#### 11139500

### DATA SHEET

valid from: 2021-12-17

UNITRONIC® FD CP (TP) plus A



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#### Application

UNITRONIC® FD CP (TP) plus A is a high flexible, screened and twisted pair 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

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.

Decoupling by means of twisted pair cable design and 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 acc. to UL AWM Style 11117 and 21576, UL 758 and CSA C22.2 No. 210

based on standard VDE 0812 and EN 50288-7

Certification **N** UL AWM Style 21576 (File No. E63634), UL 758

• AWM I/II A/B (File No. E63634)

Conductor extra-fine wire strands of bare copper wires

Insulation special Polyolefin-based compound

Core identification code acc. to DIN 47100

Stranding cores twisted to pairs, pairs are 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

Conductor resistance 0.14 mm<sup>2</sup>: max. 138.0 Ω/km

0.25 mm<sup>2</sup>: max. 79.0  $\Omega/km$ 0.34 mm<sup>2</sup>: max. 55.4 Ω/km 0.5 mm<sup>2</sup>: max. 39.0  $\Omega/km$ 0.75 mm<sup>2</sup>: max. 26.0 Ω/km 1 mm<sup>2</sup>: max. 19.5  $\Omega$ /km

Specific volume resistivity > 5 G  $\Omega$  x km

Mutual capacitance up to 0.5 mm<sup>2</sup>: approx. 60 nF/km

up to 1 mm<sup>2</sup>: approx. 70 nF/km

Inductance approx. 0.65 mH/km

Maximum operating voltage VDE: 0.14 mm<sup>2</sup>: 350 V (not for power applications)

≥ 0.25 mm<sup>2</sup>: 500 V (not for power applications) Must not be connected to the mains supply voltage.

Rated voltage UL: 1000 V C/C: 1500 V Test voltage

C/S: 1500 V

Mechanical and thermal properties

Minimum bending radius flexing: 7.5 x outer diameter

fixed installation: 4 x outer diameter

Temperature range

flexing: -40 °C up to +80 °C

fixed installation: -40 °C up to +80 °C

UL AWM: max. +80 °C

Bending cycles and power chain

operation parameters

bending radius: ≥ 7.5 x outer diameter travel distance: ≤ 5 m

 $\leq 3 \text{ m/s}^2$ Acceleration: Velocity: ≤ 3 m/s ≥ 5.000.000 Cycles:

Please comply with assembly guideline Appendix T3

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11139500

Ozone resistance

Oil resistance

## UNITRONIC® FD CP (TP) plus A



Torsional stress Torsion movement in WTG

TW-0 (5000 cycles at  $\geq$  +5 °C) TW-2 (2000 cycles at  $\geq$  -40 °C) ± 150 °/m at 1 revolution per minute

Flammability flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2

UL: Horizontal Flame Test acc. to UL 1581 CSA: FT2 acc. to CSA 22.2 No. 2556

Halogen free acc. to IEC 60754-1 resp. EN 60754-1

Weather and UV resistance acc. to ISO 4892-2, method A

(change of colour allowed) acc. to EN 50396, method B acc. to EN 50363-10-2

General requirements These cables are conform to

EU-Directive 2014/35/EU (Low Voltage Directive) and to

EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain

hazardous substances).

Environmental information These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).

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