

Data sheet

chainflex® CFKOAX



Coax cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket
 ● Oil and bio-oil-resistant ● UV-resistant ● Hydrolysis and microbe-resistant



Example image



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










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Cable structure

	Conductor	Multi-wire; adapted to single-wire diameter with pitch length to suit the requirements in e-chains®.
	Core insulation	Special FEP mixture (CFKCoax1/3) Special PE mixture (CFKCoax2)
	Core structure	Cores wound in a layer with especially short pitch length.
	Core identification	CFKOAX1.01: red CFKOAX1.05: red, green, blue, white, black
	Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	Element jacket	TPE mixture adapted to suit the requirements in e-chains®.
	Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: ► Product range table Printing: white

„00000 m** igus chainflex CFKOAX.---① -----② 500V -----③

EAC CE RoHS-II conform www.igus.eu +++ chainflex cable works +++

* **Length printing:** Not calibrated. Only intended as an orientation aid.
 ① / ② Cable identification according to Part No. (see technical table).
 ③ Description of coax element.
 Example: ... chainflex **CFKOAX1.01 1xHF75-0.3/1.6** ...



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Dynamic information



Bend radius

e-chain® linear	10 x d
flexible	8 x d
fixed	5 x d



Temperature

e-chain® linear	-35 °C up to +100 °C (CFKOAX1/3)
	-35 °C up to +70 °C (CFKOAX2)
flexible	-50 °C up to +100 °C (CFKOAX1/3)
	-50 °C up to +70 °C (CFKOAX2)
fixed	-55 °C up to +100 °C (CFKOAX1/3)
	-55 °C up to +70 °C (CFKOAX2)



v max.

unsupported	10 m/s
gliding	5 m/s



a max. 100 m/s²



Travel distance Unsupported travels and up to 400m and more for gliding applications, Class 6

These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

Guaranteed service life according to guarantee conditions

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	12,5	13,5	14,5
-25/+60 (CFKOAX2)	10	11	12
-25/+90 (CFKOAX1/CFKOAX3)	10	11	12
+60/+70 (CFKOAX2)	12,5	13,5	14,5
+90/+100 (CFKOAX1/CFKOAX3)	12,5	13,5	14,5

Minimum guaranteed service life of the cable under the specified conditions.
 The installation of the cable is recommended within the middle temperature range.



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Electrical information

	Nominal voltage	500/500V (following DIN VDE 0298-3)
	Prüfspannung	1500V (following DIN EN 50395)

Properties and approvals

	UV resistance	Medium
	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)
	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
	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. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
	CE	Following 2014/35/EU
	UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)



Data sheet

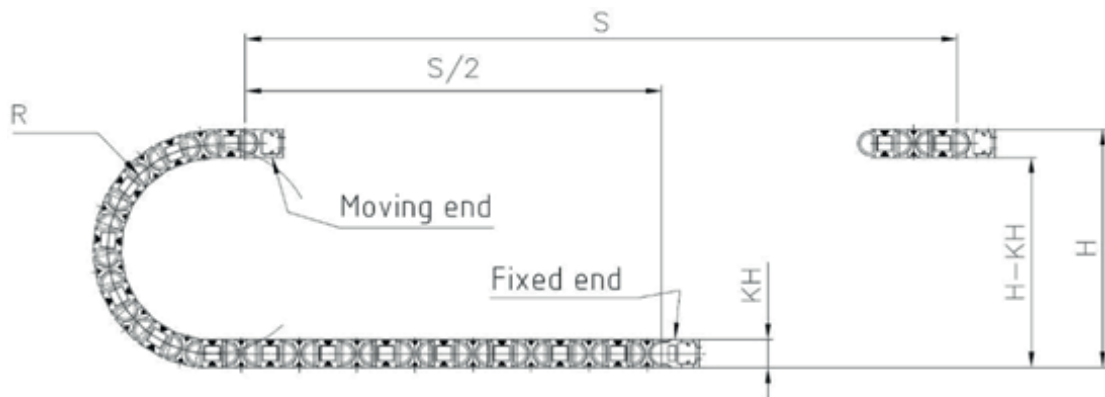
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Typical lab test setup for this cable series

Test bend radius R	approx. 55 - 100 mm
Test travel S/S ₂	approx. 1 - 15 m
Test duration	minimum 2 - 4 million double strokes
Test speed	approx. 0.5 - 2 m / s
Test acceleration	approx. 0.5 - 1.5 m / s ²



Typical application areas

- For heavy-duty applications, Class 6
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications with average sun radiation
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications



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Technical tables:

Mechanical information

Art.-Nr.	Number of cores and conductor nominal cross section [mm ²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFKOAX1.01	1xHF75-0.3/1.6	4.5	8	23
CFKOAX1.05	5xHF75-0.3/1.6	10.0	34	110
CFKOAX2.01	1xHF50-0.9/2.95	5.5	19	36
CFKOAX3.01	1xHF50-0.3/0.84	3.5	6	12

