

## Reeling cables in line with **VDE 0250 part. 813**

### Cable type

**PANZERFLEX-ELX 3,6/6 ÷ 12/20 kV**  
(N)TSCGEWÖU - H.V. reeling cable 6 to 20 kV

### Main application

Flexible H.V. reeling power cables for use on connecting movable parts of machine tools and any material handling equipment (i.e. Stacker/reclaimer, ship to shore crane, container crane, excavators, also suitable for festoon system).

Perfectly suitable for any energy supply on cable reels systems associated from high to extreme mechanical stresses, frequent bending/torsional operation and fast movement with strong acceleration.

### Construction

<b>Conductor:</b>	Tinned copper conductor, flexible cl. 5 IEC 60228 Specially designed for mobile application
<b>Insulation:</b>	Micro filtered HEPR rubber compound better than 3GI3 New specially developed compound with improved electrical and mechanical characteristics
<b>Cores identification:</b>	Main cores: natural colour with black semiconductive layer Splitted earth cores: identified by position and covered with special black semiconductive compound
<b>Field control:</b>	- Conductor screen: semiconductive layer - Insulation screen: semiconductive layer of special compound Applied with insulation
<b>Identification:</b>	Printed numbers on semiconductor layer
<b>Laying-up:</b>	Short lay length for better flexibility and mechanical characteristics ≤ 8 times the laying-up cores diameter, three cores design with protective earth cores split in 3 interstitial areas
<b>Separation (if any):</b>	Tape(s)
<b>Inner sheath:</b>	Polychloroprene rubber based compound Special developed with improved mechanical characteristics
<b>Antitwisting protection:</b>	Textile braid of synthetic yarns Firmly bonded between inner and outer sheath
<b>Outer sheath:</b>	Red polychloroprene rubber compound UV resistant, oil and chemical resistant better than 5GM3 compound
<b>Marking:</b>	PALAZZO - PANZERFLEX-ELX <i>rated voltage nc x cross section year of manufacturing</i>

### Parameters

<b>Electrical</b>	Rated voltage	U <sub>0</sub> /U = 3,6/6 kV to 12/20 kV*
	Maximum permissible operating voltage in AC systems	U <sub>m</sub> = 7,2 kV to 24 kV
	AC test voltage over 5 minutes	11 kV to 29 kV according to VDE 0250 part 813
	Current Carrying Capacity	According to DIN VDE 0298 part 4
<b>EMC</b>	Symmetrical design + narrow production tolerances	Very low interference
<b>Thermal</b>	Fully flexible operation	- 30 °C
	Fixed installation	- 40 °C
	Maximum permissible operating temperature of the conductor	90 °C
	Short-circuit temperature of the conductor	250 °C
<b>Mechanical</b>	Tensile load	Up to 20 N/mm <sup>2</sup>
	Minimum bending radii	According to DIN VDE 0298 part 3
	Reeling operation	No restriction. Consult the manufacturer if speed exceeds 180 m/min
	Festoon systems	Up to 120 m/min
<b>Chemical</b>	Resistance to oil	According to VDE / IEC standard
	Weather resistance	Unrestricted use outdoor and indoor, UV resistant, moisture resistant.



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**Table 1: PANZERFLEX-ELX 3,6/6 ÷ 12/20 kV (N)TSCGEWÖU\***

