

Data sheet

chainflex® CFSPECIAL.381



Bus cable for theatre and stage technology • PVC outer jacket • Flame-retardant



Image exemplary

DMX	Ethernet (CAT6/GigE/PoE)	Ethernet (CAT7/PoE)
CFSPECIAL.381.037	CFSPECIAL.381.049	CFSPECIAL.381.052



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Bus cable for theatre and stage technology • PVC outer jacket • Flame-retardant

Cable structure



Conductor

Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).



Core insulation

According to bus specification.



Core structure

According to bus specification.



Core identification

According to bus specification.



Element shield

Braiding made of tinned copper wires.



Element jacket

Mechanically high-quality TPE mixture.



Overall shield

Flexible braiding made of tinned copper wires.
Linear coverage approx. 70%, optically approx. 90 %



Outer jacket

Low-adhesion PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1).
Colour: jet black (similar to RAL 9005)
Printing: white



"00000m"* igus chainflex CFSPECIAL.381.① ---② E310776 cЯ Uus

AWM Style.....③ VW-1 AWM I/II A/B 80°C.....④ FT1 CE.....⑤

RoHS-II conformity www.igus.eu +++ chainflex cable works +++

* **Metre markings:** Not calibrated. Only serves as a guide.

① / ② Type designation according to Part No. (see technical table).

③ / ④ Imprint of the UL style and the UL voltage rating (see associated chapter).

⑤ Imprint of the appropriate bus standard.

Example: ... chainflex CFSPECIAL.381.049 (4x(2x0.15))C ...

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Properties and approvals

	Flame-retardant	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	Silicone-free	Free from substances that can affect paint adhesion (following PV 3.10.7 - as of 1992)
	PTFE-free	The design of these products does not contain PTFE
	UL/CSA	For details see table UL/CSA AWM
	NFPA	Following NFPA 79-2018, chapter 12.9
	REACH	In accordance with Regulation (EC) No. 1907/2006 (REACH)
	Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
	CE	Following 2014/35/EC

Properties and approvals

UL AWM details

Part No.	UL-style core insulation	UL-style outer jacket	UL voltage rating [V]	UL temperature rating [°C]
CFSSPECIAL.381.037	11704	2532	30	Mounting Kit
CFSSPECIAL.381.049	11704	2571	30	80
CFSSPECIAL.381.052	10493	2464	300	80

Dynamic information

	Bend radius	e-chain® linear flexible fixed	min. 12.5 x d min. 10 x d min. 7 x d
	Temperature	e-chain® linear flexible fixed	+5°C to +70°C -5°C to +70°C (based on DIN EN 60811-504) -15°C to +70°C (based on DIN EN 50305)
	v max.	unsupported sliding	3m/s 2m/s
	a max.		30m/s ²
	Travel		For hanging applications up to 30m

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



Image exemplary

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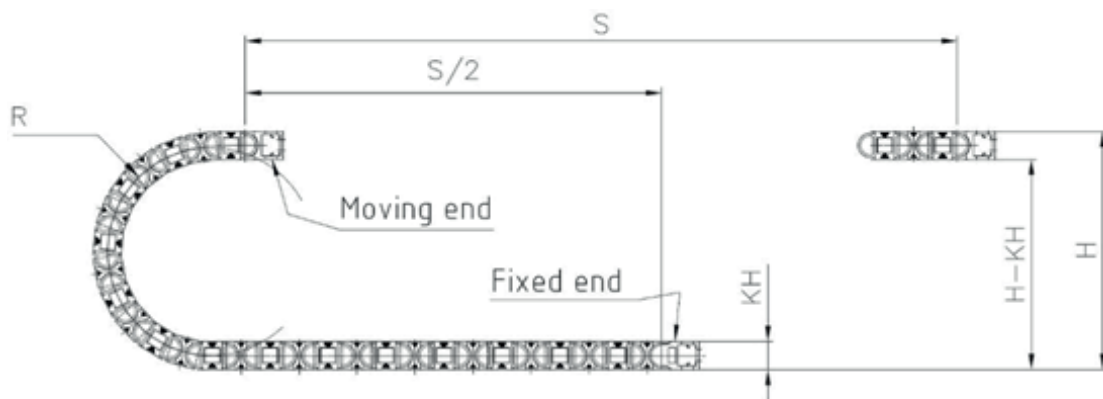
Bus cable for theatre and stage technology ● PVC outer jacket ● Flame-retardant



chainflex® CFSPECIAL.381.049

Typical test setup for this cable series

Test bend radius R	approx. 63 - 100mm
Test travel S	approx. 1 - 15m
Test duration	Min. 2 - 4 million double strokes
Test speed	approx. 0.5 - 2m/s
Test acceleration	approx. 0.5 - 1.5m/s ²



