

UNITRONIC® FD CP plus**DB0028880**

valid from: 21.05.2014

Application

UNITRONIC® FD CP plus is a high flexible and screened data cable with an outer sheath of PUR.

The cable with low capacitance is designed especially for use in power chains, automatic manipulators, in permanently moved machines parts.

The cable is increased oil-, abrasion-, tear and notch resistant, in addition microbe- and hydrolysis resistant.

It is cold-resistant and for harsh environmental conditions.

The screen protects against interference.

This cable is suitable for torsion application in wind turbines (WTG). The torsional load is limited to applications, as they typically occur in the loop of a wind turbine.

Design

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|--------------------------|--|
| Design | based on UL AWM Style 11117 and 21576 and according to VDE 0812 |
| Conductor | superfine wire strands of bare copper wires |
| Insulation | special Polyolefin-based compound |
| Core identification code | according to DIN 47100 |
| Stranding | cores stranded in layers, wrapping with fleece on the outer layer |
| Screen | Braiding with tinned copper wires, wrapping with fleece on the screen |
| Outer sheath | special PUR-based compound, flame retardant, halogen free colour: grey (RAL 7001) |

Electrical properties at 20°C

Conductor resistance

| Cross section | | max. |
|--------------------|-------|--------------|
| [mm ²] | [AWG] | [Ω/km] |
| 0.14 | 26 | 138.0 |
| 0.25 | 24 | 79.0 |
| 0.34 | 22 | 55.4 |
| 0.5 | 21 | 39.0 |
| 0.75 | 19 | 26.0 |
| 1 | 18 | 19.5 |

Specific insulation resistance > 5 G Ω x km

Mutual capacitance C/C approx. 60 nF/km

Inductivity approx. 0.65 mH/km

Peak working voltage VDE: 0.14 mm²: 350 V (not for power applications)
 ≥ 0.25 mm²: 500 V (not for power applications)
 UL: 1000 V

Test voltage C/C: 1500 V
 C/S: 1500 V

Mechanical and thermal properties

Minimum bending radius Flexing: 7.5 x cable Ø
 Fixed installation: 4 x cable Ø

Temperature range Bewegt:
 VDE/UL AWM: - 40 °C bis +80 °C
 UL CMX: - 40 °C bis +75 °C
 Fest verlegt:
 VDE/UL AWM: - 40 °C bis +80 °C
 UL CMX: - 40 °C bis +75 °C

Torsion movement in WTG TW-0 (5000 cycles at ≥ +5 °C)
 TW-2 (2000 cycles at ≥ -40 °C)
 ± 150 °/m at 1 revolution per minute

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|------------------|---|
| Flammability | flammwidrig nach IEC 60332-1-2 und nach UL: VW-1 und FT2 |
| UV resistance | according to ISO 4892-2, method A (change of colour allowed) |
| Ozone resistance | according to EN 50396 resp. VDE 0473-396, method B |
| Oil resistance | EN 50363-10-2 resp. VDE 0207-363-10-2 |
| Approvals | c(UL)us, Type CMX according to UL 444 and CSA C22.2 No. 214-08 UL AWM Style 21576 |
| EC directive | This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances). |