

PE - e-chain[®] - Coax cable for maximum load requirements (class 6.6.4):
75 Ω (CFKCoax1) / 50 Ω (CFKCoax2/3), PVC-free, halogen-free (only CFKCoax2),
oil- and biooil-resistant, hydrolysis- and microbe-resistant and UV-resistant.

Overview

Coax element	HF75-0,3/1,6 RG179	HF50-0,9/2,95 RG58	HF50-0,3/0,84 RG178
Part. No.	CFKCoax1	CFKCoax2	CFKCoax3
Example drawing			
	(see the chapter belonging to the cable for details)	(see the chapter belonging to the cable for details)	(see the chapter belonging to the cable for details)

Core design:

Conductor:	Especially bending-stable special conductor with optimized single wire diameter and pitch length, adapted to suit the requirements in e-chains [®] .
Conductor material:	CFKCoax1: Silvered copper wires CFKCoax2: Tinned copper wires CFKCoax3: Silvered copper wires
Core insulation:	CFKCoax1: Special FEP mixture CFKCoax2: Special PE mixture CFKCoax3: Special FEP mixture

Shield design:

Material:	Extremely bending-stable braid made of tinned copper wires.
Shield coverage:	Linear: approx. 70 % Optical: approx. 90 %

Jacket design:

Element jacket:	CFKCoax1: TPE mixture adapted to suit the requirements in e-chains [®] . CFKCoax2: none CFKCoax3: none
Outer jacket:	Low-adhesion mixture on the basis of TPE, especially abrasion-stable and highly bending-stable, adapted to suit the requirements in e-chains [®] . <ul style="list-style-type: none"> oil-resistant (following DIN EN 60811-2-1) biooil-resistant (following VDMA 24568 (tested by DEA with Plantocut 8 S-MB)) PVC-free halogen-free (following DIN EN 50267-2-1) (<u>only CFKCoax2</u>) hydrolysis-resistant (following DIN VDE 0282 Part 10 - A) microbe-resistant (following DIN EN 50396) silicon-free (following PV 3.10.7 - status 1992) lead-free (following 2011/65/EU (RoHS-II)) clean room ISO class 1 (following DIN ISO 14644-1 tested by IPA) UV-resistance: Medium (<u>CFKCoax3</u>) → High (<u>CFKCoax1/2</u>)
Colour outer jacket:	CFKCoax1: Steel blue (similar to RAL 5011) CFKCoax2: Jet Black (similar to RAL 9005) CFKCoax3: Window grey (similar to RAL 7040)

Cable marking (Black or White):

„00000 m^{**} igus chainflex CFKCoax-...[⊙] 500V -----[⊙] CE RoHS-II
conform www.igus.de +++ chainflex cable works +++

*** Length printing:** Not calibrated. Only intended as an orientation aid.

⊙ / ⊚: Cable identification according to part no. (see [technical table](#) for details).

Ex.: CFKCoax1.01: ⇒ ...x CFKCoax1.01 500V HF75-0,3/1,6 RG179 CE...



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General mechanical values:

(for individual details see [technical table](#))

Guaranteed lifetime for this series according to the "chainflex® guarantee club" conditions (see chainflex® catalogue and www.igus.eu/chainflex-guarantee)				
Double strokes*		5 million	7,5 million	10 million
Temperature (from/to) [°C]	Travel distance (TD)	Min. bending radius for e-chain® use [Factor multiplied by outer diameter (d)] (Ex.: CFKoax1.01 at 20°C: 10,0 x 4,5 mm → Min. bending radius 45,0 mm)		
CFKoax1/CFKoax3				
-35 / -25	≤ 400 m	12,5	13,5	14,5
-25 / +90		10,0	11,0	12,0
+90 / +100		12,5	13,5	14,5
CFKoax2				
-35 / -25	≤ 400 m	12,5	13,5	14,5
-25 / +60		10,0	11,0	12,0
+60 / +70		12,5	13,5	14,5

*: Minimum guarantee lifetime of the cable under the specified conditions.
The installation of the cable is recommended within the middle temperature range.

