

# PROTOMONT Rubber-Sheathed Flexible Cables





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### Selection and dimensioning criteria

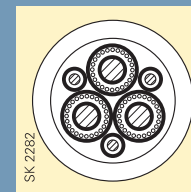
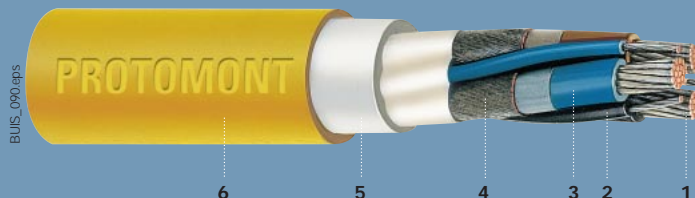
Refer to Section 4 for further details



	Type	<b>PROTOMONT .../3E</b>	Page	4/2
	Type designation	NSSHÖU	Page	4/3
	Approvals/standards	DIN VDE 0250, Part 812, MSHA P-189-3, WUG-GE-104/97	Page	4/4
	Application (refer also to DIN VDE 0298, Part 3)	The cables are suitable for fixed installation as power supply cables to motors, distribution boards, etc., for underground mining applications, for tunnel building applications, for open-cast mining applications, for use in quarries and similar applications. Permitted for applications according to DIN VDE 0118.	Page	4/6
<b>Electrical parameters</b>	Rated voltage	$U_0/U = 0.6/1$ kV	Pages to	4/14
	Maximum permissible operating voltage in AC systems	$U_0/U = 0.7/1.2$ kV		4/17
	Maximum permissible operating voltage in DC systems	$U_0/U = 0.9/1.8$ kV		
	AC test voltage	3 kV		
	Current-carrying capacity	According to DIN VDE 0298, Part 4		
<b>Thermal parameters</b>	Ambient temperature		Pages to	4/18
	<ul style="list-style-type: none"> <li>● Fully flexible operation - 25 °C to + 80 °C</li> <li>● Fixed installation - 40 °C to + 80 °C</li> </ul>			4/19
	Maximum permissible operating temperature of the conductor	90 °C		
	Short-circuit temperature of the conductor	200 °C		
<b>Mechanical parameters</b>	Tensile load	Up to 15 N/mm <sup>2</sup>	Page	4/20
	Minimum bending radii	According to DIN VDE 0298, Part 3	Page	4/22
<b>Chemical parameters</b>	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		

# PROTOMONT Rubber-Sheathed Flexible Cables

- 1 Conductor
- 2 Control core
- 3 Insulation
- 4 Individual-concentric protective-earth conductor
- 5 Inner sheath
- 6 Outer sheath



## Design features

Refer to Section 4 for further details →

Type	<b>PROTOMONT ... /3E</b>	Page	4/2
Conductor (refer also to DIN VDE 0295)	Finely stranded copper conductor, tinned, Class 5	Page	4/29
Insulation (refer also to DIN VDE 0207, Part 20)	PROTOLON, basic material EPR, compound type: 3GI3	Page	4/32
Arrangement of protective-earth conductor	Individual-concentric lay or overall concentric lay		
Core identification	Up to five cores coloured Core colours: black, blue, brown, black, black		
Core arrangement	Three, four or five cores laid-up		
Inner sheath (refer also to DIN VDE 0207, Part 21)	Vulcanized rubber inner sheath Basic material EPR, compound type: GM1b	Page	4/32
Outer sheath (refer also to DIN VDE 0207, Part 21)	Basic material PCP, rubber compound: 5GM5, colour yellow	Page	4/32
Marking	(Year of manufacture) <VDE> PROTOMONT NSSHÖU (number of cores) x (cross-section)	Page	4/40

