

**UNITRONIC® FD CP (TP) plus A 4X2X1,0**
**Article No.:** 11139539

Low-frequency data cable; 4X2X1; Conductor color code: DIN 47100; PUR; Shielded; UL recognized; Cable chain



## Details

### Benefits

- The combination of the very robust cable design and the wide temperature range in which it can be used provides a wide range of applications..
- The conductor circuits are well decoupled thanks to the twisted pair (TP) with short lay lengths.
- Durable, resistant product thanks to the outer jacket PUR material that is resistant to abrasions, notches and cuts.
- Low-capacitance conductor insulation for long transmission paths or higher data transmission rates.
- Ideal protection against electromagnetic interference thanks to copper shielding braiding with a high degree of coverage.
- Relatively small bending radii thanks to highly flexible cable design.
- UL certification according to technical data enables the product to be used on the North American market.

### Application

- Can be used universally at machine interfaces for many applications for data and signal transmission in the low-frequency range.
- Especially for environments where electromagnetic compatibility (EMC) is required.

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- Cable design enables flexible, constantly flexing use in industrial robots (without torsional stress) and handling devices.
  - The cable design allows flexible, continuously flexing use in moving machine parts and in the cable chain.
  - Cable design also suitable for torsion applications in wind turbines.
  - Can be used in dry, damp and, especially, harsh and oily environments.
  - Suitable for outdoor use in Europe.
  - The PUR outer jacket is resistant to mineral oil-based lubricants and highly resistant to chemicals.
  - Flexible use at temperatures down to -40°C.

### Notes

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

If applicable, the prices are solid metal prices without additional charges and VAT. Sales only to business customers.

Unless specified otherwise, the product values shown are rated values at room temperature. You can receive additional values, such as tolerances, upon request if they are available and have been released for publication.

The absence of PWIS raw materials does not protect against the potential risk of contamination with substances that interfere with the paint wetting during subsequent handling of the product(s) during transport, storage or further processing after delivery.

### Remarks

### Technical Data

#### General information

Brand	UNITRONIC®
Product type	Low-frequency data cable

Copper index	791.58 lb/10000 ft
Industry segment	Agricultural & Farm Machinery Assembly Machines Automotive Construction Machinery Energy Food & Beverage Healthcare & Pharma Intralogistics & Material handling Lifts & Elevators Machine Tools Packaging Process Industry Robotics Rolling Stock Ships & boats

#### Electrical parameters

Maximum operating voltage (not for power transmission)	500 V
Test voltage conductor/conductor	1.5 kV
Test voltage conductor/shielding	1.5 kV

#### Product design

Cable dimension	4X2X1
Nominal cross section conductor (mm <sup>2</sup> )	1 mm <sup>2</sup>
Nominal cross section conductor (AWG)	18 AWG
Conductor material	Bare Copper
Conductor design	extra-fine wire
Including protective ground	No
Number of cores	8
Number of pairs	4
Stranding type	Twisted-pair
Shielded	Yes
Type of overall shielding	Tin-plated copper braiding
Nominal outer diameter	0.465 in
Cable form	Round

Core insulation base material	Polyolefin
Conductor insulation basic material, short form	PO
Basic material of outer jacket	Polyurethane
Base material of outer sheath, shortname	PUR
Outer jacket color	gray
Core identification	Colors
Conductor color code	DIN 47100

**Product features**

Application area	Cable chain
For permanent bending	Yes
For torsional load	No
Minimum bending radius, stationary	4 x outer diameter
Minimum bending radius in inch, fixed installation	1.858 in
Minimum bending radius, dynamic continuously flexing	7.5 x outer diameter
Minimum bending radius in inch, dynamic continuously flexing	3.484 in
Minimum bending radius, occasionally moved	7.5 x outer diameter
Minimum bending radius in mm, occasionally moved	3.484 in
Maximum bending cycles	5,000,000
Maximum travel distance	16.404 ft
Maximum speed unsupported	9.843 ft/s
Maximum acceleration	9.843 ft/s <sup>2</sup>
Temperature, fixed installation	-40 °C to +80 °C max. conductor temperature according to UL AWM
temperature, dynamic permanently moved	-40 °C to +80 °C max. conductor temperature according to UL AWM
Flame-retardant	Yes
Flame retardance according to	IEC 60332-1-2
UV-resistant	Yes

