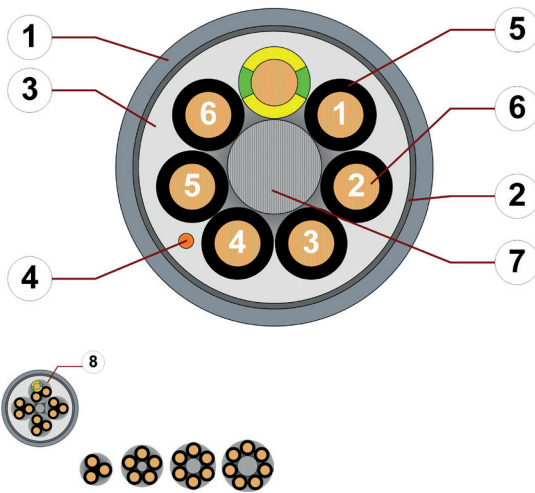


# Data sheet

## chainflex® CF140.UL



Control cable (Class 4.4.1.1) • For medium duty applications • PVC outer jacket • Shielded  
• Flame retardant



1. Outer jacket: Pressure extruded PVC mixture
2. Overall shield: Bending-resistant braiding 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 mixture
6. Conductor: Fine-wire strand 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>	Mechanically high-quality TPE mixture.
	<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</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 &lt; 0.5 mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5 mm<sup>2</sup>:</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>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
	<b>Outer jacket</b>	Low-adhesion 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
	<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<sup>\*\*\*</sup> igus chainflex CF140.-.-.-.UL① -----② ---/---V③ E310776

cRUus AWM Style 20200 VW-1 AWM I/II A/B 60°C 300V 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).  
③ Printing of nominal voltage (see general electrical values).  
Example: ... chainflex ... **CF140.02.12.UL** ... (12x0.25)C ... 300 V/500 V ...








# Data sheet

## chainflex® CF140.UL



Control cable (Class 4.4.1.1) ● For medium duty applications ● PVC outer jacket ● Shielded ● Flame retardant

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	minimum 7.5 x d minimum 6 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>	3 m/s 2 m/s
	<b>a max.</b>		20 m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travels and up to 50 m for gliding applications, Class 4



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	10	12.5	11	13.5	12	14.5
+15/+60	7.5	10	8.5	11	9.5	12
+60/+70	10	12.5	11	13.5	12	14.5

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)
	<b>Testing voltage</b>	2000 V (following DIN EN 50395)



Example image  
igus® chainflex® CF140.UL













# Data sheet

## chainflex® CF140.UL



Control cable (Class 4.4.1.1) ● For medium duty applications ● PVC outer jacket ● Shielded ● Flame retardant

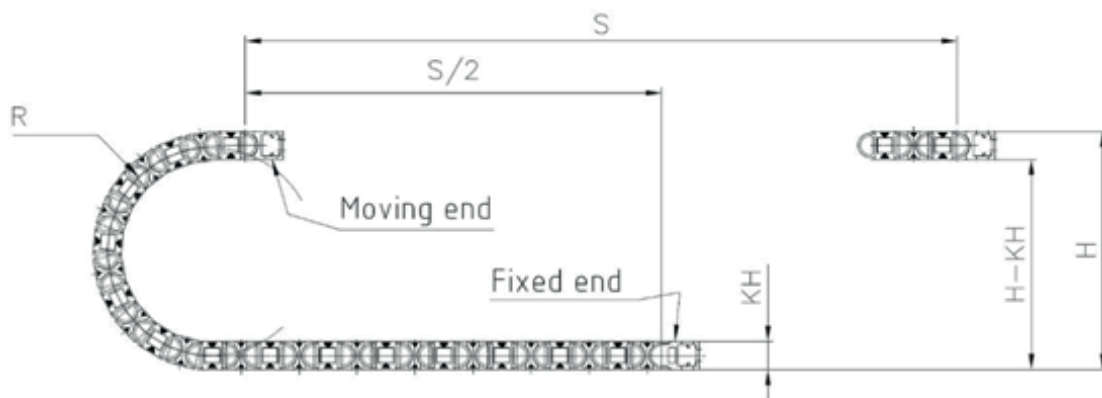
### Properties and approvals

	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10493 and 20200, 300 V, 60 °C
	<b>NFA</b>	Following NFPA 79-2012, chapter 12.9
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.01254 (TR ZU)
	<b>CTP</b>	Certificate No. C-DE.PB49.B.00416 (Fire protection)
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. The outer jacket material of this series complies with CF130.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
	<b>CE</b>	Following 2014/35/EU



