

## PROTOMONT NSSHOEU 1kV: Flexible Rubber Cables



### Application

For flexible use and fixed installation open-cast mining applications, in quarries, on construction sites and similar applications, with heavy mechanical stresses. The cables can be used indoors as well as outdoors, in explosion-hazard areas, in industry and in agriculture. They can be used permanently in waste water up to 40°C at a depth of max. 500 m and in industrial water, cooling water, surface water, rainwater and mixed water - and in groundwater and seawater to a more limited extent. The requirements for accessibility and inspection depend on the consistency of the water. In aggressive water or composed of special substances, the cable's resistance properties should be tested. In other respects the specifications of DIN VDE 0298 part 3 applies.

### Global data

Brand	PROTOMONT
Type	PROTOMONT NSSHÖU 0.6/1kV
Standard	DIN VDE 0250-812
Certifications / Approvals	MA – China MSHA P-189-3 Fire Certificate of Russian Federation TR-Certificate GOST K GOST B

### Notes on installation

Notes on installation	Maximum Submersing Depth: 500 Meter
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### Design features

Conductor	Copper, tinned, finely stranded (class 5) in accordance with DIN VDE 0295/IEC 60228
Insulation	PROTOLON, Basic material: EPR, Compound type: 3GI3 in accordance with DIN VDE 0207
Core identification	Up to 5 cores: colored in gray, black, brown, blue, green/yellow, from 6 cores: 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	Vulcanized rubber compound, Basic material: EPR, Compound type: GM1B in accordance with DIN VDE 0207 (not for single-core cables)
Outer sheath	Vulcanized rubber compound, synthetic elastomer compound e.g. CPE, Compound: 5GM5 in accordance with DIN VDE 0207, Color: Yellow

### Electrical parameters

Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage AC	0.7/1.2 kV
Max. permissible operating voltage DC	0.9/1.8 kV
AC test voltage	3 kV
Duration of AC test voltage	5 min.

### 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

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### Mechanical parameters

Max. tensile load of cable	15 N/mm <sup>2</sup>
Torsional stress	100 °/m
Min. bending radius	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 NSSHÖU-O 1x...											
1x16	20004811	5.4	10.6	11.6	235	240	1.21	0.42	0.26	103	2.29
1x25	20008654	6.3	12.8	13.7	355	375	0.7839	0.42	0.26	137	3.58
1x35	20004812	7.4	13.9	14.8	450	525	0.554	0.49	0.25	169	5.01
1x50	20004813	8.9	15.6	16.6	610	750	0.386	0.51	0.25	211	7.15
1x70	20004814	10.6	17.8	18.8	825	1050	0.272	0.59	0.24	261	10.01
1x95	20004815	12.1	19.7	20.7	1050	1425	0.206	0.6	0.24	314	13.59
1x120	20004816	14.2	22.4	23.4	1360	1800	0.161	0.69	0.23	367	17.16
1x150	20004817	15.8	24.4	25.4	1640	2250	0.129	0.69	0.23	422	21.45
1x185	20069571	17.2	27.2	28.8	2040	2775	0.106	0.68	0.23	481	26.46
1x240	20004818	20.2	30.4	32	2600	3600	0.08	0.73	0.23	571	34.32
1x300	20004819	22.9	34.5	36.8	3270	4500	0.064	0.76	0.23	681	42.9
PROTOMONT NSSHÖU-O 2x...											
2x1,5	20004826	1.6	10.8	11.9	160	45	13.3	0.22	0.33	23	0.21
2x2,5	20008593	1.9	12	13	205	75	7.98	0.23	0.32	30	0.36
2x4		2.4	14.5	15.5	295	120	4.95	0.26	0.31	41	0.57
PROTOMONT NSSHÖU-O 3x...											
3x1,5		1.6	11.3	12.3	180	68	13.3	0.22	0.33	23	0.21
3x2,5	20004872	1.9	12.5	13.6	230	113	7.98	0.23	0.32	30	0.36
3x4		2.4	15.1	16.2	340	180	4.95	0.26	0.31	41	0.57
3x6		2.9	16.2	17.3	415	270	3.3	0.3	0.29	53	0.86
3x10		3.9	20	21.1	650	450	1.91	0.32	0.28	74	1.43
3x16		5.4	23.1	24.2	890	720	1.21	0.42	0.26	99	2.29
3x25		6.3	26.8	28.5	1300	1125	0.784	0.42	0.26	131	3.58
3x35	20004837	7.5	30.9	32.5	1730	1575	0.554	0.49	0.25	162	5.01
3x50	20148227	8.9	35.2	38.3	2400	2250	0.386	0.39	0.27	202	7.15
PROTOMONT NSSHÖU-J 3x...											
3x1,5	20004827	1.6	11.3	12.3	180	68	13.3	0.22	0.33	23	0.21
3x2,5	20004828	1.9	12.5	13.6	230	113	7.98	0.23	0.32	30	0.36
3x4	20007174	2.4	15.2	16.2	340	180	4.95	0.26	0.31	41	0.57
3x6		2.9	16.2	17.3	415	270	3.3	0.3	0.29	53	0.86
PROTOMONT NSSHÖU-J 4x...											
4x1,5	20004838	1.6	12	13.1	210	90	13.3	0.22	0.33	23	0.21
4x2,5	20004839	1.9	14.6	15.7	310	150	7.98	0.23	0.32	30	0.36
4x4	20004840	2.4	16.2	17.3	410	240	4.95	0.26	0.31	41	0.57
4x6	20004841	2.9	17.4	18.5	500	360	3.3	0.3	0.29	53	0.86
4x10	20004842	3.9	21.8	22.9	800	600	1.91	0.32	0.28	74	1.43
4x16	20004843	5.4	25.9	27.6	1160	960	1.21	0.42	0.26	99	2.29
4x25	20004844	6.3	30.6	32.3	1700	1500	0.784	0.42	0.26	131	3.58
4x35	20004845	7.5	33.4	35.1	2150	2100	0.554	0.49	0.25	162	5.01
4x50	20004846	8.9	38.2	41.2	2980	3000	0.386	0.51	0.25	202	7.15
4x70	20004847	10.6	42.4	45.5	3910	4200	0.272	0.59	0.24	250	10.01
4x95	20004848	12.1	48.2	52.3	5120	5700	0.206	0.6	0.24	301	13.59
4x120	20016763	14.1	54.7	58.8	6570	7200	0.161	0.69	0.23	352	17.16
4x150	20023637	16	60.2	64.2	7990	9000	0.129	0.7	0.23	404	21.45

