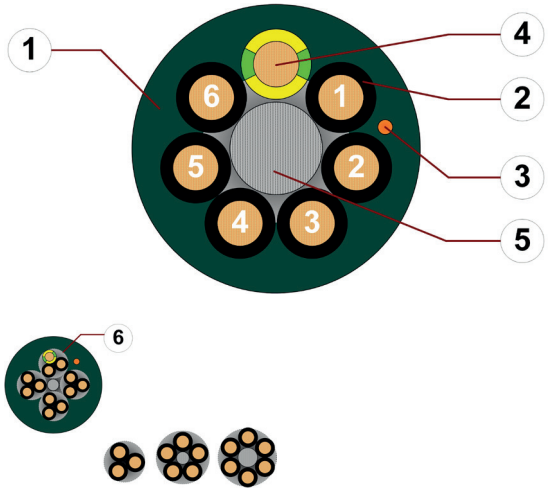


# Data sheet

## chainflex® CF5



Control cable (Class 5.5.2.2) • For heavy duty applications • PVC outer jacket • Oil-resistant  
• Flame retardant



1. Outer jacket: Pressure extruded, gusset-filling, oil-resistant PVC mixture
2. Core insulation: Mechanically high-quality TPE or PVC mixture
3. CFRIP: Tear strip for faster cable stripping
4. Conductor: Fine-wire stranded conductor consisting of bare copper wires
5. Strain relief: Tensile stress-resistant centre element
6. 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>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 outer jacket Video ▶ <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

„00000 m<sup>\*\*\*</sup> igus chainflex CF5.--.① ----② 300/500V E310776

cRUs AWM Style 2570 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 ... CF5.02.36 ... 36x0.25 ... 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® CF5









Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant ● Flame retardant



Example image  
igus® chainflex® CF5

### 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
	<b>Torsion</b>		± 90°, with 1 m cable length, Class 2



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
	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® CF5









Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant ● Flame retardant



Example image

### 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, 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 data sheet for details ► [www.igus.eu/CF5](http://www.igus.eu/CF5)
-  **NFPA** Following NFPA 79-2018, chapter 12.9
-  **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)
-  **Cleanroom** According to ISO Class 2, material/cable tested by IPA according to ISO standard 14644-1
-  **CE** Following 2014/35/EU



### 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	36	10492	2570	600	80
0.34	15-25	10492	2570	600	80
0.5	2-30	10492	2570	600	80
0.75	3-42	11113	2570	600	80
1	3-25	11113	2570	600	80
1.5	3-36	11113	2570	600	80
2.5	4-25	11113	2570	600	80

# Data sheet

## chainflex® CF5



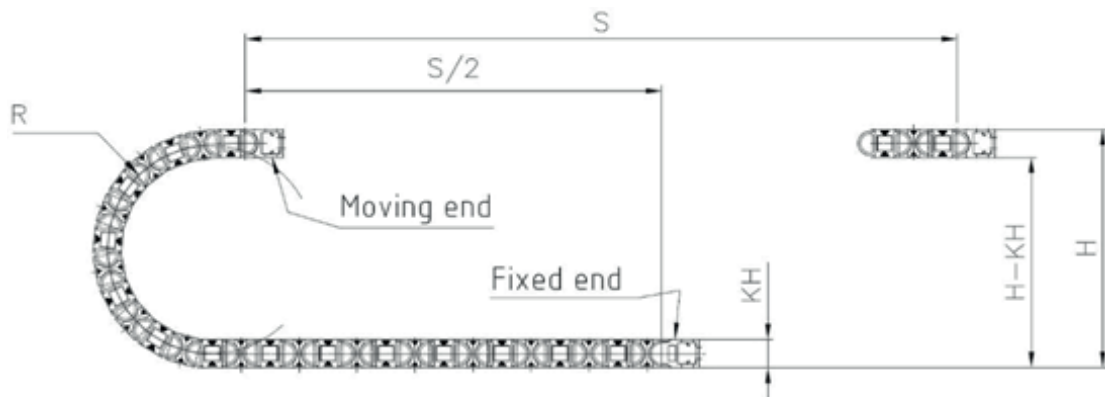
Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant ● Flame retardant



Example image

### 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
- Torsion  $\pm 90^\circ$ , with 1 m cable length, Class 2
- Preferably indoor applications, but also outdoor ones at temperatures  $> 5^\circ\text{C}$
- 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



