

PROTOMONT (M) Rubber-Sheathed Flexible Cables



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Selection and dimensioning criteria

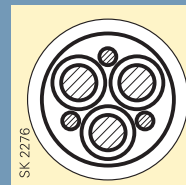
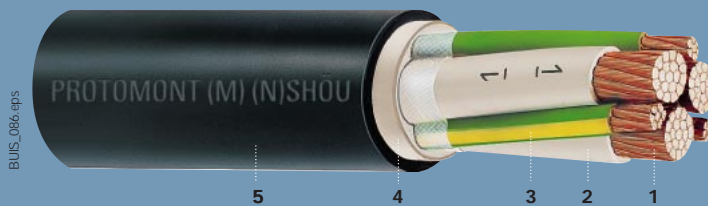
Refer to Section 4 for further details



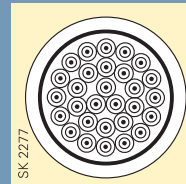
	Type	PROTOMONT (M)	Page	4/2
	Type designation	(N)SHÖU	Page	4/3
	Approvals/standards	Based on DIN VDE 0250, Part 812	Page	4/4
	Application (refer also to DIN VDE 0298, Part 3)	Rubber-sheathed flexible cables for open-cast mining, suitable for laying alongside conveyor belts (also for shiftable units) and on material handling equipment, even when the cable is moved continuously, e.g. in cable suspension fittings and as connection between upper and lower cars. The cables are also suitable for connection of submersible pump units	Page	4/6
Electrical parameters	Rated voltage		Page	4/14
	• Control cables	$U_0/U = 450/750 \text{ V}$	to	4/17
	• Power cables	$U_0/U = 0.6/1 \text{ kV}$		
	Maximum permissible operating voltage in AC systems	$U_0/U = 476/825 \text{ V to } 0.7/1.2 \text{ kV}$		
	Maximum permissible operating voltage in DC systems	$U_0/U = 619/1238 \text{ V to } 0.9/1.8 \text{ kV}$		
	AC test voltage	2.5 kV to 3 kV according to DIN VDE 0250, Part 812		
	Current-carrying capacity	According to DIN VDE 0298, Part 4		
Thermal parameters	Ambient temperature		Page	4/18
	• Fully flexible operation	- 25 °C to + 60 °C	to	4/19
	• Fixed installation	- 40 °C to + 80 °C		
	Maximum permissible operating temperature of the conductor	90 °C		
	Short-circuit temperature of the conductor	250 °C		
Mechanical parameters	Tensile load	Up to 15 N/mm ²	Page	4/20
	Torsional stresses	± 100 °/m	Page	4/21
	Minimum bending radii	According to DIN VDE 0298, Part 3	Page	4/22
	Travel speed on rewinding with drum car	Up to 100 m/min	Page	4/23
	Additional tests	Roller bending test, torsional stress test, reversed bending test, water compatibility according to HD22.16	Pages to	4/24 4/25
Chemical parameters	Resistance to oil and brine	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 (M) Rubber-Sheathed Flexible Cables

- 1 Conductor
- 2 Insulation
- 3 Protective-earth conductor
- 4 Inner sheath
- 5 Outer sheath



- 1 Conductor
- 2 Insulation
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Design features		Refer to Section 4 for further details	→
Type	PROTOMONT (M)	Page	4/2
Conductor (refer also to DIN VDE 0295)	Electrolytic copper, not tinned, finely stranded, Class 5	Page	4/29
Insulation (refer also to DIN VDE 0207, Part 20)	PROTOLON, basic material EPR, compound type: special compound	Page	4/34
Core identification	Natural colouring with black digits printed consecutively		
Core arrangement	Three main conductors laid-up together with the protective-earth conductor, from 50 mm ² with protective-earth conductor split into three in the outer interstices		
Inner sheath (refer also to DIN VDE 0207, Part 21)	Basic material EPR, compound type: special compound	Page	4/34
Outer sheath (refer also to DIN VDE 0207, Part 21)	Basic material CM, compound type: special compound, colour black	Page	4/34
Marking	(Year of manufacture) PROTOMONT (M) (N)SHOU (number of cores) x (cross-section) (rated voltage)	Page	4/40

