



**MS-HYDROFIRM(T)
(N)TSW 3,6/6 kV**
Cable for Drinking Water Application
KTW/ACS



Technical Data

	Trademark	MS-HYDROFIRM(T)
	Type designation	(N)TSW
	Specification	Design and tests according to Prysmian specification
	Application	<p>For making connections to electrical equipment used in water and subjected to medium mechanical stress, e.g. submersible pumps, lowering of water level and booster plants.</p> <p>The cables can also be used in drinking water, industrial water, cooling water, surface water, rainwater, ground water and sea water (salt water) down to 500m depth.</p> <p>The outer sheath fulfil the requirements of health according to the German KTW-Recommendation and the Attestation de Conformité Sanitaire (ACS) according to the French law. The relevant certificates are available.</p> <p>If the water concerned is aggressive or composed of special substances, the cables resistance properties should be examined.</p> <p>These cables can be used indoors, outdoors, in industrial and agricultural plant, but not in explosion-hazard areas.</p> <p>In other respects, DIN VDE 0298-3 applies.</p>
Electrical parameters	Rated voltage	U ₀ /U = 3,6/6 kV
	Maximum permissible operation voltage of plant and power system	<ul style="list-style-type: none"> - Single-phase and three-phase AC operation <li style="padding-left: 20px;">Line-Earth/ Line-Line 4.2/7.2 kV - DC operation <li style="padding-left: 20px;">Line-Earth/ Line-Line 5.4/10.8 kV
	AC test voltage	11 kV (test duration 5 min.)
	Current-carrying capacity	The values are valid for a multicore cable or three single-core cables in trefoil in permanent operation with DC or AC with 50 up to 60 Hz in air at 30 °C. In other respects, DIN VDE 0298-4 applies
Thermal parameters	Maximum permissible operating temperature at conductor	90 °C
	Maximum permissible short-circuit temperature at conductor	250 °C (max. 5 s)
	Minimum permissible temperatures	<ul style="list-style-type: none"> when in motion -25 °C when stationary -40 °C
	Maximum permissible water temperature	60 °C (At higher temperatures, a shortened cable service life is to be expected.)
Mechanical parameters	Tensile strength	max. 15 N/mm ² , see selection table
	Minimum bending radii	See selection table
Special Parameters	Water resistance	Test according to DIN VDE 0282-16
	Requirements of health	Test according to the German KTW-Recommendation
	Acceptance in France	Test according to Attestation de Conformité Sanitaire ACS



Design features

Conductor	Copper, plain, finely stranded, Class 5 according to DIN VDE 0295 / IEC 60228
Insulation	Ozone, water and weather resistant insulation compound, base EPR (Ethylene-Propylene Rubber); colour: light; PE conductor: green-yellow
Electrical field control	Inner layer of semiconductive rubber compound, colour: black
Sheath	One-layer-sheath system: EPR special compound; in accordance with KTW instructions; colour: blue
Marking	(year of manufacture)(serial Nr.) MS-HYDROFIRM(T) (N)TSW-J 3X16/16 3.6/6 kV

Selection and ordering data

Number of cores and nominal cross-sectional area mm ²	Order-No.	Conductor diameter, power core guidance value mm	Overall diameter of cable Min. value mm	Overall diameter of cable Max. value mm	Minimum bending radii (fixed installation) mm	Minimum bending radii (free movement and entry) mm	Approx. net weight for 1000 m kg	Tension force Max. value N	Current-carrying capacity, touching surfaces, at 30°C, 3 cores loaded A
MS-HYDROFIRM(T) (N)TSW-O 3,6/6kV - single core									
1 x 16	5DK3 164	5,6	15,7	17,2	103	172	382	240	103
1 x 25	5DK3 165	6,4	16,5	18,0	108	180	470	375	137
1 x 35	5DK3 166	7,6	17,7	19,2	115	192	588	525	169
1 x 50	5DK3 167	9,0	19,1	20,6	124	206	735	750	211
1 x 70	5DK3 168	10,8	21,7	23,2	139	232	990	1050	261
MS-HYDROFIRM(T) (N)TSW-O 3,6/6kV - three cores without PE-conductor									
3 x 16	5DK3 171	5,7	29,1	32,1	193	321	1305	720	99
3 x 25	5DK3 172	6,4	31,8	34,8	209	348	1675	1125	131
3 x 35	5DK3 173	7,6	34,4	37,4	224	374	2079	1575	162
3 x 50	5DK3 174	9,1	38,8	41,8	251	418	2735	2250	202
3 x 70	5DK3 175	10,8	42,5	45,5	273	455	3480	3150	250
MS-HYDROFIRM(T) (N)TSW-J - three cores with PE-conductor									
3 x 16 / 16	5DK3 181	5,7	33,3	36,3	218	363	1695	960	99
3 x 25 / 25	5DK3 182	6,4	35,0	38,0	228	380	2110	1500	131
3 x 35 / 35	5DK3 183	7,6	39,1	42,1	252	421	2675	2100	162
3 x 50 / 50	5DK3 184	9,1	42,7	45,7	274	457	3400	3000	202
3 x 70 / 70	5DK3 185	10,8	46,8	49,8	299	498	4365	4200	250
MS-HYDROFIRM(T) (N)TSW-J - three cores with divided PE-conductor									
3x25+3x25/3	5DK3 190	6,4	31,8	34,8	209	348	1823	1125	131
3x35+3x25/3	5DK3 191	7,6	34,4	37,4	224	374	2215	1575	162
3x50+3x25/3	5DK3 192	9,1	38,8	41,8	251	418	2875	2250	202
3x70+3x35/3	5DK3 193	10,8	42,5	45,5	273	455	3695	3150	250