Cables & Wires

Selection table for water-resistant cables
## WATER-RESISTANT CABLES

<table>
<thead>
<tr>
<th>Water-resistant cables</th>
<th>Temperature (°C)</th>
<th>Nominal Voltage</th>
<th>Bending radio - fixed</th>
<th>UV-resistant</th>
<th>Outdoor use</th>
<th>Drag chain</th>
<th>Colored cores</th>
<th>VDE 0293</th>
<th>HAR/VDE REG No.</th>
<th>UL/CSA</th>
<th>Page</th>
</tr>
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<tbody>
<tr>
<td>Tauchflex-R</td>
<td>-25 to +80</td>
<td>450/750</td>
<td>5x</td>
<td>X</td>
<td>X</td>
<td></td>
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<td>270</td>
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<tr>
<td>Tauchflex-FL</td>
<td>-25 to +80</td>
<td>450/750</td>
<td>5x</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>H07 RN8-F</td>
<td>-25 to +40</td>
<td>450/750</td>
<td>6x</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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</table>

The selection table is intended as an initial orientation. Please see the relevant page of the catalogue for detailed information on the product properties.
**Technical data**
- Special cables corresponding adapted to DIN VDE 0250/DIN VDE 0285-525-2-21/DIN EN 50525-2-21
- **Temperature range** (max. temperature for the outer surface): -40°C to +80°C
- **Temperature limit in water**: max. +40°C, max. +60°C with limited duration of life
- **Temperature limit in air**: flexible -25°C to +80°C, fixed installation -40°C to +80°C
- Permissible **operating temperature** at conductor +90°C
- **Nominal voltage** U0/U 450/750 V
- **Operating voltage** at alternating and three-phase currents U0/U 413/825 V at direct currents U0/U 619/1238 V
- **Test voltage** 2.5 kV, 15 min
- Max. permitted **tensile stress** per mm² conductor 15 N
- **Minimum bending radius**
  - **flexing**
    - up to 8 mm cable Ø: 3x cable Ø
    - > 8-12 mm cable Ø: 4x cable Ø
    - > 12 mm cable Ø: 5x cable Ø
  - **fixed installation**
    - up to 12 mm cable Ø: 3x cable Ø
    - > 12 mm cable Ø: 4x cable Ø

**Cable structure**
- Bare copper conductor, to DIN VDE 0295 cl.5, fine-wire, BS 6360 cl.5, IEC 60228 cl.5
- Core insulation to EPR
- Core identification to DIN VDE 0293
- GN-YE conductor, 3 cores and above
- Cores stranded in layers with optimal lay-length
- Outer sheath of special EPR
- Sheath colour blue

**Properties**
- Good insulation properties when submerged in water
- Minimal weight gain under water
- The mechanical stability of the insulation materials remains constant even when submerged
- As rotor-connection cable for motors up to 1000 V with protected fixed installation in tubes.

**Note**
- G = with green-yellow conductor
- x = without green-yellow conductor
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

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**Application**
Tauchflex-R is a special cable for use as a connecting and control cable for submersible motor pumps, underwater floodlights, floating switch and has proven its worth for constant use in drinking water, process water and service water up to an immersion depth of 300 m. Tauchflex-R can also be installed for use in dry, damp and humid areas as well as in the open air. Not suitable for the installation in hazardous areas.

**Coates** The product is conformed with the EC Low-Voltage Directive 2006/95/EC.

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**Dimensions and specifications may be changed without prior notice. (RI01)**
Tauchflex-FL 750 V, blue, submersible pump cable

Technical data
- Special cables corresponding adapted to DIN VDE 0250/DIN VDE 0285-525-2-21/DIN EN 50525-2-21
- Temperature range (max. temperature for the outer surface): -40°C to +80°C
- Temperature limit in water: max. +40°C, max. +60°C with limited duration of life
- Temperature limit in air: flexible -25°C to +80°C fixed installation -40°C to +80°C
- Permissible operating temperature at conductor +90°C
- Nominal voltage $U_0/U$ 450/750 V
- Operating voltage alternating and three-phase currents $U_0/U$ 413/825 V at direct currents $U_0/U$ 619/1238 V
- Test voltage 2.5 kV, 15 min.
- Core identification to DIN VDE 0293
- Core insulation of EPR
- Core identification to DIN VDE 0250/DIN VDE 0285-525-2-21/DIN EN 50525-2-21
- Core insulation of EPR
- Core laying parallel
- Outer sheath of special ERP
- Sheath colour blue

Cable structure
- Bare copper-conductor, to DIN VDE 0295 cl.5, fine-wire, BS 6360 cl.5, IEC 60228 cl.5
- Core insulation of EPR
- Core identification to DIN VDE 0293
- Core identification to DIN VDE 0293
- Core insulation of EPR
- Core laying parallel
- Outer sheath of special ERP
- Sheath colour blue

Properties
- Good insulation properties when submerged in water
- Minimal weight gain under water
- The mechanical stability of the insulation remains constant even when submerged
- As rotor-connection cable for motors up to 1000 V with protected fixed installation in tubes.

Note
- G = with green-yellow conductor
- x = without green-yellow conductor
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application
Tauchflex-FL is a special cable for use as a connecting and control cable for submersible motor pumps, underwater floodlights, floating switch and has proven its worth for constant use in drinking water, process water and service water up to an immersion depth of 300 m.
Tauchflex-FL can also be installed for use in dry, damp and humid areas as well as in the open air. Not suitable for the installation in hazardous areas.

