

Special cables



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The following chapter of special cables offers solutions for moved applications going beyond standard energy supply applications.

The constantly growing program of the special cables follows your special demands and we would like to offer solutions for that.

It is at the same time an inspiration for users. igus® can make cables for special applications and can fall back on most different materials and production processes. Depending to the construction this is already possible from a length of 1,640 ft. (500 m).

Use our comprehensive knowledge about cable plus the experience of 2 billion test cycles that are annually realized in the company-owned chainflex® laboratory.

The technical and material details of the CFSP families are documented data sheets of the respective cables and are at any time available up-to-date in the internet. The respective web links can be recalled on the summary pages of the CFSP cables.

We look forward to hear about your job definition!

chainflex® guarantee

As these are special cables for special applications, we ask you to contact us for information on the guaranteed lifetime:

Tel. +49-2203-9649-800, info@igus.com








www.igus.com/chainflexlife










Thermocouple cable | PUR | chainflex® CFTHERMO

- For high mechanical load requirements
- PUR outer jacket
- Oil-resistant and coolant-resistant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant



Dynamic Information

| | | | |
|--|------------------------|------------------------|--|
|  | Bend radius | E-Chain® linear | min. 12.5 x d |
| | | flexible | min. 10 x d |
| | | fixed | min. 5 x d |
|  | Temperature | E-Chain® linear | -13 °F to +176 °F (-25 °C to +80 °C) |
| | | flexible | -40 °F to +176 °F (-40 °C to +80 °C) |
| | | fixed | -58 °F to +176 °F (-50 °C to +80 °C) |
|  | v max. | unsupported | 6.56 ft/s (2 m/s) |
| | | gliding | 3.28 ft/s (1 m/s) |
|  | a max. | | 65.6 ft/s ² (20 m/s ²) |
|  | Travel distance | | Unsupported travel distances and for gliding applications up to 164.1 ft (50 m), Class 4 |

Cable structure

| | | |
|---|-------------------------------|---|
|  | Conductor | Conductor consisting of a flexible special alloy. ▶ See P/N Table |
|  | Conductor insulation | Mechanically high-quality TPE mixture. |
|  | Conductor construction | Conductors are cabled in layers with short pitch lengths. |
|  | Color code | According to thermo specification. ▶ See P/N Table |
|  | Intermediate layer | Fleece taping over the external layer. |
|  | Overall shield | Extremely bending-resistant tinned copper braid. 90 % optical coverage |
|  | Outer jacket | Low-adhesion, halogen-free, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN EN 50363-10-2). Color: According to thermo specification ▶ See P/N Table |

Electrical Information

| | | |
|---|------------------------|--------------------------------------|
|  | Nominal voltage | 300/300 V (following DIN VDE 0298-3) |
|  | Test voltage | 1500 V |

Example image











Configurators ▶ www.igus.com/CFTHERMO

36 month guarantee ... 1,354 types from stock ... no cutting charges

| | | | | | | | | | |
|--------------------|-------------|---|---|---|---|---------|---|-----------|---------|
| Basic requirements | low | 1 | 2 | 3 | 4 | 5 | 6 | 7 | highest |
| Travel distance | unsupported | 1 | 2 | 3 | 4 | 5 | 6 | ≥ 1312 ft | |
| Oil resistance | none | 1 | 2 | 3 | 4 | highest | | | |
| Torsion | none | 1 | 2 | 3 | 4 | ±360° | | | |

Class 5.4.3.1

Properties and approvals

| | |
|---|---|
|  UV resistance | Medium |
|  Oil resistance | Oil-resistant (following DIN EN 50363-10-2), Class 3 |
|  Silicone-free | Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992) |
|  Halogen-free | Following DIN EN 60754 |
|  UL verified | Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year |
|  EAC | Certificate No. RU C-DE.ME77.B.00300/19 (TR ZU) |
|  REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  Cleanroom | According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1 |
|  CE | Following 2014/35/EU |

Typical application areas

- For high mechanical load requirements, Class 5
- Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4
- Almost unlimited resistance to oil, Class 3
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

| Part No. | AWG | Number of Conductors and rated cross section [mm ²] | Outer diameter max. | | Copper index | | Weight | |
|------------------|-----|--|---------------------|------|--------------|---------|-----------|---------|
| | | | [in.] | [mm] | [lbs/mft] | [kg/km] | [lbs/mft] | [kg/km] |
| CFTHERMO-J-001 * | 24 | 1 PR x 0.23 | 0.22 | 5.5 | 6.0 | 9 | 24.2 | 36 |
| CFTHERMO-K-001 | 24 | 1 PR x 0.23 | 0.22 | 5.5 | 6.0 | 9 | 24.9 | 37 |
| CFTHERMO-K-002 | 24 | 1 STP x 0.23 | 0.30 | 7.5 | 16.1 | 24 | 45.0 | 67 |
| | 20 | 3 x 0.5 | | | | | | |

* The cross-section of the copper conductor is equivalent to the electrically effective cross-section.

