### Control cables

<table>
<thead>
<tr>
<th>chainflex® cable</th>
<th>Jacket</th>
<th>Shield</th>
<th>Minimum bend radius e-chain® [mm]</th>
<th>Temperature [°C]</th>
<th>Approvals and standards</th>
<th>Oil-resistant</th>
<th>Torsion resistant</th>
<th>v max. [m/s] unsupported</th>
<th>v max. [m/s] gliding</th>
<th>a max. [m/s²]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF880</td>
<td>PVC</td>
<td>12.5</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>CF881</td>
<td>PVC</td>
<td>12.5</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>CF130.UL</td>
<td>PVC</td>
<td>7.5</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>CF140.UL</td>
<td>PVC</td>
<td>7.5</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>CF5</td>
<td>PVC</td>
<td>6.8</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>58</td>
</tr>
<tr>
<td>CF6</td>
<td>PVC</td>
<td>6.8</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>62</td>
</tr>
<tr>
<td>CF10.UL</td>
<td>PVC</td>
<td>5</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>CF10.UL</td>
<td>PVC</td>
<td>5</td>
<td>+5/+70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>CF890</td>
<td>iguPUR</td>
<td>12.5</td>
<td>-20/+80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>CF891</td>
<td>iguPUR</td>
<td>12.5</td>
<td>-20/+80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>CF77.UL.D</td>
<td>PUR</td>
<td>6.8</td>
<td>-25/+80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>CF78.UL</td>
<td>PUR</td>
<td>6.8</td>
<td>-25/+80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>CF2</td>
<td>PUR</td>
<td>5</td>
<td>-20/+80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>CF9</td>
<td>TPE</td>
<td>5</td>
<td>-35/+100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>CF10</td>
<td>TPE</td>
<td>5</td>
<td>-35/+100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>94</td>
</tr>
<tr>
<td>CF9.UL</td>
<td>TPE</td>
<td>5</td>
<td>-35/+100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>98</td>
</tr>
<tr>
<td>CF10.UL</td>
<td>TPE</td>
<td>5</td>
<td>-35/+100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>CF98</td>
<td>TPE</td>
<td>4</td>
<td>-35/+90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>106</td>
</tr>
<tr>
<td>CF99</td>
<td>TPE</td>
<td>4</td>
<td>-35/+90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>20</td>
<td></td>
<td>108</td>
</tr>
</tbody>
</table>

36 month chainflex® guarantee
Guaranteed lifetime for predictable reliability
▶ Selection table page 40

With the help of the chainflex® service life calculator, you can quickly and easily calculate the expected service life of chainflex® cables specifically for your application:

www.igus.eu/chainflexlife
## chainflex® guarantee

### Guaranteed lifetime (1)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CF880</td>
<td>+5 / +15</td>
<td>3</td>
<td>-</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>13</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF881</td>
<td>+5 / +15</td>
<td>3</td>
<td>-</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>13</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF130.UL</td>
<td>+5 / +15</td>
<td>3</td>
<td>2</td>
<td>20</td>
<td>50</td>
<td>10</td>
<td>11</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF140.UL</td>
<td>+5 / +15</td>
<td>3</td>
<td>2</td>
<td>20</td>
<td>50</td>
<td>10</td>
<td>11</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF5</td>
<td>+5 / +15</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>100</td>
<td>7.5</td>
<td>10</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF6</td>
<td>+5 / +15</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>100</td>
<td>7.5</td>
<td>10</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSOFT1</td>
<td>New!</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>5</td>
<td>6.8</td>
<td>5</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFSOFT2</td>
<td>New!</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>5</td>
<td>6.8</td>
<td>5</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>+15 / +60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+60 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF890</td>
<td>-20 / -10</td>
<td>3</td>
<td>-</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>13</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>-10 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+70 / +80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF891</td>
<td>-20 / -10</td>
<td>3</td>
<td>-</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>13</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>-10 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+70 / +80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF77.UL.D</td>
<td>New!</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>100</td>
<td>8.5</td>
<td>10</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>-25 / -15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+70 / +80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF78.UL</td>
<td>New!</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>100</td>
<td>8.5</td>
<td>10</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>-25 / -15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+70 / +80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF2</td>
<td>-20 / -10</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>100</td>
<td>6.8</td>
<td>7.5</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>-10 / +70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+70 / +80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF9</td>
<td>-35 / -25</td>
<td>10</td>
<td>6</td>
<td>100</td>
<td>&gt; 400</td>
<td>6.8</td>
<td>7.5</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>-25 / +90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+90 / +100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF10</td>
<td>-35 / -25</td>
<td>10</td>
<td>6</td>
<td>100</td>
<td>&gt; 400</td>
<td>6.8</td>
<td>7.5</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>-25 / +90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+90 / +100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF9.UL</td>
<td>-35 / -25</td>
<td>10</td>
<td>6</td>
<td>100</td>
<td>&gt; 400</td>
<td>6.8</td>
<td>7.5</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>-25 / +90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+90 / +100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF10.UL</td>
<td>-35 / -25</td>
<td>10</td>
<td>6</td>
<td>100</td>
<td>&gt; 400</td>
<td>6.8</td>
<td>7.5</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>-25 / +90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+90 / +100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Figures in brackets refer to chainflex® series CF880/CF881 and CF890/CF891

- **Exclusive!** Guaranteed lifetime for this series according to the guarantee conditions ➤ Page 22-23

*Higher number of double strokes? Online lifetime calculation ★ www.igus.eu/chainflexlife

20 million double strokes | 30 million double strokes | 40 million double strokes

---

(1) Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ➤ Page 22-23

* Higher number of double strokes? Online lifetime calculation ★ www.igus.eu/chainflexlife

Figures in brackets refer to chainflex® series CF880/CF881 and CF890/CF891

40

41
Control cable | PVC | chainflex® CF880

- 36 month guarantee
- 1,354 types from stock
- No cutting charges

### Properties and approvals
- 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 11008 and 2464, 300 V, 80 °C
- NFPA: Following NFPA 79-2012, chapter 12.9
- EAC: Certificate No. RU C-DE.ME77.B.01560 (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

### Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>R min. [factor x d]</th>
<th>R min. [factor x d]</th>
<th>R min. [factor x d]</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5/+15</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>+15/+60</td>
<td>12.5</td>
<td>13.5</td>
<td>14.5</td>
</tr>
<tr>
<td>+60/+70</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ➤ www.igus.eu/chainflexlife

### Typical application areas
- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications.
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

### Bend radius
- e-chain® linear: minimum 12.5 x d
- flexible: minimum 10 x d
- fixed: minimum 7 x d

### Temperature
- e-chain® linear: +5 °C up to +70 °C
- flexible: -5 °C up to +70 °C (following DIN EN 60811-504)
- fixed: -15 °C up to +70 °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

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

### Core insulation
- Mechanically high-quality PVC mixture.

### Core structure
- Cores wound with an optimised pitch length.

### Core identification
- Black cores with white numbers, one green-yellow core.

### Outer jacket
- Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®.
- Colour: Jet black (similar to RAL 9005)

### Electrical information
- Nominal voltage: 300/500 V
- Testing voltage: 2000 V (following DIN EN 50395)
### Control cable | PVC | chainflex® CF880

#### Class 3.1.1.1

**Example image**

#### Part No. | Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight
--- | --- | --- | --- | ---
CF880.05.02 | 2x0.5 | 5.5 | 10 | 37
CF880.05.03 | 3G0.5 | 6.0 | 15 | 44
CF880.05.04 | 4G0.5 | 6.5 | 20 | 53
CF880.05.05 | 5G0.5 | 7.0 | 25 | 65
CF880.05.07 | 7G0.5 | 8.5 | 35 | 97
CF880.05.12 | 12G0.5 | 9.5 | 60 | 141
CF880.06.06 | 18G0.5 | 11.5 | 90 | 205
CF880.06.25 | 25G0.5 | 13.5 | 124 | 283
CF880.07.02 | 2x0.75 | 6.0 | 15 | 46
CF880.07.03 | 3G0.75 | 6.5 | 23 | 55
CF880.07.04 | 4G0.75 | 7.0 | 30 | 67
CF880.07.05 | 5G0.75 | 7.5 | 38 | 82
CF880.07.07 | 7G0.75 | 9.0 | 53 | 121
CF880.07.12 | 12G0.75 | 10.5 | 90 | 181
CF880.07.18 | 18G0.75 | 13.0 | 134 | 269
CF880.07.25 | 25G0.75 | 15.0 | 186 | 372
CF880.10.02 | 2x1.0 | 6.5 | 20 | 53
CF880.10.03 | 3G1.0 | 6.5 | 30 | 66
CF880.10.04 | 4G1.0 | 7.0 | 40 | 81
CF880.10.05 | 5G1.0 | 7.5 | 50 | 98
CF880.10.07 | 7G1.0 | 9.5 | 70 | 149
CF880.10.12 | 12G1.0 | 11.5 | 119 | 221
CF880.10.18 | 18G1.0 | 13.5 | 178 | 322
CF880.10.25 | 25G1.0 | 16.0 | 248 | 454
CF880.15.02 | 2x1.5 | 7.5 | 30 | 82
CF880.15.03 | 3G1.5 | 8.5 | 45 | 103
CF880.15.04 | 4G1.5 | 9.0 | 60 | 127
CF880.15.05 | 5G1.5 | 10.0 | 75 | 161
CF880.15.07 | 7G1.5 | 12.5 | 104 | 243
CF880.15.12 | 12G1.5 | 14.5 | 178 | 380
CF880.15.18 | 18G1.5 | 17.5 | 267 | 530
CF880.15.25 | 25G1.5 | 21.0 | 371 | 743

#### Part No. | Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight
--- | --- | --- | --- | ---
CF880.25.03 | 3G2.5 | 9.0 | 75 | 143
CF880.25.04 | 4G2.5 | 10.0 | 100 | 183
CF880.25.05 | 5G2.5 | 11.5 | 124 | 226
CF880.25.07 | 7G2.5 | 14.0 | 174 | 343
CF880.25.12 | 12G2.5 | 16.5 | 297 | 513
CF880.25.25 | 25G2.5 | 24.0 | 612 | 1064

**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

Order example: CF880.07.03 – to your desired length (0.5 m steps)

CF880 chainflex® series .07 Code nominal cross section .03 Number of cores

Online order ➤ www.chainflex.eu/CF880

Delivery time 24hrs or today. Delivery time means time until goods are shipped.

---

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | PVC | chainflex® CF881

5 million Double strokes guaranteed  
12.5 x d Bend radius, e-chain®  
10 m Travel distance, e-chain®

- For flexing applications
- PVC outer jacket
- Shielded
- Flame retardant

Dynamic information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
</table>
| Bend radius       | e-chain® linear: minimum 12.5 x d  
|                   | flexible: minimum 10 x d   
|                   | fixed: minimum 7 x d          |
| Temperature       | e-chain® linear: +5 °C up to +70 °C  
|                   | flexible: +5 °C up to +70 °C (following DIN EN 60811-504)  
|                   | fixed: +15 °C up to +70 °C (following DIN EN 50305)        |
| v max.            | unsupported: 3 m/s          |
|                   | supported: 20 m/s²          |
| Travel distance   | Unsupported travel distances up to 10 m, Class 1         |

Cable structure

- Conductor: Conductor consisting of bare copper wires (according to DIN EN 60228).
- Core insulation: Mechanically high-quality PVC mixture.
- Core structure: Cores wound with an optimised pitch length.
- Core identification: Black cores with white numbers, one green-yellow core.
- Overall shield: Braiding made of tinned copper wires, Coverage approx. 60 % optical
- Outer jacket: Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Jet black (similar to RAL 9005)

Electrical information

- Nominal voltage: 300/500 V
- Testing voltage: 2000 V (following DIN EN 50395)

Properties and approvals

- Flame retardant: According to IEC 60332-1-2, CBI 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 11008 and 2464, 300 V, 80 °C
- NFPA: Following NFPA 79-2012, chapter 12.9
- EAC: Certificate No. RU C-DE.ME77.B.01560 (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

Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>R min. [factor x d]</th>
<th>R min. [factor x d]</th>
<th>R min. [factor x d]</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5/+15</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>+15/+60</td>
<td>12.5</td>
<td>13.5</td>
<td>14.5</td>
</tr>
<tr>
<td>+60/+70</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ➤ www.igus.eu/chainflexlife

Typical application areas

- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment
### Control cable | PVC | chainflex® CF881

#### Example image

**Class 3.1.1.1**

#### Part No. | Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight (kg/km)
--- | --- | --- | --- | ---
CF881.05.03 | (3G0.5)C | 6.5 | 32 | 58
CF881.05.04 | (4G0.5)C | 7.0 | 42 | 73
CF881.05.05 | (5G0.5)C | 7.5 | 47 | 83
CF881.05.07 | (7G0.5)C | 9.0 | 68 | 119
CF881.05.12 | (12G0.5)C | 10.5 | 98 | 167
CF881.05.18 | (18G0.5)C | 12.0 | 132 | 229
CF881.06.25 | (25G0.5)C | 14.5 | 191 | 325
CF881.07.02 | (2x0.75)C | 6.5 | 32 | 59
CF881.07.03 | (3G0.75)C | 7.0 | 44 | 73
CF881.07.04 | (4G0.75)C | 7.5 | 52 | 85
CF881.07.05 | (5G0.75)C | 8.0 | 65 | 107
CF881.07.07 | (7G0.75)C | 10.0 | 85 | 145
CF881.07.12 | (12G0.75)C | 11.5 | 127 | 207
CF881.07.18 | (18G0.75)C | 13.5 | 182 | 294
CF881.07.25 | (25G0.75)C | 16.0 | 262 | 415
CF881.10.02 | (2x1.0)C | 7.0 | 42 | 70
CF881.10.03 | (3G1.0)C | 7.5 | 52 | 82
CF881.10.04 | (4G1.0)C | 8.0 | 68 | 103
CF881.10.05 | (5G1.0)C | 8.5 | 78 | 122
CF881.10.07 | (7G1.0)C | 10.5 | 107 | 169
CF881.10.12 | (12G1.0)C | 12.0 | 162 | 245
CF881.10.18 | (18G1.0)C | 14.5 | 245 | 369
CF881.10.25 | (25G1.0)C | 17.0 | 334 | 501
CF881.15.02 | (2x1.5)C | 8.5 | 57 | 101
CF881.15.03 | (3G1.5)C | 9.0 | 73 | 121
CF881.15.04 | (4G1.5)C | 10.0 | 93 | 154
CF881.15.05 | (5G1.5)C | 11.0 | 113 | 184
CF881.15.07 | (7G1.5)C | 13.0 | 152 | 260
CF881.15.12 | (12G1.5)C | 16.0 | 255 | 408
CF881.15.18 | (18G1.5)C | 18.5 | 363 | 583
CF881.15.25 | (25G1.5)C | 22.0 | 486 | 781
CF881.25.04 | (4G2.5)C | 11.0 | 137 | 212
CF881.25.05 | (5G2.5)C | 12.0 | 167 | 251
CF881.25.07 | (7G2.5)C | 15.0 | 240 | 368
CF881.25.12 | (12G2.5)C | 17.5 | 383 | 559
CF881.25.25 | (25G2.5)C | 25.0 | 735 | 1083

**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

---

**Order example:** CF881.25.25 – to your desired length (0.5 m steps)

**Online order** ► www.chainflex.eu/CF881

**Delivery time** 24hrs or today.

Delivery time means time until goods are shipped.

---

**Basic requirements**
- Travel distance unsupported
- Oil resistance none
- Torsion ±180°

---

**Part No.**
- **G** = green-yellow earth core
- **x** = without earth core

---

**Guarantee**
- 36 month guarantee...
- 1,354 types from stock...
- No cutting charges

---

**EPLAN download, configurators** ► www.igus.eu/CF881
Control cable | PVC | chainflex® CF130.UL

- For medium duty applications
- PVC outer jacket
- Flame retardant

**Dynamic information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bend radius</td>
<td>e-chain® linear: minimum 7.5 x d</td>
</tr>
<tr>
<td></td>
<td>flexible: minimum 6 x d</td>
</tr>
<tr>
<td></td>
<td>fixed: minimum 4 x d</td>
</tr>
<tr>
<td>Temperature</td>
<td>e-chain® linear: -5 °C up to +70 °C</td>
</tr>
<tr>
<td></td>
<td>flexible: -5 °C up to +70 °C (following DIN EN 60811-504)</td>
</tr>
<tr>
<td></td>
<td>fixed: -15 °C up to +70 °C (following DIN EN 50305)</td>
</tr>
<tr>
<td>v max</td>
<td>unsupported: 3 m/s</td>
</tr>
<tr>
<td></td>
<td>gliding: 2 m/s</td>
</tr>
<tr>
<td>a max</td>
<td>unsupported: 20 m/s²</td>
</tr>
<tr>
<td></td>
<td>gliding: 36 m/s²</td>
</tr>
<tr>
<td>Travel distance</td>
<td>Unsupported travels and up to 50 m for gliding applications, Class 4</td>
</tr>
<tr>
<td>Torsion</td>
<td>± 90°, with 1 m cable length, Class 2</td>
</tr>
</tbody>
</table>

**Cable structure**

- Conductor: Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
- Core insulation: Mechanically high-quality TPE mixture.
- Core structure: Number of cores < 12: Cores wound in a layer with short pitch length. Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- Core identification: Cores < 0.5 mm²: Colour code in accordance with DIN 47100.
- Cores ≥ 0.5 mm²: Black cores with white numbers, one green-yellow core.
- Outer jacket: Low-adhesion PVC mixture, adapted to suit the requirements in e-chain® (following DIN EN 50363-4-1).
- CFRIP®: Strip cables faster: a tear strip is moulded into the outer jacket.