### Typical lab test setup for this cable series

<b>Test bend radius R</b>	approx. 48 - 300 mm
<b>Test travel S</b>	approx. 1 - 15 m
<b>Test duration</b>	minimum 2 - 4 million double strokes
<b>Test speed</b>	approx. 0.5 - 2 m / s
<b>Test acceleration</b>	approx. 0.5 - 1.5 m / s <sup>2</sup>



Example image  
igus® chainflex® CF140.UL

# Data sheet

## chainflex® CF140.UL



Control cable (Class 4.4.1.1) ● For medium duty applications ● PVC outer jacket ● Shielded  
● Flame retardant

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travel distances and up to 50 m for gliding applications, Class 4
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment



# Data sheet

## chainflex® CF140.UL



Control cable (Class 4.4.1.1) ● For medium duty applications ● PVC outer jacket ● Shielded ● 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]
CF140.02.12.UL	(12x0.25)C	10.5	72	114
CF140.03.05.UL	(5x0.34)C	7.5	35	72
CF140.05.03.UL	(3G0.5)C	7.0	32	72
CF140.05.05.UL	(5G0.5)C	8.0	45	91
CF140.05.18.UL	(18G0.5)C	14.5	146	247
CF140.05.36.UL	(36G0.5)C	18.5	257	468
CF140.07.03.UL	(3G0.75)C	8.0	42	85
CF140.07.04.UL	(4G0.75)C	8.5	51	101
CF140.07.05.UL	(5G0.75)C	9.0	61	115
CF140.07.07.UL	(7G0.75)C	10.0	83	152
CF140.07.12.UL	(12G0.75)C	13.0	136	263
CF140.07.18.UL	(18G0.75)C	15.5	193	359
CF140.07.25.UL	(25G0.75)C	18.0	260	479
CF140.07.36.UL <sup>11)</sup>	(36G0.75)C	22.0	416	764
CF140.10.02.UL	(2x1.0)C	8.0	35	86
CF140.10.03.UL	(3G1.0)C	8.5	51	100
CF140.10.04.UL	(4G1.0)C	9.0	62	111
CF140.10.05.UL	(5G1.0)C	9.5	74	127
CF140.10.07.UL	(7G1.0)C	10.5	104	176
CF140.10.12.UL	(12G1.0)C	14.0	166	295
CF140.10.18.UL	(18G1.0)C	17.5	240	413
CF140.10.25.UL	(25G1.0)C	19.5	325	562
CF140.15.03.UL	(3G1.5)C	9.0	68	120
CF140.15.04.UL	(4G1.5)C	9.5	85	141
CF140.15.05.UL	(5G1.5)C	10.5	109	169
CF140.15.07.UL <sup>17)</sup>	(7G1.5)C	12.0	144	226
CF140.15.12.UL	(12G1.5)C	16.0	233	387
CF140.15.18.UL	(18G1.5)C	19.0	345	463
CF140.15.25.UL	(25G1.5)C	22.5	463	737
CF140.15.36.UL	(36G1.5)C	26.5	663	1150
CF140.15.42.UL <sup>11)</sup>	(42G1.5)C	29.5	780	1361
CF140.25.03.UL	(3G2.5)C	10.5	107	202
CF140.25.04.UL	(4G2.5)C	11.5	139	210

Example image



<sup>17)</sup> When using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

<sup>11)</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



# Data sheet

## chainflex® CF140.UL



Control cable (Class 4.4.1.1) ● For medium duty applications ● PVC outer jacket ● Shielded  
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### Electrical information

Conductor nominal cross section [mm <sup>2</sup> ]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Maximum current rating at 30 °C (following DIN VDE 0298-4) [A]
0.25	79.0	5
0.34	57.0	7
0.5	39.0	10
0.75	26.0	14
1	19.5	17
1.5	13.3	21
2.5	8.0	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.



Example image

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### Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF140.XX.02.UL	2		CF140.XX.12.UL	4x3	
CF140.XX.03.UL	3		CF140.XX.18.UL	6x3	
CF140.XX.04.UL	4		CF140.XX.25.UL	5x5	
CF140.XX.05.UL	5		CF140.XX.36.UL	6x6	
CF140.XX.07.UL	7		CF140.XX.42.UL	7x6	



Example image





# Data sheet

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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	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		



Example image

