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| 2170583 | DATA SHEET |  |
| valid from: 13.01.2020 | ETHERLINE® PN Cat.6A Y FC 4x2x23/1AWG | |

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 EN 50288-10-1 |
| Characteristics: | Sun resistant, flame retardant and largely resistant to acids, alkalis and certain oils, the "Fast Connect" design allows easy stripping and assembly of the cable |
| Applications: | Profinet with 4 pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others |

Design



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|--------------------------|--|
| Certification | c(UL)us CMX (75 °C) |
| Conductor | solid bare copper 23/1 AWG |
| Insulation | solid polyolefin |
| Core identification code | pair 1: blue-white/blue, pair 2: orange-white/orange, pair 3: green-white/green, pair 4: brown-white/brown |
| Stranding | 2 cores stranded to pair, 4 pairs stranded to bundle with central separating element on top: plastic tape (overlapping) |
| Inner sheath | TPE-V outer Ø: nom. 6.60 mm |
| Screen | plastic laminated aluminium foil (overlapping) on top: braid of tinned copper wires (coverage 85 % ±5 %) |
| Outer sheath | PVC green, similar RAL 6018 outer Ø: 8.9 mm (± 0.3 mm) |

Electrical properties at 20°C

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|--------------------------|--|
| Loop resistance | max. 14.64 Ω/100 m |
| Insulation resistance | min. 5 GΩ x km |
| Mutual capacitance | nom. 48 nF/km |
| Characteristic impedance | 100 ± 15 Ω acc. to IEC 61156-5 |
| Velocity of propagation | 0.75c |
| Signal transit time | 490 ns/100 m |
| Peak operating voltage | VDE: 125 V (not for power purposes) UL: 300 V |
| Test voltage | Core/Core: 2000 V Core/Screen: 2000 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 | 16 | 62,5 | 100 | 250 | 500 |
|----------------------|------------|------|------|------|------|------|------|------|
| (max.) Attenuation | [dB/100 m] | 3,8 | 5,9 | 7,5 | 15 | 19,1 | 31,1 | 45,3 |
| (min.) TCL | [dB] | 34 | 30 | 28 | 22 | 20 | 16 | — |
| (min.) EL TCTL | [dB/100 m] | 23 | 15 | 10,9 | — | — | — | — |
| (min.) NEXT | [dB] | 66,3 | 60,3 | 57,2 | 48,4 | 45,3 | 39,3 | 34,8 |
| (min.) PS EL FEXT | [dB/100 m] | 53 | 45 | 40,9 | 29,1 | 25 | 17 | 11 |
| (min.) ACR-F/EL FEXT | [dB/100 m] | 56 | 48 | 43,9 | 32,1 | 28 | 20 | 17 |
| (min.) Return Loss | [dB] | 23 | 25 | 25 | 21,5 | 20,1 | 17,3 | 17,3 |

Mechanical and thermal properties

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|------------------------|---|---------------------|
| Minimum bending radius | fixed: | 4x cable Ø |
| | occasional flexing: | 8x cable Ø |
| Temperature range | fixed: | -40 °C up to +80 °C |
| | occasional flexing: | -5 °C up to +50 °C |
| | UL: | 75 °C |
| Flammability | flame retardant acc. to IEC 60332-1-2; VW-1 acc. to UL 1581 §1080 | |
| UV resistance | sun resistant acc. to UL 1581 §1200 | |
| Oil resistance | acc. to IEC 60811-404 | |
| General requirements | This cable is conform to EU-Directive 2014/35/EU (Low Voltage Directive) and to EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances). | |

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