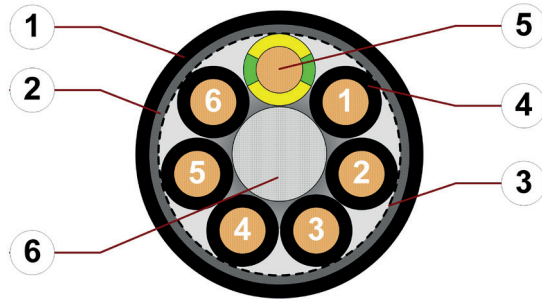


# Data sheet

## chainflex® CF891



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



1. Outer jacket: Pressure extruded iguPUR mixture
2. Overall shield: Braiding made of tinned copper wires
3. Banding: Plastic foil
4. Core insulation: Mechanically high-quality TPE mixture
5. Conductor: Stranded conductor consisting of bare copper wires
6. Filling: Plastic yarns

### Example image

For detailed overview please see design table

### Cable structure

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

„00000 m\*\*\* igus chainflex M CF891.---① ---② 300/500V E310776

cRUus AWM Style 20940 VW-1 AWM I/II A/B 80°C 600V FT1 EAC/CTP CE

RoHS-II conform [www.igus.de](http://www.igus.de) +++ chainflex cable works +++

\* Length printing: Not calibrated. Only intended as an orientation aid.

① / ② Cable identification according to Part No. (see technical table).

Example: ... chainflex ... CF891.10.04 ... (4G1.0)C ... 300 V/500 V ...



igus 36-month  
chainflex cable  
guarantee and  
service life  
calculator based  
on 2 billion test  
cycles per year



# Data sheet

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Control cable (Class 3.1.3.1) • For flexing applications • iguPUR outer jacket • Oil-resistant  
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### Dynamic information

|                                                                                   |                        |                                                           |                                                                                                                         |
|-----------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
|  | <b>Bend radius</b>     | <b>e-chain® linear</b><br><b>flexible</b><br><b>fixed</b> | minimum 12.5 x d<br>minimum 10 x d<br>minimum 7 x d                                                                     |
|  | <b>Temperature</b>     | <b>e-chain® linear</b><br><b>flexible</b><br><b>fixed</b> | -20 °C up to +80 °C<br>-40 °C up to +80 °C (following DIN EN 60811-504)<br>-50 °C up to +80 °C (following DIN EN 50305) |
|  | <b>v max.</b>          | <b>unsupported</b>                                        | 3 m/s                                                                                                                   |
|  | <b>a max.</b>          |                                                           | 20 m/s <sup>2</sup>                                                                                                     |
|  | <b>Travel distance</b> |                                                           | Unsupported travel distances up to 10 m, Class 1                                                                        |

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

### Guaranteed service life according to guarantee conditions

| Double strokes            | 1 million           | 3 million           | 5 million           |
|---------------------------|---------------------|---------------------|---------------------|
| Temperature, from/to [°C] | R min. [factor x d] | R min. [factor x d] | R min. [factor x d] |
| -20/-10                   | 15                  | 16                  | 17                  |
| -10/+70                   | 12.5                | 13.5                | 14.5                |
| +70/+80                   | 15                  | 16                  | 17                  |

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

### Electrical information

|                                                                                     |                        |                                   |
|-------------------------------------------------------------------------------------|------------------------|-----------------------------------|
|  | <b>Nominal voltage</b> | 300/500 V<br>600 V (following UL) |
|  | <b>Testing voltage</b> | 2000 V (following DIN EN 50395)   |



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



Example image

igus® chainflex® CF891

# Data sheet

## chainflex® CF891



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



### Properties and approvals

|  |                 |                                                                                                                                        |
|--|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
|  | UV resistance   | Medium                                                                                                                                 |
|  | Oil resistance  | Oil-resistant (following DIN EN 50363-10-2), Class 3                                                                                   |
|  | Flame retardant | According to IEC 60332-1-2, FT1, VW-1                                                                                                  |
|  | Silicone-free   | Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)                                                 |
|  | UL verified     | Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“ |
|  | UL/CSA AWM      | See table UL/CSA AWM for details                                                                                                       |
|  | EAC             | Certificate No. RU C-DE.ME77.B.00300/19 (TR ZU)                                                                                        |
|  | REACH           | In accordance with regulation (EC) No. 1907/2006 (REACH)                                                                               |
|  | Lead-free       | Following 2011/65/EC (RoHS-II/RoHS-III)                                                                                                |
|  | CE              | Following 2014/35/EU                                                                                                                   |

