

A detailed cross-sectional view of a multi-layered medical device, likely a catheter or probe. The device features a central white core, surrounded by a yellow layer, and an outer braided metal sheath. The internal structure shows multiple white, curved elements within the yellow layer.

139



Chainflex® cable		Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]			Bend radius min. [factor x d]			Bend radius min. [factor x d]			Page	
			unsupported	gliding			< 32.81 ft		≥ 32.81 ft	< 32.81 ft		≥ 32.81 ft	< 32.81 ft		≥ 32.81 ft		
							5 million cycles *			7.5 million cycles *			10 million cycles *				
Data cables – Stranded in layers																	
	CF240	+41 / +59 +59 / +140 +140 / +158	9.843	6.562	65.62	≤ 164		12.5 10 12.5	15 12.5 15		13.5 11 13.5	16 13.5 16		14.5 12 14.5	17 14.5 17	142	
	CF240-PUR	-13 / +14 +14 / +158 +158 / +176	9.843	6.562	65.62	≤ 164		12.5 10 12.5	15 12.5 15		13.5 11 13.5	16 13.5 16		14.5 12 14.5	17 14.5 17	146	
Data cables – Twisted Pair																	
	CF211	+41 / +59 +59 / +140 +140 / +158	16.4	9.843	164	≤ 328.1		10 7.5 10			11 8.5 11			12 9.5 12		150	
	CF211-PUR New!	-13 / +14 +14 / +158 +158 / +176	16.4	9.843	164	≤ 328.1		10 7.5 10			11 8.5 11			12 9.5 12		154	
	CF11	-31 / -13 -13 / +40 +40 / +212	32.81	19.69	328.1	≤ 1,312		7.5 6.8 7.5			8.5 7.8 8.5			9.5 8.8 9.5		158	
Data cables – Twisted Pair/Pair shield																	
	CF112 New!	-4 / +14 +14 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1		12.5 10 12.5			13.5 11 13.5			14.5 12 14.5		162	
	CF12	-31 / -13 -13 / +194 +194 / +212	32.81	19.69	328.1	≤ 1,312		12.5 10 12.5			13.5 11 13.5			14.5 12 14.5		166	
Data cables – Coax																	
	CFKoax1/3	-31 / -13 -13 / +194 +194 / +212	32.81	16.4	328.1	≤ 1,312		12.5 10 12.5			13.5 11 13.5			14.5 12 14.5		168	
		CFKoax2	-31 / -13 -13 / +140 +140 / +158	32.81	16.4	328.1	≤ 1,312		12.5 10 12.5			13.5 11 13.5			14.5 12 14.5		168

⁽¹⁾ **Exclusive!** Guaranteed lifetime for this series according to the guarantee conditions ► page 22-25

* Guaranteed lifetime, higher numbers of cycles possible.

PVC Data cable | CF240

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

Dynamic Information

	Bend radius	E-Chain®	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	E-Chain®	+41 °F to +158 °F (+5 °C to +70 °C)
		flexible	+23 °F to +158 °F (-5 °C to +70 °C)
		fixed	+5 °F to +158 °F (-15 °C to +70 °C)
		unsupported	9.84 ft/s (3 m/s)
	v max.	gliding	6.56 ft/s (2 m/s)
	a max.		65.6 ft/s² (20 m/s²)
	Travel distance		Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Conductors are cabled in layers with short pitch lengths.
	Color code	Color code in accordance with DIN 47100.
	Intermediate layer	Polyester tape over external layer.
	Overall shield	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	Outer jacket	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Silver-gray (similar to RAL 7001)

Electrical Information

	Nominal voltage	300 V
	Test voltage	1500 V

 Configurators ► www.igus.com/CF240

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Class 4.4.2.1

Properties and approvals

	Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	Style 10493 and 2464, 300 V, 80 °C
	NFFPA 79	Complies to NFFPA 79-2015 chapter 12.9
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	CTP	Certified according to no. C-DE.PB49.B.00416
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*		5 million		7.5 million		10 million	
Temperature, from/to [°F]	Travel distance [ft]	<i>R</i> min. [factor x d]		<i>R</i> min. [factor x d]		<i>R</i> min. [factor x d]	
		< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
+41 / +59		12.5	15	13.5	16	14.5	17
+59 / +140	≤ 164	10	12.5	11	13.5	12	14.5
+140 / +158		12.5	15	13.5	16	14.5	17

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, Handling, indoor cranes



1,244 types from stock ... no cutting costs*
... no minimum order quantity ... *(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...
... up to 10 million cycles guaranteed ...