Note: The given outer diameters are maximum values.

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

| Part No. | Jacket color | Thermo materials | Core group | Color code |
|----------------|--------------|------------------|------------|---------------------------|
| CFTHERMO-J-001 | black | Fe-CuNi | (2x0.23)C | + black, - white |
| CFTHERMO-K-001 | green | NiCr-Ni | (2x0.23)C | + green, - white |
| CFTHERMO-K-002 | green | NiCr-Ni | (2x0.23)C | + green, - white |
| | | Cu | 3G0.5 | brown, blue, yellow-green |



Motor cable | TPE | chainflex® CFFLAT

- For maximum mechanical load requirements
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

Dynamic Information



Bend radius

E-Chain® linear min. 5 x d
flexible min. 4 x d
fixed min. 3 x d



Temperature

E-Chain® linear -31 °F to +194 °F (-35 °C to +90 °C)
flexible -58 °F to +194 °F (-50 °C to +90 °C)
fixed -67 °F to +194 °F (-55 °C to +90 °C)



v max.

unsupported 32.81 ft/s (10 m/s)



a max.

328.1 ft/s² (100 m/s²)



Travel distance

Unsupported travel distances and for gliding applications up to 328.1 ft (100 m), Class 5

Cable structure



Conductor

Highly flexible braided special conductor.



Conductor insulation

Mechanically high-quality TPE mixture.



Outer jacket

Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®.
 Color: Dark blue (similar to RAL 5011)

Electrical Information



Nominal voltage

600/1000 V (following DIN VDE 0298-3)



Test voltage











4000 V (following DIN EN 50395)

| | | | | | | | | | |
|--------------------|-------------|---|---|---|---|---------|---|------------|---------|
| Basic requirements | low | 1 | 2 | 3 | 4 | 5 | 6 | 7 | highest |
| Travel distance | unsupported | 1 | 2 | 3 | 4 | 5 | 6 | 1,312 ft + | |
| Oil resistance | none | 1 | 2 | 3 | 4 | highest | | | |
| Torsion | none | 1 | 2 | 3 | 4 | ±360° | | | |

CFFLAT
TPE
5 x d

Class 7.5.4.1

Properties and approvals

| | | |
|---|-----------------------|---|
|  | UV resistance | High |
|  | Oil resistance | Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4 |
|  | Silicone-free | Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992) |
|  | Halogen-free | Following DIN EN 60754 |
|  | UL verified | Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year |
|  | EAC | Certificate No. RU C-DE.ME77.B.02324 (TR ZU) |
|  | REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  | Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  | Cleanroom | According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1 |
|  | CE | Following 2014/35/EU |

Typical application areas

- For maximum mechanical load requirements, Class 7
- Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, small installation spaces, small radii, Machining units/machine tools, quick handling, Cleanroom, semiconductor insertion, low temperature applications

| Part No. | AWG | Number of Conductors and rated cross section | Outer diameter max. | | Copper index | | Weight | |
|--------------|-----|--|---------------------|--------|--------------|---------|-----------|---------|
| | | | [in.] | [mm] | [lbs/mft] | [kg/km] | [lbs/mft] | [kg/km] |
| CFFLAT-40-01 | 12 | 1 x 4.0 | 0.55x0.22 | 14x5.5 | 32.3 | 48 | 78.6 | 117 |

Note: The given outer diameters are maximum values.
G = with green-yellow earth core x = without earth core








Bus cable | PUR | chainflex® CFSPECIAL-182








- For increased tensile load
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

Especially
for hanging
applications



Dynamic Information

| | | | |
|--|------------------------|------------------------|---|
|  | Bend radius | E-Chain® linear | min. 10 x d |
| | | flexible | min. 8 x d |
| | | fixed | min. 5 x d |
|  | Temperature | E-Chain® linear | -13 °F to +176 °F (-25 °C to +80 °C) |
| | | flexible | -40 °F to +176 °F (-40 °C to +80 °C) (following DIN EN 60811-504) |
| | | fixed | -58 °F to +176 °F (-50 °C to +80 °C) (following DIN EN 50305) |
|  | v max. | unsupported | 32.81 ft/s (10 m/s) |
| | | gliding | 19.69 ft/s (6 m/s) |
|  | a max. | | 328.1 ft/s ² (100 m/s ²) |
|  | Travel distance | | For hanging applications up to 164.1 ft (50 m) |