Typical application areas

- For theatre and stage technology
- Slight oil influence
- For hanging applications up to 30m
- Preferably indoors, but also outdoor applications at temperatures > 5°C

Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm ²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
DMX				
CFSPECIAL.381.037	2x(2x0.25)C	11.5	29	124
Ethernet/CAT6				
CFSPECIAL.381.049	(4x(2x0.15))C	7.5	31	71
Ethernet/CAT7				
CFSPECIAL.381.052	(4x(2x0.15)C)C	10.0	81	139

G = with protective conductor green-yellow

x = without protective conductor

Note: the given outer diameters are maximum values and may tend toward lower tolerance limits.



Image exemplary

Data sheet

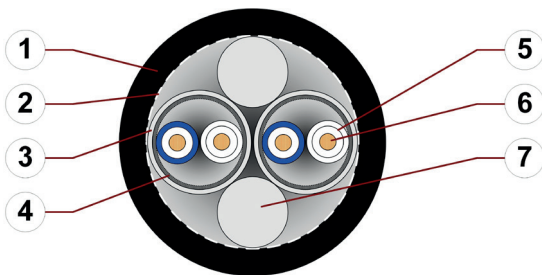
chainflex® CFSPECIAL.381



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DMX
CFSPECIAL.381.037

Cable structure
(Electrical values see next page)



1. Outer jacket: Pressure extruded, oil-resistant PVC compound
2. Overall banding: Plastic fleece
3. Element jacket: Mechanically high-quality TPE compound
4. Element shield: Braiding made of tinned copper wires
5. Core insulation: Mechanically high-quality TPE compound (in accordance with the bus specification)
6. Conductor: Fine stranded wire in an exceptionally bending-stable design made of bare copper wires
7. Filler: Plastic blind element

Image exemplary
For a detailed overview, see the design table

Construction table

Part No.	Core group	Colour code	Core structure
CFSPECIAL.381.037	2x(2x0.25)C	blue/white, blue/white	



Image exemplary

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DMX

CFSPECIAL.381.037

Electrical information

(See previous page for cable configuration)

Part No.	CFSPECIAL.381.037
Nominal voltage	50V 30V (following UL)
Testing voltage (based on EN 50395)	1000V
Operating capacity (based on EN 60811-201)	40pF/m
Characteristic wave impedance (based on IEC 61156-1)	110 ± 11Ω

Conductor nominal cross section	Maximum conductor resistance at 20 °C (based on IEC 60344)	Max. current carrying capacity at 30°C (based on DIN VDE 0298-4)
[mm²]	[Ω/km]	[A]
0.25	86	5

The final maximum current carrying capacity depends, among other things, on the ambient conditions, the type of installation and the number of loaded cores



Image exemplary

Data sheet

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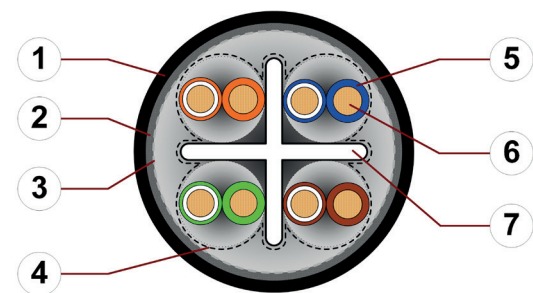


Bus cable for theatre and stage technology • PVC outer jacket • Flame-retardant

Ethernet (CAT6/GigE/PoE) CFSPECIAL.381.049

Cable structure

(Electrical values see next page)



1. Outer jacket: Pressure extruded, oil-resistant PVC compound
2. Overall shield: Bend-resistant braiding of tinned copper wires
3. Shielding foil: Aluminium-laminated plastic foil
4. Banding: Plastic foil
5. Separating element: Bending-stable cross filler made of TPE
6. Core insulation: Mechanically high-quality TPE compound (in accordance with the bus specification)
7. Conductor: Fine stranded wire in an exceptionally bending-stable design made of bare copper wires

Image exemplary

For a detailed overview, see the design table

Construction table

Part No.	Core group	Colour code	Core structure
CFSPECIAL.381.049	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown	