**Electrical information**

- Nominal voltage: 300/500 V (following DIN VDE 0298-3)
- Testing voltage: 2000 V (following DIN EN 50395)

**Properties and approvals**

- 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 10493 and 20200, 300 V, 60 °C
- NFPA: Following NFPA 79-2012, chapter 12.9
- EAC: Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- CTP: Certificate No. C-DE.PB49.B.00416 (Fire protection)
- CEI: Following CEI 20-35
- Lead-free: Following 2011/65/EC (RoHS-II)
- Clean room: According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
- CE: Following 2014/35/EU

**Guaranteed service life (details see page 22-23)**

- Double strokes: *Higher number of double strokes? Service life calculation online ► www.igus.eu/chainflexlife

**Typical application areas**

- For medium duty applications, Class 4
- Unsupported travel distances and up to 50 m for gliding applications, Class 4
- Without influence of oil, Class 1
- Torsion ± 90°, with 1 m cable length, Class 2
- Preferably indoor applications
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

chainflex® CF130.UL for woodworking.

**Basic requirements**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel distance</td>
<td>unsupported: up to 50 m, gliding: 50 m</td>
</tr>
<tr>
<td>Oil resistance</td>
<td>none</td>
</tr>
<tr>
<td>Torsion</td>
<td>none</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ► www.igus.eu/chainflexlife
Control cable | PVC | chainflex® CF130.UL

Strip cables 50% faster

**Class 4.4.1.2**

### Basic requirements
- **Travel distance**
- **Oil resistance**
- **Torsion**

### Part No. | Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CF130.02.03.UL</td>
<td>3x0.25</td>
<td>5.0</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>CF130.02.04.UL</td>
<td>4x0.25</td>
<td>5.5</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>CF130.02.06.UL</td>
<td>6x0.25</td>
<td>6.0</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>CF130.02.07.UL</td>
<td>7x0.25</td>
<td>6.5</td>
<td>19</td>
<td>56</td>
</tr>
<tr>
<td>CF130.02.12.UL</td>
<td>12x0.25</td>
<td>8.5</td>
<td>33</td>
<td>96</td>
</tr>
<tr>
<td>CF130.02.20.UL</td>
<td>20x0.25</td>
<td>10.5</td>
<td>51</td>
<td>145</td>
</tr>
<tr>
<td>CF130.02.25.UL</td>
<td>25x0.25</td>
<td>11.5</td>
<td>66</td>
<td>154</td>
</tr>
<tr>
<td>CF130.02.30.UL</td>
<td>30x0.25</td>
<td>12.5</td>
<td>75</td>
<td>184</td>
</tr>
<tr>
<td>CF130.03.02.UL</td>
<td>2x0.34</td>
<td>5.0</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>CF130.03.05.UL</td>
<td>5x0.34</td>
<td>6.0</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>CF130.05.02.UL</td>
<td>2x0.5</td>
<td>5.5</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td>CF130.05.03.UL</td>
<td>3G0.5</td>
<td>5.5</td>
<td>16</td>
<td>39</td>
</tr>
<tr>
<td>CF130.05.04.UL</td>
<td>4G0.5</td>
<td>6.0</td>
<td>21</td>
<td>47</td>
</tr>
<tr>
<td>CF130.05.05.UL</td>
<td>5G0.5</td>
<td>6.5</td>
<td>26</td>
<td>55</td>
</tr>
<tr>
<td>CF130.05.06.UL</td>
<td>6G0.5</td>
<td>7.0</td>
<td>31</td>
<td>63</td>
</tr>
<tr>
<td>CF130.05.07.UL</td>
<td>7G0.5</td>
<td>7.5</td>
<td>37</td>
<td>76</td>
</tr>
<tr>
<td>CF130.05.12.UL</td>
<td>12G0.5</td>
<td>10.0</td>
<td>63</td>
<td>139</td>
</tr>
<tr>
<td>CF130.05.18.UL</td>
<td>18G0.5</td>
<td>12.0</td>
<td>94</td>
<td>183</td>
</tr>
<tr>
<td>CF130.05.25.UL</td>
<td>25G0.5</td>
<td>13.5</td>
<td>129</td>
<td>259</td>
</tr>
<tr>
<td>CF130.07.02.UL</td>
<td>2x0.75</td>
<td>6.0</td>
<td>15</td>
<td>41</td>
</tr>
<tr>
<td>CF130.07.03.UL</td>
<td>3G0.75</td>
<td>6.0</td>
<td>23</td>
<td>49</td>
</tr>
<tr>
<td>CF130.07.04.UL</td>
<td>4G0.75</td>
<td>6.5</td>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>CF130.07.05.UL</td>
<td>5G0.75</td>
<td>7.0</td>
<td>38</td>
<td>66</td>
</tr>
<tr>
<td>CF130.07.06.UL</td>
<td>6G0.75</td>
<td>7.5</td>
<td>47</td>
<td>75</td>
</tr>
<tr>
<td>CF130.07.07.UL</td>
<td>7G0.75</td>
<td>8.0</td>
<td>53</td>
<td>95</td>
</tr>
<tr>
<td>CF130.07.12.UL</td>
<td>12G0.75</td>
<td>11.0</td>
<td>90</td>
<td>152</td>
</tr>
<tr>
<td>CF130.07.18.UL</td>
<td>18G0.75</td>
<td>13.5</td>
<td>134</td>
<td>226</td>
</tr>
<tr>
<td>CF130.07.25.UL</td>
<td>25G0.75</td>
<td>16.0</td>
<td>186</td>
<td>342</td>
</tr>
<tr>
<td>CF130.07.36.UL</td>
<td>36G0.75</td>
<td>19.0</td>
<td>238</td>
<td>531</td>
</tr>
<tr>
<td>CF130.07.42.UL</td>
<td>42G0.75</td>
<td>21.0</td>
<td>341</td>
<td>638</td>
</tr>
<tr>
<td>CF130.10.02.UL</td>
<td>2x1.0</td>
<td>6.0</td>
<td>20</td>
<td>51</td>
</tr>
<tr>
<td>CF130.10.03.UL</td>
<td>3G1.0</td>
<td>6.5</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>CF130.10.04.UL</td>
<td>4G1.0</td>
<td>7.0</td>
<td>40</td>
<td>74</td>
</tr>
<tr>
<td>CF130.10.05.UL</td>
<td>5G1.0</td>
<td>7.5</td>
<td>50</td>
<td>89</td>
</tr>
<tr>
<td>CF130.10.07.UL</td>
<td>7G1.0</td>
<td>9.0</td>
<td>70</td>
<td>121</td>
</tr>
<tr>
<td>CF130.10.12.UL</td>
<td>12G1.0</td>
<td>12.5</td>
<td>119</td>
<td>197</td>
</tr>
<tr>
<td>CF130.10.18.UL</td>
<td>18G1.0</td>
<td>15.0</td>
<td>178</td>
<td>278</td>
</tr>
<tr>
<td>CF130.10.25.UL</td>
<td>25G1.0</td>
<td>17.5</td>
<td>248</td>
<td>395</td>
</tr>
<tr>
<td>CF130.15.02.UL</td>
<td>2x1.5</td>
<td>7.0</td>
<td>30</td>
<td>62</td>
</tr>
<tr>
<td>CF130.15.03.UL</td>
<td>3G1.5</td>
<td>7.0</td>
<td>45</td>
<td>77</td>
</tr>
<tr>
<td>CF130.15.04.UL</td>
<td>4G1.5</td>
<td>8.0</td>
<td>60</td>
<td>97</td>
</tr>
<tr>
<td>CF130.15.05.UL</td>
<td>5G1.5</td>
<td>8.5</td>
<td>75</td>
<td>115</td>
</tr>
<tr>
<td>CF130.15.07.UL</td>
<td>7G1.5</td>
<td>9.5</td>
<td>104</td>
<td>153</td>
</tr>
<tr>
<td>CF130.15.12.UL</td>
<td>12G1.5</td>
<td>13.0</td>
<td>178</td>
<td>275</td>
</tr>
<tr>
<td>CF130.15.18.UL</td>
<td>18G1.5</td>
<td>17.5</td>
<td>267</td>
<td>466</td>
</tr>
<tr>
<td>CF130.15.25.UL</td>
<td>25G1.5</td>
<td>19.5</td>
<td>371</td>
<td>592</td>
</tr>
<tr>
<td>CF130.15.36.UL</td>
<td>36G1.5</td>
<td>23.5</td>
<td>579</td>
<td>887</td>
</tr>
<tr>
<td>CF130.15.42.UL</td>
<td>42G1.5</td>
<td>26.5</td>
<td>729</td>
<td>1064</td>
</tr>
<tr>
<td>CF130.25.03.UL</td>
<td>3G2.5</td>
<td>8.5</td>
<td>75</td>
<td>118</td>
</tr>
<tr>
<td>CF130.25.04.UL</td>
<td>4G2.5</td>
<td>9.5</td>
<td>100</td>
<td>147</td>
</tr>
<tr>
<td>CF130.25.07.UL</td>
<td>7G2.5</td>
<td>12.0</td>
<td>174</td>
<td>249</td>
</tr>
<tr>
<td>CF130.25.12.UL</td>
<td>12G2.5</td>
<td>17.5</td>
<td>297</td>
<td>510</td>
</tr>
<tr>
<td>CF130.40.03.UL</td>
<td>3G4.0</td>
<td>10.0</td>
<td>119</td>
<td>187</td>
</tr>
<tr>
<td>CF130.40.05.UL</td>
<td>5G4.0</td>
<td>12.0</td>
<td>198</td>
<td>299</td>
</tr>
<tr>
<td>CF130.60.04.UL</td>
<td>4G6.0</td>
<td>13.5</td>
<td>238</td>
<td>371</td>
</tr>
<tr>
<td>CF130.60.05.UL</td>
<td>5G6.0</td>
<td>14.5</td>
<td>299</td>
<td>471</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

### Order example:
*CF130.05.02.UL* → to your desired length (0.5 m steps) **phase-out model**

**Guarantee**
- 36 month guarantee
- 1,354 types from stock
- No cutting charges

**EPLAN download, configurators**
- www.igus.eu/CF130.UL

**Delivery time**
- 24hrs or today.
- Delivery time means time until goods are shipped.
Control cable | PVC | chainflex® CF140.UL

10 million | Double strokes guaranteed | 7.5 x d | 50 m | Travel distance, e-chain®

- For medium duty applications
- PVC outer jacket
- Shielded
- Flame retardant

Dynamic information

- **Bend radius**
  - e-chain® linear: minimum 7.5 x d
  - flexible: minimum 6 x d
  - fixed: minimum 4 x d

- **Temperature**
  - e-chain® linear: -5 °C up to +70 °C
  - flexible: -15 °C up to +70 °C (following DIN EN 50305)
- **v max.**
  - unsupported: 3 m/s
  - gliding: 2 m/s
- **a max.**
  - 20 m/s²

- **Travel distance**
  - Unsupported travels and up to 50 m for gliding applications, Class 4

Cable structure

- **Conductor**
  - Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).

- **Core insulation**
  - Mechanically high-quality TPE mixture.

- **Core structure**
  - Number of cores < 12: Cores wound in a layer with short pitch length.
  - Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.

- **Core identification**
  - Cores < 0.5 mm²: Colour code in accordance with DIN 47100.
  - Cores ≥ 0.5 mm²: Black cores with white numbers, one green-yellow core.

- **Core insulation**
  - PVC mixture adapted to suit the requirements in e-chains®.

- **Overall shield**
  - Bending-resistant braiding made of tinned copper wires.

- **Outer jacket**
  - Low-adhesion PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1).

- **CFRIP®**
  - Strip cables faster: a tear strip is moulded into the inner jacket.

Electrical information

- **Nominal voltage**
  - 300/500 V (following DIN VDE 0298-3)

- **Testing voltage**
  - 2000 V (following DIN EN 50395)

Basic requirements

<table>
<thead>
<tr>
<th></th>
<th>Travel distance</th>
<th>Oil resistance</th>
<th>Torsion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>unsupported</td>
<td>5 m</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>≥ 10 m</td>
<td>≥ 10 m</td>
<td>none</td>
</tr>
</tbody>
</table>

Properties and approvals

- **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 10493 and 20200, 300 V, 60 °C

- **NFPA**
  - Following NFPA 79-2012, chapter 12.9

- **EAC**
  - Certificate No. RU C-DE.ME77.B.01254 (TR ZU)

- **CE**
  - Following CEI 20-35

- **CEP**
  - Certificate No. C-DE.PB49.B.00416 (Fire protection)

- **Clean room**
  - According to ISO Class 1. The outer jacket material of this series complies with CF130.15.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU

Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Double strokes*</th>
<th>5 million</th>
<th>7.5 million</th>
<th>10 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature, from/to [°C]</td>
<td>&lt; 10 m</td>
<td>≥ 10 m</td>
<td>&lt; 10 m</td>
</tr>
<tr>
<td>+5/+15/R min.</td>
<td>10</td>
<td>12.5</td>
<td>11</td>
</tr>
<tr>
<td>+15/+60/R min.</td>
<td>7.5</td>
<td>10</td>
<td>8.5</td>
</tr>
<tr>
<td>+60/+70/R min.</td>
<td>10</td>
<td>12.5</td>
<td>11</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For medium duty applications, Class 4
- Unsupported travel distances and up to 50 m for gliding applications, Class 4
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment
Control cable | PVC | chainflex® CF140.UL

