

Control cable | TPE | chainflex® CF9

36 10 million Guaranteed double strokes **5 x d** Bend radius, e-chain® **400 m** Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

Dynamic information

Bend radius	e-chain® linear flexible	minimum 5 x d
	fixed	minimum 4 x d
	fixed	minimum 3 x d
Temperature	e-chain® linear flexible	-35 °C up to +100 °C
	flexible	-50 °C up to +100 °C (following DIN EN 60811-504)
	fixed	-55 °C up 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 travels and up to 400 m and more for gliding applications, Class 6
Torsion		Torsion ±90°, with 1m cable length, Class 2

Cable structure

Conductor	Stranded conductor in especially bending-resistant version 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 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. Especially low-torsion structure.
Core identification	Cores < 0.75 mm²: Colour code in accordance with DIN 47100. Cores ≥ 0.75 mm²: Black cores with white numbers, one green-yellow core. CF9.02.03.INI: brown, blue, black CF9.03.04.INI: brown, blue, black, white CF9.03.05.INI: brown, blue, black, white, green-yellow CF9.03.16.07.03.INI: 0.34 mm²: violet/red/grey/red-blue,green/grey-pink/white-green/white-yellow,white-grey/black/yellow-brown/brown-green,white/yellow/pink/grey-brown 0.75 mm²: blue/green-yellow/brown
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Steel-blue (similar to RAL 5011)
CFRIP®	Strip cables faster: a tear strip is moulded into the outer jacket Video ► www.igus.eu/CFRIP

Example image

EPLAN download, configurators ► www.igus.eu/CF9

36 month guarantee ... 1,354 types from stock ... no cutting charges



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 7.6.4.2

Electrical information

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

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
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
EAC	Certificate No. RU C-DE.ME77.B.00300/19 (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, material/cable tested by IPA according to DIN EN ISO standard 14644-1
CE	Following 2014/35/EU

Guaranteed service life (details see page 26-27)

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? Service life calculation online ► www.igus.eu/chainflexlife

Typical mechanical application areas

- For heaviest duty applications, Class 7
- Unsupported travels and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Torsion ±90°, with 1m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Cleanroom, semiconductor insertion, outdoor cranes, low temperature applications



chainflex® CF9 for outdoor crane systems. e-chain®: Series E4/00



UL-verified chainflex® guarantee ... www.igus.eu/ul-verified



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



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



Control cable | TPE | chainflex® CF9

Strip cables 50 % faster

igus chainflex CF9

Example image

Part No.	Number of cores and conductor nominal cross section [mm ²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF9.02.02	2x0.25	4.5	6	18
CF9.02.03.INI	3x0.25	4.5	9	22
CF9.02.06	6x0.25	5.5	16	36
CF9.02.07	7x0.25	6.5	18	42
CF9.02.08	8x0.25	6.5	21	48
CF9.02.12	12x0.25	8.0	31	71
CF9.02.18	18x0.25	9.0	46	100
CF9.02.20	20x0.25	9.5	50	108
CF9.02.25	25x0.25	10.5	63	137
CF9.03.04.INI	4x0.34	5.0	15	31
CF9.03.05.INI	5x0.34	5.5	18	37
CF9.03.06	6x0.34	6.0	21	42
CF9.03.08	8x0.34	7.0	29	56
CF9.03.16.07.03.INI	16x0.34+3x0.75	11.0	77	152
CF9.05.02	2x0.5	5.0	11	26
CF9.05.03	3x0.5	5.0	16	32
CF9.05.04	4x0.5	5.5	21	39
CF9.05.05	5x0.5	6.0	25	47
CF9.05.07	7x0.5	7.0	36	65
CF9.05.12	12x0.5	10.0	61	115
CF9.05.18	18x0.5	11.5	91	169
CF9.05.25	25x0.5	13.0	124	223
CF9.05.36	36x0.5	15.5	179	316
CF9.07.04	4G0.75	6.0	31	55
CF9.07.05	5G0.75	6.5	38	65
CF9.07.07	7G0.75	8.0	54	90
CF9.07.12	12G0.75	10.5	91	162
CF9.07.20	20G0.75	13.0	149	253
CF9.07.25	25G0.75	14.5	186	315
CF9.10.03	3G1.0	6.0	31	52
CF9.10.04	4G1.0	6.5	41	67
CF9.10.05	5G1.0	7.5	50	81
CF9.10.12	12G1.0	11.5	120	203
CF9.10.18	18G1.0	14.0	179	297
CF9.10.25	25G1.0	16.5	248	420