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm ²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF240-01-03	26	3 x 0.14	0.20	5.0	10.1	15	18.8	28
CF240-01-04	26	4 x 0.14	0.20	5.0	10.8	16	21.5	32
CF240-01-05	26	5 x 0.14	0.22	5.5	12.1	18	23.5	35
CF240-01-07	26	7 x 0.14	0.24	6.0	16.8	25	30.2	45
CF240-01-14	26	14 x 0.14	0.30	7.5	28.9	43	49.7	74
CF240-01-18	26	18 x 0.14	0.31	8.0	36.3	54	62.5	93
CF240-01-24	26	24 x 0.14	0.35	9.0	45.0	67	86.0	128
CF240-02-03	24	3 x 0.25	0.20	5.0	12.1	18	23.5	35
CF240-02-04	24	4 x 0.25	0.22	5.5	14.1	21	30.9	46
CF240-02-05	24	5 x 0.25	0.22	5.5	17.5	26	28.9	43
CF240-02-07	24	7 x 0.25	0.26	6.5	22.2	33	37.0	55
CF240-02-08	24	8 x 0.25	0.28	7.0	24.9	37	42.3	63
CF240-02-14	24	14 x 0.25	0.31	8.0	42.3	63	62.5	93
CF240-02-18	24	18 x 0.25	0.33	8.5	50.4	75	74.6	111
CF240-02-24	24	24 x 0.25	0.37	9.5	67.2	100	111.5	166
CF240-03-02	22	2 x 0.34	0.22	5.5	13.4	20	25.5	38
CF240-03-03	22	3 x 0.34	0.22	5.5	18.1	27	26.9	40
CF240-03-04	22	4 x 0.34	0.24	6.0	20.8	31	34.9	52
CF240-03-05	22	5 x 0.34	0.24	6.0	24.2	36	38.3	57
CF240-03-07	22	7 x 0.34	0.30	7.5	32.3	48	51.7	77
CF240-03-10	22	10 x 0.34	0.33	8.5	42.3	63	65.9	98
CF240-03-14	22	14 x 0.34	0.35	9.0	53.1	79	77.9	116
CF240-03-18	22	18 x 0.34	0.39	10.0	64.5	96	95.4	142
CF240-03-24	22	24 x 0.34	0.43	11.0	85.3	127	123.6	184

Note: The mentioned outer diameters are maximum values.



Order example: CF240-02-03 – In your desired length
CF240 Chainflex® series -02 Code nominal cross section -03 Number of conductors



Online order ▶ www.chainflex.com/CF240



Delivery time 24hr or today.
Delivery time means time until shipping of goods.



Configurators ▶ www.igus.com/CF240



PUR Data cable | CF240-PUR

- For medium mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Flame-retardant
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	E-Chain®	-13 °F to +176 °F (-25 °C to +80 °C)
		flexible	-40 °F to +176 °F (-40 °C to +80 °C)
		fixed	-58 °F to +176 °F (-50 °C to +80 °C)
	v max.	unsupported	9.84 ft/s (3 m/s)
	a max.	gliding	6.56 ft/s (2 m/s)
	Travel distance	Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4	

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Conductors are cabled in layers with short pitch lengths.
	Color code	Color code in accordance with DIN 47100.
	Intermediate layer	Polyester tape over external layer.
	Overall shield	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	Outer jacket	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Silver-gray (similar to RAL 7001)