Temperature range	CFKoax1/CFKoax3	-40 °C ←	-35 °C ←	-25 °C ↔ +90 °C	→ +100 °C
	CFKoax2	-40 °C ←	-35 °C ←	-25 °C ↔ +60 °C	→ +70 °C
Min. bending radius for fixed installation		10,0 x d	7,5 x d	5,0 x d	7,5 x d
Torsion (at 1 m cable length)		---	±0 °	±30 °	±0 °

General electrical values:

(for individual details see [technical table](#) and chapter belonging to the cable)

Nominal voltage: 500 V
Test voltage: 1,5 kV (following DIN EN 50289-1-3)
Guidelines: CE, EAC



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Technical tables:

Mechanical values:

① Part no.	No. of elements	② Coax element	External diameter (d) ^{***} [max. mm]	Conductor / core diameter ^{****} [nom. mm]	Copper index [kg / km]	Weight [kg / km]
CFKoax1.01	1	HF75-0,3/1,6	4,5	0,3 / 1,6	7	23
CFKoax1.05	5	HF75-0,3/1,6	10,0	0,3 / 1,6	35	112
CFKoax2.01	1	HF50-0,9/2,95	5,5	0,9 / 2,95	20	37
CFKoax3.01	1	HF50-0,3/0,84	3,5	0,3 / 0,84	5	12

*** External diameters are maximum values and may tend toward lower tolerance limits.

**** Info: The coax elements used in cables of the CF Koax1 series are comparable with a HF75-0,3/1,6 according to MIL-C-17/94-RG179 and thus fit in an RG179 plug!
The coax elements used in cables of the CF Koax2 series are comparable with a HF50-0,9/2,95 according to MIL-C-17/28-RG58 and thus fit in an RG58 plug!
The coax elements used in cables of the CF Koax3 series are comparable with a HF50-0,3/0,84 according to MIL-C-17/93-RG178 and thus fit in an RG178 plug!

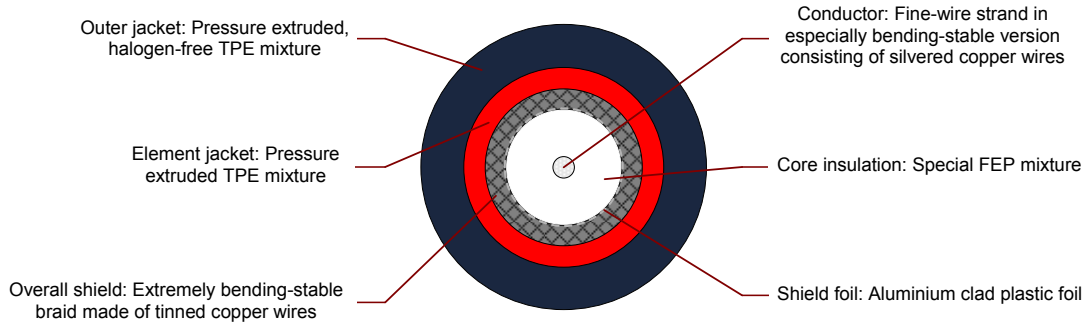
Electrical values:

Part no.	Conductor resistance [approx. Ω / km]	Characteristic wave impedance [Ω] at 200 MHz	Operating capacity [nF / km] at 800 Hz
(following)	DIN EN 50289-1-2	DIN EN 50289-1-11	DIN EN 50289-1-5
CFKoax1.01	800	75 ± 3 Ω	2,5
CFKoax1.05	800	75 ± 3 Ω	4
CFKoax2.01	44,7	50 ± 3 Ω	100
CFKoax3.01	800	50 ± 3 Ω	95

Part no.	Line attenuation [nom. db / 100 m] (following DIN EN 50289-1-8)						
	(at)	50 MHz	100 MHz	200 MHz	400 MHz	800 MHz	1 GHz
CFKoax1.01		20	28	40	57	82	92
CFKoax1.05		20	28	40	57	82	92
CFKoax2.01		13	18	26	42	60	72
CFKoax3.01		36	50	72	110	160	180

