2170488	DATA SHEET	LAPP
valid from: 23.03.2020	ETHERLINE® FD P CAT.6 4x2x26/19AWG	

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 6 and EN 50288 5-2
Characteristics:	halogen free, flame retardant, oil resistant, UV resistant and largely resistant to acids, alkalis and certain oils, the "Fast Connect" design allows easy stripping and assembly of the cable
Applications:	EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af) and many others

Design

Certification	c(UL)us CMX 75°C acc. to. UL 444 and CSA C22.2 No.214 certified for CC-Link IE Field Network
Conductor	fine-wire stranded tinned copper 26/19 AWG
Insulation	Polypropylene (PP) core Ø: ca. 0.98 mm
Core identification code	pair 1: white-blue/blue; pair 2: white-orange/orange; pair 3: white-green/green; pair 4: white-brown/brown
Stranding	cores twisted to pairs, pairs stranded together with central separating element on top: plastic tape (overlapping)
Inner sheath	FRNC outer Ø: ca. 5.7 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 ⌀: ca. 7.8 mm

Electrical properties at 20°C

Loop resistance	max. 28,0 Ω/100 m	
Insulation resistance	min. 5 GΩxkm	
Mutual capacitance	nom. 48 nF/km (800 Hz)	
Characteristic impedance	nom. 100 Ω acc. to IEC 61156-6	
Velocity of propagation	0.68 c	
Signal propagation time	<480 ns/100 m	
Delay skew	<20 ns/100 m	
Peak operating voltage	VDE: UL:	100 V (not for power purposes) 300 V
Test voltage	core/core: core/screen:	1500 V 1500 V

Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-5-2 and IEC 61156-6 for category 6. The normative requirements for the transmission properties are shown in the following table:

f [MHz]		4	10	20	31,25	62,5	100	200	250
(max.) Attenuation	[dB/100 m]	5,7	9,0	12,8	16,1	23,2	29,9	43,7	49,5
(min.) TCL	[dB]	34	30	27	25,1	22	20	17	16
(min.) EL TCTL	[dB/100 m]	23	15	9	5,1	—	—	—	—
(min.) NEXT	[dB]	66,3	60,3	55,8	52,9	48,4	45,3	40,8	39,3
(min.) PS EL FEXT	[dB/100 m]	55	47	41	37,1	31,1	27	21	19
(min.) ACR-F/EL FEXT	[dB/100 m]	58	50	44	40,1	34,1	30	24	22
(min.) Return Loss	[dB]	23	25	25,8	24,6	22,8	21,6	19,8	19,2

Mechanical and thermal properties

Minimum bending radius	fixed:	4x cable Ø
	continuous flexing:	8x cable Ø
Temperature range	fixed:	-40 °C up to +80 °C
	continuous flexing:	-30 °C up to +70 °C
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. ISO 4892-2, method A	
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).	