Strip cables 50% faster

igus® chainflex® CF140.UL

Example image

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Number of cores and conductor nominal cross section</th>
<th>Outer diameter (d) max.</th>
<th>Copper index</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF140.02.12.UL</td>
<td>(12x0.25)C</td>
<td>10.5</td>
<td>72</td>
<td>114</td>
</tr>
<tr>
<td>CF140.03.05.UL</td>
<td>(5x0.34)C</td>
<td>7.5</td>
<td>35</td>
<td>72</td>
</tr>
<tr>
<td>CF140.05.03.UL</td>
<td>(3G0.5)C</td>
<td>7.0</td>
<td>32</td>
<td>72</td>
</tr>
<tr>
<td>CF140.05.05.UL</td>
<td>(5G0.5)C</td>
<td>8.0</td>
<td>45</td>
<td>91</td>
</tr>
<tr>
<td>CF140.05.06.UL</td>
<td>(6G0.5)C</td>
<td>8.5</td>
<td>51</td>
<td>98</td>
</tr>
<tr>
<td>CF140.05.07.03.UL</td>
<td>(3G0.75)C</td>
<td>10.5</td>
<td>42</td>
<td>85</td>
</tr>
<tr>
<td>CF140.06.04.UL</td>
<td>(4G0.75)C</td>
<td>8.5</td>
<td>51</td>
<td>101</td>
</tr>
<tr>
<td>CF140.07.05.UL</td>
<td>(5G0.75)C</td>
<td>9.0</td>
<td>61</td>
<td>115</td>
</tr>
<tr>
<td>CF140.07.06.UL</td>
<td>(7G0.75)C</td>
<td>10.0</td>
<td>83</td>
<td>152</td>
</tr>
<tr>
<td>CF140.07.12.UL</td>
<td>(12G0.75)C</td>
<td>13.0</td>
<td>136</td>
<td>263</td>
</tr>
<tr>
<td>CF140.07.18.UL</td>
<td>(18G0.75)C</td>
<td>15.5</td>
<td>193</td>
<td>359</td>
</tr>
<tr>
<td>CF140.07.25.UL</td>
<td>(25G0.75)C</td>
<td>18.0</td>
<td>280</td>
<td>479</td>
</tr>
<tr>
<td>CF140.07.36.UL (11)</td>
<td>(36G0.75)C</td>
<td>22.0</td>
<td>416</td>
<td>764</td>
</tr>
<tr>
<td>CF140.10.02.UL</td>
<td>(2x1.0)C</td>
<td>8.0</td>
<td>35</td>
<td>86</td>
</tr>
<tr>
<td>CF140.10.03.UL</td>
<td>(3G1.0)C</td>
<td>8.5</td>
<td>51</td>
<td>100</td>
</tr>
<tr>
<td>CF140.10.04.UL</td>
<td>(4G1.0)C</td>
<td>9.0</td>
<td>62</td>
<td>111</td>
</tr>
<tr>
<td>CF140.10.05.UL</td>
<td>(5G1.0)C</td>
<td>9.5</td>
<td>74</td>
<td>127</td>
</tr>
<tr>
<td>CF140.10.07.UL</td>
<td>(7G1.0)C</td>
<td>10.5</td>
<td>104</td>
<td>176</td>
</tr>
<tr>
<td>CF140.10.12.UL</td>
<td>(12G1.0)C</td>
<td>14.0</td>
<td>166</td>
<td>295</td>
</tr>
<tr>
<td>CF140.10.18.UL</td>
<td>(18G1.0)C</td>
<td>17.5</td>
<td>243</td>
<td>413</td>
</tr>
<tr>
<td>CF140.10.25.UL</td>
<td>(25G1.0)C</td>
<td>19.5</td>
<td>325</td>
<td>562</td>
</tr>
<tr>
<td>CF140.10.05.3.UL</td>
<td>(3G1.5)C</td>
<td>9.0</td>
<td>68</td>
<td>120</td>
</tr>
<tr>
<td>CF140.15.04.UL</td>
<td>(4G1.5)C</td>
<td>9.5</td>
<td>85</td>
<td>141</td>
</tr>
<tr>
<td>CF140.15.05.UL</td>
<td>(5G1.5)C</td>
<td>10.5</td>
<td>109</td>
<td>169</td>
</tr>
<tr>
<td>CF140.15.07.11</td>
<td>(7G1.5)C</td>
<td>12.0</td>
<td>144</td>
<td>226</td>
</tr>
<tr>
<td>CF140.15.12.UL</td>
<td>(12G1.5)C</td>
<td>16.0</td>
<td>233</td>
<td>387</td>
</tr>
<tr>
<td>CF140.15.18.UL</td>
<td>(18G1.5)C</td>
<td>19.0</td>
<td>345</td>
<td>463</td>
</tr>
<tr>
<td>CF140.15.25.UL</td>
<td>(25G1.5)C</td>
<td>22.5</td>
<td>463</td>
<td>737</td>
</tr>
<tr>
<td>CF140.15.36.UL</td>
<td>(36G1.5)C</td>
<td>26.5</td>
<td>593</td>
<td>1150</td>
</tr>
<tr>
<td>CF140.15.42.UL (11)</td>
<td>(42G1.5)C</td>
<td>29.5</td>
<td>780</td>
<td>1361</td>
</tr>
<tr>
<td>CF140.25.03.UL</td>
<td>(3G2.5)C</td>
<td>10.5</td>
<td>107</td>
<td>202</td>
</tr>
<tr>
<td>CF140.25.04.UL</td>
<td>(4G2.5)C</td>
<td>11.5</td>
<td>139</td>
<td>210</td>
</tr>
</tbody>
</table>

1) Phase-out model
11) When using the cables with 7G 1.6 mm² and 7G 2.5 mm² minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

Basic requirements

<table>
<thead>
<tr>
<th>Travel distance</th>
<th>Oil resistance</th>
<th>Torsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsupported</td>
<td>none</td>
<td>±180°</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

Order example: CF140.02.12.UL – to your desired length (0.5 m steps)

CF140.UL chainflex® series .02 Code nominal cross section .12 Number of cores

Online order ➤ www.chainflex.eu/CF140.UL

Delivery time 24hrs or today.

Delivery time means time until goods are shipped.

chainflex® CF140.UL in the feeder automation. e-chain®: easychain®

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | PVC | chainflex® CF5

For heavy duty applications
- PVC outer jacket
- Oil-resistant
- Flame retardant

Dynamic information
- Bend radius
  - e-chain® linear: minimum 6.8 x d
  - flexible: minimum 5 x d
  - fixed: minimum 4 x d
- Temperature
  - e-chain® linear: -5 °C up to +70 °C (following DIN EN 60811-504)
  - flexible: -15 °C up to +70 °C (following DIN EN 50305)
- v max.
  - Unsupported: 10 m/s
  - Gliding: 5 m/s
- a max.
  - 80 m/s²
- Travel distance
  - Unsupported travels and up to 100 m for gliding applications, Class 5
- Torsion
  - ± 90°, with 1 m cable length, Class 2

Cable structure
- Conductor
  - Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
- Core insulation
  - Cores ≤ 0.5 mm²: Mechanically high-quality TPE mixture.
  - Cores ≥ 0.75 mm²: Mechanically high-quality PVC mixture.
- Core structure
  - Number of cores < 12: Cores wound in a layer with short pitch length.
  - Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- Core identification
  - Cores ≤ 0.34 mm²: Colour code in accordance with DIN 47100.
  - Cores ≥ 0.5 mm²: Black cores with white numbers, one green-yellow core.
- Outer jacket
  - Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50383-4-1).
  - Colour: Moss green (similar to RAL 6005)
- CFRIP®
  - Strip cables faster: a tear strip is moulded into the outer jacket

Electrical information
- Nominal voltage
  - 300/500 V (following DIN VDE 0298-3)
- Testing voltage
  - 2000 V (following DIN EN 50395)

Basic requirements
- Travel distance
- Oil resistance
- Torsion

Properties and approvals
- UV resistance
  - Medium
- Oil resistance
  - Oil-resistant (following DIN EN 50383-4-1), Class 2
- 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
  - 11113, and, 2570, 600 V, 80 °C
- NFPA
  - Following NFPA 79-2012, chapter 12.9
- EAC
  - Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- CTP
  - Certificate No. C-DE.PB49.B.00416 (Fire protection)
- CEI
  - Following CEI 20-35
- Lead-free
  - Following 2011/65/EC (RoHS-II)
- Clean room
  - According to ISO Class 2, material/cable tested by IPA according to ISO standard 14644-1
  - Following 2014/35/EU

Guaranteed service life (details see page 22-23)

Typical application areas
- For heavy duty applications, Class 5
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Light oil influence, Class 2
- Torsion ± 90°, with 1 m cable length, Class 2
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes
Control cable | PVC | chainflex® CF5

Strip cables 50% faster

igus® chainflex® CF5

Example image

<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>CF5.02.36</td>
<td>36x0.25</td>
<td>15.0</td>
<td>99</td>
<td>209</td>
</tr>
<tr>
<td>CF5.03.15</td>
<td>15x0.34</td>
<td>11.0</td>
<td>55</td>
<td>123</td>
</tr>
<tr>
<td>CF5.03.18</td>
<td>18x0.34</td>
<td>12.0</td>
<td>67</td>
<td>142</td>
</tr>
<tr>
<td>CF5.03.25</td>
<td>25x0.34</td>
<td>14.0</td>
<td>92</td>
<td>203</td>
</tr>
<tr>
<td>CF5.05.02</td>
<td>2x0.5</td>
<td>6.0</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>CF5.05.03</td>
<td>30x0.3</td>
<td>6.0</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td>CF5.05.05</td>
<td>50x0.5</td>
<td>7.0</td>
<td>25</td>
<td>73</td>
</tr>
<tr>
<td>CF5.05.07</td>
<td>70x0.5</td>
<td>8.0</td>
<td>36</td>
<td>78</td>
</tr>
<tr>
<td>CF5.05.12</td>
<td>120x0.5</td>
<td>11.0</td>
<td>60</td>
<td>131</td>
</tr>
<tr>
<td>CF5.05.18</td>
<td>180x0.5</td>
<td>13.0</td>
<td>90</td>
<td>190</td>
</tr>
<tr>
<td>CF5.05.25</td>
<td>250x0.5</td>
<td>16.0</td>
<td>124</td>
<td>281</td>
</tr>
<tr>
<td>CF5.05.30</td>
<td>300x0.5</td>
<td>18.0</td>
<td>149</td>
<td>407</td>
</tr>
<tr>
<td>CF5.07.03</td>
<td>30x0.75</td>
<td>6.5</td>
<td>23</td>
<td>54</td>
</tr>
<tr>
<td>CF5.07.04</td>
<td>40x0.75</td>
<td>7.0</td>
<td>31</td>
<td>67</td>
</tr>
<tr>
<td>CF5.07.05</td>
<td>50x0.75</td>
<td>7.5</td>
<td>39</td>
<td>82</td>
</tr>
<tr>
<td>CF5.07.07</td>
<td>70x0.75</td>
<td>9.0</td>
<td>55</td>
<td>115</td>
</tr>
<tr>
<td>CF5.07.12</td>
<td>120x0.75</td>
<td>12.5</td>
<td>90</td>
<td>189</td>
</tr>
<tr>
<td>CF5.07.18</td>
<td>180x0.75</td>
<td>15.0</td>
<td>134</td>
<td>269</td>
</tr>
<tr>
<td>CF5.07.25</td>
<td>250x0.75</td>
<td>17.5</td>
<td>190</td>
<td>384</td>
</tr>
<tr>
<td>CF5.07.36</td>
<td>300x0.75</td>
<td>22.0</td>
<td>267</td>
<td>587</td>
</tr>
<tr>
<td>CF5.07.42</td>
<td>420x0.75</td>
<td>24.0</td>
<td>312</td>
<td>637</td>
</tr>
<tr>
<td>CF5.10.03</td>
<td>30x1.0</td>
<td>6.5</td>
<td>30</td>
<td>56</td>
</tr>
<tr>
<td>CF5.10.04</td>
<td>40x1.0</td>
<td>7.0</td>
<td>40</td>
<td>78</td>
</tr>
<tr>
<td>CF5.10.05</td>
<td>50x1.0</td>
<td>8.0</td>
<td>50</td>
<td>94</td>
</tr>
<tr>
<td>CF5.10.07</td>
<td>70x1.0</td>
<td>9.5</td>
<td>74</td>
<td>130</td>
</tr>
<tr>
<td>CF5.10.12</td>
<td>120x1.0</td>
<td>13.0</td>
<td>119</td>
<td>227</td>
</tr>
<tr>
<td>CF5.10.18</td>
<td>180x1.0</td>
<td>16.5</td>
<td>179</td>
<td>306</td>
</tr>
<tr>
<td>CF5.10.25</td>
<td>250x1.0</td>
<td>19.5</td>
<td>248</td>
<td>487</td>
</tr>
<tr>
<td>CF5.15.03</td>
<td>30x1.5</td>
<td>7.5</td>
<td>45</td>
<td>83</td>
</tr>
<tr>
<td>CF5.15.04</td>
<td>40x1.5</td>
<td>8.0</td>
<td>60</td>
<td>106</td>
</tr>
<tr>
<td>CF5.15.05</td>
<td>50x1.5</td>
<td>9.0</td>
<td>74</td>
<td>127</td>
</tr>
<tr>
<td>CF5.15.07</td>
<td>70x1.5</td>
<td>10.5</td>
<td>105</td>
<td>180</td>
</tr>
<tr>
<td>CF5.15.12</td>
<td>120x1.5</td>
<td>15.0</td>
<td>179</td>
<td>264</td>
</tr>
<tr>
<td>CF5.15.18</td>
<td>180x1.5</td>
<td>19.5</td>
<td>267</td>
<td>478</td>
</tr>
<tr>
<td>CF5.15.25</td>
<td>250x1.5</td>
<td>21.5</td>
<td>371</td>
<td>645</td>
</tr>
<tr>
<td>CF5.15.36</td>
<td>360x1.5</td>
<td>26.5</td>
<td>529</td>
<td>960</td>
</tr>
</tbody>
</table>

When using the cables with 7 G 1.5 mm² and 7 G 2.5 mm² minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

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

Class 5.5.2.2

Part No. | Number of cores and conductor nominal cross section [mm²] | Outer diameter (d) max. [mm] | Copper index kg/km | Weight kg/km |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CF5.25.04</td>
<td>40x2.5</td>
<td>10.0</td>
<td>96</td>
<td>170</td>
</tr>
<tr>
<td>CF5.25.05</td>
<td>50x2.5</td>
<td>11.0</td>
<td>120</td>
<td>200</td>
</tr>
<tr>
<td>CF5.25.07</td>
<td>70x2.5</td>
<td>13.0</td>
<td>169</td>
<td>279</td>
</tr>
<tr>
<td>CF5.25.12</td>
<td>120x2.5</td>
<td>18.5</td>
<td>284</td>
<td>480</td>
</tr>
<tr>
<td>CF5.25.16</td>
<td>180x2.5</td>
<td>23.5</td>
<td>427</td>
<td>765</td>
</tr>
<tr>
<td>CF5.25.25</td>
<td>250x2.5</td>
<td>27.5</td>
<td>591</td>
<td>970</td>
</tr>
</tbody>
</table>

Order example: CF5.02.36 – to your desired length (0.5 m steps)
CF5 chainflex® series .02 Code nominal cross section .36 Number of cores

Online order ➤ www.chainflex.eu/CF5

Delivery time 24hrs or today.
Deliver time means time until goods are shipped.

chainflex® CF5/CF6 for storage retrieval unit: Long travel on longitudinal axis.
e-chain®: Series E4/00 with igus® guide trough made of steel

60 EPLAN download, configurators ➤ www.igus.eu/CF5

36 month guarantee ... 1,354 types from stock ... no cutting charges 61
Control cable | PVC | chainflex® CF6

- For heavy duty applications
- PVC outer jacket
- Shielded
- Oil-resistant

Dynamic information

- **Bend radius**
  - e-chain® linear: minimum 6.8 x d
  - flexible: minimum 5 x d
  - fixed: minimum 4 x d
- **Temperature**
  - e-chain® linear: +5 °C up to +70 °C (following DIN 60811-504)
  - flexible: -5 °C up to +70 °C (following DIN EN 50305)
- **v max.**
  - unsupported: 10 m/s
  - gliding: 5 m/s
- **a max.**
  - 80 m/s²
- **Travel distance**
  - Unsupported travels and up to 100 m for gliding applications, Class 5

Cable structure

- **Conductor**
  - Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
- **Core insulation**
  - Cores ≤ 0.5 mm²: Mechanically high-quality TPE mixture.
  - Cores ≥ 0.75 mm²: Mechanically high-quality PVC mixture.
- **Core structure**
  - Number of cores < 12: Cores wound in a layer with short pitch length.
  - Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- **Core identification**
  - Cores ≤ 0.34 mm²: Colour code in accordance with DIN 47100.
  - Cores ≥ 0.5 mm²: Black cores with white numbers, one green-yellow core. PVC mixture adapted to suit the requirements in e-chains®.
- **Inner jacket**
  - PVC mixture adapted to suit the requirements in e-chains®.
- **Overall shield**
  - Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
- **Outer jacket**
  - Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50383-4-1).
  - Colour: Moss green (similar to RAL 6005)
  - CFRIP® Strip cables faster: a tear strip is moulded into the inner jacket
  - Video ▶ www.igus.eu/CFRIP

Electrical information

- **Nominal voltage**
  - 300/500 V (following DIN VDE 0298-3)
- **Testing voltage**
  - 2000 V (following DIN EN 50095)

Class 5.5.2.1

Properties and approvals

- **UV resistance**
  - Medium
- **Oil resistance**
  - Oil-resistant (following DIN EN 50363-4-1), Class 2
- **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 1993)
- **UL/CSA**
  - Cores < 0.5 mm²: Style 10492 and 2570, 600 V, 80 °C
  - Cores ≥ 0.5 mm²: Style 11113 and 2570, 600 V, 80 °C
- **NFPA**
  - Following NFPA 79-2012, chapter 12.9
- **EAC**
  - Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- **CEI**
  - Following CEI 20-35
- **Lead-free**
  - Following 2011/65/EC (RoHS-II)
- **Clean room**
  - According to ISO Class 2. The outer jacket material of this series complies with CF5. 10.07 - tested by IPA according to standard DIN EN ISO 14644-1
  - Following 2014/35/EU

Guaranteed service life (details see page 22-23)

- **Double strokes**
  

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>5 million</th>
<th>7.5 million</th>
<th>10 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature, from/to [°C]</td>
<td>R min.</td>
<td>factor x R min.</td>
<td>R factor x R min.</td>
</tr>
<tr>
<td>+5/+15</td>
<td>7.5</td>
<td>10</td>
<td>8.5</td>
</tr>
<tr>
<td>+15/+60</td>
<td>8.5</td>
<td>10</td>
<td>8.5</td>
</tr>
<tr>
<td>+60/+70</td>
<td>9.5</td>
<td>11</td>
<td>9.5</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflex

Typical application areas

- For heavy duty applications, Class 5
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes

EPLAN download, configurators ▶ www.igus.eu/CF6

CF6 PVC 6.8 x d

Guarantee

- 36 month guarantee ... 1,354 types from stock ... no cutting charges
**Control cable | PVC | chainflex® CF6**

Strip cables 50% faster

Example image

---

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Number of cores and conductor nominal cross section ( [mm^2] )</th>
<th>Outer diameter ( (d) \max. ) ( [mm] )</th>
<th>Copper index ( [kg/km] )</th>
<th>Weight ( [kg/km] )</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF6.02.04</td>
<td>((4 \times 0.25))C</td>
<td>7.0</td>
<td>29</td>
<td>61</td>
</tr>
<tr>
<td>CF6.02.25</td>
<td>((25 \times 0.25))C</td>
<td>14.5</td>
<td>111</td>
<td>260</td>
</tr>
<tr>
<td>CF6.03.05</td>
<td>((5 \times 0.34))C</td>
<td>7.5</td>
<td>37</td>
<td>90</td>
</tr>
<tr>
<td>CF6.05.02</td>
<td>((260))C</td>
<td>7.0</td>
<td>29</td>
<td>77</td>
</tr>
<tr>
<td>CF6.05.05</td>
<td>((5G0.5))C</td>
<td>8.5</td>
<td>49</td>
<td>106</td>
</tr>
<tr>
<td>CF6.05.07</td>
<td>((7G0.5))C</td>
<td>10.0</td>
<td>64</td>
<td>127</td>
</tr>
<tr>
<td>CF6.05.09</td>
<td>((9G0.5))C</td>
<td>12.0</td>
<td>79</td>
<td>153</td>
</tr>
<tr>
<td>CF6.05.12</td>
<td>((12G0.5))C</td>
<td>13.0</td>
<td>98</td>
<td>232</td>
</tr>
<tr>
<td>CF6.05.18</td>
<td>((18G0.5))C</td>
<td>15.0</td>
<td>145</td>
<td>286</td>
</tr>
<tr>
<td>CF6.05.25</td>
<td>((25G0.5))C</td>
<td>17.5</td>
<td>192</td>
<td>399</td>
</tr>
<tr>
<td>CF6.07.03</td>
<td>((3G0.75))C</td>
<td>8.0</td>
<td>46</td>
<td>98</td>
</tr>
<tr>
<td>CF6.07.04</td>
<td>((4G0.75))C</td>
<td>8.5</td>
<td>56</td>
<td>113</td>
</tr>
<tr>
<td>CF6.07.05</td>
<td>((5G0.75))C</td>
<td>9.0</td>
<td>67</td>
<td>128</td>
</tr>
<tr>
<td>CF6.07.07</td>
<td>((7G0.75))C</td>
<td>10.5</td>
<td>86</td>
<td>152</td>
</tr>
<tr>
<td>CF6.07.12</td>
<td>((12G0.75))C</td>
<td>14.0</td>
<td>128</td>
<td>266</td>
</tr>
<tr>
<td>CF6.07.18</td>
<td>((18G0.75))C</td>
<td>17.5</td>
<td>196</td>
<td>400</td>
</tr>
<tr>
<td>CF6.07.25</td>
<td>((25G0.75))C</td>
<td>19.5</td>
<td>265</td>
<td>536</td>
</tr>
<tr>
<td>CF6.10.03</td>
<td>((3G1.0))C</td>
<td>8.0</td>
<td>54</td>
<td>107</td>
</tr>
<tr>
<td>CF6.10.04</td>
<td>((4G1.0))C</td>
<td>9.0</td>
<td>64</td>
<td>116</td>
</tr>
<tr>
<td>CF6.10.05</td>
<td>((5G1.0))C</td>
<td>9.5</td>
<td>77</td>
<td>136</td>
</tr>
<tr>
<td>CF6.10.07</td>
<td>((7G1.0))C</td>
<td>12.0</td>
<td>103</td>
<td>205</td>
</tr>
<tr>
<td>CF6.10.12</td>
<td>((12G1.0))C</td>
<td>15.0</td>
<td>161</td>
<td>319</td>
</tr>
<tr>
<td>CF6.10.18</td>
<td>((18G1.0))C</td>
<td>19.0</td>
<td>245</td>
<td>482</td>
</tr>
<tr>
<td>CF6.10.25</td>
<td>((25G1.0))C</td>
<td>21.0</td>
<td>322</td>
<td>595</td>
</tr>
<tr>
<td>CF6.15.03</td>
<td>((3G1.5))C</td>
<td>9.0</td>
<td>72</td>
<td>122</td>
</tr>
<tr>
<td>CF6.15.04</td>
<td>((4G1.5))C</td>
<td>9.5</td>
<td>87</td>
<td>155</td>
</tr>
<tr>
<td>CF6.15.05</td>
<td>((5G1.5))C</td>
<td>10.5</td>
<td>105</td>
<td>177</td>
</tr>
<tr>
<td>CF6.15.07</td>
<td>((7G1.5))C</td>
<td>13.0</td>
<td>148</td>
<td>258</td>
</tr>
<tr>
<td>CF6.15.12</td>
<td>((12G1.5))C</td>
<td>17.0</td>
<td>225</td>
<td>375</td>
</tr>
<tr>
<td>CF6.15.18</td>
<td>((18G1.5))C</td>
<td>21.0</td>
<td>345</td>
<td>581</td>
</tr>
<tr>
<td>CF6.15.25</td>
<td>((25G1.5))C</td>
<td>24.0</td>
<td>462</td>
<td>865</td>
</tr>
<tr>
<td>CF6.15.36</td>
<td>((36G1.5))C</td>
<td>30.0</td>
<td>675</td>
<td>1393</td>
</tr>
<tr>
<td>CF6.25.04</td>
<td>((4G2.5))C</td>
<td>11.5</td>
<td>131</td>
<td>222</td>
</tr>
</tbody>
</table>

---

*When using the cables with \( \times 0.1 \) \( mm^2 \) and \( \times 0.25 \) \( mm^2 \) minimum bend radius must be 17.5 \( d \) with gliding travel distance \( \geq 5 \) m.*

*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

---

**Order example:** CF6.02.04 – to your desired length (0.5 m steps)

**CF6 chainflex® series** .02 Code nominal cross section .04 Number of cores

**Online order** ▶ www.chainflex.eu/CF6

**Delivery time 24hrs or today.**

Delivery time means time until goods are shipped.

---

chainflex® CF5 and CF6 control cables (green) as well as CF211 measuring system cables (grey) in a screwing station of a car factory. e-chain®: System E4/00 with chainfix clip strain relief devices.
Control cable | PVC | chainflex® CFSOFT1

20 million
Double strokes guaranteed
5 x d
Bend radius, e-chain®
5 m
Travel distance, e-chain®

For heaviest duty applications and especially small bend radii, down to 5 x d
Highly flexible, soft design

PVC outer jacket
Oil-resistant
Flame retardant

Dynamic information

Bend radius

- e-chain® linear: minimum 5 x d
- flexible: minimum 4 x d
- fixed: minimum 3 x d

Temperature

- e-chain® linear: +5 °C up to +70 °C
- flexible: -5 °C up to +70 °C (following DIN EN 60811-504)
- fixed: -15 °C up to +70 °C (following DIN EN 50030)

v max.

- unsupported: 10 m/s
- gliding: 5 m/s

a max.

80 m/s²

Travel distance

Short, very fast applications with small radii and restricted installation space, Class 1

Cable structure

Conductor

Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.

Core insulation

Mechanically high-quality TPE mixture.

Core structure

Cores wound in a layer with especially short pitch length.

Core identification

Colour code in accordance with DIN 47100.

Outer jacket

Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50030-4-1).

Colour: Jet black (similar to RAL 9005)

Electrical information

Nominal voltage

300/500 V (following DIN VDE 0298-3)

Testing voltage

2000 V (following DIN EN 50035)

Properties and approvals

UV resistance

Medium

Oil resistance

Oil-resistant (following DIN EN 50363-4-1), Class 2

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 1043 and 2464, 300 V, 80 °C

NFPA

Following NFPA 79-2012, chapter 12.9

Clean room

According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1

CE

Following 2014/35/EU

Guaranteed service life (details see page 22-23)

Temperature, from/to [°C]

R min. [factor x d]

R min. [factor x d]

R min. [factor x d]

+5/+15 6.8 7.5 8.5

+15/+60 5 6 7

+60/+70 6.8 7.5 8.5

* Higher number of double strokes? Service life calculation online ➤ www.igus.eu/chainflexlife

Typical application areas

- For heaviest duty applications and especially small radii down to 5 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 1
- Light oil influence, Class 2
- No torsion, Class 1
- Especially soft cable design, for reduced forces
- Pick and place machines, automatic doors, Clean room, very quick handling

Part No.

Number of cores and conductor nominal cross section [mm²]
Outer diameter (d) max. [mm]
Copper index
Weight [kg/km]

New CFSOFT1.02.03
3 x 0.25 5.5 7 32

New CFSOFT1.02.06
6 x 0.25 7.0 20 67

New CFSOFT1.03.04
4 x 0.34 6.0 14 45

New CFSOFT1.05.04
4 x 0.5 6.5 20 58

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
Control cable | PVC | chainflex® CFSoFT2

20 million Double strokes guaranteed
5 x d Bend radius, e-chain®
5 m Travel distance, e-chain®

- For heaviest duty applications and especially small bend radii, down to 5 x d
- Highly flexible, soft design

PVC outer jacket
Shielded
Oil-resistant
Flame retardant

Dynamic information

| Bend radius | e-chain® linear | minimum 5 x d |
| flexible | minimum 4 x d |
| fixed | minimum 3 x d |
| Temperature | e-chain® linear | -5 °C up to +70 °C |
| flexible | -15 °C up to +70 °C (following DIN EN 50305) |
| fixed | -15 °C up to +70 °C (following DIN EN 50305) |
| v max. | unsupported | 10 m/s |
| gliding | 5 m/s |
| a max. | 80 m/s² |
| Travel distance | Short, very fast applications with small radii and restricted installation space, Class 1 |

Cable structure

Conductor
Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.

Core insulation
Mechanically high-quality TPE mixture.

Core structure
Cores wound in a layer with especially short pitch length.

Core identification
Colour code in accordance with DIN 47100.

Intermediate layer
Foil taping over the outer layer.

Overall shield
Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical.

Outer jacket
Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Jet black (similar to RAL 9005).

Electrical information

Nominal voltage
300/500 V (following DIN VDE 0298-3)

Testing voltage
2000 V (following DIN EN 50089)

Class 7.1.2.1

Properties and approvals

- UV resistance: Medium
- Oil resistance: Oil-resistant (following DIN EN 50383-4-1), Class 2
- 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 10493 and 2464, 300 V, 80 °C
- NFPA: Following NFPA 79-2012, chapter 12.9
- Clean room: According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
- Lead-free: Following 2011/65/EC (RoHS-II)

Guaranteed service life (details see page 22-23)

<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>New CFSoFT2.02.03</td>
<td>(3x0.25)C</td>
<td>6.0</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>New CFSoFT2.02.06</td>
<td>(8x0.25)C</td>
<td>7.5</td>
<td>36</td>
<td>91</td>
</tr>
<tr>
<td>New CFSoFT2.03.04</td>
<td>(4x0.34)C</td>
<td>6.5</td>
<td>25</td>
<td>54</td>
</tr>
<tr>
<td>New CFSoFT2.05.04</td>
<td>(4x0.5)C</td>
<td>7.0</td>
<td>34</td>
<td>74</td>
</tr>
<tr>
<td>New CFSoFT2.07.04</td>
<td>(4x0.75)C</td>
<td>8.0</td>
<td>46</td>
<td>100</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

Typical application areas

- For heaviest duty applications and especially small radii down to 5 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 1
- Light oil influence, Class 2
- No torsion, Class 1
- Especially soft cable design, for reduced forces
- Pick and place machines, automatic doors, Clean room, very quick handling

EPLAN download, configurators ▶ www.igus.eu/CFSoFT2

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | iguPUR | chainflex® CF890

5 million
Double strokes guaranteed
12.5 x d
Bend radius, e-chain®
10 m
Travel distance, e-chain®

● For flexing applications
● iguPUR outer jacket
● Oil-resistant
● Flame retardant

Dynamic information

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bend radius</td>
<td>e-chain® linear minimum 12.5 x d</td>
</tr>
<tr>
<td></td>
<td>flexible minimum 10 x d</td>
</tr>
<tr>
<td></td>
<td>fixed minimum 7 x d</td>
</tr>
<tr>
<td>Temperature</td>
<td>e-chain® linear -20 °C up to +80 °C</td>
</tr>
<tr>
<td></td>
<td>flexible -40 °C up to +80 °C (following DIN EN 60811-504)</td>
</tr>
<tr>
<td></td>
<td>fixed -50 °C up to +80 °C (following DIN EN 50305)</td>
</tr>
<tr>
<td>v max.</td>
<td>unsupported 3 m/s</td>
</tr>
<tr>
<td>a max.</td>
<td>20 m/s²</td>
</tr>
<tr>
<td>Travel distance</td>
<td>Unsupported travel distances up to 10 m, Class 1</td>
</tr>
</tbody>
</table>

Cable structure

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor</td>
<td>Conductor consisting of bare copper wires (according to DIN EN 60228).</td>
</tr>
<tr>
<td>Core insulation</td>
<td>Mechanically high-quality PVC mixture.</td>
</tr>
<tr>
<td>Core structure</td>
<td>Cores wound with an optimised pitch length.</td>
</tr>
<tr>
<td>Core identification</td>
<td>Black cores with white numbers, one green-yellow core.</td>
</tr>
<tr>
<td>Outer jacket</td>
<td>Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Jet black (similar to RAL 9005)</td>
</tr>
</tbody>
</table>

Electrical information

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>300/500 V</td>
</tr>
<tr>
<td>Testing voltage</td>
<td>2000 V (following DIN EN 50395)</td>
</tr>
</tbody>
</table>

Class 3.1.3.1

Properties and approvals

- UV resistance: Medium
- Oil resistance: Oil-resistant (following DIN EN 50383-10-2), 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 11008 and 20940, 600 V, 80 °C
- EAC: Certificate No. RU C-DE.ME77.B.01560 (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

Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>1 million</th>
<th>3 million</th>
<th>5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20/-10</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>-10/+70</td>
<td>12.5</td>
<td>13.5</td>
<td>14.5</td>
</tr>
<tr>
<td>+70/+80</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ➤ www.igus.eu/chainflexlife

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

EPLAN download, configurators ➤ www.igus.eu/CF890
Control cable | iguPUR | chainflex® CF890

Class 3.1.3.1

**Basic requirements**
- Travel distance: unsupported
- Oil resistance: none
- Torsion: none

**Order example:** CF890.05.02 – to your desired length (0.5 m steps)

**Online order** ➤ www.chainflex.eu/CF890

**Delivery time** 24hrs or today.

Delivery time means time until goods are shipped.

