LOW VOLTAGE CABLES FOR VERTICAL REELING

	CORDAFLEX (SMK)-V	SPREADER REEL PUR HF
Designation	(N)SHTOEU	D12YST11YU11Y
Dimension	Based on DIN VDE 0250 part 814	Optimized
Cores	Control: multicores (also with LWL)	Control: multicores
Outer Sheath	Rubber	PUR
Approvals	GOST-R	
Tensile Load	30 N/mm² + aramid support element	30 N/mm² + aramid support element
Speed	240 m/min	180 m/min
Temp. (moving)	-35°C/+80°C (special to -45°C on request)	-40°C/+80°C

CORDAFLEX(SMK)-V (N)SHTOEU

Low voltage cable for vertical reeling

Application

Flexible low voltage reeling cable for application under extreme mechanical stresses, specially designed for vertical reeling operation (spreader reeling application).

Global data

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

Design features

Conductor	Electrolytic bare copper, very finely stranded class FS
Insulation	Special thermoplastic compound providing very high stability, best insulation resistance and excellent gliding characteristic
Core identification	Best identification as a result of black colored insulation with light printed numbers, earth conductor green-yellow
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 pairs
Core arrangement	Laid-up in a maximum of 3 layers
Support element	Central aramide support element to increase the loading capability. The kN value designates the breaking load of the support element
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)-V (N)SHTOEU-J/-O (number of cores)x(cross-section)

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	Increased tensile load through addtional support elements (see table).
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	Hoist (vertical reeling): up to 240 m/min. It is recommended to consult the manufacturer for speeds beyond 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 control cables											
49x1	20004108	5DH3291	1.3	26.6	29.6	148	1250	3200	19.5	18	0.14
12x2,5	20004109	5DH3292	2	22	25	125	870	2700	7.98	30	0.36
24x2,5	20004112	5DH3295	2	26.2	29.2	146	1300	3600	7.98	30	0.36
30x2,5	20004113	5DH3296	2	29.4	32.4	162	1630	4100	7.98	30	0.36
44x2,5	20004115	5DH3298	2	34.1	37.1	186	2200	5100	7.98	30	0.36
56x2,5	20004107	5DH3290	2	40.1	43.1	216	2960	6000	7.98	30	0.36
(N)SHTOEU composite control cables											
12x2,5+(4x0,5)C	20008558	5DH3262	2	19	22	110	770	2700	7.98	30	0.36
45x2,5+(4x0,5)C	20163404	5DH3286	2	42.9	45.9	230	2830	5175	7.98	30	0.36
(N)SHTOEU-J control cables with FO											
22x2,5+4x(3G50)	20004111	5DH3294	2	28.2	31.2	156	1390	3450	7.98	30	0.36
22x2,5+2x(3G62,5)	20008607	5DH3261	2	26.2	29.2	146	1260	3450	7.98	30	0.36
24x2,5+6x(2G62,5)	20079358	5DH3981	2	29.4	32.4	162	1510	3600	7.98	30	0.36
28x2,5+2x(3G62,5)	20156011	5DH3308	2	29.4	32.4	162	1590	3900	7.98	30	0.36
28x2,5+2x(3G50)	20149375	5DH3305	2	29.4	32.4	162	1590	3900	7.98	30	0.36
36x2,5+8x(1G62,5)	20091976	5DH3978	2	34.1	37.1	186	2050	4500	7.98	30	0.36
38x2,5+6x(2G62,5)	20040061	5DH3259	2	34.1	37.1	186	2090	4650	7.98	30	0.36
41x2,5+3x(2G62,5)	20116888	5DH3301	2	34.1	37.1	186	2150	4875	7.98	30	0.36
41x2,5+3x(2G50)	20142021	5DH3304	2	34.1	37.1	186	2160	4875	7.98	30	0.36
42x2,5+2x(3G62,5)	20081032	5DH3980	2	34.1	37.1	186	2170	4950	7.98	30	0.36
44x2,5+3x(2G62,5)	20155500	5DH3314	2	35.5	38.5	193	2300	5100	7.98	30	0.36
44x2,5+4x(3G62,5)	20160144	5DH3315	2	35.5	38.5	193	2330	5100	7.98	30	0.36
44x2,5+3x(3G50)	20025456	5DH3300	2	35.5	38.5	193	2310	5100	7.98	30	0.36
44x2,5+3x(3G62,5)	20143212	5DH3313	2	35.5	38.5	193	2310	5100	7.98	30	0.36
50x2,5+6x(1G50)	20004095	5DH3269	2	40.1	43.1	216	2840	5550	7.98	30	0.36
52x2,5+4x(3G62,5)	20080536	5DH3979	2	40.1	43.1	216	2890	5700	7.98	30	0.36
56x2,5+3x(3G62,5)	20004096	5DH3270	2	41.3	44.3	222	3030	6000	7.98	30	0.36
56x2,5+4x(3G62,5)	20085758	5DH3258	2	41.3	44.3	222	3080	6000	7.98	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).
Additional special design with integrated fiber optics upon request.

