	<p>STAVBA: <b>1020002081 V1310/1311 - výměna vedení</b></p>	<p>ROZMÍSTĚNÍ TLUMIČŮ VIBRACÍ</p>
---	---	---------------------------------------

## ROZMÍSTĚNÍ TLUMIČŮ VIBRACÍ

Dokumentace pro provádění stavby

<p>Projektant: Ing. Jan Bízek</p> <p>Hlavní projektant: Ing. Jan Bízek</p>	<p>Číslo zakázky: 4-18-007</p> <p>STAVEBNÍ OBJEKT: <b>CZ00002.2 KZL</b></p>	<p>Projekt: 10/2019</p> <p>Verze: 10/2019</p>
--	---	---

**2x110 kV No.: V1310/1311 TR Mirovka - Zdar nad Sazavou (tower no. TR- 24)**  
**2S 2/24 (M167/R91-228)-17,7mmØ (TGG)**

Tower no.	Portal	1A	1	2	3	3A	4	5	6	7	8	9	20	T
Tower type	T	S	T	T	T	S	T	T	T	S	S	T	1	S
Span length [m]	53,6	51,9	58,4	122,5	160,8	140,6	106,3	129,7	216,6	247,7	227,8			
Every Day Stress [MPa]	6,44	6,44	17,40	23,20	22,63	22,63	23,72	27,79	29,33	29,33	29,33			

Tower no.	9	10	11	12	13	14	15	16	17	18	19	20	10	T
Tower type	T	S	S	T	S	T	S	S	S	S	S	S	7	S
Span length [m]	244,9	175,7	214,6	213,6	213,3	263,1	249,8	248,7	224,0	218,6	200,8			
Every Day Stress [MPa]	29,57	29,57	29,57	28,10	28,10	29,35	29,35	29,35	29,35	29,35	29,35			

Tower no.	20	21	22	23	24								6	T
Tower type	S	S	T	S	T								2	S
Span length [m]	200,4	208,6	244,8	255,4										
Every Day Stress [MPa]	29,35	29,35	25,26	25,26										

Damper B853002A03 (Tension tower): 36 pieces  
 Damper B161003A05 (Suspension tower): 10 pieces

T Tension tower  
S Suspension tower

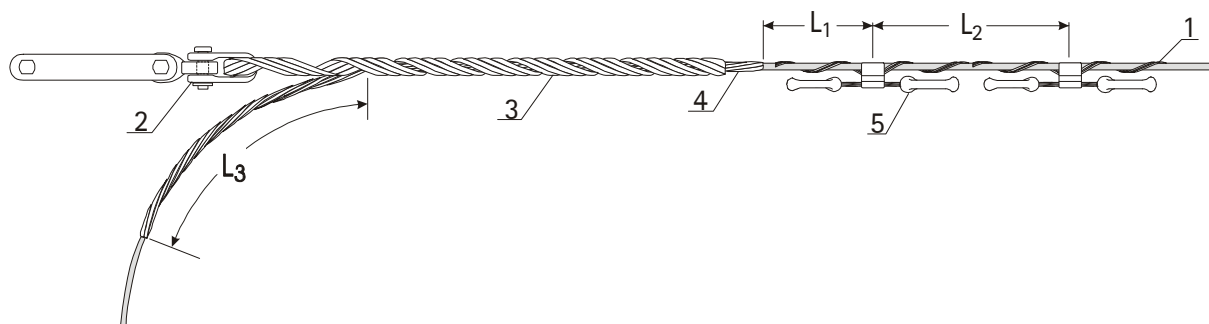
RIBE  
 Electrical Fittings  
 2019\_274  
 08.10.2019

OPGW : **2S 2/24 (M167/R91-228)-17,7mmØ (TGG)**  
 Customer : **PROFI-EMG, s.r.o.**  
 Project : **2x110 kV No.: V1310/1311 TR Mirovka – Zdar nad Sazavou (tower no. TR- 24)**  
 Conductor self damping : **Estimated on basis of similar OPGW's**  
 Every Day Stress, Tension (EDS, EDT) :  **$\leq 29,57\text{MPa} \approx 4,951\text{kN}$  (for 10 °C )**

