

PROTOLON(M) F- 15kV: Medium Voltage Flexible Cables for semiflexible Installation



Application

For laying alongside the conveyor belts (also for shiftable units) and on material handling equipment (even with continuous movement such as in cable booms or as connection between upper and lower car) and for connection of submersible pump units.

Global data

Brand	PROTOLON(M)
Type designation	F-(N)TSCGEWOEU
Standard	Based on DIN VDE 0250-813
Certifications / Approvals	MSHA P-189-4 Fire Certificate of Russian Federation GOST K GOST B

Notes on installation

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Design features

Conductor	Electrolytic copper, not tinned, very finely stranded (class 5)
Insulation	PROTOLON, Basic material: EPR, Compound type: Special compound, better 3GI3
Electrical field control	Inner and outer layer of semiconductive rubber compound
Core identification	Natural coloring with black semiconductive rubber on which white digits 1 to 3 are printed
Core arrangement	Three main conductors laid-up, with protective-earth conductor split into 3 in the outer interstices
Inner sheath	Basic material: EPR, Compound type: Special compound
Outer sheath	Basic material: Synthetic elastomer compound e.g. CM, Compound type: better 5GM3, Color: Red

Electrical parameters

Rated voltage	8.7/15 kV
Maximum permissible operating voltage AC	10.4/18 kV
Maximum permissible operating voltage DC	13.5/27 kV
AC test voltage	24 kV

Chemical parameters

Resistance to fire	EN 60332-1-2, IEC 60332-1-2
Resistance to oil	EN 60811-404, IEC 60811-404.
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture
Water resistance	EN 50525-2-21

Thermal parameters

Max. permissible temperature at conductor	90 °C
Max. short circuit temperature of the conductor	250 °C
Ambient temperature for fix installation min.	-40 °C
Ambient temperature for fix installation max.	80 °C
Ambient temperature in fully flexible operation min.	-25 °C
Ambient temperature in fully flexible operation max.	60 °C

Mechanical parameters

Max. tensile load of cable	15 N/mm ²
Torsional stress	100 °/m
Bending radii min.	Acc. to DIN VDE 0298 part 3
Additional tests	Torsional StressTest, Roller Bending Test Type C

Number of cores x cross section	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Net weight approx. kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Nom. operating capacitance μF/km	Inductance nom. mH/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
3x25+3x25/3	6.4	39.3	42.3	2490	1125	0.78	0.24	0.36	139	3.58
3x35+3x25/3	7.6	41.8	44.8	2930	1575	0.554	0.27	0.34	172	5.01
3x50+3x25/3	9.1	45	48	3550	2250	0.386	0.3	0.32	215	7.15
3x70+3x35/3	10.8	49.5	53.5	4590	3150	0.272	0.34	0.31	265	10.01
3x95+3x50/3	12.7	54.4	58.4	5710	4275	0.202	0.39	0.29	319	13.6
3x120+3x70/3	14.3	57.7	61.7	6820	5400	0.161	0.42	0.28	371	17.16
3x150+3x70/3	16	63.8	67.8	8220	6750	0.129	0.46	0.28	428	21.45
3x185+3x95/3	17.7	67.3	71.3	9540	8325	0.106	0.5	0.27	488	26.46