

Control cables



Chainflex® types ▶▶

Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	Oil-resistant	Torsion resistant v max. [ft/s], unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
Control cables										
Exclusive! Chainflex® guarantee – guaranteed lifetime						▶ Selection table page 64				
CF880	PVC		12.5	+41/ +158	   		9.84	65.62	66 New	
CF881	PVC	✓	12.5	+41/ +158	   		9.84	65.62	70 New	
CF130US	PVC		8	+41/ +176	   	✓	9.84	6.56	65.62 74	
CF140US	PVC	✓	10	+41/ +176	   	✓	9.84	6.56	65.62 78	
CF130-UL	PVC		7.5	+41/ +158	   	✓	9.84	6.56	65.62 82	
CF140-UL	PVC	✓	7.5	+41/ +158	   		9.84	6.56	65.62 86	
CF5	PVC		6.8	+41/ +158	   	✓	32.81	16.4	262.5 90	
CF6	PVC	✓	6.8	+41/ +158	   	✓	32.81	16.4	262.5 94	
CF890	iguPUR		12.5	-4/ +176	   	✓	9.84	65.62	98 New	
CF891	iguPUR	✓	12.5	-4/ +176	   	✓	9.84	65.62	102 New	
CF77-UL-D	PUR		6.8	-13/ +176	   	✓	32.81	16.4	262.5 106 New	
CF78-UL	PUR	✓	6.8	-13/ +176	   	✓	32.81	16.4	262.5 110	
CF2	PUR	✓	5	-4/ +176	   	✓	32.81	16.4	262.5 114	
CF9	TPE		5	-31/ +212	   	✓	32.81	19.69	328.1 118	
CF10	TPE	✓	5	-31/ +212	   	✓	32.81	19.69	328.1 122	
CF9-UL	TPE		5	-31/ +212	   	✓	32.81	19.69	328.1 126	
CF10-UL	TPE	✓	5	-31/ +212	   	✓	32.81	19.69	328.1 130	
CF98	TPE		4	-31/ +194	   	✓	32.81	19.69	328.1 134	
CF99	TPE	✓	4	-31/ +194	   	✓	32.81	19.69	328.1 136	



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 (1 million) cycles *			7.5 million (3 million) cycles *			10 million (5 million) cycles *			
Control cables							15	-		16	-		17	-	66
	CF880	+41 / +59 +59 / +140 +140 / +158	9.84	-	65.62	≤ 32.81	12.5	-		13.5	-		14.5	-	
							15	-		16	-		17	-	
	CF881	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.62	≤ 32.81	15	-		16	-		17	-	70
							12.5	-		13.5	-		14.5	-	
							15	-		16	-		17	-	
	CF130US	+23 / +59 +59 / +140 +140 / +176	9.84	6.56	65.62	≤ 29.52	10	-		12	-		13	-	74
							8	-		10	-		12	-	
							10	-		12	-		13	-	
	CF140US	+23 / +59 +59 / +140 +140 / +176	9.84	6.56	65.62	≤ 29.52	12	-		13	-		15	-	78
							10	-		12	-		13	-	
							12	-		13	-		15	-	
	CF130-UL	+41 / +59 +59 / +140 +140 / +158	9.84	6.56	65.62	≤ 164	10	12.5		11	13.5		12	14.5	82
							7.5	10		8.5	11		9.5	12	
							10	12.5		11	13.5		12	14.5	
	CF140-UL	+41 / +59 +59 / +140 +140 / +158	9.84	6.56	65.62	≤ 164	10	12.5		11	13.5		12	14.5	86
							7.5	10		8.5	11		9.5	12	
							10	12.5		11	13.5		12	14.5	
	CF5	+41 / +59 +59 / +140 +140 / +158	32.81	16.4	262.5	≤ 164	7.5	10		8.5	11		9.5	12	90
							6.8	7.5		7.8	8.5		8.8	9.5	
							7.5	10		8.5	11		9.5	12	
	CF6	+41 / +59 +59 / +140 +140 / +158	32.81	16.4	262.5	≤ 164	7.5	10		8.5	11		9.5	12	94
							6.8	7.5		7.8	8.5		8.8	9.5	
							7.5	10		8.5	11		9.5	12	
	CF890	-4 / +14 +14 / +158 +158 / +176	9.843	-	65.62	≤ 32.81	15	-		16	-		17	-	98
							12.5	-		13.5	-		14.5	-	
							15	-		16	-		17	-	
	CF891	-4 / +14 +14 / +158 +158 / +176	9.843	-	65.62	≤ 32.81	15	-		16	-		17	-	102
							12.5	-		13.5	-		14.5	-	
							15	-		16	-		17	-	
	CF77-UL-D	-13 / +5 +5 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1	8.5	10		9.5	11		10.5	12	106
							6.8	7.5		7.5	8.5		8.5	9.5	
							7.5	10		9.5	11		10.5	12	
	CF78-UL	-13 / +5 +5 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1	8.5	10		9.5	11		10.5	12	110
							6.8	7.5		7.5	8.5		8.5	9.5	
							7.5	10		9.5	11		10.5	12	
	CF2	-4 / +14 +14 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1		6.8 5 6.8			7.5 6.8 7.5			8.5 7.5 8.5	114
								6.8			7.5			8.5	
								6.8			7.5			8.5	
	CF9	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312		6.8 5 6.8			7.5 6 7.5			8.5 7 8.5	118
								6.8			7.5			8.5	
								6.8			7.5			8.5	
	CF10	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312		6.8 5 6.8			7.5 6 7.5			8.5 7 8.5	122
								6.8			7.5			8.5	
								6.8			7.5			8.5	
	CF9-UL	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312		6.8 5 6.8			7.5 6 7.5			10 7 10	126
								6.8			7.5			10	
								6.8			7.5			10	
	CF10-UL	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312		6.8 5 6.8			7.5 6 7.5			8.5 7 8.5	130
								6.8			7.5			8.5	
								6.8			7.5			8.5	
	CF98	-35 / -13 -13 / +176 +176 / +90	32.81	19.69	328.1	≤ 328.1		5 4 5			5 4 5			5 4 5	134
								5			5			5	
								5			5			5	
	CF99	-35 / -13 -13 / +176 +176 / +90	32.81	19.69	328.1	≤ 328.1		5 4 5			5 4 5			5 4 5	136
								5			5			5	
								5			5			5	

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

* Guaranteed lifetime, higher number of cycles possible.
Figures in brackets refer to CF880/CF881 and CF890/891.

PVC Control cable | CF880

- For low duty flexing applications
- PVC outer jacket
- Flame-retardant

Dynamic Information

	Bend radius	E-Chain®	min. 12.5 x d
		flexible	min. 10 x d
		fixed	min. 7 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.		
	a max.		65.6 ft/s² (20 m/s²)
	Travel distance		Unsupported travel distances up to 32.81 ft (10 m), Class 1

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality PVC mixture.
	Conductor construction	Conductors cabled with an optimized pitch length.
	Color code	Black with white numbers, one conductor green-yellow.
	Outer jacket	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

Electrical Information

	Nominal voltage	300 V
	Test voltage	2000 V (following DIN EN 50396)

 Configurators ► www.igus.com/CF880

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 3.1.1.1

Properties and approvals

	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 11008 and 2464, 300 V, 80 °C
	NFPA 79	Complies to NFPA 79-2015 chapter 12.9
	EAC	Certified according to no. TC RU C-DE.ME77.B.01560
	CTP	Certified according to no. C-DE.PB49.B.00449
	Lead-free	Following 2011/65/EC (RoHS-II)
	CE	Following 2014/35/EG

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

Cycles*		1 million		3 million		5 million	
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
+41 / +59				15	16	17	
+59 / +140	9.84	65.6	≤ 32.81	12.5	13.5	14.5	
+140 / +158				15	16	17	

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

Typical application areas

- For low duty flexing applications
- Without influence of oil
- Preferably indoor applications
- Especially for unsupported travel distances
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment



PVC Control cable | CF880

Class 3.1.1.1

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 [mm ²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF880-05-02	20	2 x 0.5	0.22	5.5	7.4	11	25.5	38
CF880-05-03	20	3 G 0.5	0.24	6.0	10.8	16	30.2	45
CF880-05-04	20	4 G 0.5	0.26	6.5	14.8	22	36.3	54
CF880-05-05	20	5 G 0.5	0.28	7.0	18.1	27	45.0	67
CF880-05-07 ¹⁾	20	7 G 0.5	0.33	8.5	24.9	37	66.5	99
CF880-05-12	20	12 G 0.5	0.37	9.5	43.0	64	97.4	145
CF880-05-18	20	18 G 0.5	0.45	11.5	64.5	96	141.8	211
New CF880-05-25	20	25 G 0.5	0.53	13.5	88.7	132	195.5	291
CF880-07-02	18	2 x 0.75	0.24	6.0	10.8	16	31.6	47
CF880-07-03	18	3 G 0.75	0.26	6.5	16.1	24	37.6	56
CF880-07-04	18	4 G 0.75	0.28	7.0	21.5	32	46.4	69
CF880-07-05	18	5 G 0.75	0.30	7.5	26.9	40	56.4	84
CF880-07-07	18	7 G 0.75	0.35	9.0	37.6	56	84.0	125
CF880-07-12	18	12 G 0.75	0.41	10.5	64.5	96	125.0	186
CF880-07-18	18	18 G 0.75	0.51	13.0	96.1	143	186.8	278
New CF880-07-25	18	25 G 0.75	0.59	15.0	133.0	198	258.0	384
CF880-10-02	17	2 x 1.0	0.26	6.5	14.8	22	36.3	54
CF880-10-03	17	3 G 1.0	0.26	6.5	21.5	32	45.7	68
CF880-10-04	17	4 G 1.0	0.28	7.0	28.9	43	55.8	83
CF880-10-05	17	5 G 1.0	0.31	8.0	35.6	53	67.9	101
CF880-10-07	17	7 G 1.0	0.37	9.5	49.7	74	102.8	153
CF880-10-12	17	12 G 1.0	0.45	11.5	85.3	127	153.9	229
CF880-10-18	17	18 G 1.0	0.53	13.5	128.3	191	224.4	334
New CF880-10-25	17	25 G 1.0	0.63	16.0	177.4	264	316.5	471
CF880-15-02	16	2 x 1.5	0.30	7.5	21.5	32	55.8	83
CF880-15-03	16	3 G 1.5	0.33	8.5	32.3	48	71.2	106
CF880-15-04	16	4 G 1.5	0.35	9.0	43.0	64	88.0	131
CF880-15-05	16	5 G 1.5	0.39	10.0	53.8	80	111.5	166
CF880-15-07	16	7 G 1.5	0.49	12.5	74.6	111	168.0	250
CF880-15-12	16	12 G 1.5	0.57	14.5	128.3	191	250.0	372
CF880-15-18	16	18 G 1.5	0.69	17.5	192.2	286	368.2	548
New CF880-15-25	16	25 G 1.5	0.83	21.0	266.1	396	516.1	768

¹⁾ Delivery time upon request Other types available on request.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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
CF880-25-03 ¹⁾	14	3 G 2.5	0.35	9.0	53.8	80	98.8	147
CF880-25-04	14	4 G 2.5	0.39	10.0	71.2	106	127.0	189
CF880-25-05	14	5 G 2.5	0.45	11.5	88.7	132	157.9	235
CF880-25-07	14	7 G 2.5	0.55	14.0	124.3	185	237.9	354
CF880-25-12	14	12 G 2.5	0.65	16.5	213.0	317	358.2	533
New CF880-25-25	14	25 G 2.5	0.94	24.0	443.5	660	747.2	1112

¹⁾ Delivery time upon request Other types available on request.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core



Order example: **CF880-07-03** – in your desired length
CF880 Chainflex® series **-07** Code Nominal cross section **-03** Number of conductors



Online order: www.chainflex.com/CF880



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



PVC Control cable | CF881

- For low duty flexing applications
- PVC outer jacket
- Shielded
- Flame-retardant

Dynamic Information

	Bend radius	E-Chain®	min. 12.5 x d
		flexible	min. 10 x d
		fixed	min. 7 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.		
	a max.		65.6 ft/s² (20 m/s²)
	Travel distance		Unsupported travel distances up to 32.81 ft (10 m), Class 1

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality PVC mixture.
	Conductor construction	Conductors cabled with an optimized pitch length.
	Color code	Black with white numbers, one conductor green-yellow.
	Overall shield	Tinned copper braid. 60% optical coverage
	Outer jacket	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

Electrical Information

	Nominal voltage	300 V
	Test voltage	2000 V (following DIN EN 50396)

Class 3.1.1.1

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°				

Properties and approvals

	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 11008 and 2464, 300 V, 80 °C
	NFPA 79	Complies to NFPA 79-2015 chapter 12.9
	EAC	Certified according to no. TC RU C-DE.ME77.B.01560
	CTP	Certified according to no. C-DE.PB49.B.00449
	Lead-free	Following 2011/65/EC (RoHS-II)
	CE	Following 2014/35/EG

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

Cycles*		1 million		3 million		5 million	
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
+41 / +59				15	16	17	
+59 / +140	9.84	65.6	≤ 32.81	12.5	13.5	14.5	
+140 / +158				15	16	17	

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

Typical application areas

- For low duty flexing applications
- Without influence of oil
- Preferably indoor applications
- Especially for unsupported travel distances
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

