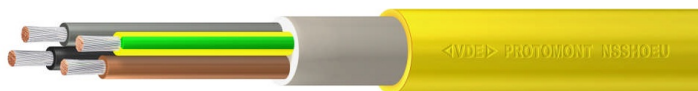


PROTOMONT NSSHOEU 0,6/1 kV



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. 2000 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 designation	NSSHOEU
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 2000 meters
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Design features

Conductor	Copper, tinned, finely stranded (class 5) in accordance with DIN EN 60228 / IEC 60228
Insulation	PROTOLON, Basic material: EPR, Compound type: 3GI3 in accordance with DIN EN 50363
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 ² 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 EN 50363 (not for single-core cables)
Outer sheath	Vulcanized rubber compound, synthetic elastomer compound e.g. CPE, Compound: 5GM5 in accordance with DIN EN 50363, 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 - main cores	3 kV (5 Min.)

Chemical parameters

Reaction to fire	DIN EN 60332-1-2
Resistance to oil	DIN EN 60811-404
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone and moisture
Water resistance	DIN 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 (At higher water temperatures, a shortened cable service life is to be expected)
Ambient temperature for fixed installation	min -40 °C ; max +80 °C
Ambient temperature in fully flexible operation	min -25 °C ; max +60 °C

Mechanical parameters

Max. tensile load on the conductor	15 N/mm ²
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	Bending radius fixed min. mm	Bending radius free moving min. mm	Weight (approx.) kg/km	Conductor resistance at 20°C max. Ω/km	Nominal operating capacitance µF/km	Inductance nom. mH/km	Current carrying capacity (1) A	Short Circuit Current (conductor) max. (1s) kA
PROTOMONT NSSHÖU-O 1x...												
1x16	20004811	5.4	10.6	11.6			235	1.21	0.42	0.26	103	2.29
1x25	20008654	6.3	12.8	14	56	70	355	0.7839	0.42	0.26	137	3.58
1x35	20004812	7.4	13.9	15.1	60	76	450	0.554	0.49	0.25	169	5.01
1x50	20004813	8.8	15.6	17.1	68	86	610	0.386	0.51	0.25	211	7.15
1x70	20004814	10.6	17.7	19.2	77	96	825	0.272	0.59	0.24	261	10.01
1x95	20004815	12.1	19.7	21.2	85	106	1050	0.206	0.6	0.24	314	13.59
1x120	20004816	14.3	22.4	23.9	96	120	1360	0.161	0.69	0.23	367	17.16
1x150	20004817	15.9	24.4	25.9	104	130	1640	0.129	0.69	0.23	422	21.45
1x185	20069571	17.5	27.2	29.4	118	147	2040	0.106	0.68	0.23	481	26.46
1x240	20004818	20.3	30.4	32.6	130	163	2600	0.0801	0.73	0.23	571	34.32
1x300	20004819	23.1	34.6	36.8	147	184	3270	0.0641	0.76	0.23	681	42.9
1x400	20154805	26.2	38.5	40.5			4210	0.0486	0.76	0.24	828	57.2
PROTOMONT NSSHÖU-O 2x...												
2x1,5	20004826	1.6	10.6	12.2	49	61	160	13.3	0.22	0.33	23	0.21
2x2,5	20008593	1.9	11.7	13.3	53	67	205	7.98	0.23	0.32	30	0.36
2x4		2.4	14.5	16.5	66	83	295	4.95	0.26	0.31	41	0.57
PROTOMONT NSSHÖU-O 3x...												
3x1,5		1.6	11.1	12.7	51	64	180	13.3	0.22	0.33	23	0.21
3x2,5	20004872	1.9	12.2	13.8	55	69	230	7.98	0.23	0.32	30	0.36
3x4		2.4	14.7	16.7	67	84	340	4.95	0.26	0.31	41	0.57
3x6		2.9	15.7	17.7	71	89	415	3.3	0.3	0.29	53	0.86
3x10	20141441	3.9	20	21.1	89	112	650	1.91	0.32	0.28	74	1.43
3x16		5.4	23.1	25.1	100	126	890	1.21	0.42	0.26	99	2.29
3x25	20004897	6.3	26.8	28.5	116	146	1300	0.784	0.42	0.26	131	3.58
3x35	20004837	7.5	29.9	32.9	132	165	1730	0.554	0.49	0.25	162	5.01
3x50	20148227	8.9	35.2	38.3			2400	0.386	0.55	0.27	202	7.15
3x70	20008777	10.6	39.1	42.1			3820	0.272	0.57	0.28	250	10.01
PROTOMONT NSSHÖU-J 3x...												
3x1,5	20004827	1.6	11.1	12.7	51	64	180	13.3	0.22	0.33	23	0.21
3x2,5	20004828	1.9	12.2	13.8	55	69	230	7.98	0.23	0.32	30	0.36
3x4	20007174	2.4	15.2	17.2	69	86	340	4.95	0.26	0.31	41	0.57
3x6		2.9	16.6	18.6	74	93	415	3.3	0.3	0.29	53	0.86
PROTOMONT NSSHÖU-O 4x...												
4x1,5	20085843	1.6	12	13.1			210	13.3	0.22	0.33	23	0.21
PROTOMONT NSSHÖU-J 4x...												
4x1,5	20004838	1.6	11.8	13.4	54	67	210	13.3	0.22	0.33	23	0.21
4x2,5	20004839	1.9	14.1	16.1	64	81	310	7.98	0.23	0.32	30	0.36
4x4	20004840	2.4	15.7	17.7	71	89	410	4.95	0.26	0.31	41	0.57
4x6	20004841	2.9	16.9	18.9	76	95	500	3.3	0.3	0.29	53	0.86
4x10	20004842	3.9	21.1	23.1	92	116	800	1.91	0.32	0.28	74	1.43
4x16	20004843	5.4	25.9	27.6	113	141	1160	1.21	0.42	0.26	99	2.29
4x16+4x2,5	20004871	5.4	27.1	30.1			1433	1.21	0.42	0.26	99	2.29
4x25	20004844	6.3	29.8	32.8	131	164	1700	0.7839	0.42	0.26	131	3.58

