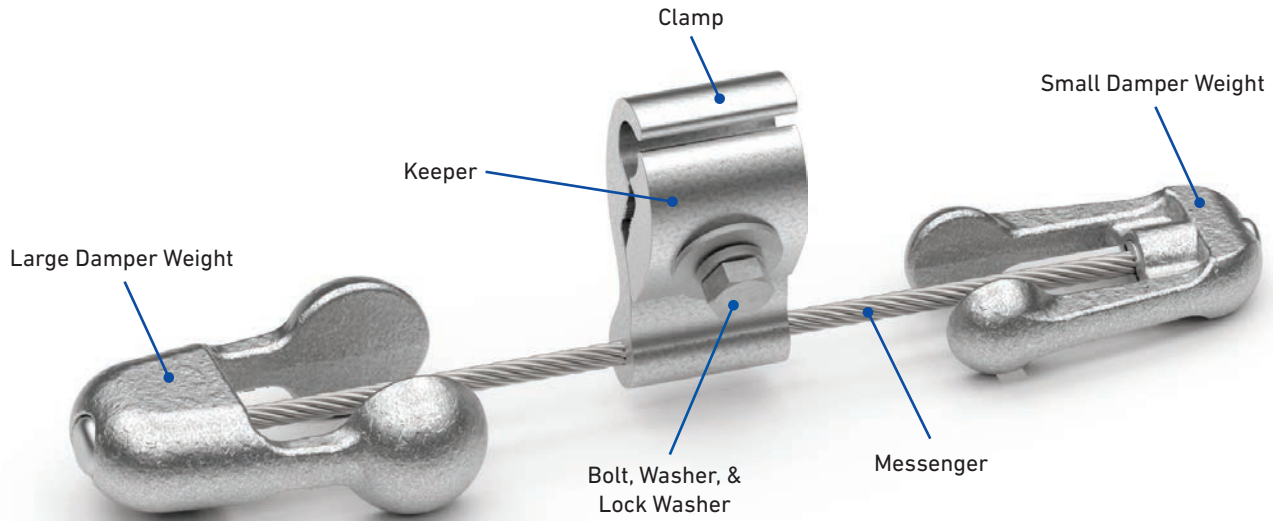


VORTX DAMPER PLACEMENT (VDP) SOFTWARE

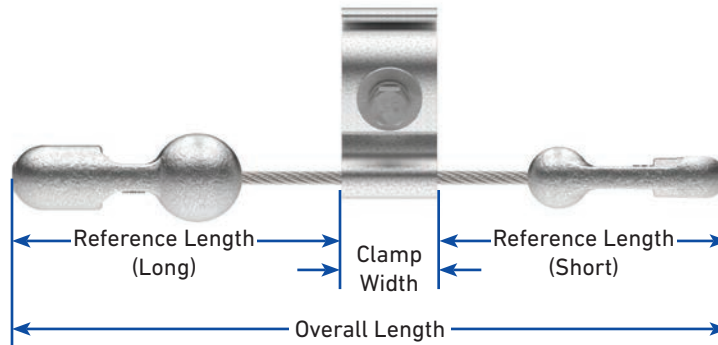
- Based upon data gathered from laboratory testing, field studies, CAD research, and PLP's 70+ year knowledge base on vibration to determine the recommended damper model, quantity, and optimal placement location within the span to counter potential damage to the line system.
- Considers many input variables specific to the individual OPGW line, such as its construction, design, and local operating conditions
- Available for registration at no charge to PLP customers. Contact your local representative or PLP Technical Support for more information.



COMPONENTS



DIMENSIONS



VORTX Vibration Damper Dimensions

Catalog Number	Clamp Range		Overall Length		Reference Length (Long)		Reference Length (Short)		Clamp Width		Bolt Size	Assembled Weight	
	in	mm	in	mm	in	mm	in	mm	in	mm		mm	lb
VSD-2016	0.483 – 0.611	12.3 – 15.4	14.6	370	6.9	175	6.0	153	1.63	41.4	M12 x 50	3.6	1.6
VSD-2020	0.612 – 0.785	15.5 – 19.9	14.9	379	6.9	175	6.0	153	2.00	50.8	M12 x 50	3.9	1.8
VSD-2025	0.786 – 0.982	20.0 – 24.9	14.9	379	6.9	175	6.0	153	2.00	50.8	M12 x 50	4.0	1.8
VSD-2032	0.983 – 1.260	25.0 – 31.9	15.1	384	6.9	175	6.0	153	2.20	55.9	M12 x 70	4.4	2.0
VSD-2040	1.261 – 1.578	32.0 – 40.0	15.3	389	6.9	175	6.0	153	2.38	60.5	M12 x 70	4.6	2.1
VSD-2050	1.579 – 1.970	40.1 – 50.0	15.4	392	6.9	175	6.0	153	2.50	63.5	M12 x 70	4.9	2.2
VSD-2520	0.612 – 0.785	15.5 – 19.9	12.7	322	6.4	161	4.3	110	2.00	50.8	M12 x 50	4.9	2.2
VSD-2525	0.786 – 0.982	20.0 – 24.9	12.7	322	6.4	161	4.3	110	2.00	50.8	M12 x 50	5.0	2.3
VSD-2532	0.983 – 1.260	25.0 – 31.9	12.9	327	6.4	161	4.3	110	2.20	55.9	M12 x 70	5.4	2.5
VSD-2540	1.261 – 1.579	32.0 – 40.1	13.1	332	6.4	161	4.3	110	2.38	60.5	M12 x 70	5.7	2.6
VSD-3525	0.786 – 0.982	20.0 – 24.9	14.7	374	7.0	179	5.7	145	2.00	50.8	M12 x 50	7.3	3.3
VSD-3532	0.983 – 1.260	25.0 – 31.9	14.9	379	7.0	179	5.7	145	2.20	55.9	M12 x 70	7.7	3.5
VSD-3540	1.261 – 1.578	32.0 – 40.0	15.1	384	7.0	179	5.7	145	2.38	60.5	M12 x 70	7.9	3.6
VSD-3550	1.579 – 1.970	40.1 – 50.0	15.2	387	7.0	179	5.7	145	2.50	63.5	M12 x 70	8.2	3.7



