



Product: [50106AH1](#)

BELDEN 50106AH1 Industrial Ethernet CAT6A Cable, SF/FTP, Profinet Type C, 4 Pair, 24AWG Stranded, PUR Jkt, E357312-S, AWM 20554 80C, 30V, FT2

Product Description

BELDEN 50106AH1 Industrial Ethernet CAT6A Cable, SF/FTP, Profinet Type C, 4 Pair, 24AWG Stranded Tinned Copper Conductors, Polyethylene Insulation, Tinned Copper Braid Shield, PUR Jacket, E357312-S, AWM 20554 80C, 30V, FT2

Technical Specifications

Product Overview

Suitable Applications:	Ethernet:10Base-T, 100Base-TX, 1000Base-T, 1000Base-TX, 10GBase-T
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Physical Characteristics (Overall)

Conductor		
AWG	Stranding	Material
24	7x32	TC - Tinned Copper
Conductor Count:		8
Total Number of Pairs:		4

Insulation	
Material	Nominal Diameter
PE - Polyethylene (Foam)	1.45 mm

Color Chart	
Number	Color
Pair 1	White & Blue
Pair 2	White & Orange
Pair 3	White & Green
Pair 4	White & Brown

Outer Shield		
Type	Material	Coverage [%]
Braid	Tinned Copper (TC)	85%
Tapes (Each Pair)	Bi-Laminate (Alum+Poly)	

Outer Jacket	
Material	Nominal Diameter
PUR - Polyurethane	8.9 mm

Electrical Characteristics

Conductor DCR	
Max. Conductor DCR	
95 Ohm/km	

Capacitance	
Nom.Mutual Capacitance	
50 pF/m	

Dielectric Strength:	750 Vac/1 min (Conductor-Conductor and Conductor-Screen)
Insulation Resistance:	5 GOhm.km

Impedance

Nominal Characteristic Impedance
100 Ohm

Delay

Max. Delay Skew
≤ 20 ns/100m

High Frequency

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. ACRF (ELFEXT) [dB]	Min. RL (Return Loss) [dB]
4 MHz	5.7 dB/100m	66.3 dB	56.0 dB	23.0 dB
10 MHz	9.5 db/100m	59.5 dB	46.4 dB	25.0 dB
16 MHz	11.5 dB/100m	57.1 dB	44.1 dB	25.0 dB
31.25 MHz	15.8 dB/100m	53.1 dB	38.0 dB	23.3 dB
62.5 MHz	22.4 dB/100m	48.4 dB	32.2 dB	20.8 dB
100 MHz	29.0 dB/100m	45.2 dB	27.8 dB	19.0 dB
200 MHz	41.1 dB/100m	40.8 dB	22.0 dB	17.3 dB
250 MHz	46.6 dB/100m	39.3 dB	20.1 dB	17.3 dB
300 MHz	51.4 dB/100m	38.2 dB	18.5 dB	17.3 dB
350 MHz	55.8 dB/100m	37.1 dB	17.1 dB	17.3 dB
500 MHz	67.9 dB/100m	34.8 dB	14.0 dB	17.3 dB

Coupling Attenuation Class:	≥ 80 dB at 30~100MHz
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Voltage

Voltage Rating [V]
30 V (AWM Style 20554)

Temperature Range

Operating Temperature Range:	-30°C To +70°C
Operating Temp Range (Fixed Install):	-40°C To +80°C

Mechanical Characteristics

UV Resistance:	Yes
Min. Bend Radius During Installation:	71.2 mm
Min. Bend Radius (Continuous Flexing):	133.5 mm
Min No. of Drag Chain Cycles:	2.5 million cycles
Drag Chain Parameters:	Test at (15D, 5m, a=3m/s², V=3m/s)

Standards

UL AWM Style Compliance:	AWM 20554
ISO/IEC Compliance:	IEC 61156-xx, UL 758
Data Category:	Category 6A
ANSI Compliance:	TIA 568.2-D

Applicable Environmental and Other Programs

Environmental Space:	Indoor/Outdoor
EU Directive 2011/65/EU (RoHS 2):	Yes

Suitability

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

Flammability, LS0H, Toxicity Testing

CSA/C(UL) Flammability:	FT2
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IEC Flammability:	IEC 60332-1-2
IEC 60754-1 - Halogen Amount:	Zero

History

Update and Revision:	Revision Number: 0.32 Revision Date: 12-12-2023
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