---

**Part No.**

<table>
<thead>
<tr>
<th>Number of cores and conductor nominal cross section</th>
<th>Outer diameter (d) max.</th>
<th>Copper index</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF890.05.02</td>
<td>2x0.5</td>
<td>5.5</td>
<td>10</td>
</tr>
<tr>
<td>CF890.05.03</td>
<td>3G0.5</td>
<td>6.0</td>
<td>15</td>
</tr>
<tr>
<td>CF890.05.04</td>
<td>4G0.5</td>
<td>6.5</td>
<td>20</td>
</tr>
<tr>
<td>CF890.05.05</td>
<td>5G0.5</td>
<td>7.0</td>
<td>25</td>
</tr>
<tr>
<td>CF890.05.07</td>
<td>7G0.5</td>
<td>8.5</td>
<td>35</td>
</tr>
<tr>
<td>CF890.05.12</td>
<td>12G0.5</td>
<td>9.5</td>
<td>60</td>
</tr>
<tr>
<td>CF890.06.18</td>
<td>18G0.5</td>
<td>11.5</td>
<td>90</td>
</tr>
<tr>
<td>CF890.05.25</td>
<td>25G0.5</td>
<td>13.5</td>
<td>124</td>
</tr>
<tr>
<td>CF890.07.02</td>
<td>2x0.75</td>
<td>6.0</td>
<td>15</td>
</tr>
<tr>
<td>CF890.07.03</td>
<td>3G0.75</td>
<td>6.5</td>
<td>23</td>
</tr>
<tr>
<td>CF890.07.04</td>
<td>4G0.75</td>
<td>7.0</td>
<td>30</td>
</tr>
<tr>
<td>CF890.07.05</td>
<td>5G0.75</td>
<td>7.5</td>
<td>36</td>
</tr>
<tr>
<td>CF890.07.07</td>
<td>7G0.75</td>
<td>9.0</td>
<td>53</td>
</tr>
<tr>
<td>CF890.07.12</td>
<td>12G0.75</td>
<td>10.5</td>
<td>90</td>
</tr>
<tr>
<td>CF890.07.18</td>
<td>18G0.75</td>
<td>13.0</td>
<td>134</td>
</tr>
<tr>
<td>CF890.07.25</td>
<td>25G0.75</td>
<td>15.0</td>
<td>186</td>
</tr>
<tr>
<td>CF890.10.02</td>
<td>2x1.0</td>
<td>6.5</td>
<td>20</td>
</tr>
<tr>
<td>CF890.10.03</td>
<td>3G1.0</td>
<td>6.5</td>
<td>30</td>
</tr>
<tr>
<td>CF890.10.04</td>
<td>4G1.0</td>
<td>7.0</td>
<td>40</td>
</tr>
<tr>
<td>CF890.10.05</td>
<td>5G1.0</td>
<td>8.0</td>
<td>50</td>
</tr>
<tr>
<td>CF890.10.07</td>
<td>7G1.0</td>
<td>9.5</td>
<td>70</td>
</tr>
<tr>
<td>CF890.10.12</td>
<td>12G1.0</td>
<td>11.5</td>
<td>119</td>
</tr>
<tr>
<td>CF890.10.18</td>
<td>18G1.0</td>
<td>13.5</td>
<td>178</td>
</tr>
<tr>
<td>CF890.10.15</td>
<td>25G1.0</td>
<td>16.0</td>
<td>248</td>
</tr>
<tr>
<td>CF890.15.02</td>
<td>2x1.5</td>
<td>7.5</td>
<td>30</td>
</tr>
<tr>
<td>CF890.15.03</td>
<td>3G1.5</td>
<td>8.5</td>
<td>45</td>
</tr>
<tr>
<td>CF890.15.04</td>
<td>4G1.5</td>
<td>9.0</td>
<td>60</td>
</tr>
<tr>
<td>CF890.15.05</td>
<td>5G1.5</td>
<td>10.0</td>
<td>75</td>
</tr>
<tr>
<td>CF890.15.07</td>
<td>7G1.5</td>
<td>12.5</td>
<td>104</td>
</tr>
<tr>
<td>CF890.15.12</td>
<td>12G1.5</td>
<td>14.5</td>
<td>178</td>
</tr>
<tr>
<td>CF890.15.18</td>
<td>18G1.5</td>
<td>17.5</td>
<td>267</td>
</tr>
<tr>
<td>CF890.15.25</td>
<td>25G1.5</td>
<td>21.0</td>
<td>371</td>
</tr>
<tr>
<td>CF890.25.03</td>
<td>3G2.5</td>
<td>9.0</td>
<td>75</td>
</tr>
<tr>
<td>CF890.25.04</td>
<td>4G2.5</td>
<td>10.0</td>
<td>100</td>
</tr>
<tr>
<td>CF890.25.05</td>
<td>5G2.5</td>
<td>11.5</td>
<td>124</td>
</tr>
<tr>
<td>CF890.25.07</td>
<td>7G2.5</td>
<td>14.0</td>
<td>174</td>
</tr>
<tr>
<td>CF890.25.12</td>
<td>12G2.5</td>
<td>16.5</td>
<td>297</td>
</tr>
<tr>
<td>CF890.25.25</td>
<td>25G2.5</td>
<td>24.0</td>
<td>612</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

---

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | iguPUR | chainflex® CF891

- For flexing applications
- iguPUR outer jacket
- Oil-resistant
- Shielded

Dynamic information

<table>
<thead>
<tr>
<th>Bend radius</th>
<th>e-chain® linear</th>
<th>minimum 12.5 x d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>flexible</td>
<td>minimum 10 x d</td>
</tr>
<tr>
<td></td>
<td>fixed</td>
<td>minimum 7 x d</td>
</tr>
<tr>
<td>Temperature</td>
<td>e-chain® linear</td>
<td>-20 °C up to +80 °C</td>
</tr>
<tr>
<td></td>
<td>flexible</td>
<td>-40 °C up to +80 °C (following DIN EN 60811-504)</td>
</tr>
<tr>
<td></td>
<td>fixed</td>
<td>-50 °C up to +80 °C (following DIN EN 50305)</td>
</tr>
<tr>
<td>v max.</td>
<td>unsupported</td>
<td>3 m/s</td>
</tr>
<tr>
<td>a max.</td>
<td>20 m/s²</td>
<td></td>
</tr>
<tr>
<td>Travel distance</td>
<td>Unsupported travel distances up to 10 m, Class 1</td>
<td></td>
</tr>
</tbody>
</table>

Cable structure

- Conductor: Conductor consisting of bare copper wires (according to DIN EN 60228).
- Core insulation: Mechanically high-quality PVC mixture.
- Core structure: Cores wound with an optimised pitch length.
- Core identification: Black cores with white numbers, one green-yellow core.
- 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: Jet black (similar to RAL 9005)

Electrical information

- Nominal voltage: 300/500 V
- Testing voltage: 2000 V (following DIN EN 50395)

Class 3.1.3.1

Properties and approvals

- Oil resistance: Oil-resistant (following DIN EN 50363-10-2), Class 3
- Flame retardant: According to IEC 60332-1-2, CE 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 11008 and 20940, 600 V, 80 °C
- EAC: Certificate No. RU.C-DE.ME77.B.01560 (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

Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>R min. [factor x d]</th>
<th>1 million</th>
<th>3 million</th>
<th>5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20/-10</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>-10/70</td>
<td>12.5</td>
<td>13.5</td>
<td>14.5</td>
<td></td>
</tr>
<tr>
<td>+70/+80</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online https://www.igus.eu/chainflexlife

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
**Control cable | iguPUR | chainflex® CF891**

**Order example:** CF891.05.02 – to your desired length (0.5 m steps)

CF891 chainflex® series .05 Code nominal cross section .02 Number of cores

**Online order** ► www.chainflex.eu/CF891

**Delivery time** 24hrs or today.

Delivery time means time until goods are shipped.

---

### Basic requirements

<table>
<thead>
<tr>
<th>Travel distance</th>
<th>Oil resistance</th>
<th>Torsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>unsupported</td>
<td>none</td>
<td>±180°</td>
</tr>
<tr>
<td>≥ 400 m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Class 3.1.3.1

**Part No.**

### Control cable | iguPUR | chainflex® CF891

#### Example image

- **Control cable | iguPUR | chainflex® CF891**

#### Table: Part No.

<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>CF891.05.02</td>
<td>(2x0.5)C</td>
<td>6.0</td>
<td>27</td>
<td>49</td>
</tr>
<tr>
<td>CF891.05.03</td>
<td>(3G0.5)C</td>
<td>6.5</td>
<td>32</td>
<td>55</td>
</tr>
<tr>
<td>CF891.05.05</td>
<td>(5G0.5)C</td>
<td>7.5</td>
<td>47</td>
<td>79</td>
</tr>
<tr>
<td>CF891.05.12</td>
<td>(12G0.5)C</td>
<td>10.5</td>
<td>98</td>
<td>159</td>
</tr>
<tr>
<td>CF891.05.18</td>
<td>(18G0.5)C</td>
<td>12.0</td>
<td>132</td>
<td>219</td>
</tr>
<tr>
<td>CF891.05.25</td>
<td>(25G0.5)C</td>
<td>14.5</td>
<td>191</td>
<td>312</td>
</tr>
<tr>
<td>CF891.07.02</td>
<td>(2x0.75)C</td>
<td>6.5</td>
<td>32</td>
<td>55</td>
</tr>
<tr>
<td>CF891.07.03</td>
<td>(3G0.75)C</td>
<td>7.0</td>
<td>44</td>
<td>70</td>
</tr>
<tr>
<td>CF891.07.04</td>
<td>(4G0.75)C</td>
<td>7.5</td>
<td>52</td>
<td>81</td>
</tr>
<tr>
<td>CF891.07.05</td>
<td>(5G0.75)C</td>
<td>8.0</td>
<td>65</td>
<td>102</td>
</tr>
<tr>
<td>CF891.07.07</td>
<td>(7G0.75)C</td>
<td>10.0</td>
<td>85</td>
<td>138</td>
</tr>
<tr>
<td>CF891.07.12</td>
<td>(12G0.75)C</td>
<td>11.5</td>
<td>127</td>
<td>199</td>
</tr>
<tr>
<td>CF891.07.18</td>
<td>(18G0.75)C</td>
<td>13.5</td>
<td>182</td>
<td>283</td>
</tr>
<tr>
<td>CF891.07.25</td>
<td>(25G0.75)C</td>
<td>16.0</td>
<td>262</td>
<td>400</td>
</tr>
<tr>
<td>CF891.10.02</td>
<td>(2x1.0)C</td>
<td>7.0</td>
<td>42</td>
<td>67</td>
</tr>
<tr>
<td>CF891.10.03</td>
<td>(3G1.0)C</td>
<td>7.5</td>
<td>52</td>
<td>79</td>
</tr>
<tr>
<td>CF891.10.04</td>
<td>(4G1.0)C</td>
<td>8.0</td>
<td>68</td>
<td>99</td>
</tr>
<tr>
<td>CF891.10.05</td>
<td>(5G1.0)C</td>
<td>8.5</td>
<td>78</td>
<td>117</td>
</tr>
<tr>
<td>CF891.10.07</td>
<td>(7G1.0)C</td>
<td>10.5</td>
<td>107</td>
<td>162</td>
</tr>
<tr>
<td>CF891.10.12</td>
<td>(12G1.0)C</td>
<td>12.0</td>
<td>162</td>
<td>236</td>
</tr>
<tr>
<td>CF891.10.18</td>
<td>(18G1.0)C</td>
<td>14.5</td>
<td>245</td>
<td>357</td>
</tr>
<tr>
<td>CF891.10.25</td>
<td>(25G1.0)C</td>
<td>17.0</td>
<td>334</td>
<td>484</td>
</tr>
<tr>
<td>CF891.15.02</td>
<td>(2x1.5)C</td>
<td>8.5</td>
<td>57</td>
<td>95</td>
</tr>
<tr>
<td>CF891.15.03</td>
<td>(3G1.5)C</td>
<td>9.0</td>
<td>73</td>
<td>115</td>
</tr>
<tr>
<td>CF891.15.04</td>
<td>(4G1.5)C</td>
<td>10.0</td>
<td>93</td>
<td>147</td>
</tr>
<tr>
<td>CF891.15.05</td>
<td>(5G1.5)C</td>
<td>11.0</td>
<td>113</td>
<td>177</td>
</tr>
<tr>
<td>CF891.15.07</td>
<td>(7G1.5)C</td>
<td>13.0</td>
<td>152</td>
<td>249</td>
</tr>
<tr>
<td>CF891.15.12</td>
<td>(12G1.5)C</td>
<td>16.0</td>
<td>255</td>
<td>393</td>
</tr>
<tr>
<td>CF891.15.18</td>
<td>(18G1.5)C</td>
<td>18.5</td>
<td>363</td>
<td>563</td>
</tr>
<tr>
<td>CF891.15.25</td>
<td>(25G1.5)C</td>
<td>22.0</td>
<td>496</td>
<td>754</td>
</tr>
<tr>
<td>CF891.25.04</td>
<td>(4G2.5)C</td>
<td>11.0</td>
<td>137</td>
<td>204</td>
</tr>
<tr>
<td>CF891.25.05</td>
<td>(5G2.5)C</td>
<td>12.0</td>
<td>167</td>
<td>242</td>
</tr>
<tr>
<td>CF891.25.07</td>
<td>(7G2.5)C</td>
<td>15.0</td>
<td>240</td>
<td>355</td>
</tr>
<tr>
<td>CF891.25.12</td>
<td>(12G2.5)C</td>
<td>17.5</td>
<td>383</td>
<td>541</td>
</tr>
<tr>
<td>CF891.25.25</td>
<td>(25G2.5)C</td>
<td>25.0</td>
<td>735</td>
<td>1048</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

---

### 36 month guarantee

- 36 month guarantee
- 1,354 types from stock
- no cutting charges

---

**Version:** 02.01.19
Control cable | PUR | chainflex® CF77.UL.D

**10 million** Double strokes guaranteed  
6.8 x d  
**100 m** Travel distance, e-chain®

- For heavy duty applications  
- PVC and halogen-free  
- PUR outer jacket  
- Oil resistant and coolant-resistant  
- Flame retardant

**Dynamic information**

<table>
<thead>
<tr>
<th>Bend radius</th>
<th>e-chain® linear</th>
<th>minimum 6.8 x d</th>
<th>flexible</th>
<th>minimum 5 x d</th>
<th>fixed</th>
<th>minimum 4 x d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>e-chain® linear</td>
<td>-25 °C up to +80 °C</td>
<td>flexible</td>
<td>-40 °C up to +80 °C (following DIN EN 60811-504)</td>
<td>fixed</td>
<td>-50 °C up to +80 °C (following DIN EN 50305)</td>
</tr>
<tr>
<td>v max.</td>
<td>Unsupported</td>
<td>10 m/s</td>
<td>gliding</td>
<td>5 m/s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a max.</td>
<td>80 m/s²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel distance</td>
<td>Unsupported travels and up to 100 m for gliding applications, Class 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Torsion | ± 180°, with 1 m cable length, Class 3  
(except for 5-core types ≥ 4.0 mm²) |

**Cable structure**

- Conductor: Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
- Core insulation: Mechanically high-quality TPE mixture.
- Core structure: Number of cores < 12: Cores wound in a layer with short pitch length.  
  Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- Core identification: Cores < 0.5 mm²: Colour code in accordance with DIN 47100.  
  Cores ≥ 0.5 mm²: Black cores with white numbers, one green-yellow core.  
  CF77.UL.03.04.INI: Brown, blue, black  
  CF77.UL.03.04.INI: Brown, blue, black, white
- Outer jacket: Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50383-10-2).  
  Colour: Window-grey (similar to RAL 7040)  
  CF77.UL.03.04.INI: Colour: Cota yellow (similar to RAL 1021)

**Electrical information**

- Nominal voltage: 300/500 V (following DIN VDE 0298-3)
- Testing voltage: 2000 V (following DIN EN 50395)

**Properties and approvals**

- UV resistance: Medium
- Oil resistance: Oil-resistant (following DIN EN 50363-10-2), Class 3
- Offshore: MUD-resistant following NEK 606 - status 2009
- 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)
- Halogen-free: Following DIN EN 60754
- UL/CSA: Cores < 0.5 mm²: Style 10493 and 20233, 300 V, 80 °C  
  Cores ≥ 0.5 mm²: Style 11323 and 21223, 1000 V, 80 °C  
  Following NFPA 79-2012, chapter 12.9
- NFPA: Following NFPA 79-2012, chapter 12.9
- DNV-GL: Type approval certificate No. 61 935-14 HH
- EAC: Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- CTP: Certificate No. C-DE.PB49.B.00416 (Fire protection)
- CEI: Following CEI 20-35
- Lead-free: Following 2011/65/EC (RoHS-II)
- DESINA: According to VDW, DESINA standardisation
- CE: Following 2014/35/EU

**Guaranteed service life (details see page 22-23)**

**Typical application areas**

- For heavy duty applications, Class 5
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- Torsion ± 180°, with 1 m cable length, Class 3
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

**Basic requirements**

- Oil resistance  
  - Unsupported: Class 3  
  - Supported: Class 5
- Torsion  
  - ±180°
- Temperature  
  - Unsupported: -25/-15°C  
  - Supported: -15/+70°C
- v max.  
  - Unsupported: 10 m/s  
  - Supported: 5 m/s
- a max.  
  - 80 m/s²
- Travel distance  
  - Unsupported travels and up to 100 m for gliding applications, Class 5
- Torsion  
  - ±180°, with 1 m cable length, Class 3  
  (except for 5-core types ≥ 4.0 mm²)
**Class 5.5.3.**

