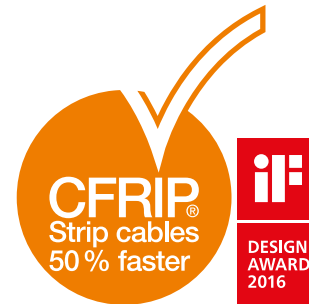


## PVC Motor cable | CF31

- For high mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant



### Dynamic Information

|  |                 |                                                                                         |                                     |
|--|-----------------|-----------------------------------------------------------------------------------------|-------------------------------------|
|  | Bend radius     | E-Chain®                                                                                | min. 7.5 x d                        |
|  |                 | flexible                                                                                | min. 6 x d                          |
|  |                 | fixed                                                                                   | min. 4 x d                          |
|  | Temperature     | E-Chain®                                                                                | +41 °F to +158 °F (+5 °C to +70 °C) |
|  |                 | flexible                                                                                | +23 °F to +158 °F (-5 °C to +70 °C) |
|  |                 | fixed                                                                                   | +5 °F to +158 °F (-15 °C to +70 °C) |
|  | v max.          | unsupported                                                                             | 32.81 ft/s (10 m/s)                 |
|  |                 | gliding                                                                                 | 16.41 ft/s (5 m/s)                  |
|  | a max.          |                                                                                         | 262.5 ft/s² (80 m/s²)               |
|  | Travel distance | Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5 |                                     |

### Cable structure

|  |                      |                                                                                                                                                                         |  |
|--|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | Conductors           | <b>16-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228).<br><b>8-2/0 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228). |  |
|  | Conductor insulation | Mechanically high-quality, especially low-capacitance TPE mixture.                                                                                                      |  |
|  | Core construction    | Conductors cabled with short pitch length around a high-tensile strength core.                                                                                          |  |
|  | Color code           | Black with white numbers, one conductor green-yellow..<br>1. U / L1 / C / L+<br>2. V / L2<br>3. W / L3 / D / L-<br>4. 4 / N<br>5. green/yellow                          |  |

|  |                |                                                                                                                                                                                       |
|--|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Inner jacket   | PVC mixture adapted to suit the requirements in E-Chains®.                                                                                                                            |
|  | Overall shield | Extremely bending-resistant tinned copper braid.<br>90 % optical coverage                                                                                                             |
|  | Outer jacket   | Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13).<br>Color: Jet black (similar to to RAL 9005) |
|  | CFRIP®         | Strip cables 50% faster: The tear strip is in the inner jacket<br>Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>                                                  |

Configurators ► [www.igus.com/CF31](http://www.igus.com/CF31)

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

## Class 5.5.2.1

|                 |             |   |   |   |       |         |   |   |            |
|-----------------|-------------|---|---|---|-------|---------|---|---|------------|
| Requirements    | low         | 1 | 2 | 3 | 4     | 5       | 6 | 7 | highest    |
| Travel distance | unsupported | 1 | 2 | 3 | 4     | 5       | 6 | 7 | 1,312 ft + |
| Oil resistance  | none        | 1 | 2 | 3 | 4     | highest |   |   |            |
| Torsion         | none        | 1 | 2 | 3 | ±180° |         |   |   |            |

### Electrical Information

|                          |                  |                                                                                                                      |
|--------------------------|------------------|----------------------------------------------------------------------------------------------------------------------|
|                          | Nominal voltage  | 1000 V                                                                                                               |
|                          | Test voltage     | 4000 V (following DIN EN 50396)                                                                                      |
| Properties and approvals |                  |                                                                                                                      |
|                          | UV resistance    | Medium                                                                                                               |
|                          | Oil resistance   | Oil-resistant (following DIN EN 50363-4-1), Class 2                                                                  |
|                          | Flame resistance | 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)                               |
|                          | UL/CSA           | Style 10492 and 2570, 1000 V, 80 °C                                                                                  |
|                          | NFPA 79          | Complies to NFPA 79-2015 chapter 12.9                                                                                |
|                          | EAC              | Certified according to no. TC RU C-DE.ME77.B.01255                                                                   |
|                          | CTP              | Certified according to no. C-DE.PB49.B.00420                                                                         |
|                          | CEI              | Following CEI 20-35                                                                                                  |
|                          | Lead-free        | Following 2011/65/EC (RoHS-II)                                                                                       |
|                          | Cleanroom        | According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1 |
|                          | CE               | Following 2014/35/EC                                                                                                 |

