
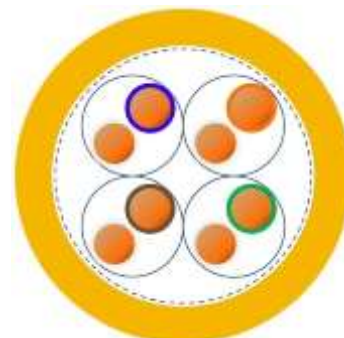


2170971	<b>DATA SHEET</b>	
valid from: 02.07.2020	<b>ETHERLINE® LAN 1000 Cat.7A S/FTP LSZH 4x2x23/1 AWG</b>	

## Application

Field of use:	Installation cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173
Performance:	Bandwidth up to 1000 MHz acc. to IEC 61156-5 Category 7A and EN 50288-9-1 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 others




## Design

Certification	EN 13501-6 and EN 50575 Classification of fire behaviour
Conductor	solid bare copper 23/1 AWG
Insulation	Polyethylene core Ø: ca. 1.3 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
Pair screen	plastic laminated aluminium foil (overlapping)
Screen	braid of tinned copper wires (coverage 85 % ± 5 %)
Outer sheath	LSZH yellow, similar RAL 1021 outer Ø: 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. 43 nF/km
Coupling attenuation	> 80 dB (30 MHz - 1000 MHz)
Characteristic impedance	nom. 100 Ω acc. to IEC 61156-5
Velocity of propagation	0.79 c
Signal propagation time	≤ 460 ns/100 m
Delay skew	≤ 20 ns/100 m
Peak operating voltage	100 V (not for other purposes)
Test voltage	core/core: 1000 V core/screen: 1000 V

Creator: KIOS / PDC	Document: DB2170971EN	Page 1 of 2
Released: ALTE / PDC	Version: 02	

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### Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-9-1 and IEC 61156-5 for category 7A. The normative requirements for the transmission properties are shown in the following table:

f [MHz]		4	10	20	62,5	100	250	500	600	1000
(max.) Attenuation	[dB/100 m]	3,7	5,8	7,3	14,6	18,5	29,7	42,8	47,1	61,9
(min.) TCL	[dB]	34	30	28	22	20	16	13	12,2	10
(min.) EL TCTL	[dB/100 m]	23	15	10,9	—	—	—	—	—	—
(min.) NEXT	[dB]	78	78	78	78	75,4	69,4	64,9	63,7	60,4
(min.) PS EL FEXT	[dB/100 m]	75	72,3	68,2	66,4	62,3	54,3	48,3	46,7	42,3
(min.) ACR-F/EL FEXT	[dB/100 m]	78	75,3	78	69,4	65,3	57,3	51,3	49,7	45,3
(min.) Return Loss	[dB]	23	25	25	21,5	20,1	17,3	17,3	17,3	17,3

### 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 flame propagation acc. to IEC 60332-3-24 resp. EN 60332-3-24
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 are 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).

Creator: KIOS / PDC	Document: DB2170971EN	Page 2 of 2
Released: ALTE / PDC	Version: 02	