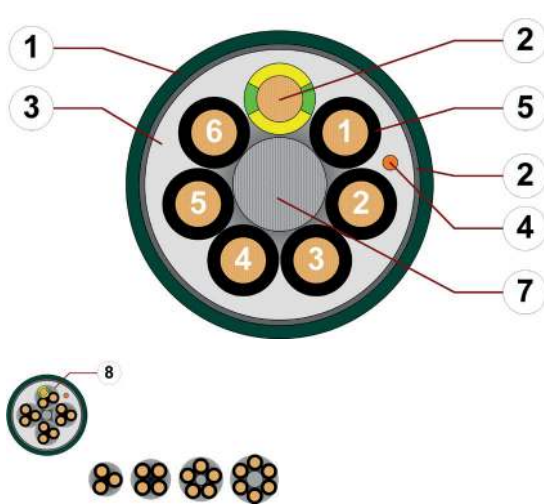


# Data sheet

## chainflex® CF6



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



1. Outer jacket: Pressure extruded, oil-resistant PVC mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling PVC mixture
4. CFRIP: Tear strip for faster cable stripping
5. Core insulation: Mechanically high-quality TPE or PVC mixture
6. Conductor: Fine-wire stranded conductor consisting of bare copper wires
7. Strain relief: Tensile stress-resistant centre element
8. 12 cores or more: Bundles with optimised pitch length and pitch direction

**Example image**  
 For detailed overview please see design table

### Cable structure

	<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	<b>Cores <math>\leq 0.5 \text{ mm}^2</math>:</b> Mechanically high-quality TPE mixture. <b>Cores <math>\geq 0.75 \text{ mm}^2</math>:</b> Mechanically high-quality PVC mixture.
	<b>Core structure</b>	<b>Number of cores <math>&lt; 12</math>:</b> Cores wound in a layer with short pitch length. <b>Number of cores <math>\geq 12</math>:</b> 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.
	<b>Core identification</b>	<b>Cores <math>\leq 0.34 \text{ mm}^2</math>:</b> Colour code in accordance with DIN 47100. <b>Cores <math>\geq 0.5 \text{ mm}^2</math>:</b> Black cores with white numbers, one green-yellow core.
	<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
	<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Moss green (similar to RAL 6005) Printing: white
	<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ▶ <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

„00000 m\*\*\* igus chainflex CF6.--.① ----② 300/500V E310776  
 cRUus AWM Style 2570 VW-1 AWM I/II A/B 80°C 600V FT1 EAC CE UKCA  
 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 **CF6.02.04 (4x0.25)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

## chainflex® CF6








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



Example image  
igus® chainflex® CF6

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	minimum 6.8 x d minimum 5 x d minimum 4 x d
	<b>Temperature</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	+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)
	<b>v max.</b>	<b>unsupported</b> <b>gliding</b>	10 m/s 5 m/s
	<b>a max.</b>		80 m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travels and up to 100 m 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.

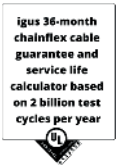
### Guaranteed service life according to guarantee conditions

Double strokes	5 million		7.5 million		10 million	
	< 10 m	≥ 10 m	< 10 m	≥ 10 m	< 10 m	≥ 10 m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	7.5	10	8.5	11	9.5	12
+15/+60	6.8	7.5	7.8	8.5	8.8	9.5
+60/+70	7.5	10	8.5	11	9.5	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

	<b>Nominal voltage</b>	300/500 V (following DIN VDE 0298-3) 600 V (following UL)
	<b>Testing voltage</b>	2000 V (following DIN EN 50395)



# Data sheet





## chainflex® CF6



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



### 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, 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)
-  **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** Details see table UL/CSA AWM
-  **NFPA** Following NFPA 79-2018, chapter 12.9
-  **EAC** Certificate No. RU C-DE.ME77.B.00300/19
-  **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 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
-  **UKCA** In accordance with the valid regulations of the United Kingdom (as at 08/2021)



### Properties and approvals

#### UL/CSA AWM Details

Conductor nominal cross section [mm <sup>2</sup> ]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
0.25	4-25	10492	2570	600	80
0.34	5	10492	2570	600	80
0.5	2-25	10492	2570	600	80
0.75	3-25	11113	2570	600	80
1	3-25	11113	2570	600	80
1.5	3-36	11113	2570	600	80
2.5	4	11113	2570	600	80

