

2170953	DATA SHEET	
valid from: 10.01.2025	ETHERLINE® LAN 200 Cat.5e SF/UTP LSZH 4x2x24/1 AWG	

Application

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

Performance: Bandwidth up to 100 MHz acc. to IEC 61156-5 Category 5e and EN 50288-2-1 and applications up to 1000Base-T

Characteristics: halogen free, flame retardant and largely resistant to acids, alkalis and certain oils

Applications: EtherCAT, EtherNet/IP, PoE (IEEE 802.3af), PoE+ (IEEE 802.3at) and many others



Design

Certification	EN 13501-6 and EN 50575 Classification of fire behaviour
Conductor	solid bare copper 24/1 AWG
Insulation	Polyethylene core diameter: ca. 1.05 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 stranded to pairs, 4 pairs stranded to bundle
Screen	kunststoffkaschierte Aluminiumfolie (überlappend) on top: braid of tinned copper wires
Outer sheath	LSZH orange, similar RAL 2003 outer diameter: 6.4 mm (± 0.3 mm)

Electrical properties at 20 °C

Loop resistance	max. 17.6 Ω/100 m
Test voltage	core/core: 1000 V core/screen: 1000 V
Maximum operating voltage	100 V (not for other purposes)
Insulation resistance	min. 5 GΩ x km
Mutual capacitance	nom. 50 nF/km
Transfer impedance	Grade 2 acc. to IEC 61156-5
Coupling attenuation	> 75 dB (30 MHz - 100 MHz)
Velocity of propagation	0.70 c
Characteristic impedance	nom. 100 Ω acc. to IEC 61156-5
Signal propagation time	≤ 480 ns/100 m
Delay skew	≤ 20 ns/100 m

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Transmission properties at 20°C

The transmission characteristics meet the requirements of IEC 61156-5 for category 5e.

Frequency	(max.) Phase delay	(max.) Differential delay	(max.) Attenuation	(min.) TCL Level 1	(min.) EL TCTL Level 1	(min.) NEXT	(min.) PS NEXT	(min.) ACR-F	(min.) PS ACR-F	Char. Impedance	(min.) RL
f [MHz]	[ns/ 100 m]	[ns/ 100 m]	[dB/ 100 m]	[dB]	[dB]	[dB]	[dB]	[dB/ 100 m]	[dB/ 100 m]	[Ohm]	[dB]
4	552.0	45.0	4.1	34.0	23.0	56.3	53.3	52.0	49.0	—	23.0
10	545.4	45.0	6.5	30.0	15.0	50.3	47.3	44.0	41.0	—	25.0
16	543.0	45.0	8.3	28.0	10.9	47.2	44.2	39.9	36.9	—	25.0
20	542.0	45.0	9.3	27.0	9.0	45.8	42.8	38.0	35.0	—	25.0
30	540.6	45.0	11.5	25.2	5.5	43.1	40.1	34.5	31.5	—	23.8
62.5	538.6	45.0	17.0	22.0	—	38.4	35.4	28.1	25.1	—	21.5
100	537.6	45.0	22.0	20.0	—	35.3	32.3	24.0	21.0	100 ± 5	20.1

Mechanical and thermal properties

Minimum bending radius	fixed installation: 4x outer diameter occasional flexing: 8x outer diameter
Temperature range	fixed installation: -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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