 Configurators ► www.igus.com/CF881



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
CF881-05-02 ¹⁾	20	2 x 0.5	0.24	6.0	18.8	28	35.6	53
CF881-05-03	20	3 G 0.5	0.26	6.5	22.8	34	40.3	60
CF881-05-04 ¹⁾	20	4 G 0.5	0.28	7.0	29.6	44	50.4	75
CF881-05-05	20	5 G 0.5	0.30	7.5	33.6	50	57.8	86
CF881-05-07 ¹⁾	20	7 G 0.5	0.35	9.0	48.4	72	82.7	123
CF881-05-12	20	12 G 0.5	0.41	10.5	69.9	104	115.6	172
CF881-05-18 ¹⁾	20	18 G 0.5	0.47	12.0	94.7	141	159.9	238
New CF881-05-25	20	25 G 0.5	0.57	14.5	136.4	203	227.1	338
CF881-07-02	18	2 x 0.75	0.26	6.5	22.8	34	40.3	60
CF881-07-03	18	3 G 0.75	0.28	7.0	31.6	47	51.1	76
CF881-07-04	18	4 G 0.75	0.30	7.5	37.0	55	59.1	88
CF881-07-05	18	5 G 0.75	0.31	8.0	46.4	69	74.6	111
CF881-07-07	18	7 G 0.75	0.39	10.0	60.5	90	100.8	150
CF881-07-12	18	12 G 0.75	0.45	11.5	91.4	136	144.5	215
CF881-07-18	18	18 G 0.75	0.53	13.5	130.4	194	205.6	306
New CF881-07-25	18	25 G 0.75	0.63	16.0	188.2	280	291.0	433
CF881-10-02	17	2 x 1.0	0.28	7.0	29.6	44	49.1	73
CF881-10-03	17	3 G 1.0	0.30	7.5	37.0	55	57.1	85
CF881-10-04	17	4 G 1.0	0.31	8.0	48.4	72	71.9	107
CF881-10-05	17	5 G 1.0	0.33	8.5	55.1	82	84.7	126
CF881-10-07	17	7 G 1.0	0.41	10.5	76.6	114	118.9	177
CF881-10-12	17	12 G 1.0	0.47	12.0	116.3	173	172.0	256
CF881-10-18	17	18 G 1.0	0.57	14.5	176.1	262	259.4	386
New CF881-10-25	17	25 G 1.0	0.67	17.0	239.2	356	352.1	524
CF881-15-02	16	2 x 1.5	0.33	8.5	41.0	61	69.9	104
CF881-15-03	16	3 G 1.5	0.35	9.0	51.7	77	84.0	125
CF881-15-04	16	4 G 1.5	0.39	10.0	65.9	98	106.8	159
CF881-15-05	16	5 G 1.5	0.43	11.0	80.6	120	129.0	192
CF881-15-07	16	7 G 1.5	0.51	13.0	109.5	163	181.4	270
CF881-15-12	16	12 G 1.5	0.63	16.0	182.8	272	285.6	425
CF881-15-18	16	18 G 1.5	0.73	18.5	260.1	387	408.6	608
New CF881-15-25	16	25 G 1.5	0.87	22.0	348.8	519	547.0	814

¹⁾ Delivery time upon request Other types available on request.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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
CF881-25-03 ¹⁾	14	3 G 2.5	0.39	10.0	76.6	114	114.9	171
CF881-25-04	14	4 G 2.5	0.43	11.0	98.1	146	148.5	221
CF881-25-05	14	5 G 2.5	0.47	12.0	119.6	178	176.1	262
CF881-25-07	14	7 G 2.5	0.59	15.0	172.0	256	258.0	384
CF881-25-12	14	12 G 2.5	0.69	17.5	274.8	409	393.1	585
New CF881-25-25	14	25 G 2.5	0.98	25.0	532.2	792	766.0	1140

¹⁾ Delivery time upon request Other types available on request.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

- 

Order example: **CF881-40-40** – In your desired length
CF881 Chainflex® series **-40** Code nominal cross section **-40** Number of conductors
- 

Online order: www.chainflex.com/CF881
- 

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



PVC Control cable | CF130US

- For flexing applications
- PVC outer jacket
- Oil-resistant
- Flame-retardant
- UL Tray cable for exposed run (TC-ER)

Dynamic Information

	Bend radius	E-Chain®	min. 8 x d
		flexible	min. 7.5 x d
		fixed	min. 5 x d
	Temperature	E-Chain®	+41 °F to +176 °F (+5 °C to +80 °C)
		flexible	+23 °F to +176 °F (-5 °C to +80 °C)
		fixed	-4 °F to +194 °F (-20 °C to +90 °C)
	v max.	unsupported	9.84 ft/s (3 m/s)
		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 30 ft (9 m), Class 1	
	Torsion	± 90°, with 3.281 ft (1 m) cable length	

Cable structure

	Conductor	Finely stranded bundled bare copper wires. Designed in accordance with ASTM B174-95.
	Conductor insulation	Mechanically high-quality, PVC/Nylon.
	Conductor construction	Conductors concentrically layered with short pitch.
	Color code	Black with white numbers, one green-yellow. **
	Outer jacket	Oil-resistant UV-resistant PVC, low-adhesion blend, adapted to the requirements of the Energy Chain®. Color: Gray (RAL 7001)

Electrical Information

	Nominal voltage	600 V
	Testing voltage	3300 V

** Custom color codes are available upon request.



Configurators ► www.igus.com/CF130US

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 3.1.4.2

Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil resistant (according to DIN EN 60811-2-1, DIN EN 50363-4-1, Class 4
	Flame resistance	CSA AWM: FT4
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	For installation in accordance with all applicable sections of the National Electric Code. 22-10 AWG: UL Type MTW (Machine Tool Wire), 18-10 AWG: UL Type TC (Tray Cable) UL AWM: 2587 90 °C 600V; CSA AWM: I/II A/B 90 °C 600V FT4 2002/95/EC; Please reference the Design Section for more information.
	Lead-free	In accordance with European Council Directive 73/23/EEC
	CE	
	Info	In general these cables will offer continuous-flex performance in specific “Tray Cable” and “Machine Tool Wire” NEC compliant installations. The CF130US line is designed for use in 600V control and power applications. The oil-resistant jacket also passes the stringent 70,000 BTU UL and CSA Vertical Flame Tests. Not recommended for long travel / gliding applications.

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+23 / +59				10	12	13
+59 / +140	9.84	6.56	≤ 29.52	8	10	12
+140 / +176				10	12	13

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

Typical application areas

- For medium mechanical load requirements
- Suitable for indoor/outdoor applications
- Especially for unsupported travel distances and for low-duty gliding applications up to 30 ft (9m)
- UL Tray cable for exposed run (TC-ER)
- Wood/stone processing, packaging industry, supply system, handling, adjusting equipment, machine tools



PVC Control cable | CF130US



Image exemplary.

Part No.	Number of Conductors	AWG	Strand/ AWG	Outer diameter max.		Copper index		Weight	
				in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF130US-05-02	2	20	26/34	0.27	6.7	6.4	10	22.0	33
CF130US-05-03	3	20	26/34	0.28	7.1	10.0	15	35.0	52
CF130US-05-04	4	20	26/34	0.31	7.9	13.0	19	49.3	73
CF130US-05-05	5	20	26/34	0.33	8.4	16.0	24	56.7	84
CF130US-05-07	7	20	26/34	0.38	9.7	22.5	33	72.9	108
CF130US-05-12	12	20	26/34	0.47	11.9	38.5	57	115.8	172
CF130US-05-18	18	20	26/34	0.55	14.0	57.8	86	161.9	241
CF130US-05-25	25	20	26/34	0.66	16.6	80.3	119	215.7	321
CF130US-07-04	4	18	41/34	0.33	8.3	20.2	30	59.1	88
CF130US-07-05	5	18	41/34	0.35	8.9	25.5	38	68.5	102
CF130US-07-07	7	18	41/34	0.40	10.2	35.6	53	88.7	132
CF130US-07-12	12	18	41/34	0.50	12.7	60.5	90	143.1	213
CF130US-07-18	18	18	41/34	0.58	14.7	91.4	136	202.9	302
CF130US-07-25	25	18	41/34	0.69	17.5	126.3	188	270.8	403
CF130US-15-03	3	16	65/34	0.33	8.4	24.2	36	59.8	89
CF130US-15-04	4	16	65/34	0.35	9	32.3	48	76.6	114
CF130US-15-05	5	16	65/34	0.39	9.8	40.3	60	88.7	132
CF130US-15-07	7	16	65/34	0.44	11.3	56.4	84	129.0	192
CF130US-15-10	10	16	65/34	0.56	14.2	80.6	120	184.1	274
CF130US-15-12	12	16	65/34	0.56	14.2	96.1	143	196.2	292
CF130US-15-18	18	16	65/34	0.65	16.4	144.5	215	282.9	421
CF130US-15-22	22	16	65/34	0.71	18	176.7	263	339.3	505
CF130US-15-25	25	16	65/34	0.76	19.4	200.2	298	389.7	580
CF130US-15-33	33	16	65/34	0.85	21.6	264.8	394	556.4	828
CF130US-25-04	4	14	105/34	0.39	9.8	51.7	77	101.5	151
CF130US-25-07	7	14	105/34	0.51	13	90.7	135	170.7	254
CF130US-25-10	10	14	105/34	0.63	16	127.7	190	223.8	333
CF130US-25-12	12	14	105/34	0.61	15.6	155.9	232	269.5	401
CF130US-40-04	4	12	165/34	0.49	12.4	79.3	118	149.2	222
CF130US-60-04	4	10	259/34	0.56	14.2	129.7	193	219.7	327
CF130US-60-05	5	10	259/34	0.61	15.5	162.6	242	261.4	389

Note: The mentioned outer diameters are maximum values.
** Custom color codes are available upon request. Minimum order may apply.

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 3.1.4.2

- Order example: CF130US-07-04 – In your desired length**
CF130US Chainflex® series -07 Code nominal cross section -04 Number of conductors
- Online order: www.chainflex.com/CF130US
- Delivery time 24hr or today.
Delivery time means time until shipping of goods.



PVC Control cable | CF140US

- For flexing applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant
- UL Tray cable for exposed run (TC-ER)

Dynamic Information

	Bend radius	E-Chain®	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 7.5 x d
	Temperature	E-Chain®	+41 °F to +176 °F (+5 °C to +80 °C)
		flexible	+23 °F to +176 °F (-5 °C to +80 °C)
		fixed	-4 °F to +194 °F (-20 °C to +90 °C)
	v max.	unsupported	9.84 ft/s (3 m/s)
	a max.	gliding	6.56 ft/s (2 m/s)
			65.6 ft/s² (20 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 30 ft (9 m), Class 1	

Cable structure

	Conductor	Finely stranded bundled bare copper wires. Designed in accordance with ASTM B174-95.	
	Conductor insulation	Mechanically high-quality, PVC/Nylon.	
	Conductor construction	Conductors concentrically layered with short pitch.	
	Color code	Black with white numbers, one green-yellow. **	
	Inner jacket	Low-adhesion PVC.	
	Overall shield	Tinned copper braid. 85% optical coverage	
	Outer jacket	Oil-resistant UV-resistant PVC, low-adhesion blend, adapted to the requirements of the Energy Chain®. Color: Gray (RAL 7001)	

Electrical Information

	Nominal voltage	600 V
	Testing voltage	3300 V

** Custom color codes are available upon request.



Configurators ► www.igus.com/CF140US

Requirements

Travel distance

Oil-resistance

Torsion

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

Class 3.1.4.2

Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil resistant (according to DIN EN 60811-2-1, DIN EN 50363-4-1, Class 4
	Flame resistance	CSA AWM: FT4
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	For installation in accordance with all applicable sections of the National Electric Code. 22-10 AWG: UL Type MTW (Machine Tool Wire), 18-10 AWG: UL Type TC (Tray Cable) UL AWM: 2587 90 °C 600V; CSA AWM: I/II A/B 90 °C 600V FT4 2002/95/EC; Please reference the Design Section for more information.
	Lead-free	In accordance with European Council Directive 73/23/EEC
	CE	
	Info	In general these cables will offer continuous-flex performance in specific “Tray Cable” and “Machine Tool Wire” NEC compliant installations. The CF140US line is designed for use in 600V control and power applications. The oil-resistant jacket also passes the stringent 70,000 BTU UL and CSA Vertical Flame Tests. Not recommended for long travel / gliding applications.

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+23 / +59				12	13	15
+59 / +140	9.84	6.56	≤ 29.52	10	12	13
+140 / +176				12	13	15

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

Typical application areas

- For medium mechanical load requirements
- Suitable for indoor/outdoor applications
- Especially for unsupported travel distances and for low-duty gliding applications up to 30 ft (9m)
- UL Tray cable for exposed run (TC-ER)
- Wood/stone processing, packaging industry, supply system, handling, adjusting equipment, machine tools



PVC Control cable | CF140US

IGUS CHAINFLEX® CF-140-US

Image exemplary.

Part No.	Number of Conductors	AWG	Strand/ AWG	Outer diameter max.		Copper index		Weight	
				in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF140US-05-02	2	20	26/34	0.35	8.8	14.8	22	55.1	82
CF140US-05-03	3	20	26/34	0.36	9.1	20.8	31	66.5	99
CF140US-05-04	4	20	26/34	0.39	9.9	24.9	37	74.6	111
CF140US-05-05	5	20	26/34	0.41	10.4	28.2	42	87.4	130
CF140US-05-07	7	20	26/34	0.46	11.7	37.6	56	108.2	161
CF140US-05-12	12	20	26/34	0.55	14	61.1	91	165.3	246
CF140US-05-18	18	20	26/34	0.63	16.1	84.0	125	219.1	326
CF140US-05-25	25	20	26/34	0.78	19.7	115.6	172	291.0	433
CF140US-07-04	4	18	41/34	0.40	10.2	32.3	48	88.7	132
CF140US-07-05	5	18	41/34	0.43	10.8	28.9	43	101.5	151
CF140US-07-07	7	18	41/34	0.48	12.2	51.1	76	127.0	189
CF140US-07-12	12	18	41/34	0.57	14.6	86.0	128	196.9	293
CF140US-07-18	18	18	41/34	0.66	16.8	123.0	183	267.4	398
CF140US-07-25	25	18	41/34	0.78	19.7	161.3	240	283.6	422
CF140US-15-03	3	16	65/34	0.41	10.3	37.0	55	92.7	138
CF140US-15-04	4	16	65/34	0.43	10.9	46.4	69	108.9	162
CF140US-15-05	5	16	65/34	0.46	11.7	63.2	94	125.0	186
CF140US-15-07	7	16	65/34	0.52	13.3	79.3	118	154.6	230
CF140US-15-12	12	16	65/34	0.64	16.3	118.9	177	250.0	372
CF140US-15-18	18	16	65/34	0.72	18.4	169.3	252	334.6	498
CF140US-15-22	22	16	65/34	0.76	19.2	203.6	303	385.7	574
CF140US-15-25	25	16	65/34	0.85	21.6	241.2	359	454.9	677
CF140US-15-33	33	16	65/34	0.93	23.5	307.1	457	578.6	861
CF140US-25-04	4	14	105/34	0.46	11.8	67.2	100	137.1	204
CF140US-25-07	7	14	105/34	0.59	14.9	110.9	165	217.7	324
CF140US-25-12	10	14	105/34	0.69	17.5	180.1	268	326.6	486
CF140US-25-18	12	14	105/34	0.79	20	200.2	298	350.4	521.5
CF140US-40-04	4	12	165/34	0.57	14.5	99.5	148	195.5	291
CF140US-60-04	4	10	259/34	0.64	16.3	155.2	231	270.1	402
CF140US-60-05	5	10	259/34	0.69	17.5	186.8	278	318.5	474

Note: The mentioned outer diameters are maximum values.

