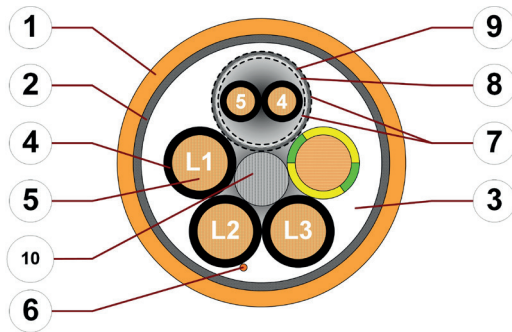


Data sheet

chainflex® CF29.D



Servo cable (Class 7.6.4.1) ● For heaviest duty applications ● TPE outer jacket
 ● Shielded ● Oil and bio-oil-resistant ● PVC and halogen-free ● UV-resistant
 ● Hydrolysis and microbe-resistant



Example image
 For detailed overview please see design table

1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Overall shield: Extremely bending-stable braid made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling TPE mixture
4. Core insulation: Mechanically high-quality, especially low-capacitance XLPE mixture
5. Conductor: Especially bending-resistant version consisting of bare copper wires
6. CFRIP: Tear strip for faster cable stripping
7. Element banding: Plastic foil
8. Shield foil: Aluminium-coated polyester foil
9. Element shield: Extremely bending-resistant wrapping made of tinned copper wires
10. Strain relief: Tensile stress-resistant centre element

Cable structure

	Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	Core insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
	Core structure	Power cores with control pair elements wound with elements for high tensile stresses.
	Core identification	Power cores: Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 1 Control pair: Black cores with white numbers. 1. Control core: 4 2. Control core: 5
	Element shield	Extremely bending-resistant braiding made of tinned copper wires.
	Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
	Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003) Printing: black
	CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► www.igus.eu/CFRIP

„00000 m** igus chainflex CF29.-.-.-.D① -----② 600/1000V

RU AWM Style 22351 90°C 1000V EAC CE UKCA DESINA 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).

Example: ... chainflex CF29.15.15.02.01.D (4G1.5+(2x1.5)C)C 600/1000V ...



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Dynamic information

	Bend radius	e-chain® linear flexible fixed	minimum 6.8 x d minimum 5 x d minimum 4 x d
	Temperature	e-chain® linear flexible fixed	-35°C up to +100°C -50°C up to +100°C (following DIN EN 60811-504) -55°C up to +100°C (following DIN EN 50305)
	v max.	unsupported gliding	10m/s 5m/s
	a max.	80m/s ²	
	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		12.5 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [x d]	R min. [x d]	R min. [x d]	R min. [x d]	R min. [x d]	R min. [x d]
-35/-25	8.5	10	9.5	11	10.5	12
-25/+90	6.8	7.5	7.5	8.5	8.5	9.5
+90/+100	8.5	10	9.5	11	10.5	12

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

Electrical information

	Nominal voltage	600/1000V (following DIN VDE 0298-3) 1000V (following UL)
	Testing voltage	4000 V (following DIN EN 50395)



Example image

igus® chainflex® CF29.D

Data sheet

chainflex® CF29.D



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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)
	Halogen-free	Following DIN EN 60754
	PTFE-free	The design of these products does not contain PTFE
	UL-verified	Certificate No. V293650: „igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	UL AWM	Details see table UL AWM
	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
	Dry cleanroom	Tested in „dry cleanroom“ according to DIN EN ISO 14644-1, Report No. IG 2405-1526
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EU

Properties and approvals

UL AWM details

Conductor nominal cross section [mm ²]	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
1.5	30052	22351	1000	90
2.5	30052	22351	1000	90
4	30052	22351	1000	90



Example image

igus® chainflex® CF29.D

Data sheet

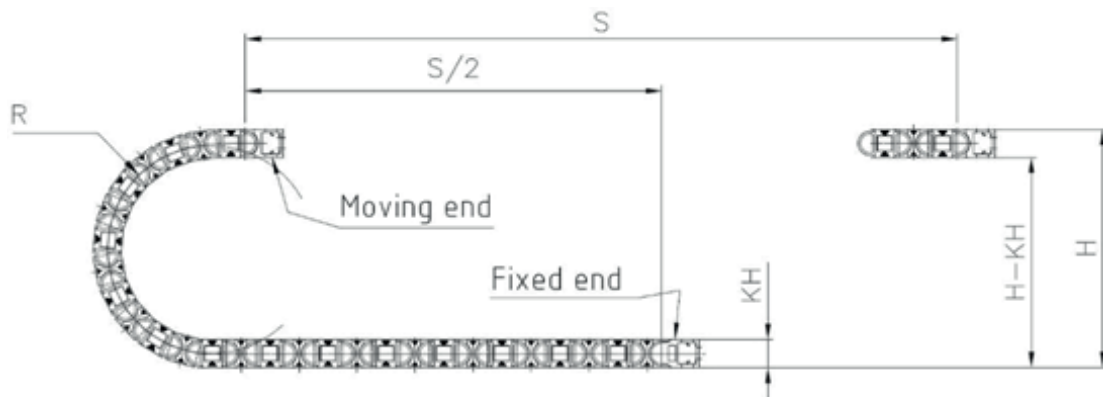
chainflex® CF29.D



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Typical lab test setup for this cable series

Test bend radius R	approx. 63 - 250 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 7
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant, Class 4
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

Example image



Data sheet

chainflex® CF29.D



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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]
1 Control pair shielded				
CF29.15.15.02.01.D	(4G1.5+(2x1.5)C)C	13.0	145	231
CF29.25.15.02.01.D	(4G2.5+(2x1.5)C)C	14.0	199	291
CF29.40.15.02.01.D	(4G4.0+(2x1.5)C)C	15.5	256	367

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

Electrical information

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Max. current rating at 30 °C [A]
1.5	14	21
2.5	8.5	30
4	5.2	41

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

Design table

Part No.	Number of cores	Core design
CF29.XX.XX.XX.01.D	4+1x2	

Example image

igus® chainflex® CF29.D

