



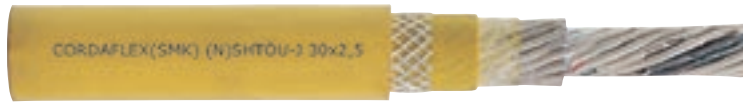
CORDAFLEX (SMK)
(N)SHTOEU
Low Voltage Reeling Cable

ENERGY



Technical Data

	Type	CORDAFLEX (SMK)
	Type designation	(N)SHTOEU-J/-O
	Approvals/standards	DIN VDE 0250, Part 814; VDE-Reg.-Nr. 7519; GOST R
	Application	Flexible reeling cable for very high mechanical stresses. Also for applications to which DIN VDE 0168 and 0118 apply: Open-cast and underground mining.
Electrical parameters	Rated voltage	$U_0 / U = 0.6/1 \text{ kV}$
	Maximum permissible operating voltage in AC systems	$U_0 / U = 0.7/1.2 \text{ kV}$
	Maximum operating voltage in DC systems	$U_0 / U = 0.9/1.8 \text{ kV}$
	AC test voltage	
	- Power cores	3.5 kV, 5 min
	- Control cores	3.5 kV, 5 min
	Current-carrying capacity	According to DIN VDE 0298, Part 4
	Bus compatibility	with special elements: ASI-Bus, Profibus, CAN-Bus, Industrial Ethernet alternativ: Fibre optics for transmitting all bus protocols
	EMC	Assured as result of special cable design
Thermal parameters	Ambient temperature	
	- Fully flexible operation	- 35 °C to + 80 °C
	- Fixed installation	- 50 °C to + 80 °C
	Maximum permissible operating temperature of the conductor	90 °C
	Short-circuit temperature of the conductor	250 °C
Mechanical parameters	Tensile load	Up to 30 N/mm ²
	Torsional stresses	+/- 50 °/m
	Minimum bending radii	According to DIN VDE 0298, Part 3
	Minimum distance with S-type directional changes	20 x D
	Travel speed	
	- Gantry (reeling operation)	No restriction. It is recommended to consult the manufacturer for speeds beyond 240m/min
	- Trolley (festoon operation)	Up to 240 m/min
	Additional tests	Reserved bending test, roller bending test, torsional stress test
Chemical parameters	Resistance to oil	DIN VDE 0473, Part 811-2-1, Para. 10
	Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture



Design features

Type	CORDAFLEX (SMK)
Conductor	Electrolytic copper tinned, very finely stranded class FS
Insulation	PROTOLON MS Special compound based on high-quality EPR (> 3GI3); Improved mechanical and electrical characteristics
Shield for individually shielded cores and twisted and shielded pairs	Braid screen made of tinned copper wires. Transfer impedance optimized at 30 MHz. Surface covered: at least 60 % for shielded cores at least 80 % for twisted and shielded pairs
Core identification	best identification as a result of light colored insulation with numbers printed in black for power and control cables, earth conductor green-yellow colored
Core arrangement	Laid-up in a maximum of 3 layers
Sheath system	<ul style="list-style-type: none"> - PROTOFIRM Special: Inner sheath high grade special compound based on PCP, color: yellow - Anti-torsion braid Reinforced braid made of polyester threads, in a vulcanized bond between the sheaths. Resulting in a high strength of the sheath system. - PROTOFIRM special: outer sheath A sheath system with a unique combination of flexibility and robustness has been achieved through the use of this structure. Abrasion and tear resistant special rubber compound based on PCP, color: yellow.
Marking	CORDAFLEX (SMK) (N)SHTOEU -J/-O (number of cores) x (cross section)

