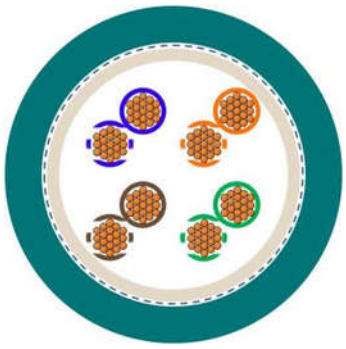
2170489	DATA SHEET	LAPP
valid from: 14.02.2022	ETHERLINE® FD P Cat. 5e 4x2x26/19 AWG	

Application

Field of use:	Connecting cable for cabling systems acc. to ISO/IEC 11801 and EN 50173. Suitable for highly flexible applications in power chains and permanent moved machine parts. Meeting the transmission requirements of IEC 61156-6 Category 5.
Performance:	4-pair, screened twisted pair cable (S/UTP), having a nominal impedance of 100 Ω, supporting a bandwidth of 2.5 Gbit/s (e.g. 100BASE-T, 1000BASE-T, 2.5GBASE-T) over up to 60 m.
Characteristics:	Flame retardant, halogen free, UV-resistant, oil resistant, abrasion resistant, the ""Fast Connect" design allows easy stripping and assembly of the cable
Applications:	EtherCAT, EtherNet/IP, CC-Link IE and others



Design

Certification	E63634 cRUus AWM Style 21576 80 °C 1000 V I/II A/B acc. to UL 758 & CSA C22.2 No.210 certified for CC-Link IE Field Network
Conductor	fine-wire stranded tinned copper 26/19 AWG
Insulation	foamed polyolefin core diameter: nom. 1.00 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
Inner sheath	TPE outer diameter: nom. 5.2 mm
Screen	braid of tinned copper wire (coverage ca. 85 %)
Outer sheath	PUR blue, similar RAL 5021 outer diameter: 6.3 mm (± 0.3 mm)

Electrical properties at 20 °C

Loop resistance	≤ 28.0 Ω/100 m	
Insulation resistance	≥ 5 GΩ×km	
Mutual capacitance	800 Hz:	50 nF/100 m
Characteristic impedance	100 MHz:	100 Ω acc. to IEC 61156-6
Velocity of propagation	100 MHz:	0.74c
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	IEC/EN:	100 V (not for power applications)
Rated voltage	UL/CSA:	1000 V acc. to UL 758 & CSA 22.2 No.210
Test voltage	core/core: core/screen:	3000 V 3000 V

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Electrical transmission properties at 20°C

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

f [MHz]		4	10	16	20	31,25	62,5	100
(max.) Attenuation	[dB/100 m]	6	9,5	12,1	13,5	17,1	24,8	32
(min.) TCL	[dB]	34	30	28	27	25,1	22	20
(min.) EL TCTL	[dB/100 m]	23	15	10,9	9	5,1	—	—
(min.) NEXT	[dB]	56,3	50,3	47,2	45,8	42,9	38,4	35,3
(min.) PS EL FEXT	[dB/100 m]	49	41	36,9	35	31,1	25,1	21
(min.) ACR-F/EL FEXT	[dB/100 m]	52	44	39,9	38	34,1	28,1	24
(min.) Return Loss	[dB]	23	25	25	25	23,6	21,5	20,1

Mechanical and thermal properties

Minimum bending radius	fixed installation: flexing:	8 × outer diameter 15 × outer diameter
Temperature range	fixed installation: flexing: UL/CSA:	-40 °C up to +80 °C -20 °C up to +50 °C 80 °C
Flammability	FT2 acc. to UL 1581 §1100	
Halogen free	acc. to IEC 60754-1 resp. EN 60754-1	
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).

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