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 3.1.4.2



Order example: **CF140US-15-07** – In your desired length
CF140US Chainflex® series **-15** Code nominal cross section **-07** Number of conductors



Online order: www.chainflex.com/CF140US

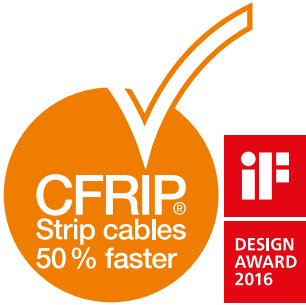


Delivery time 24hr or today.
Delivery time means time until shipping of goods.



PVC Control cable | CF130-UL

- For medium mechanical load requirements
- PVC outer jacket
- 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)
	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	
	Torsion	± 90°, with 3.281 ft (1 m) cable length	

Cable structure

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Number of conductors < 12: Conductors cabled in a layer with short pitch length. Number of conductors ≥ 12: Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	Color code	24-22 AWG: Color code in accordance with DIN 47100. 20-4 AWG: Black with white numbers, one conductor green-yellow.

	Outer jacket	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 5). Color: Gray (RAL 7001)
	CFRIP®	Strip cables 50% faster: The tear strip is in the outer jacket Video ▶ www.igus.com/CFRIP

Electrical Information

	Nominal voltage	300 V
	Testing voltage	2000 V (following DIN EN 50396)
	Configurators ▶ www.igus.com/CF130	

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 4.4.1.2

Properties and approvals

	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	Style 10493 and 20200, 300 V, 60 °C
	NFPA 79	Complies to NFPA 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 CF130-15-07-UL, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EG

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
+41 / +59	≤ 164	10	12.5	11	13.5	12	14.5
+59 / +140		7.5	10	8.5	11	9.5	12
+140 / +158		10	12.5	11	13.5	12	14.5

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

Typical application areas

- For medium mechanical load requirements
- Without influence of oil
- Preferably indoor applications
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Wood/stone processing, packaging industry, supply systems, Handling, adjusting equipment



Chainflex® CF130.UL for woodworking. E-Chain®: E4/light

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 ...



PVC Control cable | CF130-UL

Strip cables 50 % faster



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
CF130-02-03-UL	24	3 x 0.25	0.20	5.0	6.0	9	16.8	25
CF130-02-04-UL	24	4 x 0.25	0.22	5.5	7.4	11	19.5	29
CF130-02-06-UL	24	6 x 0.25	0.24	6.0	11.4	17	32.9	49
CF130-02-07-UL	24	7 x 0.25	0.26	6.5	13.4	20	31.6	47
CF130-02-12-UL	24	12 x 0.25	0.33	8.5	23.5	35	65.9	98
CF130-02-20-UL	24	20 x 0.25	0.41	10.5	36.3	54	99.5	148
CF130-02-25-UL	24	25 x 0.25	0.45	11.5	47.0	70	106.2	158
CF130-02-30-UL	24	30 x 0.25	0.49	12.5	53.8	80	127.0	189
CF130-03-02-UL	22	2 x 0.34	0.20	5.0	5.4	8	17.5	26
CF130-03-05-UL	22	5 x 0.34	0.24	6.0	12.8	19	27.6	41
CF130-05-02-UL	20	2 x 0.5	0.22	5.5	7.4	11	25.5	38
CF130-05-03-UL	20	3 G 0.5	0.22	5.5	11.4	17	26.9	40
CF130-05-04-UL	20	4 G 0.5	0.24	6.0	14.8	22	32.3	48
CF130-05-05-UL	20	5 G 0.5	0.26	6.5	18.8	28	38.3	57
CF130-05-07-UL	20	7 G 0.5	0.30	7.5	26.2	39	52.4	78
CF130-05-12-UL	20	12 G 0.5	0.39	10.0	44.3	66	96.1	143
CF130-05-18-UL	20	18 G 0.5	0.47	12.0	66.5	99	126.3	188
CF130-05-25-UL	20	25 G 0.5	0.53	13.5	92.7	138	180.1	268
CF130-07-02-UL	18	2 x 0.75	0.24	6.0	10.8	16	28.2	42
CF130-07-03-UL	18	3 G 0.75	0.24	6.0	16.1	24	34.3	51
CF130-07-04-UL	18	4 G 0.75	0.26	6.5	21.5	32	39.6	59
CF130-07-05-UL	18	5 G 0.75	0.28	7.0	26.9	40	47.7	71
CF130-07-07-UL	18	7 G 0.75	0.31	8.0	37.6	56	65.9	98
CF130-07-12-UL	18	12 G 0.75	0.43	11.0	64.5	96	106.2	158
CF130-07-18-UL	18	18 G 0.75	0.53	13.5	96.1	143	157.9	235
CF130-07-25-UL	18	25 G 0.75	0.63	16.0	133.0	198	238.5	355
CF130-07-36-UL	18	36 G 0.75	0.75	19.0	210.3	313	369.6	550
CF130-07-42-UL ¹⁾	18	42 G 0.75	0.83	21.0	245.3	365	424.7	632
CF130-10-02-UL	17	2 x 1.0	0.24	6.0	14.8	22	34.9	52
CF130-10-03-UL	17	3 G 1.0	0.26	6.5	21.5	32	41.7	62
CF130-10-04-UL	17	4 G 1.0	0.28	7.0	28.9	43	51.1	76
CF130-10-05-UL	17	5 G 1.0	0.30	7.5	35.6	53	61.8	92
CF130-10-07-UL	17	7 G 1.0	0.35	9.0	49.7	74	84.0	125
CF130-10-12-UL	17	12 G 1.0	0.49	12.5	85.3	127	138.4	206
CF130-10-18-UL	17	18 G 1.0	0.59	15.0	128.3	191	194.9	290
CF130-10-25-UL	17	25 G 1.0	0.69	17.5	177.4	264	276.2	411

¹⁾ Delivery time upon request Other types available on request.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

Class 4.4.1.2

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°				

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
CF130-15-02-UL	16	2 x 1.5	0.28	7.0	21.5	32	43.0	64
CF130-15-03-UL	16	3 G 1.5	0.28	7.0	32.3	48	53.1	79
CF130-15-04-UL	16	4 G 1.5	0.31	8.0	43.0	64	67.2	100
CF130-15-05-UL	16	5 G 1.5	0.33	8.5	53.8	80	80.6	120
CF130-15-07-UL ¹⁷⁾	16	7 G 1.5	0.37	9.5	74.6	111	107.5	160
CF130-15-12-UL	16	12 G 1.5	0.51	13.0	128.3	191	192.9	287
CF130-15-18-UL	16	18 G 1.5	0.69	17.5	192.2	286	325.2	484
CF130-15-25-UL	16	25 G 1.5	0.77	19.5	266.1	396	414.6	617
CF130-15-36-UL ¹⁾	16	36 G 1.5	0.93	23.5	419.3	624	626.3	932
CF130-15-42-UL ¹⁾	16	42 G 1.5	1.04	26.5	489.9	729	728.4	1084
CF130-25-03-UL	14	3 G 2.5	0.33	8.5	53.8	80	82.7	123
CF130-25-04-UL	14	4 G 2.5	0.37	9.5	71.2	106	102.8	153
CF130-25-07-UL ¹⁷⁾	14	7 G 2.5	0.47	12.0	124.3	185	175.4	261
CF130-25-12-UL	14	12 G 2.5	0.69	17.5	213.0	317	356.1	530
CF130-40-03-UL	12	3 G 4.0	0.39	10.0	85.3	127	131.7	196
CF130-40-05-UL	12	5 G 4.0	0.47	12.0	142.5	212	210.3	313
CF130-60-04-UL	10	4 G 6.0	0.53	13.5	170.7	254	260.1	387
CF130-60-05-UL	10	5 G 6.0	0.57	14.5	213.0	317	313.8	467
CF130-100-05-UL ¹⁾	8	5 G 10.0	0.75	19.0	354.8	528	503.3	749
CF130-160-05-UL	6	5 G 16.0	0.89	22.5	567.8	845	762.7	1135
CF130-250-05-UL ¹⁾	4	5 G 25.0	1.10	28.0	887.0	1320	1137.0	1692

¹⁾ Delivery time upon request
¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

Order example: CF130-05-02-UL – In your desired length
CF130-UL Chainflex® series -05 Code nominal cross section -02 Number of conductors

Online order: www.chainflex.com/CF130

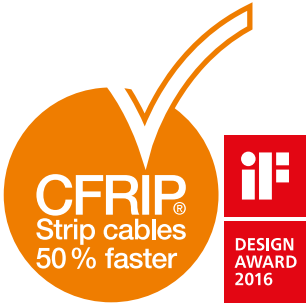
Delivery time 24hr or today.
Delivery time means time until shipping of goods.

Configurators ► www.igus.com/CF130



PVC Control cable | CF140-UL

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- 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)
	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

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Number of conductors < 12: Conductors cabled in a layer with short pitch length. Number of conductors ≥ 12: Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.

	Color code	24-22 AWG: Color code in accordance with DIN 47100. 20-14 AWG: Black with white numbers, one conductor green-yellow.
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	Inner jacket	PVC mixture adapted to suit the requirements in E-Chains®.
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	Overall shield	Bending-resistant tinned copper braid. 80% optical coverage
--	----------------	--

	Outer jacket	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 5).
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	CFRIP®	Strip cables 50% faster: The tear strip is in the inner jacket Video ▶ www.igus.com/CFRIP
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	Configurators ▶ www.igus.com/CF140
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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 4.4.1.1

Electrical Information

	Nominal voltage	300 V
	Testing voltage	2000 V (following DIN EN 50396)
Properties and approvals		
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	UL/CSA	Style 10493 and 20200, 300 V, 60 °C
	NFPA 79	Complies to NFPA 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 CF130-15-07-UL, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EG

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
+41 / +59		10	12.5	11	13.5	12	14.5
+59 / +140	≤ 164	7.5	10	8.5	11	9.5	12
+140 / +158		10	12.5	11	13.5	12	14.5

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

Typical application areas

- For medium mechanical load requirements
- Without influence of oil
- Preferably indoor applications
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment



PVC Control cable | CF140-UL

Strip cables 50 % faster



Image exemplary.

Class 4.4.1.1

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°				

- Order example: **CF140-10-04-UL** – In your desired length
CF140-UL Chainflex® series **-10** Code nominal cross section **-04** Number of conductors
- Online order: www.chainflex.com/CF140
- Delivery time 24hr or today.
Delivery time means time until shipping of goods.



Chainflex® CF140.UL in the feeder automation. E-Chain®: E-Z Chain®

Configurators ► www.igus.com/CF140

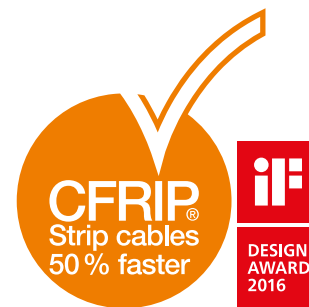
Part No.	AWG	Number of conductors and rated cross section [mm ²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF140-02-12-UL	24	12 x 0.25	0.41	10.5	51.1	76	79.3	118
CF140-03-05-UL	22	5 x 0.34	0.30	7.5	24.9	37	49.7	74
CF140-05-03-UL	20	3 G 0.5	0.28	7.0	22.8	34	49.7	74
CF140-05-05-UL	20	5 G 0.5	0.31	8.0	32.3	48	63.2	94
CF140-05-18-UL	20	18 G 0.5	0.57	14.5	104.8	156	172.7	257
CF140-05-36-UL	20	36 G 0.5	0.73	18.5	184.1	274	325.9	485
CF140-07-03-UL	18	3 G 0.75	0.31	8.0	29.6	44	58.5	87
CF140-07-04-UL	18	4 G 0.75	0.33	8.5	36.3	54	69.9	104
CF140-07-05-UL	18	5 G 0.75	0.35	9.0	43.0	64	79.3	118
CF140-07-07-UL	18	7 G 0.75	0.39	10.0	58.5	87	104.8	156
CF140-07-12-UL	18	12 G 0.75	0.51	13.0	97.4	145	183.4	273
CF140-07-18-UL	18	18 G 0.75	0.61	15.5	139.1	207	250.0	372
CF140-07-25-UL	18	25 G 0.75	0.71	18.0	186.8	278	334.0	497
CF140-07-36-UL	18	36 G 0.75	0.87	22.0	279.5	416	513.4	764
CF140-07-42-UL ¹⁾	18	42 G 0.75	0.94	24.0	328.6	489	562.4	837
CF140-10-02-UL	17	2 x 1.0	0.31	8.0	24.9	37	59.1	88
CF140-10-03-UL	17	3 G 1.0	0.33	8.5	36.3	54	69.2	103
CF140-10-04-UL	17	4 G 1.0	0.35	9.0	43.7	65	76.6	114
CF140-10-05-UL	17	5 G 1.0	0.37	9.5	52.4	78	88.7	132
CF140-10-07-UL	17	7 G 1.0	0.41	10.5	73.9	110	122.3	182
CF140-10-12-UL	17	12 G 1.0	0.55	14.0	119.6	178	206.3	307
CF140-10-18-UL	17	18 G 1.0	0.69	17.5	172.0	256	288.9	430
CF140-10-25-UL	17	25 G 1.0	0.77	19.5	233.2	347	392.4	584
CF140-15-03-UL	16	3 G 1.5	0.35	9.0	48.4	72	83.3	124
CF140-15-04-UL	16	4 G 1.5	0.37	9.5	60.5	90	98.1	146
CF140-15-05-UL	16	5 G 1.5	0.41	10.5	77.3	115	117.6	175
CF140-15-07-UL ¹⁷⁾	16	7 G 1.5	0.47	12.0	102.8	153	157.9	235
CF140-15-12-UL	16	12 G 1.5	0.63	16.0	167.3	249	270.8	403
CF140-15-18-UL	16	18 G 1.5	0.75	19.0	247.3	368	326.6	486
CF140-15-25-UL	16	25 G 1.5	0.89	22.5	332.6	495	516.1	768
CF140-15-36-UL ¹⁾	16	36 G 1.5	1.04	26.5	480.5	715	807.7	1202
CF140-15-42-UL ¹⁾	16	42 G 1.5	1.16	29.5	565.1	841	955.5	1422
CF140-25-03-UL	14	3 G 2.5	0.41	10.5	75.9	113	139.8	208
CF140-25-04-UL	14	4 G 2.5	0.45	11.5	99.5	148	147.2	219