SPREADER REEL PUR-HF D12YST11YU11Y

Low voltage cable PUR sheathed for vertical reeling

Application

Flexible low voltage reeling cable for application under high mechanical stresses, specially designed for vertical reeling operation (spreader reeling application).

Global data

Brand	SPREADER REEL
Type designation	D12YST11YU11Y-JZ

Design features

Conductor	Plain copper, flexible class 5 acc. to DIN EN 60228 / DIN VDE 0295
Insulation	Halogen free compound, based on polyester
Core identification	White with black numbers, similar to HD 308
Core arrangement	Central aramid strain element; cores twisted in layers with short length of lay
Inner sheath	Polyurethan, halogen free, flame retardant
Reinforcement	Open braid, reinforced
Outer sheath	Polyurethane, halogen free, flame retardant, opaque; Colour: black
Marking	White imprint: D12YST11YU11Y-JZ PUR-HF SPEZIAL (number of cores) x (cross-section) DRAKA DE (week/year)

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	4 kV (5 Min.)
Current Carrying Capacity description	Acc. to DIN VDE 0298-4

Chemical parameters

Resistance to fire	Similar to IEC 60332-1
Resistance to oil	According to EN 60811-404
Water resistance	The cables are suitable for permanent use in water (no drinking water) up to 50 meter diving depth.

