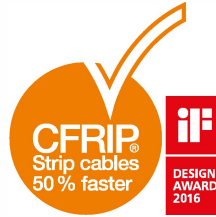


Control cable | TPE | chainflex® CF9.UL

- For extremely heavy duty applications
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- Flame retardant
- PVC-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant



Dynamic information

	Bend radius	e-chain®	minimum 5 x d
		flexible	minimum 4 x d
		fixed	minimum 3 x d
	Temperature	e-chain®	-35 °C to +100 °C
		flexible	-45 °C to +100 °C (following DIN EN 60811-504)
		fixed	-50 °C to +100 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	6 m/s
	a max.		100 m/s ²
	Travel distance		Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
	Torsion		± 90°, with 1 m cable length, Class 2

Cable structure

	Conductor	Stranded conductor in especially bending-resistant design consisting of bare copper wires (following DIN EN 60228).
	Core insulation	Mechanically high-quality TPE mixture.
	Core structure	Number of cores < 12: Cores wound in a layer with a short pitch length. Number of cores ≥ 12: Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions.
	Core identification	Cores < 0.75 mm²: Colour code in accordance with DIN 47100. Cores ≥ 0.75 mm²: Black cores with white numerals, one core green-yellow. CF9.UL.02.03.INI: brown, blue, black CF9.UL.03.04.INI: brown, blue, black, white CF9.UL.03.05.INI: brown blue, black, white, green-yellow
	Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Slate grey (similar to RAL 7015)
	CFRIP®	Strip cables faster: a tear strip is moulded into the outer jacket Video ► www.igus.eu/CFRIP

Electrical information

	Nominal voltage	300/500 V (following DIN VDE 0298-3)
	Testing voltage	2000 V (following DIN EN 50395)

Class 6.6.4.2

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

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.
	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	Cores < 0.5 mm²: Style 10479 and 21529, 300 V, 90 °C Cores ≥ 0.5 mm²: Style 10258 and 21387, 1000 V, 90 °C
	NFFPA	Following NFFPA 79-2012 chapter 12.9.
	DNV-GL	Certified according to GL type testing – Certificate no.: 61 935-14 HH
	EAC	Certificate no. RU C-DE.ME77.B.01254 (TR ZU)
	CTP	Certificate no. C-DE.PB49.B.00416 (Fire safety)
	CEI	Following CEI 20-35.
	Lead-free	Following 2011/65/EU (RoHS-II).
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF34.UL.25.04.D, 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]
-35/-25	6.8	7.5	8.5
-25/+90	5	6	7
+90/+100	6.8	7.5	8.5

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

Typical mechanical application areas

- For heaviest duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV resistant
- Unsupported travel distances and up to 400 m and more for gliding applications
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling equipment, Clean room, semiconductor handling, outdoor cranes, low temperature applications



Control cable | TPE | chainflex® CF9.UL

Class 6.6.4.2

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

Strip cables 50% faster

igus® chainflex® CF9.UL

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
CF9.UL.02.02	2x0.25	5.0	6	28
CF9.UL.02.03.INI	3x0.25	5.5	8	32
CF9.UL.02.04	4x0.25	5.5	11	38
CF9.UL.02.06	6x0.25	6.5	16	49
CF9.UL.02.08	8x0.25	7.5	22	64
CF9.UL.02.12	12x0.25	8.5	32	94
CF9.UL.03.04.INI	4x0.34	6.0	15	43
CF9.UL.03.05.INI	5x0.34	6.5	18	53
CF9.UL.03.06	6x0.34	6.5	22	57
CF9.UL.03.08	8x0.34	7.5	29	76
CF9.UL.05.02	2x0.5	6.0	11	43
CF9.UL.05.03	3x0.5	6.5	16	52
CF9.UL.05.04	4x0.5	7.0	22	60
CF9.UL.05.05	5x0.5	7.5	27	70
CF9.UL.05.07	7x0.5	8.5	37	96
CF9.UL.05.12	12x0.5	11.5	64	170
CF9.UL.05.18	18x0.5	13.5	96	239
CF9.UL.05.25	25x0.5	14.5	132	296
CF9.UL.05.36 ¹¹⁾	36x0.5	18.5	191	460
CF9.UL.07.05	5G0.75	8.0	40	96
CF9.UL.07.07	7G0.75	9.5	56	133
CF9.UL.07.12	12G0.75	13.0	96	234
CF9.UL.07.25	25G0.75	16.5	198	421
CF9.UL.10.03	3G1.0	7.5	32	78
CF9.UL.10.04	4G1.0	8.0	43	97
CF9.UL.10.12	12G1.0	14.0	127	283
CF9.UL.10.18	18G1.0	16.5	191	406
CF9.UL.10.25	25G1.0	18.5	264	541
CF9.UL.15.04	4G1.5	9.0	64	126
CF9.UL.15.05	5G1.5	9.5	80	150
CF9.UL.15.07 ¹⁷⁾	7G1.5	11.5	111	206
CF9.UL.15.12	12G1.5	16.0	191	384
CF9.UL.15.18	18G1.5	19.0	286	553
CF9.UL.15.25	25G1.5	22.0	396	756
CF9.UL.25.04	4G2.5	10.5	106	194
CF9.UL.25.05	5G2.5	11.0	132	239

¹¹⁾ Phase-out model

¹⁷⁾ When using the cables with „7 G 1.5 mm²“ and „7 G 2.5 mm²“ minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

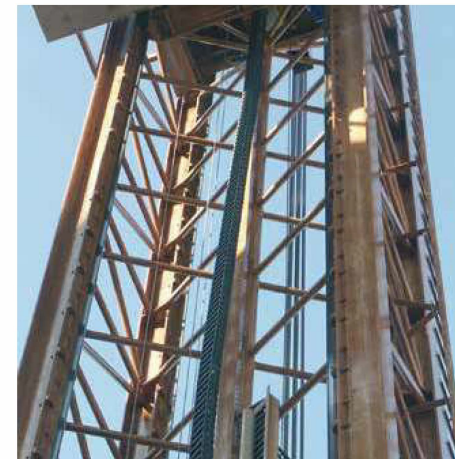
G = with green-yellow earth core x = without earth core

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. mm	Copper index kg/km	Weight kg/km
CF9.UL.25.07 ¹⁷⁾	7G2.5	13.5	185	328
CF9.UL.25.12	12G2.5	19.0	317	620
CF9.UL.25.18	18G2.5	24.0	476	917
CF9.UL.25.25	25G2.5	27.0	660	1199
CF9.UL.40.04	4G4.0	12.0	169	271
CF9.UL.60.04	4G6.0	14.0	254	380

¹⁷⁾ When using the cables with „7 G 1.5 mm²“ and „7 G 2.5 mm²“ minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.

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



igus® chainflex® cables in a lift application of a rafter channel.