Electrical Information

	Nominal voltage	300 V
	Test voltage	1500 V

 Configurators ► www.igus.com/CF240PUR

Requirements
Travel distance
Oil-resistance
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Class 4.4.3.1

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 resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	UL/CSA	Style 10493 and 20233, 300 V, 80 °C
	NFFPA 79	Complies to NFFPA 79-2015 chapter 12.9
	DNV-GL	Certified according to GL type testing – Certificate no.: 61 936-14 HH
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	CTP	Certified according to no. C-DE.PB49.B.00416
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*		5 million		7.5 million		10 million	
Temperature, from/to [°F]	Travel distance [ft]	R min. [factor x d]		R min. [factor x d]		R min. [factor x d]	
		< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
-13 / +5		12.5	15	13.5	16	14.5	17
+5 / +158	≤ 164	10	12.5	11	13.5	12	14.5
+158 / +176		12.5	15	13.5	16	14.5	17

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF240-PUR-01-03 ¹⁾	26	3 x 0.14	0.22	5.5	9.4	14	24.9	37
CF240-PUR-01-04	26	4 x 0.14	0.24	6.0	10.8	16	26.9	40
CF240-PUR-01-05 ¹⁾	26	5 x 0.14	0.24	6.0	12.1	18	30.2	45
CF240-PUR-01-07 ¹⁾	26	7 x 0.14	0.26	6.5	16.1	24	37.0	55
CF240-PUR-01-14	26	14 x 0.14	0.31	8.0	28.2	42	54.4	81
CF240-PUR-01-18	26	18 x 0.14	0.33	8.5	36.3	54	65.2	97
CF240-PUR-02-03	24	3 x 0.25	0.24	6.0	12.1	18	28.2	42
CF240-PUR-02-04	24	4 x 0.25	0.24	6.0	14.8	22	30.9	46
CF240-PUR-02-05	24	5 x 0.25	0.24	6.0	17.5	26	34.9	52
CF240-PUR-02-07	24	7 x 0.25	0.28	7.0	22.2	33	44.3	66
CF240-PUR-02-08	24	8 x 0.25	0.30	7.5	24.9	37	49.1	73
CF240-PUR-02-14	24	14 x 0.25	0.33	8.5	42.3	63	71.2	106
CF240-PUR-02-18	24	18 x 0.25	0.35	9.0	50.4	75	84.7	126
CF240-PUR-03-03 ¹⁾	22	3 x 0.34	0.24	6.0	18.1	27	32.9	49
CF240-PUR-03-04	22	4 x 0.34	0.26	6.5	20.8	31	37.0	55
CF240-PUR-03-05 ¹⁾	22	5 x 0.34	0.28	7.0	24.2	36	41.7	62
CF240-PUR-03-07	22	7 x 0.34	0.31	8.0	32.3	48	58.5	87
CF240-PUR-03-14	22	14 x 0.34	0.37	9.5	53.1	79	88.0	131
CF240-PUR-03-18	22	18 x 0.34	0.41	10.5	65.2	97	108.2	161

¹⁾ Delivery time upon request
Note: The mentioned outer diameters are maximum values.



Order example: CF240-PUR-02-03 – In your desired length
CF240-PUR Chainflex® series -02 Code nominal cross section -03 Number of conductors



Online order ► www.chainflex.com/CF240PUR



Delivery time 24hr or today.
Delivery time means time until shipping of goods.



Configurators ► www.igus.com/CF240PUR



PVC Data cable | CF211

- For high mechanical load requirements
- PVC outer jacket
- Shielded
- Twisted pair
- Oil-resistant
- Flame-retardant