### Properties and approvals

#### UL/CSA AWM Details

| Conductor nominal cross section [mm²] | Number of cores | UL style core insulation | UL style outer jacket | UL Voltage Rating [V] | UL Temperature Rating [°C] |
|---------------------------------------|-----------------|--------------------------|-----------------------|-----------------------|----------------------------|
| 0.5                                   | 2-25            | 11323                    | 20940                 | 600                   | 80                         |
| 0.75                                  | 2-25            | 11323                    | 20940                 | 600                   | 80                         |
| 1                                     | 2-25            | 11323                    | 20940                 | 600                   | 80                         |
| 1.5                                   | 2-25            | 11323                    | 20940                 | 600                   | 80                         |
| 2.5                                   | 4-25            | 11323                    | 20940                 | 600                   | 80                         |



Example image

# Data sheet

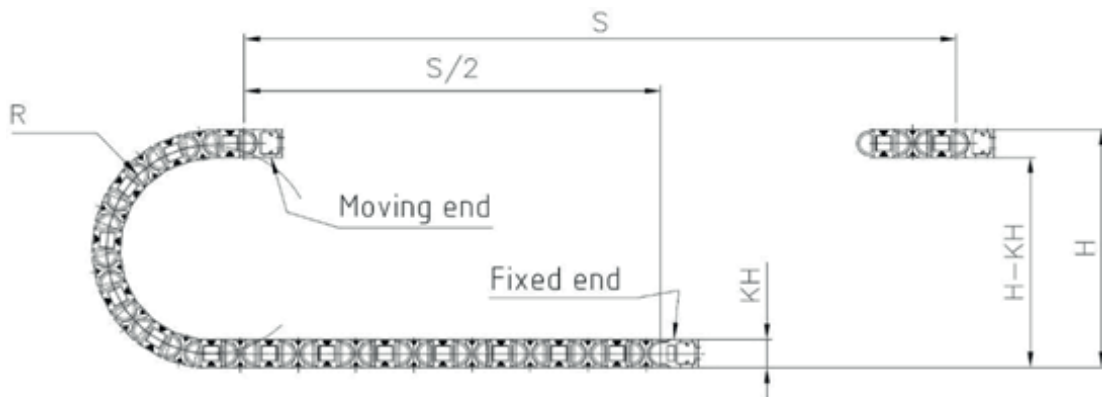
## chainflex® CF891



Control cable (Class 3.1.3.1) ● For flexing applications ● iguPUR outer jacket ● Oil-resistant  
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### Typical lab test setup for this cable series

|                    |                                      |
|--------------------|--------------------------------------|
| Test bend radius R | approx. 75 - 225 mm                  |
| Test travel S      | approx. 1 - 15 m                     |
| Test duration      | minimum 2 - 4 million double strokes |
| Test speed         | approx. 0.5 - 2 m / s                |
| Test acceleration  | approx. 0.5 - 1.5 m / s <sup>2</sup> |



### 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



Example image



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



# Data sheet

## chainflex® CF891



Control cable (Class 3.1.3.1) • For flexing applications • iguPUR outer jacket • Oil-resistant  
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### Technical tables:

