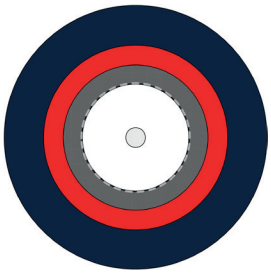
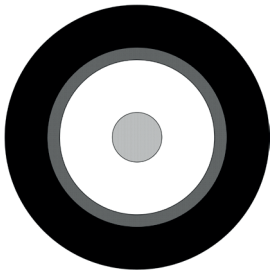
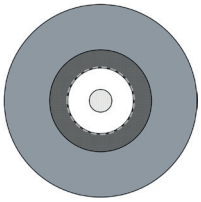
Data sheet
chainflex® CFKOAX

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

CFKOAX1	CFKOAX2	CFKOAX3
HF75-0.3/1.6 RG179	HF50-0.9/2.95 RG58	HF50-0.3/0.85 RG178
		

Guarantee igus chainflex 4 YEARS up to 4 years guarantee

igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

CFRIP

c UL us LISTED

c UL us

nec NFPA

NFPA

CUPA

DNV

REACH

RoHS

clean-room

DESINA

CE

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Example image

Cable structure

Conductor	Multi-wire; adapted to single-wire diameter with pitch length to suit the requirements in e-chains®.
Core insulation	**CFKOAX1/3:** Special FEP mixture **CFKOAX2:** Special PE mixture
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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Example image

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. [x d]	R min. [x d]	R min. [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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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

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)
PFAS-free	**CFKOAX2:** Use of PFAS-free materials according to the content of the REACH directive and its rules for the production and processing of chemical substances
UL verified	Certificate No. V293560: „igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
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

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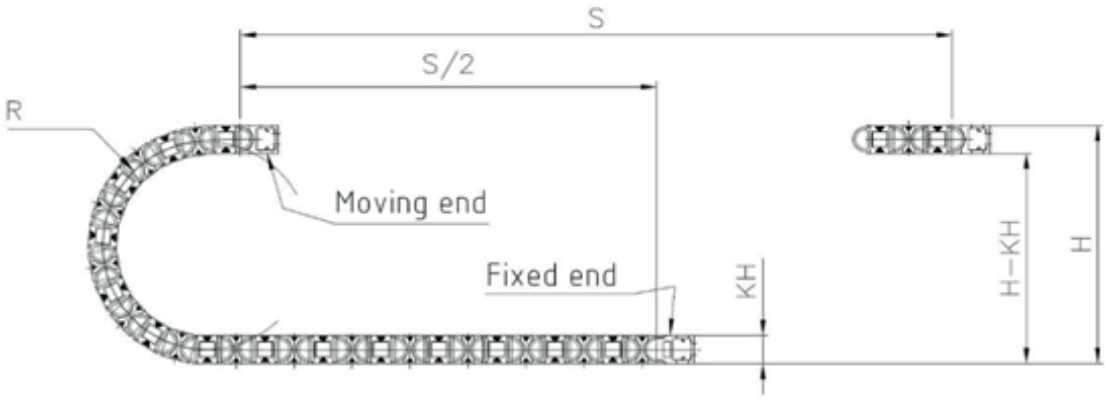
chainflex® CFKOAX

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

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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igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

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

Technical tables:

Mechanical information

Art.-Nr.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFKOAX1.01[5)]	1xHF75-0.3/1.6	4.5	8	23
CFKOAX1.05[5)]	5xHF75-0.3/1.6	10.0	34	110
CFKOAX2.01	1xHF50-0.9/2.95	5.5	19	36
CFKOAX3.01[5)]	1xHF50-0.3/0.85	3.5	6	12

[5)] not PFAS-free

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

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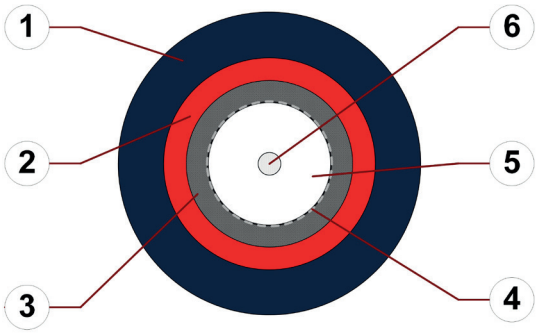
Example image

CFKOAX1

HF75-0.3/1.6 RG179

Cable structure

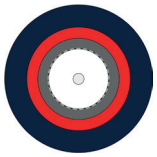
(Electrical information please see next page)



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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Example image

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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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

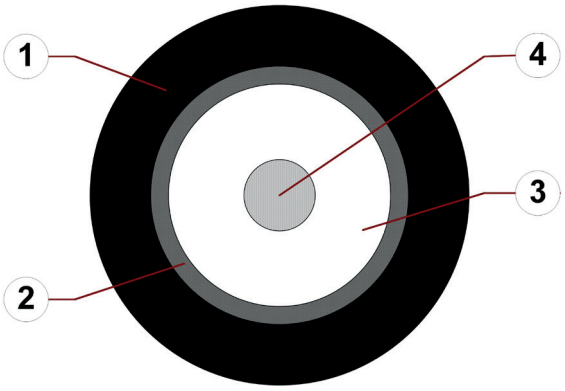
Example image

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	-	

Data sheet
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Example image

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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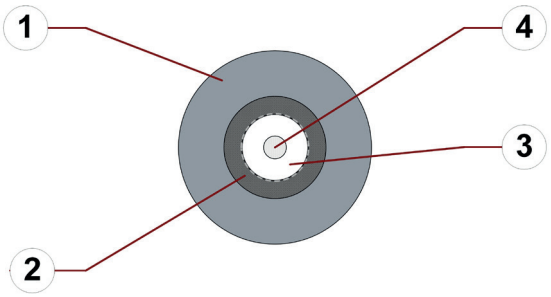
Example image

CFKOAX3

HF50-0.3/0.85 RG178

Cable structure

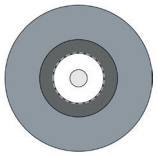
(Electrical information please see next page)



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Core insulation: Special FEP mixture
4. 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	-	

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Example image

CFKOAX3

HF50-0.3/0.85 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