¹⁾ Delivery time upon request
¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core



PVC Control cable | CF5

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



Dynamic Information

	Bend radius	E-Chain®	min. 6.8 x d
		flexible	min. 5 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)
	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	
	Torsion	± 90°, with 3.281 ft (1 m) cable length	

Cable structure

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	24-20 AWG: Mechanically high-quality TPE mixture. 18-14 AWG: Mechanically high-quality PVC mixture (following DIN VDE 0207 Part 4).
	Conductor construction	Number of conductors < 12: Conductors cabled in a layer with short pitch length. Number of conductors ≥ 12: Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	Color code	24-22 AWG: Color code in accordance with DIN 47100. 20-14 AWG: Black with white numbers, one conductor green-yellow.

	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: Green (RAL 6005)
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	CFRIP®	Strip cables 50% faster: The tear strip is in the outer jacket Video ► www.igus.com/CFRIP
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Configurators ► www.igus.com/CF5

Class 5.5.2.2

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°				

Electrical Information

	Nominal voltage	600 V
	Testing voltage	2000 V (following DIN EN 50396)
Properties and approvals		
	UV resistance	Medium
	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
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	UL/CSA	24-20 AWG: Style 10492 and 2570, 600 V, 80 °C 18-14 AWG: Style 11113 and 2570, 600 V, 80 °C
	NFPA 79	Complies to NFPA 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 2, material/cable tested by IPA according to ISO standard 14644-1
	CE	Following 2014/35/EG

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
+41 / +59	≤ 164	7.5	10	8.5	11	9.5	12
+59 / +140		6.8	7.5	7.8	8.5	8.8	9.5
+140 / +158		7.5	10	8.5	11	9.5	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, quick 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 ...

PVC Control cable | CF5

Strip cables 50 % faster

IGUS® CHAINFLEX® CF5

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
CF5-02-36	24	36 x 0.25	0.59	15.0	70.6	105	144.5	215
CF5-03-15	22	15 x 0.34	0.43	11.0	39.0	58	94.7	141
CF5-03-18	22	18 x 0.34	0.47	12.0	47.7	71	122.3	182
CF5-03-25	22	25 x 0.34	0.55	14.0	65.2	97	164.0	244
CF5-05-02	20	2 x 0.5	0.24	6.0	7.4	11	25.5	38
CF5-05-03	20	3 G 0.5	0.24	6.0	10.8	16	28.2	42
CF5-05-05	20	5 G 0.5	0.28	7.0	18.1	27	50.4	75
CF5-05-07	20	7 G 0.5	0.31	8.0	25.5	38	53.8	80
CF5-05-12	20	12 G 0.5	0.43	11.0	43.0	64	90.0	134
CF5-05-18	20	18 G 0.5	0.51	13.0	64.5	96	131.0	195
CF5-05-25	20	25 G 0.5	0.63	16.0	88.7	132	194.2	289
CF5-05-30	20	30 G 0.5	0.71	18.0	106.8	159	280.2	417
CF5-07-03	18	3 G 0.75	0.26	6.5	16.1	24	37.6	56
CF5-07-04	18	4 G 0.75	0.28	7.0	22.2	33	45.7	68
CF5-07-05	18	5 G 0.75	0.30	7.5	27.6	41	56.4	84
CF5-07-07	18	7 G 0.75	0.35	9.0	39.0	58	79.3	118
CF5-07-12	18	12 G 0.75	0.49	12.5	64.5	96	130.4	194
CF5-07-18	18	18 G 0.75	0.59	15.0	96.1	143	186.8	278
CF5-07-25	18	25 G 0.75	0.69	17.5	136.4	203	266.8	397
CF5-07-36	18	36 G 0.75	0.87	22.0	191.5	285	406.5	605
CF5-07-42	18	42 G 0.75	0.94	24.0	223.8	333	442.2	658
CF5-10-03	17	3 G 1.0	0.26	6.5	21.5	32	38.3	57
CF5-10-04	17	4 G 1.0	0.28	7.0	28.9	43	53.8	80
CF5-10-05	17	5 G 1.0	0.31	8.0	35.6	53	65.2	97
CF5-10-07	17	7 G 1.0	0.37	9.5	52.4	78	90.7	135
CF5-10-12	17	12 G 1.0	0.51	13.0	85.3	127	157.9	235
CF5-10-18	17	18 G 1.0	0.65	16.5	128.3	191	213.7	318
CF5-10-25	17	25 G 1.0	0.77	19.5	177.4	264	338.0	503

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

 Configurators ► www.igus.com/CF5

Class 5.5.2.2

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°			

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
CF5-15-03	16	3 G 1.5	0.30	7.5	32.3	48	51.7	77
CF5-15-04	16	4 G 1.5	0.31	8.0	43.0	64	72.6	108
CF5-15-05	16	5 G 1.5	0.35	9.0	53.1	79	88.7	132
CF5-15-07 ¹⁷⁾	16	7 G 1.5	0.41	10.5	75.3	112	125.7	187
CF5-15-12	16	12 G 1.5	0.59	15.0	128.3	191	185.5	276
CF5-15-18	16	18 G 1.5	0.77	19.5	191.5	285	333.3	496
CF5-15-25	16	25 G 1.5	0.85	21.5	266.1	396	450.2	670
CF5-15-36	16	36 G 1.5	1.04	26.5	383.0	570	672.6	1001
CF5-25-04	14	4 G 2.5	0.39	10.0	68.5	102	118.3	176
CF5-25-05	14	5 G 2.5	0.43	11.0	86.0	128	139.8	208
CF5-25-07 ¹⁷⁾	14	7 G 2.5	0.51	13.0	121.6	181	195.5	291
CF5-25-12	14	12 G 2.5	0.73	18.5	203.6	303	335.3	499
CF5-25-18	14	18 G 2.5	0.93	23.5	306.4	456	533.5	794
CF5-25-25	14	25 G 2.5	1.08	27.5	428.0	637	739.2	1100

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

 Order example: **CF5-07-03** – In your desired length
CF5 Chainflex® series **-07** Code nominal cross section **-03** Number of conductors

 Online order: www.chainflex.com/CF5

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

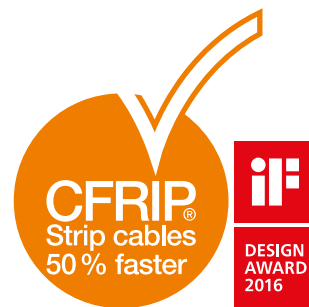


Chainflex® CF5/CF6 for storage retrieval unit: Long travel in longitudinal axis.
E-Chain®: Series E4/00 with igus® guide trough made of steel



PVC Control cable | CF6

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



Dynamic Information

	Bend radius	E-Chain®	min. 6.8 x d
		flexible	min. 5 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)
	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

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	24-20 AWG: Mechanically high-quality TPE mixture. 18-14 AWG: Mechanically high-quality PVC mixture (following DIN VDE 0207 Part 4).
	Conductor construction	Number of conductors < 12: Conductors cabled in a layer with short pitch length. Number of conductors ≥ 12: Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	Color code	24-22 AWG: Color code in accordance with DIN 47100. 20-14 AWG: Black with white numbers, one conductor green-yellow.

	Inner jacket	PVC mixture adapted to suit the requirements in E-Chains®.
	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: Green (RAL 6005)
	CFRIP®	Strip cables 50% faster: The tear strip is in the inner jacket Video ► www.igus.com/CFRIP

Configurators ► www.igus.com/CF6

Class 5.5.2.1

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°			

Electrical Information

	Nominal voltage	600 V
	Testing voltage	2000 V (following DIN EN 50396)

Properties and approvals

	UV resistance	Medium
	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
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	UL/CSA	24-20 AWG: Style 10492 and 2570, 600 V, 80 °C 18-14 AWG: Style 11113 and 2570, 600 V, 80 °C
	NFPA 79	Complies to NFPA 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 2, material/cable tested by IPA according to ISO standard 14644-1
	CE	Following 2014/35/EG

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
+41 / +59		7.5	10	8.5	11	9.5	12
+59 / +140	≤ 164	6.8	7.5	7.8	8.5	8.8	9.5
+140 / +158		7.5	10	8.5	11	9.5	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, quick handling, indoor cranes

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
CF6-02-04	24	4 x 0.25	0.28	7.0	20.2	30	41.7	62
CF6-02-25	24	25 x 0.25	0.57	14.5	79.3	118	179.4	267
CF6-03-05	22	5 x 0.34	0.30	7.5	26.2	39	61.8	92
CF6-05-02	20	2 x 0.5	0.28	7.0	20.8	31	52.4	78
CF6-05-05	20	5 G 0.5	0.33	8.5	34.9	52	73.2	109
CF6-05-07	20	7 G 0.5	0.39	10.0	45.0	67	88.0	131
CF6-05-09	20	9 G 0.5	0.47	12.0	49.7	74	105.5	157
CF6-05-12	20	12 G 0.5	0.51	13.0	69.9	104	159.9	238
CF6-05-18	20	18 G 0.5	0.59	15.0	103.5	154	198.2	295
CF6-05-25	20	25 G 0.5	0.69	17.5	137.8	205	276.9	412
CF6-07-03	18	3 G 0.75	0.31	8.0	32.9	49	67.9	101
CF6-07-04	18	4 G 0.75	0.33	8.5	39.6	59	77.9	116
CF6-07-05	18	5 G 0.75	0.35	9.0	47.7	71	88.7	132
CF6-07-07	18	7 G 0.75	0.41	10.5	61.1	91	105.5	157
CF6-07-12	18	12 G 0.75	0.55	14.0	92.1	137	184.8	275
CF6-07-18	18	18 G 0.75	0.69	17.5	140.4	209	277.5	413
CF6-07-25	18	25 G 0.75	0.77	19.5	190.2	283	372.3	554
CF6-10-03	17	3 G 1.0	0.31	8.0	38.3	57	73.9	110
CF6-10-04	17	4 G 1.0	0.35	9.0	45.7	68	80.6	120
CF6-10-05	17	5 G 1.0	0.37	9.5	54.4	81	94.7	141
CF6-10-07	17	7 G 1.0	0.47	12.0	73.2	109	141.8	211
CF6-10-12	17	12 G 1.0	0.59	15.0	115.6	172	221.7	330
CF6-10-18	17	18 G 1.0	0.75	19.0	175.4	261	334.6	498
CF6-10-25	17	25 G 1.0	0.83	21.0	231.2	344	414.6	617

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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
CF6-15-03	16	3 G 1.5	0.35	9.0	51.1	76	84.7	126
CF6-15-04	16	4 G 1.5	0.37	9.5	61.8	92	107.5	160
CF6-15-05	16	5 G 1.5	0.41	10.5	75.3	112	123.6	184
CF6-15-07 ¹⁷⁾	16	7 G 1.5	0.51	13.0	104.8	156	180.1	268
CF6-15-12	16	12 G 1.5	0.67	17.0	161.3	240	262.1	390
CF6-15-18	16	18 G 1.5	0.83	21.0	247.3	368	405.9	604
CF6-15-25	16	25 G 1.5	0.94	24.0	331.3	493	602.1	896
CF6-15-36	16	36 G 1.5	1.18	30.0	489.2	728	904.5	1346
CF6-25-04	14	4 G 2.5	0.45	11.5	94.1	140	155.2	231

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

- Order example: CF6-15-12 – In your desired length

CF6 Chainflex® series -15 Code nominal cross section -12 Number of conductors
- Online order: www.chainflex.com/CF6
- Delivery time 24hr or today.

Delivery time means time until shipping of goods.



