



Part Number: 74010E

DataTuff® Cat 6A Ethernet PROFINET Type A, PVC

Product Description

DataTuff PROFINET Type A, Cat 6A, 10 Gb/s, AWG 22(1), Solid, Foil+ 85% Braid, PVC Jacket, UL AWM 20726

Technical Specifications

Product Overview

Environmental Space:	Indoor - Euroclass Eca
Suitable Applications:	Profinet CAT6A, TCP/IP Ethernet

Physical Characteristics (Overall)

Conductor

Element	AWG	Stranding	Material	No. of Pairs
Individual shielded pair	22	Solid	BC - Bare Copper	4

Conductor Count:	8
Total Number of Pairs:	4

Insulation

Element	Type	Material	Nominal Diameter
Individual shielded pair	Dielectric	FPE - Foamed Polyethylene	1.54 mm

Bonded-Pair:	No
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Color Chart

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

Inner Shield Material

Element	Type	Material	Coverage [%]
Individual shielded pair	Tape	Aluminum / Polyester	100 %

InnerShield, Table Note:	Aluminum outside
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Outer Shield Material

Type	Material	Min. Coverage [%]
Braid	TC - Tinned Copper	80 %

Outer Jacket Material

Material	Nominal Diameter	Diameter +/- Tolerance
PVC	8.7 mm	0.3 mm

Construction and Dimensions

Min Elongation at Breakof Conductors:	10 %
Min Elongation at Breakof Insulation:	100 %

Cabling

Description
4 pairs twisted to cable core

Min Elongation at Breakof Jacket:	100 %
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Electrical Characteristics

Conductor DCR

Max. Conductor DCR	Max DCR Unbalanced Between Pairs [%]	Max. DCR Unbalanced Within Pair [%]
59.1 Ohm/km	4 %	2 %

Capacitance

Max. Capacitance Unbalance	Max. Mutual Capacitance
1.6 pF/m	56 pF/m

Impedance

Nominal Characteristic Impedance
100 Ohm

High Frequency (Nominal/Typical)

Frequency [MHz]	Nom. Insertion Loss	Nom. NEXT [dB]	Nom. PSNEXT [dB]	Nom. ACR [dB]	Nom. PSACR [dB]	Nom. ACRF (ELFEXT) [dB]	Nom. PSACRF (PSELFEXT) [dB]
1 MHz	1.9 dB/100m	103 dB	100 dB	101 dB	98 dB	95 dB	92 dB
4 MHz	3.4 dB/100m	100 dB	97 dB	97 dB	94 dB	94 dB	91 dB
10 MHz	5.5 dB/100m	98 dB	95 dB	92 dB	89 dB	93 dB	92 dB
16 MHz	6.9 dB/100m	97 dB	94 dB	90 dB	87 dB	91 dB	88 dB
31.2 MHz	9.7 dB/100m	95 dB	92 dB	85 dB	82 dB	90 dB	87 dB
62.5 MHz	13.9 dB/100m	94 dB	91 dB	80 dB	77 dB	87 dB	84 dB
100 MHz	17.7 dB/100m	93 dB	90 dB	75 dB	72 dB	85 dB	82 dB
125 MHz	19.9 dB/100m	92 dB	89 dB	72 dB	69 dB	83 dB	80 dB
200 MHz	25.6 dB/100m	91 dB	88 dB	65 dB	64 dB	77 dB	74 dB
250 MHz	28.8 dB/100m	90 dB	87 dB	61 dB	58 dB	74 dB	71 dB
300 MHz	31.8 dB/100m	90 dB	87 dB	58 dB	55 dB	74 dB	71 dB
600 MHz	46.6 dB/100m	88 dB	86 dB	42 dB	39 dB	60 dB	57 dB

Delay

Max. Delay Skew	Nominal Velocity of Propagation (VP) [%]
25 ns/100m	78 %

High Freq

Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. ACR [dB]	Min. PSACR [dB]	Min. ACRF (ELFEXT) [dB]	Min. RL (Return Loss) [dB]	Min. ELTCTL [dB]
2 dB/100m	78 dB	76 dB	73 dB	78 dB	20 dB	35 dB
3.7 dB/100m	78 dB	74.3 dB	71.3 dB	78 dB	23 dB	23 dB
5.9 dB/100m	78 dB	72.1 dB	69.1 dB	75.3 dB	25 dB	15 dB
7.4 dB/100m	78 dB	70.6 dB	67.6 dB	71.2 dB	25 dB	10.9 dB
10.4 dB/100m	78 dB	67.6 dB	64.6 dB	65.4 dB	23.6 dB	5.1 dB
14.9 dB/100m	75.5 dB	60.6 dB	57.6 dB	59.4 dB	21.5 dB	
19 dB/100m	72.4 dB	53.4 dB	50.4 dB	55.3 dB	20.1 dB	
21.4 dB/100m	70.9 dB	49.6 dB	46.6 dB	53.4 dB	19.4 dB	
27.5 dB/100m	67.9 dB	40.4 dB	37.4 dB	49.3 dB	18 dB	
31 dB/100m	66.4 dB	35.5 dB	32.5 dB	47.3 dB	17.3 dB	
34.2 dB/100m	65.2 dB	31.1 dB	28.1 dB	45.8 dB	17.3 dB	
50.1 dB/100m	60.7 dB	10.6 dB	7.6 dB	39.7 dB	17.3 dB	

High Freq Table Note:	Limits below 4MHz are for information only
Coupling Attenuation Class:	Type I
Segregation class according EN50174-2:	d

Transfer Impedance

Description
Grade 1

Current

Max. Recommended Current [A]
1.5 A

Voltage

Voltage Rating [V]
30 V AC

Temperature Range

Storage Temp Range:	-40°C To +80°C
Operating Temp Range:	-40°C To +80°C

Mechanical Characteristics

Oil Resistance:	IEC 60811-404
Min Bend Radius During Installation:	90 mm
Min Bend Radius During Operation:	45 mm

Standards

ISO/IEC Compliance:	ISO/IEC 11801 Ed. 2.2:2002/A2:2010/C1:2011 and ISO/IEC 24702
CPR Euroclass:	Eca
CENELEC Compliance:	EN 50173-1 Ed. 3:2011
Data Category:	Category 6A

Applicable Environmental and Other Programs

EU RoHS Compliance Date (yyyy-mm-dd):	2017-04-11
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Flammability, LSOH, Toxicity Testing

ISO/IEC Flammability:	IEC 60332-1-2
Other Flammability:	UL Cable flame

Part Number

Variants

Item #	Color	Length
74010E.00500	Green	500 m
74010E.00100	Green	100 m

Patent:	https://www.belden.com/resources/patents
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History

Update and Revision:	Revision Number: 0.56 Revision Date: 08-22-2019
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