

# Data sheet

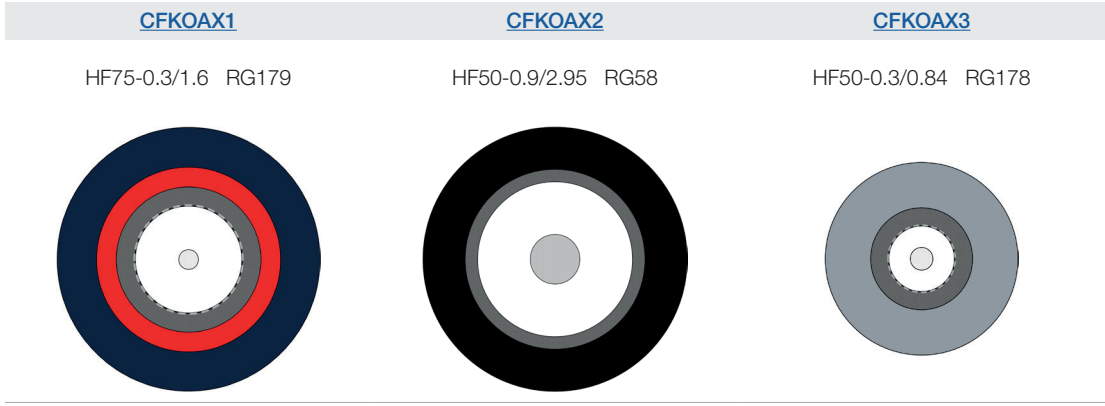
## chainflex® CFKOAX



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



Guarantee  
igus chainflex  
**36**  
months

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

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### Cable structure

	<b>Conductor</b>	Multi-wire; adapted to single-wire diameter with pitch length to suit the requirements in e-chains®.
	<b>Core insulation</b>	Special FEP mixture (CFKcoax1/3) Special PE mixture (CFKcoax2)
	<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
	<b>Core identification</b>	<b>CFKOAX1.01:</b> red <b>CFKOAX1.05:</b> red, green, blue, white, black
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	<b>Element jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: ► <b>Product range table</b> Printing: white



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

EAC CE RoHS-II conform [www.igus.eu](http://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/s<sup>2</sup>



**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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Example image  
 igus® chainflex® CFKOAX

### 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)



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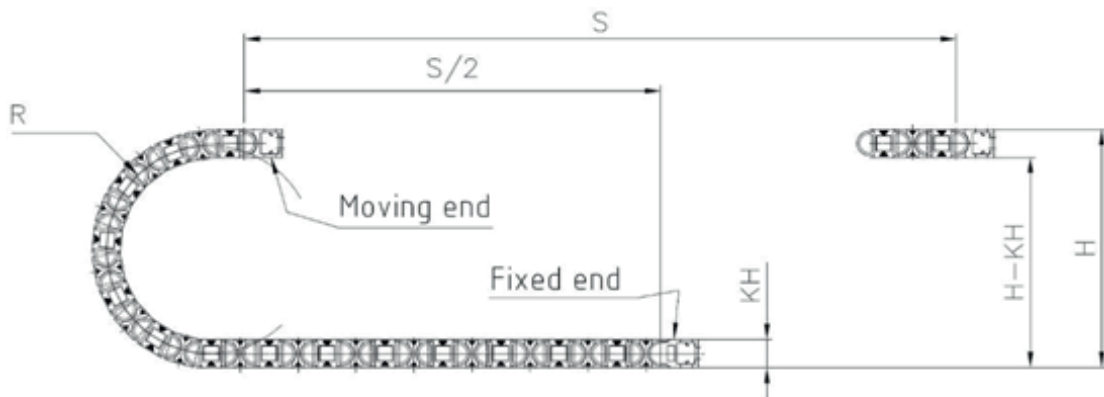
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### Typical lab test setup for this cable series

Test bend radius R	approx. 55 - 100 mm
Test travel S/S <sub>2</sub>	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 <sup>2</sup>



### 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



Example image



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### Technical tables:

#### Mechanical information

Art.-Nr.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	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.



Example image



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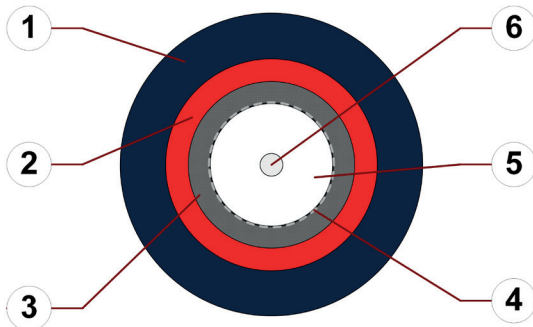
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### CFKOAX1

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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Example image

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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
<b>Nominal voltage</b> (following DIN VDE 0298-3)	500 V	
<b>Testing voltage</b> (following DIN EN 50289-1-3)	1500 V	
<b>Operating capacity</b> (following DIN EN 50289-1-5)	65 nF/km (at 800 Hz)	60 nF/km (at 800 Hz)
<b>Characteristic wave impedance</b> (following DIN EN 50289-1-11)	75 ± 5 Ω (at 200 MHz)	
<b>Maximum conductor resistance at 20 °C</b> (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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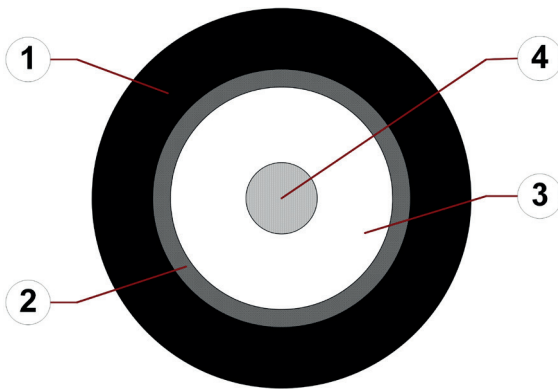
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### CFKOAX2

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



Example image

### Design table

Part No.	Core identification	Drawing
CFKOAX2.01	-	



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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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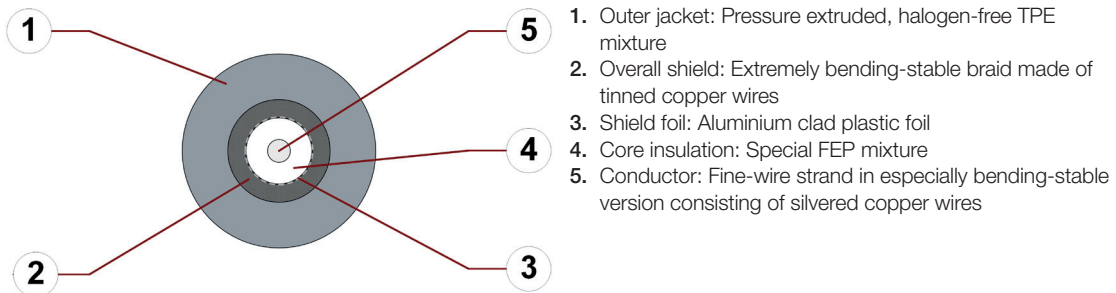
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### CFKOAX3

HF50-0.3/0.84 RG178

### Cable structure

(Electrical information please see next page)



**Example image**  
 For detailed overview please see design table

### Design table

Part No.	Core identification	Drawing
CFKOAX3.01	-	



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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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