

# Bus cable | iguPUR | chainflex® CF898

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

## Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
		<b>flexible</b>	minimum 12 x d
		<b>fixed</b>	minimum 8 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-20 °C to +70 °C
		<b>flexible</b>	-40 °C to +70 °C (following DIN EN 60811-504)
		<b>fixed</b>	-50 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	3 m/s
	<b>a max.</b>		20 m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travel distances up to 10 m, Class 1

## Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	According to bus specification.
	<b>Core structure</b>	According to bus specification.
	<b>Core identification</b>	According to bus specification. ▶ Product range table
	<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60 % optical
	<b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001) <b>CF898.080/CF898.082:</b> Gelb (vergleichbar RAL 1021) <b>CF898.081/CF898.083:</b> Jet black (similar to RAL 9005)

## Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

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

# Class 3.1.3.1

## Properties and approvals

	<b>UV resistance</b>	Medium.
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3.
	<b>Flame retardant</b>	<b>CF898.001-CF898.060:</b> According to IEC 60332-1-2, CEI 20-35, FT1, VW-1 <b>CF898.080-CF898.083:</b> According to IEC 60332-1-2, CEI 20-35, FT2
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	<b>CF898.001:</b> Style 1589 and 20236, 80 V, 80 °C <b>CF898.021-CF898.060:</b> Style 1598 and 20236, 80 V, 80 °C <b>CF898.080-CF898.081:</b> Style 10493 and 20549, 300 V, 80 °C <b>CF898.082-CF898.083:</b> Style 21866, 90 V, 80 °C Certificate no. RU C-DE.ME77.B.01559 (TR ZU)
	<b>EAC</b>	
	<b>CTP</b>	Certificate no. C-DE.PB49.B.00449 (Fire safety)
	<b>Lead-free</b>	Following 2011/65/EU (RoHS-II).
	<b>CE</b>	Following 2014/35/EU.

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

Double strokes*	1 million			3 million			5 million					
	Temperature, from/to [°C]			R min. [factor x d]			R min. [factor x d]					
	-20/-10			17.5			18.5			19.5		
	-10/+60			15			16			17		
	+60/+70			17.5			18.5			19.5		

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

## Typical mechanical application areas

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

igus® chainflex® CF898.045

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Characteristic wave impedance approx.	Core group	Colour code
	[mm²]	[mm]	[kg/km]	[kg/km]		[Ω]		
<b>Profibus</b>								
CF898.001	(2x0.25)C	8.0	19	58	CF898.001	150	(2x0.25)C	red, green
<b>CAN-Bus</b>								
CF898.021	(2x0.5)C	8.5	26	82	CF898.021	120	(2x0.5)C	white, brown
<b>Ethernet/CAT5e</b>								
CF898.045	(4x(2x0.14))C	7.5	27	64	CF898.045	100	(4x(2x0.14))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>								
EtherCAT <sup>®</sup> CF898.060 <sup>2) 16)</sup>	(4x0.34)C	7.0	27	60	CF898.060 <sup>2) 16)</sup>	100	(4x0.34)C	white, orange, blue, yellow (star-quad stranding)
<b>ASI BUS (flat cables)</b>								
CF898.080	2x1.5		32	64	CF898.080	-	2x1.5	blue, brown
CF898.081	2x1.5		32	64	CF898.081	-	2x1.5	blue, brown
CF898.082	2x2.5		50	78	CF898.082	-	2x2.5	blue, brown
CF898.083	2x2.5		50	78	CF898.083	-	2x2.5	blue, brown

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018)

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

**Technical note on bus cables**

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability.

It is also ensured that the electrical values remain stable over the long term in spite of permanent movement.

The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals.

igus® advises you when you are designing your bus system so that all these factors are taken into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.