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius fixed min. mm	Bending radius free moving min. mm	Weight (approx.) kg/km	Conductor resistance at 20°C max. Ω/km	Nominal operating capacitance µF/km	Inductance nom. mH/km	Current carrying capacity (1) A	Short Circuit Current (conductor) max. (1s) kA
4x25+1x(4x1,5)ST	20220185	6.3	32.4	35.4			2000	0.784	0.42	0.26	131	3.58
4x35	20004845	7.5	32.7	35.7	143	179	2150	0.554	0.49	0.25	162	5.01
4x50	20004846	8.8	38.1	41.1	164	206	2980	0.386	0.51	0.25	202	7.15
4x70	20004847	10.6	42.1	45.1	180	226	3910	0.272	0.59	0.24	250	10.01
4x95	20004848	12.1	48.2	52.2	209	261	5120	0.206	0.6	0.24	301	13.59
4x120	20016763	14.2	54.6	58.6	234	293	6570	0.161	0.69	0.23	352	17.16
4x150	20023637	16.1	60.8	64.8	259	324	7990	0.129	0.7	0.23	404	21.45
4x185	20007494	17.9	67.3	71.3	285	357	9820	0.106	0.71	0.23	461	26.46
4x240	20060343	20.3	73.7	77.7	311	389	12100	0.0801	0.73	0.23	547	34.32
PROTOMONT NSSHÖU-J 3x.../...												
3x50/25	20004863	8.8	38.4	41.4	166	207	2820	0.386	0.51	0.25	202	7.15
3x70/35	20004864	10.6	42.3	45.3	181	227	3670	0.272	0.59	0.24	250	10.01
3x95/50	20004865	12.1	48.1	52.1	208	261	4840	0.206	0.6	0.24	301	13.59
3x120/70	20004866	14.2	54.6	58.6	234	293	6250	0.161	0.69	0.23	352	17.16
3x150/70	20004868	16.1	60	64	256	320	7500	0.129	0.7	0.23	404	21.45
3x185/95	20004867	17.9	67.3	71.3	285	357	9290	0.106	0.71	0.23	461	26.46
3x240/120	20196331	20.2	73	77			11000	0.08	0.73	0.23	547	34.32
PROTOMONT NSSHÖU-J 3x...+3x.../3												
3x185+3x95/3		17.9	60.7	64.7	259	324	8690	0.106	0.71	0.23	461	26.46
PROTOMONT NSSHÖU-J 5x...												
5x1,5	20004855	1.6	12.7	14.3	57	72	245	13.3	0.22	0.33	23	0.21
5x2,5	20004856	1.9	15.2	17.2	69	86	360	7.98	0.23	0.32	30	0.36
5x4	20004857	2.4	17	19	76	95	475	4.95	0.26	0.31	41	0.57
5x6	20004858	2.9	19.1	21.1	84	106	625	3.3	0.3	0.29	53	0.86
5x10	20004859	3.9	23	25	100	125	955	1.91	0.32	0.28	74	1.43
5x16	20004860	5.4	27.4	30.4	122	152	1380	1.21	0.42	0.26	99	2.29
5x25	20004861	6.3	32.4	35.4	142	177	2030	0.7839	0.42	0.26	131	3.58
5x35	20006970	7.5	36.9	39.9	160	200	2700	0.554	0.49	0.25	162	5.01
5x70	20024963	10.6	47	51			5000	0.272	0.57	0.24	202	7.15
5x95	20023910	12.1	53.4	57.4			6325	0.206	0.65	0.24	250	10.01
5x120	20023647	14.1	59.6	63.6			7980	0.161	0.68	0.24	352	17.16
5x185	20211472	17.8	74.6	78.7			12010	0.106	0.71	0.23	461	26.46
5x240	20062184	20.2	79.9	84.9			15160	0.08	0.73	0.23	547	34.32
PROTOMONT NSSHÖU-J ...x1,5												
7x1,5	20004891	1.6	15.2	17.2	69	86	365	13.3	0.22	0.33	15	0.21
8x1,5	20004890	1.6	16.6	18.6	74	93	410	13.3	0.22	0.33	14	0.21
10x1,5	20004886	1.6	17.7	19.7	79	99	455	13.3	0.22	0.33	13	0.21
12x1,5	20023911	1.6	17.7	25			540	20.3	0.22	0.33	13	0.21
7x10+5x1,5ST	20004896	3.9	26	29			1420	1.91	0.33	0.28	28	1.43
19x1,5	20023912	1.6	17.7	21.7			760	23.7	0.22	0.33	13	0.21
24x1,5	20088402	1.6	24.3	27.3	109	137	920	13.3	0.22	0.33	9	0.21
PROTOMONT NSSHÖU-J ...x2,5												
7x2,5	20004887	1.9	17.4	19.4	78	97	485	7.98	0.24	0.32	19	0.36
10x2,5	20174408	2	20.4	21.4	92	115	630	7.98	0.24	0.32	16	0.36