CE The product is conformed with the EC Low-Voltage Directive 2006/95/EC.

Dimensions and specifications may be changed without prior notice. (RI01)

Suitable accessories can be found in Chapter X.
- Cable Gland - HELUTOP® HT-MS Plus

Part no. | No.cores x cross-sec. mm² | Outer dimension approx. mm | Cop. weight kg / km | Weight approx. kg / km | AWG-No.
--- | --- | --- | --- | --- | ---
37155 | 3 x 1.5 | 7.0 x 13.0 | 43.0 | 125.0 | 16
37156 | 3 x 2.5 | 8.0 x 16.0 | 72.0 | 185.0 | 14
37157 | 3 x 4 | 9.0 x 19.0 | 115.0 | 290.0 | 12
37158 | 3 x 6 | 10.0 x 23.0 | 173.0 | 400.0 | 10
37159 | 3 x 10 | 12.0 x 28.0 | 288.0 | 615.0 | 8
37160 | 3 x 16 | 14.0 x 31.0 | 461.0 | 890.0 | 6
37161 | 3 x 25 | 17.0 x 37.0 | 720.0 | 1155.0 | 4
37162 | 3 x 35 | 17.0 x 38.0 | 1008.0 | 1540.0 | 2
37163 | 3 x 50 | 20.0 x 45.0 | 1440.0 | 2190.0 | 1
37164 | 3 x 70 | 22.0 x 52.0 | 2016.0 | 2890.0 | 0/0
37165 | 3 x 95 | 25.0 x 58.0 | 2736.0 | 3800.0 | 3/0
37166 | 3 x 120 | 27.0 x 64.0 | 3466.0 | 4700.0 | 4/0

Part no. | No.cores x cross-sec. mm² | Outer dimension approx. mm | Cop. weight kg / km | Weight approx. kg / km | AWG-No.
--- | --- | --- | --- | --- | ---
37167 | 4 G 1.5 | 7.0 x 17.0 | 58.0 | 160.0 | 16
37168 | 4 G 2.5 | 8.0 x 20.0 | 96.0 | 245.0 | 14
37169 | 4 G 4 | 9.0 x 24.0 | 154.0 | 330.0 | 12
37170 | 4 G 6 | 10.0 x 26.0 | 230.0 | 450.0 | 10
37171 | 4 G 10 | 11.0 x 31.0 | 384.0 | 850.0 | 8
37172 | 4 G 16 | 13.0 x 36.0 | 614.0 | 1200.0 | 6
37173 | 4 G 25 | 15.0 x 45.0 | 962.0 | 1590.0 | 4
37174 | 4 G 35 | 17.0 x 48.0 | 1344.0 | 2085.0 | 2
37175 | 4 G 50 | 20.0 x 59.0 | 1920.0 | 2890.0 | 1
37176 | 4 G 70 | 22.0 x 64.0 | 2500.0 | 3650.0 | 0/0
37177 | 4 G 95 | 25.0 x 68.0 | 3180.0 | 4420.0 | 3/0
37178 | 4 G 120 | 27.0 x 77.0 | 3950.0 | 5640.0 | 4/0

CW&A Edition 27 (published 01.04.2015)
Water-resistant Cables

H07RN8-F waterproof rubber-sheathed cable, harmonized type

Technical data

- Water resistant heavy-duty pipe to DIN VDE 0285-525-2-21 / DIN EN 50525-2-21
- Temperature range: flexing -25°C fixed installation -40°C in water max. +40°C
- Permissible operating temperature at conductor +60°C
- Nominal voltage: U0/U 450/750 V in case of protected and fixed installation U0/U 600/1000 V
- Test voltage: 2500 V
- Permanent tensile load max. 15 N mm²
- Minimum bending radius: flexing 6x cable Ø fixed installation 4x cable Ø

Cables structure

- Bare copper-conductor, to DIN VDE 0295 cl.5, fine-wire, BS 6360 cl.5, IEC 60228 cl.5
- Core insulation of rubber compound type EI4 to DIN VDE 0207-363-1 / DIN EN 50363-1
- Core identification to DIN VDE 0293-308: up to 5 cores coloured - from 6 cores, black with continuous white numbering
- GN-YE conductor, 3 cores and above
- Cores stranded in layers with optimal lay-length
- Outer sheath of special polyethylene rubber
- Outer sheath black

Properties

- Resistant to Ozone
- Weather
- The core identification of a single core sheathed, of an insulated wire is black.

Tests

- Oil resistant acc. to DIN VDE 0473-811-404 / IEC 60811
- Behaviour in fire to DIN VDE 0482-332-1-2 DIN EN 60332-2-1, IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Note

- G = with green-yellow conductor
- x = without green-yellow conductor
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

Specifically designed for use in fresh water up to 10 m water depth and a maximum water temperature of 40°C for connection of submersible pumps and similar applications. Not suitable for underwater power transmission systems or in waterways or in areas where mechanical damage is possible which represent a potential danger.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EC.

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### Table: Dimensions and Specifications

<table>
<thead>
<tr>
<th>Part no.</th>
<th>No.cores x cross.-sec. mm²</th>
<th>Outer Ø min. mm</th>
<th>Cop. weight kg/km</th>
<th>Weight approx. kg/km</th>
<th>AWG-No.</th>
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<tbody>
<tr>
<td>37327</td>
<td>1 x 15</td>
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Dimensions and specifications may be changed without prior notice. (RI01)