

# Motor cable | PVC | chainflex® CF31

**36** 10 million  
Guaranteed double strokes

**7.5 x d**  
Bend radius e-chain®

**100 m**  
Travel distance, e-chain®

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

Optimised core insulation

## Dynamic information

 Bend radius	<b>e-chain® linear flexible</b>	min. 7.5 x d min. 6 x d
	<b>fixed</b>	min. 4 x d
 Temperature	<b>e-chain® linear flexible</b>	+5 °C up to +70 °C -5 °C up to +70 °C (following DIN EN 60811-504)
	<b>fixed</b>	-15 °C up to +70 °C (following DIN EN 50305)
 v max.	<b>unsupported</b>	10 m/s
	<b>gliding</b>	5 m/s
 a max.		80 m/s <sup>2</sup>
 Travel distance		Unsupported travels and up to 100 m for gliding applications, Class 5

## Cable structure

 Conductor	<b>Cores &lt; 10 mm<sup>2</sup>:</b> Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228). <b>Cores ≥ 10 mm<sup>2</sup>:</b> Conductor cable consisting of pre-leads (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 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
 Inner jacket	PVC mixture adapted to suit the requirements in e-chains®.
 Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70 %, optical approx. 90 %
 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 ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

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

Example image

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400 m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.1

### 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 79-2018, chapter 12.9
 EAC	Certificate No. RU C-DE.ME77.B.02324 (TR ZU)
 CTP	Certificate No. C-DE.PB49.B.00420 (Fire protection)
 CEI	Following CEI 20-35
 Lead-free	Following 2011/65/EC (RoHS-II)
 Clean-Room	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

### Guaranteed service life (details see 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? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical mechanical application areas

- For heavy duty applications, Class 5
- Unsupported travels and up to 100 m for gliding applications, Class 5
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units for high-bay warehouses, machining units/ packaging machines, quick handling, indoor cranes



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Strip cables 50 % faster

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Example image

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF31.15.04	(4G1.5)C	10.5	89	163
CF31.25.04	(4G2.5)C	12.0	133	241
CF31.25.05	(5G2.5)C	13.0	163	284
CF31.40.04	(4G4.0)C	13.5	203	314
CF31.40.05	(5G4.0)C	15.0	263	383
CF31.60.04	(4G6.0)C	16.0	298	467
CF31.60.05	(5G6.0)C	18.0	361	538
CF31.100.04	(4G10)C	20.5	505	762
CF31.100.05	(5G10)C	22.5	637	910
CF31.160.04	(4G16)C	23.5	763	1069
CF31.250.04	(4G25)C	28.5	1163	1629
CF31.350.04	(4G35)C	32.5	1592	2183
CF31.500.04	(4G50)C	37.5	2244	3001
CF31.700.04	(4G70)C	43.0	3203	3834

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

Order example: **CF31.15.04** – to your desired length (0.5 m steps)  
CF31 chainflex® series .15 Code nominal cross section .04 Number of cores

Online order ► [www.chainflex.eu/CF31](http://www.chainflex.eu/CF31)

Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