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius fixed min. mm	Bending radius free moving min. mm	Weight (approx.) kg/km	Conductor resistance at 20°C max. Ω/km	Nominal operating capacitance μF/km	Inductance nom. mH/km	Current carrying capacity (1) A	Short Circuit Current (conductor) max. (1s) kA
12x2,5	20004874	1.9	21.2	23.2	93	116	725	7.98	0.24	0.32	16	0.36
18x2,5	20004892	1.9	24.5	27.5	110	138	1035	7.98	0.24	0.32	13	0.36
19x2,5	20025547	2	26	28			1100	7.98	0.24	0.32	13	0.36
24x2,5		1.9	28.3	31.3	125	157	1320	7.98	0.23	0.32	12	0.36
PROTOMONT NSSHÖU-J ...x4												
7x4	20059552	2.4	20.5	22.5	90	113	685	4.95	0.26	0.31	17	0.57
12x4	20040505	2.4	25.6	28.6	114	143	1030	4.95	0.26	0.31	21	0.57
PROTOMONT NSSHÖU-J ...x10												
7x4+5x1,5ST	20004893	2.4	24.1	26.1			901	4.95	0.26	0.31	17	0.57

(1) Nominal current carrying capacity for multicore cable or three single-core cables in trefoil in permanent operation with DC or AC with 50 up to 60 Hz at 30°C ambient temperature, free in air, three cores loaded. (see also VDE 0298-4)