Dynamic Information

	Bend radius	E-Chain®	min. 7.5 x d
		flexible	min. 6 x d
		fixed	min. 4 x d
	Temperature	E-Chain®	+41 °F to +158 °F (+5 °C to +70 °C)
		flexible	+23 °F to +158 °F (-5 °C to +70 °C)
		fixed	+5 °F to +158 °F (-15 °C to +70 °C)
		unsupported	16.41 ft/s (5 m/s)
	v max.	gliding	9.84 ft/s (3 m/s)
	a max.		164.1 ft/s² (50 m/s²)
	Travel distance		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Twisted Pairs cabled together with short pitch lengths.
	Color code	Color code in accordance with DIN 47100.
	Intermediate layer	Polyester tape over external layer.
	Overall shield	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	Outer jacket	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Silver-gray (similar to RAL 7001)

Electrical Information

	Nominal voltage	300 V
	Test voltage	1500 V

 Configurators ► www.igus.com/CF211

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6		1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3		±180°			

Class 5.5.2.1

Properties and approvals

	Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	Style 10493 and 2464, 300 V, 80 °C
	NFFPA 79	Complies to NFFPA 79-2015 chapter 12.9
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	CTP	Certified according to no. C-DE.PB49.B.00416
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*	5 million		7.5 million		10 million	
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				10	11	12
+59 / +140	16.4	9.843	164	7.5	8.5	9.5
+140 / +158				10	11	12

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, Handling, indoor cranes



Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF211-02-01-02	24	1 PR x 0.25	0.20	5.0	11.4	17	21.5	32
CF211-02-02-02	24	2 PR x 0.25	0.24	6.0	16.1	24	28.9	43
CF211-02-03-02	24	3 PR x 0.25	0.28	7.0	22.8	34	46.4	69
CF211-02-04-02	24	4 PR x 0.25	0.31	8.0	28.2	42	49.7	74
CF211-02-05-02	24	5 PR x 0.25	0.33	8.5	33.6	50	60.5	90
CF211-02-06-02	24	6 PR x 0.25	0.35	9.0	39.6	59	71.2	106
CF211-02-08-02	24	8 PR x 0.25	0.41	10.5	50.4	75	95.4	142
CF211-02-10-02	24	10 PR x 0.25	0.47	12.0	63.8	95	116.9	174
CF211-02-14-02	24	14 PR x 0.25	0.47	12.0	77.3	115	131.7	196
CF211-03-03-02	22	3 PR x 0.34	0.31	8.0	31.6	47	56.4	84
CF211-03-08-02	22	8 PR x 0.34	0.45	11.5	65.2	97	116.9	174
CF211-03-10-02 ¹⁾	22	10 PR x 0.34	0.51	13.0	80.0	119	132.4	197
CF211-05-01-02	20	1 PR x 0.5	0.22	5.5	16.8	25	28.9	43
CF211-05-02-02 ²⁾	20	2 PR x 0.5	0.28	7.0	26.2	39	43.0	64
CF211-05-03-02	20	3 PR x 0.5	0.35	9.0	39.0	58	71.2	106
CF211-05-04-02	20	4 PR x 0.5	0.37	9.5	47.7	71	88.7	132
CF211-05-05-02	20	5 PR x 0.5	0.41	10.5	58.5	87	103.5	154
CF211-05-06-02	20	6 PR x 0.5	0.45	11.5	64.5	96	120.3	179
CF211-05-08-02	20	8 PR x 0.5	0.51	13.0	89.4	133	156.6	233
CF211-05-10-02	20	10 PR x 0.5	0.61	15.5	121.6	181	198.2	295
CF211-05-14-02	20	14 PR x 0.5	0.61	15.5	134.4	200	202.3	301

¹⁾ Delivery time upon request
The chainflex® types marked with ²⁾ are cables designed as a star-quad.
Note: The mentioned outer diameters are maximum values.

Order example: CF211-02-04-02 – In your desired length
CF211 Chainflex® series -02 Code nominal cross section -04 Number of pairs -02 Identification pairs

Online order ▶ www.chainflex.com/CF211

Delivery time 24hr or today.
Delivery time means time until shipping of goods.