Selection and ordering data

Number of cores and nominal cross-section mm ²	Order No.	Conductor diameter (guidance value)			Conductor resistance at 20 °C Ω/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
		Max. value mm	Min. value mm	Max. value mm					
(N)SHÖU-O									
1 x 16	5DL4 006	5.7	9.5	11.1	1.210	99	1.95	230	240
1 x 25	5DL4 007	6.7	11.0	12.6	0.780	131	3.05	335	375
1 x 35	5DL4 008	8.0	12.3	13.9	0.554	162	4.27	435	525
1 x 50	5DL4 010	9.5	14.6	16.6	0.386	202	6.10	620	750
1 x 70	5DL4 011	11.0	16.4	18.4	0.272	250	8.54	835	1050
1 x 95	5DL4 012	13.1	18.8	20.8	0.206	301	11.59	1070	1425
1 x 120	5DL4 013	14.8	20.7	22.7	0.161	352	14.64	1340	1800
1 x 150	5DL4 014	16.5	22.8	24.8	0.129	404	18.30	1650	2250
1 x 185	5DL4 015	17.9	24.7	27.7	0.106	461	22.57	2020	2775
1 x 240	5DL4 017	21.2	28.0	31.0	0.080	547	29.28	2600	3600
1 x 300	5DL4 018	23.6	31.6	34.6	0.064	633	36.60	3250	4500
2 x 1.5	5DL4 021	1.5	9.8	11.4	13.300	23	0.18	160	45
2 x 2.5	5DL4 022	2.0	10.7	12.3	7.980	30	0.31	200	75
2 x 4	5DL4 023	2.6	11.9	13.5	4.950	41	0.49	260	120
3 x 2.5	5DL4 352	2.0	11.2	12.8	7.980	30	0.31	230	113
3 x 4	5DL4 353	2.6	12.5	14.1	4.950	41	0.49	300	180
3 x 6	5DL4 354	3.2	13.9	15.5	3.300	53	0.73	380	270
3 x 10	5DL4 355	4.2	16.6	18.6	1.910	74	1.22	575	450
(N)SHÖU-J									
3 x 1.5	5DL4 296	1.5	10.3	11.9	13.300	23	0.18	185	68
3 x 2.5	5DL4 297	2.0	11.2	12.8	7.980	30	0.31	230	113
3 x 4	5DL4 298	2.5	12.5	14.1	4.950	41	0.49	300	180
3 x 6	5DL4 300	3.2	13.9	15.5	3.300	53	0.73	380	270
4 x 1.5	5DL4 315	1.5	11.0	12.6	13.300	23	0.18	210	90
4 x 2.5	5DL4 016	2.0	12.0	13.7	7.980	30	0.31	270	150
4 x 4	5DL4 317	2.6	13.5	15.1	4.950	41	0.49	355	240
4 x 6	5DL4 318	3.2	15.7	17.7	3.300	53	0.73	490	360
4 x 10	5DL4 320	4.2	18.0	20.0	1.910	74	1.22	700	600
4 x 16	5DL4 321	5.7	22.7	24.7	1.210	99	1.95	1110	960
4 x 25	5DL4 322	6.7	26.8	29.8	0.780	131	3.05	1660	1500
4 x 35	5DL4 323	8.0	29.9	32.9	0.554	162	4.27	2140	2100
3 x 50 + 3 x 25/3	5DL4 324	9.5	32.5	32.5	0.386	202	6.10	2560	2250
3 x 70 + 3 x 35/3	5DL4 325	11.0	36.4	39.4	0.272	250	8.54	3420	3150
3 x 95 + 3 x 50/3	5DL4 326	13.1	42.1	45.1	0.206	301	11.59	4480	4275
3 x 120 + 3 x 70/3	5DL4 310	14.8	46.3	49.3	0.161	352	14.64	5710	5400
5 x 1.5	5DL4 333	1.5	11.9	13.5	13.300	23	0.18	245	113
5 x 2.5	5DL4 334	2.0	13.0	14.6	7.980	30	0.31	310	188
5 x 4	5DL4 335	2.6	15.3	17.3	4.950	41	0.49	445	300
5 x 6	5DL4 336	3.2	17.0	19.0	3.300	53	0.73	580	450
5 x 10	5DL4 337	4.2	20.4	22.4	1.910	74	1.22	875	750
5 x 16	5DL4 338	5.7	24.3	27.3	1.210	99	1.95	1320	1200
5 x 25	5DL4 340	6.7	29.3	32.3	0.780	131	3.05	1990	1875
7 x 1.5	5DL4 102	1.5	13.0	14.6	13.300	23	0.18	300	158
8 x 1.5	5DL4 103	1.5	13.8	15.4	13.300	23	0.18	325	180
10 x 1.5	5DL4 104	1.5	15.5	17.5	13.300	23	0.18	400	225
12 x 1.5	5DL4 105	1.5	16.5	18.5	13.300	23	0.18	450	270
7 x 2.5	5DL4 112	2.0	15.0	17.0	7.980	30	0.31	420	263
10 x 2.5	5DL4 114	2.0	17.3	19.3	7.980	30	0.31	525	375
12 x 2.5	5DL4 115	2.0	17.8	19.8	7.980	30	0.31	590	450
18 x 2.5	5DL4 116	2.0	21.2	23.2	7.980	30	0.31	840	675
24 x 2.5	5DL4 117	2.0	23.2	25.5	7.980	30	0.31	900	900