# Control cable | TPE | chainflex® CF99

- For heaviest duty applications and especially small radii up to 4 x d
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant


Example image

## 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 to +90 °C |
| | flexible | -50 °C to +90 °C (following DIN EN 60811-504) |
| | fixed | -55 °C 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 tight design space, Class 5 |

## Cable structure

| | |
|---|---|
| Conductor | Conductor consisting of a special highly flexible alloy. |
| Core insulation | Mechanically high-quality TPE mixture. |
| Core structure | Cores wound in a layer with a short pitch length. |
| Core identification | **Colour code in accordance with DIN 47100.**<br>CF99.02.03.INI: brown, blue, black<br>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, special alloy shield.<br>Coverage approx. 70 % inear, approx. 90 % optical |
| Outer jacket | Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®.<br>Colour: Steel-blue (similar to RAL 5011) |

## Electrical information

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





| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Basic requirements | low | 1 | 2 | 3 | 4 | 5 | 6 | **7** | highest | |
| Travel distance | unsupported | 1 | 2 | 3 | 4 | **5** | 6 | ≥ 400 m | | |
| Oil resistance | none | 1 | 2 | 3 | **4** | highest | | | | |
| Torsion | none | **1** | 2 | 3 | ±180° | | | | | |

# Class 7.5.4.1

## 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. |
| 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. RU C-DE.ME77.B.01254 (TR ZU) |
| Lead-free | Following 2011/65/EU (RoHS-II). |
| Cleanroom | According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1. |
| CE | Following 2014/35/EU. |

## Guaranteed lifetime according to guarantee conditions (Page 22-23)

| Double strokes* | 20 million | 30 million | 40 million |
|---|---|---|---|
| Temperature, from/to [°C] | R min. [factor x d] | R min. [factor x d] | R min. [factor x d] |
| -35/-25 | 5 | 6 | 7 |
| -25/+80 | 4 | 5 | 6 |
| +80/+90 | 5 | 6 | 7 |

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

## Typical mechanical application areas

- For heaviest duty applications and especially small radii up to 4 x d
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV resistant
- Especially for short, very fast applications with small radii and tight design space
- Pick and place machines, automatic doors, Clean room, very quick handling equipment

| Part No. | Number of cores and conductor nominal cross section [mm²] | Outer diameter (d) max. mm | Copper index kg/km | Weight kg/km |
|---|---|---|---|---|
| CF99.01.02 | (2x0.14)C | 5.5 | 14 | 33 |
| CF99.01.04 | (4x0.14)C | 6.0 | 21 | 43 |
| CF99.01.08 | (8x0.14)C | 8.0 | 36 | 69 |
| CF99.02.04 | (4x0.25)C | 6.5 | 30 | 56 |
| CF99.02.07 | (7x0.25)C | 8.0 | 48 | 85 |
| CF99.03.08 | (8x0.34)C | 9.0 | 64 | 105 |

**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