

<b>2170592</b>	<b>DATA SHEET</b>	
<b>valid from: 23.06.2021</b>	<b>ETHERLINE® Cat.6A P FD FC 4x2x26/19 AWG</b>	

### Application

Field of use: Connecting cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173

Performance: Bandwidth up to 500 MHz acc. to IEC 61156-6 Category 6A and EN 50288-10-2

Characteristics: Halogen free, flame retardant and largely resistant to acids, alkalis and certain oils, the "Fast Connect" design allows easy stripping and assembly of the cable

Applications: PROFINET, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others



### Design

Certification E236660 c(UL)us CMX 75°C acc. to UL 444 and CSA C22.2 No. 214

Conductor fine-wire stranded tinned copper  
26/19 AWG

Insulation polyolefin  
core diameter: nom. 1.05 mm

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  
outer diameter: nom. 6.2 mm

Screen plastic laminated aluminium foil (overlapping)  
on top:  
braid of tinned copper wires (coverage 85 % ± 5 %)

Taping plastic tape (overlapping)

Outer sheath PUR  
green, similar RAL 6018  
outer diameter: nom. 8.8 mm (± 0.3 mm)

### Electrical properties at 20 °C

Loop resistance	≤ 20.4 Ω/100 m	
Insulation resistance	≥ 5 GΩxkm	
Mutual capacitance	800 Hz:	52 nF/100 m
Transfer impedance	1 MHz:	≤ 20 mΩ/m
	10 MHz:	≤ 20 mΩ/m
	30 MHz:	≤ 50 mΩ/m
	100 MHz:	≤ 200 mΩ/m
Coupling attenuation	30 MHz bis 500 MHz:	≥ 90 dB
Characteristic impedance	100 MHz:	100 Ω acc. to IEC 61156-6
Velocity of propagation	100 MHz:	0.67c
Signal propagation time	4 MHz up to 500 MHz:	≤ 520 ns/100 m
Delay skew	4 MHz up to 500 MHz:	≤ 25 ns/100 m
Maximum operating voltage	EN:	100 V (not for power applications)
Rated voltage	UL/CSA:	300 V
Test voltage	core/core:	2000 V
	core/screen:	2000 V

Creator: KIOS / PDC	Document: DB2170592EN	Page 1 of 2
Released: ALTE / PDC	Version: 01	

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### Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-10-2 and IEC 61156-6 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]	5,7	8,9	11,2	22,5	28,7	46,6	67,9
(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	14
(min.) Return Loss	[dB]	23	25	25	21,5	20,1	17,3	17,3

### Mechanical and thermal properties

Minimum bending radius	flexing: 15 x outer diameter fixed installation: 4 x outer diameter
Temperature range	flexing: -30 °C up to +50 °C fixed installation: -40 °C up to +80 °C UL/CSA: 75 °C
Bending cycles and power chain operation parameters	bending radius: ≥15 x outer diameter travel distance: ≤ 5 m Acceleration: ≤ 3 m/s <sup>2</sup> Velocity: ≤ 3 m/s Cycles: ≤ 1.000.000 Please comply with assembly guideline Appendix T3.
Flammability	flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2 VW-1 acc. to UL 1581 §1080
Halogen free	acc. to VDE 0472-815
UV resistance	acc. to EN ISO 4892-2-2013, method A (change of colour allowed)
Oil resistance	acc. to EN 50363-10-2
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).
Environmental information	These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).

Creator: KIOS / PDC	Document: DB2170592EN	Page 2 of 2
Released: ALTE / PDC	Version: 01	