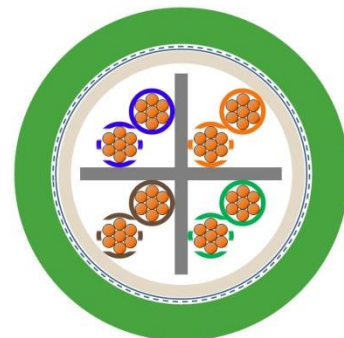


| | | |
|-----------------------------------|---|---|
| 2170587 | DATA SHEET |  |
| valid from: 15.07.2020 | ETHERLINE® PN CAT.6A FRNC FLEX FC 4x2x23/7 AWG | |

Application

| | |
|------------------|---|
| Field of use: | Connecting cable for generic cabling systems acc. to ISO/IEC 11801 and EN 50173 |
| Performance: | Bandwidth up to 500 MHz acc. to IEC 61156-6 Category 6A and EN 50288-10-2 |
| Characteristics: | halogen free, 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, EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af), Power over Ethernet Plus (IEEE 802.3at) and many others |



Design

| | |
|--------------------------|---|
| Certification | c(UL)us CMX 75°C acc. to UL 444 & CSA 22.2 No. 214 RU AWM Style 21281 80°C 300V FT2 acc. to. UL 758 |
| Conductor | stranded bare copper 23/7 AWG |
| Insulation | solid polyethylen |
| Core identification code | pair 1: white/blue-blue, pair 2: white/orange-orange, pair 3: white/green-green, pair 4: white/brown-brown |
| Stranding | 2 cores stranded to pair, 4 pairs stranded to bundle with central cross element on top: plastic tape (overlapping) |
| Inner sheath | LSZH outer Ø: nom. 6.60 mm |
| Screen | plastic laminated aluminium foil (overlapping) on top: braid of tinned copper wires (coverage 85 % ± 5 %) |
| Outer sheath | FRNC green, similar RAL 6018 outer Ø: 8.9 mm (± 0.3 mm) |

Electrical properties at 20°C

| | |
|--------------------------|---|
| Loop resistance | max. 15.0 Ω/100 m |
| Insulation resistance | min. 5 GΩ x km |
| Mutual capacitance | nom. 45 nF/km |
| Characteristic impedance | 100 ± 15 Ω acc. to IEC 61156-6 |
| Velocity of propagation | 0.78 c |
| Signal propagation time | 510 ns/100 m |
| Delay skew | max. 20 ns/100 m |
| Peak operating voltage | EN: 125 V (not for power purposes) UL: 300 V |
| Test voltage | core/core: 2000 V core/screen: 2000 V |

| | | |
|----------------------|-----------------------|-------------|
| Creator: KIOS / PDC | Document: DB2170587EN | Page 1 of 2 |
| Released: ALTE / PDC | Version: 01 | |

| | | |
|-----------------------------------|---|---|
| 2170587 | DATA SHEET |  |
| valid from: 15.07.2020 | ETHERLINE® PN CAT.6A FRNC FLEX FC 4x2x23/7 AWG | |

Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-10-2 and IEC 61156-6 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] | 5,7 | 8,9 | 12,6 | 22,5 | 28,7 | 41,4 | 46,6 | 67,9 |
| (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 | 14 |
| (min.) Return Loss | [dB] | 23 | 25 | 25 | 21,5 | 20,1 | 18 | 17,3 | 17,3 |

Mechanical and thermal properties

| | |
|---------------------------|---|
| 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 |
| 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 61034-1 resp. EN 61034-1 |
| 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). |
| Environmental information | These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS). |

| | | |
|----------------------|-----------------------|-------------|
| Creator: KIOS / PDC | Document: DB2170587EN | Page 2 of 2 |
| Released: ALTE / PDC | Version: 01 | |