



## UNITRONIC® FD CP (TP) plus

Screened highly flexible data transmission cable with PUR outer sheath and twisted pairs - UL/CSA-listed



**Info**

- Flexible at low temperatures
- Low capacitance
- Halogen-free

### Benefits

- Wide temperature range for applications in harsh climatic environments
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm<sup>2</sup> and <16 AWG), but not inside drag chains or on machines since AWM style is limited to internal wiring
- **ATTENTION:** 3<sup>rd</sup> condition acc. to NFPA 79, 2015 Ed., 12.9.2, not applicable for this product before May 2016

### Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Drag chain use - in case of horizontal installation travel distances up to 100 m
- For use in drag chains: Please respect the assembly guidelines listed in Appendix T3
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

### Product features

- Halogen-free, has low capacitance and is flexible down to -40°C
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant
- Flame retardance ratings: IEC 60332-1-2, VW-1 acc. UL 1581, FT2 (Horizontal Flame Test)
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter

### Norm references / Approvals

- CULus CMX (Communications Cable listing) acc. to UL 444 and CSA C22.2 No.214, certified by UL (UL file no. for Stuttgart-based U.I. Lapp GmbH: E236660)
- CULus AWM/ Recognized certification (by UL/ UL file no. for Stuttgart-based U.I. Lapp GmbH: E63634): UL AWM Style 21576 acc. to UL 758 and AWM A/BI/II to CSA C22.2 No. 210-11

### Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin TP structure
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of special PUR compound  
Outer sheath colour: grey (RAL 7001)

### Technical data

**Classification**  
ETIM 5.0 Class-ID: EC000830  
ETIM 5.0 Class-Description: Data cable

**Core identification code**  
DIN 47100, refer to Appendix T9

**Mutual capacitance**  
Up to 0.5 mm<sup>2</sup>: 60 nF/km  
Up to 1.0 mm<sup>2</sup>: 70 nF/km

**Peak operating voltage**  
Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)

**Inductivity**  
approx. 0.65 mH/km

**Conductor stranding**  
Stranded, extra-fine wire  
From 0.5 mm<sup>2</sup>: extra-fine wire according to IEC 60228 class 6

**Torsion movement in WTG**  
TW-0 & TW-2, refer to Appendix T0

**Minimum bending radius**  
Flexing: 7.5 x outer diameter  
Fixed installation: 4 x outer diameter

**Test voltage**  
Core/core: 1500 V rms  
Core/screen: 500 V

**Temperature range**  
Flexing: -40°C to +80°C  
Fixed installation: -40°C to +80°C  
UL/CSA CMX: +75°C  
UL AWM: +80°C

Article number	Number of pairs and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
<b>UNITRONIC® FD CP (TP) plus</b>				
0030910	2 x 2 x 0.14	5.9	19.4	42
0030911	3 x 2 x 0.14	6.2	23.4	53
0030912	4 x 2 x 0.14	6.7	27.1	59
0030913	5 x 2 x 0.14	7.3	37.4	75
0030914	6 x 2 x 0.14	7.5	49.4	91
0030915	8 x 2 x 0.14	8.8	54.8	109
0030916	10 x 2 x 0.14	10.1	60.1	120
0030962	1 x 2 x 0.25	4.9	14	27
0030919	2 x 2 x 0.25	6.5	32	60
0030920	3 x 2 x 0.25	6.8	38.4	72
0030921	4 x 2 x 0.25	7.4	43.2	85
0030922	5 x 2 x 0.25	8.3	51.5	103
0030923	6 x 2 x 0.25	8.9	71.8	131
0030924	8 x 2 x 0.25	10.4	74.4	155
0030925	10 x 2 x 0.25	12	90	186
0030926	14 x 2 x 0.25	12.2	111.2	219
0030963	1 x 2 x 0.34	5.3	20	36
0030928	2 x 2 x 0.34	7.1	41	81
0030929	3 x 2 x 0.34	7.5	52	101
0030930	4 x 2 x 0.34	8.4	59	119
0030932	6 x 2 x 0.34	10.1	86.2	165
0030934	10 x 2 x 0.34	13.8	131.1	274
0030964	1 x 2 x 0.5	5.9	22	47

Article number	Number of pairs and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
0030937	2 x 2 x 0.5	8.3	50	99
0030938	3 x 2 x 0.5	8.8	71.8	130
0030939	4 x 2 x 0.5	9.8	74.4	148
0030940	5 x 2 x 0.5	10.7	84.5	168
0030941	6 x 2 x 0.5	11.8	99.6	194
0030942	8 x 2 x 0.5	14	144.3	284
0030943	10 x 2 x 0.5	15.9	176	343
0030944	14 x 2 x 0.5	16.2	215.4	401
0030965	1 x 2 x 0.75	6.3	34	61
0030946	2 x 2 x 0.75	8.9	60	112
0030947	3 x 2 x 0.75	9.7	85.7	157
0030948	4 x 2 x 0.75	10.6	93.6	172
0030950	6 x 2 x 0.75	12.8	130.4	231
0030951	8 x 2 x 0.75	15.2	192.2	342
0030952	10 x 2 x 0.75	17.3	258	466
0030953	14 x 2 x 0.75	18.2	316.6	545
0030955	1 x 2 x 1	6.7	42	71
0030956	2 x 2 x 1	9.7	73	129
0030957	3 x 2 x 1	10.4	93.6	169
0030958	4 x 2 x 1	11.6	117.8	204
0030959	5 x 2 x 1	12.7	139	237

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: [www.lappkabel.de/en/cable-standardlengths](http://www.lappkabel.de/en/cable-standardlengths)

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Photographs are not to scale and do not represent detailed images of the respective products.

#### Accessories

- SKINTOP® MS-SC-M refer to page 732
- SILVYN® CHAIN
- STAR STRIP stripping tool refer to page 1000