

## PROTOLON(SMK) (N)TSCGEWOEU

Medium voltage reeling cable, 6/10 kV  
+ 90°C service temperature, oil, UV, ozone and moisture resistant  
DIN VDE 250 – 813, GOST-R

### Application

Flexible medium voltage reeling cable for transmission of energy, under high or extreme mechanical stresses, e.g. high travel speeds, dynamic tensile loads, multiple changes of direction into different planes, churning on running over rollers and torsional stresses. Mainly for mobile equipment, e.g. fast-moving container cranes, cranes, large mobile equipment and excavators. Also suitable for application according to DIN VDE 0168 and 0118: open-cast and underground mining.

### Construction



1. Conductor: Copper conductor, very finely stranded, class FS
2. Insulation: High grade special compound based on high-quality EPR (at least 3GI3); improved mechanical and electrical characteristics  
Identification: Natural coloured insulation with black semiconductive layer
3. Electrical field control: Inner semiconductive layer of EPR, outer semiconductive layer of modified NBR, (Easy Strip design)
4. Core arrangement: Three core design with cradle separator in the center, earth conductor split into 3 parts positioned in two interstices.
5. Inner sheath: Special compound based on EPR, quality at least 5GM3, also served as water barrier, color: red
6. Anti-torsion braid: Reinforced braid made of polyester threads, in a vulcanized bond between the sheaths, resulting in high strength of the sheath system.
7. Outer sheath: Double layer outer sheath system with a unique combination of flexibility and robustness. Rubber compounds based on PCP, quality at least 5GM5, red

### Technical information

Rated voltage	kV	6/10	
Max. operating voltage AC	kV	6,9/12	
Max. operating voltage DC	kV	9/18	
Test voltage AC	kV	17	
EMC			This design exhibits an extremely low interference level as a result of use a symmetrical three- core design with very narrow manufacturing rates.
Data transmission			Special design with fiber-optics for trouble free data transmission at high data rates is available on request.
Current carrying capacity			According to DIN VDE 0298, Part 4. Higher values are permissible in specific cases (please consult the manufacturer)

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Max. permissible temperature at conductor	+ 90 °C
Max. short circuit temperature of the conductor	+ 250 °C
Operating temperature	fix installed - 50 °C to + 80 °C flex operation - 35 °C to + 80 °C
Min. bending radius mm	VDE 0298 Section 3
Min. distance with S-type directional changes	20 x D
Max. permanent tensile load	20 N/mm <sup>2</sup>
Max. tensile load during acceleration	30 N/mm <sup>2</sup>
Torsional stress	25°/m
Travel speed	Gantry (reeling operation): no restriction. For speeds beyond 240 m/min it is recommended to consult the cable manufacturer.
Additional tests	Reversed bending test, torsional stress test

### Additional parameters

Water resistance	According to HD 2216
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture
Oil resistance	DIN EN 60811-404 and DIN VDE 0473-811-404, paragraph 10

N° of cores and cross section mm <sup>2</sup>	Conductor diameter max. mm	Earth conductor diameter max. mm	Outer diameter min. approx. mm	Outer diameter max. approx. mm	Weight approx. kg/km	Resistance at 20°C max. Ω/km	Current carrying capacity in air A	Short Circuit Current kA
<b>6/10 kV</b>								
3x25+3x25/3	7,1	4,2	37,8	40,8	2400	0,80	131	3,58
3x35+3x25/3	8,3	4,2	40,2	43,2	2830	0,57	162	5,01
3x35+3x35/3	8,3	5	40,2	43,2	2920	0,57	162	5,01
3x35+3x50/3	8,3	5,9	42,7	45,7	3280	0,57	162	5,01
3x50+3x25/3	9,9	4,2	43,7	46,7	3570	0,39	202	7,15
3x70+3x50/3	11,8	5,9	47,7	50,7	4570	0,28	250	10,01
3x95+3x50/3	13,8	5,9	52,8	56,8	5710	0,21	301	13,59
3x120+3x70/3	15,4	7	56,2	60,2	6840	0,16	352	17,16
3x150+3x70/3	17,2	7	61,5	65,5	8200	0,13	404	21,45
3x185+3x95/3	19	8	65,3	69,3	9690	0,11	461	26,46
3x240+3x120/3	21,8	9	73,8	77,8	12310	0,08	540	34,32
3x300+3x150/3	24,4	10	79,5	83,5	14780	0,07	620	42,9

Current carrying capacity: single-core rubber-cables laid on surfaces at 30° C ambient temperature

La version française de cette fiche technique est disponible sur demande.  
De technische gegevens zijn op aanvraag in het Nederlands beschikbaar.