



TECWATER EMV-FC
S1BC4N8-F 0,6/1 kV
Screened Cable for Water Application



Technical Data

| | | |
|------------------------------|---|---|
| | Trademark | TECWATER EMV-FC |
| | Type designation | S1BC4N8-F |
| | Specification | Design and tests according to Prysmian specification |
| | Application | <p>For making connections to electrical equipment used in a waste-water environment and subject to medium mechanical stress, e.g. submersible pumps in sewage disposal and treatment as well as submersible mixer. Especially for frequency converter controlled AC drives and if considerable demands in respect of electromagnetic compatibility (EMC) according to the EMC directive imposes. For an effective shielding both ends of cable must have a good shield contact to ground.</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. In other respects, DIN VDE 0298-300 / HD 516 applies</p> |
| Electrical parameters | Rated voltage | $U_0/U = 0.6/1$ 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 0.7/1.2 kV - DC operation <li style="padding-left: 20px;">Line-Earth/ Line-Line 0.9/1.8 kV |
| | Maximum permissible peak AC voltage \hat{U} | 2,4 kV |
| | AC test voltage | 5 kV (test duration 5 min.) |
| | Current-carrying capacity | The values are valid for a cable 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 of the conductor | permanent 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"> when in motion - 25°C when stationary - 40°C |

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| Mechanical parameters | Tensile strength | max. 15 N/mm ² , see selection table |
| | Minimum bending radii | See selection table |
| 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

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|---------------------|--|
| Conductor | Copper, plain, finely stranded Class 5 according to DIN VDE 0295 / HD 383 / IEC 60228 |
| Insulation | Ozone, water and weather resistant insulation compound, base EPR (Ethylene-Propylene Rubber) |
| Core identification | Colour of cores according to DIN VDE 0293-308:2003 |
| Sheath | 2 layer sheath system: Inner layer: EPR special compound; colour: blue Outer layer: CPE special compound; water and oil resistant; colour: black |
| Shield | Braiding of tinned copper wires between inner and outer sheath. Maximum transfer impedance of 30 Ohm/km at 30 MHz |
| Marking, example | ~~"NNNNNNNN"~~ TECWATER EMV-FC S1BC4N8-F 3x10/10KON 0,6/1 kV ~~ "NNNNNNNN" = Order number |

Selection and ordering data

| Number of cores and nominal cross-sectional area mm ² | Order-No. | Conductor diameter | Diameter over shield | 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 |
|---|-----------|--------------------|----------------------|---------------------------|---------------------------|--|---|-------------------------------|---------------|---|-----------------------|
| | | guidance value mm | guidance value mm | Min. value mm | Max. value mm | mm | mm | kg | Max. value N | A | 1 s kA |
| TECWATER EMV-FC S1BC4N8-F | | | | | | | | | | | |
| 3X1,5/1,5KON | 5DH8 702 | 1,5 | 8,7 | 9,5 | 11,1 | 33 | 56 | 174 | 67 | 23 | 0,21 |
| 3X2,5/2,5KON | 5DH8 703 | 2,0 | 9,7 | 10,5 | 12,1 | 48 | 73 | 230 | 112 | 30 | 0,36 |
| 3X4/4KON | 5DH8 704 | 2,4 | 10,7 | 11,8 | 13,4 | 54 | 80 | 310 | 180 | 41 | 0,57 |
| 3X6/6KON | 5DH8 705 | 2,9 | 12,2 | 13,6 | 15,2 | 61 | 91 | 389 | 270 | 53 | 0,86 |
| 3X10/10KON | 5DH8 706 | 3,9 | 16,6 | 17,8 | 19,8 | 79 | 119 | 693 | 450 | 74 | 1,43 |
| 3X16/16KON | 5DH8 707 | 5,0 | 19,4 | 20,9 | 22,9 | 92 | 137 | 1037 | 720 | 99 | 2,29 |
| 3X25+3G16/3 | 5DH8 708 | 6,3 | 24,5 | 25,3 | 28,3 | 113 | 170 | 1477 | 1125 | 131 | 3,58 |
| 3X35+3G16/3 | 5DH8 709 | 7,5 | 26,7 | 28,3 | 31,3 | 125 | 188 | 1883 | 1575 | 162 | 5,01 |
| 3X50+3G25/3 | 5DH8 710 | 8,9 | 31,0 | 33,2 | 36,2 | 145 | 217 | 2635 | 2250 | 202 | 7,15 |
| 3X70+3G35/3 | 5DH8 711 | 10,7 | 36,0 | 38,7 | 41,7 | 167 | 250 | 3633 | 3150 | 250 | 10,01 |
| 3X95+3G50/3 | 5DH8 712 | 12,3 | 41,5 | 43,7 | 47,7 | 191 | 286 | 4652 | 4275 | 301 | 13,59 |
| 3X120+3G70/3 | 5DH8 713 | 14,3 | 42,9 | 48,8 | 51,8 | 207 | 311 | 5933 | 5400 | 352 | 17,16 |