










## PVC Hybrid Servo cable | CF220-UL-H

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

## Dynamic Information


	Bend radius	E-Chain®	min. 10 x d
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	E-Chain®	+41 °F to +158 °F (+5 °C to +70 °C)
		flexible	+23 °F to +158 °F (-5 °C to +70 °C)
		fixed	+5 °F to +158 °F (-15 °C to +70 °C)
	v max.	unsupported	32.81 ft/s (10 m/s)
		gliding	6.56 ft/s (2 m/s)
	a max.		164.1 ft/s² (50 m/s²)
	Travel distance	Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2	

## Cable structure













	Conductors	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality, especially low-capacitance TPE mixture.
	Conductor construction	Power conductors and Signal Pairs cabled with short pitch.
	Color code	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- <b>Control pair:</b> Black with white numbers. 1. Control Pair Printed 5 and 6 <b>Bus element:</b> white, blue <b>Signal Pair shield</b> Aluminium/Polyester tape & Tinned Copper Braided shield. 80% optical coverage <b>Overall cable</b> Aluminium/Polyester tape <b>Overall shield</b> Bending-resistant tinned copper braid. 80 % optical coverage <b>Outer jacket</b> 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: Orange (similar to RAL 2003) Color: Orange (similar to RAL 2003)

## Class 4.2.2.1

## Electrical Information

	Nominal voltage	1000 V
	Test voltage	4000 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
	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL/CSA	Style 10989 and 2570, 1000 V, 80 °C
	NFPA 79	Complies to NFPA 79-2015 chapter 12.9
	EAC	Certified according to no. TC RU C-DE.ME77.B.01255
	CTP	Certified according to no. C-DE.PB49.B.00420
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	CE	Following 2014/35/EC

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

Cycles*	5 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]
		unsupported	gliding			
+41 / +59				≤ 32.81	12.5	13.5
+59 / +140		32.81	6.56		10	11
+140 / +158					12.5	13.5

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

## Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

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°				

IGUS® CHAINFLEX® CF220.UL.H

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Hybrid technology	Manufacturer
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF220-UL-H100-07-04	18	4 G 0.75							CF220-UL-H100-07-04	Sick "Hiperface DSL"	see selection table on page 279
	22	1 STP x 0.34	0.47	12.0	78.6	117	148.5	221			
	22	1 STP x 22AWG									
CF220-UL-H101-10-04	17	4 G 1.0							CF220-UL-H101-10-04	Sick "Hiperface DSL"	see selection table on page 279
	18	1 STP x 0.75	0.49	12.5	93.4	139	172.7	257			
	22	1 STP x 22AWG									
CF220-UL-H101-15-04	16	4 G 1.5							CF220-UL-H101-15-04	Sick "Hiperface DSL"	see selection table on page 279
	18	1 STP x 0.75	0.53	13.5	106.8	159	197.6	294			
	22	1 STP x 22AWG									
CF220-UL-H102-25-04	14	4 G 2.5							CF220-UL-H102-25-04	Sick "Hiperface DSL"	see selection table on page 279
	17	1 STP x 1.0	0.59	15.0	145.8	217	243.3	362			
	22	1 STP x 22AWG									
New CF220-UL-H200-25-07 <sup>1)</sup>	14	7 G 2.5	0.79	20.0	207.0	308	360.8	537	CF220-UL-H200-25-07	SEW Cable type A/2.5	SEW
New CF220-UL-H501-15-04 <sup>1)</sup>	18	1 STP x 0.75							CF220-UL-H501-15-04	Heidenhain	B&R
	16	4 G 1.5									
	18	1 STP x 0.75	0.59	15.0	129.7	193	195.5	291			
	26	(2 PR x 0.14 +									
New CF220-UL-H502-40-04 <sup>1)</sup>	24	1 PR x 0.25) SHLD							CF220-UL-H502-40-04	Heidenhain	B&R
	12	4 G 4.0									
	17	1 STP x 1.0	0.67	17.0	211.7	315	285.6	425			
	26	(2 PR x 0.14 +									
New CF220-UL-H601-25-05 <sup>1) 16)</sup>	24	1 PR x 0.25) SHLD							CF220-UL-H601-25-05	isH Servo	ELAU/Schneider Electric
	14	5 G 2.5									
	24	24 AWG QUAD SHLD	0.57	14.5	113.6	169	205.6	306			
	24	1 STP x 0.25 SHLD									

<sup>1)</sup> Delivery time upon request<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018)

Note: The mentioned outer diameters are maximum values.

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

STP = Individually shielded Twisted Pair  
SC = Individually shielded ConductorPR = Twisted Pair  
SHLD = Shielded Precable