Fibre Optic Sensing Cables

**BRUsens temperature 85°C**

Small fiber optic temperature sensing cable, armored with stainless steel loose tube, stainless steel strength members and PA outer sheath, fast thermal response, for up to 8 fibers

**Construction:**
1. PA outer sheath
2. Stainless steel wires, 316L
3. Stainless steel loose tube, 316L
4. Bend insensitive optical fibers with dual layer acrylate coating for increased micro bending performance

**Description:**
- Gel filled central metal loose tube with up to 8 fibers, hermetically sealed
- High tensile strength
- High crush resistance
- Excellent rodent protection
- Laterally watertight
- High chemical resistance
- Robust abrasion resistant cable sheath
- Compact, high flexibility, small bending radius
- Halogen free
- Fast temperature response

**Applications:**
- Sensing applications: e.g. temperature monitoring
- Sensing technologies: Raman, Brillouin, FBG etc.
- Harsh environment, outdoors
- Deployment in conduits, directly in the ground or attached to structures
- Connection and communication cable for sensing
- Temperature compensation cable for Brillouin

**Standard optical fiber:**
- Multimode fiber: ITU-T G.651, 50µm or 62.5µm
- Other fiber types and fiber quality

**Temperature range:**
- Operating temperature: -40°C ... + 85°C
- Storage temperature: -40°C ... + 85°C
- Installation temperature: -10°C ... + 50°C
- Short-term temperature: (max 60min) -50°C ... +150°C

**Cable sheath color:**
- Red, similar RAL 3000
- Other colors upon request

**Standards:**
- Cable tests complying with IEC 60794-1-2

**Remarks:**
- Fiber colors: 1 red, 2 green, 3 yellow, 4 blue
- Other cable designs and temperature ranges available
- Standard cable marking with meter marks, special labeling of outer sheath upon request
- Accessories such as loops, fan-outs, connectors, mounting brackets etc. available
- Deployment training upon request
- For improved UV resistance, black cable sheath available upon request

**Technical data:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. no. of fibres</th>
<th>Cable ø</th>
<th>Weight</th>
<th>Max. crush res.</th>
<th>Max. tensile strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>units</td>
<td>mm</td>
<td>kg/km</td>
<td>N/cm</td>
<td>installation N</td>
</tr>
<tr>
<td>1F</td>
<td>1</td>
<td>3.4</td>
<td>18</td>
<td>2000</td>
<td>800</td>
</tr>
<tr>
<td>2F</td>
<td>2</td>
<td>3.8</td>
<td>26</td>
<td>800</td>
<td>1500</td>
</tr>
<tr>
<td>4F</td>
<td>4</td>
<td>3.8</td>
<td>26</td>
<td>800</td>
<td>1500</td>
</tr>
<tr>
<td>8F</td>
<td>8</td>
<td>4.8</td>
<td>46</td>
<td>1000</td>
<td>3000</td>
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</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Min. bending radius</th>
<th>Hydrostatic pressure resistance</th>
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<tbody>
<tr>
<td></td>
<td>with tensile mm</td>
<td>without tensile mm</td>
</tr>
<tr>
<td>1F...8F</td>
<td>20xD</td>
<td>15xD</td>
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</table>

**Optical fiber data (cabled) at 20°C**

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>850 nm</th>
<th>1300 / 1310 nm</th>
<th>1550 nm</th>
<th>850 nm</th>
<th>1300 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMF 50/125</td>
<td>≤ 3.0</td>
<td>≤ 1.0</td>
<td>NA</td>
<td>700</td>
<td>500</td>
</tr>
<tr>
<td>MMF 62.5/125</td>
<td>≤ 3.5</td>
<td>≤ 1.0</td>
<td>NA</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>SMF</td>
<td>NA</td>
<td>≤ 0.36</td>
<td>≤ 0.25</td>
<td>NA</td>
<td>NA</td>
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