UV-resistant according to	DIN EN ISO 4892-2 method A
weather resistant	Yes
Weather-resistant according to	ISO 4892-2
Ozone-resistant	Yes
ozone resistant according to	EN 50396, method B
Chemical resistant	Yes
Halogenfree	Yes
Halogen-free according to	VDE 0472-815
Oil resistant	Yes
Oil resistance according to	EN 50363-10-2
PWIS-free	Yes
PWIS-free according to	VDMA 24364-B2-L
Mechanically resistant	Yes

#### Certifications and standards

CE marking	Yes
UL recognized	Yes
UL AWM certification	according to UL 758 (e-file number: E63634)
UL listed	No
cUR recognized	Yes
cUR certification	AWM I A according to CSA C22.2 No. 210 (80°C, 300V) (e-file number: E63634) AWM I B according to CSA C22.2 No. 210 (80°C, 300V) (e-file number: E63634) AWM II A according to CSA C22.2 No. 210 (80°C, 300V) (e-file number: E63634) AWM II B according to CSA C22.2 No. 210 (80°C, 300V) (e-file number: E63634)
cUL listed	No
CSA certified	No
VDE certified	No
DNV-certified	No

**UNITRONIC® FD CP (TP) plus A**

Article No.	Name	Number of pairs	Nominal cross section conductor (mm <sup>2</sup> )	Nominal outer diameter	Copper index
11139499	UNITRONIC® FD CP (TP) plus A 8X2X0,34	8	0.34 mm <sup>2</sup>	0.465 in	721.02 lb/10000 ft
11139501	UNITRONIC® FD CP (TP) plus A 2X2X0,14	2	0.14 mm <sup>2</sup>	0.232 in	130.36 lb/10000 ft
11139502	UNITRONIC® FD CP (TP) plus A 3X2X0,14	3	0.14 mm <sup>2</sup>	0.244 in	157.24 lb/10000 ft
11139503	UNITRONIC® FD CP (TP) plus A 4X2X0,14	4	0.14 mm <sup>2</sup>	0.264 in	182.1 lb/10000 ft
11139504	UNITRONIC® FD CP (TP) plus A 5X2X0,14	5	0.14 mm <sup>2</sup>	0.287 in	251.32 lb/10000 ft
11139505	UNITRONIC® FD CP (TP) plus A 6X2X0,14	6	0.14 mm <sup>2</sup>	0.295 in	331.95 lb/10000 ft
11139506	UNITRONIC® FD CP (TP) plus A 8X2X0,14	8	0.14 mm <sup>2</sup>	0.346 in	368.24 lb/10000 ft
11139507	UNITRONIC® FD CP (TP) plus A 10X2X0,14	10	0.14 mm <sup>2</sup>	0.398 in	403.85 lb/10000 ft
11139508	UNITRONIC® FD CP (TP) plus A 2X2X0,25	2	0.25 mm <sup>2</sup>	0.26 in	215.03 lb/10000 ft
11139509	UNITRONIC® FD CP (TP) plus A 3X2X0,25	3	0.25 mm <sup>2</sup>	0.276 in	258.04 lb/10000 ft
11139510	UNITRONIC® FD CP (TP) plus A 4X2X0,25	4	0.25 mm <sup>2</sup>	0.299 in	290.29 lb/10000 ft
11139511	UNITRONIC® FD CP (TP) plus A 5X2X0,25	5	0.25 mm <sup>2</sup>	0.335 in	346.06 lb/10000 ft
11139512	UNITRONIC® FD CP (TP) plus A 6X2X0,25	6	0.25 mm <sup>2</sup>	0.346 in	482.47 lb/10000 ft
11139513	UNITRONIC® FD CP (TP) plus A 8X2X0,25	8	0.25 mm <sup>2</sup>	0.406 in	499.94 lb/10000 ft
11139514	UNITRONIC® FD CP (TP) plus A 10X2X0,25	10	0.25 mm <sup>2</sup>	0.465 in	604.77 lb/10000 ft
11139515	UNITRONIC® FD CP (TP) plus A 14X2X0,25	14	0.25 mm <sup>2</sup>	0.472 in	747.23 lb/10000 ft
11139516	UNITRONIC® FD CP (TP) plus A 2X2X0,34	2	0.34 mm <sup>2</sup>	0.287 in	275.51 lb/10000 ft
11139517	UNITRONIC® FD CP (TP) plus A 3X2X0,34	3	0.34 mm <sup>2</sup>	0.315 in	349.42 lb/10000 ft
11139518	UNITRONIC® FD CP (TP) plus A 4X2X0,34	4	0.34 mm <sup>2</sup>	0.343 in	396.46 lb/10000 ft
11139519	UNITRONIC® FD CP (TP) plus A 6X2X0,34	6	0.34 mm <sup>2</sup>	0.394 in	579.24 lb/10000 ft
11139520	UNITRONIC® FD CP (TP) plus A 10X2X0,34	10	0.34 mm <sup>2</sup>	0.539 in	880.95 lb/10000 ft
11139521	UNITRONIC® FD CP (TP) plus A 2X2X0,5	2	0.5 mm <sup>2</sup>	0.327 in	335.98 lb/10000 ft
11139522	UNITRONIC® FD CP (TP) plus A 3X2X0,5	3	0.5 mm <sup>2</sup>	0.346 in	482.47 lb/10000 ft
11139523	UNITRONIC® FD CP (TP) plus A 4X2X0,5	4	0.5 mm <sup>2</sup>	0.386 in	499.94 lb/10000 ft
11139524	UNITRONIC® FD CP (TP) plus A 5X2X0,5	5	0.5 mm <sup>2</sup>	0.421 in	567.81 lb/10000 ft
11139525	UNITRONIC® FD CP (TP) plus A 6X2X0,5	6	0.5 mm <sup>2</sup>	0.445 in	669.28 lb/10000 ft
11139526	UNITRONIC® FD CP (TP) plus A 8X2X0,5	8	0.5 mm <sup>2</sup>	0.52 in	969.65 lb/10000 ft
11139527	UNITRONIC® FD CP (TP) plus A 10X2X0,5	10	0.5 mm <sup>2</sup>	0.598 in	1182.66 lb/10000 ft
11139528	UNITRONIC® FD CP (TP) plus A 14X2X0,5	14	0.5 mm <sup>2</sup>	0.61 in	1447.42 lb/10000 ft
11139529	UNITRONIC® FD CP (TP) plus A 2X2X0,75	2	0.75 mm <sup>2</sup>	0.354 in	403.18 lb/10000 ft

