

## PROTOMONT (M) (N)SHOEU 0.6/1kV: Flexible Rubber Cables



### Application

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.

### Global data

Brand	PROTOMONT(M)
Type	PROTOMONT(M) (N)SHOEU 0.6/1kV
Type designation	(N)SHOEU
Standard	Based on DIN VDE 0250 part 812
Certifications / Approvals	Fire Certificate of Russian Federation TR-Zertifikat GOST K GOST B

### Notes on installation

Maximum Submersing Depth	500 Meter
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### Design features

Conductor	Electrolytic copper, not tinned, finely stranded (class 5)
Insulation	PROTOLON, Basic material: EPR, Compound type: Special compound better 3GI3
Core identification	Light gray with black digits
Core arrangement	Three main conductors laid-up together with the protective-earth conductor, from 50 mm <sup>2</sup> with protective-earth conductor split into three in the outer interstices
Inner sheath	Basic material: EPR, Compound type: Special compound
Outer sheath	Basic material: Chlorinated rubber, Compound type: Special compound, 5GM3, Color: Black

### Electrical parameters

Rated voltage	U <sub>0</sub> /U=450/750 V (Control cables); U <sub>0</sub> /U=0.6/1 kV (Power cables)
Maximum permissible operating voltage AC	0.7/1.2 kV
Maximum permissible operating voltage DC	0.9/1.8 kV
AC test voltage	3 kV
AC test voltage - Control Cores	2 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 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
Max. permissible water temperature	40 °C (for higher temperatures a life time reduction is expected)
Ambient temperature for fix installation min.	-40 °C
Ambient temperature for fix installation max.	80 °C
Ambient temp. in fully flex. operation min.	-25 °C
Ambient temp. in fully flex. operation max.	60 °C

### Mechanical parameters

Max. speed on rewinding with drum car	100 m/min Meter per minute
Tensile load on the conductor max .	15 N/mm <sup>2</sup>
Torsional stress	100 °/m
Bending radii min.	Acc. to DIN VDE 0298 part 3

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
PROTOMONT (M) (N)SHOEU-J											
3x1,5	20004939	1.6	10.2	11.8	160	68	13.3	0.21	0.33	23	0.18
3x2,5	20004940	2	11.1	12.7	200	113	7.98	0.24	0.32	30	0.31
3x4	20040377	2.4	12.1	13.7	270	180	4.95	0.27	0.31	41	0.49
3x6	20004941	2.9	13.2	14.8	340	270	3.3	0.32	0.29	53	0.73
PROTOMONT(M) (N)SHOEU-J											
4x1,5		1.6	11	12.6	204	90	13.3	0.21	0.33	23	0.18
4x2,5	20004921	2	12	13.6	245	150	7.98	0.24	0.32	30	0.31
4x4	20004943	2.4	13	14.6	338	240	4.95	0.27	0.3	41	0.49
4x6	20004944	2.9	14.9	16.9	453	360	3.3	0.32	0.29	53	0.73
4x10	20004945	3.9	17.4	19.4	663	600	1.91	0.34	0.28	74	1.22
4x16	20004946	5.2	21.4	23.4	1020	960	1.12	0.44	0.26	99	1.95
4x25	20004947	6.4	24.5	27.5	1480	1500	0.78	0.45	0.26	131	3.05
4x35	20004948	7.5	28.4	31.4	1880	2100	0.554	0.52	0.25	162	4.27
4x50	20004949	9	33.6	36.6	2570	3000	0.386	0.54	0.25	202	6.1
4x70	20004950	10.6	39.5	42.5	3820	4200	0.272	0.61	0.24	250	8.45
4x95	20004938	12.8	44.8	47.8	4920	5700	0.206	0.64	0.24	301	11.59
4x120	20004942	14.4	49.9	53.9	6300	7200	0.161	0.72	0.23	352	14.64
4x150	20004967	16.1	54.9	58.9	7578	9000	0.129	0.72	0.23	404	18.3
PROTOMONT(M) (N)SHOEU-J											
3x50+3x25/3	20007826	9	29.4	32.4	2320	2250	0.386	0.54	0.25	202	6.1
3x70+3x35/3	20041925	10.6	34.8	37.8	3200	3150	0.272	0.61	0.24	250	8.54
3x95+3x50/3	20006972	12.8	40.9	43.9	4270	4275	0.206	0.64	0.24	301	11.59
3x120+3x70/3	20006971	14.4	44.7	47.7	5350	5400	0.161	0.72	0.23	352	14.64
3x150+3x70/3		16.1	51.6	55.6	6930	6750	0.129	0.72	0.23	404	18.3
3x185+3x95/3	20007432	17.9	54.5	58.5	8150	8325	0.106	0.71	0.23	461	22.57
3x240+3x120/3		20.6	62.2	66.2	10200	10800	0.08	0.76	0.23	540	26.56
3x300+3x150/3		23.4	70.3	74.3	13250	13500	0.064	0.78	0.23	633	29.28
PROTOMONT(M) (N)SHOEU-J											
5x1,5	20040380	1.6	11.9	13.5	245	113	13.3	0.21	0.33	23	0.18
5x2,5	20004951	2	12.9	14.5	297	188	7.98	0.24	0.32	30	0.31
5x4	20040379	2.4	14.7	16.7	414	300	4.95	0.27	0.3	41	0.49
5x6	20040378	2.9	16.1	18.1	530	450	3.3	0.32	0.29	53	0.73
5x10	20004952	3.9	19	21	795	750	1.91	0.34	0.28	74	1.22
5x16		5.2	23.2	25.2	1200	1200	1.21	0.44	0.26	99	1.95
5x25		6.4	28	31	1850	1875	0.78	0.45	0.26	131	3.05
PROTOMONT(M) (N)SHOEU-J											
7x1,5	20004928	1.6	12.9	14.5	288	158	13.3	0.21	0.33	23	0.18
8x1,5		1.6	13.8	15.4	325	180	13.3	0.21	0.33	23	0.18
10x1,5		1.6	15.5	17.5	400	225	13.3	0.21	0.33	23	0.18
12x1,5	20004929	1.6	15.8	17.8	400	270	13.3	0.21	0.33	23	0.18
14x1,5		1.6	16.8	18.8	495	315	13.3	0.21	0.33	23	0.18
19x1,5	20042550	1.6	18.9	20.9	620	427	13.3	0.21	0.33	23	0.18
7x2,5		2	14.9	16.9	417	263	7.98	0.24	0.32	30	0.31
8x2,5	20004930	2	15.8	17.8	452	300	7.98	0.24	0.32	30	0.31

