Control cable | PUR | chainflex® CF77.UL.D

Example image

- For heavy duty applications
- PUR outer jacket
- Oil and coolant-resistant
- Flame retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

Dynamic information

Bend radius	**e-chain®**	minimum 6.8 x d
	flexible	minimum 5 x d
	fixed	minimum 4 x d
Temperature	**e-chain®**	-25 °C to +80 °C
	flexible	-40 °C to +80 °C (following DIN EN 60811-504)
	fixed	-50 °C to +80 °C (following DIN EN 50305)
v max.	**unsupported**	10 m/s
	gliding	5 m/s
a max.		80 m/s²
Travel distance		Unsupported travel distances and up to 100 m for gliding applications, Class 5
Torsion		± 180°, with 1 m cable length, Class 3 (except 5-core types ≥ 4,0 mm² Product range table)

Cable structure

Conductor	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	**Number of cores < 12:** Cores wound in a layer with a short pitch length. **Number of cores ≥ 12:** Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions.
Core identification	**Cores < 0.5 mm²:** Colour code in accordance with DIN 47100. **Cores ≥ 0.5 mm²:** Black cores with white numerals, one core green-yellow. CF77.UL.03.04.INI: brown, blue, black, white
Outer jacket	Low-adhesion, highly abrasion-resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Window-grey (similar to RAL 7040) CF77.UL.03.04.INI: Colour: Colza yellow (similar to RAL 1021)

Electrical information

Nominal voltage	300/500 V (following DIN VDE 0298-3)
Testing voltage	2000 V (following DIN EN 50395)

Class 5.5.3.3

Basic requirements	low	1	2	3	4	**5**	6	7	highest
Travel distance	unsupported	1	2	3	4	**5**	6		≥ 400 m
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 retardant	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
Halogen-free	Following DIN EN 60754.
UL/CSA	**Cores < 0.5 mm²:** Style 10493 and 20233, 300 V, 80 °C **Cores ≥ 0.5 mm²:** Style 11323 and 21223, 1000 V, 80 °C
NFPA	Following NFPA 79-2012 chapter 12.9.
DNV-GL	Certified according to GL type testing – Certificate no.: 61 935-14 HH
EAC	Certificate no. RU C-DE.ME77.B.01254 (TR ZU)
CTP	Certificate no. C-DE.PB49.B.00416 (Fire safety)
CEI	Following CEI 20-35.
Lead-free	Following 2011/65/EU (RoHS-II).
Cleanroom	According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1.
DESINA	According to VDW, DESINA standardisation.
CE	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]	< 10 m	≥ 10 m	< 10 m	≥ 10 m	< 10 m	≥ 10 m
	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	8.5	10	9.5	11	10.5	12
-15/+70	6.8	7.5	7.5	8.5	8.5	9.5
+70/+80	8.5	10	9.5	11	10.5	12

* Higher number of double strokes? Online lifetime calculation: www.igus.eu/chainflexlife

Typical mechanical application areas

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

Control cable | PUR | chainflex® CF77.UL.D

Class 5.5.3.3

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

CF77.UL.D
PUR
6.8 x d

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
CF77.UL.02.04.D	4x0.25	5.5	11	35
CF77.UL.03.04.INI	4x0.34	6.0	17	40
CF77.UL.05.04.D	4G0.5	6.0	22	44
CF77.UL.05.05.D	5G0.5	6.5	28	52
CF77.UL.05.07.D	7G0.5	7.5	41	80
CF77.UL.05.12.D	12G0.5	10.0	66	132
CF77.UL.05.18.D	18G0.5	12.0	99	184
CF77.UL.05.25.D	25G0.5	14.0	138	247
CF77.UL.05.30.D	30G0.5	15.0	165	325
CF77.UL.07.03.D	3G0.75	6.5	24	55
CF77.UL.07.04.D	4G0.75	7.0	32	64
CF77.UL.07.05.D	5G0.75	7.5	40	75
CF77.UL.07.07.D	7G0.75	8.5	56	106
CF77.UL.07.12.D	12G0.75	12.0	96	192
CF77.UL.07.18.D	18G0.75	13.5	143	260
CF77.UL.07.20.D	20G0.75	14.5	159	292
CF77.UL.07.25.D	25G0.75	16.0	198	368
CF77.UL.07.36.D	36G0.75	19.0	297	524
CF77.UL.07.42.D	42G0.75	21.0	365	604
CF77.UL.10.02.D	2x1.0	6.5	22	54
CF77.UL.10.03.D	3G1.0	6.5	32	65
CF77.UL.10.04.D	4G1.0	7.0	43	79
CF77.UL.10.05.D	5G1.0	8.0	53	97
CF77.UL.10.07.D	7G1.0	9.0	74	119
CF77.UL.10.12.D	12G1.0	12.5	127	234
CF77.UL.10.18.D	18G1.0	15.0	191	339
CF77.UL.10.25.D	25G1.0	17.5	264	452
CF77.UL.10.42.D	42G1.0	22.5	462	708
CF77.UL.15.03.D	3G1.5	7.5	48	86
CF77.UL.15.04.D	4G1.5	8.0	64	105
CF77.UL.15.05.D	5G1.5	8.5	80	125
CF77.UL.15.07.D[17]	7G1.5	10.5	111	174
CF77.UL.15.12.D	12G1.5	14.0	191	308
CF77.UL.15.18.D	18G1.5	17.0	286	477
CF77.UL.15.25.D	25G1.5	19.5	396	630
CF77.UL.15.36.D	36G1.5	23.5	594	891
CF77.UL.15.42.D	42G1.5	26.5	729	1040

[17] When using the cables with „7 G 1.5 mm²“ and „7 G 2.5 mm²“ minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.
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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. mm	Copper index kg/km	Weight kg/km
CF77.UL.25.03.D	3G2.5	8.5	80	124
CF77.UL.25.04.D	4G2.5	9.5	106	155
CF77.UL.25.05.D	5G2.5	10.5	132	192
CF77.UL.25.07.D[17]	7G2.5	12.5	185	270
CF77.UL.25.12.D	12G2.5	17.5	317	530
CF77.UL.40.04.D	4G4.0	11.5	176	256
CF77.UL.40.05.D	5G4.0	12.0	212	302
CF77.UL.60.05.D	5G6.0	14.0	317	428
CF77.UL.160.05.D[11]	5G16.0	22.5	845	1098

[11] Phase-out model
[17] When using the cables with „7 G 1.5 mm²“ and „7 G 2.5 mm²“ minimum bend radius must be 17.5 x d with gliding travel distance ≥ 5 m.
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

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