CORDAFLEX(SMK) (N)SHTOEU

Low voltage reeling cable

Application

Flexible low voltage reeling cable for application under high and very high mechanical stresses.

Global data

Brand	CORDAFLEX(SMK)
Type designation	(N)SHTOEU-J/-O
Standard	Based on DIN VDE 0250-814
Certifications / Approvals	VDE Reg. Nr. 7519; GOST-R

Design features

Conductor	Electrolytic copper tinned, very finely stranded class FS
Insulation	PROTOLON MS Special compound based on high-quality EPR (min. 3GI3); improved mechanical and electrical characteristics.
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.
Individual screen	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 arrangement	Laid-up in a maximum of 3 layers
Sheath system	- 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)+VDE Reg.-Nr.

Electrical parameters

Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage AC	0.7/1.2 kV
Max. permissible operating voltage DC	0.9/1.8 kV
AC Test Voltage	3.5 kV (5 Min.)
Data transmission	With special elements: ASI-Bus, Profibus, CAN-Bus, Industrial Ethernet. Alternatively: Fibre optics for transmitting all bus protocols.
Current Carrying Capacity description	Acc. to DIN VDE 0298-4

Chemical parameters

Resistance to oil	Acc. to DIN EN 60811-404; DIN VDE 0473-811-404, paragraph 10
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture.
Water resistance	Given and verified in long-term tests

Thermal parameters

Max. permissible temperature at conductor	90 °C
Max. short circuit temperature of the conductor	250 °C
Ambient temperature for fixed installation	min -50 °C ; max +80 °C
Ambient temperature in fully flexible operation	min -35 °C ; max +80 °C

Mechanical parameters

Max. tensile load on the conductor	30 N/mm²
Torsional stress	± 50 °/m
Min. bending radius	Acc. to DIN VDE 0298 part 3
Min. 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	Reversed bending test, roller bending test, torsional stress test.

Number of cores x cross section	Part number	MLFB Number	Conduc-tor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permis-sible tensile force max. N	Con-ductor resis-tance at 20°C max. Ω/km	Current carrying capacity (1) A	Short Circuit Current (conduc-tor) kA
(N)SHTOEU-J power cables, 3-core design, earth conductor split in three											
3x35+3x16/3	20004037	5DH3121	8.4	28.7	31.7	159	1990	3150	0.57	162	5.01
3x50+3x25/3	20004038	5DH3122	10.3	34.4	37.4	187	2810	4500	0.39	202	7.15
3x70+3x35/3	20004039	5DH3123	12	39.7	42.7	214	3860	6300	0.28	250	10.01
3x95+3x50/3	20004040	5DH3124	14	44.3	47.3	237	4950	8550	0.21	301	13.59
3x120+3x70/3	20004041	5DH3125	15.8	51	55	275	6440	10800	0.16	352	17.16
3x150+3x70/3	20004042	5DH3126	17.5	53.9	57.9	290	7500	13500	0.13	404	21.45
3x185+3x95/3	20004043	5DH3127	19.4	58.9	62.9	315	8990	16650	0.11	461	26.46
3x240+3x120/3	20004044	5DH3128	22.5	67.4	71.4	357	11940	21600	0.08	540	34.32
3x300+3x150/3	20051390	5DH3119	25.2	75.6	79.6	398	14740	27000	0.07	620	42.9
(N)SHTOEU-J power cables, 4-core design											
4x4	20004047	5DH3132	3	16	18	90	450	480	5.09	41	0.57
4x6	20004048	5DH3133	3.6	17.4	19.4	97	600	720	3.39	53	0.86
4x10	20004049	5DH3134	4.6	21.6	23.6	118	900	1200	1.95	74	1.43
4x16	20004050	5DH3135	5.6	23.7	26.7	134	1240	1920	1.24	99	2.29
4x25	20004051	5DH3136	7.3	28.5	31.5	158	1850	3000	0.8	131	3.58
(N)SHTOEU-J power cables, 5-core design											
5x4	20014479	5DH3151	3	17.4	19.4	97	550	600	5.09	41	0.57
5x6	20004056	5DH3152	3.6	19	21	105	690	900	3.39	53	0.86
5x10	20004057	5DH3153	4.6	23.4	25.4	127	1070	1500	1.95	74	1.43
5x16	20004058	5DH3154	5.6	26.1	29.1	146	1500	2400	1.24	99	2.29
5x25	20004059	5DH3155	7.3	33.7	36.7	184	2340	3750	0.8	131	3.58
(N)SHTOEU-J control cables											
3x1,5	20007588	5DH3129	1.6	11.7	13.3	67	210	130	13.7	23	0.21
4x1,5	20004045	5DH3130	1.6	12.2	13.8	69	240	180	13.7	23	0.21
5x1,5	20004052	5DH3140	1.6	13	14.6	73	280	220	13.7	23	0.21
7x1,5	20004054	5DH3142	1.6	15.2	17.2	86	390	310	13.7	23	0.21
12x1,5	20004061	5DH3161	1.6	21.4	23.4	117	720	540	13.7	23	0.21
18x1,5	20004062	5DH3162	1.6	21.3	23.3	117	770	810	13.7	23	0.21
24x1,5	20004063	5DH3163	1.6	23.8	26.8	134	1020	1080	13.7	23	0.21
30x1,5	20135223	5DH3164	1.6	26.5	29.5	148	1240	1350	13.7	23	0.21
36x1,5	20024745	5DH3165	1.6	26.5	29.5	148	1290	1620	13.7	23	0.21
44x1,5		5DH3166	1.6	29.5	32.5	163	1530	1980	13.7	23	0.21
56x1,5	20054721	5DH3167	1.6	35.9	38.9	195	2040	2520	13.7	23	0.21
3x2,5	20004036	5DH3111	2	12.7	14.3	72	270	220	8.21	30	0.36
4x2,5	20004046	5DH3131	2	13.2	14.8	74	300	300	8.21	30	0.36
5x2,5	20004053	5DH3141	2	14.2	15.8	79	350	370	8.21	30	0.36
7x2,5	20004055	5DH3143	2	16.6	18.6	93	500	520	8.21	30	0.36
12x2,5	20004064	5DH3171	2	23.4	25.4	127	910	900	8.21	30	0.36
18x2,5	20004065	5DH3172	2	23.3	25.3	127	1010	1350	8.21	30	0.36
24x2,5	20004066	5DH3173	2	26.2	29.2	146	1340	1800	8.21	30	0.36
30x2,5	20004067	5DH3174	2	29.4	32.4	162	1660	2250	8.21	30	0.36