Chainflex® CF5 and CF6 control cables (green) as well as CF211 measuring system cables (gray) in a screwing station of a motor factory. E-Chain®: System E4/00 with chainfix clip strain relief devices

Configurators ► www.igus.com/CF6



iguPUR Control cable | CF890

- For low duty flexing applications
- iguPUR outer jacket
- Oil-resistant
- Flame-retardant

Dynamic Information

	Bend radius	E-Chain®	min. 12.5 x d
		flexible	min. 10 x d
		fixed	min. 7 x d
	Temperature	E-Chain®	-4 °F to +176 °F (-20 °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.		65.6 ft/s² (20 m/s²)
	Travel distance		Unsupported travel distances up to 32.81 ft (10 m), Class 1

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality PVC mixture.
	Conductor construction	Conductors cabled with an optimized pitch length.
	Color code	Black with white numbers, one conductor green-yellow.
	Outer jacket	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

Electrical Information

	Nominal voltage	600 V
	Test voltage	2000 V (following DIN EN 50396)

Class 3.1.3.1

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°				

Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2)
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT-2
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	Style 11008 and 20940, 600V, 80 °C
	EAC	Certified according to no. TC RU C-DE.ME77.B.01560
	CTP	Certified according to no. C-DE.PB49.B.00449
	Lead-free	Following 2011/65/EC (RoHS-II)
	CE	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				15	16	17
+14 / +158	9.84	65.6	≤ 32.81	12.5	13.5	14.5
+158 / +176				15	16	17

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

Typical application areas

- For low duty flexing applications
- With influence of oil
- Indoor and outdoor applications without direct sun radiation
- Especially for unsupported travel distances
- Machining units/machine tools, low temperature applications

 Configurators ► www.igus.com/CF890

iguPUR Control cable | CF891

- For low duty flexing applications
- iguPUR outer jacket
- Oil-resistant
- Shielded
- Flame-retardant

Dynamic Information

	Bend radius	E-Chain®	min. 12.5 x d
		flexible	min. 10 x d
		fixed	min. 7 x d
	Temperature	E-Chain®	-4 °F to +176 °F (-20 °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.		65.6 ft/s² (20 m/s²)
	Travel distance		Unsupported travel distances up to 32.81 ft (10 m), Class 1

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality PVC mixture.
	Conductor construction	Conductors cabled with an optimized pitch length.
	Color code	Black with white numbers, one conductor green-yellow.
	Overall shield	Tinned copper braid. 60% optical coverage
	Outer jacket	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

Electrical Information

	Nominal voltage	600 V
	Test voltage	2000 V (following DIN EN 50396)

Class 3.1.3.1

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°			

Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil-resistant (following DIN EN 50363-10-2)
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT-2
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	Style 11008 and 20940, 600V, 80 °C
	EAC	Certified according to no. TC RU C-DE.ME77.B.01560
	CTP	Certified according to no. C-DE.PB49.B.00449
	Lead-free	Following 2011/65/EC (RoHS-II)
	CE	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				15	16	17
+14 / +158	9.84	65.6	≤ 32.81	12.5	13.5	14.5
+158 / +176				15	16	17

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

Typical application areas

- For low duty flexing applications
- With influence of oil
- Indoor and outdoor applications without direct sun radiation
- Especially for unsupported travel distances
- Machining units/machine tools, low temperature applications

 Configurators ► www.igus.com/CF891

PUR Control cable | CF77-UL-D

- For high mechanical load requirements
- PUR outer jacket
- Oil-resistant and coolant-resistant
- Notch-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®	-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
	Torsion		± 180°, with 3.281ft (1m) cable length (except 5-core types ≥ 12 AWG Schedule delivery program)

Cable structure

	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Number of conductors < 12: Conductors cabled in a layer with short pitch length. Number of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	Color code	24-22 AWG: Color code in accordance with DIN 47100.
		20-4 AWG: Black with white numbers, one conductor green-yellow.

	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: Window-gray (similar to RAL 7040) CF77-UL-03-04-INI: Color: Yellow (similar to RAL 1021)
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Electrical Information

	Nominal voltage	24-22 AWG: 300 V 20-4 AWG: 1000 V
	Test voltage	2000 V (following DIN EN 50396)

 Configurators ► www.igus.com/CF77

Image exemplary.

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

Class 5.5.3.3

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°				

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	24-22 AWG: Style 10493 and 20233, 300 V, 80 °C 20-4 AWG: Style 11323 and 21223, 1000 V, 80 °C
	NFPA 79	Complies to NFPA 79-2015 chapter 12.9
	DNV-GL	Certified according to GL type testing – Certificate no.: 61 935-14 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
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EG

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		7.5	10	9.5	11	10.5	12
+5 / +158	≤ 328	6.8	7.5	7.5	8.5	8.5	9.5
+158 / +176		7.5	10	9.5	11	10.5	12

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

Typical application areas

- For high mechanical load requirements
- 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

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

PUR Control cable | CF77-UL-D

Class 5.5.3.3

Requirements
Travel distance
Oil-resistance
Torsion

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

IGUS® CHAINFLEX® CF77.UL.D

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
CF77-UL-02-04-D	24	4 x 0.25	0.22	5.5	7.4	11	23.5	35
CF77-UL-03-04-INI	22	4 x 0.34	0.24	6.0	11.4	17	26.9	40
CF77-UL-05-04-D	20	4 G 0.5	0.24	6.0	14.8	22	29.6	44
CF77-UL-05-05-D	20	5 G 0.5	0.26	6.5	18.8	28	34.9	52
CF77-UL-05-07-D	20	7 G 0.5	0.30	7.5	27.6	41	53.8	80
CF77-UL-05-12-D	20	12 G 0.5	0.39	10.0	44.3	66	88.7	132
CF77-UL-05-18-D	20	18 G 0.5	0.47	12.0	66.5	99	123.6	184
CF77-UL-05-25-D	20	25 G 0.5	0.55	14.0	92.7	138	166.0	247
CF77-UL-05-30-D	20	30 G 0.5	0.59	15.0	110.9	165	218.4	325
CF77-UL-07-03-D	18	3 G 0.75	0.26	6.5	16.1	24	37.0	55
CF77-UL-07-04-D	18	4 G 0.75	0.28	7.0	21.5	32	43.0	64
CF77-UL-07-05-D	18	5 G 0.75	0.30	7.5	26.9	40	50.4	75
CF77-UL-07-07-D	18	7 G 0.75	0.33	8.5	37.6	56	71.2	106
CF77-UL-07-12-D	18	12 G 0.75	0.47	12.0	64.5	96	129.0	192
CF77-UL-07-18-D	18	18 G 0.75	0.53	13.5	96.1	143	174.7	260
CF77-UL-07-20-D	18	20 G 0.75	0.57	14.5	106.8	159	196.2	292
CF77-UL-07-25-D	18	25 G 0.75	0.63	16.0	133.0	198	247.3	368
CF77-UL-07-36-D	18	36 G 0.75	0.75	19.0	199.6	297	352.1	524
CF77-UL-07-42-D ¹⁾	18	42 G 0.75	0.83	21.0	245.3	365	405.9	604
CF77-UL-10-02-D	17	2 x 1.0	0.26	6.5	14.8	22	36.3	54
CF77-UL-10-03-D	17	3 G 1.0	0.26	6.5	21.5	32	43.7	65
CF77-UL-10-04-D	17	4 G 1.0	0.28	7.0	28.9	43	53.1	79
CF77-UL-10-05-D	17	5 G 1.0	0.31	8.0	35.6	53	65.2	97
CF77-UL-10-07-D	17	7 G 1.0	0.35	9.0	49.7	74	80.0	119
CF77-UL-10-12-D	17	12 G 1.0	0.49	12.5	85.3	127	157.2	234
CF77-UL-10-18-D	17	18 G 1.0	0.59	15.0	128.3	191	227.8	339
CF77-UL-10-25-D	17	25 G 1.0	0.69	17.5	177.4	264	303.7	452
CF77-UL-10-42-D	17	42 G 1.0	0.89	22.5	310.4	462	475.8	708

¹⁾ Delivery time upon request
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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
CF77-UL-15-03-D	16	3 G 1.5	0.30	7.5	32.3	48	57.8	86
CF77-UL-15-04-D	16	4 G 1.5	0.31	8.0	43.0	64	70.6	105
CF77-UL-15-05-D	16	5 G 1.5	0.33	8.5	53.8	80	84.0	125
CF77-UL-15-07-D ¹⁷⁾	16	7 G 1.5	0.41	10.5	74.6	111	116.9	174
CF77-UL-15-12-D	16	12 G 1.5	0.55	14.0	128.3	191	207.0	308
CF77-UL-15-18-D	16	18 G 1.5	0.67	17.0	192.2	286	320.5	477
CF77-UL-15-25-D	16	25 G 1.5	0.77	19.5	266.1	396	423.3	630
CF77-UL-15-36-D ¹⁾	16	36 G 1.5	0.93	23.5	399.1	594	598.7	891
CF77-UL-15-42-D ¹⁾	16	42 G 1.5	1.04	26.5	489.9	729	698.8	1040
CF77-UL-25-03-D	14	3 G 2.5	0.33	8.5	53.8	80	83.3	124
CF77-UL-25-04-D	14	4 G 2.5	0.37	9.5	71.2	106	104.2	155
CF77-UL-25-05-D	14	5 G 2.5	0.41	10.5	88.7	132	129.0	192
CF77-UL-25-07-D ¹⁷⁾	14	7 G 2.5	0.49	12.5	124.3	185	181.4	270
New CF77-UL-25-12-D	14	12 G 2.5	0.69	17.5	213.0	317	356.1	530
CF77-UL-40-04-D ¹⁾	12	4 G 4.0	0.45	11.5	118.3	176	172.0	256
CF77-UL-40-05-D	12	5 G 4.0	0.47	12.0	142.5	212	202.9	302
CF77-UL-60-05-D	10	5 G 6.0	0.55	14.0	213.0	317	287.6	428
CF77-UL-100-05-D ¹⁾	8	5 G 10.0	0.75	19.0	354.8	528	486.5	724
CF77-UL-160-05-D	6	5 G 16.0	0.89	22.5	567.8	845	737.8	1098
CF77-UL-250-05-D ¹⁾	4	5 G 25.0	1.10	28.0	887.0	1320	1098.7	1635

¹⁾ Delivery time upon request
¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

 Order example: **CF77-UL-10-03-D** – In your desired length
CF77-UL-D Chainflex® series **-10** Code nominal cross section **-03** Number of conductors

 Online order: www.chainflex.com/CF77

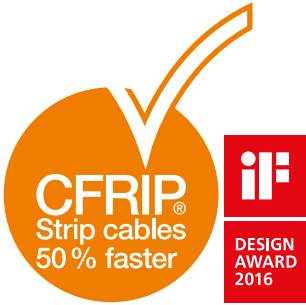
 Delivery time 24hr or today.
Delivery time means time until shipping of goods.

 Configurators ► www.igus.com/CF77



PUR Control cable | CF78-UL

- For high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- Notch-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®	-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)
	a max.	gliding	16.41 ft/s (5 m/s)
	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	Number of conductors < 12: Conductors cabled in a layer with short pitch length. Number of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	Color code	24-22 AWG: Color code in accordance with DIN 47100. 20-12 AWG: Black with white numbers, one conductor green-yellow
	Inner jacket	TPE mixture adapted to suit the requirements in E-Chains®.
	Overall shield	Bending-resistant tinned copper braid. 80% 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: Window-gray (similar to RAL 7040)
	CFRIP®	Strip cables 50% faster: The tear strip is in the inner jacket Video ▶ www.igus.com/CFRIP

Electrical Information

	Nominal voltage	24-22 AWG: 300 V 20-4 AWG: 1000 V
	Test voltage	2000 V (following DIN EN 50396)

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 5.5.3.1

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	24-22 AWG: Style 10493 and 20233, 300 V, 80 °C 20-12 AWG: Style 11323 and 21223, 1000 V, 80 °C
	NFPA 79	Complies to NFPA 79-2015 chapter 12.9
	DNV-GL	Certified according to GL type testing – Certificate no.: 61 935-14 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/EG

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		7.5	10	9.5	11	10.5	12
+5 / +158	≤ 328	6.8	7.5	7.5	8.5	8.5	9.5
+158 / +176		7.5	10	9.5	11	10.5	12

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

Typical application areas

- For high mechanical load requirements
- 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 ...



PUR Control cable | CF78-UL

Class 5.5.3.1

Requirements
Travel distance
Oil-resistance
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
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
CF78-UL-05-04	20	4 G 0.5	0.31	8.0	26.9	40	53.1	79
CF78-UL-05-05	20	5 G 0.5	0.31	8.0	32.3	48	63.2	94
CF78-UL-05-07	20	7 G 0.5	0.37	9.5	41.7	62	82.7	123
CF78-UL-05-09	20	9 G 0.5	0.43	11.0	54.4	81	99.5	148
CF78-UL-05-12	20	12 G 0.5	0.49	12.5	65.2	97	139.1	207
CF78-UL-05-18	20	18 G 0.5	0.57	14.5	104.8	156	172.7	257
CF78-UL-05-25	20	25 G 0.5	0.63	16.0	121.0	180	245.9	366
CF78-UL-07-03	18	3 G 0.75	0.31	8.0	29.6	44	53.1	79
CF78-UL-07-04	18	4 G 0.75	0.33	8.5	34.9	52	66.5	99
CF78-UL-07-05	18	5 G 0.75	0.37	9.5	43.0	64	72.6	108
CF78-UL-07-07	18	7 G 0.75	0.41	10.5	58.5	87	98.1	146
CF78-UL-07-12	18	12 G 0.75	0.53	13.5	97.4	145	169.3	252
CF78-UL-07-18	18	18 G 0.75	0.61	15.5	139.1	207	246.6	367
CF78-UL-07-36	18	36 G 0.75	0.87	22.0	279.5	416	489.2	728
CF78-UL-07-42 ¹⁾	18	42 G 0.75	0.96	24.5	328.6	489	537.6	800
CF78-UL-10-03	17	3 G 1.0	0.33	8.5	35.6	53	60.5	90
CF78-UL-10-04	17	4 G 1.0	0.35	9.0	43.7	65	71.9	107
CF78-UL-10-05	17	5 G 1.0	0.37	9.5	52.4	78	83.3	124
CF78-UL-10-07	17	7 G 1.0	0.43	11.0	73.9	110	114.2	170
CF78-UL-10-12	17	12 G 1.0	0.57	14.5	119.6	178	206.3	307
CF78-UL-10-18 ¹⁾	17	18 G 1.0	0.67	17.0	172.0	256	284.9	424
CF78-UL-10-25	17	25 G 1.0	0.79	20.0	233.2	347	381.0	567
CF78-UL-15-03	16	3 G 1.5	0.37	9.5	48.4	72	89.4	133
CF78-UL-15-04	16	4 G 1.5	0.39	10.0	60.5	90	93.4	139
CF78-UL-15-05	16	5 G 1.5	0.41	10.5	77.3	115	111.5	166
CF78-UL-15-07 ¹⁷⁾	16	7 G 1.5	0.49	12.5	102.8	153	151.9	226
CF78-UL-15-12	16	12 G 1.5	0.63	16.0	167.3	249	270.8	403
CF78-UL-15-18	16	18 G 1.5	0.75	19.0	247.3	368	379.0	564
CF78-UL-15-25	16	25 G 1.5	0.89	22.5	332.6	495	507.3	755
CF78-UL-15-36 ¹⁾	16	36 G 1.5	1.04	26.5	480.5	715	770.7	1147
CF78-UL-15-42 ¹⁾	16	42 G 1.5	1.16	29.5	594.0	884	913.9	1360

