

## UNITRONIC® FD CP (TP) plus

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

UNITRONIC® FD CP (TP) plus: Low-frequency PUR data cable UL AWM CMX VW-1 Halogen-free, Highly flexible Drag chain, Screened Twisted pair, Low capacitance, -40°C

### Info

Flexible at cold temperatures

Low capacitance

Halogen-free



Torsion-resistant



Interference signals



Power chain



Oil-resistant



Mechanical resistance



Halogen-free



Wind Energy



Cold-resistant

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You can find the current technical data in the corresponding data sheet.

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## UNITRONIC® FD CP (TP) plus

### 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, according to NFPA 79, 2015 ed., 12.9.2 (exception 3 under 12.9.2: Up to 1 mm<sup>2</sup> and <16 AWG)

### Application range

Suitable for use in measuring, control and regulating circuits

Linear robot, automated handling equipment

Drag chain use - in case of horizontal installation travel distances up to 100 m.

...No use inside drag chains in the USA since the UL AWM Style 21576 does not allow external wiring/ interconnection

For use in drag chains: Please observe the assembly guidelines in table T3

Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

### Product features

Halogen-free, low capacitance and flexible at temperatures as low as -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: IEC 60332-1-2, VW-1 according to UL 1581, FT2 (Horizontal Flame Test)

Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 metres

### Norm references / approvals

cULus CMX (communications cable listing) according to UL 444 and CSA C22.2 no. 214, certified by UL (UL file no. of U.I. Lapp GmbH: E236660)

cULus AWM/ Recognized certification (by UL/UL file no. for U.I. Lapp GmbH: E63634): UL AWM Style 21576 according to UL 758 and AWM A/B I/II according to CSA C22.2 no. 210-11

### Design

Extra-fine wire strand made of bare copper wires

Polyolefin-based core insulation

Twisted pair (TP) structure

Fleece wrapping

Tinned-copper braiding

Outer sheath made of special PUR compound

Outer sheath colour: grey (RAL 7001)

## UNITRONIC® FD CP (TP) plus

### Technical Data

Classification:	ETIM 5.0 Class-ID: EC000104 ETIM 5.0 Class-Description: Control cable
Core identification code:	DIN 47100, refer to appendix T9
Operating 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 use or continuous operating voltage to ground above 49 VAC or 74 VDC)
Inductance:	approx. 0.65 mH/km
Conductor design:	Stranded, extra-fine wire From 0.5 mm <sup>2</sup> : extra-fine wire 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 eff. Core/Shield: 500 V
Temperature range:	Flexing: -40 °C to +80 °C Fixed installation: -40 °C to +80 °C cULus CMX: +75 °C cULus AWM: +80 °C

### Note

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; see catalogue appendix T17 for the application and definition of "Metal price basis" and "Metal index"

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

Packaging: Ring ≤ 30 kg or ≤ 250 m, otherwise drum

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

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

\* Prices are net prices without VAT and surcharges. Sale to business customers only.

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Article number	Number of pairs and mm <sup>2</sup> per conductor	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP (TP) plus				
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	5.5	22	47
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

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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

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