Cable structure

| | | |
|---|-------------------------------|---|
|  | Conductor | Conductor consisting of bare copper wires (according to DIN EN 60228). |
|  | Conductor insulation | According to bus specification. |
|  | Conductor construction | According to bus specification. |
|  | Color code | According to bus specification. |
|  | Inner jacket | TPE mixture adapted to suit the requirements in E-Chains®. |
|  | Overall shield | Bending-resistant tinned copper braid. 90 % optical coverage |
| | Reinforcement | High tensile strength aramid braid embedded in the outer jacket. |
|  | Outer jacket | 1. outer jacket: PUR mixture adapted to suit the requirements in E-Chains®. Reinforcement: High tensile strength aramid braid embedded in the outer jacket. 2. outer jacket: Low-adhesion mixture on the basis of PUR, highly abrasion- and bending-resistant, adapted to suit the requirements in hanging applications (following DIN EN 50363-10-2). Color: Jet black (similar to RAL 9005) |

Electrical Information














| | | |
|---|------------------------|-------|
|  | Nominal voltage | 300 V |
|  | Test voltage | 500 V |

Configurators ► www.igus.com/CFSPECIAL-182

36 month guarantee ... 1,354 types from stock ... no cutting charges



Properties and approvals

| | | |
|---|-------------------------|--|
|  | UV resistance | High |
|  | Oil resistance | Oil-resistant (following DIN EN 50363-10-2), Class 3 |
|  | Offshore | MUD-resistant following NEK 606 - status 2009 |
|  | Flame resistance | According to IEC 60332-1-2, 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 verified | Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year |
|  | UL/CSA AWM | See data sheet for details ► www.igus.com/CFSPECIAL-182 |
|  | NFPA 79 | Complies to Electrical Standard for Industrial Machinery NFPA 79 Section 12.9 |
|  | EAC | Certificate No. RU C-DE.ME77.B.01218 (TR ZU) |
|  | REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  | Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  | CE | Following 2014/35/EU |

Typical application areas

- For increased tensile load
- For hanging applications up to 50 m
- Almost unlimited resistance to oil
- Storage and retrieval units for high-bay warehouses, hanging control units, Elevators

| Part No. | AWG | Number of Conductors and rated cross section [mm ²] | Outer diameter max. | | Copper index | | Weight | | |
|-----------------------------------|-----|--|---------------------|------|--------------|---------|-----------|---------|--|
| | | | [in.] | [mm] | [lbs/mft] | [kg/km] | [lbs/mft] | [kg/km] | |
| Ethernet/CAT5e/PoE | | | | | | | | | |
| CFSPPECIAL-182-045 ¹⁵⁾ | 26 | 4 PR x 0.15 | 0.37 | 9.5 | 28.2 | 42 | 91.4 | 136 | |
| Profinet | | | | | | | | | |
| CFSPPECIAL-182-060 | 22 | 2 PR x 0.38 | 0.33 | 8.5 | 24.9 | 37 | 84.0 | 125 | |

¹⁵⁾ Color outer jacket: Black (similar to RAL 9005)
Note: The given outer diameters are maximum values.
G = with green-yellow earth core **x** = without earth core

| Part No. | Characteristic wave impedance approx. [Ω] | Core group | Color code |
|-----------------------------------|---|-------------|--|
| Ethernet/CAT5e/PoE | | | |
| CFSPPECIAL-182-045 ¹⁵⁾ | 100 | (4x2x0.15)C | white-blue/blue, white-orange/orange, white-green/green, white-brown/brown |
| Profinet | | | |
| CFSPPECIAL-182-060 | 100 | (4x0.38)C | white, orange, blue, yellow (Star-quad) |








Control cable for rail vehicles | chainflex® CFSPECIAL-414





- For maximum mechanical load requirements in rail vehicles
- Special outer jacket
- PVC and halogen-free
- Oil-resistant
- Flame-retardant
- Self-extinguishing
- Low toxicity
- Low gas density