Selection and ordering data

Number of cores and nominal cross-section	Order No.	Main conductor diameter	Overall diameter of cable Min. value	Overall diameter of cable Max. value	Approx. net weight for 1000 m	Maximum permissible tensile force
		[mm]	[mm]	[mm]		
(N)SHTOEU-J power cables, five-core design						
5x4	5DH3 151	3.0	17.4	19.4	430	600
5x6	5DH3 152	3.6	19.0	21.0	690	900
5x10	5DH3 153	4,6	23,4	25,4	1080	1500
5x16	5DH3 154	5,6	26,1	29,1	1500	2400
5x25	5DH3 155	7,3	34,7	37,7	2350	3750
(N)SHTOEU-J power cables, four-core design						
4x4	5DH3 132	3.0	16.0	18.0	455	480
4x6	5DH3 133	3.6	17.4	19.4	575	720
4x10	5DH3 134	4,6	21,6	23,6	905	1200
4x16	5DH3 135	5,6	23,7	26,7	1240	1920
4x25	5DH3 136	7,3	28,5	31,5	1850	3000
(N)SHTOEU-J power cables, three-core design, earth conductor splitted into three parts						
3x35+3x16/3	5DH3 121	8.4/3.5	28.5	31.5	2160	3150
3x50+3x25/3	5DH3 122	10.3/4.2	34.4	37.4	2850	4500
3x70+3x35/3	5DH3 123	12,0/5,0	39,7	42,7	3920	6300
3x95+3x50/3	5DH3 124	14,0/6,0	44,3	47,3	4960	8550
3x120+3x70/3	5DH3 125	15,8/7,2	51,0	55,0	6630	10800
3x150+3x70/3	5DH3 126	17,5/7,2	53,9	57,9	7560	13500
3x185+3x95/3	5DH3 127	19,4/8,1	58,9	62,9	9310	16650
3x240+3x120/3	5DH3 128	22,5/9,3	67,4	71,4	12200	21600
(N)SHTOEU-J control cables						
4x 1.5	5DH3 130	1.6	12.2	13.8	240	180
4x1.5	5DH3 140	1.6	13.0	14.6	280	225
7x1.5	5DH3 142	1,6	15,2	17,2	385	315
12x1.5	5DH3 161	1,6	21,4	23,4	710	540
18x1.5	5DH3 162	1,6	21,3	23,3	760	810
24x1.5	5DH3 163	1,6	23,8	26,8	990	1080
30x1,5	5DH3 164	1,6	26,6	29,6	1220	1350
36x1,5	5DH3 165	1,6	26,5	29,5	1260	1620
44x1,5	5DH3 166	1,6	29,5	32,5	1530	1980
56x1,5	5DH3 167	1,6	34,9	37,9	2050	2520
3x2,5	5DH3 111	2,0	12,7	14,3	280	225
4x2,5	5DH3 131	2,0	13,2	14,8	305	300
5x2,5	5DH3 141	2,0	14,2	15,8	355	375
7x2,5	5DH3 143	2,0	16,6	18,6	510	525
12x2,5	5DH3 171	2,0	23,4	25,4	920	900
18x2,5	5DH3 172	2,0	23,3	25,3	1005	1350
24x2,5	5DH3 173	2,0	26,2	29,2	1320	1800
30x2,5	5DH3 174	2,0	29,4	32,4	1660	2250
36x2,5	5DH3 175	2,0	29,3	32,3	1720	2700
44x2,5	5DH3 176	2,0	34,1	37,1	2230	3300
56x2,5	5DH3 177	2,0	40,1	43,1	2940	4200

Selection and ordering data

Number of cores and nominal cross-section	Order No.	Main conductor diameter	Overall diameter of cable Min. value	Overall diameter of cable Max. value	Approx. net weight for 1000 m	Maximum permissible tensile force
		[mm]	[mm]	[mm]	[kg/km]	[N]

(N)SHTOEU-O bus cables

3x(2x1)C	5DH3 186	1.3	22.0	24.0	755	180
6x(2x0,5)C	5DH3 187	0.9	23.1	25.1	885	360
6x(2x1)C	5DH3 188	1,3	28,9	31,9	1330	360
12x(2x1)C	5DH3 206	1,3	38,9	40,9	2170	720
12x1 (C)	5DH3 183	1,3	22,9	25,9	865	360

(N)SHTOEU-J combined control cables

12x2,5+12x1(C)	5DH3 184	2.0/1.3	26.2	29.2	1230	900
19x2,5+5x1(C)	5DH3 180	2.0/1.3	26.2	29.2	1290	1575
25x2,5+5x1(C)	5DH3 181	2,0/1,3	29,4	32,4	1620	2025

Special designs upon request!