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 -40 °C ; max +80 °C

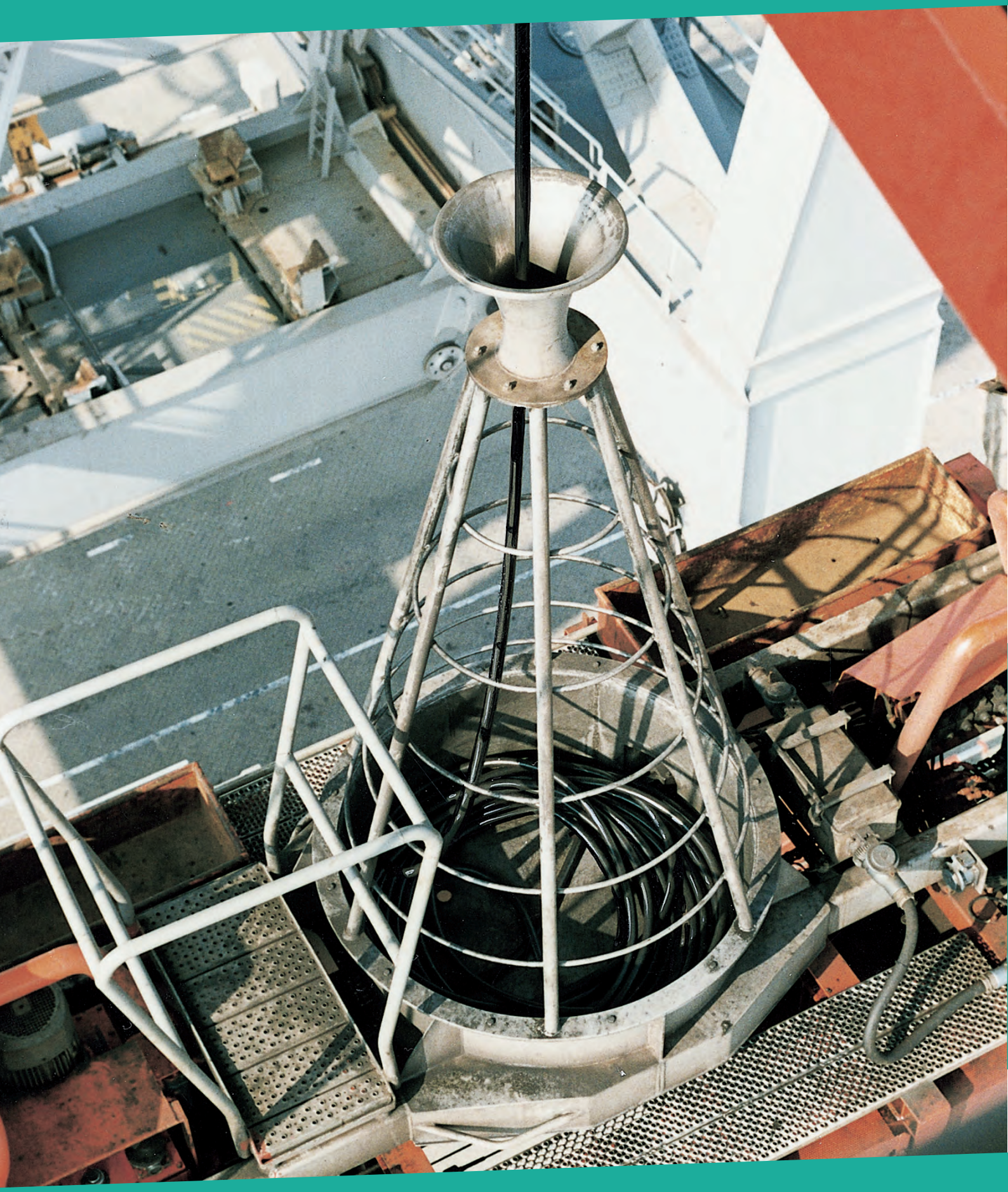
Mechanical parameters

Max. tensile load	Increased tensile load through addtional support elements (see table).
Torsional stress	± 50 °/m
Min. bending radius	6 x D (Proved by flexing tests acc. to HD 22.2 part 3.1)
Min. distance with S-type directional changes	20 x D
Travel speed	- Vertical reeling: up to 180 m/min

Number of cores x cross section	Part 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
24x2,5	20074331	2	23.8	25.2	151	980	3000	7.98	30	0.36
30x2,5	20074131	2	25.8	27.4	164	1290	3375	7.98	30	0.36
36x2,5	20074356	2	30.2	32.2	193	1530	3750	7.98	30	0.36
42x2,5	20074550	2	34.1	36.5	219	1940	4125	7.98	30	0.36
44x2,5	20119442	2	36.1	38.5	231	2080	4250	7.98	30	0.36
9x(5x2,5)		2	38.8	41.2	247	2150	3810	7.98	30	0.36
8x(6x2,5)	20076165	2	42.7	45.1	271	2620	4000	7.98	30	0.36
14x(4x2,5)	20161383	2	40	42.4	254	2410	4000	7.98	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).
For articles without part number the values shown are approximate, and need to be confirmed in case of order.
The tensile loads values given are valid for systems where kellum grips are used to take the tensile load on the head block. In case of different application please contact the manufacturer.

Crane cables



LOW VOLTAGE CABLES FOR BASKET OPERATION

	SPREADERFLEX
Designation	3GSLTOE-J/-O
Dimension	Based on VDE 0250
Cores	Control: multicores (also with LWL or TSP)
Outer Sheath	PUR
Approvals	VDE
Tensile Load	Increased tensile load through additional support element
Speed	160 m/min
Temp. (moving)	-40°C/+80°C

SPREADERFLEX 3GSLTOE 0.6 / 1kV

Spreader cable for basket operation

Application

Feeder cable for load-lifting equipment, e.g. spreader with high mechanical stress in gravity-fed collector basket operation, with voltage rate up to 0,6/1 kV. Suitable for operation in cold environment.

Global data

Brand	SPREADERFLEX
Type designation	3GSLTOE-J/-O
Standard	based on DIN VDE 0250
Certifications / Approvals	GOST-R

Notes on installation

Notes on installation	Cable must be laid into the basket in a counter-clockwise direction; detailed installation instructions available upon request.

Design features

Conductor	Bare Electrolytic copper, extremely fine stranded, class FS
Insulation	Special EPR compound based on type 3GI3 acc. DIN VDE 0207; for application in ambient temperatures down to -40°C
Core identification	Optimal identification as a result of light colored insulation with numbers printed in black; protective earth conductor green/yellow
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 pairs
Core arrangement	Core assembly: cores laid-up into bundles; Bundle assembly: bundles laid-up around the central support element.
Support element	Aramide threads woven round lead ball cords, arranged centrally. The breaking load is rated to provide a safety factor of 5 when the cable is suspended vertically for 50 m. In case of bigger cross-section and higher number of cores, the support element is a round rubber filler with Aramid threads.
Outer sheath	Special PUR compound; Colour: black
Marking	SPREADERFLEX 3GSLTOE-J (number of cores) x (cross-section)

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 bus elements: ASI-Bus, Profibus or use of fibre optics elements for trouble-free data transmission.
Current Carrying Capacity description	According to DIN VDE 0298, Part 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.

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 -40 °C ; max +80 °C

Mechanical parameters

Max. tensile load	Increased tensile load through addtional support element
Torsional stress	Designed for best torsional properties according to the corresponding application
Min. bending radius	Acc. to DIN VDE 0298 part 3
Travel speed	Hoist: up to 160 m/min
Basket design	Dimensions depending on system (e.g. dependent on space requirements, hoisting height and speed, wind load). Recommended: basket diameter min. 30xD; basket height approx. 45xD (where D = cable diameter).