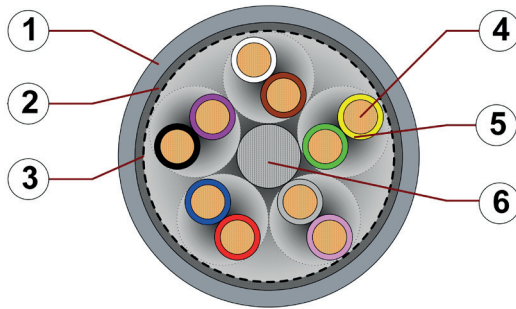


Data sheet

chainflex® CF211



Data cable (Class 5.5.2.1) • For heavy duty applications • PVC outer jacket • Shielded
• Twisted pair • Oil-resistant • Flame-retardant



1. Outer jacket: Pressure extruded, oil-resistant PVC mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Banding: Plastic foil
4. Conductor: Very finely stranded special cores of particularly high-flex design made of bare copper wires
5. Core insulation: Mechanically high-quality TPE mixture
6. Strain relief: Tensile stress-resistant centre element

Example image

For detailed overview please see design table

Cable structure



Conductor

Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.



Core insulation

Mechanically high-quality TPE mixture.



Core structure

Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.



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 linear approx. 70%, optical approx. 90%



Outer jacket

Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1).
Colour: Silver-grey (similar to RAL 7001)
Printing: black

„00000 m“* igus chainflex CF211.---.02① -----② E310776 cRUus

AWM Style 2464 VW-1 AWM I/II A/B 80°C 300V FT1 CE

RoHS-II conform 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 CF211.02.04.02 (4x(2x0.25))C E310776 ...



igus 4-year
chainflex cable
guarantee and
service life
calculator based
on 2 billion test
cycles per year



Data sheet






chainflex® CF211



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Dynamic information

| | | | |
|---|------------------------|--|---|
|  | Bend radius | e-chain® linear flexible fixed | minimum 7.5 x d minimum 6 x d minimum 4 x d |
|  | Temperature | e-chain® linear flexible fixed | +5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504) -15°C up to +70°C (following DIN EN 50305) |
|  | v max. | unsupported gliding | 5m/s 3m/s |
|  | a max. | | 50m/s ² |
|  | Travel distance | Unsupported travels and up to 100m for gliding applications, Class 5 | |

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 | 5 million | 7.5 million | 10 million |
|---------------------------|--------------|--------------|--------------|
| Temperature, from/to [°C] | R min. [x d] | R min. [x d] | R min. [x d] |
| +5/+15 | 10 | 11 | 12 |
| +15/+60 | 7.5 | 8.5 | 9.5 |
| +60/+70 | 10 | 11 | 12 |

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

Electrical information

| | | |
|---|------------------------|--|
|  | Nominal voltage | 300/300V (following DIN VDE 0298-3) 300V (following UL) |
|  | Testing voltage | 1500V (following DIN EN 50395) |














Data sheet

chainflex® CF211



Data cable (Class 5.5.2.1) • For heavy duty applications • PVC outer jacket • Shielded
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Properties and approvals

| | | |
|---|------------------------|---|
|  | Oil resistance | Oil-resistant (following DIN EN 50363-4-1), Class 2 |
|  | Flame-retardant | According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame |
|  | Silicone-free | Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992) |
|  | PTFE-free | The design of these products does not contain PTFE |
|  | 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 details |
|  | NFPA | Following NFPA 79-2018, chapter 12.9 |
|  | REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  | Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  | Cleanroom | According to ISO Class 1. The outer jacket material of this series complies with CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1 |
|  | 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] |
|---------------------------------------|-----------------|--------------------------|-----------------------|-----------------------|----------------------------|
| 0.25 | 2-28 | 10493 | 2464 | 300 | 80 |
| 0.34 | 6-16 | 10493 | 2464 | 300 | 80 |
| 0.5 | 2-28 | 10493 | 2464 | 300 | 80 |



igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



Example image

igus® chainflex® CF211 DATA

Data sheet

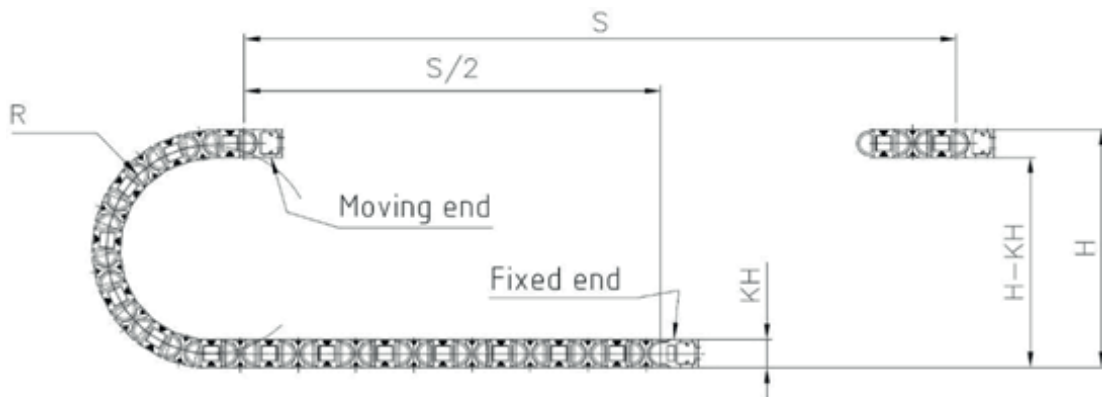
chainflex® CF211



Data cable (Class 5.5.2.1) • For heavy duty applications • PVC outer jacket • Shielded
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Typical lab test setup for this cable series

| | |
|--------------------|--------------------------------------|
| Test bend radius R | approx. 35 - 75 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 ² |



Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 100m 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, machining units/packages machines, handling, indoor cranes

Example image



Data sheet

chainflex® CF211



Data cable (Class 5.5.2.1) ● For heavy duty applications ● PVC outer jacket ● Shielded
● Twisted pair ● Oil-resistant ● Flame-retardant

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] |
|------------------------------|---|------------------------------|----------------------|----------------|
| CF211.02.01.02 | (2x0.25)C | 5.0 | 18 | 33 |
| CF211.02.02.02 ²⁾ | (2x(2x0.25))C | 6.0 | 25 | 51 |
| CF211.02.03.02 | (3x(2x0.25))C | 7.0 | 36 | 63 |
| CF211.02.04.02 | (4x(2x0.25))C | 7.5 | 44 | 76 |
| CF211.02.05.02 | (5x(2x0.25))C | 8.5 | 52 | 92 |
| CF211.02.06.02 | (6x(2x0.25))C | 9.0 | 62 | 105 |
| CF211.02.08.02 | (8x(2x0.25))C | 10.5 | 78 | 137 |
| CF211.02.10.02 | (10x(2x0.25))C | 12.0 | 90 | 170 |
| CF211.02.14.02 | (14x(2x0.25))C | 12.0 | 119 | 204 |
| CF211.03.03.02 | (3x(2x0.34))C | 8.0 | 44 | 86 |
| CF211.03.08.02 | (8x(2x0.34))C | 12.0 | 102 | 206 |
| CF211.05.01.02 | (2x0.5)C | 6.0 | 26 | 51 |
| CF211.05.02.02 ²⁾ | (2x(2x0.5))C | 7.0 | 46 | 90 |
| CF211.05.03.02 | (3x(2x0.5))C | 9.0 | 61 | 109 |
| CF211.05.04.02 | (4x(2x0.5))C | 9.5 | 74 | 125 |
| CF211.05.05.02 | (5x(2x0.5))C | 11.0 | 91 | 153 |
| CF211.05.06.02 | (6x(2x0.5))C | 11.5 | 103 | 189 |
| CF211.05.08.02 | (8x(2x0.5))C | 13.0 | 137 | 234 |
| CF211.05.10.02 | (10x(2x0.5))C | 15.5 | 181 | 326 |
| CF211.05.14.02 | (14x(2x0.5))C | 16.0 | 193 | 341 |

²⁾ The chainflex® types marked with 2) are cables designed as a star-quad.

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

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

Electrical information

| 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] |
|---------------------------------------|---|----------------------------------|
| 0.25 | 79 | 5 |
| 0.34 | 57 | 7 |
| 0.5 | 39 | 10 |

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



Example image

igus® chainflex® CF211 DATA

Data sheet

chainflex® CF211



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Design table

| Part No. | Number of cores | Core design | Part No. | Number of cores | Core design |
|----------------|-----------------|-------------|----------------|-----------------|-------------|
| CF211.XX.01.02 | 2 | | CF211.XX.06.02 | 6x2 | |
| CF211.XX.02.02 | 4 | | CF211.XX.08.02 | 8x2 | |
| CF211.XX.03.02 | 3x2 | | CF211.XX.10.02 | 10x2 | |
| CF211.XX.04.02 | 4x2 | | CF211.XX.14.02 | 14x2 | |
| CF211.XX.05.02 | 5x2 | | | | |



Data sheet

chainflex® CF211



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Colour code in accordance with DIN 47100

| Conductor no. | Colours according to DIN ISO 47100 | Conductor no. | Colours according to DIN ISO 47100 |
|---------------|------------------------------------|---------------|------------------------------------|
| 1 | white | 19 | white-pink |
| 2 | brown | 20 | pink-brown |
| 3 | green | 21 | white-blue |
| 4 | yellow | 22 | brown-blue |
| 5 | grey | 23 | white-red |
| 6 | pink | 24 | brown-red |
| 7 | blue | 25 | white-black |
| 8 | red | 26 | brown-black |
| 9 | black | 27 | grey-green |
| 10 | violet | 28 | yellow-grey |
| 11 | grey-pink | 29 | pink-green |
| 12 | red-blue | 30 | yellow-pink |
| 13 | white-green | 31 | green-blue |
| 14 | brown-green | 32 | yellow-blue |
| 15 | white-yellow | 33 | green-red |
| 16 | yellow-brown | 34 | yellow-red |
| 17 | white-grey | 35 | green-black |
| 18 | grey-brown | 36 | yellow-black |