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

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Class 7.6.4.2

Basic requirements
Travel distance
Oil resistance
Torsion

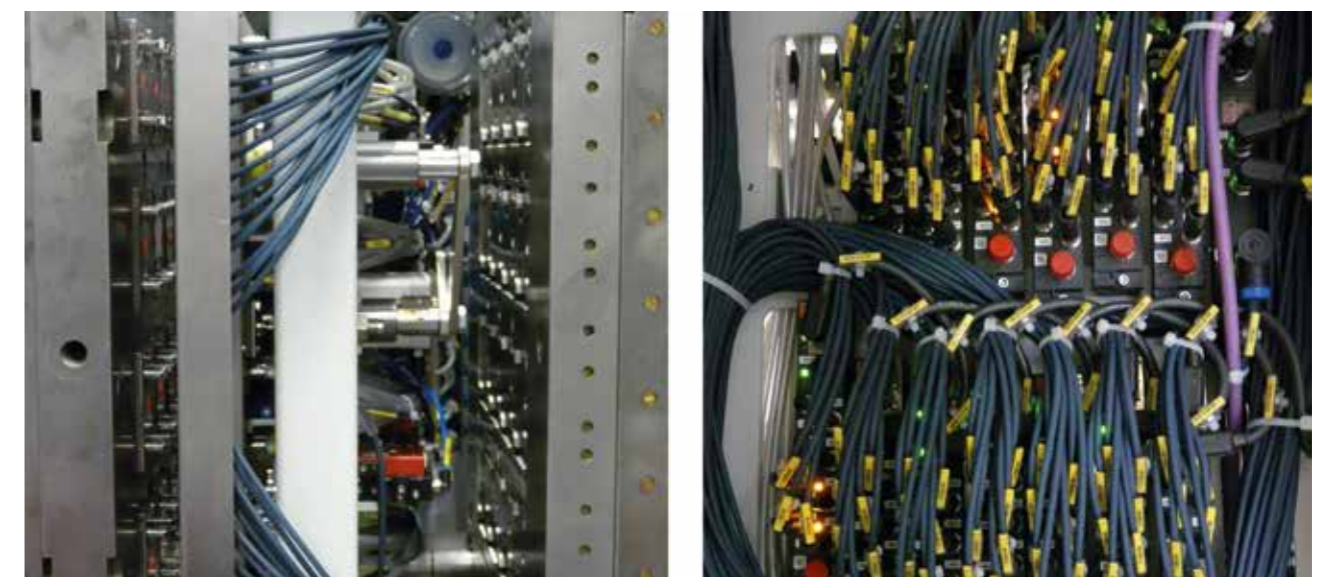
low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400 m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Part No.	Number of cores and conductor nominal cross section [mm ²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF9.15.02	2x1.5	6.5	31	56
CF9.15.04	4G1.5	7.5	61	92
CF9.15.05	5G1.5	8.0	76	110
CF9.15.07 ¹⁷⁾	7G1.5	9.5	107	157
CF9.15.12	12G1.5	13.5	179	284
CF9.15.18	18G1.5	16.5	268	422
CF9.15.25	25G1.5	20.0	371	600
CF9.15.36	36G1.5	23.5	530	847
CF9.25.04	4G2.5	8.5	100	151
CF9.25.05	5G2.5	10.0	124	186
CF9.25.07 ¹⁷⁾	7G2.5	12.0	176	269
CF9.25.12	12G2.5	17.5	297	492
CF9.25.16	16G2.5	19.5	396	654
CF9.25.18 ⁷⁾	18G2.5	22.5	445	766
CF9.25.25	25G2.5	23.5	612	980
CF9.40.04	4G4.0	10.5	159	227
CF9.60.04	4G6.0	12.5	238	317
CF9.60.05	5G6.0	13.5	297	389
CF9.100.04	4G10	16.5	396	549
CF9.160.04	4G16	20.5	628	873

⁷⁾ Nominal voltage 600/1000 V

¹⁷⁾ When using the cables with "7G1.5mm²" and "G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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



chainflex® CF9 INI cables in a high-performance system for plastics processing, with cycle times in seconds. e-chain® E6 series. (Source: Hekuma)

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

CFRIP
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design
award
2015

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NFPA

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A

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EQU

EAC

REACH

RoHS

Clean
Room

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CE