

PROTOMONT (V) Coal Cutter Cables for Chain Operation



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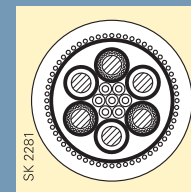
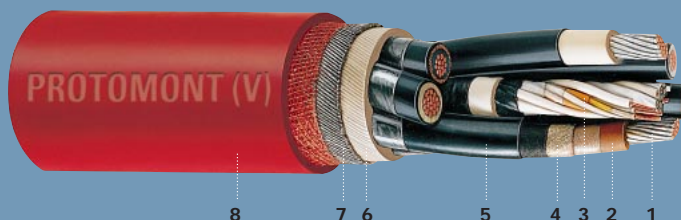
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Selection and dimensioning criteria			Refer to Section 4 for further details →	
	Type	PROTOMONT (M)	Page	4/2
	Type designation	NSSHCGEÖU or NTSKCGECWÖU	Page	4/3
	Approvals/standards	DIN VDE 0250, Part 812 or Part 813; MSHA-P-189-4, WUG GE-73/98, WUG GE-69/97	Page	4/4
	Application (refer also to DIN VDE 0298, Part 3)	Used as power supply connection cable for mobile equipment and machines in underground mining applications, such as coal cutting machines, etc. (M) Coal cutter cables are designed for use in cable protection chains, which are trailed behind the machine and which absorb the thereby occurring tensile forces.	Page	4/6
Electrical parameters	Rated voltage	$U_0/U = 0.6/1 \text{ kV}; 1.8/3 \text{ kV}; 3.6/6 \text{ kV}$	Pages to	4/14
	Maximum permissible operating voltage in AC systems	$U_0/U = 0.7/1.2 \text{ kV}; 2.1/3.6 \text{ kV}; 4.2/7.2 \text{ kV}$		4/17
	Maximum permissible operating voltage in DC systems	$U_0/U = 0.9/1.8 \text{ kV}; 2.7/5.4 \text{ kV}; 5.4/10.8 \text{ kV}$		
	AC test voltage	Power cores: 3 kV; 6 kV; 11 kV Control cores: 2 kV		
	Current-carrying capacity	According to DIN VDE 0298, Part 4		
Thermal parameters	Ambient temperature		Pages to	4/18
	• Fully flexible operation	- 20 °C to + 60 °C		4/19
	• Fixed installation	- 40 °C to + 80 °C		
	Maximum permissible operating temperature of the conductor	+ 90 °C		
	Short-circuit temperature of the conductor	200 °C		
Mechanical parameters	Tensile load	Up to 15 N/mm ² , however, only 5 N/mm ² for a bending radius of 2.3 x D ¹⁾	Page	4/20
	Minimum bending radii	According to DIN VDE 0298, Part 3, or 2.3 x D ¹⁾ at a tensile load of max. 5 N/mm ²	Page	4/22
	Minimum distance with S-type directional changes	20 x D ¹⁾		
Chemical parameters	Resistance to oil	Given to DIN VDE 0473, Part 811-2-1, Para. 10	Page	4/28
	Behaviour in case of fire	Given to DIN VDE 0482, Part 265-2-1, Para. 10		
	Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone and moisture		

1) D = overall diameter of the cable.

PROTOMONT (V) Coal Cutter Cables for Chain Operation

- 1 Conductor
- 2 Insulation
- 3 Control core/monitoring conductor element
- 4 Individual-concentric protective-earth conductor
- 5 Semiconductive layer
- 6 Inner sheath
- 7 Steel/Cu wire spinning
- 8 Outer sheath



Design features		Refer to Section 4 for further details	→
Type	PROTOMONT (V)		Page 4/2
Conductor (refer also to DIN VDE 0295)	Finely stranded copper conductor, tinned, Class 5 Protective-earth conductor: overall concentric steel/copper wire spinning Control core: double-concentric control/monitoring conductor elements in the center element		Page 4/29
Insulation (refer also to DIN VDE 0207, Part 20)	PROTOLON, basic material EPR, compound type: 3GI3		Page 4/32
Electrical field control	Outer semiconductive layer of semiconductive cold-strippable rubber		Page 4/36
Core identification	Main cores coloured, black, blue, brown Control cores white, monitoring cores orange		
Core arrangement	Three or six main cores laid-up, with double-concentric control/monitoring conductor elements in the outer interstice; length of lay approx. 6 x D		
Inner sheath (refer also to DIN VDE 0207, Part 21)	Vulcanized rubber inner sheath Basic material EPR, compound type: GM1b		Page 4/32
Spinning	Closed-lay spinning of steel/copper wires in a vulcanized bond between inner and outer sheath		
Outer sheath (refer also to DIN VDE 0207, Part 21)	PROTOFIRM, basic material PCP, compound type: 5GM5, colour yellow or red		Page 4/32
Marking	(Year of manufacture) <VDE> PROTOMONT (V) NSSHCGEÖU or NTSKCGECWÖU (number of cores) x (cross-section)		Page 4/40