Study:  
**2019\_274**

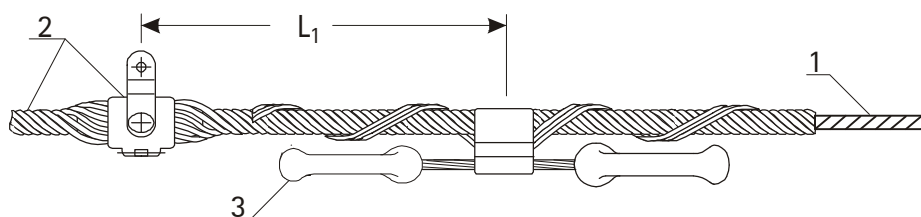
Date:  
**08.10.2019**

### Tension tower:



1.....	OPGW.....		
2.....	Thimble.....	F02686A02	$L_1 \approx 0,5 \text{ m}$
3.....	Dead end.....	AW252152	$L_2 = 0,6 \text{ m}$
4.....	Protection rods.....	RW193220lis	$L_3 \approx 0,4 \text{ m}$
5.....	Vibration damper.....	B853002A03	
	with helical rods.....	TW185043	

### Suspension tower:



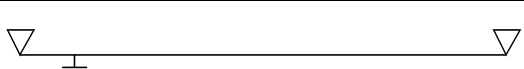
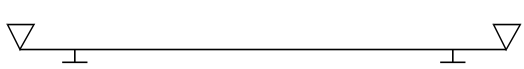
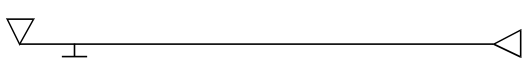
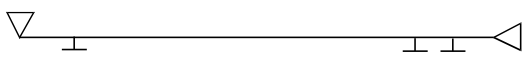
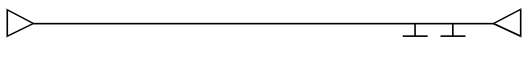

1.....	OPGW.....		
2.....	Amor grip suspension...	LTA179200/6lis	$L_1 = 0,6 \text{ m}$
3.....	Vibration damper.....	B161003A05	
	with helical rods.....	TW310062	




The damper locations are only valid for the damper type numbers shown in the drawing. They are not transferrable to other damper types. Ignoring this warning may cause damage of the cable or the damper.

OPGW : **2S 2/24 (M167/R91-228)-17,7mmØ (TGG)**  
 Customer : **PROFI-EMG, s.r.o.**  
 Project : **2x110 kV No.: V1310/1311 TR Mirovka – Zdar nad Sazavou (tower no. TR- 24)**  
 Conductor self damping : **Estimated on basis of similar OPGW's**  
 Every Day Stress, Tension (EDS, EDT) :  **$\leq 29,57\text{MPa} \approx 4,951\text{kN}$  (for 10 °C )**

Study:  
**2019\_274**

Date:  
**08.10.2019**

		max. span length	Damper left	Damper right
	S - S	< 250 m	type 1	-----
	S - S	250 – 264 m	type 1	type 1
	S - T	< 250 m	type 1	-----
	S - T	250 – 264 m	type 1	type 2
	T - T	< 250 m	-----	type 2
	T - T	250 – 264 m	type 2	type 2

