


2170606	<b>DATA SHEET</b>	
valid from: 01.05.2019	<b>ETHERLINE® PN Cat.7 FRNC A 4x2x 23/1 AWG</b>	

## Application

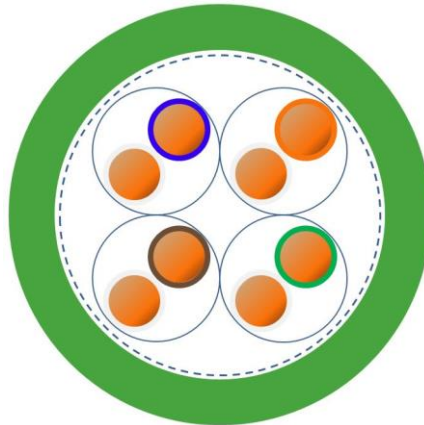
ETHERLINE® PN CAT.7 FRNC A (bandwidth up to 600 MHz), has a performance for the cabling class “F” and a maximum transfer rate (IEEE 802.3) of 10 GBit/s to 100m.

The electrical parameter of the cable with a nominal impedance of 100 Ω and excellent shielding properties (pair and total screen) are normatively specified to IEC 61156-5.

It is provided for industrial secondary and tertiary cable according to EN 50173-3 ISO/IEC 24702.

Other applications are Profinet with 4 Pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE’s 802.3af) and Power over Ethernet Plus (802.3at). The product is flame retardant, halogen free and comes in rough industrial environments for use. It is suitable for fixed installation and serves to wiring of machines, tools, devices, appliances and control cabinets.

## Design



Certification	cURus AWM 21286 (300 V, 80°C) acc. to UL 758 and CSA C22.2 No. 210-15
Conductor	Solid bare copper 0.25 mm <sup>2</sup> (23/1 AWG)
Insulation	Foam skin polyethylen acc. to EN 50290-2-25 table 1 outer Ø approx. 1.40 mm
Core identification code	pair 1: white-blue, pair 2: white-orange, pair 3: white-green, pair 4: white-brown
Stranding	2 cores stranded to pair and individually screened with plastic laminated aluminum foil, 4 pairs stranded to bundle
Screen	braid of copper wires coverage approx. 85 %
Outer sheath	FRNC acc. to UL 1581, table 50.133 (80 °C) green RAL 6018 outer Ø: 8.1 mm

## Electrical properties at 20°C

Loop resistance	max. 149 Ω/km
Insulation resistance	min. 5 GΩxkm
Mutual capacitance	nom. 44 nF/km
Characteristic impedance	nom. 100 Ω acc. to IEC 61156-5 100 ± 5 Ω (@ 100 MHz)
Velocity of propagation	0.77c
Signal transit time	4.8 ns/m
Peak operating voltage	125 V (not for power purposes)
Test voltage	core/core: 1500 V core/screening: 1500 V

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### Electrical transmission properties at 20°C

f [MHz]	max. Attenuation [dB/100m]	min. PS NEXT [dB]		min. EL FEXT [dB]		min. Return Loss [dB]
	standard	standard	typical	standard	typical	standard
<b>1*</b>	2.0	75.0	> 95	73.0	94	20.0
<b>4</b>	3.7	75.0	> 95	71.3	94	23.0
<b>10</b>	5.9	75.0	> 95	69.1	92	25.0
<b>16</b>	7.4	75.0	92	67.6	91	25.0
<b>31,25</b>	10.4	75.0	89	64.6	80	23.3
<b>62,5</b>	14.9	72.5	87	57.6	74	20.7
<b>100</b>	19.0	69.4	85	50.4	71	19.0
<b>250</b>	31.0	63.4	80	31.4	54	17.3
<b>500</b>	45.3	58.9	76	13.6	34	17.3
<b>600</b>	50.1	57.7	74	7.6	27	17.3

### Mechanical and thermal properties

Minimum bending radius	fixed installation: 4 x cable Ø
Temperature range	fixed installation: -30° C up to +80° C UL AWM: +80°C
Flammability	flame retardant acc. to IEC 60332-1-2, IEC 60332-3-24, FT2 acc. to UL 1581
Corrosivity of gases	acc. to EN 50267-2 and IEC 60754-1
Smoke density	acc. to IEC 61034-2
General requirements	This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances).

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