N. of cores and nominal section n-mm <sup>2</sup> +n-mm <sup>2</sup> /3	Main conductor		Protective earth cond. nom. diam. mm	Overall diameter		Net weight approx. kg/km	Maximum permissible tensile force N	Current carrying capacity at 30 °C*				Short circuit current 80 ° to 200 °C kA·1 sec.
	D.C. resist. at 20 °C Ohm/km	nom. diam. mm		min. mm	max. mm			Laid straight A	Spiral or 1 layer A	2 layers A	3 layers A	
<b>3,6/6 kV</b>												
3x25+3x25/3	0,795	6,6	4,0	38,5	41,5	2.460	1.500	131	105	80	64	3,2
3x35+3x25/3	0,565	8,0	4,0	41,2	44,2	2.970	2.100	162	130	99	79	4,5
3x50+3x25/3	0,393	9,3	4,0	44,0	47,0	3.500	3.000	202	162	123	99	6,4
3x70+3x35/3	0,277	11,2	4,9	48,1	51,1	4.460	4.200	250	200	153	123	9,0
3x95+3x50/3	0,210	13,0	5,4	52,7	56,7	5.560	5.700	301	241	184	147	12,2
3x120+3x70/3	0,164	15,0	6,6	57,0	61,0	6.930	7.200	352	282	215	172	15,4
3x150+3x70/3	0,132	16,9	6,9	62,7	66,7	8.190	9.000	404	323	246	198	19,2
3x185+3x95/3	0,108	18,3	8,0	66,8	70,8	9.750	11.100	461	369	281	226	23,7
3x240+3x120/3	0,0817	20,5	9,3	73,9	77,9	12.450	14.400	540	432	329	265	30,7
<b>6/10 kV</b>												
3x25+3x25/3	0,795	6,6	4,0	39,4	42,4	2.530	1.500	131	105	80	64	3,2
3x35+3x25/3	0,565	8,0	4,0	42,0	45,0	3.050	2.100	162	130	99	79	4,5
3x50+3x25/3	0,393	9,3	4,0	44,8	47,8	3.590	3.000	202	162	123	99	6,4
3x70+3x35/3	0,277	11,2	4,9	48,4	52,4	4.550	4.200	250	200	153	123	9,0
3x95+3x50/3	0,210	13,0	5,4	53,5	57,5	5.670	5.700	301	241	184	147	12,2
3x120+3x70/3	0,164	15,0	6,6	57,8	61,8	7.040	7.200	352	282	215	172	15,4
3x150+3x70/3	0,132	16,9	6,6	63,5	67,5	8.310	9.000	404	323	246	198	19,2
3x185+3x95/3	0,108	18,3	8,0	67,4	71,4	9.820	11.100	461	369	281	226	23,7
3x240+3x120/3	0,0817	20,5	9,3	74,8	78,8	12.600	14.400	540	432	329	265	30,7
<b>8,7/15 kV</b>												
3x25+3x25/3	0,795	6,6	4,0	42,8	45,8	2.840	1.500	139	111	85	68	3,2
3x35+3x25/3	0,565	8,0	4,0	45,5	48,5	3.380	2.100	172	138	105	84	4,5
3x50+3x25/3	0,393	9,3	4,0	48,3	51,3	3.940	3.000	215	172	131	105	6,4
3x70+3x35/3	0,277	11,2	4,9	53,1	57,1	5.080	4.200	265	212	162	130	9,0
3x95+3x50/3	0,210	13,0	5,4	57,0	61,0	6.100	5.700	319	255	195	156	12,2
3x120+3x70/3	0,164	15,0	6,6	62,9	66,9	7.730	7.200	371	297	226	182	15,4
3x150+3x70/3	0,132	16,9	6,6	67,0	71,0	8.800	9.000	428	342	261	210	19,2
3x185+3x95/3	0,108	18,3	8,0	70,0	74,0	10.230	11.100	488	390	298	239	23,7
3x240+3x120/3	0,0817	20,5	9,3	77,4	81,4	13.020	14.400	574	459	350	281	30,7
<b>12/20 kV</b>												
3x25+3x25/3	0,795	6,6	4,0	48,0	51,0	3.360	1.500	139	111	85	68	3,2
3x35+3x25/3	0,565	8,0	4,0	51,4	55,4	4.070	2.100	172	138	105	84	4,5
3x50+3x25/3	0,393	9,3	4,0	54,2	58,2	4.660	3.000	215	172	131	105	6,4
3x70+3x35/3	0,277	11,2	4,9	58,3	62,3	5.730	4.200	265	212	162	130	9,0
3x95+3x50/3	0,210	13,0	5,4	63,7	67,7	7.020	5.700	319	255	195	156	12,2
3x120+3x70/3	0,164	15,0	6,6	68,0	72,0	8.470	7.200	371	297	226	182	15,4
3x150+3x70/3	0,132	16,9	6,6	73,9	77,9	9.890	9.000	428	342	261	210	19,2
3x185+3x95/3	0,108	18,3	8,0	77,0	81,0	11.370	11.100	488	390	298	239	23,7
3x240+3x120/3	0,0817	20,5	9,3	82,6	86,6	13.890	14.400	574	459	350	281	30,7

\* 18/30 kV available on request.