ORDERING INFORMATION

Protector Rods

- Must be ordered for locations that require the damper to be placed beyond the protective rods of the attachment hardware.
- Select the appropriate catalog number from the table below using the OPGW diameter.

FIBERLIGN Protector Rods

Catalog Number	Cable Diameter		Rod Length		Rod Diameter		Rods per Set	Color Code	Units per Carton	Weight per Carton	
	in	mm	in	mm	in	mm				lb	Kg
PR-0135	0.378 – 0.423	9.6 – 10.7	12	304	0.121	3.1	11	Yellow	50	10	4.5
PR-0137	0.424 – 0.475	10.8 – 12.1	12	304	0.121	3.1	12	Brown	50	10	4.5
PR-0139	0.476 – 0.533	12.1 – 13.5	16	406	0.121	3.1	13	Blue	50	14	6.4
PR-0141	0.534 – 0.585	13.6 – 14.8	16	406	0.121	3.1	14	Green	50	14	6.4
PR-0142	0.586 – 0.618	14.9 – 15.6	16	406	0.146	3.7	13	Orange	50	21	9.5
PR-0144	0.619 – 0.667	15.7 – 16.9	16	406	0.146	3.7	14	Purple	50	21	9.5
PR-0146	0.668 – 0.722	17.0 – 18.3	20	508	0.146	3.7	15	Red	50	29	13.1
PR-0148	0.723 – 0.816	18.4 – 20.3	20	508	0.146	3.7	16	Black	50	29	13.1
PR-0150	0.817 – 0.898	20.8 – 22.7	20	508	0.146	3.7	17	White	50	31	14.1
PR-0151	0.899 – 0.954	22.8 – 24.2	24	610	0.167	4.2	17	Yellow	50	47	21.3
PR-0152	0.955 – 1.019	24.3 – 25.8	24	610	0.182	4.6	16	Brown	25	29	13.1
PR-0154	1.020 – 1.064	25.9 – 27.0	24	610	0.182	4.6	17	Blue	25	29	16.1
PR-0155	1.065 – 1.098	27.1 – 27.8	26	660	0.204	5.2	16	Green	25	36	16.3
PR-0156	1.099 – 1.181	27.9 – 29.9	26	660	0.250	6.4	14	Orange	25	48	21.7
PR-0158	1.182 – 1.298	30.0 – 32.9	26	660	0.250	6.4	15	Purple	25	51	23.1

VORTX Vibration Dampers

- Complete the catalog number by selecting the appropriate suffix codes from the tables below
- In order to select the proper clamp suffix code, use the following equation to determine the overall diameter for the section of the span on which the damper will be installed: **OPGW Diameter + (2 x Protector Rod Diameter)**.

VORTX Vibration Damper Catalog Number

VSD- X X X
 (Section 1) (Section 2) (Section 3)

Catalog Number Example: VSD-2025B

Includes (1) VORTX Vibration Damper with Weights for OPGW Diameter Range .465"–.720", Clamp for Overall Diameter Range .786"– .983", and Break-Away Bolt

Section 1

Weight Suffix Code	OPGW Diameter Range	
	in	mm
20	0.465 – 0.720	11.8 – 18.2
25	0.612 – 1.260	15.5 – 32.0
35	0.721 – 1.260	18.3 – 32.0

Section 2

Clamp Suffix Code	Clamp Range	
	in	mm
16	0.483 – 0.612	12.3 – 15.5
20	0.612 – 0.786	15.5 – 20.0
25	0.786 – 0.983	20.0 – 25.0
32	0.983 – 1.261	25.0 – 32.0
40	1.261 – 1.579	32.0 – 40.1
50	1.579 – 1.970	40.1 – 50.0

Section 3

Bolt Suffix Code	Bolt Type
Leave Blank	Standard Bolt
B	Break-Away Bolt