¹⁾ Delivery time upon request

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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
CF78-UL-25-04	14	4 G 2.5	0.45	11.5	99.5	148	142.5	212
CF78-UL-25-05	14	5 G 2.5	0.49	12.5	118.9	177	166.0	247
CF78-UL-25-07 ¹⁷⁾	14	7 G 2.5	0.57	14.5	164.6	245	235.2	350
CF78-UL-40-04 ¹⁾	12	4 G 4.0	0.55	14.0	145.8	217	229.8	342

¹⁾ Delivery time upon request

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core



Order example: **CF78-UL-15-18** – In your desired length
CF78-UL Chainflex® series **-15** Code nominal cross section **-18** Number of conductors



Online order: www.chainflex.com/CF78



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



Configurators ► www.igus.com/CF78



PUR Control cable | CF2

- For very high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- Notch-resistant
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 5 x d
		flexible	min. 4 x d
		fixed	min. 3 x d
	Temperature	E-Chain®	-4 °F to +176 °F (-20 °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

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	< 20 AWG: Mechanically high-quality TPE mixture. ≥ 20 AWG: Mechanically high-quality PVC mixture (following DIN VDE 0207 Part 4).
	Conductor construction	No. of conductors < 12: Conductors cabled in a layer with short pitch length. No. of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	Color code	Color code in accordance with DIN 47100.
	Inner jacket	PVC 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: Dark Gray (RAL 7016)

Electrical Information

	Nominal voltage	300 V
	Testing voltage	2000 V (following DIN EN 50396)

 Configurators ► www.igus.com/CF2

Requirements
Travel distance
Oil-resistance
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
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
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	UL/CSA	Style 10493 and 20317, 300 V, 80 °C
	NFPA 79	Complies to NFPA 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 CF27-07-05-02-01-D, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EG

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]	a max. [ft/²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
-4 / +14				6.8	7.5	8.5	
+14 / +158	32.81	16.41	262.5	≤ 328	5	6.8	7.5
+158 / +176					6.8	7.5	8.5

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

Typical application areas

- For very high mechanical load requirements
- Indoor and outdoor applications
- 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, quick handling, indoor cranes, 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 ...

PUR Control cable | CF2

Class 6.5.3.1

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
CF2-01-04	26	4 x 0.14	0.26	6.5	11.4	17	26.9	40
CF2-01-08	26	8 x 0.14	0.30	7.5	19.5	29	43.7	65
CF2-01-12	26	12 x 0.14	0.37	9.5	32.9	49	67.9	101
CF2-01-18	26	18 x 0.14	0.41	10.5	35.6	53	84.0	125
CF2-01-24 ³⁾	26	24 x 0.14	0.45	11.5	43.7	65	90.7	135
CF2-01-36	26	36 x 0.14	0.57	14.5	59.1	88	134.4	200
CF2-01-48	26	48 x 0.14	0.65	16.5	90.7	135	208.3	310
CF2-02-04	24	4 x 0.25	0.28	7.0	16.1	24	35.6	53
CF2-02-08	24	8 x 0.25	0.33	8.5	27.6	41	55.8	83
CF2-02-18	24	18 x 0.25	0.49	12.5	64.5	96	127.7	190
CF2-02-24	24	24 x 0.25	0.53	13.5	80.6	120	147.8	220
CF2-02-48	24	48 x 0.25	0.71	18.0	154.6	230	302.4	450

The chainflex® types marked with a ³⁾ refer to cables that are based on a bundling of 4 cores each. Due to their excellent electrical properties (star-quad with especially minimum crosstalk), these cables can virtually be used in all cases in which otherwise twisted-pair cables are required.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core **x** = without earth core

-  **Order example: CF2-01-04 – In your desired length**
CF2 Chainflex® series -01 Code nominal cross section -04 Number of conductors
-  Online order: www.chainflex.com/CF2
-  Delivery time 24hr or today.
Delivery time means time until shipping of goods.



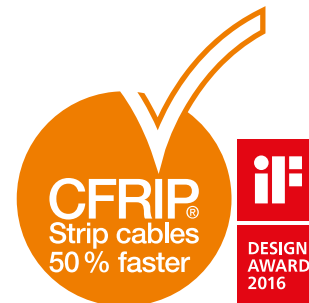
Chainflex® CF2 cables are resistant to oil and coolants. E-chain®: System E4/00

 Configurators ► www.igus.com/CF78



TPE Control cable | CF9

- For maximum mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



Dynamic Information

	Bend radius	E-Chain®	min. 5 x d
		flexible	min. 4 x d
		fixed	min. 3 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)
		gliding	19.69 ft/s (6 m/s)
	a max.		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	
	Torsion	± 90°, with 3.281 ft (1 m) cable length	

Cable structure

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	No. of conductors < 12: Conductors cabled in a layer with short pitch length. No. of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure. 24-20 AWG: Color code in accordance with DIN 47100. 18-2 AWG: Black with white numbers, one conductor green-yellow. CF9-02-03-INI: brown, blue, black CF9-03-04-INI: brown, blue, black, white CF9-02-05-INI: brown, blue, black, white, green-yellow CF9-03-16-07-03-INI: (22 AWG): violet/red/gray/red-blue, green/gray-pink/white-green/white-yellow, white-gray/black/yellow-brown/brown-green, white/yellow/pink/gray-brown (18 AWG): blue/green-yellow/brown
	Color code	

	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 (RAL 5011)
	CFRIP®	Strip cables 50% faster: The tear strip is in the outer jacket Video ► www.igus.com/CFRIP

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 7.6.4.2

Electrical Information

	Nominal voltage	300 V
	Testing voltage	2000 V (following DIN EN 50396)
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
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	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, material/cable tested by IPA according to ISO standard 14644-1
	CE	Following 2014/35/EG

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]	a max. [ft/²]	Travel distance [ft]		R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
	unsupported	gliding					
-31 / -13					6.8	7.5	8.5
-13 / +194	32.81	19.69	328.1	> 1312	5	6	7
+194 / +212					6.8	7.5	8.5

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

Typical application areas

- For maximum mechanical load requirements
- 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, Ship to shore, outdoor cranes, low temperature applications



Test data ► Page 58

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 ...

TPE Control cable | CF9

Strip cables 50 % faster



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
CF9-02-02	24	2 x 0.25	0.18	4.5	4.0	6	12.1	18
CF9-02-03- INI	24	3 x 0.25	0.18	4.5	5.4	8	14.8	22
CF9-02-06	24	6 x 0.25	0.22	5.5	10.8	16	24.9	37
CF9-02-07	24	7 x 0.25	0.26	6.5	12.8	19	29.6	44
CF9-02-08	24	8 x 0.25	0.26	6.5	14.8	22	33.6	50
CF9-02-12	24	12 x 0.25	0.31	8.0	21.5	32	49.1	73
CF9-02-18 ¹⁾	24	18 x 0.25	0.37	9.5	32.3	48	70.6	105
CF9-02-20	24	20 x 0.25	0.37	9.5	35.6	53	74.6	111
CF9-03-04- INI	22	4 x 0.34	0.20	5.0	10.1	15	21.5	32
CF9-03-05- INI	22	5 x 0.34	0.22	5.5	12.1	18	25.5	38
CF9-03-06	22	6 x 0.34	0.24	6.0	14.8	22	30.2	45
CF9-03-08	22	8 x 0.34	0.28	7.0	19.5	29	39.6	59
CF9-03-16-07-03- INI	22	16 x 0.34	0.43	11.0	55.1	82	106.8	159
	18	3 x 0.75						
CF9-05-02	20	2 x 0.5	0.20	5.0	7.4	11	17.5	26
CF9-05-03	20	3 x 0.5	0.20	5.0	10.8	16	21.5	32
CF9-05-04	20	4 x 0.5	0.22	5.5	14.8	22	26.9	40
CF9-05-05	20	5 x 0.5	0.24	6.0	18.1	27	32.3	48
CF9-05-07	20	7 x 0.5	0.28	7.0	24.9	37	44.3	66
CF9-05-12	20	12 x 0.5	0.39	10.0	43.0	64	80.6	120
CF9-05-18	20	18 x 0.5	0.45	11.5	64.5	96	118.9	177
CF9-05-25	20	25 x 0.5	0.51	13.0	88.7	132	158.6	236
CF9-05-36	20	36 x 0.5	0.61	15.5	128.3	191	224.4	334
CF9-07-04 ¹⁾	18	4 G 0.75	0.24	6.0	21.5	32	37.0	55
CF9-07-05	18	5 G 0.75	0.26	6.5	26.9	40	45.7	68
CF9-07-07	18	7 G 0.75	0.31	8.0	37.6	56	63.2	94
CF9-07-12	18	12 G 0.75	0.43	11.0	64.5	96	114.2	170
CF9-07-20	18	20 G 0.75	0.53	13.5	106.8	159	179.4	267
CF9-07-25	18	25 G 0.75	0.57	14.5	133.0	198	221.1	329
CF9-10-03	17	3 G 1.0	0.24	6.0	21.5	32	36.3	54
CF9-10-04	17	4 G 1.0	0.26	6.5	28.9	43	46.4	69
CF9-10-05	17	5 G 1.0	0.30	7.5	35.6	53	56.4	84
CF9-10-12	17	12 G 1.0	0.47	12.0	85.3	127	143.8	214
CF9-10-18	17	18 G 1.0	0.57	14.5	128.3	191	211.0	314
CF9-10-25	17	25 G 1.0	0.67	17.0	177.4	264	302.4	450

¹⁾ Delivery time upon request

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

Class 7.6.4.2

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°				

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
CF9-15-02	16	2 x 1.5	0.26	6.5	21.5	32	40.3	60
CF9-15-04	16	4 G 1.5	0.30	7.5	43.0	64	60.5	90
CF9-15-05	16	5 G 1.5	0.31	8.0	54.4	81	73.9	110
CF9-15-07 ¹⁷⁾	16	7 G 1.5	0.37	9.5	76.6	114	101.5	151
CF9-15-12	16	12 G 1.5	0.53	13.5	128.3	191	194.9	290
CF9-15-18	16	18 G 1.5	0.65	16.5	192.2	286	277.5	413
CF9-15-25	16	25 G 1.5	0.79	20.0	266.1	396	424.7	632
CF9-15-36	16	36 G 1.5	0.93	23.5	383.7	571	563.8	839
CF9-25-04	14	4 G 2.5	0.35	9.0	71.2	106	102.1	152
CF9-25-05	14	5 G 2.5	0.39	10.0	88.7	132	132.4	197
CF9-25-07 ¹⁷⁾	14	7 G 2.5	0.47	12.0	125.7	187	164.6	245
CF9-25-12	14	12 G 2.5	0.69	17.5	213.0	317	346.1	515
CF9-25-16	14	16 G 2.5	0.77	19.5	284.2	423	461.6	687
CF9-25-18 ⁷⁾	14	18 G 2.5	0.91	23.0	319.9	476	557.7	830
CF9-25-25	14	25 G 2.5	0.96	24.5	443.5	660	711.6	1059
CF9-40-04	12	4 G 4.0	0.41	10.5	114.2	170	153.9	229
CF9-60-04	10	4 G 6.0	0.49	12.5	170.7	254	223.1	332
CF9-60-05	10	5 G 6.0	0.53	13.5	213.0	317	275.5	410
CF9-100-04	8	4 G 10.0	0.65	16.5	284.2	423	389.7	580
CF9-160-04	6	4 G 16.0	0.71	18.0	354.8	528	483.1	719
CF9-350-04	2	4 G 35.0	1.10	28.0	993.8	1479	1188.7	1769

⁷⁾ Nominal voltage 600/1000 V ⁹⁾ Nominal voltage 450/750 V

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core



Order example: **CF9-25-04** – In your desired length
CF9 Chainflex® series **-25** Code nominal cross section **-04** Number of conductors



Online order: www.chainflex.com/CF9



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

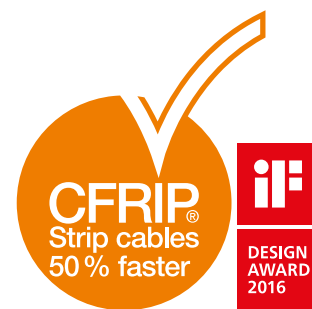


Configurators ► www.igus.com/CF9



TPE Control cable | CF10

- For maximum mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



Dynamic Information

	Bend radius	E-Chain®	min. 5 x d
		flexible	min. 4 x d
		fixed	min. 3 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

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	No. of conductors < 12: Conductors cabled in a layer with short pitch length. No. of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	Color code	26-20 AWG: Color code in accordance with DIN 47100. 18-12 AWG: Black with white numbers, one conductor green-yellow. CF10-03-05-INI: brown, blue, black, white, green-yellow

	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 (RAL 5011)
	CFRIP®	Strip cables 50% faster: The tear strip is in the inner jacket Video ► www.igus.com/CFRIP

Electrical Information

	Nominal voltage	300 V
	Testing voltage	2000 V (following DIN EN 50396)

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 7.6.4.1

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
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	Halogen-free	Following EN 50267-2-1
	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/EG

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]
-31 / -13					6.8	7.5	8.5
-13 / +194	32.81	19.69	328.1	> 1312	5	6	7
+194 / +212					6.8	7.5	8.5

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

Typical application areas

- For maximum mechanical load requirements
- 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, Ship to shore, outdoor cranes, low temperature applications



Control cable Chainflex® CF10 in storage and retrieval units for high-bay warehouses. E-chain®: System E2 medium

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 ...

