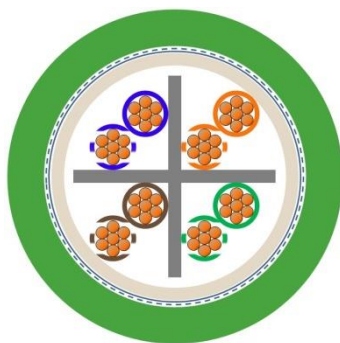


|                           |                                                   |                                                                                     |
|---------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|
| 2170591                   | <b>DATA SHEET</b>                                 |  |
| valid from:<br>13.01.2020 | <b>ETHERLINE® PN Cat.6A Y FD<br/>4x2x24/7 AWG</b> |                                                                                     |

## 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: | 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



|                          |                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Certification            | c(UL)us CMX (75 °C)                                                                                                              |
| Conductor                | stranded bare copper<br>24/7 AWG                                                                                                 |
| Insulation               | solid polyolefin                                                                                                                 |
| Core identification code | pair 1: blue-white/blue, pair 2: orange-white/orange,<br>pair 3: green-white/green, pair 4: brown-white/brown                    |
| Stranding                | 2 cores stranded to pair,<br>4 pairs stranded to bundle with central separating element<br>on top:<br>plastic tape (overlapping) |
| Inner sheath             | TPE-V<br>outer Ø: nom. 6.50 mm                                                                                                   |
| Screen                   | plastic laminated aluminium foil (overlapping)<br>on top:<br>braid of tinned copper wires (coverage 85 % ± 5 %)                  |
| Outer sheath             | PVC<br>green, similar RAL 6018<br>outer Ø: 8.9 mm (± 0.3 mm)                                                                     |

## Electrical properties at 20°C

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| Loop resistance          | max. 18.84 Ω/100 m                               |
| Insulation resistance    | min. 5 GΩ x km                                   |
| Mutual capacitance       | nom. 52 nF/km                                    |
| Characteristic impedance | 100 ± 15 Ω acc. to IEC 61156-6                   |
| Velocity of propagation  | 0.67c                                            |
| Signal transit time      | 520 ns/100 m                                     |
| Peak operating voltage   | VDE: 125 V (not for power purposes)<br>UL: 300 V |
| Test voltage             | Core/Core: 2000 V<br>Core/Screen: 2000 V         |

|                      |                       |             |
|----------------------|-----------------------|-------------|
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### Electrical transmission properties at 20°C

The transmission characteristics meet the requirements of the standards EN 50288-10-2 and IEC 61156-6 for category 6A.  
The normative requirements for the transmission properties are shown in the following table:

| f [MHz]              |            | 4    | 10   | 16   | 62,5 | 100  | 250  | 500  |
|----------------------|------------|------|------|------|------|------|------|------|
| (max.) Attenuation   | [dB/100 m] | 5,7  | 8,9  | 11,2 | 22,5 | 28,7 | 46,6 | 67,9 |
| (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   | 14   |
| (min.) Return Loss   | [dB]       | 23   | 25   | 25   | 21,5 | 20,1 | 17,3 | 17,3 |

### Mechanical and thermal properties

|                        |                                                                                                                                                                         |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minimum bending radius | fixed: 4x cable Ø<br>flexing: 15x cable Ø                                                                                                                               |
| Temperature range      | fixed: -40 °C up to +80 °C<br>flexing: -5 °C up to +50 °C<br>UL: 75 °C                                                                                                  |
| Flammability           | flame retardant acc. to IEC 60332-1-2;<br>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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