Data sheet
chainflex® CF894

Measuring system cable (Class 3.1.3.1) • For flexing applications • iguPUR outer jacket • Oil-resistant • Shielded • Flame retardant

Example image
For detailed overview please see design table

Cable structure

1. Outer jacket: Pressure extruded iguPUR mixture
2. Overall shield: Braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Banding: Plastic foil
5. Drain wire: Stranded conductor consisting of tinned copper wires
6. Core insulation: Mechanically high-quality TPE mixture
7. Conductor: Stranded conductor consisting of bare copper wires
8. Strain relief: Plastic centre element

Example image
For detailed overview please see design table

Conductor
Conductor consisting of bare copper wires (according to DIN EN 60228).

Core insulation
Mechanically high-quality TPE mixture.

Core structure
According to measuring system specification.

Core identification
According to measuring system specification.

Element shield
aluminum/polyester tape
Coverage approx. 100 % optical

Overall shield
Braiding made of tinned copper wires.
Coverage approx. 60 % optical

Outer jacket
Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®.
Colour: Yellow-green (similar to RAL 6018)
Printing: black

Example: chainflex CF894.011 (4x(2x0.34)+4x0.5)C E310776 ...
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Dynamic information

- **Bend radius**
  - e-chain® linear
    - flexible: minimum 15 x d
    - fixed: minimum 12 x d
  - fixed: minimum 8 x d

- **Temperature**
  - e-chain® linear
    - flexible: -20 °C up to +80 °C
    - fixed: -40 °C up to +80 °C (following DIN EN 60811-504)
    - fixed: -50 °C up to +80 °C (following DIN EN 50305)

- **v max.**
  - unsupported: 3 m/s

- **a max.**
  - 20 m/s²

- **Travel distance**
  - Unsupported travel distances up to 10 m, Class 1

These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

Guaranteed service life according to guarantee conditions

<table>
<thead>
<tr>
<th>Double strokes</th>
<th>1 million</th>
<th>3 million</th>
<th>5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature, from/to [°C]</td>
<td>R min. [factor x d]</td>
<td>R min. [factor x d]</td>
<td>R min. [factor x d]</td>
</tr>
<tr>
<td>-20/-10</td>
<td>17.5</td>
<td>18.5</td>
<td>19.5</td>
</tr>
<tr>
<td>-10/+70</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>+70/+80</td>
<td>17.5</td>
<td>18.5</td>
<td>19.5</td>
</tr>
</tbody>
</table>

Minimum guaranteed service life of the cable under the specified conditions.
The installation of the cable is recommended within the middle temperature range.

Electrical information

- **Nominal voltage**
  - 50 V

- **Testing voltage**
  - 500 V
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Properties and approvals
- UV resistance: Medium
- Oil resistance: Oil-resistant (following DIN EN 50363-10-2), Class 3
- Flame retardant: According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
- Silicone-free: Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
- UL/CSA: Style 1589 and 20236, 30 V, 80 °C
- NFPA: Following NFPA 79-2012, chapter 12.9
- EAC: Certificate No. RIU C-DE.ME77.B.01559 (TR ZU)
- CTP: Certificate No. C-DE.PB49.B.00449 (Fire protection)
- Lead-free: Following 2011/65/EC (RoHS-II)
- CE: Following 2014/35/EU

Typical lab test setup for this cable series
- Test bend radius R: approx. 75 - 225 mm
- Test travel S: approx. 1 - 15 m
- Test duration: minimum 2 - 4 million double strokes
- Test speed: approx. 0.5 - 2 m / s
- Test acceleration: approx. 0.5 - 1.5 m / s²
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Typical application areas
● For flexing applications, Class 3
● Especially for unsupported travels, Class 1
● With influence of oil, Class 3
● No torsion, Class 1
● Indoor and outdoor applications without direct solar radiation
● Machining units/machine tools, low temperature applications
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Technical tables:
Mechanical information