**Control cable | PUR | chainflex® CF77.UL.D**

### Example image

**igus® chainflex® CF77.UL.D**

**New**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Number of cores and conductor nominal cross section</th>
<th>Outer diameter (d) max.</th>
<th>Copper index</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF77.UL.02.03.INI</td>
<td>3x0.25</td>
<td>5.0</td>
<td>8</td>
<td>29</td>
</tr>
<tr>
<td>CF77.UL.02.04.D</td>
<td>4x0.25</td>
<td>5.5</td>
<td>11</td>
<td>35</td>
</tr>
<tr>
<td>CF77.UL.02.12.D</td>
<td>12x0.25</td>
<td>9.0</td>
<td>30</td>
<td>77</td>
</tr>
<tr>
<td>CF77.UL.02.18.D</td>
<td>18x0.25</td>
<td>10.5</td>
<td>45</td>
<td>114</td>
</tr>
<tr>
<td>CF77.UL.03.04.INI</td>
<td>4x0.34</td>
<td>6.0</td>
<td>16</td>
<td>39</td>
</tr>
<tr>
<td>CF77.UL.05.04.D</td>
<td>4G0.5</td>
<td>6.0</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>CF77.UL.05.05.D</td>
<td>5G0.5</td>
<td>6.5</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>CF77.UL.05.07.D</td>
<td>7G0.5</td>
<td>7.5</td>
<td>39</td>
<td>78</td>
</tr>
<tr>
<td>CF77.UL.05.12.D</td>
<td>12G0.5</td>
<td>10.0</td>
<td>63</td>
<td>129</td>
</tr>
<tr>
<td>CF77.UL.05.18.D</td>
<td>18G0.5</td>
<td>12.0</td>
<td>94</td>
<td>179</td>
</tr>
<tr>
<td>CF77.UL.05.25.D</td>
<td>25G0.5</td>
<td>14.0</td>
<td>129</td>
<td>238</td>
</tr>
<tr>
<td>CF77.UL.05.30.D</td>
<td>30G0.5</td>
<td>15.0</td>
<td>155</td>
<td>315</td>
</tr>
<tr>
<td>CF77.UL.07.03.D</td>
<td>3G1.0</td>
<td>6.5</td>
<td>23</td>
<td>54</td>
</tr>
<tr>
<td>CF77.UL.07.04.D</td>
<td>4G1.0</td>
<td>7.0</td>
<td>30</td>
<td>63</td>
</tr>
<tr>
<td>CF77.UL.07.05.D</td>
<td>5G1.0</td>
<td>7.5</td>
<td>38</td>
<td>73</td>
</tr>
<tr>
<td>CF77.UL.07.07.D</td>
<td>7G1.0</td>
<td>8.5</td>
<td>53</td>
<td>103</td>
</tr>
<tr>
<td>CF77.UL.07.12.D</td>
<td>12G1.0</td>
<td>12.0</td>
<td>90</td>
<td>187</td>
</tr>
<tr>
<td>CF77.UL.07.18.D</td>
<td>18G1.0</td>
<td>13.5</td>
<td>134</td>
<td>251</td>
</tr>
<tr>
<td>CF77.UL.07.20.D</td>
<td>20G1.0</td>
<td>14.5</td>
<td>149</td>
<td>282</td>
</tr>
<tr>
<td>CF77.UL.07.25.D</td>
<td>25G1.0</td>
<td>16.0</td>
<td>186</td>
<td>356</td>
</tr>
<tr>
<td>CF77.UL.07.36.D</td>
<td>36G1.0</td>
<td>19.0</td>
<td>279</td>
<td>506</td>
</tr>
<tr>
<td>CF77.UL.07.42.D</td>
<td>42G1.0</td>
<td>21.0</td>
<td>341</td>
<td>580</td>
</tr>
<tr>
<td>CF77.UL.10.02.D</td>
<td>2x1.0</td>
<td>6.5</td>
<td>20</td>
<td>53</td>
</tr>
<tr>
<td>CF77.UL.10.03.D</td>
<td>3G1.0</td>
<td>6.5</td>
<td>30</td>
<td>63</td>
</tr>
<tr>
<td>CF77.UL.10.04.D</td>
<td>4G1.0</td>
<td>7.0</td>
<td>40</td>
<td>77</td>
</tr>
<tr>
<td>CF77.UL.10.05.D</td>
<td>5G1.0</td>
<td>8.0</td>
<td>50</td>
<td>94</td>
</tr>
<tr>
<td>CF77.UL.10.07.D</td>
<td>7G1.0</td>
<td>9.0</td>
<td>70</td>
<td>115</td>
</tr>
<tr>
<td>CF77.UL.10.12.D</td>
<td>12G1.0</td>
<td>12.5</td>
<td>119</td>
<td>225</td>
</tr>
<tr>
<td>CF77.UL.10.18.D</td>
<td>18G1.0</td>
<td>15.0</td>
<td>178</td>
<td>326</td>
</tr>
<tr>
<td>CF77.UL.10.25.D</td>
<td>25G1.0</td>
<td>17.6</td>
<td>248</td>
<td>436</td>
</tr>
<tr>
<td>CF77.UL.10.42.D</td>
<td>42G1.0</td>
<td>22.5</td>
<td>433</td>
<td>679</td>
</tr>
<tr>
<td>CF77.UL.15.03.D</td>
<td>3G1.5</td>
<td>7.5</td>
<td>45</td>
<td>83</td>
</tr>
<tr>
<td>CF77.UL.15.04.D</td>
<td>4G1.5</td>
<td>8.0</td>
<td>60</td>
<td>102</td>
</tr>
<tr>
<td>CF77.UL.15.05.D</td>
<td>5G1.5</td>
<td>8.5</td>
<td>75</td>
<td>121</td>
</tr>
<tr>
<td>CF77.UL.15.07.D</td>
<td>7G1.5</td>
<td>10.5</td>
<td>104</td>
<td>167</td>
</tr>
<tr>
<td>CF77.UL.15.12.D</td>
<td>12G1.5</td>
<td>14.0</td>
<td>178</td>
<td>296</td>
</tr>
</tbody>
</table>

### Part No. | Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CF77.UL.15.18.D</td>
<td>1G1.5</td>
<td>12.5</td>
<td>12</td>
<td>174</td>
</tr>
<tr>
<td>CF77.UL.15.25.D</td>
<td>2G1.5</td>
<td>17.0</td>
<td>297</td>
<td>451</td>
</tr>
<tr>
<td>CF77.UL.15.36.D</td>
<td>3G1.5</td>
<td>23.0</td>
<td>59</td>
<td>119</td>
</tr>
<tr>
<td>CF77.UL.15.42.D</td>
<td>4G1.5</td>
<td>26.5</td>
<td>100</td>
<td>149</td>
</tr>
<tr>
<td>CF77.UL.15.04.D</td>
<td>5G1.5</td>
<td>10.5</td>
<td>124</td>
<td>183</td>
</tr>
<tr>
<td>CF77.UL.15.07.D</td>
<td>7G1.5</td>
<td>12.5</td>
<td>174</td>
<td>259</td>
</tr>
<tr>
<td>CF77.UL.15.12.D</td>
<td>12G1.5</td>
<td>17.0</td>
<td>297</td>
<td>451</td>
</tr>
<tr>
<td>CF77.UL.15.20.D</td>
<td>20G1.5</td>
<td>22.5</td>
<td>433</td>
<td>679</td>
</tr>
<tr>
<td>CF77.UL.15.30.D</td>
<td>30G1.5</td>
<td>27.5</td>
<td>580</td>
<td>910</td>
</tr>
<tr>
<td>CF77.UL.15.40.D</td>
<td>40G1.5</td>
<td>32.5</td>
<td>771</td>
<td>1256</td>
</tr>
<tr>
<td>CF77.UL.15.50.D</td>
<td>50G1.5</td>
<td>37.5</td>
<td>902</td>
<td>1616</td>
</tr>
<tr>
<td>CF77.UL.15.07.D</td>
<td>7G2.5</td>
<td>12.5</td>
<td>174</td>
<td>259</td>
</tr>
</tbody>
</table>

**Order example:** CF77.UL.02.04.D – to your desired length (0.5 m steps)

**Online order** [www.chainflex.eu/CF77.UL.D](http://www.chainflex.eu/CF77.UL.D)

**Guarantee**

- 36 month guarantee
- 1,354 types from stock
- no cutting charges

---

**Basic requirements**

- Travel distance
- Oil resistance
- Torsion

**Delivery time**

- 24hrs or today.

**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

---

**Part No.**

**Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight |**

**Notes:**

- Colour outer jacket: Colza yellow, similar to RAL 1021
- When using the cables with “7 G 1.5 mm²” and “7 G 2.5 mm²” minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.
- The given outer diameters are maximum values and may tend toward lower tolerance limits.
- G = with green-yellow earth core
- x = without earth core
Control cable | PUR | chainflex® CF78.UL

- **For heavy duty applications**
- **Flame retardant**
- **PUR outer jacket**
- **PVC and halogen-free**
- **Shielded**
- **Notch-resistant**
- **Oil resistant and coolant-resistant**
- **Hydrolysis and microbe-resistant**

### Dynamic information

- **Bend radius**
  - e-chain® linear: minimum 6.8 x d
  - flexible: minimum 5 x d
  - fixed: minimum 4 x d
- **Temperature**
  - e-chain® linear: -25 °C up to +80 °C
  - flexible: -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: 10 m/s
  - gliding: 5 m/s
- **a max.**
  - 80 m/s²
- **Travel distance**
  - Unsupported travels and up to 100 m for gliding applications, Class 5

### Cable structure

- **Conductor**
  - Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
- **Core insulation**
  - Mechanically high-quality TPE mixture.
- **Core structure**
  - Number of cores < 12: Cores wound in a layer with short pitch length.
  - Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- **Core identification**
  - Black cores with white numbers, one green-yellow core.
- **Inner jacket**
  - TPE mixture adapted to suit the requirements in e-chains®.
- **Overall shield**
  - Bending-resistant braiding made of stranded copper wires.
  - Coverage approx. 55 % linear, approx. 80 % optical.
- **Outer jacket**
  - Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50383-10-2).
  - Colour: Window-grey (similar to RAL 7040).
  - Strip cables faster: a tear strip is moulded into the inner jacket.
- **CFRIP®**
  - Strip cables faster: a tear strip is moulded into the inner jacket.
- **Electrical information**
  - **Nominal voltage**: 300/500 V (following DIN VDE 0298-3)
  - **Testing voltage**: 2000 V (following DIN EN 50095)

### Video

- [www.igus.eu/CFRIP](http://www.igus.eu/CFRIP)

### Properties and approvals

#### UV resistance
- Medium

#### Oil resistance
- Oil-resistant (following DIN EN 50363-10-2), Class 3

#### Offshore
- MUD-resistant following NEK 606 - status 2009

#### 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)

#### Halogen-free
- Following DIN EN 60754

#### UL/CSA
- Style 11323 and 21223, 1000 V, 80 °C

#### NFPA
- Following NFPA 79-2012, chapter 12.9

#### DNV-GL
- Type approval certificate No. 61 935-14 HH

#### EAC
- Certificate No. RU C-DE.ME77.B.01254 (TR ZU)

#### CTP
- Certificate No. C-DE.PB49.B.00416 (Fire protection)

#### CEI
- Following CEI 20-35

#### Lead-free
- Following 2011/65/EC (RoHS-II)

#### Clean room
- According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1

#### CE
- Following 2014/35/EU

### Guarantee

- 36 month guarantee
  - New
  - For heavy duty applications
  - Almost unlimited resistance to oil, Class 3
  - No torsion, Class 1
  - Indoor and outdoor applications with average sun radiation
  - Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

### Typical application areas

- For heavy duty applications, Class 5
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

### Technical data

#### Double strokes

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>5 million</th>
<th>7.5 million</th>
<th>10 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>-25/-15</td>
<td>8.5</td>
<td>10</td>
<td>10.5</td>
</tr>
<tr>
<td>-15/0</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
</tr>
<tr>
<td>+70/80</td>
<td>8.5</td>
<td>10</td>
<td>10.5</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Further information

- [EPLAN download, configurators](http://www.igus.eu/CF78.UL)
- [www.igus.eu/CF78.UL](http://www.igus.eu/CF78.UL)
Control cable | PUR | chainflex® CF78.UL

Strip cables 50% faster

Class 5.5.3.1

EPLAN download, configurators | www.igus.eu/CF78.UL

Part No. | Number of cores and conductor nominal cross section [mm²] | Outer diameter (d) max. [mm] | Copper index | Weight [kg/km] | Weight [kg/km]
--- | --- | --- | --- | --- | ---
CF78.UL.05.04 | (4G0.5)C | 8.0 | 38 | 77 |
CF78.UL.05.05 | (5G0.5)C | 8.0 | 45 | 91 |
CF78.UL.05.07 | (7G0.5)C | 9.5 | 58 | 119 |
CF78.UL.05.09 | (9G0.5)C | 11.0 | 77 | 143 |
CF78.UL.05.12 | (12G0.5)C | 12.5 | 92 | 202 |
CF78.UL.05.18 | (18G0.5)C | 14.5 | 146 | 247 |
CF78.UL.05.25 | (25G0.5)C | 16.0 | 168 | 354 |
CF78.UL.07.03 | (3G0.75)C | 8.0 | 42 | 77 |
CF78.UL.07.04 | (4G0.75)C | 8.5 | 49 | 96 |
CF78.UL.07.05 | (5G0.75)C | 9.5 | 61 | 105 |
CF78.UL.07.07 | (7G0.75)C | 10.5 | 82 | 142 |
CF78.UL.07.12 | (12G0.75)C | 13.5 | 136 | 242 |
CF78.UL.07.18 | (18G0.75)C | 15.5 | 193 | 354 |
CF78.UL.07.36 | (36G0.75)C | 22.0 | 390 | 702 |
CF78.UL.07.42 | (42G0.75)C | 24.5 | 458 | 769 |
CF78.UL.10.03 | (3G1.0)C | 8.5 | 50 | 87 |
CF78.UL.10.04 | (4G1.0)C | 9.0 | 62 | 104 |
CF78.UL.10.05 | (5G1.0)C | 9.5 | 74 | 119 |
CF78.UL.10.07 | (7G1.0)C | 11.0 | 104 | 164 |
CF78.UL.10.12 | (12G1.0)C | 14.5 | 166 | 295 |
CF78.UL.10.18 | (18G1.0)C | 17.0 | 240 | 407 |
CF78.UL.10.25 | (25G1.0)C | 20.0 | 325 | 545 |
CF78.UL.15.03 | (3G1.5)C | 9.5 | 68 | 129 |
CF78.UL.15.04 | (4G1.5)C | 10.0 | 85 | 134 |
CF78.UL.15.05 | (5G1.5)C | 10.5 | 109 | 160 |
CF78.UL.15.07 | (7G1.5)C | 12.5 | 144 | 217 |
CF78.UL.15.12 | (12G1.5)C | 16.0 | 233 | 387 |
CF78.UL.15.18 | (18G1.5)C | 19.0 | 345 | 541 |
CF78.UL.15.25 | (25G1.5)C | 22.5 | 463 | 724 |
CF78.UL.15.36 | (36G1.5)C | 28.5 | 663 | 1095 |
CF78.UL.15.42 | (42G1.5)C | 29.5 | 820 | 1296 |
CF78.UL.25.03 | (3G2.5)C | 10.0 | 106 | 181 |
CF78.UL.25.04 | (4G2.5)C | 11.5 | 139 | 203 |
CF78.UL.25.05 | (5G2.5)C | 12.5 | 166 | 235 |
CF78.UL.25.07 | (7G2.5)C | 14.5 | 229 | 334 |
CF78.UL.25.12 | (12G2.5)C | 19.0 | 382 | 585 |
CF78.UL.40.04 | (4G4.0)C | 14.0 | 203 | 328 |

Order example: CF78.UL.05.04 – to your desired length (0.5 m steps)
CF78.UL chainflex® series .05 Code nominal cross section .04 Number of cores

Online order | www.chainflex.eu/CF78.UL

Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

Class 5.5.3.1
Basic requirements
Travel distance
Oil resistance
Torsion

---

<table>
<thead>
<tr>
<th>Travel distance unsupported</th>
<th>≥ 400 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil resistance none</td>
<td>none</td>
</tr>
<tr>
<td>Torsion ±180°</td>
<td>±180°</td>
</tr>
</tbody>
</table>

Class 5.5.3.1

Phase-out model
When using the cables with “7 G 1.5 mm²” and “7 G 2.5 mm²” minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

When using the cables with “7 G 1.5 mm²” and “7 G 2.5 mm²” minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

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

G = with green-yellow earth core
x = without earth core

---

Guarantee
36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | PUR | chainflex® CF2

### Dynamic information
- **Bend radius**:
  - **e-chain® linear**: minimum 5 x d
  - **flexible**: minimum 4 x d
  - **fixed**: minimum 3 x d
- **Temperature**:
  - **e-chain® linear**: -20 °C up to +80 °C
  - **flexible**: -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**: 10 m/s
  - **gliding**: 5 m/s
- **a max.**: 80 m/s²
- **Travel distance**: Unsupported travels and up to 100 m for gliding applications, Class 5

### Cable structure
- **Conductor**: Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
- **Core insulation**: Mechanically high-quality TPE mixture.
- **Core structure**:
  - **Number of cores x 12**: Cores wound in a layer with short pitch length.
  - **Number of cores ≥ 12**: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- **Core identification**: Colour code in accordance with DIN 47100.
- **Inner jacket**: PVC mixture adapted to suit the requirements in e-chains®.
- **Overall shield**: Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
- **Outer jacket**: Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50383-10-2). Colour: Anthracite grey (similar to RAL 7016)

### Electrical information
- **Nominal voltage**: 300/500 V (following DIN VDE 0298-3)
- **Testing voltage**: 2000 V (following DIN EN 50395)

### Properties and approvals
- **UV resistance**: High
- **Oil resistance**: Oil-resistant (following DIN EN 50363-10-2), Class 3
- **Offshore**: MUD-resistant following NEK 606 - status 2009
- **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 10493 and 20317, 300 V, 80 °C
- **NFPA**: Following NFPA 79-2012, chapter 12.9
- **EAC**: Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- **CTP**: Certificate No. C-DE.PB49.B.00416 (Fire protection)
- **CE**: Following CEI 20-35
- **Lead-free**: Following 2011/65/EC (RoHS-II)
- **Clean room**: According to ISO Class 1. The outer jacket material of this series complies with CF27.07.05.02.01.D - tested by IPA according to standard DIN EN ISO 14644-1
- **Guarantee**: Following 2014/35/EU

### Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>Double strokes*</th>
<th>5 million</th>
<th>7.5 million</th>
<th>10 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20/-10</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>-10/+70</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>+70/+80</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
<td></td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

### Typical application areas
- For heaviest duty applications, Class 6
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes, refrigerating sector
Control cable | PUR | chainflex® CF2

Class 6.5.3.1

Order example: CF2.01.04 – to your desired length (0.5 m steps)
CF2 chainflex® series .01 Code nominal cross section .04 Number of cores

Online order • www.chainflex.eu/CF2

Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

The chainflex® types marked with a *) refer to cables that are based on a bundling of 4 cores each. Due to their excellent electrical properties (star-quad with especially low crosstalk), these cables can be used in virtually all cases in which twisted-pair cables are normally required.