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



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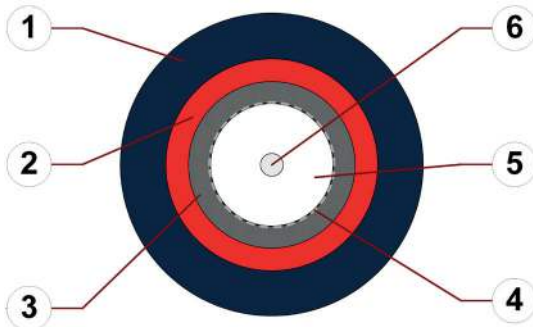
Coax cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket
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CFKOAX1

HF75-0.3/1.6 RG179

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Element jacket: Pressure extruded TPE mixture
3. Overall shield: Extremely bending-stable braid made of tinned copper wires
4. Shield foil: Aluminium clad plastic foil
5. Core insulation: Special FEP mixture
6. Conductor: Fine-wire strand in especially bending-stable version consisting of silvered copper wires

Example image

For detailed overview please see design table

Design table

Part No.	Core identification	Drawing
CFKOAX1.01	red	
CFKOAX1.05	red, green, blue, white, black	



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CFKOAX1

HF75-0.3/1.6 RG179

Electrical information

(Cable structure please see previous page)

Part No.	CFKOAX1.01	CFKOAX1.05
Nominal voltage (following DIN VDE 0298-3)	500 V	
Testing voltage (following DIN EN 50289-1-3)	1500 V	
Operating capacity (following DIN EN 50289-1-5)	65 nF/km (at 800 Hz)	60 nF/km (at 800 Hz)
Characteristic wave impedance (following DIN EN 50289-1-11)	75 ± 5 Ω (at 200 MHz)	
Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	800 Ω/km	

Line attenuation approx. [dB/100m]

Part No.	50 MHz	100 MHz	200 MHz	400 MHz	800 MHz	1 GHz
CFKOAX1.01	23	28	40	57	82	92
CFKOAX1.05	23	28	40	57	82	92



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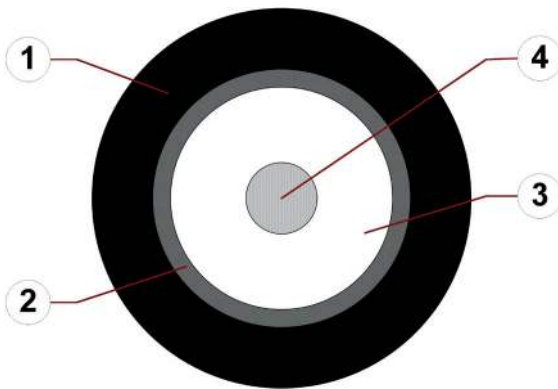
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CFKOAX2

HF50-0.9/2.95 RG58

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Core insulation: Special halogen-free PE mixture
4. Conductor: Fine-wire strand in especially bending-stable version consisting of tinned copper wires

Example image

For detailed overview please see design table

Design table

Part No.	Core identification	Drawing
CFKOAX2.01	-	



Example image



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CFKOAX2

HF50-0.9/2.95 RG58

Electrical information

(Cable structure please see previous page)

Part No.	CFKOAX2.01
Nominal voltage (following DIN VDE 0298-3)	500 V
Testing voltage (following DIN EN 50289-1-3)	1500 V
Operating capacity (following DIN EN 50289-1-5)	100 nF/km (at 800 Hz)
Characteristic wave impedance (following DIN EN 50289-1-11)	50 ± 5 Ω (at 200 MHz)
Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	44,7 Ω/km

Line attenuation approx. [dB/100m]

Part No.	50 MHz	100 MHz	200 MHz	400 MHz	800 MHz	1 GHz
CFKOAX2.01	13	18	26	42	60	72



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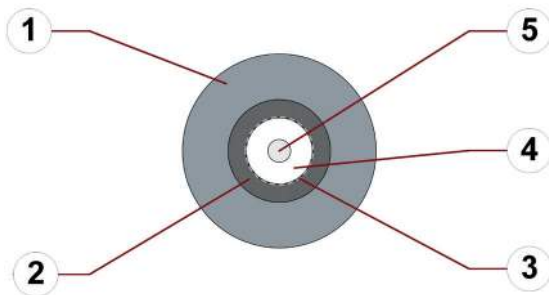
Coax cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket
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CFKOAX3

HF50-0.3/0.84 RG178

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Core insulation: Special FEP mixture
5. Conductor: Fine-wire strand in especially bending-stable version consisting of silvered copper wires

Example image

For detailed overview please see design table

Design table

Part No.	Core identification	Drawing
CFKOAX3.01	-	



Example image



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Example image

CFKOAX3

HF50-0.3/0.84 RG178

Electrical information

(Cable structure please see previous page)

Part No.	CFKOAX3.01
Nominal voltage (following DIN VDE 0298-3)	500 V
Testing voltage (following DIN EN 50289-1-3)	1500 V
Operating capacity (following DIN EN 50289-1-5)	95 nF/km (at 800 Hz)
Characteristic wave impedance (following DIN EN 50289-1-11)	50 ± 5 Ω (at 200 MHz)
Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	800 Ω/km

Line attenuation approx. [dB/100m]

Part No.	50 MHz	100 MHz	200 MHz	400 MHz	800 MHz	1 GHz
CFKOAX3.01	38	53	76	110	160	180



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