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Number of cores and conductor nominal cross section [mm²]</th>
<th>Outer diameter (d) max. [mm]</th>
<th>Copper index [kg/km]</th>
<th>Weight [kg/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF894.001</td>
<td>(3x(2x0.14)+(4x0.25)+2x0.5)C</td>
<td>8.5</td>
<td>41</td>
<td>88</td>
</tr>
<tr>
<td>CF894.006</td>
<td>(3x(2x0.14)+(4x0.14)+(4x0.12)+2x0.5)C</td>
<td>9.0</td>
<td>50</td>
<td>110</td>
</tr>
<tr>
<td>CF894.009</td>
<td>(4x(2x0.14)+4x0.5)C</td>
<td>8.0</td>
<td>44</td>
<td>78</td>
</tr>
<tr>
<td>CF894.011</td>
<td>(4x(2x0.25)+4x0.5)C</td>
<td>9.5</td>
<td>64</td>
<td>112</td>
</tr>
<tr>
<td>CF894.015</td>
<td>(4x(2x0.14)+4x0.5)C</td>
<td>8.5</td>
<td>44</td>
<td>87</td>
</tr>
<tr>
<td>CF894.022</td>
<td>(2x0.25)+5x0.5)C</td>
<td>8.0</td>
<td>42</td>
<td>81</td>
</tr>
<tr>
<td>CF894.028</td>
<td>(2x(2x0.15)+(2x0.38))C</td>
<td>7.5</td>
<td>41</td>
<td>64</td>
</tr>
</tbody>
</table>

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. G = with green-yellow earth core x = without earth core

Electrical information

<table>
<thead>
<tr>
<th>Conductor nominal cross section [mm²]</th>
<th>Maximum conductor resistance at 20 °C [Ω/km]</th>
<th>Maximum current rating at 30 °C [A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.14</td>
<td>138.0</td>
<td>2.5</td>
</tr>
<tr>
<td>0.15</td>
<td>138.0</td>
<td>2.5</td>
</tr>
<tr>
<td>0.22</td>
<td>89.0</td>
<td>5</td>
</tr>
<tr>
<td>0.25</td>
<td>79.0</td>
<td>5</td>
</tr>
<tr>
<td>0.34</td>
<td>58.0</td>
<td>7</td>
</tr>
<tr>
<td>0.38</td>
<td>54.0</td>
<td>7</td>
</tr>
<tr>
<td>0.5</td>
<td>39.0</td>
<td>10</td>
</tr>
</tbody>
</table>

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.
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**Design table**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Core group</th>
<th>Colour code</th>
<th>Core design</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF894.001</td>
<td>3x(2x0.14)C</td>
<td>green/yellow, black/brown, red/orange</td>
<td>2x0.5 brown-red, brown-blue</td>
</tr>
<tr>
<td></td>
<td>4x0.14</td>
<td>grey, blue, white-yellow, white-black</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2x0.5</td>
<td>brown-red, brown-blue</td>
<td></td>
</tr>
<tr>
<td>CF894.006</td>
<td>3x(2x0.14)C</td>
<td>green/yellow, black/brown, red/orange</td>
<td>2x0.5 brown-red, brown-blue</td>
</tr>
<tr>
<td></td>
<td>4x0.14</td>
<td>grey, blue, white-yellow, white-black</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 x 0.22</td>
<td>brown-yellow, brown-grey, green-black, brown-red</td>
<td></td>
</tr>
<tr>
<td>CF894.009</td>
<td>4x(2x0.25)</td>
<td>brown/green, blue/violet, grey/pink, red/black</td>
<td>2x0.5 white/brown</td>
</tr>
<tr>
<td></td>
<td>2x0.5</td>
<td>white/brown</td>
<td></td>
</tr>
<tr>
<td>CF894.011</td>
<td>4x(2x0.34)</td>
<td>black/brown, red/orange, yellow/green, blue/violet</td>
<td>4x0.5 blue-white, black-white, red-white, yellow-white</td>
</tr>
<tr>
<td></td>
<td>4x0.5</td>
<td>blue-white, black-white, red-white, yellow-white</td>
<td></td>
</tr>
<tr>
<td>CF894.015</td>
<td>4x(2x0.14)</td>
<td>brown/green, yellow/violet, grey/pink, red/black</td>
<td>4x0.5 blue, white, brown-green, white-green</td>
</tr>
<tr>
<td></td>
<td>4x0.5</td>
<td>blue, white, brown-green, white-green</td>
<td></td>
</tr>
<tr>
<td>CF894.022</td>
<td>5x0.5</td>
<td>white, brown</td>
<td>2x0.25 green, yellow, grey, pink, blue</td>
</tr>
<tr>
<td></td>
<td>2x0.25</td>
<td>green, yellow, grey, pink, blue</td>
<td></td>
</tr>
<tr>
<td>CF894.028</td>
<td>2x(2x0.15)</td>
<td>green/yellow, pink/blue</td>
<td>2x0.38 red/black</td>
</tr>
<tr>
<td></td>
<td>2x0.38</td>
<td>red/black</td>
<td></td>
</tr>
</tbody>
</table>