
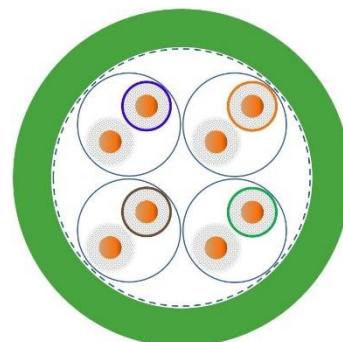


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|-----------------------------------|--|---|
| 2170464 | DATA SHEET |  |
| valid from: 09.08.2021 | ETHERLINE® Y Cat. 6A 4x2x22/1 AWG | |

Application

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|------------------|---|
| Field of use: | Installation cable for cabling systems acc. to ISO/IEC 11801 and EN 50173. Meeting the transmission requirements of IEC 61156-5, Category 6A and EN 50288-10-1. Compliant to the "PROFINET Cabling and Interconnection Technology" guideline. |
| Performance: | 4-pair, screened foiled twisted pair cable (S/FTP), having a nominal impedance of 100 Ω, supporting a bandwidth of 10 Gbit/s (e.g. 100BASE-T, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T) over up to 100 m. |
| Characteristics: | Flame retardant, no flame propagation, oil resistant |
| Applications: | PROFINET, EtherCAT, EtherNet/IP, PoE (IEEE 802.3af), PoE+ (IEEE 802.3at), PPOE (IEEE 802.3bt) and others |




Design

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|--------------------------|---|
| Certification | EN 13501-6 and EN 50575 Classification of fire behaviour |
| Conductor | solid bare copper 22/1 AWG |
| Insulation | polyolefin (foamed) core diameter: nom. 1.50 mm |
| Core identification code | pair 1: white/blue, pair 2: white/orange, pair 3: white/green, pair 4: white/brown (colored ring marking on the white cores is optional) |
| Stranding | 2 cores stranded to pair, 4 pairs stranded to bundle |
| Pair screen | plastic laminated aluminium foil (overlapping) |
| Screen | braid of tinned copper wires (coverage 85 % ± 5 %) |
| Outer sheath | PVC green, similar RAL 6018 outer diameter: 8.70 mm (± 0.3 mm) |

Electrical properties at 20 °C

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|---------------------------|--------------------|---------------------------------------|
| Loop resistance | ≤ 12.2 Ω/100 m | |
| Insulation resistance | ≥ 5 GΩ×km | |
| Mutual capacitance | 800 Hz: | 42 nF/100 m |
| Coupling attenuation | 30 MHz - 100 MHz: | ≥ 80 dB |
| | 100 MHz - 500 MHz: | ≥ 80 - 20×log ₁₀ (f / 100) |
| Characteristic impedance | 100 MHz: | 100 Ω acc. to IEC 61156-5 |
| Velocity of propagation | 100 MHz: | 0.80 c |
| Signal propagation time | 4 MHz - 500 MHz: | ≤ 480 ns/100 m |
| Delay skew | 4 MHz - 500 MHz: | ≤ 20 ns/100 m |
| Maximum operating voltage | EN: | 100 V (not for power applications) |
| Test voltage | core/core: | 700 V |
| | core/screen: | 700 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 installation: | 10 × outer diameter |
| Temperature range | fixed installation: | -30 °C up to +80 °C |
| Flammability | flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2 | |
| | no flame propagation acc. to IEC 60332-3-25 resp. EN 60332-3-25 | |

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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