# Data sheet

## chainflex® CF5



Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant  
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### 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]
CF5.02.36	36x0.25	15.0	99	209
CF5.03.15	15x0.34	11.0	55	113
CF5.03.18	18x0.34	12.0	67	143
CF5.03.25	25x0.34	14.0	92	194
CF5.05.02	2x0.5	6.0	11	38
CF5.05.03	3G0.5	6.0	16	41
CF5.05.04	4G0.5	6.5	21	47
CF5.05.05	5G0.5	7.0	25	59
CF5.05.07	7G0.5	8.0	36	78
CF5.05.12	12G0.5	11.0	61	131
CF5.05.18	18G0.5	13.0	91	190
CF5.05.25	25G0.5	16.0	124	281
CF5.05.30	30G0.5	18.0	149	325
CF5.07.03	3G0.75	6.5	23	54
CF5.07.04	4G0.75	7.0	32	67
CF5.07.05	5G0.75	7.5	39	82
CF5.07.07	7G0.75	9.0	56	115
CF5.07.12	12G0.75	12.5	91	189
CF5.07.18	18G0.75	15.0	134	269
CF5.07.25	25G0.75	17.5	190	384
CF5.07.36	36G0.75	22.0	267	587
CF5.07.42	42G0.75	23.5	313	745
CF5.10.03	3G1.0	6.5	31	56
CF5.10.04	4G1.0	7.0	41	78
CF5.10.05	5G1.0	8.0	50	94
CF5.10.07	7G1.0	9.5	74	130
CF5.10.12	12G1.0	13.0	119	227
CF5.10.18	18G1.0	16.5	179	306
CF5.10.25	25G1.0	19.5	248	487

**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® CF5



Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant  
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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]
CF5.15.03	3G1.5	7.5	46	74
CF5.15.04	4G1.5	8.0	61	105
CF5.15.05	5G1.5	9.0	75	127
CF5.15.07 <sup>17)</sup>	7G1.5	10.5	105	180
CF5.15.12	12G1.5	15.0	179	264
CF5.15.18	18G1.5	19.5	267	478
CF5.15.25	25G1.5	21.5	371	645
CF5.15.36	36G1.5	26.5	529	960
CF5.25.04	4G2.5	10.0	96	170
CF5.25.05	5G2.5	11.0	120	200
CF5.25.07 <sup>17)</sup>	7G2.5	13.0	169	279
CF5.25.12	12G2.5	18.5	284	480
CF5.25.18	18G2.5	23.5	427	765
CF5.25.25	25G2.5	27.5	591	1054

<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

# Data sheet

## chainflex® CF5



Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant  
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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.



# Data sheet

## chainflex® CF5

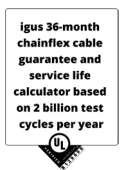


Control cable (Class 5.5.2.2) • For heavy duty applications • PVC outer jacket • Oil-resistant  
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### Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF5.XX.02	2		CF5.XX.15	5x3	
CF5.XX.03	3		CF5.XX.18	6x3	
CF5.XX.04	4		CF5.XX.25	5x5	
CF5.XX.05	5		CF5.XX.30	6x5	
CF5.XX.07	7		CF5.XX.36	6x6	
CF5.XX.12	4x3		CF5.XX.42	7x6	





# Data sheet

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Control cable (Class 5.5.2.2) ● For heavy duty applications ● PVC outer jacket ● Oil-resistant  
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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	Conductor no.	Colours according to DIN ISO 47100
1	white	22	brown-blue	43	blue-black
2	brown	23	white-red	44	red-black
3	green	24	brown-red	45	white-brown-black
4	yellow	25	white-black	46	yellow-green-black
5	grey	26	brown-black	47	grey-pink-black
6	pink	27	grey-green	48	red-blue-black
7	blue	28	yellow-grey	49	white-green-black
8	red	29	pink-green	50	brown-green-black
9	black	30	yellow-pink	51	white-yellow-black
10	violet	31	green-blue	52	yellow-brown-black
11	grey-pink	32	yellow-blue	53	white-grey-black
12	red-blue	33	green-red	54	grey-brown-black
13	white-green	34	yellow-red	55	white-pink-black
14	brown-green	35	green-black	56	pink-brown-black
15	white-yellow	36	yellow-black	57	white-blue-black
16	brown-yellow	37	grey-blue	58	brown-blue-black
17	white-grey	38	pink-blue	59	white-red-black
18	brown-grey	39	grey-red	60	brown-red-black
19	white-pink	40	pink-red	61	black-white
20	white-brown	41	grey-black		
21	white-blue	42	pink-black		



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