Motor cable | PVC | chainflex® CF31

- For heavy duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame retardant

CFRIP® Strip cables 50 % faster

DESIGN AWARD 2016

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 to +70 °C
	flexible	-5 °C to +70 °C (following DIN EN 60811-504)
	fixed	-15 °C to +70 °C (following DIN EN 50305)
v max.	**unsupported**	10 m/s
	gliding	5 m/s
a max.		80 m/s²
Travel distance		Unsupported travel distances and up to 100 m for gliding applications, Class 5

Cable structure

Conductor
Cores < 10 mm²: Stranded conductor in especially bending-resistant design consisting of bare copper wires (following DIN EN 60228).
Cores ≥ 10 mm²: Conductor consisting of pre-wound conductor bundles (following DIN EN 60228).

Core insulation
Mechanically high-quality, especially low-capacitance TPE mixture.

Core structure
Cores wound with a short pitch length around a high tensile strength centre element.

Core identification
Black cores with white numerals, one core green-yellow.
1. Core: U / L1 / C / L+ 2. Core: V / L2
3. Core: W / L3 / D / L- 4. Core: 4 / N

Inner jacket
PVC mixture, adapted to suit the requirements in e-chains®.

Overall shield
Extremely bending-resistant braiding made of tinned copper wires.
Coverage approx. 70 % inear, 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)

CFRIP®
Strip cables faster: a tear strip is moulded into the inner jacket
Video ▶ www.igus.eu/CFRIP

Electrical information

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

Example image

igus® chainflex® CF31

Class 5.5.2.1

Basic requirements	low	1	2	3	4	**5**	6	7	highest
Travel distance	unsupported	1	2	3	4	**5**	6		≥ 400 m
Oil resistance	none	1	**2**	3		highest			
Torsion	none	**1**	2	3		±180°			

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, CEI 20-35, FT1, VW-1
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
UL/CSA	Style 10492 and 2570, 1000 V, 80 °C
NFPA	Following NFPA 79-2012 chapter 12.9.
EAC	Certificate no. RU C-DE.ME77.B.02324 (TR ZU)
CTP	Certificate no. C-DE.PB49.B.00420 (Fire safety)
CEI	Following CEI 20-35.
Lead-free	Following 2011/65/EU (RoHS-II).
Cleanroom	According to ISO Class 2. Outer jacket material complies with CF5.10.07, tested by IPA according to standard 14644-1.
CE	Following 2014/35/EU.

Guaranteed lifetime according to guarantee conditions (Page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	12

* Higher number of double strokes? Online lifetime calculation: www.igus.eu/chainflexlife

Typical mechanical application areas

- For heavy duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Unsupported travel distances and up to 100 m for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/ packaging machines, quick handling equipment, indoor cranes

CF31
PVC
7.5 x d

Guarantee igus chainflex 36 month guarantee

PVC | iguPUR | PUR | TPE

Motor cable | PVC | chainflex® CF31

Class 5.5.2.1

Basic requirements: low 1 2 3 4 **5** 6 7 highest
Travel distance: unsupported 1 2 3 4 **5** 6 ≥ 400 m
Oil resistance: none 1 **2** 3 4 highest
Torsion: none **1** 2 3 ±180°

Strip cables 50% faster

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF31.15.04	(4G1.5)C	10.5	94	168
CF31.25.04	(4G2.5)C	12.0	142	233
CF31.25.05	(5G2.5)C	13.0	174	295
CF31.40.04	(4G4.0)C	13.5	217	345
CF31.40.05	(5G4.0)C	15.0	281	424
CF31.60.04	(4G6.0)C	16.0	318	488
CF31.60.05	(5G6.0)C	18.0	385	598
CF31.100.04	(4G10.0)C	20.5	539	833
CF31.100.05	(5G10.0)C	22.5	687	954
CF31.160.04	(4G16.0)C	23.5	823	1127
CF31.250.04	(4G25.0)C	28.5	1254	1718
CF31.350.04	(4G35.0)C	32.5	1716	2298
CF31.500.04	(4G50.0)C	37.5	2420	3173
CF31.700.04	(4G70.0)C	43.0	3454	4085

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

CF31
PVC
7.5 x d