Selection and ordering data

Number of cores and nominal cross-section mm ²	Order No.	Conductor diameter (Max. value)			Overall diameter of cable (guidance value) (Min. value) (Max. value)	Conductor resistance at 20 °C Ω/km	Inductance per unit length mH/km	Operating capacitance per unit length μF/km	Current carrying capacity at 30 °C A	Permissible short-circuit current (1s) kA	Approx. net weight for 1000 m kg	Maximum permissible tensile force N
		mm	mm	mm								

0.6/1 kV NSSHCGEÖÜ

3 x 25/16KON + 3 x (1.5ST KON/1.5 ÜL KON)V	5DM1 055	7.1	40.0	44.0	0.795	0.25	0.60	131	3.05	2850	1125
3 x 35/16KON + 3 x (1.5ST KON/1.5 ÜL KON)V	5DM1 056	8.4	40.0	44.0	0.565	0.24	0.69	162	4.27	3070	1575
3 x 50/35KON + 3 x (1.5ST KON/1.5 ÜL KON)V	5DM1 057	9.9	46.0	50.0	0.393	0.24	0.72	202	6.1	4010	2250
3 x 70/35KON + 3 x (1.5ST KON/1.5 ÜL KON)V	5DM1 058	11.9	48.0	52.0	0.277	0.23	0.84	250	8.54	4970	3150
3 x 95/50KON + 3 x (1.5ST KON/1.5 ÜL KON)V	5DM1 060	13.9	56.0	61.0	0.210	0.23	0.86	301	11.59	6580	4275

1.8/3 kV NTSKCGECWÖÜ

3 x 35 + 3 x (1.5ST KON + 25/3KON) + ÜL KON	5DM1 556	8.4	43.0	48.0	0.554	0.29	0.49	162	4.27	3850	1575
3 x 50 + 3 x (1.5ST KON + 25/3KON) + ÜL KON	5DM1 550	9.9	47.0	52.0	0.368	0.28	0.56	202	6.10	4840	2250
3 x 70 + 3 x (1.5ST KON + 35/3KON) + ÜL KON	5DM1 557	11.9	54.0	59.0	0.272	0.27	0.64	250	8.54	6180	3150
3 x 95 + 3 x (1.5ST KON + 50/3KON) + ÜL KON	5DM1 108	13.9	60.5	65.5	0.206	0.26	0.67	301	11.59	7920	4275

3.6/6 kV NTSKCGECWÖÜ

3 x 35 + 3 x (1.5ST KON + 25/3KON) + ÜL KON	5DM1 548	8.4	45.0	50.0	0.554	0.31	0.38	162	4.27	4040	1575
3 x 50 + 3 x (1.5ST KON + 50/3KON) + ÜL KON	5DM1 543	9.9	49.0	54.0	0.368	0.30	0.43	202	6.10	5050	2250
3 x 70 + 3 x (1.5ST KON + 70/3KON) + ÜL KON	5DM1 541	11.9	55.5	60.5	0.272	0.29	0.49	250	8.54	6410	3150
3 x 95 + 3 x (1.5ST KON + 95/3KON) + ÜL KON	5DM1 542	13.9	60.5	65.5	0.206	0.28	0.55	301	11.59	7970	4275

1.8/3 kV NTSKCGECWÖÜ

3 x 50 + 3 x (35 + 35/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 044	9.9	62.5	67.5	0.368	0.40	0.56	162	6.10	8150	3825
3 x 70 + 3 x (50 + 50/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 046	11.9	70.0	75.0	0.272	0.39	0.64	200	8.54	10050	5400
3 x 95 + 3 x (70 + 70/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 047	13.9	80.0	85.0	0.206	0.38	0.67	241	11.59	12950	7425

3.6/6 kV NTSKCGECWÖÜ

3 x 35 + 3 x (35 + 35/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 115	8.4	65.5	70.5	0.544	0.44	0.37	130	4.27	7570	2700
3 x 50 + 3 x (50 + 50/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 116	9.9	69.0	74.0	0.368	0.42	0.43	152	6.10	9060	3825
3 x 70 + 3 x (70 + 70/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 117	11.9	75.5	80.5	0.272	0.40	0.49	200	8.54	11250	5400
3 x 95 + 3 x (95 + 95/3KON) + 2 x (0.75ST KON) + 1 x (2 x 0.75ÜL KON)	5DM1 118	13.9	84.5	89.5	0.206	0.39	0.55	241	11.59	13520	7425