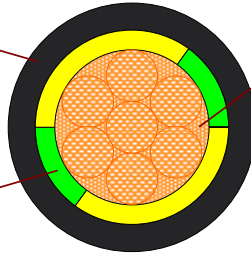


**TPE - e-chain<sup>®</sup> - power cable for maximum load requirements (class 6.6.4): oil- and biooil-resistant, flame-retardant, hydrolysis- and microbe-resistant as well as UV-resistant.**

Outer jacket: Pressure extruded, flame-retardant TPE mixture

Core insulation: Mechanically high-quality TPE mixture



Conductor: Conductor strand in bending-stable version consisting of bare copper wires

**Example drawing**

### Core design:

**Conductor:** Conductor strand in bending-stable version consisting of bare copper wires.  
**Core insulation:** Mechanically high-quality TPE mixture.  
**Core identification:** greenyellow

### Jacket design:

**Outer jacket:** Low-adhesion mixture on the basis of TPE, especially abrasion-stable and highly bending-stable, adapted to suit the requirements in e-chains<sup>®</sup>.

- oil-resistant (following DIN EN 60811-2-1)
- biooil-resistant (following VDMA 24568 (tested by DEA with Plantocut 8 S-MB))
- flame-retardant (according to IEC 60332-1-2, CEI 20-35, VW-1, FT-1)
- hydrolysis-resistant (following DIN VDE 0282 Part 10 - A)
- microbe-resistant (following DIN EN 50396)
- silicon-free (following PV 3.10.7 - status 1992)
- lead-free (following 2011/65/EU (RoHS-II))
- clean room ISO class 1 (according to DIN ISO 14644-1 tested by IPA)
- UV-resistance: High

**Colour outer jacket:** Signal black (similar to RAL 9004)

**Cable marking (White):**

„00000 m“\* igus chainflex CFPE... 600/1000V E310776

cigus AWM Style 21218 VW-1 AWM I/II A/B 80°C 1000V FT-1 GL 61

938-14 HH EAC/CTP CE RoHS-II conform www.igus.de

+++ chainflex cable works +++

\* **Length printing:** Not calibrated. Only intended as an orientation aid.

⊙ / ⊚: Cable identification according to part no. (see [technical table](#) for details).

Ex.: CFPE.40.01: ⇒ ...chainflex CFPE.40.01 1G4,0 600/1000V...

### General mechanical values:

(for individual details see [technical table](#))

Guaranteed lifetime for this series according to the "chainflex <sup>®</sup> guarantee club" conditions (see chainflex <sup>®</sup> catalogue and <a href="http://www.igus.eu/chainflex-guarantee">www.igus.eu/chainflex-guarantee</a> )				
Double strokes*		5 million	7,5 million	10 million
Temperature (from/to) [°C]	Travel distance (TD)	Min. bending radius for e-chain <sup>®</sup> use [Factor multiplied by outer diameter (d)] (Ex.: CFPE.40.01 at 20°C: 7,5 x 6,5 mm → Min. bending radius 48,75 mm)		
-35 / -25	≤ 400 m	10,0	11,0	12,0
		7,5	8,5	9,5
		10,0	11,0	12,0

\*: Minimum guarantee lifetime of the cable under the specified conditions.

The installation of the cable is recommended within the middle temperature range.

Temperature range	-40 °C ←	-35 °C ←	-25 °C ↔ +80 °C	→ +90 °C
Min. bending radius for fixed installation	7,5 x d	6,8 x d	4,0 x d	6,8 x d
Torsion (at 1 m cable length)	---	±45 °	±90 °	±45 °

**TPE - e-chain<sup>®</sup> - power cable for maximum load requirements (class 6.6.4): oil- and biooil-resistant, flame-retardant, hydrolysis- and microbe-resistant as well as UV-resistant.**

### General electrical values:

(for individual details see [technical table](#))

<b>Nominal voltage:</b>	600 / 1000 V (following DIN VDE 0250)
<b>Test voltage:</b>	4 kV (following VDE 0281-2)
<b>Certifications:</b>	<ul style="list-style-type: none"> <li>• cRUus: (E310776: Style 10492 &amp; 21218, 1000 V / 80 °C)</li> <li>• GL type approval certificate: No. 61 938-14 HH</li> </ul>
<b>Guidelines:</b>	CE, NFPA (following 79-2012 chapter 12.9), EAC & TR (CTP)

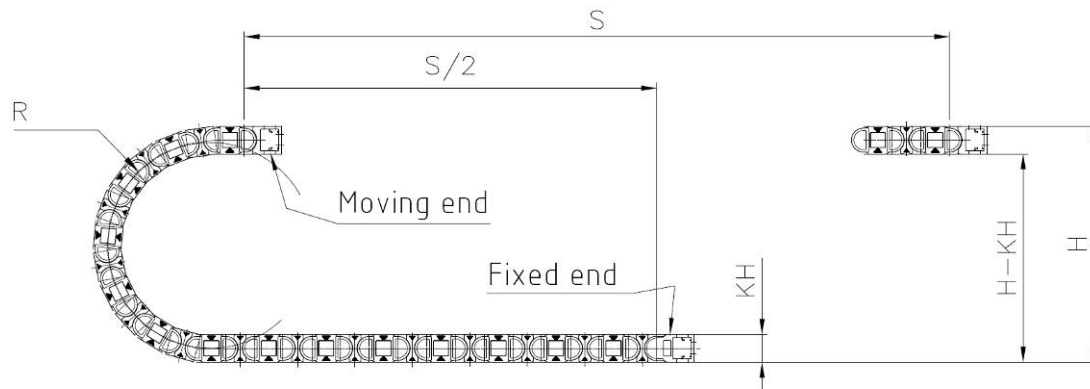
### Dynamic values:

<b>Max. speed in e-chain<sup>®</sup> use:**</b>	<b>Unsupported:</b> v = 10 m / s <b>Gliding (up to 400 m):</b> v = 6 m / s
<b>Max. acceleration in e-chain<sup>®</sup> use:**</b>	a = 100 m / s <sup>2</sup>

\*\* These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

### Typical lab test setup for this cable group:

<b>Test bending radius R:</b>	approx. 35 - 150 mm
<b>Test travel S:</b>	approx. 1 - 15 m
<b>Test period:</b>	min. 2 - 4 million double strokes
<b>Test speed:</b>	approx. 0,5 - 2 m / s
<b>Test acceleration:</b>	approx. 0,5 - 1,5 m / s <sup>2</sup>



### e-chain<sup>®</sup> - power cable / single core for maximum load requirements:

- especially abrasion-stable
- almost unlimited resistance to oil, also with biooils
- for unsupported travel distances and up to 400 m in gliding applications
- UV-resistant
- CE, RoHS-II, cRUus, GL type approval certificate, NFPA, EAC & TR (CTP)

### Typical application areas:

Indoor and outdoor applications.  
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.

**TPE - e-chain<sup>®</sup> - power cable for maximum load requirements (class 6.6.4):  
oil- and biooil-resistant, flame-retardant, hydrolysis- and microbe-resistant  
as well as UV-resistant.**

**Technical tables:**

**Mechanical values:**

① Part no.	② Number of cores & nominal cross section [mm <sup>2</sup> ] <sup>***</sup>	External diameter (d) <sup>****</sup> [max. mm]	Copper index [kg / km]	Weight [kg / km]
CFPE.15.01	1G1,5	5,0	17	31
CFPE.25.01	1G2,5	6,0	29	47
CFPE.40.01	1G4,0	6,5	43	67
CFPE.60.01	1G6,0	7,0	64	87
CFPE.100.01	1G10,0	8,0	106	133
CFPE.160.01	1G16,0	9,5	170	205
CFPE.250.01	1G25,0	11,0	264	311
CFPE.350.01	1G35,0	12,5	370	418
CFPE.500.01	1G50,0	14,5	528	583
CFPE.700.01	1G70,0	16,5	766	822
CFPE.950.01	1G95,0	20,0	1009	1105
CFPE.1200.01	1G120,0	21,0	1276	1378

\*\*\* G ⇒ Cable contains a greenyellow core.

\*\*\*\* External diameters are maximum values and may tend toward lower tolerance limits.



**TPE - e-chain<sup>®</sup> - power cable for maximum load requirements (class 6.6.4): oil- and biooil-resistant, flame-retardant, hydrolysis- and microbe-resistant as well as UV-resistant.**

### Technical tables (continuation):

Electrical values:

Nominal cross section [mm <sup>2</sup> ] (following)	Conductor resistance [approx. Ω / km] at 20 °C	
	DIN EN 50289-1-2	DIN VDE 0298-4
1,5	13,3	21
2,5	7,98	30
4,0	4,95	41
6,0	3,3	53
10,0	1,91	74
16,0	1,21	99
25,0	0,78	131
35,0	0,554	162
50,0	0,41	202
70,0	0,29	250
95,0	0,22	301
120,0	0,18	352

\* The max. current rating depends on factors such as the individual environmental conditions and the type of installation. It is important to ensure that the max. conductor temperature of 90 °C (Recommended 80 °C) is not exceeded.

Short circuit capacity (I <sub>thz</sub> ) following DIN VDE 0298-4 (at T <sub>conductor</sub> = 80 °C and T <sub>short circuit</sub> = 200 °C)		
$I_{thz} = J_{thr} \cdot S_n \cdot \sqrt{\frac{t_{kr}}{t_k}}$	J <sub>thr</sub> : Short-time current density = 128 A/mm <sup>2</sup> S <sub>n</sub> : Nominal cross section t <sub>kr</sub> : Rated short-circuit duration = 1 s t <sub>k</sub> : Short-circuit duration	
	Short circuit capacity (I <sub>thz</sub> ) [kA]	
Nominal cross section (S <sub>n</sub> ) [mm <sup>2</sup> ]	t <sub>k</sub> = 1 s	t <sub>k</sub> = 0,5 s
1,5	0,22	0,31
2,5	0,37	0,52
4,0	0,59	0,84
6,0	0,89	1,26
10,0	1,49	2,10
16,0	2,38	3,37
25,0	3,72	5,26
35,0	5,21	7,37
50,0	7,45	10,53
70,0	10,43	14,75
95,0	14,15	20,01
120,0	17,88	25,28