Image exemplary

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Bus cable for theatre and stage technology • PVC outer jacket • Flame-retardant



Ethernet (CAT6/GigE/PoE)

CFSPECIAL.381.049

Electrical information

(See previous page for cable configuration)

Part No.	CFSPECIAL.381.049
Nominal voltage	50V 30V (following UL)
Testing voltage (based on EN 50395)	1000V
Operating capacity (based on EN 60811-201)	47pF/m
Nominal velocity of propagation (NVP) (based on EN 50289-1-7)	72%
Characteristic wave impedance (based on IEC 61156-1)	100 ± 10Ω

Line attenuation approx. [dB/100m]

Part No.	1 MHz	4 MHz	10 MHz	16 MHz	20 MHz	31.25 MHz	62.5 MHz	100 MHz	200 MHz	250 MHz
CFSPECIAL.381.049	3.1	5.8	9.0	11.4	12.8	16.1	23.2	29.9	43.7	49.5

Conductor nominal cross section	Maximum conductor resistance at 20 °C (based on IEC 60344)	Max. current carrying capacity at 30°C (based on DIN VDE 0298-4)
[mm²]	[Ω/km]	[A]
0.15	146	2.5

The final maximum current carrying capacity depends, among other things, on the ambient conditions, the type of installation and the number of loaded cores

Part No.	Bus type	Link class	Maximum transmission length
CFSPECIAL.381.049	Ethernet/CAT6	Class E - (Data applications up to 250 MHz)	50 m



Image exemplary

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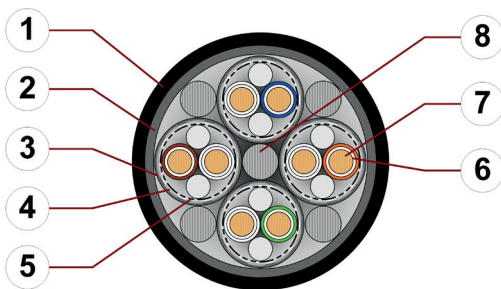


Bus cable for theatre and stage technology • PVC outer jacket • Flame-retardant

Ethernet (CAT7/PoE)
CFSPECIAL.381.052

Cable structure

(Electrical values see next page)



1. Outer jacket: Pressure extruded, oil-resistant PVC compound
2. Overall shield: Bend-resistant braiding of tinned copper wires
3. Element shield: Bending-stable braiding made of tinned copper wires
4. Element shield foil: Aluminium-laminated plastic foil
5. Banding: Plastic foil
6. Core insulation: Mechanically high-quality TPE compound (in accordance with the bus specification)
7. Conductor: Fine stranded wire in an exceptionally bending-stable design made of bare copper wires
8. Strain relief: high tensile strength centre element

Image exemplary

For a detailed overview, see the design table

Construction table

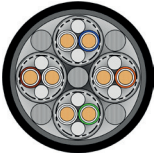
Part No.	Core group	Colour code	Core structure
CFSPECIAL.381.052	(4x(2x0.15)C)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown	



Image exemplary

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Ethernet (CAT7/PoE)

CFSPECIAL.381.052

Electrical information

(See previous page for cable configuration)

Part No.	CFSPECIAL.381.052
Nominal voltage	50V 300V (following UL)
Testing voltage (based on EN 50395)	2000V
Operating capacity (based on EN 60811-201)	55pF/m
Nominal velocity of propagation (NVP) (based on EN 50289-1-7)	66%
Characteristic wave impedance (based on IEC 61156-1)	100 ± 10Ω

Line attenuation approx. [dB/100m]

Part No.	1 MHz	4 MHz	10 MHz	16 MHz	20 MHz	31.25 MHz	62.5 MHz	100 MHz	200 MHz	250 MHz	500 MHz	600 MHz
CFSPECIAL.381.052	3.1	5.6	8.8	11.1	12.4	15.6	22.3	28.5	41.2	46.5	67.9	75.2

Conductor nominal cross section	Maximum conductor resistance at 20 °C (based on IEC 60344)	Max. current carrying capacity at 30°C (based on DIN VDE 0298-4)
[mm²]	[Ω/km]	[A]
0.15	146	2.5

The final maximum current carrying capacity depends, among other things, on the ambient conditions, the type of installation and the number of loaded cores

Part No.	Bus type	Link class	Maximum transmission length
CFSPECIAL.381.052	Ethernet/CAT7	Class F - (Data applications up to 250 MHz)	55 m

