

kV

MS-TECWATER 3,6/6

(N)TSW0EU



Application

MS-TECWATER rubber-sheathed cables (N)TSW0EU are intended for connection of electrical equipment in contaminated water and for heavy mechanical stresses, e.g. submersible pumps in sewage disposal and treatment as well as submersible mixer. Due to the various substances in the contaminated water, the cables may be used only in easily accessible areas that can be inspected (installation depth of approx. 10 m, as normally used in sewage water tanks). These cables are also suitable for use in process water, cooling water, mine surface water, rainwater and combined waste water. They further can be used in groundwater and seawater; less stringent specifications in terms of accessibility and inspection can be imposed (in such cases the cables can be used at depths up to 2000 m). Water types are defined in accordance with DIN 4045 and DIN 4046.

If the water concerned is aggressive or composed of special substances, the cable's resistance properties should be examined. These cables can be used indoors, outdoors, in explosion-hazard areas.

In other respects the specifications of DIN VDE 0298 part 3 apply.

Global data

Brand	TECWATER
Type designation	(N)TSW0EU
Standard	Based on EN 50525-2-21

Notes on installation

Maximum Submersing Depth	2000 Meter
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Design features

Conductor	Plain copper, finely stranded class 5 in accordance with DIN EN 60228 / IEC 60228
Insulation	Ozone, water and weather resistant insulation compound, base EPR (Ethylene-Propylene Rubber)
Electrical field control	Inner layer of semiconductive rubber compound
Core identification	Cores light, printed with black numbers
Inner sheath	For all multi core cables with cross-section more than 6mm ² : Inner layer of CPE special compound; color: blue
Outer sheath	Special rubber compound based on CPE, water and oil-resistant
Outer sheath colour	Black

Electrical parameters

Rated voltage	3.6/6 kV
Max. permissible operating voltage AC	4.2/7.2 kV
Max. permissible operating voltage DC	5.4/10.8 kV
AC test voltage - main cores	11 kV (5 Min.)

Chemical parameters

Flame propagation	DIN EN 60332-1-2
Resistance to oil	DIN EN 60811-404
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 fix installation min.	-40 °C
Ambient temp. in fully flex. operation min.	-25 °C

Mechanical parameters

Max. tensile load on the conductor	15 N/mm ²
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	Current carrying capacity in water A
1x16		5.6	15.7	17.2	103	172	390	1.21	170
1x25		6.4	16.5	18	108	180	480	0.7839	225
1x35		7.6	17.7	19.2	115	192	600	0.554	278
1x50		9	19.1	20.6	124	206	750	0.386	347
1x70		10.8	21.7	23.2	139	232	1010	0.272	429
3x16		5.7	29.1	32.1	193	321	1330	1.21	125
3x25		6.4	31.8	34.8	209	348	1710	0.7839	165
3x35		7.6	34.4	37.4	224	374	2120	0.554	205
3x50		9.1	38.8	41.8	251	418	2790	0.386	255
3x70		10.8	42.5	45.5	273	455	3550	0.272	316
3x16 /16		5.7	33.3	36.3	218	363	1730	1.21	125
3x25 /25		6.4	35	38	228	380	2110	0.7839	165
3x35 /35		7.6	39.1	42.1	253	421	2730	0.554	205
3x50 /50	20038161	9.1	42.7	45.7	274	457	3470	0.386	255
3x70 /70		10.8	46.8	49.8	299	498	4450	0.272	316
3x25 + 3x25/3	20004484	6.4	31.8	34.8	209	348	1860	0.7839	165
3x35 + 3x25/3		7.6	34.4	37.4	224	374	2260	0.554	205
3x50 + 3x25/3		9.1	38.8	41.8	251	418	2930	0.386	255
3x70 + 3x35/3		10.8	42.5	45.5	273	455	3770	0.272	316

Current carrying capacity in water: The values are valid for permanent operation with DC or AC with 50 up to 60 Hz at 30 °C ambient water temperature, two or three cores loaded (cable compete immersed in water).

(2) Current carrying capacity free in air: The values are valid for permanent operation with DC or AC with 50 up to 60 Hz at 30 °C ambient temperature, two or three cores loaded (see also DIN VDE 298-4).