Configurators ▶ www.igus.com/CF211



PUR Data cable | CF211-PUR

- For high mechanical load requirements
- PUR outer jacket
- Shielded
- Twisted pair
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Flame-retardant
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 7.5 x d
		flexible	min. 6 x d
		fixed	min. 4 x d
	Temperature	E-Chain®	-13 °F to +176 °F (-25 °C to +80 °C)
		flexible	-40 °F to +176 °F (-40 °C to +80 °C)
		fixed	-58 °F to +176 °F (-50 °C to +80 °C)
	v max.	unsupported	16.41 ft/s (5 m/s)
		gliding	9.84 ft/s (3 m/s)
	a max.		164.1 ft/s² (50 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Twisted Pairs cabled together with short pitch lengths.
	Color code	Color code in accordance with DIN 47100.
	Intermediate layer	Polyester tape over external layer.
	Overall shield	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	Outer jacket	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Silver-gray (similar to RAL 7001)

Electrical Information

	Nominal voltage	300 V
	Test voltage	1500 V



Configurators ► www.igus.com/CF211PUR

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Class 5.5.3.1

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 resistance	According to IEC 60332-1-2, CEI 20-35, 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/CSA	Style 10493 and 20233, 300 V, 80 °C
	NFFPA 79	Complies to NFFPA 79-2015 chapter 12.9
	DNV-GL	Certified according to GL type testing – Certificate no.: 13 656-14 HH
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	CTP	Certified according to no. C-DE.PB49.B.00416
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*				5 mio.		7.5 mio.	10 mio.
Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	R min.	R min.	R min.
	unsupported	gliding			[factor x d]	[factor x d]	[factor x d]
-13 / +5					10	11	12
+5 / +158	16.4	9.843	164	≤ 328.1	7.5	8.5	9.5
+158 / +176					10	11	12

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For high mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector





Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF211-PUR-02-01-02 ¹⁾	24	1 PR x 0.25	0.20	5.0	11.4	17	20.2	30
CF211-PUR-02-02-02 ²⁾	24	2 PR x 0.25	0.24	6.0	16.1	24	26.9	40
CF211-PUR-02-03-02	24	3 PR x 0.25	0.28	7.0	22.8	34	43.0	64
CF211-PUR-02-04-02	24	4 PR x 0.25	0.30	7.5	28.2	42	45.0	67
CF211-PUR-02-05-02	24	5 PR x 0.25	0.33	8.5	33.6	50	56.4	84
CF211-PUR-02-06-02	24	6 PR x 0.25	0.35	9.0	39.6	59	67.2	100
CF211-PUR-02-08-02	24	8 PR x 0.25	0.41	10.5	50.4	75	86.0	128
CF211-PUR-02-10-02 ¹⁾	24	10 PR x 0.25	0.47	12.0	63.8	95	107.5	160
CF211-PUR-02-14-02	24	14 PR x 0.25	0.47	12.0	77.3	115	122.3	182
CF211-PUR-03-03-02 ¹⁾	22	3 PR x 0.34	0.31	8.0	31.6	47	56.4	84
CF211-PUR-03-08-02	22	8 PR x 0.34	0.47	12.0	65.2	97	102.1	152
CF211-PUR-03-10-02 ¹⁾	22	10 PR x 0.34	0.51	13.0	80.0	119	132.4	197
CF211-PUR-05-01-02 ¹⁾	20	1 PR x 0.5	0.22	5.5	16.8	25	28.2	42
CF211-PUR-05-02-02 ²⁾	20	2 PR x 0.5	0.28	7.0	26.2	39	41.0	61
CF211-PUR-05-03-02	20	3 PR x 0.5	0.35	9.0	39.0	58	67.9	101
CF211-PUR-05-04-02	20	4 PR x 0.5	0.37	9.5	47.7	71	82.0	122
CF211-PUR-05-05-02	20	5 PR x 0.5	0.41	10.5	58.5	87	103.5	154
CF211-PUR-05-06-02	20	6 PR x 0.5	0.45	11.5	64.5	96	120.3	179
CF211-PUR-05-08-02 ¹⁾	20	8 PR x 0.5	0.51	13.0	89.4	133	147.8	220
CF211-PUR-05-10-02 ¹⁾	20	10 PR x 0.5	0.59	15.0	121.6	181	186.1	277
CF211-PUR-05-14-02 ¹⁾	20	14 PR x 0.5	0.59	15.0	134.4	200	202.3	301

¹⁾ Delivery time upon request
The chainflex® types marked with ²⁾ are cables designed as a star-quad.
Note: The mentioned outer diameters are maximum values.