Especially
for rail vehicles



Dynamic Information

| | | | |
|---|------------------------|------------------------|---|
|  | Bend radius | E-Chain® linear | min. 7.5 x d |
| | | flexible | min. 6 x d |
| | | fixed | min. 4 x d |
|  | Temperature | E-Chain® linear | -4 °F to +176 °F (-20 °C to +80 °C) |
| | | flexible | -13 °F to +176 °F (-25 °C to +80 °C) (following DIN EN 60811-504) |
| | | fixed | -22 °F to +176 °F (-30 °C to +80 °C) (following DIN EN 50305) |
|  | v max. | unsupported | 32.81 ft/s (10 m/s) |
|  | a max. | | 65.6 ft/s ² (20 m/s ²) |
|  | Travel distance | | For unsupported travels up to 16.4 ft (5 m) |












Cable structure

| | | |
|---|-----------------------------|---|
|  | Conductor | Conductor consisting of bare copper wires (according to DIN EN 60228). |
|  | Conductor insulation | Mechanically high-quality special mixture. |
|  | Color code | Black with white numbers. |
|  | Outer jacket | Special mixture adapted to suit the requirements in E-Chains®(following DIN EN 50264-1 EM 104). Color: Jet black (similar to RAL 9005) |

Electrical Information

| | | |
|---|------------------------|-----------|
|  | Nominal voltage | 300/500 V |
|  | Test voltage | 2000 V |

Properties and approvals

| | | |
|--|--------------------------|--|
|  | UV resistance | High |
|  | Oil resistance | Oil-resistant (following DIN EN 60811-2-1), Class 3 |
|  | Flame resistance | Following DIN EN 45545-2 Fire safety class 3 (HL3) |
|  | Halogen-free | Following DIN EN 60754 |
|  | UL verified | Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year |
|  | EAC | Certificate No. RU C-DE.ME77.B.00300/19 (TR ZU) |
|  | REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  | Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  | CE | Following 2014/35/EU |
|  | Toxicity | Low toxicity according to EN 50305-9.2 |
|  | Smoke gas density | Low smoke gas density according to EN 61034-2 |

Typical application areas

- Rail vehicles, Automatic doors, buses, adjusting equipment

| Part No. | AWG | Number of Conductors and rated cross section | Outer diameter max. | | Copper index | | Weight | |
|----------------------|-----|---|---------------------|------|--------------|---------|-----------|---------|
| | | | [in.] | [mm] | [lbs/mft] | [kg/km] | [lbs/mft] | [kg/km] |
| CFSPPECIAL-414-03-04 | 22 | 4 x 0.34 | 0.20 | 5.0 | 10.1 | 15 | 24.2 | 36 |
| CFSPPECIAL-414-03-06 | 22 | 6 x 0.34 | 0.24 | 6.0 | 15.5 | 23 | 34.3 | 51 |

Note: The given outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

| Part No. | Core group | Color code |
|----------------------|------------|------------------------------|
| CFSPPECIAL.414.03.04 | 4 x 0.34 | Black with white numbers 1-4 |
| CFSPPECIAL.414.03.06 | 6 x 0.34 | Black with white numbers 1-6 |








Bus cable for rail vehicles | chainflex® CFSPECIAL-484








Especially
for rail vehicles

- For maximum mechanical load requirements in rail vehicles
- Special outer jacket
- PVC and halogen-free
- Oil-resistant
- Flame-retardant
- Self-extinguishing
- Low toxicity
- Low gas density



Dynamic Information

| | | | |
|---|------------------------|------------------------|---|
|  | Bend radius | E-Chain® linear | min. 12.5 x d |
| | | flexible | min. 10 x d |
| | | fixed | min. 7 x d |
|  | Temperature | E-Chain® linear | -4 °F to +176 °F (-20 °C to +80 °C) |
| | | flexible | -13 °F to +176 °F (-25 °C to +80 °C) (following DIN EN 60811-504) |
| | | fixed | -22 °F to +176 °F (-30 °C to +80 °C) (following DIN EN 50305) |
|  | v max. | unsupported | 32.81 ft/s (10 m/s) |
|  | a max. | | 65.6 ft/s ² (20 m/s ²) |
|  | Travel distance | | For unsupported travels up to 16.4 ft (5 m) |

Cable structure

| | | |
|---|-------------------------------|---|
|  | Conductor | Conductor consisting of bare copper wires (according to DIN EN 60228). |
|  | Conductor insulation | According to bus specification. |
|  | Conductor construction | According to bus specification. |
|  | Color code | According to bus specification. |
|  | Inner jacket | TPE mixture adapted to suit the requirements in E-Chains®. |
|  | Overall shield | Extremely bending-resistant tinned copper braid. 90 % optical coverage |
|  | Outer jacket | Special mixture adapted to suit the requirements in E-Chains®(following DIN EN 50264-1 EM 104). Color: Jet black (similar to RAL 9005) |