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
CF10-01-12	26	12 x 0.14	0.31	8.0	26.9	40	55.1	82
CF10-01-18	26	18 x 0.14	0.37	9.5	45.7	68	85.3	127
CF10-02-04	24	4 x 0.25	0.26	6.5	17.5	26	34.9	52
CF10-02-08	24	8 x 0.25	0.31	8.0	28.2	42	54.4	81
CF10-02-12	24	12 x 0.25	0.37	9.5	47.0	70	85.3	127
CF10-02-25	24	25 x 0.25	0.49	12.5	80.0	119	151.2	225
CF10-03-05-INI	22	5 x 0.34	0.28	7.0	24.2	36	43.7	65
CF10-05-04	20	4 x 0.5	0.28	7.0	26.2	39	46.4	69
CF10-05-05	20	5 x 0.5	0.30	7.5	30.9	46	53.1	79
CF10-05-07	20	7 x 0.5	0.33	8.5	40.3	60	69.2	103
CF10-05-12	20	12 x 0.5	0.47	12.0	75.9	113	133.7	199
CF10-05-18	20	18 x 0.5	0.53	13.5	102.8	153	176.7	263
CF10-05-25	20	25 x 0.5	0.59	15.0	133.0	198	225.1	335
CF10-07-04	18	4 G 0.75	0.30	7.5	34.3	51	58.5	87
CF10-07-05	18	5 G 0.75	0.31	8.0	41.0	61	66.5	99
CF10-07-07	18	7 G 0.75	0.37	9.5	63.2	94	97.4	145
CF10-07-12	18	12 G 0.75	0.49	12.5	98.1	146	165.3	246
CF10-07-20	18	20 G 0.75	0.59	15.0	151.9	226	247.3	368
CF10-07-25	18	25 G 0.75	0.65	16.5	181.4	270	302.4	450
CF10-10-02	17	2 x 1.0	0.30	7.5	26.2	39	48.4	72
CF10-10-03	17	3 G 1.0	0.30	7.5	34.3	51	55.8	83
CF10-10-04	17	4 G 1.0	0.31	8.0	43.0	64	69.2	103
CF10-10-05	17	5 G 1.0	0.33	8.5	49.7	74	80.6	120
CF10-10-07	17	7 G 1.0	0.39	10.0	77.9	116	120.3	179
CF10-10-12	17	12 G 1.0	0.53	13.5	125.0	186	202.9	302
CF10-10-18	17	18 G 1.0	0.63	16.0	176.1	262	278.9	415
CF10-10-25	17	25 G 1.0	0.71	18.0	231.2	344	369.6	550

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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
CF10-15-04	16	4 G 1.5	0.35	9.0	66.5	99	97.4	145
CF10-15-05	16	5 G 1.5	0.39	10.0	80.0	119	118.3	176
CF10-15-07 ¹⁷⁾	16	7 G 1.5	0.45	11.5	106.8	159	157.9	235
CF10-15-12	16	12 G 1.5	0.61	15.5	174.0	259	262.7	391
CF10-15-18	16	18 G 1.5	0.79	20.0	267.4	398	419.3	624
CF10-25-04	14	4 G 2.5	0.45	11.5	100.1	149	150.5	224
CF10-25-07 ¹⁷⁾	14	7 G 2.5	0.53	13.5	164.0	244	244.6	364
CF10-25-12	14	12 G 2.5	0.75	19.0	276.2	411	438.8	653
CF10-40-04	12	4 G 4.0	0.49	12.5	149.2	222	213.0	317
CF10-40-05	12	5 G 4.0	0.53	13.5	182.1	271	259.4	386

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

 Order example: CF10-10-12 – In your desired length
CF10 Chainflex® series -10 Code nominal cross section -12 Number of conductors

 Online order: www.chainflex.com/CF10

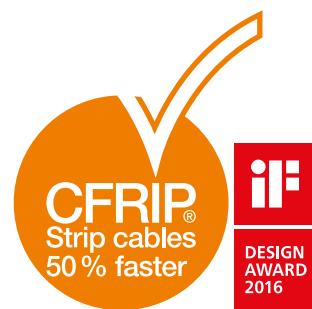
 Delivery time 24hr or today.
Delivery time means time until shipping of goods.

 Configurators ► www.igus.com/CF10



TPE Control cable | CF9-UL

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- Flame-retardant
- PVC free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



Dynamic Information

	Bend radius	E-Chain®	min. 5 x d
		flexible	min. 4 x d
		fixed	min. 3 x d
	Temperature	E-Chain®	-31 °F to +212 °F (-35 °C to +100 °C)
		flexible	-49 °F to +212 °F (-45 °C to +100 °C)
		fixed	-58 °F to +212 °F (-50 °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	
	Torsion	± 90°, with 3.281 ft (1 m) cable length	

Cable structure

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	No. of conductors < 12: Conductors cabled in a layer with short pitch length. No. of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.

	Color code	24-20 AWG: Color code in accordance with DIN 47100.
		18-10 AWG: Black with white numbers, one conductor green-yellow.
		CF9-UL-02-03-INI: brown, blue, black
		CF9-UL-03-04-INI: brown, blue, black, white
		CF9-UL-03-05-INI: brown, blue, black, white, green-yellow

	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: Gray (RAL 7015)
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	CFRIP®	Strip cables 50% faster: The tear strip is in the outer jacket Video ► www.igus.com/CFRIP
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	Configurators ► www.igus.com/CF9UL
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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 6.6.4.2

Electrical Information

	Nominal voltage	24-22 AWG: 300 V 20-10 AWG: 1000 V
	Testing voltage	2000 V (following DIN EN 50396)

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
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	24-22 AWG: Style 10479 and 21529, 300 V, 90 °C 20-10 AWG: Style 10258 and 21387, 1000 V, 90 °C
	NFFPA 79	Complies to NFFPA 79-2015 chapter 12.9
	DNV/GL	Certified according to GL type testing – Certificate no.: 61 935-14 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 CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EG

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]	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]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				6.8	7.5	10				
-13 / +194	32.81	19.69	328.1	5	6	7				
+194 / +212				6.8	7.5	10				

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

Typical application areas

- For very high mechanical load requirements
- 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, Ship to shore, outdoor cranes, low temperature applications

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 ...

TPE Control cable | CF9-UL

Strip cables 50 % faster



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
CF9-UL-02-02	24	2 x 0.25	0.20	5.0	4.0	6	18.8	28
CF9-UL-02-03-INI	24	3 x 0.25	0.22	5.5	5.4	8	21.5	32
CF9-UL-02-04	24	4 x 0.25	0.22	5.5	7.4	11	25.5	38
CF9-UL-02-06	24	6 x 0.25	0.26	6.5	10.8	16	32.9	49
CF9-UL-02-07 ¹⁾	24	7 x 0.25	0.28	7.0	12.8	19	39.6	59
CF9-UL-02-08	24	8 x 0.25	0.30	7.5	14.8	22	43.0	64
CF9-UL-02-12	24	12 x 0.25	0.33	8.5	21.5	32	63.2	94
CF9-UL-03-04-INI	22	4 x 0.34	0.24	6.0	10.1	15	28.9	43
CF9-UL-03-05-INI	22	5 x 0.34	0.26	6.5	12.1	18	35.6	53
CF9-UL-03-06	22	6 x 0.34	0.26	6.5	14.8	22	38.3	57
CF9-UL-03-08	22	8 x 0.34	0.30	7.5	19.5	29	51.1	76
CF9-UL-05-02	20	2 x 0.5	0.24	6.0	7.4	11	28.9	43
CF9-UL-05-03 ¹⁾	20	3 x 0.5	0.26	6.5	10.8	16	34.9	52
CF9-UL-05-04	20	4 x 0.5	0.28	7.0	14.8	22	40.3	60
CF9-UL-05-05	20	5 x 0.5	0.30	7.5	18.1	27	47.0	70
CF9-UL-05-07	20	7 x 0.5	0.33	8.5	24.9	37	64.5	96
CF9-UL-05-12	20	12 x 0.5	0.45	11.5	43.0	64	114.2	170
CF9-UL-05-18	20	18 x 0.5	0.53	13.5	64.5	96	160.6	239
CF9-UL-05-25	20	25 x 0.5	0.57	14.5	88.7	132	198.9	296
CF9-UL-05-36	20	36 x 0.5	0.73	18.5	128.3	191	309.1	460
CF9-UL-07-05	18	5 G 0.75	0.31	8.0	26.9	40	64.5	96
CF9-UL-07-07	18	7 G 0.75	0.37	9.5	37.6	56	89.4	133
CF9-UL-07-12	18	12 G 0.75	0.51	13.0	64.5	96	157.2	234
CF9-UL-07-20 ¹⁾	18	20 G 0.75	0.61	15.5	106.8	159	234.5	349
CF9-UL-07-25	18	25 G 0.75	0.65	16.5	133.0	198	282.9	421
CF9-UL-10-03	17	3 G 1.0	0.30	7.5	21.5	32	52.4	78
CF9-UL-10-04	17	4 G 1.0	0.31	8.0	28.9	43	65.2	97
CF9-UL-10-05 ¹⁾	17	5 G 1.0	0.35	9.0	35.6	53	77.9	116
CF9-UL-10-12	17	12 G 1.0	0.55	14.0	85.3	127	190.2	283
CF9-UL-10-18	17	18 G 1.0	0.65	16.5	128.3	191	272.8	406
CF9-UL-10-25	17	25 G 1.0	0.73	18.5	177.4	264	363.5	541

¹⁾ Delivery time upon request
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

 Configurators ► www.igus.com/CF9UL

Class 6.6.4.2

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	5	6	7	highest
Torsion	none	1	2	3	4	5	6	7	±180°

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
CF9-UL-15-04	16	4 G 1.5	0.35	9.0	43.0	64	84.7	126
CF9-UL-15-05	16	5 G 1.5	0.37	9.5	53.8	80	100.8	150
CF9-UL-15-07 ¹⁷⁾	16	7 G 1.5	0.45	11.5	74.6	111	138.4	206
CF9-UL-15-12	16	12 G 1.5	0.63	16.0	128.3	191	258.0	384
CF9-UL-15-18	16	18 G 1.5	0.75	19.0	192.2	286	371.6	553
CF9-UL-15-25	16	25 G 1.5	0.87	22.0	266.1	396	508.0	756
CF9-UL-25-04	14	4 G 2.5	0.41	10.5	71.2	106	130.4	194
CF9-UL-25-05 ¹⁾	14	5 G 2.5	0.43	11.0	88.7	132	160.6	239
CF9-UL-25-07 ¹⁷⁾	14	7 G 2.5	0.53	13.5	124.3	185	220.4	328
CF9-UL-25-12	14	12 G 2.5	0.75	19.0	213.0	317	416.6	620
CF9-UL-25-16	14	16 G 2.5	0.85	21.5	284.2	423	545.0	811
CF9-UL-25-18	14	18 G 2.5	0.94	24.0	319.9	476	616.2	917
CF9-UL-25-25	14	25 G 2.5	1.06	27.0	443.5	660	805.7	1199
CF9-UL-40-04	12	4 G 4.0	0.47	12.0	113.6	169	182.1	271
CF9-UL-60-04	10	4 G 6.0	0.55	14.0	170.7	254	255.3	380

¹⁾ Delivery time upon request
¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

 **Order example: CF9-UL-02-12 – In your desired length**
CF9-UL Chainflex® series -02 Code nominal cross section -12 Number of conductors

 Online order: www.chainflex.com/CF9UL

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

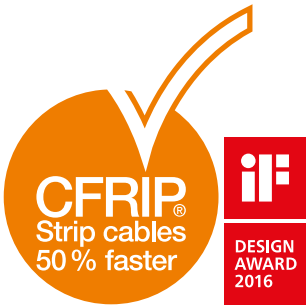


igus® Chainflex® cables in a rafting channel application.



TPE Control cable | CF10-UL

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- PVC free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



Dynamic Information

	Bend radius	E-Chain®	min. 5 x d
		flexible	min. 4 x d
		fixed	min. 3 x d
	Temperature	E-Chain®	-31 °F to +212 °F (-35 °C to +100 °C)
		flexible	-49 °F to +212 °F (-45 °C to +100 °C)
		fixed	-58 °F to +212 °F (-50 °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

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	No. of conductors < 12: Conductors cabled in a layer with short pitch length. No. of conductors ≥ 12: Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.

	Color code	24-20 AWG: Color code in accordance with DIN 47100. 18-12 AWG: Black with white numbers, one conductor green-yellow.
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	Inner jacket	TPE mixture adapted to suit the requirements in E-Chains®.
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	Overall shield	Extremely bending-resistant tinned copper braid. 90% optical coverage
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	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: Gray (RAL 7015)
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	CFRIP®	Strip cables 50% faster: The tear strip is in the inner jacket Video ► www.igus.com/CFRIP
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Configurators ► www.igus.com/CF10UL

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 6.6.4.1

Electrical Information

	Nominal voltage	24-22 AWG: 300 V 20-10 AWG: 1000 V
	Testing voltage	2000 V (following DIN EN 50396)

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
	Flame resistance	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	UL/CSA	24 AWG: Style 10479 and 21529, 300 V, 90 °C 20-12 AWG: Style 10258 and 21387, 1000 V, 90 °C
	NFFPA 79	Complies to NFFPA 79-2015 chapter 12.9
	DNV/GL	Certified according to GL type testing – Certificate no.: 61 935-14 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 CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EG

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]	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]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				6.8	7.5	8.5				
-13 / +194	32.81	19.69	328.1	5	6	7				
+194 / +212				6.8	7.5	8.5				

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

Typical application areas

- For very high mechanical load requirements
- 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, Ship to shore, outdoor cranes, low temperature applications

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 ...