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4x185	20007494	17.8	67.3	71.3	9820	11100	0.106	0.71	0.23	461	26.46
4x240	20060343	20.2	72.1	76.4	12100	14400	0.08	0.73	0.23	547	34.32
PROTOMONT NSSHÖU-J 3x.../...											
3x50/25	20004863	8.9	38.2	41.2	2820	2250	0.386	0.51	0.25	202	7.15
3x70/35	20004864	10.6	42.4	45.5	3670	3150	0.272	0.59	0.24	250	10.01
3x95/50	20004865	12.1	48.2	52.3	4840	4275	0.206	0.6	0.24	301	13.59
3x120/70	20004866	14.1	54.7	58.8	6250	5400	0.161	0.69	0.23	352	17.16
3x150/70	20004868	16	60.2	64.2	7500	6750	0.129	0.7	0.23	404	21.45
3x185/95	20004867	17.8	67.3	71.3	9290	8325	0.106	0.71	0.23	461	26.46
PROTOMONT NSSHÖU-J 3x... +3x.../3											
3x185 + 3x95/3		17.9	60.7	64.7	8690	8325	0.106	0.71	0.23	461	26.46
PROTOMONT NSSHÖU-J 5x...											
5x1,5	20004855	1.6	12.9	14	245	113	13.3	0.22	0.33	23	0.21
5x2,5	20004856	1.9	15.7	16.7	360	188	7.98	0.23	0.32	30	0.36
5x4	20004857	2.4	17.4	18.5	475	300	4.95	0.26	0.31	41	0.57
5x6	20004858	2.9	19.6	20.6	625	450	3.3	0.3	0.29	53	0.86
5x10	20004859	3.9	23.5	24.5	955	750	1.91	0.32	0.28	74	1.43
5x16	20004860	5.4	28	29.7	1380	1200	1.21	0.42	0.26	99	2.29
5x25	20004861	6.3	33.1	34.8	2030	1875	0.784	0.42	0.26	131	3.58
5x35	20006970	7.5	37	40.1	2700	2625	0.554	0.49	0.25	162	5.01
PROTOMONT NSSHÖU-J ...x1,5											
7x1,5	20004891	1.6	15.9	16.9	365	158	13.3	0.22	0.33	15	0.21
8x1,5	20004890	1.6	17.1	18.1	410	180	13.3	0.22	0.33	14	0.21
10x1,5	20004886	1.6	17.7	19.7	455	225	13.3	0.22	0.33	13	0.21
24x1,5	20088402	1.6	24.3	27.3	920	540	13.3	0.22	0.33	9	0.21
PROTOMONT NSSHÖU-J ...x2,5											
7x2,5	20004887	2	18	18.9	485	263	7.98	0.24	0.32	19	0.36
10x2,5		2	20.4	21.4	630	375	7.98	0.24	0.32	16	0.36
12x2,5	20004874	2	21.7	22.7	725	450	7.98	0.24	0.32	16	0.36
18x2,5	20004892	2	25.6	27.5	1035	675	7.98	0.24	0.32	13	0.36
24x2,5		2	28.6	30.2	1320	900	7.98	0.23	0.32	12	0.36
PROTOMONT NSSHÖU-J ...x4											
7x4	20059552	2.4	21	22	685	420	4.95	0.26	0.31	17	0.57
12x4	20040505	2.4	24.9	26.5	1030	720	4.95	0.26	0.31	21	0.57