# PROTOMONT

## Rubber-Sheathed Flexible Cables with Copper Core Shield

### Selection and ordering data

Number of cores and nominal cross-section	Order No.	Conductor diameter (Max. value)			Overall diameter of cable (guidance value) (Min. value) (Max. value)	Conductor resistance at 20 °C	Inductance per unit length	Operating capacitance per unit length	Current carrying capacity at 30 °C	Permissible short-circuit current (1s)	Approx. net weight for 1000 m	Maximum permissible tensile force
		mm	mm	mm								
mm <sup>2</sup>		mm	mm	mm	Ω/km	mH/km	μF/km	A	kA	kg	N	
<b>NSSHÖU.../3E</b>												
3 x 1.5 + 3 x 1.5/3E	<b>5DL4 404</b>	1.5	11.0	15.0	13.7	0.32	0.25	23	0.18	290	68	
3 x 2.5 + 3 x 2.5/3E	<b>5DL4 405</b>	2.0	13.0	17.0	8.21	0.28	0.28	30	0.31	335	113	
3 x 4 + 3 x 4/3E	<b>5DL4 406</b>	2.6	15.0	20.0	5.09	0.24	0.31	41	0.49	500	180	
3 x 6 + 3 x 6/3E	<b>5DL4 407</b>	3.2	17.0	21.0	3.39	0.21	0.37	53	0.73	600	270	
3 x 10 + 3 x 10/3E	<b>5DL4 410</b>	4.2	21.0	25.0	1.95	0.18	0.40	74	1.22	885	450	
3 x 16 + 3 x 16/3E	<b>5DL4 412</b>	5.7	24.0	30.0	1.24	0.15	0.51	99	1.95	1240	720	
3 x 25 + 3 x 16/3E	<b>5DL4 713</b>	7.0	28.0	34.0	0.795	0.14	0.53	131	3.05	1720	1125	
3 x 35 + 3 x 16/3E	<b>5DL4 714</b>	8.1	32.0	38.0	0.565	0.13	0.58	162	4.27	2240	1575	
3 x 50 + 3 x 25/3E	<b>5DL4 715</b>	9.7	37.0	44.0	0.393	0.12	0.62	202	6.10	3160	2250	
3 x 70 + 3 x 35/3E	<b>5DL4 716</b>	11.3	42.0	48.0	0.277	0.11	0.71	250	8.54	3960	3150	
3 x 95 + 3 x 50/3E	<b>5DL4 717</b>	13.1	47.0	55.0	0.21	0.10	0.76	301	11.59	5070	4275	
3 x 120 + 3 x 70/3E	<b>5DL4 718</b>	15.0	53.0	61.0	0.164	0.10	0.85	352	14.64	6460	5400	
3 x 150 + 3 x 70/3E	<b>5DL4 720</b>	16.6	59.0	67.0	0.132	0.10	0.85	404	18.3	7590	6750	
3 x 185 + 3 x 95/3E	<b>5DL4 724</b>	19.0	63.0	72.0	0.108	0.09	0.84	461	22.57	9330	8325	
<b>NSSHÖU.../3E + ST</b>												
3 x 2.5 + 3 x 2.5/3E + 3 x 1.5ST	<b>5DM4 724</b>	2.0	17.0	20.0	8.21	0.28	0.28	30	0.31	520	113	
3 x 4 + 3 x 4/3E + 3 x 1.5ST	<b>5DM4 726</b>	2.6	18.0	21.0	5.09	0.24	0.31	41	0.49	600	180	
3 x 6 + 3 x 6/3E + 3 x 1.5ST	<b>5DM4 730</b>	3.2	18.0	22.0	3.39	0.21	0.37	53	0.73	670	270	
3 x 10 + 3 x 10/3E + 3 x 2.5ST	<b>5DM4 731</b>	4.2	21.0	26.0	1.95	0.18	0.34	74	1.22	1010	450	
3 x 16 + 3 x 16/3E + 3 x 2.5ST	<b>5DM4 432</b>	5.7	24.0	30.0	1.24	0.15	0.51	99	1.95	1290	720	
3 x 25 + 3 x 16/3E + 3 x 2.5ST	<b>5DM4 733</b>	7.0	28.0	34.0	0.795	0.14	0.53	131	3.05	1780	1125	
3 x 35 + 3 x 16/3E + 3 x 2.5ST	<b>5DM4 734</b>	8.1	32.0	38.0	0.565	0.13	0.59	162	4.27	2300	1575	
3 x 50 + 3 x 25/3E + 3 x 2.5ST	<b>5DM4 735</b>	9.7	37.0	44.0	0.393	0.12	0.62	202	6.10	3200	2250	
3 x 70 + 3 x 35/3E + 3 x 2.5ST	<b>5DM4 736</b>	11.3	42.0	48.0	0.277	0.11	0.71	250	8.54	4010	3150	
3 x 95 + 3 x 50/3E + 3 x 2.5ST	<b>5DM4 737</b>	13.1	47.0	55.0	0.21	0.10	0.76	301	11.59	5100	4275	
3 x 120 + 3 x 70/3E + 3 x 2.5ST	<b>5DM4 738</b>	15.0	53.0	61.0	0.164	0.10	0.85	352	14.64	6510	5400	
3 x 150 + 3 x 70/3E + 3 x 2.5ST	<b>5DM4 742</b>	16.6	59.0	67.0	0.132	0.09	0.91	404	18.3	7600	6750	
3 x 185 + 3 x 95/3E + 3 x 2.5ST	<b>5DM4 744</b>	19.0	63.0	72.0	0.108	0.09	0.97	461	22.57	9400	8325	
<b>NSSHÖU.../KON</b>												
3 x 1.5/1.5KON	<b>5DL2 404</b>	1.5	11.0	14.0	13.70	0.30	0.25	23	0.18	265	68	
3 x 2.5/2.5KON	<b>5DL2 405</b>	2.0	13.0	16.0	8.21	0.26	0.28	30	0.31	335	113	
4 x 6/6KON	<b>5DL2 507</b>	3.2	18.0	22.0	3.39	0.21	0.37	53	0.73	375	360	
4 x 10/10KON	<b>5DL2 508</b>	4.2	22.0	27.0	1.95	0.18	0.32	74	1.22	1050	600	
5 x 2.5/2.5KON	<b>5DL2 605</b>	2.0	16.0	20.0	8.21	0.25	0.28	30	0.31	490	188	
5 x 4/4KON	<b>5DL2 606</b>	2.6	18.0	22.0	5.09	0.23	0.31	41	0.49	640	300	
5 x 6/6KON	<b>5DL2 607</b>	3.2	21.0	24.0	3.39	0.21	0.37	53	0.73	845	450	