Symbols:  suspension (S)  tension (T)  vibration damper

type 1: B161003A05

type 2: B853002A03

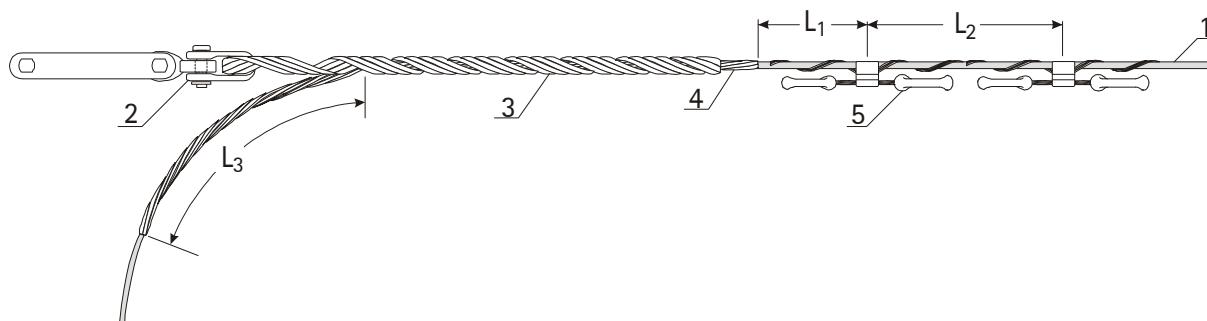
The damper locations are only valid for the damper type numbers shown in the drawing. They are not transferrable to other damper types. Ignoring this warning may cause damage of the cable or the damper.

OPGW : **2S 2/24 (M112 / R62-101) – 14,45mmØ**  
 Customer : **PROFI-EMG, s.r.o.**  
 Project : **2x110 kV No.: V1310/1311 TR Mirovka – Zdar nad Sazavou (tower no. 24 – TR Zdar)**  
 Conductor self damping : **Estimated on basis of similar OPGW's**  
 Every Day Stress (EDS) : **≤ 36,5 MPa (for 10 °C)**

Study:  
**2019\_269**

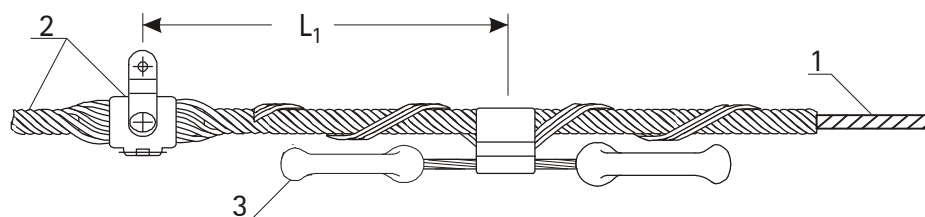
Date:  
**30.09.2019**

### Tension tower:



1.....	OPGW/ ADSS.....	
2.....	Thimble.....	F02686A02
3.....	Dead end.....	AW225153s
4.....	Protection rods.....	RW148200lis
5.....	Vibration damper.....	B853002A01
	with helical rods.....	TW148040
		$L_1 \approx 0,5 \text{ m}$
		$L_2 = 0,6 \text{ m}$
		$L_3 \approx 0,4 \text{ m}$

### Suspension tower:



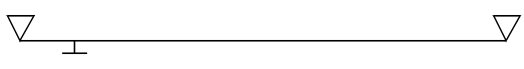
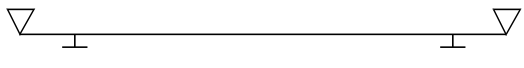
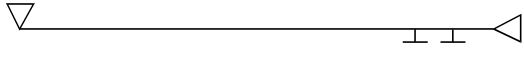
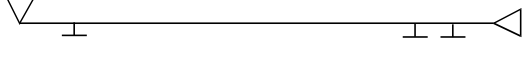


1.....	OPGW/ ADSS.....	
2.....	Amour grip suspension.	LTA144180/6lis
3.....	Vibration damper.....	B853002A06
	with helical rods.....	TW252062
		$L_1 = 0,6 \text{ m}$




The damper locations are only valid for the damper type numbers shown in the drawing. They are not transferrable to other damper types. Ignoring this warning may cause damage of the cable or the damper.

