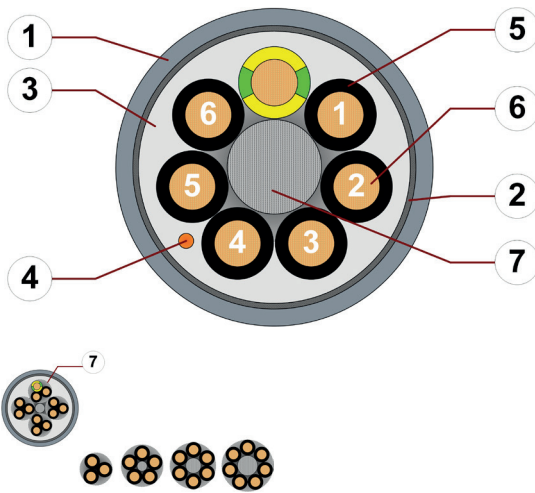


Data sheet

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

	Conductor	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
	Core insulation	Mechanically high-quality TPE mixture.
	Core structure	Number of cores < 12: Cores wound in a layer with short pitch length. Number of cores ≥ 12: 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.
	Core identification	Cores < 0.5 mm²: Colour code in accordance with DIN 47100. Cores ≥ 0.5 mm²: Black cores with white numbers, one green-yellow core.
	Inner jacket	PVC mixture adapted to suit the requirements in e-chains®.
	Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
	Outer jacket	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
	CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► www.igus.eu/CFRIP

„00000 m^{***} 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 +++ 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 ...**



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








Data sheet

chainflex® CF140.UL



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

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	3 m/s 2 m/s
	a max.		20 m/s ²
	Travel distance		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

	Nominal voltage	300/500 V (following DIN VDE 0298-3) 300 V (following UL)
	Testing voltage	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

- 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 table UL/CSA AWM for details
- 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 1. The outer jacket material of this series complies with CF130.15.07 - 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 [mm ²]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
0.25	12	10493	20200	300	60
0.34	5	10493	20200	300	60
0.5	3-36	10493	20200	300	60
0.75	3-25	10493	20200	300	60
1	2-25	10493	20200	300	60
1.5	3-36	10493	20200	300	60
2.5	3-4	10493	20200	300	60



Example image

Data sheet

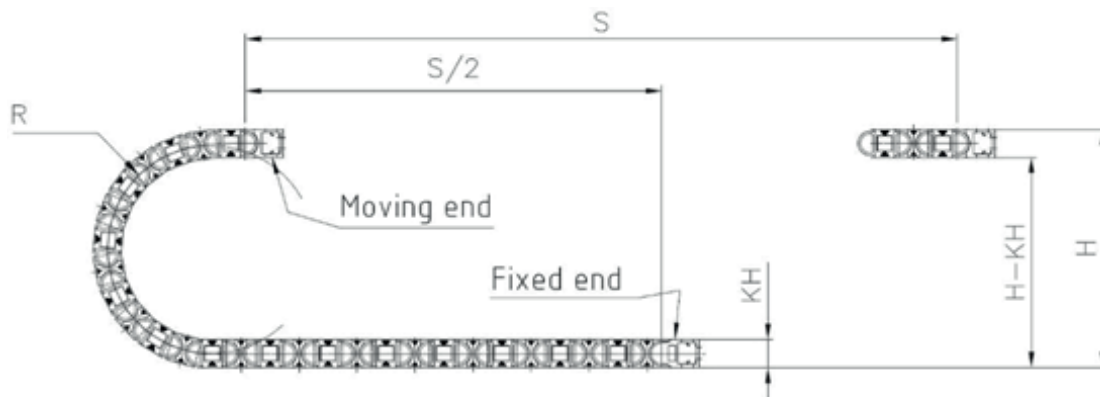
chainflex® CF140.UL



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

Typical lab test setup for this cable series

Test bend radius R	approx. 48 - 300 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 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



Example image



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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 ²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF140.02.12.UL	(12x0.25)C	10.5	72	133
CF140.03.05.UL	(5x0.34)C	7.5	36	72
CF140.05.03.UL	(3G0.5)C	7.0	33	72
CF140.05.05.UL	(5G0.5)C	8.0	45	91
CF140.05.18.UL	(18G0.5)C	14.5	147	258
CF140.05.36.UL	(36G0.5)C	18.5	258	468
CF140.07.03.UL	(3G0.75)C	8.0	42	85
CF140.07.04.UL	(4G0.75)C	8.5	51	102
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	194	359
CF140.07.25.UL	(25G0.75)C	18.0	261	479
CF140.10.02.UL	(2x1.0)C	8.0	35	86
CF140.10.03.UL	(3G1.0)C	8.5	51	105
CF140.10.04.UL	(4G1.0)C	9.0	62	118
CF140.10.05.UL	(5G1.0)C	9.5	74	136
CF140.10.07.UL	(7G1.0)C	10.5	104	176
CF140.10.12.UL	(12G1.0)C	14.0	166	300
CF140.10.18.UL	(18G1.0)C	16.5	240	413
CF140.10.25.UL	(25G1.0)C	19.5	325	562
CF140.15.03.UL	(3G1.5)C	9.0	68	126
CF140.15.04.UL	(4G1.5)C	9.5	86	146
CF140.15.05.UL	(5G1.5)C	9.5	108	168
CF140.15.07.UL ¹⁷⁾	(7G1.5)C	11.5	144	226
CF140.15.12.UL	(12G1.5)C	16.0	233	387
CF140.15.18.UL	(18G1.5)C	19.0	346	463
CF140.15.25.UL	(25G1.5)C	22.5	464	737
CF140.15.36.UL	(36G1.5)C	26.5	663	1150
CF140.25.03.UL	(3G2.5)C	10.5	106	202
CF140.25.04.UL	(4G2.5)C	11.5	140	210

¹⁷⁾ When using the cables with „7G1.5mm²“ and „G2.5mm²“ 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® CF140.UL



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



Example image

Electrical information

Conductor nominal cross section [mm ²]	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
0.75	26	13
1	19.5	15
1.5	13.3	19
2.5	8	27

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® CF140.UL



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

chainflex® CF140.UL



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

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		



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



Example image