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
10x2,5		2	16.4	18.4	500	375	7.98	0.24	0.32	30	0.31
12x2,5		2	17.3	19.3	561	450	7.98	0.24	0.32	30	0.31
14x2,5		2	18.7	20.7	660	525	7.98	0.24	0.32	30	0.31
18x2,5		2	21.2	23.2	840	675	7.98	0.24	0.32	30	0.31
19x2,5		2	22.3	24.3	900	712	7.98	0.24	0.32	30	0.31
24x2,5	20004931	2	22.8	24.8	1009	900	7.98	0.24	0.32	30	0.31
PROTOMONT(M) (N)SHOEU-O											
12x4	20004932	2.4	20.8	22.8	831	720	4.95	0.27	0.3	41	0.49
12x6	20004933	2.9	23.4	26.4	1129	1080	3.3	0.32	0.29	53	0.73
PROTOMONT(M) (N)SHOEU-O											
1x16		5.2	9.5	11.1	230	240	1.21	0.44	0.26	99	1.95
1x25		6.4	11	12.6	335	375	0.78	0.45	0.26	131	3.05
1x35		7.5	12.3	13.9	435	525	0.554	0.52	0.25	162	4.27
1x50		9	14.5	16.5	615	750	0.386	0.54	0.25	202	6.1
1x70	20096562	11.1	16.4	18.4	812	1050	0.272	0.61	0.24	250	8.54
1x95	20004920	12.8	18.5	20.5	1060	1425	0.206	0.64	0.24	301	11.59
1x120	20008751	14.5	20.4	22.4	1300	1800	0.161	0.72	0.23	352	14.64
1x150	20064454	16.5	22.8	24.8	1600	2250	0.129	0.72	0.23	404	18.3
1x185		17.9	24.7	27.7	2020	2775	0.106	0.71	0.23	461	22.57
1x240	20004922	21.2	27.6	30.6	2548	3600	0.08	0.76	0.23	547	29.28
1x300		23.6	31.6	34.6	3200	4500	0.064	0.78	0.23	633	36.6
PROTOMONT(M) (N)SHOEU-O											
2x1,5		1.6	9.8	11.4	145	45	13.3	0.21	0.33	23	0.18
2x2,5		2	10.7	12.3	185	75	7.98	0.24	0.32	30	0.31
2x4		2.4	11.9	13.5	220	120	4.95	0.27	0.3	41	0.49
PROTOMONT(M) (N)SHOEU-O											
3x2,5	20004953	2	11.1	12.7	213	113	7.98	0.24	0.32	30	0.31
3x4	20004954	2.4	12.1	13.7	271	180	4.985	0.27	0.3	41	0.49
3x6	20004955	2.9	13.2	14.8	347	270	3.3	0.32	0.29	53	0.73
3x10	20004956	3.9	16.1	18.1	505	450	1.91	0.34	0.28	74	1.22
3x16	20004957	5.2	19	21	775	720	1.12	0.44	0.26	99	1.95
3x25	20004958	6.4	22.9	24.9	1160	1125	0.78	0.45	0.26	131	3.05
3x35	20004959	7.5	24.9	27.9	1500	1575	0.554	0.52	0.25	162	4.27
3x50	20004960	9	29.4	32.4	2190	2250	0.386	0.54	0.25	202	6.1
3x70	20004961	11.1	34.8	37.8	2930	3150	0.272	0.61	0.24	250	8.54
3x95	20004962	12.8	40.9	43.9	3720	4275	0.206	0.64	0.24	301	11.59
3x120	20004963	14.4	44.7	47.7	4850	5400	0.161	0.72	0.23	352	14.64
3x150	20004964	16.1	50	54	6130	6750	0.129	0.72	0.23	404	18.3