



**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.
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### 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 %
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#### 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
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#### 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 <sup>2</sup> 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
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Suitability - Non-Halogenated:	Yes
Suitability - Oil Resistance:	Yes
Suitability - Outdoor:	Yes
Suitability - Sunlight Resistance:	Yes

## Flammability, LSOH, Toxicity Testing

CSA Flammability:	FT2
IEC Flammability:	IEC 60332-1-2 and IEC 60332-3-25 cat D
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

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

## History

Update and Revision: Revision Number: 0.100 Revision Date: 04-08-2022

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