


2170953	DATA SHEET	
valid from: 02.07.2020	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:	Transmission characteristics 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:	PROFINET, 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 Ø: 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	plastic laminated aluminium foil (overlapping) on top: braid of tinned copper wires (coverage 85 % ± 5 %)
Outer sheath	LSZH orange, similar RAL 2003 outer Ø: 6.4 mm (± 0.3 mm)

Electrical properties at 20°C

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

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Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-2-1 and IEC 61156-5 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]	4	6,3	8	9	11,4	16,5	21,3
(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: 4x cable Ø occasional flexing: 8x cable Ø
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	These cables 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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