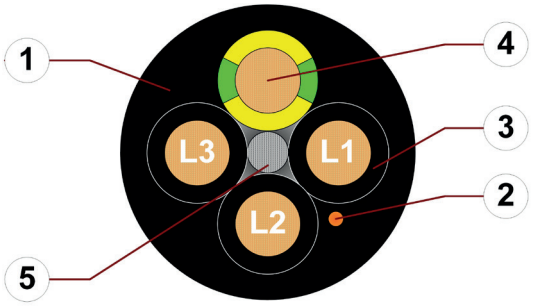
Data sheet
chainflex® CF30

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

Example image



Example image
For detailed overview please see design table

1. Outer jacket: Pressure extruded, gusset-filling, oil-resistant PVC mixture
2. CFRIP: Tear strip for faster cable stripping
3. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
4. Conductor: Especially bending-stable version consisting of bare copper wires
5. Strain relief: Tensile stress-resistant centre element

Cable structure

Conductor	**Cores < 10mm²:** Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228). **Cores ≥ 10mm²:** Conductor cable consisting of pre-leads (following DIN EN 60228).
Core insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
Core structure	Cores wound with a short pitch length around a high tensile strength centre element.
Core identification	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
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
CFRIP®	Strip cables faster: a tear strip is moulded into the outer jacket Video ▶ www.igus.eu/CFRIP

„00000 m“* igus chainflex CF30.--.--① ----② 600/1000V E310776

cЯUus AWM Style 20886 VW-1 AWM I/II A/B 90°C 1000V FT1 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).
Example: ... chainflex **CF30.15.04 4G1.5 600/1000V** ...

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Dynamic information

Bend radius	e-chain® linear	minimum 7.5 x d
	flexible	minimum 6 x d
	fixed	minimum 4 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	10m/s
	gliding	5m/s
a max.		80m/s²
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5
Torsion		Torsion ±90°, with 1m 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
Temperature, from/to [°C]	R min. [x d]	R min. [x d]	R min. [x d]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	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

Nominal voltage	600/1000V (following DIN VDE 0298-3) 1000V (following UL)
Testing voltage	4000V (following DIN EN 50395)

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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)
PTFE-free	The design of these products does not contain PTFE
UL-verified	Certificate No. V293650: „igus 4-year 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
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

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]
1.5	4	30052	20886	1000	90
2.5	4-5	30052	20886	1000	90
4	4-5	30052	20886	1000	90
6	4-5	30052	20886	1000	90
10	4-5	30052	20886	1000	90
16	4-5	30052	20886	1000	90
25	4	30052	20886	1000	90
35	4	30052	20886	1000	90
50	4	30052	20886	1000	90

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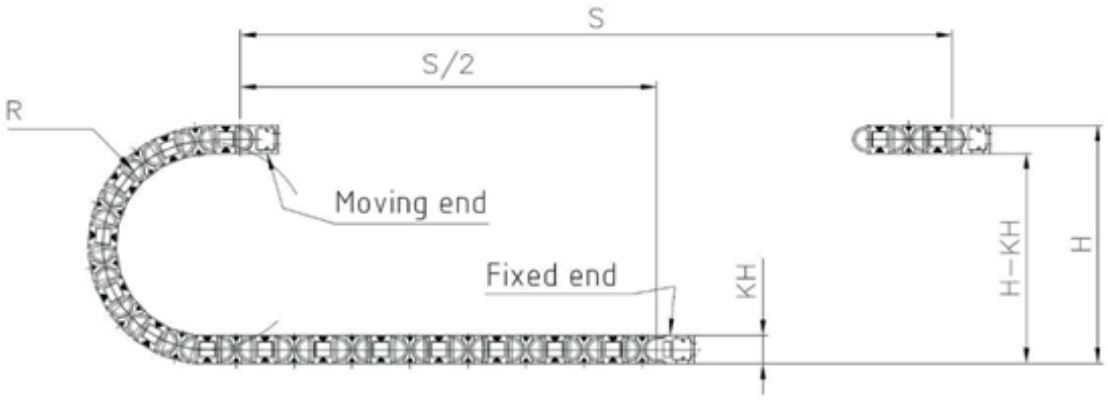
Example image

Typical lab test setup for this cable series

Test bend radius R	approx. 55 - 250 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 / s²



Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 100m for gliding applications, Class 5
- Light oil influence, Class 2
- Torsion ±90°, with 1m cable length, Class 2
- Preferably indoor applications, but also outdoor ones at temperatures > 5°C
- Storage and retrieval units, machining units/packaging machines, quick handling, indoor cranes

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Example image

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]
CF30.15.04	4G1.5	8.0	61	104
CF30.25.04	4G2.5	10.0	100	166
CF30.25.05	5G2.5	11.0	124	203
CF30.40.04	4G4.0	11.5	163	249
CF30.40.05	5G4.0	12.5	204	302
CF30.60.04	4G6.0	13.5	237	343
CF30.60.05	5G6.0	15.0	297	410
CF30.100.04	4G10	16.5	407	548
CF30.100.05	5G10	19.5	515	684
CF30.160.04	4G16	20.0	646	826
CF30.160.05	5G16	23.5	815	1067
CF30.250.04	4G25	25.0	1014	1320
CF30.350.04	4G35	28.5	1439	1795
CF30.500.04 [11)]	4G50	34.0	2061	2528

[11)] 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

Electrical information

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Max. current rating at 30 °C [A]
1.5	13.3	19
2.5	7.98	27
4	4.95	37
6	3.3	48
10	1.91	69
16	1.21	92
25	0.78	121
35	0.56	152
50	0.39	191

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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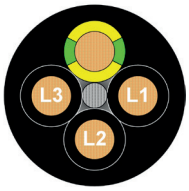
Example image

Design table

Part No.	Number of cores	Core design
CF30.XX.04	4	
CF30.XX.05	5