Order example: CF211-PUR-02-04-02 – In your desired length
CF211-PUR Chainflex® series -02 Code nominal cross section -04 Number of pairs -02 Identification pairs



Online order ► www.chainflex.com/CF211PUR



Delivery time 24hr or today.
Delivery time means time until shipping of goods.



Configurators ► www.igus.com/CF211PUR



TPE Data cable | CF11

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Twisted pair
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 6.8 x d
		flexible	min. 5 x d
		fixed	min. 4 x d
	Temperature	E-Chain®	-31 °F to +212 °F (-35 °C to +100 °C)
		flexible	-58 °F to +212 °F (-50 °C to +100 °C)
		fixed	-67 °F to +212 °F (-55 °C to +100 °C)
	v max.	unsupported	32.81 ft/s (10 m/s)
	a max.	gliding	19.69 ft/s (6 m/s)
			328.1 ft/s² (100 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Twisted Pairs cabled together with short pitch lengths.
	Color code	26-18 AWG: Color code according to DIN 47100. 17-14 AWG: Black with white numbers.
	Inner jacket	TPE mixture adapted to suit the requirements in E-Chains®.
	Overall shield	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	Outer jacket	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark blue (similar to RAL 5011)

Electrical Information

	Nominal voltage	300 V
	Test voltage	1500 V



Configurators ► www.igus.com/CF11

Requirements
Travel distance
Oil-resistance
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Class 6.6.4.1

Properties and approvals

	UV resistance	High
	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
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*				5 mio.		7.5 mio.	10 mio.
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					7,5	8,5	9,5
-13 / +194	32.81	19.69	328.1	≤ 1,312	6,8	7,8	8,8
+194 / +212					7,5	8,5	9,5

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

Delivery program Measuring system cables

- Page 244, CF211 (PVC)
- Page 254, CF111-D (PUR)
- Page 268, CF11-D (TPE)

1,244 types from stock ... no cutting costs*
... no minimum order quantity ... *(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...
... up to 10 million cycles guaranteed ...



Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF11-01-04-02	26	4 PR x 0.14	0.30	7.5	20.8	31	43.7	65
CF11-01-18-02	26	18 PR x 0.14	0.47	12.0	71.9	107	133.0	198
CF11-02-01-02	24	1 PR x 0.25	0.24	6.0	12.1	18	26.2	39
CF11-02-02-02	24	2 PR x 0.25	0.26	6.5	18.8	28	34.3	51
CF11-02-03-02	24	3 PR x 0.25	0.31	8.0	24.9	37	53.8	80
CF11-02-04-02	24	4 PR x 0.25	0.33	8.5	29.6	44	61.1	91
CF11-02-05-02	24	5 PR x 0.25	0.35	9.0	34.9	52	71.9	107
CF11-02-06-02	24	6 PR x 0.25	0.39	10.0	49.1	73	90.0	134
CF11-02-09-02	24	9 PR x 0.25	0.49	12.5	68.5	102	139.8	208
CF11-02-10-02	24	10 PR x 0.25	0.51	13.0	73.2	109	149.8	223
CF11-02-14-02	24	14 PR x 0.25	0.53	13.5	88.7	132	155.9	232
CF11-03-08-02	22	8 PR x 0.34	0.51	13.0	75.9	113	152.5	227
CF11-05-04-02	20	4 PR x 0.5	0.37	9.5	55.1	82	92.7	138
CF11-05-06-02	20	6 PR x 0.5	0.47	12.0	73.9	110	137.8	205
CF11-05-08-02	20	8 PR x 0.5	0.55	14.0	97.4	145	182.1	271
CF11-07-03-02	18	3 PR x 0.75	0.39	10.0	58.5	87	106.8	159
CF11-10-04-02	17	4 PR x 1.0	0.47	12.0	90.0	134	159.3	237
CF11-15-06-02	16	6 PR x 1.5	0.67	17.0	176.7	263	286.9	427
CF11-25-03-02	14	3 PR x 2.5	0.61	15.5	151.9	226	264.1	393

Note: The mentioned outer diameters are maximum values.

