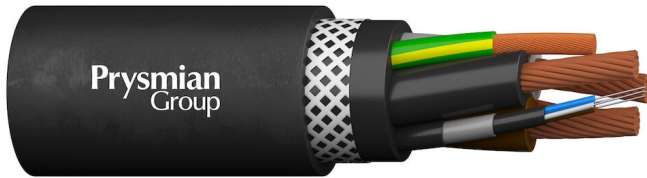


TROMMELFLEX (KSM-S) (N)SHTOEU 0,6/1KV

Low voltage reeling cables



These cables are intended for applications where frequent winding and unwinding is necessary during operation, in particular with simultaneous tensile strain and/or torsional stress and/or forced guidance of the cable. Where excessive stress, particularly high dynamic tensile force may be expected, e.g. as a result of high acceleration figures, the permissible stress limits have to be determined individually. For heavy duty units such as cable reels, hoisting gears, transportation systems, driveable motors, rail traction motors and agricultural machinery; at high and extreme mechanical stresses; in dry or damp areas and outdoor.

STANDARDS / APPROVALS

EAC

Based on DIN VDE 0250-814

DIN EN 60228 / IEC 60228

DIN VDE 0293-308

DIN VDE 0207-20

DIN VDE 0207-21

DIN VDE 0298-4

DIN VDE 0298-3

DIN EN 60332-1-2 / IEC 60332-1-2

General

Conductor

Core identification

Compound

Compound

Electrical parameters

Application

Fire performance

CABLE DESIGN

Conductor

Finely stranded copper, bare, class 5

Core insulation material

EPR rubber

-

Special compound 3GI3

Core arrangement

Cores laid up with short length of lay; split earth conductor and optical element positioned in the interstices

Material inner sheath

Rubber

-

Special compound 5GM3

Armouring/reinforcement

Braiding

Armouring/reinforcement material

Polyester

Material outer sheath

Rubber - polychloroprene (PCP)

-

Special compound 5GM5

ELECTRICAL PARAMETERS

Rated voltage U ₀ /U (Um)	0.6/1 (1.2) kV
Test voltage [kV]	2.5
Nominal voltage U [V]	1,000

THERMAL PARAMETERS

Max. conductor temperature [°C]	90
Max. conductor temperature at short circuit [°C]	250
Ambient temperature fix installation (min) [°C]	-40
Ambient temperature fix installation (max) [°C]	80
Ambient temperature flexible installation (min) [°C]	-40
Ambient temperature flexible installation (max) [°C]	80

CHEMICAL PARAMETERS

Oil resistant	Yes
Ozone resistance	Yes
Resistant to UV	Yes
Sea water resistance	Yes

OPTICAL FIBER PROPERTIES

Fiber type	G62,5/125 µm Multi-mode graded index	G50/125 µm Multi-mode graded index	E9/125 µm Single-mode graded index
Cladding diameter	125 µm	125 µm	125 µm
Fiber diameter	250 µm	250 µm	250 µm
Attenuation at 850 nm	< 3,3 dB/km	< 2,8 dB/km	
Attenuation at 1310 nm	< 0,9 dB/km	< 0,8 dB/km	< 0,4 dB/km
Attenuation at 1550 nm			< 0,3 dB/km
Bandwidth at 850 nm	> 400 MHz	> 400 MHz	
Bandwidth at 1310 nm	> 600 MHz	> 1200 MHz	
Numerical Aperture	0,275 +/- 0,02	0,2 +/- 0,02	0,14 +/- 0,02
Chromatic Dispersion at 1300 nm			< 3,5 ps/nm km
Chromatic Dispersion at 1550 nm			< 18 ps/nm km

MECHANICAL PARAMETERS

Torsional stress +/- [°/m]	50
Permanent tensile strength (rule)	20 N/mm ²
Travel speed	Reeling operation: 180 m/min
Bending radius (rule)	Acc. to VDE 0298-3: 4 X D fixed installation 5 X D flexible operation 20 X D min distance with S-type directional changes

CABLE PROPERTIES

Basic construction	SAP code	External code	Diameter conductor [mm]	Cable diameter (min) [mm]	Cable diameter (max) [mm]	Cable weight [kg/km]
3x50+3x25/3	20166655		9.6	34	37	2,550
3x70+3x35/3	20231521		11.1	40	43	3,520
3x95+3x50/3	20164198		12.6	43	46	4,340
3x120+3x70/3	20217880		14.8	48	52	5,630
3x150+3x70/3	20161381		16	52	56	6,500
3x185+3x95/3	20172219		17.7	56	61	7,910
3x240+3x120/3	20160696		20.2	64	70	10,380
3x300+3x150/3	20074322		22.7	70	76	13,220
3x400+3x240/3	TROMME_KSM_1KV_003		27	82	88	20,750
3x25+2x16/2+12LWL	TROMME_KSM_1KV_004		6.3	31	34	1,700
3x35+2x16/2+12LWL	TROMME_KSM_1KV_002		7.8	33.5	36.5	2,170
3x50+2x25/2+12G62,5	20166541		9	39.5	42.5	3,120
3x70+2x35/2+12G62,5	20203288		11.1	40	43	3,480
3x95+2x50/2+12G62,5	20205591		12.6	43	46	4,480
3x120+2x70/2+12G62,5	20165663		14.8	48.5	52.5	5,870
3x150+2x70/2+12G62,5	20129614		16	54	58	6,684
3x185+2x95/2+12G62,5	20165664		17.7	56	61	8,160
3x240+2x120/2+12G62,5	20166701		20.2	64	70	10,350
3x300+2x150/2+12G62,5	20340122		22.7	70	76	12,900

CABLE PROPERTIES ELECTRICAL / MECHANICAL

Basic construction	SAP code	External code	Max. tensile strength [N]	Bending radius moving (min) [mm]	Conductor resistance at 20° C [Ohm/km]	Current carrying capacity [A]
3x50+3x25/3	20166655		3,000	185	0.386	202
3x70+3x35/3	20231521		4,200	215	0.272	250
3x95+3x50/3	20164198		5,700	230	0.206	301
3x120+3x70/3	20217880		7,200	280	0.161	352
3x150+3x70/3	20161381		9,000	280	0.129	404
3x185+3x95/3	20172219		11,100	305	0.106	461
3x240+3x120/3	20160696		14,400	350	0.0801	540
3x300+3x150/3	20074322		18,000	380	0.0641	620
3x400+3x240/3	TROMME_KSM_1KV_003		24,000	440	0.0486	715
3x25+2x16/2+12LWL	TROMME_KSM_1KV_004		1,500	170	0.8	131
3x35+2x16/2+12LWL	TROMME_KSM_1KV_002		2,100	183	0.554	162
3x50+2x25/2+12G62,5	20166541		3,000	213	0.386	202
3x70+2x35/2+12G62,5	20203288		4,200	215	0.272	250
3x95+2x50/2+12G62,5	20205591		5,700	230	0.206	301
3x120+2x70/2+12G62,5	20165663		7,200	263	0.161	352
3x150+2x70/2+12G62,5	20129614		9,000	290	0.129	404
3x185+2x95/2+12G62,5	20165664		11,100	305	0.106	461
3x240+2x120/2+12G62,5	20166701		14,400	350	0.0801	540
3x300+2x150/2+12G62,5	20340122		18,000	380	0.0641	620

Current carrying capacity acc. VDE 0298-4, Tab. 15, on a surface at 30°C ambient temperature.

Design with 6, 12, 18 or 24 fibers, in G62,5, G50 and E9 available upon request. Further combination with different fiber types is also possible.