

PROTOLON(FL) (N)TSFLCGEWOEU 8,7/15 kV: medium voltage flat reeling cable



Application

Flexible medium voltage reeling cable for high mechanical stresses (e.g. dynamic tensile loads, multiple changes of direction within one plane, running over rollers). Mainly for mobile equipment, e.g. fast-moving container cranes, cranes, large mobile equipment and excavators.

Global data

Brand	PROTOLON(FL)
Type designation	(N)TSFLCGEWOEU
Standard	Based on DIN VDE 0250-813

Design features

Conductor	Electrolytic copper tinned, finely stranded, class F (refer also to DIN VDE 0295)
Insulation	PROTOLON Special compound based on high-quality EPR (at least 3GI3); improved mechanical and electrical characteristics
Electrical field control	Inner semiconductive layer of EPR, outer semiconductive layer of modified EPR, removable in warm condition
Core identification	Natural coloured insulation with black semiconductive layer
Core arrangement	Parallel core arrangement; earth conductor splitted and concentrically distributed around each core
Sheath system	PROTOFIRM Special compound based on CR, quality at least 5GM5, red colour
Marking	PROTOLON (FL) (N)TSFLCGEWOEU (number of cores)x(cross-section) (rated voltage) (year of manufacture) (serial number)

Electrical parameters

Rated voltage	3.6/6 kV
Max. permissible operating voltage AC	4.2/7.2 kV
Max. permissible operating voltage DC	5.4/10.8 kV
AC test voltage	11 kV
Data transmission	A special cable design with fibre-optics can be found in the product range PROTOLON (FL)-LWL
Current Carrying Capacity description	According to DIN VDE 0298, Part 4 Higher values are permissible in specific cases (please consult the manufacturer).

Chemical parameters

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

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	15 N/mm ²
Torsional stress	Not allowed
Min. bending radius	Acc. to DIN VDE 0298, Part 3. (Recommendation: applied cable diameter D = 1.5 x height of the flat cable)
Min. distance with S-type directional changes	20 x D (cable diameter)
Travel speed	- Gantry (reeling operation): up to 120 m/min
Additional tests	Reversed bending test, reeling test

Number of cores x cross section	Part number	MLFB Number	Conductor diameter max. mm	Min. Height (for flat cable) mm	Max. Height (for flat cable) mm	Min. Width (for flat cable) mm	Max. Width (for flat cable) 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, reeled in 1 layer (3) A	Short Circuit Current (conductor) kA
3x25+3x25/3E	20168238	5DK5...	6.9	27.7	30.7	73.3	77.3	461	3390	1125	0.8	111	3.58
3x35+3x25/3E		5DK5...	8.3	28.7	31.7	76.2	80.2	476	3820	1575	0.57	138	5.01
3x50+3x25/E		5DK5...	9.8	30.2	33.2	80.7	84.7	498	4440	2250	0.39	172	7.15
3x70+3x35/3E		5DK5...	11.4	33.3	36.3	87.5	92.5	545	5610	3150	0.28	212	10.01
3x95+3x50/3E		5DK5...	13.3	35.3	38.3	93.5	98.5	575	6700	4275	0.21	255	13.59
3x120+3x70/3E		5DK5...	15.1	37.3	40.3	99.5	104.5	605	8000	5400	0.16	297	17.16

(3) Nominal current carrying capacity for rubber cables reeled in 1 layer, at 30°C ambient temperature (see also technical annexes).