Order example: CF11-02-03-02 – In your desired length

CF11 Chainflex® series -02 Code nominal cross section -03 Number of pairs -02 Identification pairs

Online order ▶ www.chainflex.com/CF11

Delivery time 24hr or today.

Delivery time means time until shipping of goods.

Configurators ▶ www.igus.com/CF11



PUR Data cable | CF112

- For very high mechanical load requirements
- PUR outer jacket
- Shielded twisted Pairs with an overall shield
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Flame-retardant
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	E-Chain®	-13 °F to +176 °F (-25 °C to +80 °C)
		flexible	-40 °F to +176 °F (-40 °C to +80 °C)
		fixed	-58 °F to +176 °F (-50 °C to +80 °C)
	v max.	unsupported	32.81 ft/s (10 m/s)
		gliding	16.41 ft/s (5 m/s)
	a max.		262.5 ft/s² (80 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Twisted Pairs cabled together with short pitch lengths.
	Color code	Color code in accordance with DIN 47100
	Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90 % optical
	Inner jacket	PUR mixture adapted to suit the requirements in E-Chains®.
	Overall shield	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	Outer jacket	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Anthracite-gray (similar to RAL 7016)

Electrical Information

	Nominal voltage	300 V
	Test voltage	1500 V

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Class 6.5.3.1

Properties and approvals

	UV resistance	High
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Offshore	MUD-resistant following NEK 606 - status 2009
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	UL/CSA	Style 10493 and 20233, 300 V, 80 °C
	NFPA 79	Complies to NFPA 79-2015 chapter 12.9
	DNV-GL	Certified according to GL type testing – Certificate no.: 13 656-14 HH
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	CTP	Certified according to no. C-DE.PB49.B.00416
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*		5 mio.		7.5 mio.		10 mio.	
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
-13 / +5				12.5	13.5	14.5	
+5 / +158	32.81	16.4	262.5	10	11	12	
+158 / +176				12.5	13.5	14.5	

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

1,244 types from stock ... no cutting costs*
... no minimum order quantity ... *(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...
... up to 10 million cycles guaranteed ...



Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF112-02-02-02	24	2 PR x 0.25	0.37	9.5	39.6	59	88.0	131
CF112-02-03-02	24	3 PR x 0.25	0.39	10.0	50.4	75	101.5	151
CF112-02-04-02	24	4 PR x 0.25	0.43	11.0	57.8	86	112.2	167
CF112-02-05-02	24	5 PR x 0.25	0.45	11.5	70.6	105	130.4	194
CF112-02-06-02	24	6 PR x 0.25	0.49	12.5	79.3	118	148.5	221
CF112-05-02-02	20	2 PR x 0.5	0.45	11.5	53.8	80	118.3	176
CF112-05-03-02 ¹⁾	20	3 PR x 0.5	0.47	12.0	70.6	105	135.7	202
CF112-05-04-02	20	4 PR x 0.5	0.51	13.0	83.3	124	156.6	233
CF112-05-05-02 ¹⁾	20	5 PR x 0.5	0.53	13.5	101.5	151	186.1	277
CF112-05-06-02	20	6 PR x 0.5	0.57	14.5	114.9	171	216.4	322

¹⁾ Delivery time upon request
Note: The mentioned outer diameters are maximum values.

Order example: CF112-05-04-02 – In your desired length
CF112 Chainflex® series -05 Code nominal cross section -04 Number of pairs -02 Identification pairs

Online order ▶ www.chainflex.com/CF112

Delivery time 24hr or today.
Delivery time means time until shipping of goods.