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

| Cycles*                   |               | 5 million           |                | 7.5 million         |     | 10 million          |  |
|---------------------------|---------------|---------------------|----------------|---------------------|-----|---------------------|--|
| Temperature, from/to [°F] | v max. [ft/s] | R min. [factor x d] |                | R min. [factor x d] |     | R min. [factor x d] |  |
|                           | unsupported   | gliding             |                |                     |     |                     |  |
| +41 / +59                 |               |                     |                | 10                  | 11  | 12                  |  |
| +59 / +140                | 32.81         | 16.41               | 262.48 ≤ 328.1 | 7.5                 | 8.5 | 9.5                 |  |
| +140 / +158               |               |                     |                | 10                  | 11  | 12                  |  |

\* Higher number of cycles possible - please ask for your individual calculation.

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, indoor cranes

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

Strip cables 50% faster!



Image exemplary.

| Part No.    | AWG | Number of Conductors<br>and rated cross section<br>[mm²] | Outer diameter<br>max. |      | Copper index |       | Weight  |       |
|-------------|-----|----------------------------------------------------------|------------------------|------|--------------|-------|---------|-------|
|             |     |                                                          | in.                    | mm   | lbs/mft      | kg/km | lbs/mft | kg/km |
| CF31-15-04  | 16  | 4 G 1.5                                                  | 0.41                   | 10.5 | 63.2         | 94    | 112.9   | 168   |
| CF31-25-04  | 14  | 4 G 2.5                                                  | 0.47                   | 12.0 | 95.4         | 142   | 156.6   | 233   |
| CF31-25-05  | 14  | 5 G 2.5                                                  | 0.51                   | 13.0 | 116.9        | 174   | 198.2   | 295   |
| CF31-40-04  | 12  | 4 G 4.0                                                  | 0.53                   | 13.5 | 145.8        | 217   | 231.8   | 345   |
| CF31-40-05  | 12  | 5 G 4.0                                                  | 0.59                   | 15.0 | 188.8        | 281   | 284.9   | 424   |
| CF31-60-04  | 10  | 4 G 6.0                                                  | 0.63                   | 16.0 | 213.7        | 318   | 327.9   | 488   |
| CF31-60-05  | 10  | 5 G 6.0                                                  | 0.71                   | 18.0 | 258.7        | 385   | 401.8   | 598   |
| CF31-100-04 | 8   | 4 G 10.0                                                 | 0.81                   | 20.5 | 362.2        | 539   | 559.8   | 833   |
| CF31-100-05 | 8   | 5 G 10.0                                                 | 0.89                   | 22.5 | 461.6        | 687   | 641.1   | 954   |
| CF31-160-04 | 6   | 4 G 16.0                                                 | 0.93                   | 23.5 | 553.0        | 823   | 757.3   | 1127  |
| CF31-250-04 | 4   | 4 G 25.0                                                 | 1.12                   | 28.5 | 842.6        | 1254  | 1154.4  | 1718  |
| CF31-350-04 | 2   | 4 G 35.0                                                 | 1.28                   | 32.5 | 1153.1       | 1716  | 1544.2  | 2298  |
| CF31-500-04 | 1   | 4 G 50.0                                                 | 1.48                   | 37.5 | 1626.2       | 2420  | 2132.2  | 3173  |
| CF31-700-04 | 2/0 | 4 G 70.0                                                 | 1.69                   | 43.0 | 2321.0       | 3454  | 2745.0  | 4085  |

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

-  **Order example: CF31-25-04 – In your desired length**  
CF31 Chainflex® series -25 Code nominal cross section -04 Number of conductors
-  Online order ► [www.chainflex.com/CF31](http://www.chainflex.com/CF31)
-  Delivery time 24hr or today.  
Delivery time means time until shipping of goods.

 Configurators ► [www.igus.com/CF31](http://www.igus.com/CF31)