OPGW : **2S 2/24 (M112 / R62-101) – 14,45mmØ**  
 Customer : **PROFI-EMG, s.r.o.**  
 Project : **2x110 kV No.: V1310/1311 TR Mirovka – Zdar nad Sazavou (tower no. 24 – TR Zdar)**  
 Conductor self damping : **Estimated on basis of similar OPGW's**  
 Every Day Stress (EDS) : **≤ 36,5 MPa (for 10 °C)**

Study:  
**2019\_269**

Date:  
**30.09.2019**

		max. span length	Damper left	Damper right
	S - S	< 250 m	type 1	-----
	S - S	250 – 262 m	type 1	type 1
	S - T	< 250 m	-----	type 2
	S - T	250 – 262 m	type 1	type 2
	T - T	< 250 m	-----	type 2
	T - T	250 – 262 m	type 2	type 2

Symbols:  suspension (S)  tension (T)  vibration damper

type 1: B853002A06

type 2: B853002A01

The damper locations are only valid for the damper type numbers shown in the drawing. They are not transferrable to other damper types. Ignoring this warning may cause damage of the cable or the damper.

**2x110 kV No.: V1310/1311 TR Mirovka - Zdar nad Sazavou (tower no. 24 – TR Zdar)**  
**2S 2/24 (M112 / R62-101) – 14,45mmØ**

Tower no.	24	25	26	27	28	29	30	31	32	33	34	35	10	T
Tower type	T	T	S	S	T	S	S	S	S	S	S	T	6	S
Span length [m]	71,9	199,6	187,0	208,0	200,1	223,7	217,2	220,8	221,1	235,0	209,5			
Every Day Stress [MPa]	27,49	29,38	29,38	29,38	28,78	28,78	28,78	28,78	28,78	28,78	28,78			

Tower no.	35	36	37	38	39	40	41	42	43	44	45	46	12	T
Tower type	T	S	S	T	T	S	S	S	S	S	S	T	6	S
Span length [m]	220,3	149,6	178,2	259,9	179,9	200,1	242,2	248,8	240,7	207,9	232,7			
Every Day Stress [MPa]	29,73	29,73	29,73	28,00	29,13	29,13	29,13	29,13	29,13	29,13	29,13			

Tower no.	46	47	48	49	50	51	52	53	54	55	56	57	4	T
Tower type	T	S	S	S	S	S	S	S	S	S	S	T	10	S
Span length [m]	213,1	236,9	247,7	243,5	254,8	237,2	231,6	243,3	247,3	246,1	216,5			
Every Day Stress [MPa]	29,08	29,08	29,08	29,08	29,08	29,08	29,08	29,08	29,08	29,08	29,08			

Tower no.	57	58	59	60	61	62	63	64	65	66	67	68	6	T
Tower type	T	S	S	S	S	S	S	S	S	S	T	S	8	S
Span length [m]	222,2	211,1	224,8	242,6	226,4	235,1	246,3	211,9	221,2	244,9	241,6			
Every Day Stress [MPa]	29,29	29,29	29,29	29,29	29,29	29,29	29,29	29,29	29,29	29,29	29,32			

Tower no.	68	69	70	71	72	73	74	75	76	77	78	79	6	T
Tower type	S	S	S	S	S	T	S	S	S	S	S	T	9	S
Span length [m]	198,7	262,0	226,0	218,5	202,8	183,9	195,6	203,9	228,5	221,7	221,4			
Every Day Stress [MPa]	29,32	29,32	29,32	29,32	29,32	33,27	33,27	33,27	33,27	33,27	33,27			

Damper B853002A01 (Tension tower): 38 pieces

Damper B853002A06 (Suspension tower): 39 pieces



T Tension tower

S Suspension tower

RIBE  
Electrical Fittings  
2019\_269  
02.10.2019

**2x110 kV No.: V1310/1311 TR Mirovka - Zdar nad Sazavou (tower no. 24 – TR Zdar)**  
**2S 2/24 (M112 / R62-101) – 14,45mmØ**

