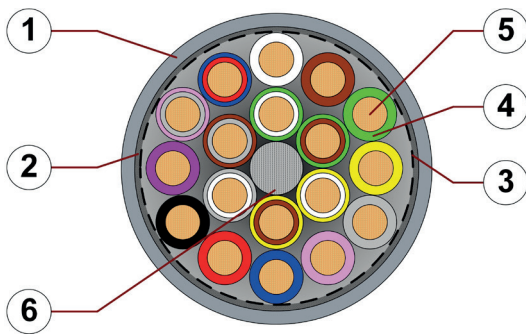# Data sheet
chainflex® CF240.PUR

igus®

Data cable (Class 4.4.3.1) ● For medium duty applications ● PUR outer jacket ● Shielded ● Oil resistant and coolant-resistant ● Flame retardant ● PVC and halogen-free ● Notch-resistant ● Hydrolysis and microbe-resistant

1. Outer jacket: Pressure extruded PUR mixture
2. Overall shield: Aluminum/Polyester tape and extremely bending-resistant braiding made of tinned copper wires.
3. Banding: Plastic foil
4. Core insulation: Mechanically high-quality TPE mixture
5. Conductor: Very finely stranded special cores of particularly high-flex design made of bare copper wires
6. Strain relief: Tensile stress-resistant centre element

Guarantee igus chainflex 36 month guarantee

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

Example image
For detailed overview please see design table

Cable structure

Conductor	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
Core insulation	Mechanically high-quality TPE mixture.
Core structure	The individual cores are wound in layers with a short pitch length.
Core identification	Colour code in accordance with DIN 47100
Intermediate layer	Foil taping over the outer layer.
Overall shield	Aluminum/Polyester tape and extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Window-grey (similar to RAL 7040) Printing: black

„00000 m"* igus chainflex CF240.PUR.--.--① -----② E310776 cЯUus

AWM Style 20233 VW-1 AWM I/II A/B 80°C 300V FT1 DNV-GL TAE00003X3

EAC/CTP CE RoHS-II conform   www.igus.de   +++ 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 ... **CF240.PUR.01.18** ... **(18x0.14)C** ... **E310776** ...

Example image

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Dynamic information

Bend radius	e-chain® linear	minimum 10 x d
	flexible	minimum 8 x d
	fixed	minimum 5 x d
Temperature	e-chain® linear	-25 °C up to +80 °C
	flexible	-40 °C up to +80 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +80 °C (following DIN EN 50305)
v max.	unsupported	3 m/s
	gliding	2 m/s
a max.		20 m/s²
Travel distance		Unsupported travels and up to 50 m for gliding applications, Class 4

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	
	< 10 m	≥ 10 m	< 10 m	≥ 10 m	< 10 m	≥ 10 m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	12.5	15	13.5	16	14.5	17
-15/+70	10	12.5	11	13.5	12	14.5
+70/+80	12.5	15	13.5	16	14.5	17

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		300/300 V (following DIN VDE 0298-3)
		300 V (following UL)
Testing voltage		1500 V (following DIN EN 50395)

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Data cable (Class 4.4.3.1) ● **For medium duty applications** ● **PUR outer jacket** ● **Shielded** ● **Oil resistant and coolant-resistant** ● **Flame retardant** ● **PVC and halogen-free** ● **Notch-resistant** ● **Hydrolysis and microbe-resistant**

Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Offshore	MUD-resistant following NEK 606 - status 2009
	Flame retardant	According to IEC 60332-1-2, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following DIN EN 60754
	UL verified	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	UL/CSA AWM	See table UL/CSA AWM for details
	NFPA	Following NFPA 79-2018, chapter 12.9
	DNV-GL	Type approval certificate No. TAE00003X3
	EAC	Certificate No. RU C-DE.ME77.B.00300/19 (TR ZU)
	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 CF77. UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
	CE	Following 2014/35/EU

Properties and approvals

UL/CSA AWM Details

Conductor nominal cross section [mm²]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
0.14	4-18	10493	20233	300	80
0.25	3-25	10493	20233	300	80
0.34	3-18	10493	20233	300	80

Example image
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Typical lab test setup for this cable series

Test bend radius R	approx. 50 - 115 mm
Test travel S	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 / s²

Typical application areas

● For medium duty applications, Class 4
● Unsupported travel distances and up to 50 m for gliding applications, Class 4
● Almost unlimited resistance to oil, Class 3
● No torsion, Class 1
● Indoor and outdoor applications with average sun radiation
● Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

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Data cable (Class 4.4.3.1) ● **For medium duty applications** ● **PUR outer jacket** ● **Shielded** ● **Oil resistant and coolant-resistant** ● **Flame retardant** ● **PVC and halogen-free** ● **Notch-resistant** ● **Hydrolysis and microbe-resistant**

Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF240.PUR.01.04	(4x0.14)C	5.5	15	39
CF240.PUR.01.07	(7x0.14)C	6.5	24	54
CF240.PUR.01.08	(8x0.14)C	7.0	26	64
CF240.PUR.01.14	(14x0.14)C	7.5	41	79
CF240.PUR.01.18	(18x0.14)C	8.0	51	97
CF240.PUR.01.25	(25x0.14)C	8.5	66	101
CF240.PUR.02.03	(3x0.25)C	5.5	18	41
CF240.PUR.02.04	(4x0.25)C	6.0	22	45
CF240.PUR.02.05	(5x0.25)C	6.0	25	50
CF240.PUR.02.07	(7x0.25)C	7.0	33	65
CF240.PUR.02.08	(8x0.25)C	7.0	39	72
CF240.PUR.02.14	(14x0.25)C	8.0	60	103
CF240.PUR.02.18	(18x0.25)C	9.0	71	122
CF240.PUR.02.25	(25x0.25)C	10.5	97	152
CF240.PUR.03.03	(3x0.34)C	5.0	25	47
CF240.PUR.03.04	(4x0.34)C	5.5	30	54
CF240.PUR.03.05	(5x0.34)C	6.0	34	60
CF240.PUR.03.07	(7x0.34)C	6.5	45	84
CF240.PUR.03.14	(14x0.34)C	8.0	74	126
CF240.PUR.03.18	(18x0.34)C	8.5	91	156

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]
0.14	138	2.5
0.25	79	5
0.34	57	7

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

Example image

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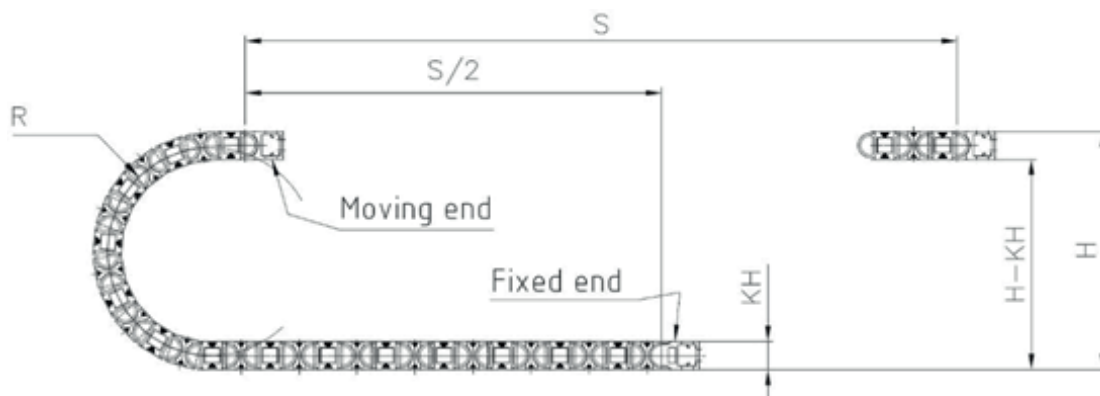
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Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF240.PUR.XX.03	3		CF240.PUR.XX.08	8	
CF240.PUR.XX.04	4		CF240.PUR.XX.14	14	
CF240.PUR.XX.05	5		CF240.PUR.XX.18	18	
CF240.PUR.XX.07	7		CF240.PUR.XX.25	25	

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36 month guarantee

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Colour code in accordance with DIN 47100

Conductor no.	Colours according to DIN ISO 47100	Conductor no.	Colours according to DIN ISO 47100	Conductor no.	Colours according to DIN ISO 47100
1	white	22	brown-blue	43	blue-black
2	brown	23	white-red	44	red-black
3	green	24	brown-red	45	white-brown-black
4	yellow	25	white-black	46	yellow-green-black
5	grey	26	brown-black	47	grey-pink-black
6	pink	27	grey-green	48	red-blue-black
7	blue	28	yellow-grey	49	white-green-black
8	red	29	pink-green	50	brown-green-black
9	black	30	yellow-pink	51	white-yellow-black
10	violet	31	green-blue	52	yellow-brown-black
11	grey-pink	32	yellow-blue	53	white-grey-black
12	red-blue	33	green-red	54	grey-brown-black
13	white-green	34	yellow-red	55	white-pink-black
14	brown-green	35	green-black	56	pink-brown-black
15	white-yellow	36	yellow-black	57	white-blue-black
16	brown-yellow	37	grey-blue	58	brown-blue-black
17	white-grey	38	pink-blue	59	white-red-black
18	brown-grey	39	grey-red	60	brown-red-black
19	white-pink	40	pink-red	61	black-white
20	white-brown	41	grey-black		
21	white-blue	42	pink-black		

Example image

igus® chainflex® CF240.PUR