TPE Coax cable | CFK coax

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- UV-resistant
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	E-Chain®	-31 °F to +212 °F (-35 °C to +100 °C) (CFKcoax1/3)
			-31 °F to +158 °F (-35 °C to +70 °C) (CFKcoax2)
		flexible	-58 °F to +212 °F (-50 °C to +100 °C) (CFKcoax1/3)
			-58 °F to +158 °F (-50 °C to +70 °C) (CFKcoax2)
		fixed	-67 °F to +212 °F (-55 °C to +100 °C) (CFKcoax1/3)
			-67 °F to +158 °F (-55 °C to +70 °C) (CFKcoax2)
	v max.	unsupported	32.81 ft/s (10 m/s)
	a max.	gliding	16.41 ft/s (5 m/s)
	Travel distance	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

Cable structure

	Conductors	CFKcoax1: Silvered copper wires. CFKcoax2: Tinned copper wires. CFKcoax3: Silvered copper wires.
	Conductor insulation	Special FEP-isolating mixture.
	Conductor construction	Conductors cabled in one layer with especially short pitch length.
	Color code	Coaxial elements - See Table
	Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90 % optical
	Element jacket	TPE mixture adapted to suit the requirements in E-Chains®.
	Outer jacket	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: See chart

Electrical Information

	Nominal voltage	500 V
	Test voltage	1500 V

 Configurators ► www.igus.com/CFKCOAX

1,244 types from stock ... no cutting costs*
... no minimum order quantity ... *(up to 10 cuts of the same part number)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Class 6.6.4.1

Properties and approvals

	UV resistance	High
	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)
	EAC	Certified according to no. TC RU C-DE.ME77.B.01254
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*	5 mio.		7.5 mio.		10 mio.	
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				12.5	13.5	14.5
CFKcoax1/3 - 13 / +194				10	11	12
CFKcoax2 -13 / +140	32.81	16.4	328.1 ≤ 1,312			
CFKcoax1/3 + 194 / +212				12.5	13.5	14.5
CFKcoax2 +140 / +158						

* Higher number of cycles possible - please ask for your individual calculation.

Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications

36 months guarantee on every chainflex® cable ...
... up to 10 million cycles guaranteed ...



Image exemplary.

Part No.	AWG	Compatible with plug type	Coaxial elements	Outer diameter max.		Copper index		Weight	
				in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFKoax1-01	30	RG 179	1	0.18	4.5	4.7	7	15.5	23
CFKoax1-05	30	RG 179	5	0.39	10.0	23.5	35	75.3	112
CFKoax2-01	20	RG 58	1	0.22	5.5	13.4	20	24.9	37
CFKoax3-01	30	RG 178	1	0.14	3.5	3.4	5	8.1	12

Note: The mentioned outer diameters are maximum values.

Part No.	Character- istic wave impedance [Ω]	Conductor Diameter nom.		Conductor Diameter over insulati- on nom.		Color code	Colour outer jacket (similar to RAL)
		in.	mm	in.	mm		
CFKoax1-01	75	0.012	0.3	0.062	1.6	red	Steel-blue (comparable RAL 5011)
CFKoax1-05	75	0.012	0.3	0.062	1.6	red, green, blue, white, black	Steel-blue (comparable RAL 5011)
CFKoax2-01	50	0.035	0.9	0.116	2.95	-	Jet black (similar to RAL 9005)
CFKoax3-01	50	0.012	0.3	0.033	0.84	-	Window-gray (comparable RAL 7040)

- Order example: CFKoax-1-01 – In your desired length**
CFKoax1 Chainflex® series -01 Number of coaxial elements
- Online order ▶ www.chainflex.com/CFKOAX
- Delivery time 24hr or today.
Delivery time means time until shipping of goods.

Configurators ▶ www.igus.com/CFKOAX



Coax cable and other Chainflex® cables in platform technology. E-Chain®: System E4/4