11) Phase-out model

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

<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</th>
<th>Weight [kg/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF2.01.04</td>
<td>(4x0.14)C</td>
<td>6.5</td>
<td>17</td>
<td>40</td>
</tr>
<tr>
<td>CF2.01.08</td>
<td>(8x0.14)C</td>
<td>7.5</td>
<td>29</td>
<td>65</td>
</tr>
<tr>
<td>CF2.01.12</td>
<td>(12x0.14)C</td>
<td>9.5</td>
<td>49</td>
<td>101</td>
</tr>
<tr>
<td>CF2.01.18</td>
<td>(16x0.14)C</td>
<td>10.5</td>
<td>53</td>
<td>125</td>
</tr>
<tr>
<td>CF2.01.24</td>
<td>(24x0.14)C</td>
<td>11.5</td>
<td>65</td>
<td>135</td>
</tr>
<tr>
<td>CF2.01.36</td>
<td>(36x0.14)C</td>
<td>14.5</td>
<td>88</td>
<td>200</td>
</tr>
<tr>
<td>CF2.01.48</td>
<td>(48x0.14)C</td>
<td>16.5</td>
<td>135</td>
<td>310</td>
</tr>
<tr>
<td>CF2.02.04</td>
<td>(4x0.25)C</td>
<td>7.0</td>
<td>24</td>
<td>53</td>
</tr>
<tr>
<td>CF2.02.08</td>
<td>(8x0.25)C</td>
<td>8.5</td>
<td>41</td>
<td>83</td>
</tr>
<tr>
<td>CF2.02.18</td>
<td>(18x0.25)C</td>
<td>12.5</td>
<td>96</td>
<td>190</td>
</tr>
<tr>
<td>CF2.02.24</td>
<td>(24x0.25)C</td>
<td>13.5</td>
<td>120</td>
<td>220</td>
</tr>
<tr>
<td>CF2.02.48</td>
<td>(48x0.25)C</td>
<td>18.0</td>
<td>230</td>
<td>450</td>
</tr>
</tbody>
</table>

chainflex® CF2 cables are resistant to oil and coolants. e-chain®: System E4/00

G = with green-yellow earth core
x = without earth core

Note:
The given outer diameters are maximum values and may tend toward lower tolerance limits.

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | TPE | chainflex® CF9

10 million | 5 x d | 400 m

For heaviest duty applications  
TPE outer jacket  
Oil and bio-oil resistant  
PVC and halogen-free

Low-temperature-flexible  
Hydrolysis and microbe-resistant

Dynamic information

- **Bend radius**
  - e-chain® linear: minimum 5 x d
  - flexible: minimum 4 x d
  - fixed: minimum 3 x d
- **Temperature**
  - e-chain® linear: -35 °C up to +100 °C (following DIN EN 60811-504)
  - flexible: -55 °C up to +100 °C (following DIN EN 50305)
- **v max.**
  - unsupported: 10 m/s
  - gliding: 6 m/s
- **a max.**
  - 100 m/s²
- **Travel distance**
  - Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- **Torsion**
  - ± 90°, with 1 m cable length, Class 2

Cable structure

- **Conductor**
  - Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
- **Core insulation**
  - Mechanically high-quality TPE mixture.
- **Number of cores**
  - Number of cores < 12: Cores wound in a layer with short pitch length.
  - Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- **Core identification**
  - Cores < 0.75 mm²: Colour code in accordance with DIN 47100.
  - Cores ≥ 0.75 mm²: Black cores with white numbers, one green-yellow core.
  - CF9.02.03.INI: brown, blue, black
  - CF9.03.04.INI: brown, blue, black, white
  - CF9.03.05.INI: brown, blue, black, white, green-yellow
  - CF9.03.16.07.03.INI: 0.34 mm²: violet/red/grey/red-blue/green/grey/pink/white-green/white-yellow/white-grey/black/yellow/brown/green/white/ yellow/pink/grey-brown
  - 0.75 mm²: blue/green-yellow/brown
- **Outer jacket**
  - Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®.
  - Colour: Steel-blue (similar to RAL 5011)
  - CFRIP®
  - Strip cables faster: a tear strip is moulded into the outer jacket
  - Video: www.igus.eu/CFRIP

Electrical information

- **Nominal voltage**
  - 300/500 V (following DIN VDE 0298-3)
- **Testing voltage**
  - 2000 V (following DIN EN 50395)

Properties and approvals

- **UV resistance**
  - High
- **Oil resistance**
  - Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- **Silicone-free**
  - Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
- **Halogen-free**
  - Following DIN EN 60754
- **EAC**
  - Certificate No. RUI C.DE.ME77.B.01254 (TR ZU)
- **Clean room**
  - According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
  - Following 2014/35/EU

Guaranteed service life (details see page 22-23)

* Higher number of double strokes? Service life calculation online: www.igus.eu/chainflexlife

Typical application areas

- For heaviest duty applications
- Unsupported travel distances and up to 400 m and more for gliding applications
- Almost unlimited resistance to oil, also with bio-oils
- Torsion ± 90°, with 1 m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications
Control cable | TPE  | chainflex® CF9

Strip cables 50% faster

Part No. | Number of cores and conductor nominal cross section [mm²] | Outer diameter (d) max. [mm] | Copper index | Weight [kg/km] | [kg/km]
--- | --- | --- | --- | --- | ---
CF9.02.02 | 2x0.25 | 4.5 | 5 | 18
CF9.02.03.INI | 3x0.25 | 4.5 | 8 | 21
CF9.02.06 | 6x0.25 | 5.5 | 15 | 36
CF9.02.07 | 7x0.25 | 6.5 | 18 | 43
CF9.02.08 | 8x0.25 | 6.5 | 20 | 49
CF9.02.12 | 12x0.25 | 8.0 | 30 | 71
CF9.02.18 | 18x0.25 | 9.5 | 45 | 102
CF9.02.20 | 20x0.25 | 9.5 | 50 | 109
CF9.02.25 | 25x0.25 | 11.0 | 63 | 141
CF9.03.04.INI | 4x0.34 | 5.0 | 14 | 31
CF9.03.05.INI | 5x0.34 | 5.5 | 17 | 37
CF9.03.06 | 6x0.34 | 6.0 | 21 | 44
CF9.03.08 | 8x0.34 | 7.0 | 28 | 58
CF9.03.16.07.03.INI | 16x0.34+3x0.75 | 11.0 | 77 | 154
CF9.05.02 | 2x0.5 | 5.0 | 10 | 26
CF9.05.03 | 3x0.5 | 5.0 | 15 | 31
CF9.05.04 | 4x0.5 | 5.5 | 20 | 39
CF9.05.05 | 5x0.5 | 6.0 | 25 | 47
CF9.05.07 | 7x0.5 | 7.0 | 35 | 64
CF9.05.12 | 12x0.5 | 10.0 | 60 | 117
CF9.05.18 | 18x0.5 | 11.5 | 88 | 172
CF9.05.25 | 25x0.5 | 13.0 | 124 | 227
CF9.05.36 | 36x0.5 | 15.5 | 178 | 322
CF9.07.04 | 4G0.75 | 6.0 | 30 | 54
CF9.07.05 | 5G0.75 | 6.5 | 38 | 66
CF9.07.07 | 7G0.75 | 8.0 | 53 | 91
CF9.07.12 | 12G0.75 | 11.0 | 90 | 165
CF9.07.20 | 20G0.75 | 13.5 | 149 | 257
CF9.07.25 | 25G0.75 | 14.5 | 186 | 317
CF9.10.03 | 3G1.0 | 6.0 | 30 | 52
CF9.10.04 | 4G1.0 | 6.5 | 40 | 67
CF9.10.05 | 5G1.0 | 7.5 | 50 | 81
CF9.10.12 | 12G1.0 | 12.0 | 119 | 206
CF9.10.18 | 18G1.0 | 14.5 | 178 | 302
CF9.10.25 | 25G1.0 | 17.0 | 248 | 433

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

Order example: CF9.25.04 – to your desired length (0.5 m steps)
CF9 chainflex® series .25 Code nominal cross section .04 Number of cores

Online order ► www.chainflex.eu/CF9

Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | TPE | chainflex® CF10

For heaviest duty applications
- PVC and halogen-free
- TPE outer jacket
- Shielded
- Oil and bio-oil resistant

Dynamic information

| Bend radius | E-chain® linear | minimum 5 x d |
|            | flexible       | minimum 4 x d |
|            | fixed          | minimum 3 x d |
| Temperature | E-chain® linear | -35 °C up to +100 °C (following DIN EN 60811-504) |
|            | flexible       | -50 °C up to +100 °C (following DIN EN 60811-504) |
|            | fixed          | -55 °C up to +100 °C (following DIN EN 50303) |
| v max.     | Unsupported    | 10 m/s |
|            | gliding       | 6 m/s |
| a max.     | Unsupported    | 100 m/s² |

Travel distance
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6

Cable structure

Conductor
- Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).

Core insulation
- Mechanically high-quality TPE mixture.

Core structure
- Number of cores < 12: Cores wound in a layer with short pitch length.
- Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.

Core identification
- Cores < 0.75 mm²: Colour code in accordance with DIN 47100.
- Cores ≥ 0.75 mm²: Black cores with white numbers, one green-yellow core.
- CF10.03.05.IN1: brown, blue, black, white, green-yellow
- TPE mixture adapted to suit the requirements in e-chains®.

Inner jacket
- Extremely bending-resistant braiding made of tinned copper wires.
- Coverage approx. 70 % linear, approx. 90 % optical

Outer jacket
- Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®.
- Colour: Steel-blue (similar to RAL 5011)

CFRIP®
- Strip cables faster: a tear strip is moulded into the inner jacket

Electrical information

Nominal voltage
- 300/500 V (following DIN VDE 0298-3)

Testing voltage
- 2000 V (following DIN EN 50639)

Properties and approvals

- UV resistance: High
- Oil resistance: Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- Silicone-free: Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
- Halogen-free: Following DIN EN 60754

Guaranteed service life (details see page 22-23)

Video ► www.igus.eu/CF10
Control cable | TPE | chainflex® CF10

Strip cables 50% faster

Class 7.6.4.1

Order example: CF10.01.12 – to your desired length (0.5 m steps)
CF10 chainflex® series .01 Code nominal cross section .12 Number of cores

Online order ► www.chainflex.eu/CF10

Delivery time 24hrs or today.

Delivery time means time until goods are shipped.

Example image

Control cable chainflex® CF10 in storage and retrieval units for high-bay warehouses. e-chain®: System E2

36 month guarantee ... 1,354 types from stock ... no cutting charges
Control cable | TPE | chainflex® CF9.UL

- For extremely heavy duty applications
- TPE outer jacket
- Oil and bio-oil resistant
- Flame retardant
- PVC-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

### Dynamic information

<table>
<thead>
<tr>
<th>Property</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bend radius e-chain® linear</td>
<td>5 x d</td>
<td>5 x d</td>
</tr>
<tr>
<td>Bend radius flexible</td>
<td>4 x d</td>
<td></td>
</tr>
<tr>
<td>Bend radius fixed</td>
<td>3 x d</td>
<td></td>
</tr>
<tr>
<td>Temperature e-chain® linear</td>
<td>-35 °C to +100 °C</td>
<td>-35 °C to +100 °C</td>
</tr>
<tr>
<td>Temperature flexible</td>
<td>-45 °C to +100 °C</td>
<td>-45 °C to +100 °C</td>
</tr>
<tr>
<td>Temperature fixed</td>
<td>-50 °C to +100 °C</td>
<td>-50 °C to +100 °C</td>
</tr>
<tr>
<td>V max. gliding</td>
<td>10 m/s</td>
<td></td>
</tr>
<tr>
<td>A max. gliding</td>
<td>6 m/s</td>
<td></td>
</tr>
<tr>
<td>Travel distance</td>
<td></td>
<td>≥ 400 m</td>
</tr>
<tr>
<td>Torsion</td>
<td>± 90°</td>
<td>Class 2</td>
</tr>
</tbody>
</table>

### Cable structure

- Conductor: Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
- Core insulation: Mechanically high-quality TPE mixture.
- Core structure:
  - Number of cores < 12: Cores wound in a layer with short pitch length.
  - Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
- Core identification:
  - Cores ≤ 0.75 mm²: Colour code in accordance with DIN 47100.
  - Black cores with white numbers, one green-yellow core.
  - Colour code for CF9.UL 02.03.03.INI: brown, blue, black
  - Colour code for CF9.UL 03.04.03.INI: brown, blue, black, white
  - Colour code for CF9.UL 03.05.03.INI: brown, blue, black, white, green-yellow
- Outer jacket: Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Slate grey (similar to RAL 7015).
- CFRIP®: Strip cables faster: a tear strip is moulded into the outer jacket.