Electrical Information












| | | |
|---|------------------------|-------|
|  | Nominal voltage | 50 V |
|  | Test voltage | 500 V |

Example image

Configurators ► www.igus.com/CFSPECIAL-484

36 month guarantee ... 1,354 types from stock ... no cutting charges

Properties and approvals

| | | |
|--|--------------------------|--|
|  | UV resistance | High |
|  | Oil resistance | Oil-resistant (following DIN EN 60811-2-1), Class 3 |
|  | Flame resistance | Following DIN EN 45545-2 Fire safety class 3 (HL3) |
|  | Halogen-free | Following DIN EN 60754 |
|  | UL verified | Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year |
|  | EAC | Certificate No. RU C-DE.ME77.B.00295/19 (TR ZU) |
|  | REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  | Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  | CE | Following 2014/35/EU |
|  | Toxicity | Low toxicity according to EN 50305-9.2 |
|  | Smoke gas density | Low smoke gas density according to EN 61034-2 |

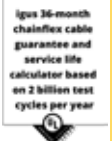
Typical application areas

- Rail vehicles, Automatic doors, buses, adjusting equipment

| Part No. | AWG | Number of Conductors and rated cross section [mm ²] | Outer diameter max. | | Copper index | | Weight | |
|--------------------------|-----|---|---------------------|------|--------------|---------|-----------|---------|
| | | | [in.] | [mm] | [lbs/mft] | [kg/km] | [lbs/mft] | [kg/km] |
| Ethernet/CAT6 | | | | | | | | |
| CFSPECIAL-484-049 | 26 | 4 PR x 0.15 | 0.33 | 8.5 | 28.2 | 42 | 57.8 | 86 |

Note: The given outer diameters are maximum values.
G = with green-yellow earth core x = without earth core

| Part No. | Core group | Color code |
|--------------------------|---------------|--|
| Ethernet/CAT6 | | |
| CFSPECIAL-484-049 | (4x(2x0.15))C | white-blue/blue, white-orange/orange, white-green/green, white-brown/brown |








7th axis robot cable | PUR | chainflex® CFSPECIAL-792









- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

Dynamic Information

| | | | |
|--|------------------------|---|---|
|  | Bend radius | E-Chain® linear | min. 10 x d |
| | | flexible | min. 8 x d |
| | | fixed | min. 5 x d |
|  | Temperature | E-Chain® linear | -13 °F to +176 °F (-25 °C to +80 °C) |
| | | flexible | -40 °F to +176 °F (-40 °C to +80 °C) (following DIN EN 60811-504) |
| | | fixed | -58 °F to +176 °F (-50 °C to +80 °C) (following DIN EN 50305) |
|  | v max. | unsupported | 9.84 ft/s (3 m/s) |
| | | gliding | 6.56 ft/s (2 m/s) |
|  | a max. | | 65.6 ft/s ² (20 m/s ²) |
|  | Travel distance | Unsupported travel distances and for gliding applications up to 328.1 ft (100 m), Class 5 | |

Cable structure

| | | |
|---|-----------------------------|---|
|  | Conductor | Conductor consisting of bare copper wires (according to DIN EN 60228). |
|  | Conductor insulation | Mechanically high-quality TPE mixture. |
|  | Color code | ► See P/N Table |
|  | Inner jacket | TPE mixture adapted to suit the requirements in E-Chains®. |
|  | Overall shield | Bending-resistant tinned copper braid. 80 % optical coverage |
|  | Outer jacket | Low-adhesion, halogen-free, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN EN 50363-10-2). Color: Jet black (similar to RAL 9005) |

Electrical Information














| | | |
|---|------------------------|---------------------------------|
|  | Nominal voltage | 1000 V |
|  | Test voltage | 4000 V (following DIN EN 50395) |

