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| 2170606 | DATA SHEET |  |
| valid from: 01.05.2019 | ETHERLINE® PN Cat.7 FRNC A 4x2x 23/1 AWG | |

Application

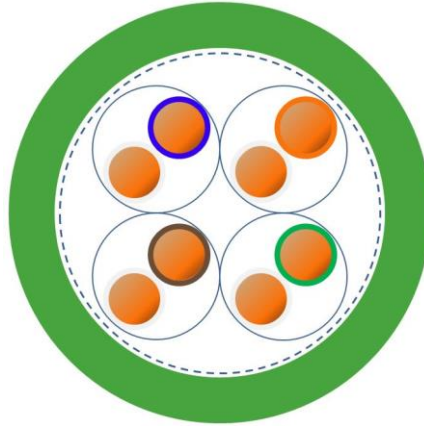
ETHERLINE® PN CAT.7 FRNC A (bandwidth up to 600 MHz), has a performance for the cabling class “F” and a maximum transfer rate (IEEE 802.3) of 10 GBit/s to 100m.

The electrical parameter of the cable with a nominal impedance of 100 Ω and excellent shielding properties (pair and total screen) are normatively specified to IEC 61156-5.

It is provided for industrial secondary and tertiary cable according to EN 50173-3 ISO/IEC 24702.

Other applications are Profinet with 4 Pairs, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE’s 802.3af) and Power over Ethernet Plus (802.3at). The product is flame retardant, halogen free and comes in rough industrial environments for use. It is suitable for fixed installation and serves to wiring of machines, tools, devices, appliances and control cabinets.

Design



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| Certification | cURus AWM 21286 (300 V, 80°C) acc. to UL 758 and CSA C22.2 No. 210-15 |
| Conductor | Solid bare copper 0.25 mm ² (23/1 AWG) |
| Insulation | Foam skin polyethylen acc. to EN 50290-2-25 table 1 outer Ø approx. 1.40 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 and individually screened with plastic laminated aluminum foil, 4 pairs stranded to bundle |
| Screen | braid of copper wires coverage approx. 85 % |
| Outer sheath | FRNC acc. to UL 1581, table 50.133 (80 °C) green RAL 6018 outer Ø: 8.1 mm |

Electrical properties at 20°C

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|--------------------------|---|
| Loop resistance | max. 149 Ω/km |
| Insulation resistance | min. 5 GΩxkm |
| Mutual capacitance | nom. 44 nF/km |
| Characteristic impedance | nom. 100 Ω acc. to IEC 61156-5 100 ± 5 Ω (@ 100 MHz) |
| Velocity of propagation | 0.77c |
| Signal transit time | 4.8 ns/m |
| Peak operating voltage | 125 V (not for power purposes) |
| Test voltage | core/core: 1500 V core/screening: 1500 V |

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Electrical transmission properties at 20°C

| f [MHz] | max. Attenuation [dB/100m] | min. PS NEXT [dB] | | min. EL FEXT [dB] | | min. Return Loss [dB] |
|--------------|----------------------------------|-------------------------|---------|-------------------------|---------|--------------------------------|
| | standard | standard | typical | standard | typical | standard |
| 1* | 2.0 | 75.0 | > 95 | 73.0 | 94 | 20.0 |
| 4 | 3.7 | 75.0 | > 95 | 71.3 | 94 | 23.0 |
| 10 | 5.9 | 75.0 | > 95 | 69.1 | 92 | 25.0 |
| 16 | 7.4 | 75.0 | 92 | 67.6 | 91 | 25.0 |
| 31,25 | 10.4 | 75.0 | 89 | 64.6 | 80 | 23.3 |
| 62,5 | 14.9 | 72.5 | 87 | 57.6 | 74 | 20.7 |
| 100 | 19.0 | 69.4 | 85 | 50.4 | 71 | 19.0 |
| 250 | 31.0 | 63.4 | 80 | 31.4 | 54 | 17.3 |
| 500 | 45.3 | 58.9 | 76 | 13.6 | 34 | 17.3 |
| 600 | 50.1 | 57.7 | 74 | 7.6 | 27 | 17.3 |

Mechanical and thermal properties

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| Minimum bending radius | fixed installation: 4 x cable Ø |
| Temperature range | fixed installation: -30° C up to +80° C UL AWM: +80°C |
| Flammability | flame retardant acc. to IEC 60332-1-2, IEC 60332-3-24, FT2 acc. to UL 1581 |
| Corrosivity of gases | acc. to EN 50267-2 and IEC 60754-1 |
| Smoke density | acc. to IEC 61034-2 |
| General requirements | This cable is conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances). |

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