TPE Control cable | CF10-UL

Class 6.6.4.1

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°				

Strip cables 50 % faster



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
CF10-UL-02-04	24	4 x 0.25	0.28	7.0	18.8	28	46.4	69
CF10-UL-02-08	24	8 x 0.25	0.35	9.0	27.6	41	69.9	104
CF10-UL-02-12	24	12 x 0.25	0.41	10.5	47.0	70	106.2	158
CF10-UL-02-24	24	24 x 0.25	0.51	13.0	80.6	120	171.4	255
CF10-UL-05-04	20	4 x 0.5	0.33	8.5	27.6	41	66.5	99
CF10-UL-05-05	20	5 x 0.5	0.35	9.0	32.3	48	75.3	112
CF10-UL-05-12	20	12 x 0.5	0.51	13.0	78.6	117	174.0	259
CF10-UL-05-18	20	18 x 0.5	0.59	15.0	108.2	161	234.5	349
CF10-UL-05-25	20	25 x 0.5	0.65	16.5	137.1	204	282.2	420
CF10-UL-07-03	18	3 G 0.75	0.33	8.5	29.6	44	71.2	106
CF10-UL-07-04	18	4 G 0.75	0.35	9.0	36.3	54	82.7	123
CF10-UL-07-05	18	5 G 0.75	0.39	10.0	50.4	75	104.8	156
CF10-UL-07-07	18	7 G 0.75	0.43	11.0	66.5	99	136.4	203
CF10-UL-07-12	18	12 G 0.75	0.57	14.5	106.2	158	229.8	342
CF10-UL-07-20 ¹⁾	18	20 G 0.75	0.67	17.0	157.9	235	323.9	482
CF10-UL-07-25	18	25 G 0.75	0.75	19.0	206.3	307	415.3	618
CF10-UL-10-02	17	2 x 1.0	0.33	8.5	28.2	42	70.6	105
CF10-UL-10-03	17	3 G 1.0	0.35	9.0	35.6	53	81.3	121
CF10-UL-10-04	17	4 G 1.0	0.39	10.0	53.1	79	106.2	158
CF10-UL-10-05	17	5 G 1.0	0.41	10.5	61.8	92	121.6	181
CF10-UL-10-07	17	7 G 1.0	0.47	12.0	80.6	120	159.9	238
CF10-UL-10-12	17	12 G 1.0	0.59	15.0	127.0	189	255.3	380
CF10-UL-10-18	17	18 G 1.0	0.75	19.0	202.9	302	393.8	586
CF10-UL-10-25	17	25 G 1.0	0.85	21.5	262.1	390	518.8	772
CF10-UL-15-04	16	4 G 1.5	0.41	10.5	69.9	104	130.4	194
CF10-UL-15-05	16	5 G 1.5	0.45	11.5	83.3	124	153.2	228
CF10-UL-15-07 ¹⁷⁾	16	7 G 1.5	0.51	13.0	110.2	164	200.9	299
CF10-UL-15-12	16	12 G 1.5	0.71	18.0	180.1	268	351.4	523
CF10-UL-15-18	16	18 G 1.5	0.85	21.5	277.5	413	518.1	771
CF10-UL-25-04	14	4 G 2.5	0.47	12.0	103.5	154	185.5	276
CF10-UL-25-07 ¹⁷⁾	14	7 G 2.5	0.59	15.0	168.0	250	296.3	441
CF10-UL-25-12	14	12 G 2.5	0.85	21.5	299.0	445	567.8	845
CF10-UL-40-04	12	4 G 4.0	0.53	13.5	152.5	227	252.7	376

¹⁾ Delivery time upon request

¹⁷⁾ Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.

When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.

G = with green-yellow earth core x = without earth core



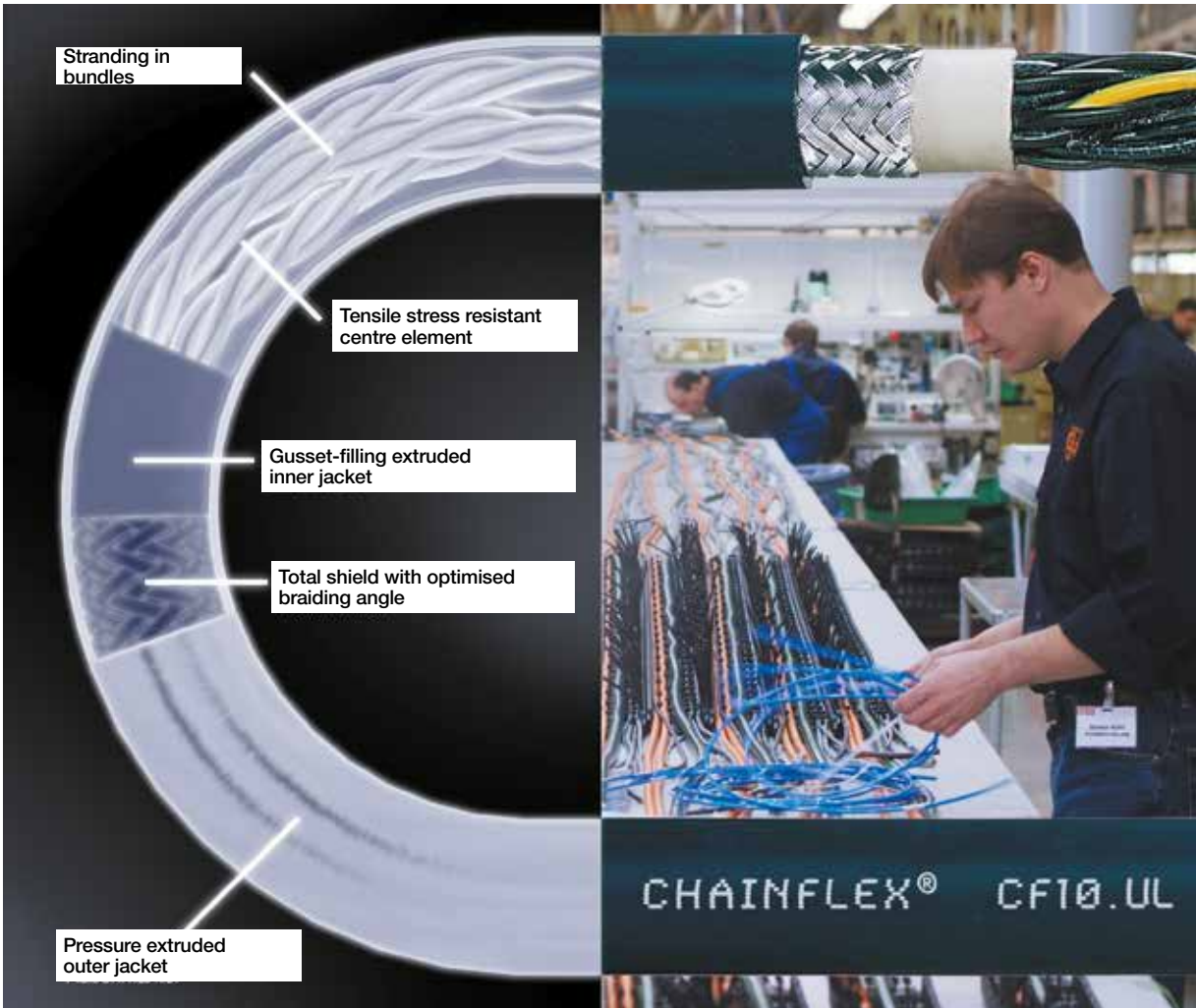
Order example: **CF10-UL-10-02** – In your desired length
CF10-UL Chainflex® series **-10** Code nominal cross section **-02** Number of conductors



Online order: www.chainflex.com/CF10UL



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



Configurators ► www.igus.com/CF10UL



TPE Control cable | CF98

- For maximum mechanical load requirements and especially small bend radii to 4 x d
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 4 x d
		flexible	min. 4 x d
		fixed	min. 3 x d
	Temperature	E-Chain®	-31 °F to +194 °F (-35 °C to +90 °C)
		flexible	-58 °F to +194 °F (-50 °C to +90 °C)
		fixed	-67 °F to +194 °F (-55 °C to +90 °C)
	v max.	unsupported	32.81 ft/s (10 m/s)
		gliding	19.69 ft/s (6 m/s)
	a max.		328.1 ft/s² (100 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	
	Torsion	± 90°, with 3.281 ft (1 m) cable length	

Cable structure

	Conductor	Conductor consisting of a highly flexible stranded special alloy.
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Conductors cabled in one layer with especially short pitch length.
	Color code	Color code in accordance with DIN 47100. CF98-02-03-INI: brown, blue, black CF98-03-04-INI: brown, blue, black, white
	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 (RAL 5011)

Electrical Information

	Nominal voltage	300 V
	Testing voltage	1500 V

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

 Configurators ► www.igus.com/CF98

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 7.5.4.2

Properties and approvals

	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	Halogen-free	Following EN 50267-2-1
	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/EG

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]	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]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				5	5	5				
-13 / +176	32.81	19.69	328.1	≤ 328	4	4	4			
+176 / +194				5	5	5				

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

Typical application areas

- For maximum mechanical load requirements and especially small bend radii to 4 x d
- Indoor and outdoor applications, UV-resistant
- Especially for short, very fast applications with small radii and tight design space
- Pick and place machines, automatic doors, Clean room, very quick handling

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
CF98-01-02	26	2 x 0.14	0.16	4.0	2.7	4	7.4	11
CF98-01-03	26	3 x 0.14	0.18	4.5	4.0	6	9.4	14
CF98-01-04	26	4 x 0.14	0.20	5.0	6.0	9	10.8	16
CF98-01-07 ¹⁾	26	7 x 0.14	0.24	6.0	9.4	14	14.1	21
CF98-01-08	26	8 x 0.14	0.26	6.5	10.8	16	16.1	24
CF98-02-03-INI	24	3 x 0.25	0.20	5.0	8.1	12	16.8	25
CF98-02-04	24	4 x 0.25	0.22	5.5	10.8	16	20.2	30
CF98-02-07	24	7 x 0.25	0.26	6.5	17.5	26	35.6	53
CF98-02-08	24	8 x 0.25	0.28	7.0	20.2	30	40.3	60
CF98-03-03 ¹⁾	22	3 x 0.34	0.20	5.0	9.4	14	18.8	28
CF98-03-04-INI	22	4 x 0.34	0.22	5.5	12.8	19	23.5	35
CF98-03-07	22	7 x 0.34	0.28	7.0	21.5	32	37.0	55
CF98-03-08 ¹⁾	22	8 x 0.34	0.30	7.5	25.5	38	42.3	63
CF98-05-04	20	4 x 0.5	0.24	6.0	20.8	31	26.9	40

¹⁾ Delivery time upon request

Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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

TPE Control cable | CF99

- For maximum mechanical load requirements and especially small bend radii to 4 x d
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant

Dynamic Information

	Bend radius	E-Chain®	min. 4 x d
		flexible	min. 4 x d
		fixed	min. 3 x d
	Temperature	E-Chain®	-31 °F to +194 °F (-35 °C to +90 °C)
		flexible	-58 °F to +194 °F (-50 °C to +90 °C)
		fixed	-67 °F to +194 °F (-55 °C to +90 °C)
	v max.	unsupported	32.81 ft/s (10 m/s)
		gliding	19.69 ft/s (6 m/s)
	a max.		328.1 ft/s² (100 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

Cable structure

	Conductor	Conductor consisting of a highly flexible stranded special alloy.
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Conductors cabled in one layer with especially short pitch length.
	Color code	Color code in accordance with DIN 47100. CF99-02-03-INI: brown, blue, black CF99-03-04-INI: brown, blue, black, white
	Inner jacket	TPE mixture adapted to suit the requirements in E-Chains®.
	Overall shield	Highly flexible, alloyed special shield. 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 (RAL 5011)

Electrical Information

	Nominal voltage	300 V
	Testing voltage	1500 V

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

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 7.5.4.1

Properties and approvals

	Silicon-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	Halogen-free	Following EN 50267-2-1
	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/EG

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]	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]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					5	5	5			
-13 / +176	32.81	19.69	328.1	≤ 328	4	4	4			
+176 / +194					5	5	5			

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

Typical application areas

- For maximum mechanical load requirements and especially small bend radii up to 4 x d
- Indoor and outdoor applications, UV-resistant
- Especially for short, very fast applications with small radii and tight design space
- Pick and place machines, automatic doors, Clean room, very quick handling

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
CF99-01-02	26	2 x 0.14	0.22	5.5	9.4	14	22.2	33
CF99-01-03 ¹⁾	26	3 x 0.14	0.24	6.0	11.4	17	24.9	37
CF99-01-04	26	4 x 0.14	0.24	6.0	14.1	21	28.9	43
CF99-01-07 ¹⁾	26	7 x 0.14	0.30	7.5	21.5	32	41.7	62
CF99-01-08	26	8 x 0.14	0.31	8.0	24.2	36	46.4	69
CF99-02-03-INI ¹⁾	24	3 x 0.25	0.26	6.5	16.8	25	32.3	48
CF99-02-04	24	4 x 0.25	0.26	6.5	20.2	30	37.6	56
CF99-02-07	24	7 x 0.25	0.31	8.0	32.3	48	57.1	85
CF99-02-08 ¹⁾	24	8 x 0.25	0.33	8.5	36.3	54	62.5	93
CF99-03-03 ¹⁾	22	3 x 0.34	0.26	6.5	18.1	27	34.3	51
CF99-03-04-INI ¹⁾	22	4 x 0.34	0.28	7.0	23.5	35	41.7	62
CF99-03-08	22	8 x 0.34	0.35	9.0	43.0	64	70.6	105

¹⁾ Delivery time upon request
Note: The mentioned outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

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 ...