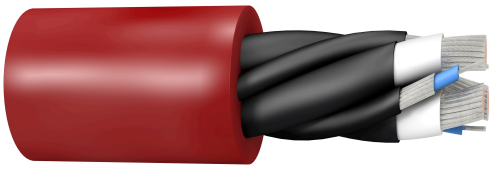
PROTOMONT (VO) 3kV: Coal Cutter Cables for Chain Operation



Application

Used as power supply connection cable for mobile equipment and machines in underground mining applications, such as coal cutting machines, etc. (VO)-Coal-Cutter cables are designed for use in cable protection chains(cable handler), which are trailed behind the machine and which absorb the thereby occuring tensile forces.

Global data

Brand	PROTOMONT(VO)
Type designation	NTSKCGEWOEU
Standard	DIN VDE 0250-813
Certifications / Approvals	MA – China

Design features

Conductor	Finely-stranded copper conductor, tinned (class FS)
PE-Conductor	3 Double-concentric control / PE conductor elements in the outer interstices
Insulation	PROTOLON, Basic material: EPR, Compound type: 3GI3
Electrical field control	Cold strippable outer layer of semiconductive rubber compound
Core identification	Main cores: Natural color Control cores: Blue
Core arrangement	Three main cores laid-up, with double concentric control / PE conductor elements in the outer interstices, length of lay approx. 6 x D
Inner sheath	Vulcanized rubber inner sheath, Basic material: EPR, Compound type: better GM1B
Outer sheath	PROTOFIRM, Basic material: synthetic elastomer compound e.g. CM, Compound type: 5GM5, Color: Red

Electrical parameters

Rated voltage	1.8/3 kV
Maximum permissible operating voltage AC	2.1/3.6 kV
Maximum permissible operating voltage DC	2.7/5.4 kV
AC test voltage	6 kV
AC test voltage - Control Cores	2 kV

Chemical parameters

Resistance to fire	EN 60322-1-2, IEC 60322-1-2
Resistance to oil	EN 60811-404, IEC 60811-404
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone and moisture

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 temp. in fully flex. operation min.	-20 °C
Ambient temp. in fully flex. operation max.	60 °C

Mechanical parameters

Tensile load on the conductor max .	15 N/mm²
Bending radii min.	Acc. to DIN VDE 0298 part 3
Bending radii min.	2.3 x D at a tensile load of max. 5 N/mm²
Minimum distance with S-type directional changes	20 x D

Number of cores x cross section	Part number	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
1.8/3 kV (N)TSKCGEWOEU, three-core design											
3x25+3x(1,5STKON +16/3KON)		7.1	37.8	40.8	2500	1125	0.795	0.28	0.34	131	3.58
3x35+3x(1,5STKON +16/3KON)		8.4	42	45	3150	1575	0.565	0.31	0.33	162	5.01
3x50+3x(1,5STKON +25/3KON)		10.1	45.7	48.7	3950	2250	0.393	0.36	0.31	202	7.15
3x70+3x(1,5STKON +35/3KON)		11.9	50.9	54.9	5000	3150	0.277	0.42	0.3	250	10.01
3x95+3x(1,5STKON +50/3KON)	20069403	14	56.3	60.3	6350	4275	0.21	0.45	0.29	301	13.59
3x120+3x(1,5STKON +70/3KON)	20069404	15.5	60.1	64.1	7800	5400	0.164	0.49	0.28	352	17.16
3x150+3x(1,5STKON +70/3KON)	20026143	17.2	65.6	69.6	9000	6750	0.132	0.54	0.28	404	21.45
3x185+3x(1,5STKON +95/3KON)	20070763	19.1	69.7	73.7	10500	8325	0.108	0.59	0.27	461	26.46
3x240+3x(1,5STKON +120/3KON)		22	77.8	81.8	13500	10800	0.0817	0.67	0.26	544	34.32
3x300+3x(1,5STKON +150/3KON)		24.8	83.4	88.4	17110	13500	0.0654	0.74	0.25	626	42.9