

Control cables in line with **VDE 0250 part. 814**

Cable type

PANZERFLEX-L 0,6/1 kV

(N)SHTÖU-JZ / -OZ rubber cables suitable for reeling & festoon system

Main application

Flexible control 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, festoon, grabbye ship unloading, gantry festoons, timber crane festoons, etc.).

Suitable for signaling supply on cable reels and festoon systems associated to high mechanical stresses, frequent bending/torsional operation and fast movement with strong acceleration.

Construction

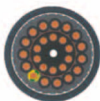
Conductor:	Tinned copper conductor, flexible cl. 5 IEC 60228 Specially designed for mobile application
Insulation:	HEPR compound better than 3GI3 New specially developed crushproof compound with improved electrical and mechanical characteristics
Cores identification:	Black with printed numbers with or without 1 green/yellow Standard: with green/yellow core in the outer layer
Laying-up:	Short lay length for better flexibility ≤7,5 times the laying-up cores diameter in maximum 3 layers
Separation (if any):	Tape(s)
Inner sheath:	Polychloroprene rubber based compound Better than GM1b
Antitwisting protection:	Synthetic yarns Firmly bonded between inner and outer sheath
Outer sheath:	Black polychloroprene rubber compound UV resistant, oil and chemical resistant better than 5GM2
Marking:	PALAZZO - PANZERFLEX-L 0,6/1 kV <i>nc x cross section</i>

Parameters

Electrical	Rated voltage	U ₀ /U = 0,6/1 kV
	Maximum permissible operating voltage in AC systems	Um = 1,2 kV
	AC test voltage over 5 minutes	3,5 kV
	Current Carrying Capacity	According to DIN VDE 0298 part 4
Thermal	Fully flexible operation	- 25 °C
	Fixed installation	- 40 °C
	Maximum permissible operating temperature of the conductor	90 °C
	Short-circuit temperature of the conductor	250 °C
Mechanical	Tensile load	Up to 15 N/mm ²
	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 240 m/min
Chemical	Resistance to oil	According to VDE / IEC standard
	Weather resistance	Unrestricted use outdoor and indoor, UV resistant, moisture resistant.

If the environment reaches - 40 °C, Palazzo can provide a special version of this cable (differentiated from the standard one by the "-K" add to the code name), which is constructed with a special rubber compound that can face this condition.

For temperature down to - 40 °C we suggest to use the Panzerflex-K. To allow this cable operating at - 40 °C we use an outer-sheath compound that is less resistant to abrasion and tear so please contact our sales department for more information regarding application.



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Table 1: PANZERFLEX-L 0,6/1 kV (N)SHTÖU-JZ /-OZ control cables

N. of cores and nominal section (n-mm ²)	D.C. resist. at 20 °C Ohm/km	Conductor 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.
			min. mm	max. mm			Laid straight A	(Suspended in free air) A	Spiral or 1 layer A	2 layers A	3 layers A		
3x1,5	13,7	1,5	12,4	14,5	255	68	23	24	18	14	11	0,19	
4x1,5	13,7	1,5	13,1	15,2	285	90	23	24	18	14	11	0,19	
5x1,5	13,7	1,5	14,0	16,0	320	113	23	24	18	14	11	0,19	
7x1,5	13,7	1,5	15,8	17,9	415	158	23	24	18	14	11	0,19	
12x1,5	13,7	1,5	19,1	21,2	585	270	23	24	18	14	11	0,19	
18x1,5	13,7	1,5	21,6	23,7	765	405	23	24	18	14	11	0,19	
24x1,5	13,7	1,5	25,6	27,6	1.040	540	23	24	18	14	11	0,19	
30x1,5	13,7	1,5	28,6	28,7	1.140	675	23	24	18	14	11	0,19	
36x1,5	13,7	1,5	28,6	31,8	1.370	810	23	24	18	14	11	0,19	
3x2,5	8,21	2,0	13,4	15,5	310	113	30	32	24	18	15	0,32	
4x2,5	8,21	2,0	14,3	16,3	355	150	30	32	24	18	15	0,32	
5x2,5	8,21	2,0	15,2	17,3	410	188	30	32	24	18	15	0,32	
7x2,5	8,21	2,0	18,1	20,2	570	263	30	32	24	18	15	0,32	
12x2,5	8,21	2,0	21,1	23,2	760	450	30	32	24	18	15	0,32	
18x2,5	8,21	2,0	24,7	26,8	1.070	675	30	32	24	18	15	0,32	
24x2,5	8,21	2,0	28,6	31,8	1.450	900	30	32	24	18	15	0,32	
30x2,5	8,21	2,0	30,0	33,0	1.600	1.125	30	32	24	18	15	0,32	
36x2,5	8,21	2,0	31,8	35,0	1.850	1.350	30	32	24	18	15	0,32	
7x4	5,09	2,4	20,6	22,6	760	420	41	43	33	25	20	0,51	
12x4	5,09	2,4	25,0	27,0	1.085	720	41	43	33	25	20	0,51	
18x4	5,09	2,4	28,4	30,4	1.460	1.080	41	43	33	25	20	0,51	

* Tabulated values are valid up to three loaded conductors with or without earth.

Derating factor shall be used for multicore cables depending on loaded conductors. See page 57.

The Tensile Load on control cables is calculated considering the limit of 15N/mm² instead of the standard 20N/mm².

This is due to the construction of these multi-core cables. For higher Tensile Load please consider to use our VS type as it is provided of a central Kevlar® strainer that allows much higher tensile load.