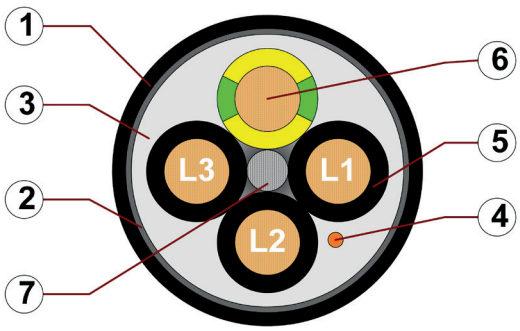
Data sheet
chainflex® CF38

Motor cable (Class 7.6.4.1) ● For heaviest duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● PVC and halogen-free ● UV-resistant ● Hydrolysis and microbe-resistant

Example image



Example image
For detailed overview please see design table

1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling TPE mixture
4. CFRIP: Tear strip for faster cable stripping
5. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
6. Conductor: Especially bending-stable version consisting of bare copper wires
7. Strain relief: Tensile stress-resistant centre element

Cable structure

Conductor	**Cores < 10 mm²:** Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228). **Cores ≥ 10 mm²:** 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-
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Jet black (similar to RAL 9005) Printing: white
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ▶ www.igus.eu/CFRIP

„00000 m“* igus chainflex CF38.--.--① ----② 600/1000V E310776

ЯU AWM Style 22351 90°C 1000V EAC CE UKCA RoHS-II conform

www.igus.eu +++ 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 **CF38.15.04 (4G1.5)C 600/1000V** ...

Guarantee igus chainflex 4 YEARS up to 4 years guarantee

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

CFRIP

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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	-35 °C up to +90 °C
	flexible	-50 °C up to +90 °C (following DIN EN 60811-504)
	fixed	-55 °C up to +90 °C (following DIN EN 50305)
v max.	unsupported	10 m/s
	gliding	6 m/s
a max.		80 m/s²
Travel distance		Unsupported travel distances and up to 400 m for gliding applications, Class 6

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	12.5 million
Temperature, from/to [°C]	R min. [Faktor x d]	R min. [Faktor x d]	R min. [Faktor x d]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	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	600/1000 V (following DIN VDE 0298-3) 1000 V (following UL)
Testing voltage	4000 V (following DIN EN 50395)

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Example image

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
PFAS-free	Use of PFAS-free materials according to the content of the REACH directive and its rules for the production and processing of chemical substances
UL verified	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
UL AWM	Details see table UL AWM
EAC	Certificate No. RU C-DE.ME77.B.02324 (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 CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU

Properties and approvals

UL AWM details

Conductor nominal cross section [mm²]	UL style core insultation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
1.5	30052	22351	1000	90
2.5	30052	22351	1000	90
4	30052	22351	1000	90
6	30052	22351	1000	90
10	30052	22351	1000	90
16	30052	22351	1000	90
50	30052	22351	1000	90

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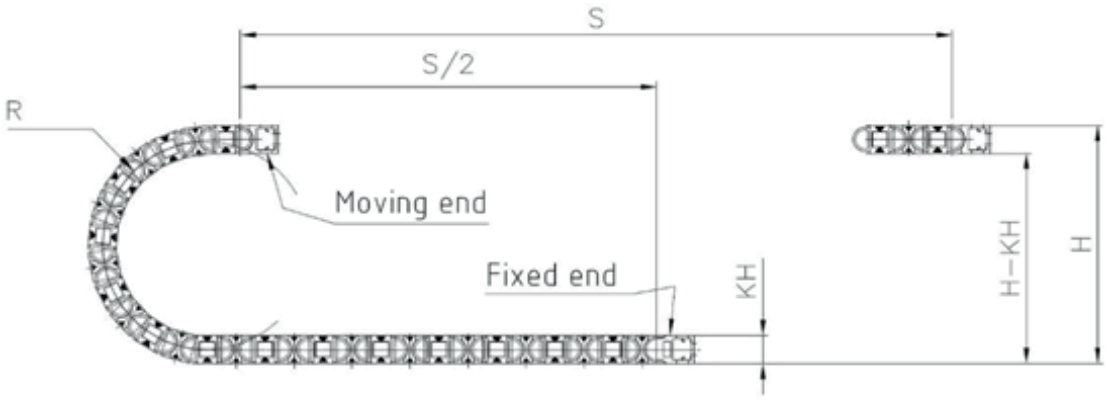
Example image

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 / s^2



Typical application areas

- For extremely heavy duty applications, Class 7
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

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Example image

Technical tables:

Mechanical information

Art.-Nr.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF38.15.04	(4G1.5)C	10.0	89	140
CF38.25.04	(4G2.5)C	11.5	133	198
CF38.40.04	(4G4.0)C	13.0	203	280
CF38.60.04	(4G6.0)C	16.0	288	409
CF38.100.04	(4G10)C	18.5	468	613
CF38.160.04	(4G16)C	23.0	738	943
CF38.250.04	(4G25)C	27.0	1153	1432
CF38.60.03.O.PE	(3x6.0)C	14.5	229	328
CF38.100.03.O.PE	(3x10)C	17.0	358	494
CF38.160.03.O.PE	(3x16)C	20.5	565	762
CF38.250.03.O.PE	(3x25)C	24.5	879	1121
CF38.500.03.O.PE	(3x50)C	33.0	1714	2129

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	21
2.5	7.98	30
4	4.95	41
6	3.3	53
10	1.91	74
16	1.21	99
25	0.78	131
50	0.39	202

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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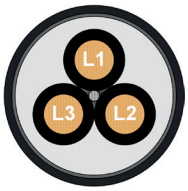
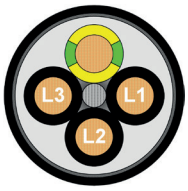
Example image

Design table

Part No.	Number of cores	Core design
CF38.XX.03.O.PE	3	
CF38.XX.04	4	

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