# Data sheet

**chainflex® CF888**

Bus cable (Class 3.1.1.1) • For flexing applications • PVC outer jacket • Shielded • Flame retardant

---

<table>
<thead>
<tr>
<th>Profibus</th>
<th>CAN-Bus</th>
<th>Ethernet (CAT5/CAT5e/GigE/PoE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.001</td>
<td>CF888.021</td>
<td>CF888.045</td>
</tr>
</tbody>
</table>

---

**Profinet (Type C)**

CF888.060

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**Data sheet**

**chainflex® CF888**

**Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant**

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**Cable structure**

- **Conductor**: Conductor consisting of bare copper wires (according to DIN EN 60228).
- **Core insulation**: According to bus specification.
- **Core structure**: According to bus specification.
- **Core identification**: According to bus specification. ▶ Product range table
- **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: Red lilac (similar to RAL 4001), Variants ▶ Product range table
  - Printing: black

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```
"00000 m" igus chainflex CF888.001 (2x0.25)C...
```

---

**Guaranteed service life according to guarantee conditions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>1 million</th>
<th>3 million</th>
<th>5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5/+15</td>
<td>17.5</td>
<td>18.5</td>
<td>19.5</td>
</tr>
<tr>
<td>+15/+60</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>+60/+70</td>
<td>17.5</td>
<td>18.5</td>
<td>19.5</td>
</tr>
</tbody>
</table>

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

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Example image

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Properties and approvals

Flame retardant
According to IEC 60332-1-2, CE1 20-35, FT1, VW-1

Silicone-free
Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

UL/CSA
CF888.001: Style 1589 and 2560, 30 V, 60 °C
CF888.021-CF888.060: Style 1589 and 2571, 30 V, 80 °C

NFPA
Following NFPA 79-2018, chapter 12.9

EAC
Certificate No. RU-C-DE.ME77.B.01559 (TR ZU)

CTP
Certificate No. C-DE.PB49.B.00449 (Fire protection)

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

CE
Following 2014/35/EU

Dynamic information

Bend radius
- e-chain® linear
  - min. 15 x d flexible
  - min. 12 x d fixed

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

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

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Typical lab test setup for this cable series

- Test bend radius $R$  
  approx. 75 - 100 mm
- Test travel $S/2$  
  approx. 1 - 15 m
- Test duration  
  minimum 2 - 4 million double strokes
- Test speed  
  approx. 0,5 - 2 m / s
- Test acceleration  
  approx. 0.5 - 1.5 m / s²

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

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**Data sheet**  
**chainflex® CF888**

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---

**Technical tables:**  
**Mechanical information**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Number of cores and conductor nominal cross section [mm²]</th>
<th>Outer diameter (d) max. [mm]</th>
<th>Copper index [kg/km]</th>
<th>Weight [kg/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profibus (1x2x0,64 mm)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF888.001</td>
<td>(2x0.25)C</td>
<td>8.0</td>
<td>18</td>
<td>61</td>
</tr>
<tr>
<td><strong>CAN-Bus</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF888.021</td>
<td>(2x0.5)C</td>
<td>8.5</td>
<td>24</td>
<td>80</td>
</tr>
<tr>
<td><strong>Ethernet/CAT5e</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF888.045</td>
<td>(4x(2x0.14))C</td>
<td>7.5</td>
<td>25</td>
<td>66</td>
</tr>
<tr>
<td><strong>Profinet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF888.060</td>
<td>(4x0.34)C</td>
<td>7.0</td>
<td>25</td>
<td>56</td>
</tr>
</tbody>
</table>

1) The chainflex® types marked with 2) are cables designed as a star-quad.  
2) Colour outer jacket: Yellow-green (similar to RAL 6018)  
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.
Data sheet
chainflex® CF888

Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant

Profibus
CF888.001

Cable structure
(Electrical information please see next page)

1. Outer jacket: Pressure extruded PVC mixture
2. Overall shield: Braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Banding: Plastic foil
5. Filler: Plastic yarns
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Stranded conductor consisting of bare copper wires

Example image
For detailed overview please see design table

Design table

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Core group</th>
<th>Colour code</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.001</td>
<td>2x0.25</td>
<td>red, green</td>
<td></td>
</tr>
</tbody>
</table>

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Data sheet
chainflex® CF888

Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant

Profibus
CF888.001

Electrical information
(Cable structure please see previous page)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>CF888.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>50 V</td>
</tr>
<tr>
<td>Testing voltage</td>
<td>500 V</td>
</tr>
<tr>
<td>(following DIN EN 50289-1-3)</td>
<td></td>
</tr>
<tr>
<td>Characteristic wave impedance</td>
<td>150 ± 15 Ω (at 3-16 MHz)</td>
</tr>
</tbody>
</table>

Line attenuation approx. [dB/100m]

<table>
<thead>
<tr>
<th>Part No.</th>
<th>9.6 kHz</th>
<th>38.4 kHz</th>
<th>4 MHz</th>
<th>16 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.001</td>
<td>0.3</td>
<td>0.4</td>
<td>2.5</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Conductor nominal cross section

<table>
<thead>
<tr>
<th>[mm²]</th>
<th>[Ω/km]</th>
<th>[A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>88</td>
<td>5</td>
</tr>
</tbody>
</table>

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.
Data sheet
chainflex® CF888

Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant

CAN-Bus
CF888.021

Cable structure
(Electrical information please see next page)

1. Outer jacket: Pressure extruded PVC mixture