Number of cores x cross section	Part number	MLFB Number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
36x2,5	20004068	5DH3175	2	30.3	33.3	167	1750	2700	8.21	30	0.36
44x2,5	20004069	5DH3176	2	34.1	37.1	186	2180	3300	8.21	30	0.36
56x2,5	20004070	5DH3177	2	40.1	43.1	216	2870	4200	8.21	30	0.36
(N)SHTOEU-O bus cables											
6x(2x0,5)C		5DH3187	0.9	23.1	25.1	126	885	180	40.1	10	0.07
3x(2x1)C	20004074	5DH3186	1.3	22	24	120	730	180	20	18	0.14
6x(2x1)C	20004075	5DH3188	1.3	28.9	31.9	160	1300	360	20	18	0.14
9x(2x1)C	20004076	5DH3189	1.3	39.3	42.3	212	2150	540	20	18	0.14
12x(2x1)C		5DH3206	1.3	38.9	40.9	205	2170	720	20	18	0.14
12x1(C)	20007925	5DH3183	1.3	22.9	25.9	130	880	360	20	18	0.14
(N)SHTOEU-J combined control cables											
12x2,5+12x1(C)	20004073	5DH3184	2	27.2	30.2	151	1280	900	8.21	30	0.36
19x2,5+5x1(C)	20004071	5DH3180	2	26.2	29.2	146	1310	1420	8.21	30	0.36
19X2,5+5x1,5(C)	20037707	5DH3222	2	31	34	170	1580	1420	8.21	30	0.36
25x2,5+5x1(C)	20004072	5DH3181	2	29.4	32.4	162	1640	1870	8.21	30	0.36
(N)SHTOEU-J control cables with FO											
24x1,5+6x(2G62,5)	20040297	5DH3257	1.6	26.6	29.6	148	1180	1080	13.7	23	0.21
24x1,5+6x(2G50)	20025841	5DH3255	1.6	26.6	29.6	148	1180	1080	13.7	23	0.21
24x1,5+12x(2xE9)	20025742	5DH3254	1.6	26.5	29.5	148	1200	1080	13.7	23	0.21
20x2,5+6x(3G62,5)	20070669	5DH3170	2	28.4	31.4	157	1280	1500	8.21	30	0.36
20x2,5+6x(3E9)	20004087	5DH3234	2	28.4	31.4	157	1290	1500	8.21	30	0.36
24x2,5+6x(2E9)	20040470	5DH3194	2	29.4	32.4	162	1520	1800	8.21	30	0.36
28x2,5+2x(3G50)	20009380	5DH3249	2	29.4	32.4	162	1590	2100	8.21	30	0.36
30x2,5+6x(3E9)	20154112	5DH3169	2	30.2	33.3	167	1640	2250	8.21	30	0.36

(1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).
Special designs upon request!