



Product: [50106HFP](#)

50106HFP Industrial Cat6 Cable, SF/UTP, 4 Pair, AWG 26 Stranded, PE/PUR, High-Flex, CC-Link IE Field & CC-Link IE Field TSN Certified, AWM 20549

Product Description

SF/UTP, Category 6, 4-Pair, 26 AWG Stranded Bare Copper Conductors, Polyethylene Insulation, Overall foil shield plus tinned copper braid shield, Halogen Free PUR Jacket, High Flexibility, CC-Link IE Field & CC-Link IE Field TSN Certified, AWM 20549

Technical Specifications

Product Overview

| | |
|------------------------|--|
| Suitable Applications: | Interconnecting Industrial Ethernet Switches, IP controllers, media convertors, distributed control system, programmable logic controller and transmitting industrial protocol data signals. Suitable for transmitting 1000BASE-TX Gigabit Ethernet, 100BASE-T Fast Ethernet, 100BaseVG ANYLAN, 155ATM, 622 ATM, RS-422, 250MHz Category 6, EtherCAT. With superior flexibility this cable is very suitable for use in the continuous flexing applications like drag chains, robotics, moving machinery parts, etc. It is designed to meet up to 10 million bending cycles that covers the most critical scenarios in plant engineering and machinery manufacturing. These are highly durable & ruggedized cables for both indoor and outdoor use meeting IEC 60332-1 & IEC 60332-3-25 flame rating. |
|------------------------|--|

Physical Characteristics (Overall)

Conductor

| AWG | Stranding | Material |
|-----|-----------|------------------|
| 26 | Stranded | BC - Bare Copper |

| | |
|------------------------|---|
| Conductor Count: | 8 |
| Total Number of Pairs: | 4 |

Insulation

| Material |
|-------------------|
| PE - Polyethylene |

Color Chart

| Number | Color |
|--------|-------------------------|
| Pair 1 | White / Blue & Blue |
| Pair 2 | White / Orange & Orange |
| Pair 3 | White / Green & Green |
| Pair 4 | White / Brown & Brown |

Cabling

| Filler |
|----------------|
| Central Spline |

Outer Shield

| Type | Material | Coverage [%] |
|-------|-------------------------|--------------|
| Tape | Bi-Laminate (Alum+Poly) | 100% |
| Braid | Tinned Copper (TC) | 85% |

Outer Jacket

| Material | Nominal Diameter |
|-----------------------------------|------------------|
| PUR - Polyurethane (Halogen Free) | 7.0 mm |

Electrical Characteristics

Conductor DCR

| Max. Conductor DCR | Max DCR Unbalanced Between Pairs [%] |
|--------------------|--------------------------------------|
| 140 Ohm/km | 5 % |

Capacitance

| Max. Capacitance Unbalance | Nom. Mutual Capacitance |
|----------------------------|-------------------------|
| 330 pF/100m | 56 pF/m |

Impedance

| Nominal Characteristic Impedance |
|----------------------------------|
| 100 Ohm |

Delay

| Max. Delay | Max. Delay Skew |
|---------------------|-----------------|
| 538 ns/100m @100MHz | 45 ns/100m |

High Frequency

| Frequency [MHz] | Max. Insertion Loss (Attenuation) | Min. NEXT [dB] | Min. PSNEXT [dB] | Min. ACRF (ELFEXT) [dB] | Min. PSACRF (PSELFEXT) [dB] | Min. RL (Return Loss) [dB] |
|-----------------|-----------------------------------|----------------|------------------|-------------------------|-----------------------------|----------------------------|
| 1 MHz | 2.1 dB | 65 dB | 62 dB | 63.3 dB | 60.3 dB | 19 dB |
| 4 MHz | 4.0 dB | 63 dB | 60.5 dB | 51.2 dB | 48.2 dB | 19 dB |
| 8 MHz | 5.7 dB | 58.2 dB | 55.6 dB | 45.2 dB | 42.2 dB | 19 dB |
| 10 MHz | 6.3 dB | 56.6 dB | 54 dB | 43.3 dB | 40.3 dB | 19 dB |
| 16 MHz | 8.0 dB | 53.2 dB | 50.6 dB | 39.2 dB | 36.2 dB | 18 dB |
| 20 MHz | 9.0 dB | 51.6 dB | 49 dB | 37.2 dB | 34.2 dB | 17.5 dB |
| 25 MHz | 10.1 dB | 50 dB | 47.3 dB | 35.3 dB | 32.3 dB | 17 dB |
| 31.25 MHz | 11.4 dB | 48.4 dB | 45.7 dB | 33.4 dB | 30.4 dB | 16.5 dB |
| 62.5 MHz | 16.5 dB | 43.4 dB | 40.6 dB | 27.3 dB | 24.3 dB | 14 dB |
| 100 MHz | 21.3 dB | 39.9 dB | 37.1 dB | 23.3 dB | 20.3 dB | 12 dB |
| 200 MHz | 31.5 dB | 34.8 dB | 31.9 dB | 17.2 dB | 14.2 dB | 9 dB |
| 250 MHz | 35.9 dB | 33.1 dB | 30.2 dB | 15.3 dB | 12.3 dB | 8 dB |

Table Notes: Note: Fluke Channel transmission performance, Max. Cable length: 45 meters

Voltage

| Voltage Rating [V] |
|--------------------------------|
| 300 V RMS (UL AWM Style 20549) |

Temperature Range

| | |
|------------------------------|---------------|
| Operating Temperature Range: | -25°C To 80°C |
|------------------------------|---------------|

Mechanical Characteristics

| | |
|---------------------------------------|---|
| Bulk Cable Weight: | 54 kg/km |
| Min. Bend Radius During Installation: | 56 mm |
| Min No. of Drag Chain Cycles: | 10 million |
| Drag Chain Parameters: | 1m Travel Distance, 2m/s Travel Speed, 2m/s ² Acceleration and 70mm Bending Radius |

Standards

| | |
|--------------------------|--|
| CEC/C(UL) Compliance: | AWM I/II 80C 300V |
| UL AWM Style Compliance: | AWM 20549 |
| ISO/IEC Compliance: | ISO/IEC 11801 |
| Data Category: | Category 6 |
| ANSI Compliance: | ANSI/TIA 568-D.2 |
| TIA/EIA Compliance: | CC-Link IE Field, CC-Link IE Field TSN |

Applicable Environmental and Other Programs

| | |
|-----------------------------------|----------------------|
| Environmental Space: | Indoor/Outdoor, LSZH |
| EU Directive 2011/65/EU (RoHS 2): | Yes |
| EU Directive Compliance: | Yes |

Suitability

| | |
|------------------------------------|-----|
| Suitability - Indoor: | Yes |
| Suitability - Non-Halogenated: | Yes |
| Suitability - Oil Resistance: | Yes |
| Suitability - Outdoor: | Yes |
| Suitability - Sunlight Resistance: | Yes |

Flammability, LSOH, Toxicity Testing

| | |
|---|-------------------------------|
| IEC Flammability: | IEC 60332-1-2, IEC 60332-2-25 |
| IEC 61034-2 - Smoke Density Min. Transmittance: | 60% |

Related Part Numbers

Variants

| Item # | Color | Put-Up Type | Length |
|------------------|-------|-------------|--------|
| 50106HFP 010305M | Black | Reel | 305 m |
| 50106HFP 006305M | Blue | Reel | 305 m |
| 50106HFP 008305M | Gray | Reel | 305 m |

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| Footnote: | For more order number information, please approach your Belden sales representative freely |
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History

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| Update and Revision: | Revision Number: 0.104 Revision Date: 11-27-2023 |
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