Example image

Configurators ► www.igus.com/CFSPECIAL-792

36 month guarantee ... 1,354 types from stock ... no cutting charges

Properties and approvals

| | | |
|---|-------------------------|--|
|  | UV resistance | High |
|  | Oil resistance | Oil-resistant (following DIN EN 50363-10-2), Class 3 |
|  | Offshore | MUD-resistant following NEK 606 - status 2009 |
|  | Flame resistance | According to IEC 60332-1-2, 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 verified | Certificate No. B129699: igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year |
|  | UL/CSA AWM | See data sheet for details ► www.igus.com/CFSPECIAL-792 |
|  | NFPA 79 | Complies to Electrical Standard for Industrial Machinery NFPA 79 Section 12.9 |
|  | EAC | Certificate No. RU C-DE.ME77.B.00302/19 (TR ZU) |
|  | REACH | In accordance with regulation (EC) No. 1907/2006 (REACH) |
|  | Lead-free | Following 2011/65/EC (RoHS-II/RoHS-III) |
|  | CE | Following 2014/35/EU |

Typical application areas

- Reliable E-Chain® cable for the seventh robot axis
- Electrical properties in line with Kuka (.011/.013/.014), ABB (.012) and Fanuc (.015/.016)



7th axis robot cable | PUR | chainflex® CFSPECIAL-792

igus® chainflex® CFROBOT 9

Example image

| Part No. | Number of Conductors and rated cross section [mm ²] | Outer diameter max. | | Copper index | | Weight | | |
|--------------------------|---|------------------------|------|--------------|---------|-----------|---------|--|
| | | [in.] | [mm] | [lbs/mft] | [kg/km] | [lbs/mft] | [kg/km] | |
| ABB | | | | | | | | |
| CFSPECIAL-792-012 | (18G2.5)C | 1.00 | 25.5 | 366.2 | 545 | 592.7 | 882 | |
| Fanuc | | | | | | | | |
| CFSPECIAL-792-015 | (7x(6x2.0))C | 1.44 | 36.5 | 671.3 | 999 | 1173.9 | 1747 | |
| CFSPECIAL-792-016 | (5x(4x0.25)+10x(3x0.75))C | 1.04 | 26.5 | 283.6 | 422 | 589.3 | 877 | |
| Kuka | | | | | | | | |
| CFSPECIAL-792-011 | (5x(2x6.0+2x2.5)+(2x(6x1.0))C | 1.40 | 35.5 | 840.0 | 1250 | 1366.1 | 2033 | |
| CFSPECIAL-792-013 | ((6x1.5)C+3x(3x4)+1G6)C | 1.10 | 28.0 | 456.3 | 679 | 819.8 | 1220 | |
| CFSPECIAL-792-014 | (2x(3x1.5)C+3x(3x10)+1G10)C | 1.40 | 35.5 | 900.4 | 1340 | 1425.9 | 2122 | |

Note: The given outer diameters are maximum values.
G = with green-yellow earth core x = without earth core



| Part No. | AWG | Core group | Color code |
|---------------------------|-----|--------------|---|
| CFSPPECIAL-792-012 | 14 | (18G2.5)C | Black cores with white numbers 1-17, one green-yellow core |
| CFSPPECIAL-792-015 | 14 | (7x(6x2.0))C | Black cores with white numbers 1-29 Blue cores with white numbers 1-4 Yellow cores with black numbers 1-9 |
| CFSPPECIAL-792-016 | 24 | 5x(4x0.25) | (blue/violet/brown/green),(gray/violet/yellow/brown), (gray/blue/brown/green),(gray/blue/green/yellow), (green/violet/brown/yellow) |
| | 18 | 10x(3x0.75) | Brown cores with white numbers 1, 7, 24 & 30 Black cores with white numbers 16-21 Blue cores with white numbers 2, 8 & 25 Green cores with black numbers 3, 9 & 26 Yellow cores with black numbers 5, 22 & 28 Red cores with white numbers 11-15 Violet cores with white numbers 4, 10 & 27 Grey cores with black numbers 6, 23 & 29 |
| CFSPPECIAL-792-011 | 10 | 10x6.0 | Black cores with white numbers 1-9, one green-yellow core |
| | 14 | 10x2.5 | Black cores with white numbers 10-18, one green-yellow core |
| | 17 | 2x(6x1.0)C | Black cores with white numbers 19-30 |
| CFSPPECIAL-792-013 | 16 | (6x1.5)C | Black cores with white numbers 10-15 |
| | 12 | 3x(3x4) | Black cores with white numbers 1-9 |
| | 10 | 1G6 | Green-yellow core |
| CFSPPECIAL-792-014 | 16 | 2x(3x1.5)C | Black cores with white numbers 10-15 |
| | 8 | 3x(3x10) | Black cores with white numbers 1-9 |
| | 8 | 1G10 | Green-yellow core |