Tower no.	79	80	81	82	83	84	85	86	87	88	89	90	6	T
Tower type	T	S	S	S	T	S	S	S	S	S	S	S	8	S
Span length [m]	218,9	239,7	213,4	203,2	233,5	185,0	212,0	218,0	220,0	195,0	200,0			
Every Day Stress [MPa]	21,08	21,08	21,08	21,08	13,59	13,59	13,59	13,59	13,59	13,59	13,59			

Tower no.	90	91	92	93	94	95	96	97	98	99	100	101	8	T
Tower type	S	S	T	S	S	S	S	S	T	S	S	S	7	S
Span length [m]	208,3	190,3	214,9	180,0	175,0	160,0	184,0	172,5	166,0	167,0	172,0			
Every Day Stress [MPa]	13,59	13,59	13,77	13,77	13,77	13,77	13,77	13,77	12,06	12,06	12,06			

Tower no.	101	102	103	104	105	106	107	108	109	110	111	112	8	T
Tower type	S	S	S	S	T	S	S	S	T	S	S	S	7	S
Span length [m]	180,1	168,8	168,1	128,0	138,0	169,0	168,0	153,4	230,2	180,0	177,0			
Every Day Stress [MPa]	12,06	12,06	12,06	12,06	12,13	12,13	12,13	12,13	13,68	13,68	13,68			

Tower no.	112	113	114	115	116	117	118	119	120	121	122	123	8	T
Tower type	S	S	S	T	S	S	S	S	S	S	T	S	7	S
Span length [m]	204,0	185,0	170,9	186,7	228,0	175,0	188,0	188,0	192,0	176,2	169,4			
Every Day Stress [MPa]	13,68	13,68	13,68	13,69	13,69	13,69	13,69	13,69	13,69	13,69	13,91			

Tower no.	123	124	125	126	127	128	129	130	131	132	133	134	12	T
Tower type	S	S	S	S	T	S	S	S	T	S	T	S	5	S
Span length [m]	181,0	175,0	160,0	158,0	211,3	204,9	230,1	189,2	161,3	172,8	174,3			
Every Day Stress [MPa]	13,91	13,91	13,91	13,91	21,24	21,24	21,24	21,24	36,43	36,43	35,34			

Damper B853002A01 (Tension tower): 42 pieces  
 Damper B853002A06 (Suspension tower): 34 pieces

T Tension tower  
 S Suspension tower

RIBE  
 Electrical Fittings  
 2019\_269  
 02.10.2019



**2x110 kV No.: V1310/1311 TR Mirovka - Zdar nad Sazavou (tower no. 24 – TR Zdar)**  
**2S 2/24 (M112 / R62-101) – 14,45mmØ**

Tower no.	134	135	136	137	138	139	140	141	142	143	144	145	10	T
Tower type	S	S	T	S	S	S	S	S	S	T	T	S	6	S
Span length [m]	180,9	180,6	210,0	229,7	230,1	229,6	216,9	22,7	231,6	233,3	215,5			
Every Day Stress [MPa]	35,34	35,34	21,01	21,01	21,01	21,01	21,01	21,01	21,01	28,08	21,21			

Tower no.	145	146	147	148	149	150	151	152	153	TR	16	T
Tower type	S	S	T	S	T	S	T	T	T	T	1	S
Span length [m]	224,5	194,1	224,0	212,1	210,2	197,1	238,0	77,2	27,4			
Every Day Stress [MPa]	21,21	21,21	21,11	21,11	30,60	30,60	26,02	17,41	27,40			

Damper B853002A01 (Tension tower): 26 pieces  
 Damper B853002A06 (Suspension tower): 7 pieces

T Tension tower  
 S Suspension tower

**damper total tower no. 24-153-Tr**

Damper B853002A01 (Tension tower): 106 pieces  
 Damper B853002A06 (Suspension tower): 80 pieces

T Tension tower  
 S Suspension tower

RIBE  
 Electrical Fittings  
 2019\_269  
 02.10.2019