


2170963	DATA SHEET	
valid from: 18.08.2022	ETHERLINE® LAN 500 Cat.6A F/UTP LSZH 4x2x23/1 AWG	

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 applications up to 10GBase-T
Characteristics:	halogen free, flame retardant and largely resistant to acids, alkalis and certain oils
Applications:	PROFINET, EtherCAT, EtherNet/IP, PoE (IEEE 802.3af), PoE+ (IEEE 802.3at) and many other




Design

Certification	EN 13501-6 and EN 50575 Classification of fire behaviour
Conductor	solid bare copper 23/1 AWG
Insulation	Polyethylene core Ø: ca. 1.09 mm
Core identification code	pair 1: white/blue, pair 2: white/orange, pair 3: white/green, pair 4: white/brown
Stranding	2 cores stranded to pair, 4 pairs stranded to bundle with central separating element
Screen	plastic laminated aluminium foil (overlapping) with tinned copper drain wire
Outer sheath	LSZH orange, similar RAL 2003 outer diameter: 7.4 mm (± 0.3 mm)

Electrical properties at 20 °C

Loop resistance	max. 16.0 Ω/100 m
Insulation resistance	min. 5 GΩ x km
Mutual capacitance	nom. 50 nF/km
Coupling attenuation	> 55 dB (30 MHz - 500 MHz)
Characteristic impedance	nom. 100 Ω acc. to IEC 61156-5
Velocity of propagation	0.66 c
Signal propagation time	≤ 510 ns/100 m
Delay skew	≤ 40 ns/100 m
Maximum operating voltage	100 V (not for ower purposes)
Test voltage	core/core: 1000 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	20	62,5	100	200	250	500
(max.) Attenuation	[dB/100 m]	3,8	5,9	8,4	15	19,1	27,6	31,1	45,3
(min.) TCL	[dB]	34	30	27	22	20	17	16	—
(min.) EL TCTL	[dB/100 m]	23	15	9	—	—	—	—	—
(min.) NEXT	[dB]	66,3	60,3	55,8	48,4	45,3	40,8	39,3	34,8
(min.) PS EL FEXT	[dB/100 m]	53	45	39	29,1	25	19	17	11
(min.) ACR-F/EL FEXT	[dB/100 m]	56	48	42	32,1	28	22	20	17
(min.) Return Loss	[dB]	23	25	25	21,5	20,1	18	17,3	17,3

Mechanical and thermal properties

Minimum bending radius	fixed: 4x outer diameter occasional flexing: 8x outer diameter
Temperature range	fixed: -20 °C up to +60 °C occasional flexing: 0 °C up to +50 °C
Flammability	flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2
Halogen free	acc. to IEC 60754-1 resp. EN 60754-1
Corrosivity of gases	acc. to IEC 60754-2 resp. EN 60754-2
Smoke density	acc. to IEC 61034 resp. EN 61034

General requirements

This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances) and the LV-Directive 2014/35/EU (Low voltage Directive). This cable is classified in accordance with the EU-Regulation no. 305/2011 (CPR).

Environmental information

These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).

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