

2170593	DATA SHEET	
valid from: 23.06.2021	ETHERLINE® Cat.6A Y FD FC 4x2x26/19 AWG	

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:	Flame retardant, UV resistant 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	PVC 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

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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: -25 °C up to +70 °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 ² 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
UV resistance	SUN RES acc. to UL 444 §7.22
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).

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