BELDEN

Product: 2177A

5 Serial Digital Coax, RG7, 16 AWG BC, Shielded, CMR

Product Description

Low Loss Serial Digital Coax, 5 Coax, RG-7 Type 16 AWG solid bare copper conductor, gas-injected foamed high-density polyethylene insulation, Duofoil® + tinned copper braid shield (95% coverage) plus Beldfoil® with shorting fold, PVC jacket.

Technical Specifications

Product Overview

Suitable Applications:	SMPTE 2081-1 6 Gb/s UHDTV, SMPTE 424M 3 Gb/s HD-SDI 1080p, SDI/HDTV Digital Video, High Definition (HD), Standard Definition (SDI)

Physical Characteristics (Overall)

Conductor

AWG	Stranding	Material	Nominal Diameter	No. of Coax
16	Solid	BC - Bare Copper	0.051 in	5

Conductor Count:	1

Insulation

Material	Nominal Diameter
PE - Polyethylene (Foam)	0.225 in

Table Notes:	Gas Injected

Color Chart

Color
Green
Brown
Red
Orange
Yellow

Inner Shield

Type	Layer	Material	Material Trade Name	Coverage [%]
Tape	1	Tri-Laminate (Alum+Poly+Alum)	Duofoil®	100%
Braid	2	Tinned Copper (TC)		95%
Tape	3	Bi-Laminate (Alum+Poly)	Beldfoil®	100%

Inner Jacket

Material	Nominal Diameter
PVC - Polyvinyl Chloride	0.32 in

Outer Jacket

Material	Nominal Diameter
PVC - Polyvinyl Chloride	0.968 in

Electrical Characteristics

Conductor DCR

Nominal Conductor DCR	Nominal Conductor DCR Conductor Resistance	Nominal Outer Shield DCR	Outer Conductor DCR

4 Ohm/1000ft	4 Ohm/1000ft	1.9 Ohm/1000ft	1.9 Ohm/1000ft

Capacitance

Nom. Capacitance Conductor to Shield
16.1 pF/ft

Inductance

Nominal Inductance
0.091 µH/ft

Impedance

Nominal Characteristic Impedance
75 Ohm

Return Loss (RL)

Frequency [MHz]	Minimum Return (RL)
5-1600 MHz	23 dB
1600-4500 MHz	21 dB
4500-6000 MHz	15 dB

High Frequency (Nominal/Typical)

Frequency [MHz]	Nom. Insertion Loss
1 MHz	0.17 dB/100ft
3.58 MHz	0.3 dB/100ft
5 MHz	0.35 dB/100ft
6 MHz	0.38 dB/100ft
7 MHz	0.4 dB/100ft
10 MHz	0.48 dB/100ft
12 MHz	0.52 dB/100ft
25 MHz	0.74 dB/100ft
55 MHz	1.08 dB/100ft
67.5 MHz	1.2 dB/100ft
71.5 MHz	1.24 dB/100ft
88.5 MHz	1.37 dB/100ft
100 MHz	1.46 dB/100ft
135 MHz	1.7 dB/100ft
143 MHz	1.75 dB/100ft
180 MHz	1.97 dB/100ft
270 MHz	2.43 dB/100ft
360 MHz	2.83 dB/100ft
540 MHz	3.5 dB/100ft
720 MHz	4.09 dB/100ft
750 MHz	4.18 dB/100ft
1000 MHz	4.89 dB/100ft
1500 MHz	6.1 dB/100ft
2000 MHz	7.2 dB/100ft
2250 MHz	7.69 dB/100ft
3000 MHz	9.08 dB/100ft
4500 MHz	11.53 dB/100ft
6000 MHz	13.77 dB/100ft

Delay

Nominal Delay	Nominal Velocity of Propagation (VP) [%]
1.21 ns/ft	84%

High Frequency

Frequency [MHz]
1 MHz
3.58 MHz
5 MHz
6 MHz
7 MHz
10 MHz

12 MHz
25 MHz
55 MHz
67.5 MHz
71.5 MHz
88.5 MHz
100 MHz
135 MHz
143 MHz
180 MHz
270 MHz
360 MHz
540 MHz
720 MHz
750 MHz
1000 MHz
1500 MHz
2000 MHz
2250 MHz

Voltage

UL Voltage Rating
300 V RMS

Temperature Range

Operating Temperature Range:	-20°C To +60°C

Mechanical Characteristics

Bulk Cable Weight:	372 lbs/1000ft
Max. Pull Tension:	555 lbs
Min. Bend Radius/Minor Axis:	9.75 in

Standards

NEC/(UL) Compliance:	CMR
CEC/C(UL) Compliance:	CMG
Series Type:	7

Applicable Environmental and Other Programs

Environmental Space:	Indoor/Outdoor
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2003/11/EC (BFR):	Yes
EU Directive 2011/65/EU (RoHS 2):	Yes
EU Directive 2012/19/EU (WEEE):	Yes
EU Directive 2015/863/EU (RoHS 2 amendment):	Yes
EU Directive Compliance:	Yes
EU CE Mark:	Yes
MII Order #39 (China RoHS):	Yes

Suitability

Suitability - Burial:	No
Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes - Black only

Flammability, LS0H, Toxicity Testing

UL Flammability:	UL1666 Vertical Shaft
CSA Flammability:	FT4
UL voltage rating:	300 V RMS

Plenum/Non-Plenum

Plenum (Y/N):	No

Related Part Numbers

Variants

Item #	Color	Put-Up Type	Length
2177A B59N1000	Black, Matte	Reel w/Small Barrel	1,000 ft

Product Notes

Notes:	Print legend includes sequential footage marks.

History

Update and Revision:	Revision Number: 0.252 Revision Date: 11-09-2022