Example image

# Data sheet

## chainflex® CF6

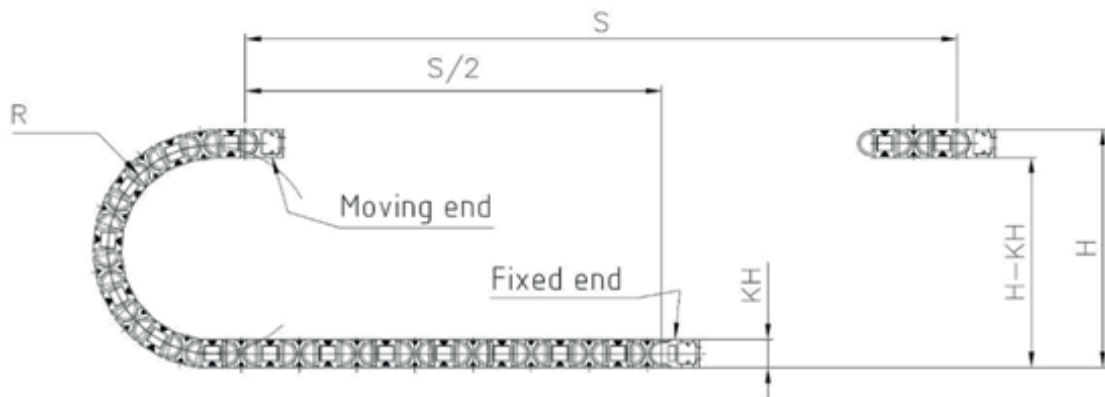


Control cable (Class 5.5.2.1) ● For heavy duty applications ● PVC outer jacket ● Shielded  
 ● Oil-resistant ● Flame retardant



### Typical lab test setup for this cable series

Test bend radius R	approx. 38 - 200 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 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/package machines, quick handling, indoor cranes



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



Example image

# Data sheet

## chainflex® CF6



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

### Technical tables:

#### Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF6.02.04	(4x0.25)C	7.0	29	61
CF6.02.25	(25x0.25)C	14.5	111	260
CF6.03.05	(5x0.34)C	7.5	37	90
CF6.05.02	(2x0.5)C	7.0	30	77
CF6.05.05	(5G0.5)C	8.5	49	106
CF6.05.07	(7G0.5)C	10.0	64	127
CF6.05.09	(9G0.5)C	12.0	80	154
CF6.05.12	(12G0.5)C	13.0	98	232
CF6.05.18	(18G0.5)C	15.0	145	286
CF6.05.25	(25G0.5)C	17.5	192	399
CF6.07.03	(3G0.75)C	8.0	46	98
CF6.07.04	(4G0.75)C	8.5	56	113
CF6.07.05	(5G0.75)C	9.0	67	128
CF6.07.07	(7G0.75)C	10.5	87	152
CF6.07.12	(12G0.75)C	14.0	128	266
CF6.07.18	(18G0.75)C	17.5	196	400
CF6.07.25	(25G0.75)C	19.5	265	536
CF6.10.03	(3G1.0)C	8.0	54	107
CF6.10.04	(4G1.0)C	9.0	65	116
CF6.10.05	(5G1.0)C	9.5	77	136
CF6.10.07	(7G1.0)C	12.0	103	205
CF6.10.12	(12G1.0)C	15.0	161	319
CF6.10.18	(18G1.0)C	19.0	245	482
CF6.10.25	(25G1.0)C	21.0	322	595
CF6.15.03	(3G1.5)C	9.0	72	122
CF6.15.04	(4G1.5)C	9.5	88	155
CF6.15.05	(5G1.5)C	10.5	105	177
CF6.15.07 <sup>17)</sup>	(7G1.5)C	12.5	146	258
CF6.15.12	(12G1.5)C	17.0	225	375
CF6.15.18	(18G1.5)C	21.0	345	581
CF6.15.25	(25G1.5)C	24.0	462	865
CF6.25.03	(3G2.5)C	10.5	107	180
CF6.25.04	(4G2.5)C	11.5	131	222

<sup>17)</sup> When using the cables with „7G1.5mm<sup>2</sup>“ and „G2.5mm<sup>2</sup>“ minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

**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



Example image



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



# Data sheet

## chainflex® CF6



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



Example image

### Electrical information

Conductor nominal cross section [mm <sup>2</sup> ]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Max. current rating at 30 °C [A]
0.25	79	4
0.34	57	5
0.5	39	8
0.75	26	12
1	19.5	15
1.5	13.3	18
2.5	8	26

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



# Data sheet

## chainflex® CF6



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



### Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF6.XX.02	2		CF6.XX.09	9	
CF6.XX.03	3		CF6.XX.12	4x3	
CF6.XX.04	4		CF6.XX.18	6x3	
CF6.XX.05	5		CF6.XX.25	5x5	
CF6.XX.07	7		CF6.XX.36	6x6	



# Data sheet

## chainflex® CF6



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



Example image

### 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