### Electrical information

- Nominal voltage: 300/500 V (following DIN VDE 0298-3)
- Testing voltage: 2000 V (following DIN EN 50059)

### Properties and approvals

- **UV resistance:** High
- **Oil resistance:** Oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- **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:** 10258, and, 21387, 1000 V, 90 °C
- **NFPA:** Following NFPA 79-2012, chapter 12.9
- **DNV-GL:** Type approval certificate No. 61 935-14 HH
- **EAC:** Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- **CTP:** Certificate No. C-DE.PB49.B.00416 (Fire protection)
- **CE:** Following CEI 20-35

### Guaranteed service life (details see page 22-23)

<table>
<thead>
<tr>
<th>Double strokes*</th>
<th>5 million</th>
<th>7.5 million</th>
<th>10 million</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature, from/to (°C)</strong></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>-35/-25</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
</tr>
<tr>
<td>-25/+90</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>+90/+100</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online: www.igus.eu/chainflexlife

### Typical application areas

- For heaviest duty applications, Class 6
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Torsion ± 90°, with 1 m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications
Control cable | TPE | chainflex® CF9.UL

Strip cables 50% faster

igus® chainflex® CF9.UL

Example image

Control cable | TPE | chainflex® CF9.UL

Class 6.6.4.2

Basic requirements
Travel distance
Oil resistance
Torsion

- Unsupported
- TPE

Strip cables 50% faster

CF9.UL

TPE

5 x d

Order example: CF9.UL.02.02 – to your desired length (0.5 m steps)

CF9.UL.02.02

2x0.25

5.0

5

28

CF9.UL.02.03.INI

3x0.25

5.5

8

32

CF9.UL.02.04

4x0.25

5.5

10

37

CF9.UL.02.06

6x0.25

6.5

15

48

CF9.UL.02.07

7x0.25

7.5

20

63

CF9.UL.03.04.INI

4x0.34

6.0

14

42

CF9.UL.03.05.INI

5x0.34

6.5

17

52

CF9.UL.03.06

6x0.34

6.5

21

56

CF9.UL.03.08

8x0.34

7.5

28

74

Part No.
Number of cores and conductor
nominal cross section [mm²]
Outer diameter (d) max. [mm]
Copper index [kg/km]
Weight [kg/km]

CF9.UL.02.02

2x0.25

5.0

5

28

CF9.UL.02.03.INI

3x0.25

5.5

8

32

CF9.UL.02.04

4x0.25

5.5

10

37

CF9.UL.02.06

6x0.25

6.5

15

48

CF9.UL.02.07

7x0.25

7.5

20

63

CF9.UL.03.04.INI

4x0.34

6.0

14

42

CF9.UL.03.05.INI

5x0.34

6.5

17

52

CF9.UL.03.06

6x0.34

6.5

21

56

CF9.UL.03.08

8x0.34

7.5

28

74

CF9.UL.05.02

2x0.5

6.0

10

42

CF9.UL.05.03

3x0.5

6.5

15

51

CF9.UL.05.04

4x0.5

7.0

20

59

CF9.UL.05.05

5x0.5

7.5

25

69

CF9.UL.05.07

7x0.5

8.5

35

94

CF9.UL.05.12

12x0.5

11.5

60

167

CF9.UL.05.18

18x0.5

13.5

90

234

CF9.UL.05.25

25x0.5

14.5

124

288

CF9.UL.05.36

36x0.5

15.5

178

448

CF9.UL.07.05

5G0.75

8.0

38

94

CF9.UL.07.07

7G0.75

9.5

53

130

CF9.UL.07.12

12G0.75

13.0

90

228

CF9.UL.07.25

25G0.75

16.5

186

406

CF9.UL.07.36

36G0.75

18.5

178

448

CF9.UL.10.03

3G1.0

7.5

30

77

CF9.UL.10.04

4G1.0

8.0

40

94

CF9.UL.10.05

6G1.0

9.5

60

122

CF9.UL.10.07

7G1.0

11.5

104

199

CF9.UL.10.12

12G1.0

16.0

178

372

CF9.UL.10.18

18G1.0

19.0

267

535

CF9.UL.10.25

25G1.0

22.0

371

731

CF9.UL.15.04

4G1.5

9.0

60

122

CF9.UL.15.05

6G1.5

9.5

75

146

CF9.UL.15.07

7G1.5

11.5

104

199

CF9.UL.15.12

12G1.5

16.0

178

372

CF9.UL.15.18

18G1.5

19.0

267

535

CF9.UL.15.25

25G1.5

22.0

371

731

Part No.
Number of cores and conductor
nominal cross section [mm²]
Outer diameter (d) max. [mm]
Copper index [kg/km]
Weight [kg/km]

CF9.UL.25.04

4G2.5

10.5

100

188

CF9.UL.25.05

5G2.5

11.0

124

231

CF9.UL.25.07

7G2.5

13.5

174

317

CF9.UL.25.12

12G2.5

19.0

297

600

CF9.UL.25.18

18G2.5

24.0

445

887

CF9.UL.25.25

25G2.5

27.0

612

1151

CF9.UL.40.04

4G4.0

12.0

159

261

CF9.UL.60.04

4G6.0

14.0

238

384

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

Phase-out model
When using the cables with “7 G 1.5 mm²” and “7 G 2.5 mm²” minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

Guarantee
36 month guarantee ... 1,354 types from stock ... no cutting charges

Order example: CF9.UL.02.02 – to your desired length (0.5 m steps)

CF9.UL chainflex® series .02 Code nominal cross section .02 Number of cores

CF9.UL download, configurators

Order online ➤ www.chainflex.eu/CF9.UL

Delivery time 24hrs or today.

Delivery time means time until goods are shipped.

igus® chainflex® cables in a drilling application.
Control cable | TPE | chainflex® CF10.UL

Properties and approvals
- **UV resistance**: High
- **Oil resistance**: Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- **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**: Cores < 0.5 mm²: Style 10479 and 21529, 300 V, 90 °C
  Cores ≥ 0.5 mm²: Style 10258 and 21387, 1000 V, 90 °C
  Following NFPA 79-2012, chapter 12.9
- **NFPA**: Following NFPA 79-2012, chapter 12.9
- **DNV-GL**: Type approval certificate No. 61 935-14 HH
- **EAC**: Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- **CTP**: Certificate No. C-DE.PB49.B.00416 (Fire protection)
- **CEI**: Following CEI 20-35
- **Lead-free**: Following 2011/65/EC (RoHS-II)
- **Clean room**: According to ISO Class 1. The outer jacket material of this series complies with CFR3.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1

Basic requirements
- **Travel distance**: unsupported
  - 1: 10 million
  - 2: 5 million
  - 3: 2.5 million
  - 4: 1.25 million
  - 5: 500 thousand
  - 6: 100 thousand
- **Oil resistance**: none
- **Torsion**: none

**Class 6.6.4.1**

**Properties and approvals**

- **UV resistance**: High
- **Oil resistance**: Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- **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**: Cores < 0.5 mm²: Style 10479 and 21529, 300 V, 90 °C
  Cores ≥ 0.5 mm²: Style 10258 and 21387, 1000 V, 90 °C
  Following NFPA 79-2012, chapter 12.9
- **NFPA**: Following NFPA 79-2012, chapter 12.9
- **DNV-GL**: Type approval certificate No. 61 935-14 HH
- **EAC**: Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
- **CTP**: Certificate No. C-DE.PB49.B.00416 (Fire protection)
- **CEI**: Following CEI 20-35
- **Lead-free**: Following 2011/65/EC (RoHS-II)
- **Clean room**: According to ISO Class 1. The outer jacket material of this series complies with CFR3.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1

**Guaranteed service life (details see page 22-23)**

<table>
<thead>
<tr>
<th>Double strokes*</th>
<th>5 million</th>
<th>7.5 million</th>
<th>10 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>-35/-25</td>
<td>6.8</td>
<td>7.2</td>
<td>7.8</td>
</tr>
<tr>
<td>-25/-90</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>≥+90/+100</td>
<td>6.8</td>
<td>7.5</td>
<td>8.5</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

**Typical application areas**
- For heaviest duty applications, Class 6
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-ols, Class 4
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications

EPLAN download, configurators ▶ www.igus.eu/CF10.UL

Guarantee
- 36 month guarantee
- 1,354 types from stock
- no cutting charges

103
Control cable | TPE | chainflex® CF10.UL

Strip cables 50% faster

Class 6.6.4.1

Order example: CF10.UL.02.04 – to your desired length (0.5 m steps)

Online order ➤ www.chainflex.eu/CF10.UL

Delivery time 24hrs or today.

Delivery time means time until goods are shipped.

The special cable structure of chainflex® CF10.UL guarantees quality – offered by igus® fully harnessed.

---

### Part No. | Number of cores and conductor nominal cross section | Outer diameter (d) max. | Copper index | Weight
---|---|---|---|---
CF10.UL.02.04 | (4x0.25)C | 7.0 | 26 | 67
CF10.UL.02.08 | (8x0.25)C | 9.0 | 39 | 102
CF10.UL.02.12 | (12x0.25)C | 10.5 | 66 | 155
CF10.UL.02.25 | (25x0.25)C | 13.0 | 112 | 252
CF10.UL.05.04 | (4x0.5)C | 8.5 | 39 | 97
CF10.UL.05.05 | (5x0.5)C | 9.0 | 45 | 109
CF10.UL.05.12 | (12x0.5)C | 13.0 | 110 | 251
CF10.UL.05.25 | (25x0.5)C | 16.5 | 191 | 407
CF10.UL.07.03 (1) | (3G0.75)C | 8.5 | 42 | 104
CF10.UL.07.04 | (4G0.75)C | 9.0 | 51 | 120
CF10.UL.07.05 | (5G0.75)C | 10.0 | 71 | 152
CF10.UL.07.07 | (7G0.75)C | 11.0 | 94 | 197
CF10.UL.07.12 | (12G0.75)C | 14.5 | 148 | 332
CF10.UL.07.20 | (20G0.75)C | 17.0 | 220 | 467
CF10.UL.07.25 | (25G0.75)C | 19.0 | 288 | 598
CF10.UL.10.02 | (2x1.0)C | 8.5 | 40 | 103
CF10.UL.10.03 | (3G1.0)C | 9.0 | 50 | 118
CF10.UL.10.04 | (4G1.0)C | 10.0 | 74 | 153
CF10.UL.10.05 | (5G1.0)C | 10.5 | 87 | 176
CF10.UL.10.07 | (7G1.0)C | 12.0 | 113 | 231
CF10.UL.10.12 (1) | (12G1.0)C | 15.0 | 189 | 390
CF10.UL.10.18 (1) | (18G1.0)C | 19.0 | 283 | 567
CF10.UL.10.25 | (25G1.0)C | 21.5 | 365 | 747
CF10.UL.15.04 | (4G1.5)C | 10.5 | 98 | 189
CF10.UL.15.05 | (5G1.5)C | 11.5 | 116 | 221
CF10.UL.15.07 (17) | (7G1.5)C | 13.0 | 154 | 289
CF10.UL.15.12 | (12G1.5)C | 15.0 | 251 | 506
CF10.UL.15.15 | (16G1.5)C | 18.0 | 251 | 506
CF10.UL.15.18 | (20G1.5)C | 21.5 | 367 | 745
CF10.UL.25.04 | (4G2.5)C | 12.0 | 145 | 266
CF10.UL.25.07 (17) | (7G2.5)C | 15.0 | 234 | 425
CF10.UL.25.12 | (12G2.5)C | 19.0 | 417 | 817
CF10.UL.40.04 | (4G4.0)C | 13.5 | 213 | 361

(1) Phase-out model
(17) When using the cables with “7G 1.5 mm²” and “7G 2.5 mm²” minimum bend radius must be 17.5 x d with sliding travel distance ≥ 5 m.

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

---

Tensile stress resistant centre element
Gusset-filling extruded inner jacket
Overall shield with optimised braiding angle
Pressure extruded outer jacket

The special cable structure of chainflex® CF10.UL guarantees quality – offered by igus® fully harnessed.
Control cable | TPE | chainflex® CF98

40 million Double strokes guaranteed 4 x d Bend radius, e-chain® 100 m Travel distance, e-chain®

- For heaviest duty applications and especially small radii down to 4 x d
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

Dynamic information

- Bend radius: e-chain® linear minimum 4 x d, flexible minimum 4 x d, fixed minimum 3 x d
- Temperature: e-chain® linear -35 °C up to +90 °C, flexible -50 °C up to +90 °C (following DIN EN 60811-504), fixed -55 °C up to +90 °C (following DIN EN 50305)
- v max.: unsupported 10 m/s, gliding 6 m/s
- a max.: unsupported 100 m/s²
- Travel distance: Short, very fast applications with small radii and restricted installation space, Class 5
- Torsion: ± 90°, with 1 m cable length, Class 2

Cable structure

- Conductor: Conductor consisting of a highly flexible special alloy.
- Core insulation: Mechanically high-quality TPE mixture.
- Core structure: Cores wound in a layer with especially short pitch length.
- Core identification: Colour code in accordance with DIN 47100. CF98.02.03.INI: brown, blue, black
- Outer jacket: Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Steel-blue (similar to RAL 5011)

Electrical information

- Nominal voltage: 300/300 V
- Testing voltage: 1500 V

Class 7.5.4.2

Properties and approvals

- UV resistance: High
- Oil resistance: Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- Silicone-free: Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992), Class 4
- Halogen-free: Following DIN EN 60754

EAL

Certificate No. RU C-DE.ME77.B.01254 (TR ZU)

Lead-free

Following 2011/65/EC (RoHS-II)

Clean room

According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1

CE

Following 2014/35/EU

Guaranteed service life (details see page 22-23)

Double strokes* 20 million 30 million 40 million

<table>
<thead>
<tr>
<th>Temperature, from/to [°C]</th>
<th>R min. [factor x d]</th>
<th>R min. [factor x d]</th>
<th>R min. [factor x d]</th>
</tr>
</thead>
<tbody>
<tr>
<td>-35/-25</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>-25/+80</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>+80/+90</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

* Higher number of double strokes? Service life calculation online © www.igus.eu/chainflexlife

Typical application areas

- For heaviest duty applications and especially small radii down to 4 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 5
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Torsion ± 90°, with 1 m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, Clean room, very quick handling

Part No. Number of cores and conductor nominal cross section Outer diameter (d) max. Copper index Weight

| CF98.01.02 | 2x0.14 | 4.5 | 4 | 18 |
| CF98.01.03 (1) | 3x0.14 | 4.5 | 6 | 19 |
| CF98.01.04 | 4x0.14 | 5.0 | 7 | 25 |
| CF98.01.08 | 8x0.14 | 6.5 | 15 | 45 |
| CF98.02.03.INI | 3x0.25 | 5.0 | 10 | 29 |
| CF98.02.04 | 4x0.25 | 7.0 | 15 | 36 |
| CF98.02.07 | 7x0.25 | 7.0 | 25 | 59 |
| CF98.02.08 | 8x0.25 | 7.5 | 29 | 68 |
| CF98.03.04.INI | 4x0.34 | 5.5 | 15 | 38 |
| CF98.05.04 | 4x0.5 | 6.0 | 32 | 52 |

(1) Phase-out model

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
Control cable | TPE | chainflex® CF99

**Properties and approvals**
- **Class 7.5.4.1**
- **UV resistance**: High
- **Oil resistance**: Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
- **Silicone-free**: Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992), Class 4
- **Halogen-free**: Following DIN EN 60754
- **EAC**: Certificate No. RU C-DE.M.E77.B.01254 (TR ZU)
- **Lead-free**: Following 2011/65/EC (RoHS-II)
- **Clean room**: According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 – tested by IPA according to standard DIN EN ISO 14644-1
- **CE**: Following 2014/35/EU

**Guaranteed service life (details see page 22-23)**
- **Double strokes**:
  - Temperature, from/to [°C]:
    - -35/-25: 5
    - -25/+80: 5
    - +80/+90: 5
  - Guaranteed service life: 40 million

**Typical application areas**
- For heaviest duty applications and especially small radii down to 4 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 5
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, Clean room, very quick handling

**Electrical information**
- **Nominal voltage**: 300/300 V
- **Testing voltage**: 1500 V

**Part No. | Number of cores and conductor nominal cross section [mm²] | Outer diameter (d) max. [mm] | Copper index | Weight [kg/km] | Weight [kg/km]**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CF99.01.02</td>
<td>(2x0.14)C</td>
<td>6.0</td>
<td>12</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>CF99.01.04</td>
<td>(4x0.14)C</td>
<td>6.5</td>
<td>16</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>CF99.01.08</td>
<td>(8x0.14)C</td>
<td>8.0</td>
<td>28</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>CF99.02.04</td>
<td>(4x0.25)C</td>
<td>7.0</td>
<td>24</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>CF99.02.07</td>
<td>(7x0.25)C</td>
<td>8.0</td>
<td>40</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>CF99.03.08</td>
<td>(8x0.34)C</td>
<td>9.0</td>
<td>45</td>
<td>107</td>
<td></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
- S = without earth core

---

Control cable | TPE | chainflex® CF99

- **Double strokes** guaranteed
- **Bend radius, e-chain®**: 4 x d
- **Travel distance, e-chain®**: 100 m

- For heaviest duty applications and especially small radii down to 4 x d
- TPE outer jacket
- Shielded

- Oil and bio-oil resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

**Dynamic information**
- **Bend radius**
  - e-chain® linear: minimum 4 x d
  - flexible: minimum 4 x d
  - fixed: minimum 3 x d
- **Temperature**
  - e-chain® linear: -35 °C up to +90 °C
  - flexible: -50 °C up to +90 °C (following DIN EN 60811-504)
  - fixed: -55 °C up to +90 °C (following DIN EN 50305)

**v max.**
- unsupported: 10 m/s
- gliding: 6 m/s

**a max.**
- 100 m/s²

**Travel distance**
- Short, very fast applications with small radii and restricted installation space, Class 5

**Cable structure**
- **Conductor**: Conductor consisting of a highly flexible special alloy.
- **Core insulation**: Mechanically high-quality TPE mixture.
- **Core structure**: Cores wound in a layer with especially short pitch length.
- **Core identification**: Colour code in accordance with DIN 47100.
  - CF99.02.02.INI: brown, blue, black
  - CF99.03.04.INI: brown, blue, black, white
- **Inner jacket**: TPE mixture adapted to suit the requirements in e-chains®.
- **Overall shield**: Extremely bending resistant braiding made of alloy wires.
  - Coverage approx. 70 % linear, approx. 90 % optical
- **Outer shield**: Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®.
- **Outer jacket**: Steel-blue (similar to RAL 5011)

**Electrical information**
- **Nominal voltage**: 300/300 V
- **Testing voltage**: 1500 V