#### Mechanical information

| Part No.                  | Number of cores and conductor nominal cross section [mm²] | Outer diameter (d) max. [mm] | Copper index [kg/km] | Weight [kg/km] |
|---------------------------|-----------------------------------------------------------|------------------------------|----------------------|----------------|
| CF891.05.02               | (2x0.5)C                                                  | 6.0                          | 18                   | 37             |
| CF891.05.03               | (3G0.5)C                                                  | 6.0                          | 28                   | 45             |
| CF891.05.05               | (5G0.5)C                                                  | 7.0                          | 41                   | 62             |
| CF891.05.12               | (12G0.5)C                                                 | 9.0                          | 91                   | 122            |
| CF891.05.18               | (18G0.5)C                                                 | 11.0                         | 136                  | 174            |
| CF891.05.25               | (25G0.5)C                                                 | 13.0                         | 210                  | 234            |
| CF891.07.02               | (2x0.75)C                                                 | 6.5                          | 30                   | 48             |
| CF891.07.03               | (3G0.75)C                                                 | 7.0                          | 37                   | 63             |
| CF891.07.04               | (4G0.75)C                                                 | 7.5                          | 46                   | 68             |
| CF891.07.05               | (5G0.75)C                                                 | 8.0                          | 61                   | 85             |
| CF891.07.07               | (7G0.75)C                                                 | 9.0                          | 83                   | 109            |
| CF891.07.12               | (12G0.75)C                                                | 10.5                         | 124                  | 166            |
| CF891.07.18               | (18G0.75)C                                                | 12.0                         | 183                  | 232            |
| CF891.07.25               | (25G0.75)C                                                | 14.5                         | 222                  | 299            |
| CF891.10.02               | (2x1.0)C                                                  | 6.5                          | 30                   | 50             |
| CF891.10.03               | (3G1.0)C                                                  | 7.0                          | 46                   | 71             |
| CF891.10.04               | (4G1.0)C                                                  | 7.5                          | 63                   | 98             |
| CF891.10.05               | (5G1.0)C                                                  | 8.0                          | 76                   | 105            |
| CF891.10.07               | (7G1.0)C                                                  | 9.5                          | 100                  | 126            |
| CF891.10.12               | (12G1.0)C                                                 | 11.5                         | 167                  | 224            |
| CF891.10.18               | (18G1.0)C                                                 | 13.0                         | 213                  | 276            |
| CF891.10.25               | (25G1.0)C                                                 | 16.0                         | 291                  | 382            |
| CF891.15.02               | (2x1.5)C                                                  | 7.5                          | 60                   | 69             |
| CF891.15.03               | (3G1.5)C                                                  | 7.5                          | 63                   | 85             |
| CF891.15.04               | (4G1.5)C                                                  | 8.5                          | 90                   | 108            |
| CF891.15.05               | (5G1.5)C                                                  | 9.0                          | 94                   | 129            |
| CF891.15.07               | (7G1.5)C                                                  | 11.0                         | 153                  | 177            |
| CF891.15.12               | (12G1.5)C                                                 | 13.0                         | 212                  | 276            |
| CF891.15.25               | (25G1.5)C                                                 | 18.5                         | 425                  | 560            |
| CF891.25.04               | (4G2.5)C                                                  | 10.0                         | 141                  | 157            |
| CF891.25.05               | (5G2.5)C                                                  | 11.0                         | 149                  | 192            |
| CF891.25.07               | (7G2.5)C                                                  | 13.0                         | 204                  | 255            |
| CF891.25.12 <sup>1)</sup> | (12G2.5)C                                                 | 16.0                         | 342                  | 420            |
| CF891.25.25 <sup>1)</sup> | (25G2.5)C                                                 | 22.5                         | 681                  | 843            |

<sup>1)</sup> 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



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



# Data sheet

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### Electrical information

| Conductor nominal cross section [mm²] | Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km] | Max. current rating at 30 °C [A] |
|---------------------------------------|---------------------------------------------------------------------------|----------------------------------|
| 0.5                                   | 39                                                                        | 10                               |
| 0.75                                  | 26                                                                        | 14                               |
| 1                                     | 19.5                                                                      | 17                               |
| 1.5                                   | 13.3                                                                      | 21                               |
| 2.5                                   | 8                                                                         | 30                               |

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



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



Example image



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### Design table

| Part No.    | Number of cores | Core design | Part No.    | Number of cores | Core design |
|-------------|-----------------|-------------|-------------|-----------------|-------------|
| CF891.XX.02 | 2               |             | CF891.XX.07 | 7               |             |
| CF891.XX.03 | 3               |             | CF891.XX.12 | 12              |             |
| CF891.XX.04 | 4               |             | CF891.XX.18 | 18              |             |
| CF891.XX.05 | 5               |             | CF891.XX.25 | 25              |             |

Guarantee  
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month guarantee

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Example image