| 2170488 | DATA SHEET | LAPP |
|---|---|---|
| valid from: 23.03.2020 | ETHERLINE® FD P CAT.6 4x2x26/19AWG | |

## 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 6 and EN 50288 5-2 |
| Characteristics: | halogen free, flame retardant, oil resistant, UV resistant and largely resistant to acids, alkalis and certain oils, the "Fast Connect" design allows easy stripping and assembly of the cable |
| Applications: | EtherCAT, EtherNet/IP, Power over Ethernet (IEEE 802.3af) and many others |



## Design

| | |
|---|---|
| Certification | c(UL)us CMX 75°C acc. to. UL 444 and CSA C22.2 No.214<br>certified for CC-Link IE Field Network |
| Conductor | fine-wire stranded tinned copper<br>26/19 AWG |
| Insulation | Polypropylene (PP)<br>core Ø: ca. 0.98 mm |
| Core identification code | pair 1: white-blue/blue; pair 2: white-orange/orange;<br>pair 3: white-green/green; pair 4: white-brown/brown |
| Stranding | cores twisted to pairs,<br>pairs stranded together with central separating element<br>on top:<br>plastic tape (overlapping) |
| Inner sheath | FRNC<br>outer Ø: ca. 5.7 mm |
| Screen | plastic laminated aluminium foil (overlapping)<br>on top:<br>braid of tinned copper wires (coverage 85 % ±5 %) |
| Outer sheath | PUR<br>green, similar RAL 6018<br>outer ⌀: ca. 7.8 mm |

## Electrical properties at 20°C

| | | |
|---|---|---|
| Loop resistance | max. 28,0 Ω/100 m | |
| Insulation resistance | min. 5 GΩxkm | |
| Mutual capacitance | nom. 48 nF/km (800 Hz) | |
| Characteristic impedance | nom. 100 Ω acc. to IEC 61156-6 | |
| Velocity of propagation | 0.68 c | |
| Signal propagation time | <480 ns/100 m | |
| Delay skew | <20 ns/100 m | |
| Peak operating voltage | VDE:<br>UL: | 100 V (not for power purposes)<br>300 V |
| Test voltage | core/core:<br>core/screen: | 1500 V<br>1500 V |



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## Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-5-2 and IEC 61156-6 for category 6. The normative requirements for the transmission properties are shown in the following table:

| f [MHz] | | 4 | 10 | 20 | 31,25 | 62,5 | 100 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| (max.) Attenuation | [dB/100 m] | 5,7 | 9,0 | 12,8 | 16,1 | 23,2 | 29,9 | 43,7 | 49,5 |
| (min.) TCL | [dB] | 34 | 30 | 27 | 25,1 | 22 | 20 | 17 | 16 |
| (min.) EL TCTL | [dB/100 m] | 23 | 15 | 9 | 5,1 | — | — | — | — |
| (min.) NEXT | [dB] | 66,3 | 60,3 | 55,8 | 52,9 | 48,4 | 45,3 | 40,8 | 39,3 |
| (min.) PS EL FEXT | [dB/100 m] | 55 | 47 | 41 | 37,1 | 31,1 | 27 | 21 | 19 |
| (min.) ACR-F/EL FEXT | [dB/100 m] | 58 | 50 | 44 | 40,1 | 34,1 | 30 | 24 | 22 |
| (min.) Return Loss | [dB] | 23 | 25 | 25,8 | 24,6 | 22,8 | 21,6 | 19,8 | 19,2 |

## Mechanical and thermal properties

| | | |
|---|---|---|
| Minimum bending radius | fixed: | 4x cable Ø |
| | continuous flexing: | 8x cable Ø |
| Temperature range | fixed: | -40 °C up to +80 °C |
| | continuous flexing: | -30 °C up to +70 °C |
| Flammability | flame retardant acc. to. IEC 60332-1-2 resp. EN 60332-1-2<br>VW-1 acc. to UL 1581 §1080 | |
| Halogen free | acc. to VDE 0472-815 | |
| UV resistance | acc. to. ISO 4892-2, method A | |
| Oil resistance | acc. to. EN 50363-10-2 | |
| 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). | |



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