

Part Number: 1685ENH

Cat 6A Cable, F/FTP, LSZH, 4 Pair, AWG 23, Indoor CPR Dca

Product Description

Cat. 6A (500MHz), 4-Pair, F/FTP shielded, Premise Horizontal Cable, 23 AWG Solid Bare Copper conductors, Foam Polyolefin insulation, each pair with Beldfoil® shield, AWG 26 solid tinned copper drainwire, overall Beldfoil® shield, LSZH jacket

Technical Specifications

Product Overview

Environmental Space:	Indoor - Euroclass Dca
Suitable Applications:	Horizontal and building backbone cable; Support current and future Category 6A and 6 applications, such as: 10GBase-T (10 Gigabit Ethernet), 1000Base-T (Gigabit Ethernet), 100 Base-T, 10 Base-T, FDDI, ATM

Physical Characteristics (Overall)

Conductor

Element	AWG	Stranding	Material	No. of Pairs
Individual pair	23	Solid	BC - Bare Copper	4

Conductor Count:	8
Total Number of Pairs:	4
Conductor Size:	23 AWG

Insulation

Element	Type	Material	Nominal Diameter
Individual pair	Dielectric	Polyethylene	1.32 mm

Bonded-Pair:	No

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 facing outside

Outer Shield Material

Type	Material	Coverage [%]	Drainwire Material	Drainwire AWG	Drainwire Position
Tape	Aluminum/Polyester	100 %	Solid tinned copper	26	Between inner and outer foil

Note:	Aluminum facing inside

Outer Jacket Material

Material	Nominal Diameter	Diameter +/- Tolerance	Ripcord
LSZH / FRNC	7.1 mm	0.3 mm	Yes

Construction and Dimensions

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

Cabling

Description
4 pairs twisted together

Min Elongation at Breakof Jacket:	100 %
Min Tensile Strength of Jacket:	9 MPa

Electrical Characteristics

Conductor DCR

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

Capacitance

Max. Capacitance Unbalance	Max. Mutual Capacitance
1,600 pF/m	56 pF/m

Impedance

Nominal Characteristic Impedance
100 Ohm

Delay

Max. Delay Skew	Nominal Velocity of Propagation (VP) [%]
25 ns/100m	77 %

High Freq

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. PSNEXT [dB]	Min. ACR [dB]	Min. PSACR [dB]	Min. ACRF (ELFEXT) [dB]	Min. PSACRF (PSELFEXT) [dB]	Min. RL (Return Loss) [dB]	Min. PSANEXT	Min. PSAACRF	Min. TCL [dB]	Min. ELTCTL [dB]
1 MHz	2.1 dB/100m	75.3 dB	72.3 dB	73.2 dB	70.2 dB	68 dB	65 dB	20 dB	67 dB	67 dB	40 dB	35 dB
4 MHz	3.8 dB/100m	66.3 dB	63.3 dB	62.5 dB	59.5 dB	56 dB	53 dB	23 dB	67 dB	66.2 dB	34 dB	23 dB
10 MHz	5.9 dB/100m	60.3 dB	57.3 dB	54.4 dB	51.4 dB	48 dB	45 dB	25 dB	67 dB	58.2 dB	30 dB	15 dB
16 MHz	7.5 dB/100m	57.2 dB	54.2 dB	49.8 dB	46.8 dB	43.9 dB	40.9 dB	25 dB	67 dB	54.1 dB	28 dB	10.9 dB
31.2 MHz	10.5 dB/100m	52.9 dB	49.9 dB	42.4 dB	39.4 dB	38.1 dB	35.1 dB	23.6 dB	67 dB	48.3 dB	25.1 dB	5.1 dB
62.5 MHz	15 dB/100m	48.4 dB	45.4 dB	33.4 dB	30.4 dB	32.1 dB	29.1 dB	21.5 dB	65.6 dB	42.3 dB	22 dB	
100 MHz	19.1 dB/100m	45.3 dB	42.3 dB	26.2 dB	23.2 dB	28 dB	25 dB	20.1 dB	62.5 dB	38.2 dB	20 dB	
125 MHz	21.5 dB/100m	43.8 dB	40.8 dB	22.3 dB	19.3 dB	26.1 dB	23.1 dB	19.4 dB	61 dB	36.3 dB	19 dB	
200 MHz	27.6 dB/100m	40.8 dB	37.8 dB	13.2 dB	10.2 dB	22 dB	19 dB	18 dB	58 dB	32.2 dB	17 dB	
250 MHz	31.1 dB/100m	39.3 dB	36.3 dB	8.3 dB	5.3 dB	20 dB	17 dB	17.3 dB	56.5 dB	30.2 dB	16 dB	
300 MHz	34.3 dB/100m	38.1 dB	35.1 dB	3.9 dB	0.9 dB	18.5 dB	15.5 dB	17.3 dB	55.3 dB	28.7 dB		
500 MHz	45.3 dB/100m	34.8 dB	31.8 dB	-10.4 dB	-13.4 dB	14 dB	11 dB	17.3 dB	52 dB	24.2 dB		
625 MHz	51.2 dB/100m	33.4 dB	30.4 dB	-17.8 dB	-20.8 dB	12.1 dB	9.1 dB	17.3 dB	50.6 dB	22.3 dB		

High Freq Table Note:	Limits below 4MHz and at 625MHz are for information only.
Coupling Attenuation Class:	Type Ib
Segregation class according EN50174-2:	c

Transfer Impedance

Frequency [MHz]	Description	Transfer Impedance
1 Mhz	Grade 2	Max. 50 mOhm/m
10 Mhz		Max. 100 mOhm/m
30 Mhz		Max. 200 mOhm/m
100 Mhz		Max. 1000 mOhm/m

Current

Max. Recommended Current [A]
1.5 A

Voltage

Voltage Rating [V]
72 V

Temperature Range

Installation Temp Range:	0°C To +50°C
Operating Temp Range:	-30°C To +60°C

Mechanical Characteristics

Bulk Cable Weight:	48 kg/km
Max Recommended Pulling Tension:	79 N
Min Bend Radius During Installation:	57 mm
Min Bend Radius During Operation:	29 mm

Standards

ISO/IEC Compliance:	ISO/IEC 11801 Ed. 2.2:2002/A2:2010/C1:2011
CPR Euroclass:	Dca-s2,d1,a1
CENELEC Compliance:	EN 50173-1 Ed. 3:2011
Data Category:	Category 6A
ANSI Compliance:	ANSI/TIA/EIA 568-C.2 (2009)

Applicable Environmental and Other Programs

EU RoHS Compliance Date (yyyy-mm-dd):	2013-07-26

Flammability, LS0H, Toxicity Testing

ISO/IEC Flammability:	IEC 60332-1
Burning Load:	515 kJ/m
Amount of Halogen acc. to IEC 60754-1 & EN50267-1:	Zero

Part Number

Variants

Item #	Color
1685ENH.001000	Gray
1685ENH.00500	Gray
1685ENH.00600	Gray
1685ENH.031000	Purple
1685ENH.03500	Purple

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

History

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