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CFKoax1 (HF75-0,3/1,6 RG179)



Electrical values:

Operating capacity:

CFKoax1.01: approx. 2,5 pF / m
CFKoax1.05: approx. 4 pF / m
⇒ (at 800 Hz) following DIN EN 50289-1-5

Characteristic wave resistance:

75 ± 3 Ω (at 200 MHz) following DIN EN 50289-1-11

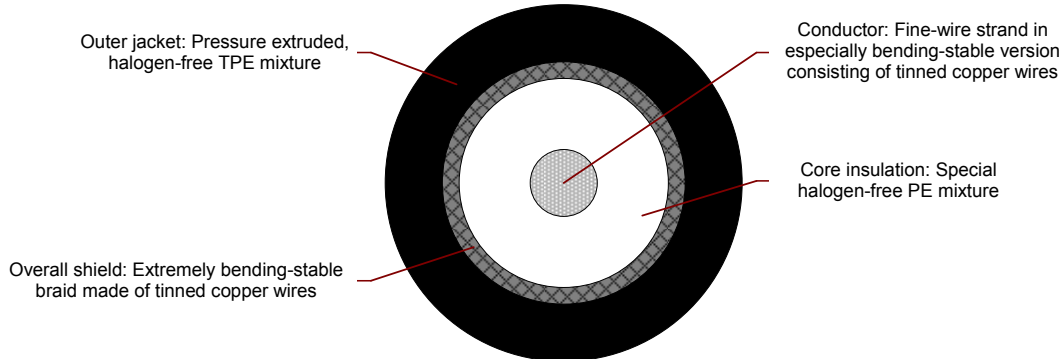
Construction table:

Part No.	Element identification	Cable construction
CFKoax1.01	red	
CFKoax1.05	red, green, blue, white & black	

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CFKoax2 (HF50-0,9/2,95 RG58)



Electrical values:

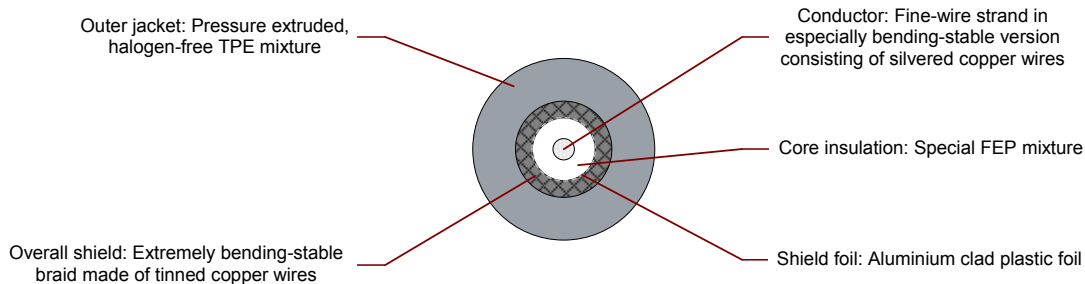
Operating capacity: CFKoax2.01: approx. 100 pF / m
 ⇒ (at 800 Hz) following DIN EN 50289-1-5

Characteristic wave resistance: 50 ± 3 Ω (at 200 MHz) following DIN EN 50289-1-11

Construction table:

Part No.	Element identification	Cable construction
CFKoax2.01	--	

CFKoax3 (HF50-0,3/0,84 RG178)



Electrical values:

Operating capacity: CFKoax3.01: approx. 95 pF / m
 ⇒ (at 800 Hz) following DIN EN 50289-1-5

Characteristic wave resistance: 50 ± 3 Ω (at 200 MHz) following DIN EN 50289-1-11

Construction table:

Part No.	Element identification	Cable construction
CFKoax3.01	--	

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Subject to misprints and errors. Technical modifications are possible at any time.
 Maybe older batches do not have all or other features.
 Please refer regarding the availability of the items especially the information in the latest chainflex[®] catalogue.

