


2170585	<b>DATA SHEET</b>	
valid from: 13.01.2020	<b>ETHERLINE® PN Cat.6A P FC 4x2x23/1AWG</b>	

## Application

Field of use:	Installation cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173
Performance:	Bandwidth up to 500 MHz acc. to IEC 61156-5 Category 6A and EN 50288-10-1
Characteristics:	Halogen free, flame retardant and abrasion resistant and largely resistant to acids, alkalis and certain oils, the "Fast Connect" design allows easy stripping and assembly of the cable
Applications:	Profinet with 4 pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others

## Design




Certification	c(UL)us CMX (75 °C)
Conductor	solid bare copper 23/1 AWG
Insulation	solid polyolefin
Core identification code	pair 1: blue-white/blue, pair 2: orange-white/orange, pair 3: green-white/green, pair 4: brown-white/brown
Stranding	2 cores stranded to pair, 4 pairs stranded to bundle with central separating element on top: plastic tape (overlapping)
Inner sheath	TPE-V outer Ø: nom. 6.60 mm
Screen	plastic laminated aluminium foil (overlapping) on top: braid of tinned copper wires (coverage 85 % ±5 %)
Outer sheath	PUR green, similar RAL 6018 outer Ø: 8.9 mm (± 0.3 mm)

## Electrical properties at 20°C

Loop resistance	max. 14.64 Ω/100 m
Insulation resistance	min. 5 GΩ x km
Mutual capacitance	nom. 48 nF/km
Characteristic impedance	100 ± 15 Ω acc. to IEC 61156-5
Velocity of propagation	0.75c
Signal transit time	490 ns/100 m
Peak operating voltage	VDE: 125 V (not for power purposes) UL: 300 V
Test voltage	Core/Core: 2000 V Core/Screen: 2000 V

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### Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-10-1 and IEC 61156-5 for category 6A. The normative requirements for the transmission properties are shown in the following table:

f [MHz]		4	10	16	62,5	100	250	500
(max.) Attenuation	[dB/100 m]	3,8	5,9	7,5	15	19,1	31,1	45,3
(min.) TCL	[dB]	34	30	28	22	20	16	—
(min.) EL TCTL	[dB/100 m]	23	15	10,9	—	—	—	—
(min.) NEXT	[dB]	66,3	60,3	57,2	48,4	45,3	39,3	34,8
(min.) PS EL FEXT	[dB/100 m]	53	45	40,9	29,1	25	17	11
(min.) ACR-F/EL FEXT	[dB/100 m]	56	48	43,9	32,1	28	20	17
(min.) Return Loss	[dB]	23	25	25	21,5	20,1	17,3	17,3

### Mechanical and thermal properties

Minimum bending radius	fixed: 4x cable Ø occasional flexing: 8x cable Ø
Temperature range	fixed: -40 °C up to +80 °C occasional flexing: -30 °C up to +50 °C UL: 75 °C
Flammability	flame retardant acc. to IEC 60332-1-2; VW-1 acc. to UL 1581 §1080
Halogen free	acc. to VDE 0472-815
UV resistance	acc. to EN 50618 resp. VDE 0283-618 acc. to EN 50620 resp. VDE 0285-620 acc. to EN ISO 4892-2-2013, method A (change of colour allowed)
Oil resistance	acc. to IEC 60811-404
General requirements	This cable is 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).

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