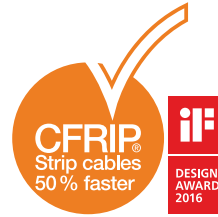


Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Servo cable | PVC | chainflex® CF21.U.L

- For heavy duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame retardant



### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
		<b>flexible</b>	minimum 6 x d
		<b>fixed</b>	minimum 4 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	+5 °C to +70 °C
		<b>flexible</b>	-5 °C to +70 °C (following DIN EN 60811-504)
		<b>fixed</b>	-15 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
		<b>gliding</b>	5 m/s
	<b>a max.</b>		80 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 100 m for gliding applications, Class 5	

### Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant design consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
	<b>Core identification</b>	<b>Power cores:</b> Black cores with white numerals, one core green-yellow. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 Control pair:</b> Black cores with white numerals. 1. Control core: 4 2. Control core: 5 <b>2 Control pairs:</b> Black cores with white numerals. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
	<b>Inner jacket</b>	PVC mixture, adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % inear, approx. 90 % optical
	<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Moss green (similar to RAL 6005)
	<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Class 5.5.2.1

### Electrical information

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

### Properties and approvals

	<b>UV resistance</b>	Medium.
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2.
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 10492 and 2570, 1000 V, 80 °C
	<b>NFPA</b>	Following NFPA 79-2012 chapter 12.9.
	<b>EAC</b>	Certificate no. RU C-DE.ME77.B.02324 (TR ZU)
	<b>CTP</b>	Certificate no. C-DE.PB49.B.00420 (Fire safety)
	<b>CEI</b>	Following CEI 20-35.
	<b>Lead-free</b>	Following 2011/65/EU (RoHS-II).
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5.10.07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EU.

### Guaranteed lifetime according to guarantee conditions (Page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	12

\* Higher number of double strokes? Online lifetime calculation: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical mechanical application areas

- For heavy duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Unsupported travel distances and up to 100 m for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/ packaging machines, quick handling equipment, indoor cranes



# Servo cable | PVC | chainflex® CF21.UL

## Class 5.5.2.1

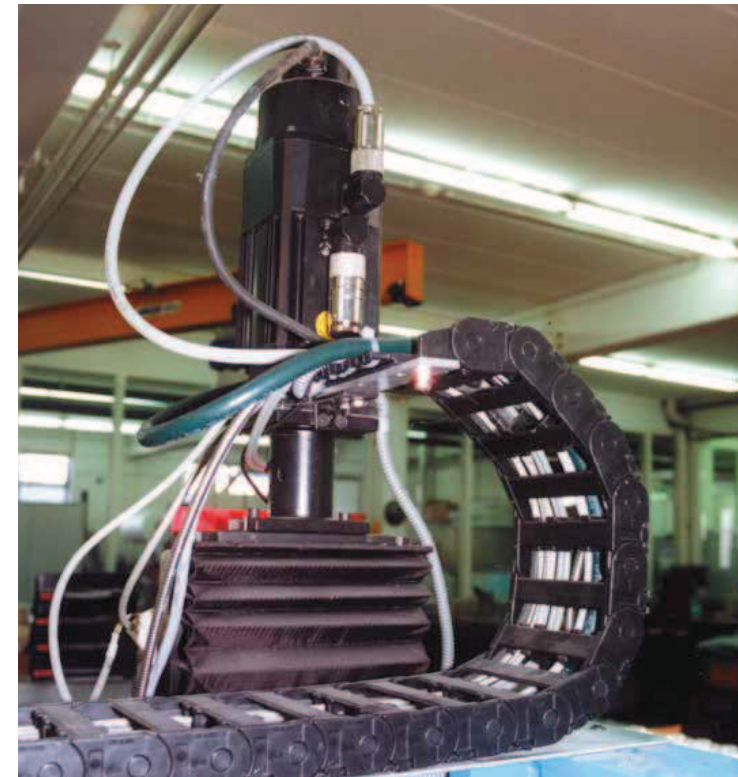
Strip cables 50% faster

igus® chainflex® CF21.UL

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>1 Control pair shielded</b>				
CF21.07.05.02.01.UL	(4G0.75+(2x0.5)C)C	11.5	87	189
CF21.15.15.02.01.UL	(4G1.5+(2x1.5)C)C	13.0	159	281
CF21.25.15.02.01.UL	(4G2.5+(2x1.5)C)C	14.5	217	348
CF21.40.15.02.01.UL	(4G4.0+(2x1.5)C)C	16.0	282	440
CF21.60.15.02.01.UL	(4G6.0+(2x1.5)C)C	18.0	368	581
CF21.100.15.02.01.UL	(4G10.0+(2x1.5)C)C	22.5	586	910
<b>2 Control pairs shielded</b>				
CF21.07.03.02.02.UL	(4G0.75+2x(2x0.34)C)C	12.5	116	230
CF21.10.07.02.02.UL	(4G1.0+2x(2x0.75)C)C	13.5	168	293
CF21.15.07.02.02.UL	(4G1.5+2x(2x0.75)C)C	14.5	192	340
CF21.25.15.02.02.UL	(4G2.5+2x(2x1.5)C)C	17.0	285	476
CF21.40.15.02.02.UL	(4G4.0+2x(2x1.5)C)C	18.5	346	560
CF21.60.15.02.02.UL	(4G6.0+2x(2x1.5)C)C	21.5	450	754
CF21.100.15.02.02.UL	(4G10.0+2x(2x1.5)C)C	24.0	654	1016
CF21.160.15.02.02.UL	(4G16.0+2x(2x1.5)C)C	27.5	959	1393
CF21.250.15.02.02.UL <sup>1)</sup>	(4G25.0+2x(2x1.5)C)C	31.0	1359	1919
CF21.350.15.02.02.UL	(4G35.0+2x(2x1.5)C)C	34.0	1810	2442

<sup>1)</sup> Phase-out model  
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



chainflex® CF21.UL: cables for energy supply systems in spinneret production. e-chain®: E2/000



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