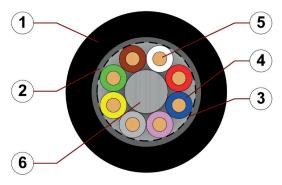# Data sheet
chainflex® CFSOFT2

Control cable (Class 7.1.2.1) ● For heaviest duty applications and especially small radii down to 5 x d ● Highly flexible, soft design ● 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. **Overall banding:** Plastic foil
4. **Core insulation:** Mechanically high-quality TPE mixture
5. **Conductor:** Very finely stranded special conductors of particularly soft and bending resistant design made of bare copper wires
6. **Strain relief:** Tensile stress-resistant centre element

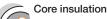**Example image**
For detailed overview please see design table

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

Cable structure

Conductor	Very finely stranded special conductors of particularly soft and bending resistant design made of bare copper wires.	
Core insulation	Mechanically high-quality TPE mixture.	
Core structure	Cores wound in a layer with especially short pitch length.	
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 approx. 70 % linear, approx. 90 % optical	
Outer jacket	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Jet black (similar to RAL 9005) Printing: white	

„00000 m"** igus chainflex CFSOFT2.--.--① -----② 300/500V E310776

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

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 **CFSOFT2.02.03 (3x0.25)C 300/500** ...

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Example image

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Dynamic information

Bend radius	e-chain® linear	minimum 5 x d	
	flexible	minimum 4 x d	
	fixed	minimum 3 x d	
Temperature	e-chain® linear	+5 °C up to +70 °C	
	flexible	-5 °C up to +70 °C (following DIN EN 60811-504)	
	fixed	-15 °C up to +70 °C (following DIN EN 50305)	
v max.	unsupported	10 m/s	
	gliding	5 m/s	
a max.	80 m/s^2		
Travel distance	Very short, very fast applications with small radii and tight design space, Class 1		

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	10 million	15 million	20 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	6.8	7.5	8.5
+15/+60	5	6	7
+60/+70	6.8	7.5	8.5

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)	

Guarantee igus chainflex

36

up to 36 months guarantee

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DNV

EAC

REACH

RoHS

clean-room

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Properties and approvals

UV	**UV resistance**	Medium
oil	**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	**UL verified**	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
cRUus	**UL/CSA AWM**	Details see table UL AWM
NFPA	**NFPA**	Following NFPA 79-2018, chapter 12.9
EAC	**EAC**	Certificate No. RU C-DE.ME77.B.00300/19
REACH	**REACH**	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	**Lead-free**	Following 2011/65/EC (RoHS-II/RoHS-III)
clean-room	**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	**CE**	Following 2014/35/EU
UKCA	**UKCA**	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

Example image

igus® chainflex® CF30FT2

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	3-8	10493	2464	300	80
0.34	4	10493	2464	300	80
0.5	4	10493	2464	300	80
0.75	4	10493	2464	300	80

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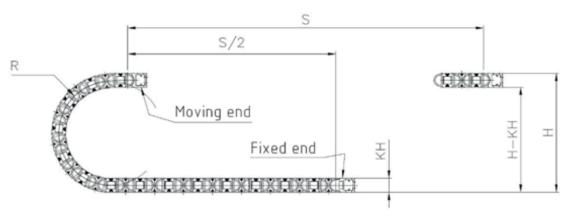
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Typical lab test setup for this cable series

Test bend radius R	approx. 15 - 28 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 heaviest duty applications and especially small radii down to 5 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 1
- Light oil influence, Class 2
- No torsion, Class 1
- Especially soft cable design, for reduced restoring forces
- Pick and place machines, automatic doors, Clean room, very quick handling

Example image

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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]
CFSOFT2.02.03	(3x0.25)C	6.0	17	41
CFSOFT2.02.08	(8x0.25)C	7.5	38	86
CFSOFT2.03.04	(4x0.34)C	6.5	24	50
CFSOFT2.05.04	(4x0.5)C	7.5	36	80
CFSOFT2.07.04	(4G0.75)C	8.0	47	97

G = with green-yellow earth core
x = without earth core
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Electrical information

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Maximum current rating at 30 °C [A]
0.25	79.0	5
0.34	57.0	7
0.5	39.0	10
0.75	26.0	14

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

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Example image

Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CFSOFT2.XX.03	3		CFSOFT2.XX.08	8	
CFSOFT2.XX.04	4				

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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

Example image