0028880	DATA SHEET	LAPP
valid from: 01.01.2019	UNITRONIC® FD CP plus	

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

Design	based on UL AWM Style 11117 and 21576, UL 758, CSA C22.2 No. 210, Type CMX, UL 444, CSA C22.2 No. 214 and according to VDE 0812
Certification	c(UL)us, Type CMX, UL 444 (File No. E236660) UL AWM Style 21576, UL 758 (File No. E63634)
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 (similar RAL 7001)

Electrical properties at 20°C

Specific volume resistivity	> 5 G Ω x km
Mutual capacitance	C/C approx. 60 nF/km
Inductance	approx. 0.65 mH/km
Peak operating 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	VDE: Flexing: - 40˚C up to +80˚C Fixed installation: - 40˚C up to +80˚C UL AWM: max. +80˚C UL CMX: max. +75˚C
Torsional stress	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
Flammability	flame retardant acc. to IEC 60332-1-2 and acc. to UL: VW-1 and FT2
Halogen free	acc. to VDE 0472-815
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
General requirements	This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).