



**TECWATER**  
**S1BN8-F 0,6/1 kV**  
Cable for Water Application

**ENERGY**



## Technical Data

	Trademark	TECWATER
	Type designation	S1BN8-F
	Specification	Design and tests according to Prysmian specification
	Approval	VDE Certificate of Conformity with Factory Surveillance
	Application	<p>For making connections to electrical equipment used in a waste-water environment and subject to heavy mechanical stress, e.g. submersible pumps in sewage disposal and treatment as well as submersible mixer.</p> <p>Owing to the various (and frequently changing) substances of which the contaminated water is made up, the cables may be used only in easily accessible areas that can be inspected (installation depth of approximately 10 m, as customarily encountered in sewage water tanks).</p> <p>These cables are also suitable for use in process water, cooling water, mine surface water, rainwater and combined waste water. Under certain circumstances they can be suitable for groundwater and seawater; it is possible to impose less stringent specifications in terms of accessibility and inspection. In such cases the cables can be used at depths up to 500 m.</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 explosion-hazard areas.</p> <p>In other respects, DIN VDE 0298-300 / HD 516 applies</p>
<b>Electrical parameters</b>	Rated voltage	U <sub>0</sub> /U = 0.6/1 kV
	Maximum permissible operation voltage of plant and power system	<ul style="list-style-type: none"> <li>- Single-phase and three-phase AC operation</li> <li style="padding-left: 20px;">Line-Earth/ Line-Line    0.7/1.2 kV</li> <li>- DC operation</li> <li style="padding-left: 20px;">Line-Earth/ Line-Line    0.9/1.8 kV</li> </ul>
	AC test voltage	3 kV (test duration 15 min.)
	Current-carrying capacity	<p>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 at 30°C ambient temperature, touching surface, three cores loaded.</p> <p>In other respects, DIN VDE 0298-4 applies</p>
<b>Thermal parameters</b>	Maximum permissible operating temperature at conductor	90 °C
	Maximum permissible short-circuit temperature at conductor	250 °C (max. 5 s)
	Maximum permissible water temperature	40 °C (At higher water temperatures, a shortened cable service life is to be expected.)
	Minimum permissible temperatures during operation, laying, transportation and storage	<ul style="list-style-type: none"> <li>when in motion            - 25°C</li> <li>when stationary           - 40°C</li> </ul>
<b>Mechanical parameters</b>	Tensile strength	Max. 15 N/mm <sup>2</sup> , see selection table
	Minimum bending radii	See selection table

## Technical Data

### Stability against other influences

Water resistance

Test according to DIN VDE 0282-16 (HD 22.16)

Resistance to oil

Test according to DIN EN 60811-2-1

Behaviour in case of fire

Test according to DIN EN 60332-1-2



## 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)
Core identification	Power cables: Cores colored according to DIN VDE 0293-308:2003 Control cores: Cores light, printed with black numbers
Sheath	1 layer sheath: CPE special compound; water and oil resistant; colour: black for all single core cables and multi core cables up to 5 cores and 6 mm <sup>2</sup>  2 layer sheath system: Inner layer: EPR special compound; colour: blue Outer layer: CPE special compound; water and oil resistant; colour: black for all multi core cables starting with 10 mm <sup>2</sup> and all cables with more than 5 cores
Marking, example	~~"NNNNNNNN"~~TECWATER S1BN8-F 4G25 0,6/1 kV VDE-REG-NR~~  "NNNNNNNN" = order number

### Selection and ordering data

Number of cores and nominal cross-sectional area	Order-No.	Conductor diameter	Overall diameter of cable	Overall diameter of cable	Minimum bending radii (fixed installation)	Minimum bending radii (free movement and entry)	Approx. net weight for 1000 m	Tension force	Current-carrying capacity, touching surfaces, at 30°C, 3 cores loaded	Short Circuit Current
mm <sup>2</sup>		guidance value mm	Min. value mm	Max. value mm	mm	mm	kg	Max. value N	A	1 s kA