Article No.	Name	Number of pairs	Nominal cross section conductor (mm <sup>2</sup> )	Nominal outer diameter	Copper index
11139530	UNITRONIC® FD CP (TP) plus A 3X2X0,75	3	0.75 mm <sup>2</sup>	0.386 in	575.88 lb/10000 ft
11139531	UNITRONIC® FD CP (TP) plus A 4X2X0,75	4	0.75 mm <sup>2</sup>	0.421 in	628.96 lb/10000 ft
11139532	UNITRONIC® FD CP (TP) plus A 6X2X0,75	6	0.75 mm <sup>2</sup>	0.484 in	876.25 lb/10000 ft
11139533	UNITRONIC® FD CP (TP) plus A 8X2X0,75	8	0.75 mm <sup>2</sup>	0.579 in	1291.52 lb/10000 ft
11139534	UNITRONIC® FD CP (TP) plus A 10X2X0,75	10	0.75 mm <sup>2</sup>	0.657 in	1733.68 lb/10000 ft
11139535	UNITRONIC® FD CP (TP) plus A 14X2X0,75	14	0.75 mm <sup>2</sup>	0.669 in	2127.45 lb/10000 ft
11139536	UNITRONIC® FD CP (TP) plus A 1X2X1,0	1	1 mm <sup>2</sup>	0.248 in	282.23 lb/10000 ft
11139537	UNITRONIC® FD CP (TP) plus A 2X2X1,0	2	1 mm <sup>2</sup>	0.39 in	490.54 lb/10000 ft
11139538	UNITRONIC® FD CP (TP) plus A 3X2X1,0	3	1 mm <sup>2</sup>	0.413 in	628.96 lb/10000 ft
11139539	UNITRONIC® FD CP (TP) plus A 4X2X1,0	4	1 mm <sup>2</sup>	0.465 in	791.58 lb/10000 ft
11139540	UNITRONIC® FD CP (TP) plus A 5X2X1,0	5	1 mm <sup>2</sup>	0.516 in	934.04 lb/10000 ft
11139541	UNITRONIC® FD CP (TP) plus A 1X2X0,34	1	0.34 mm <sup>2</sup>	0.201 in	134.39 lb/10000 ft
11139542	UNITRONIC® FD CP (TP) plus A 1X2X0,5	1	0.5 mm <sup>2</sup>	0.217 in	147.83 lb/10000 ft
11139543	UNITRONIC® FD CP (TP) plus A 1X2X0,75	1	0.75 mm <sup>2</sup>	0.232 in	228.47 lb/10000 ft
11139544	UNITRONIC® FD CP (TP) plus A 1X2X0,25	1	0.25 mm <sup>2</sup>	0.185 in	94.08 lb/10000 ft

V1.1