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

Application

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| 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

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|--------------------------|---|
| 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

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|---------------------------|--------------------------------|
| 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

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| 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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