#### TECWATER S1BN8-F, single-core design

1 X 1.5	5DH8 302	1,6	5.8	6.6	20	20	53	23	24	0.21
1 X 2.5	5DH8 303	2,0	6.3	7.0	21	21	65	38	31	0.36
1 X 4	5DH8 304	2,4	6.7	7.5	23	23	82	60	43	0.57
1 X 6	5DH8 305	2,9	7.2	8.0	24	32	103	90	55	0.86
1 X 10	5DH8 306	3,9	8.3	9.1	27	36	160	150	77	1.43
1 X 16	5DH8 307	5,0	9.1	10.1	30	40	210	240	103	2.29
1 X 25	5DH8 308	6,3	10.8	12.4	50	62	315	375	137	3.58
1 X 35	5DH8 309	7,5	12.3	13.9	56	70	421	525	169	5.01
1 X 50	5DH8 310	8,8	14.1	15.7	63	79	577	750	211	7.15
1 X 70	5DH8 311	10,6	16.3	18.3	73	92	808	1050	261	10.01
1 X 95	5DH8 312	12,2	18.8	20.3	81	102	1024	1425	314	13.59
1 X 120	5DH8 313	14,2	20.9	22.9	92	115	1314	1800	367	17.16
1 X 150	5DH8 314	16,0	23.2	25.2	101	126	1627	2250	422	21.45
1 X 185	5DH8 315	17,8	26.0	28.3	113	142	1982	2775	481	26.46
1 X 240	5DH8 316	20,3	28.9	31.2	125	156	2548	3600	571	34.32
1 X 300	5DH8 317	23,1	32.1	34.4	138	172	3151	4500	661	42.9
1 X 400	5DH8 318	26,5	36.3	38.6	154	193	4087	6000	762	57.2
1 X 500	5DH8 319	29,8	40,4	42,7	171	214	5160	7500	877	71.5

#### TECWATER S1BN8-F, two-core design, without PE conductor

2 X 1	5DH8 321	1,3	8.0	9.0	27	36	94	30	18	0.14
2 X 1.5	5DH8 322	1,6	8.6	9.6	29	38	111	45	23	0.21
2 X 2.5	5DH8 323	2,0	9.4	10.4	31	42	141	75	30	0.36
2 X 4	5DH8 324	2,4	10.2	11.8	35	47	182	120	41	0.57
2 X 6	5DH8 325	2,9	11.2	12.8	51	64	239	180	53	0.86
2 X 10	5DH8 326	3,9	15.0	17.0	68	85	420	300	74	1.43
2 X 16	5DH8 327	5,0	17.6	19.6	78	98	597	480	99	2.29
2 X 25	5DH8 328	6,3	21.6	23.6	94	118	890	750	131	3.58

#### TECWATER S1BN8-F, three-core design, with PE conductor

3 G 1	5DH8 331	1,3	8.4	9.5	28	38	104	45	18	0.14
3 G 1.5	5DH8 332	1,6	9.1	10.1	30	40	125	67	23	0.21
3 G 2.5	5DH8 333	2,0	9.6	11.2	34	45	162	112	30	0.36
3 G 4	5DH8 334	2,4	10.6	12.2	49	61	216	180	41	0.57

**Selection and ordering data**

Number of cores and nominal cross-sectional area	Order-No.	Conductor diameter	Overall diameter of cable	Overall diameter of cable	Minimum bending radii (fixed installation)	Minimum bending radii (free movement and entry)	Approx. net weight for 1000 m	Tension force	Current-carrying capacity, touching surfaces, at 30°C, 3 cores loaded	Short Circuit Current
mm <sup>2</sup>		guidance value mm	Min. value mm	Max. value mm	mm	mm	kg	Max. value N	A	1 s kA

**TECWATER S1BN8-F, three-core design, without PE conductor**

3 X 1	5DH8 381	1,3	8.4	9.5	28	38	104	45	18	0.14
3 X 1.5	5DH8 382	1,6	9.1	10.1	30	40	125	67	23	0.21
3 X 2.5	5DH8 383	2,0	9.6	11.2	34	45	162	112	30	0.36
3 X 4	5DH8 384	2,4	10.6	12.2	49	61	216	180	41	0.57
3 X 6	5DH8 385	2,9	12.1	13.7	55	69	292	270	53	0.86
3 X 10	5DH8 386	3,9	16.3	18.3	73	92	514	450	74	1.43
3 X 16	5DH8 387	5,0	19.1	21.1	84	106	740	720	99	2.29
3 X 25	5DH8 388	6,3	23.1	25.1	100	126	1094	1125	131	3.58
3 X 35	5DH8 389	7,5	25.6	28.6	114	143	1459	1575	162	5.01
3 X 50	5DH8 390	8,9	29.9	32.9	132	165	2018	2250	202	7.15
3 X 70	5DH8 391	10,7	35.4	38.4	154	192	2831	3150	250	10.01
3 X 95	5DH8 392	12,3	39.0	42.0	168	210	3547	4275	301	13.59
3 X 120	5DH8 393	14,3	44.4	47.4	190	237	4542	5400	352	17.16
3 X 150	5DH8 394	16,0	49,0	53,0	212	265	5627	6750	404	21.45
3 X 185	5DH8 395	17,7	54,2	58,2	233	291	6819	8325	461	26.46
3 X 240	5DH8 396	20,3	61,4	65,4	262	327	8645	10800	547	34.32