2. Overall shield: Braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Banding: Plastic foil
5. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
6. Conductor: Stranded conductor consisting of bare copper wires
7. Filler: Plastic dummy

Example image
For detailed overview please see design table

Design table

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Core group</th>
<th>Colour code</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.021</td>
<td>2x0.5</td>
<td>white, brown</td>
<td></td>
</tr>
</tbody>
</table>

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Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant

CAN-Bus
CF888.021

Electrical information
(Cable structure please see previous page)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>CF888.021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>50 V</td>
</tr>
<tr>
<td>Testing voltage (following DIN EN 50289-1-3)</td>
<td>500 V</td>
</tr>
<tr>
<td>Characteristic wave impedance (following DIN EN 50289-1-11)</td>
<td>120 ± 12 Ω (at 1 MHz)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conductor nominal cross section</th>
<th>Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)</th>
<th>Maximum current rating at 30 °C (following DIN VDE 0298-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[mm²]</td>
<td>[Ω/km]</td>
<td>[A]</td>
</tr>
<tr>
<td>0.5</td>
<td>39</td>
<td>10</td>
</tr>
</tbody>
</table>

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.
Data sheet
chainflex® CF888

Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant

Ethernet (CAT5/CAT5e/GigE/PoE)
CF888.045

Cable structure
(For detailed overview please see design table)

1. Outer jacket: Pressure extruded PVC mixture
2. Overall shield: Braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Banding: Plastic foil
5. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
6. Conductor: Stranded conductor consisting of bare copper wires

Design table

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Core group</th>
<th>Colour code</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.045</td>
<td>4x(2x0.14)</td>
<td>white-blue/blue, white-orange/orange, white-green/green, white-brown/brown</td>
<td><img src="example_image" alt="Drawing" /></td>
</tr>
</tbody>
</table>

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Ethernet (CAT5/CAT5e/GigE/PoE)
CF888.045

Electrical information
(Cable structure please see previous page)

<table>
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<th>Part No.</th>
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</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>50 V</td>
</tr>
<tr>
<td>Testing voltage</td>
<td>500 V</td>
</tr>
<tr>
<td>(following DIN EN 50289-1-3)</td>
<td></td>
</tr>
<tr>
<td>Characteristic wave impedance</td>
<td>100 ± 25 Ω</td>
</tr>
<tr>
<td>(following DIN EN 50289-1-11)</td>
<td></td>
</tr>
<tr>
<td>Operating capacity</td>
<td>47 pF/m</td>
</tr>
<tr>
<td>Nominal Velocity of Propagation (NVP)</td>
<td>67 %</td>
</tr>
</tbody>
</table>

Line attenuation approx. [dB/100m]

<table>
<thead>
<tr>
<th>Part No.</th>
<th>1 MHz</th>
<th>4 MHz</th>
<th>10 MHz</th>
<th>16 MHz</th>
<th>20 MHz</th>
<th>31.25 MHz</th>
<th>62.5 MHz</th>
<th>100 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.045</td>
<td>3.2</td>
<td>6.0</td>
<td>9.5</td>
<td>12.1</td>
<td>13.6</td>
<td>17.1</td>
<td>14.8</td>
<td>32.0</td>
</tr>
</tbody>
</table>

Conductor nominal cross section

<table>
<thead>
<tr>
<th>[mm²]</th>
<th>[Ω/km]</th>
<th>[A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.14</td>
<td>145</td>
<td>2.5</td>
</tr>
</tbody>
</table>

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

**chainflex® CF888**

**Bus cable (Class 3.1.1.1) ● For flexing applications ● PVC outer jacket ● Shielded ● Flame retardant**

---

**Profinet (Type C)**

CF888.060

**Cable structure**

(Electrical information please see next page)

1. Outer jacket: Pressure extruded PVC mixture
2. Overall shield: Braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Banding: Plastic foil
5. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
6. Conductor: Stranded conductor consisting of bare copper wires
7. Filler: Plastic yarns

**Example image**

For detailed overview please see design table

**Design table**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Core group</th>
<th>Colour code</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.060</td>
<td>4x0.34</td>
<td>white, orange, blue, yellow (Star-quad)</td>
<td></td>
</tr>
</tbody>
</table>
**Data sheet**

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Bus cable (Class 3.1.1.1) • For flexing applications • PVC outer jacket • Shielded • Flame retardant

---

**Profinet (Type C)**

CF888.060

**Electrical information**

(Cable structure please see previous page)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>CF888.060</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>50 V</td>
</tr>
<tr>
<td>Testing voltage</td>
<td>500 V</td>
</tr>
<tr>
<td>Characteristic wave impedance</td>
<td>100 ± 15 Ω</td>
</tr>
<tr>
<td>Operating capacity</td>
<td>53 pF/m</td>
</tr>
<tr>
<td>Nominal Velocity of Propagation (NVP)</td>
<td>67 %</td>
</tr>
</tbody>
</table>

**Nominal voltage**

50 V

**Testing voltage**

(following DIN EN 50289-1-3)

500 V

**Characteristic wave impedance**

(assuming DIN EN 50289-1-11)

100 ± 15 Ω

**Operating capacity**

53 pF/m

**Nominal Velocity of Propagation (NVP)**

67 %

**Line attenuation approx. [dB/100m]**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>1 MHz</th>
<th>4 MHz</th>
<th>10 MHz</th>
<th>16 MHz</th>
<th>20 MHz</th>
<th>31.25 MHz</th>
<th>62.5 MHz</th>
<th>100 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF888.060</td>
<td>3.2</td>
<td>6.0</td>
<td>9.5</td>
<td>12.1</td>
<td>13.6</td>
<td>17.1</td>
<td>14.8</td>
<td>32.0</td>
</tr>
</tbody>
</table>

**Conductor nominal cross section**

[mm²] [Ω/km] [A]

<table>
<thead>
<tr>
<th>[mm²]</th>
<th>0.34</th>
<th>59</th>
<th>7</th>
</tr>
</thead>
</table>

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

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