**TECWATER S1BN8-F, four-core design, with PE conductor**

4 G 1	5DH8 351	1,3	9,1	10,1	30	40	123	60	18	0,14
4 G 1.5	5DH8 352	1,6	9,5	11,1	33	44	148	90	23	0,21
4 G 2.5	5DH8 353	2,0	10,5	12,1	48	61	201	150	30	0,36
4 G 4	5DH8 354	2,4	11,8	13,4	54	67	276	140	41	0,57
4 G 6	5DH8 355	2,9	13,6	15,2	61	76	378	340	53	0,86
4 G 10	5DH8 356	3,9	17,8	19,8	79	99	464	600	74	1,43
4 G 16	5DH8 357	5,0	20,9	22,9	92	115	934	960	99	2,29
4 G 25	5DH8 358	6,3	25,3	28,3	113	142	1418	1500	131	3,58
4 G 35	5DH8 359	7,5	28,3	31,3	125	157	1877	2100	162	5,01
4 G 50	5DH8 360	8,9	33,2	36,2	145	181	2613	3000	202	7,15
4 G 70	5DH8 361	10,7	38,7	41,7	167	209	3638	4200	250	10,01
4 G 95	5DH8 362	12,3	43,7	47,7	191	239	4643	5700	301	13,59
4 G 120	5DH8 363	14,3	48,7	52,7	211	264	5833	7200	352	17,16
4 G 150	5DH8 364	16,0	54,5	58,5	234	293	7222	9000	404	21,45
4 G 185	5DH8 365	17,7	60,6	64,6	258	323	8830	11100	461	26,46
4 G 240	5DH8 366	20,3	68,2	72,2	289	361	11457	14400	547	34,32
4 G 300	5DH8 367	23,1	77,0	81,0	324	405	14368	18000	633	42,90

**TECWATER S1BN8-F, five-core design, with PE conductor**

5 G 1,5	5DH8 372	1,6	10,4	12,0	48	60	186	112	23	0,21
5 G 2,5	5DH8 373	2,0	11,6	13,2	53	66	250	187	30	0,36
5 G 4	5DH8 374	2,4	12,0	13,6	54	68	340	300	41	0,57
5 G 6	5DH8 375	2,9	14,6	15,3	61	77	480	450	53	0,86
5 G 10	5DH8 376	3,9	19,9	21,9	88	110	810	750	74	1,43
5 G 16	5DH8 377	5,0	23,2	25,2	101	126	1192	1200	99	2,29
5 G 25	5DH8 378	6,3	28,0	31,0	124	155	1810	1875	131	3,58

**Selection and ordering data**

Number of cores and nominal cross-sectional area  mm <sup>2</sup>	Order-No.	Conductor diameter  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	Short Circuit Current  1 s kA
TECWATER S1BN8-F, multi core design, with PE conductor, Control Cables										
7 G 1,5	5DH8 403	1,6	12,9	14,5	58	73	276	157	23	0,21
8 G 1,5	5DH8 404	1,6	14,5	16,5	66	83	305	180	23	0,21
10 G 1,5	5DH8 406	1,6	15,6	17,6	70	88	376	225	23	0,21
11 G 1,5	5DH8 407	1,6	16,0	18,0	72	90	400	247	23	0,21
12 G 1,5	5DH8 408	1,6	16,0	18,0	72	90	413	270	23	0,21
7 G 2,5	5DH8 413	2,0	14,7	16,7	67	84	381	262	30	0,36
8 G 2,5	5DH8 414	2,0	16,3	18,3	73	92	410	300	30	0,36
10 G 2,5	5DH8 416	2,0	17,4	19,4	78	97	480	375	30	0,36
12 G 2,5	5DH8 418	2,0	17,9	19,9	80	100	555	450	30	0,36