Detailed Specifications & Technical Data



9L28020 Flat - Gray Ribbon 9L280XX Series









Description:

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Belden[^]s .050" pitch gray ribbon cable was designed for general purpose electronic interconnect applications. The cable provides reliable mass-termination to standard IDC connectors.

Physical Characteristics (Overall)	
Conductor	
AWG: # Conductors AWG Stranding Conductor Material	
20 28 7x36 TC - Tinned Copper	
Conductor Spacing Center to Center:	.050 +/002
Conductor Spacing Outside Center to Outside Center:	.95 +/008
Insulation Insulation Material:	
Insulation MaterialWall Thickness (in.)PVC - Polyvinyl Chloride.010	
Insulation Resistance:	>10, 000 Megaohms
Outer Shield Outer Shield Material:	
Outer Shield Material Unshielded	
Overall Cabling	
Overall Nominal Thickness:	.035 +/003
Overall Nominal Width:	1.00 +/008
Mechanical Characteristics (Overall)	
Operating Temperature Range:	-40°C To +105°C
Applicable Specifications and Agency Con	npliance (Overall)
Applicable Standards & Environmental Progra	ms
UL AWM Style:	2651
UL Rating:	105°C, 300 V RMS, VW-1
CSA Specification:	AWM I A 105°C 300 V FT1
CSA Rating:	105°C, 300 V RMS, FT1
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2005
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

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9L28020 Flat - Gray Ribbon 9L280XX Series

UL Plane Test: VW-1 CSA Flame Test: FT1 enum/Non-Plenum Plenum (YN): No rface Printing (Overall) surface Printing: BELDEN-T 28 AWG CSA AWM I A 105°C 300 V FT1 LL7874 (UL LOGO) AWM STYLE 2651 VW-1 E12683 surface Printing: BELDEN-T 28 AWG CSA AWM I A 105°C 300 V FT1 LL7874 (UL LOGO) AWM STYLE 2651 VW-1 E12683 sectrical Characteristics (Overall) m. faacteristic Impedance: Description Inductance (MHT) 055/100 150 050/100 100 01 MH+r (0S0) 18 01 MH+r (0S0) 19 02 MH+r (0S0) 19 03 MH 14 04 MH 10 04 MH 10 05 MH 10 05 MH 10 05 MH 10 05 MH				9L28020 Flat - Gray Ribbon 9L2802
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om. Inductance: Description Inductance (µH/ft) @ 1 MHz (GSG) 20 Om. Capacitance Conductor to Conductor: Description Capacitance (pF/ft) @ 1 MHz (GSG) 18 @ 1 MHz (GSG) 15 ominal Delocity of Propagation: Description VP (%) ominal Delay: Delay (ns/ft) 1.40 MS/FT. (GSG) Om. Attenuation: PER (MHz) Attenuation (dB/100 ft) 10 2.8 20 4.8 30 6.5 40 8.3 50 9.8 60 12 70 13 80 14 90 15.8 100 17 12 13 80 14 90 15.8 100 17 12 15.8 100 17 12 15.8 13 15.8 100 17	(GS)	150		
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100 17 ax. Operating Voltage - UL: Voltage		14		
ax. Operating Voltage - UL: Voltage	90	15.8		
Voltage	100	17		
Voltage	ax, Operat	ting Voltage - UL:		
	Voltage			
		aandustar @ 20°C		
Max. Recommended Current: Current 1 Amp per conductor @ 20°C	1 Amp per	conductor @ 20°C		

ENGLISH MEASUREMENT VERSION



9L28020 Flat - Gray Ribbon 9L280XX Series

Dielectric Withstand Voltage:

2, 000 V RMS

Typical	Unbalanced	Crosstalk:

Description	Pulse Rise Time (NS) (MHz)	Near End % (MHz)	Far End % (MHz)
10 ft. sample length	3	4.8	7
10 ft. sample length	5	3.5	4.7
10 ft. sample length	7	3	3

Notes (Overall)

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Notes: GSG=Ground-Signal-Ground Mode

Polarity Identification (Overall)

Polarity Identification:

RED POLARITY STRIPE ON #1 CONDUCTOR

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9L28020 008H100	100 FT	2.300 LB	GRAY		20 #28 STR PVC RIBBON

Gray Ribbon 9L280XX Series

.050" Pitch, 28 AWG, PVC

Product Description

Belden's (9L280XX Series) .050" pitch extruded gray ribbon cable was designed for general purpose electronic interconnect applications. The cable provides reliable mass-termination to standard .100" contact IDC connectors, flexibility, consistent electricals and breakouts can be made easily with the tear feature design. The cable is constructed of stranded 28 AWG (7x36) tinned copper conductors. Insulation material consists of Gray PVC, with a Red polarity stripe for proper circuit alignment. Various conductor counts are standard; other sizes are available upon request. The cable is UL approved and CSA certified, and passes the VW-1 Vertical Wire Flame Test.

Color Code: Gray with Red polarity stripe (standard).

Application: Internal interconnection or internal wiring of electronic equipment.

Physical Specifications

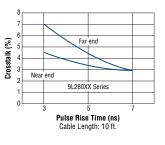
Conductor	28 AWG (7x36) Tinned Copper
Insulation	.010" Nom. Wall Gray PVC
Pitch	.050" ± .002"
Temperature Rating	-40 to +105°C
Flammability Rating	UL: VW-1; CSA: FT1
UL Approval	File #E12683, Style 2651
CSA Approval	File #LL7874, CSA AWM I A 105°C 300V FT1
Packaging	H100, H300, R300

Electrical Specifications

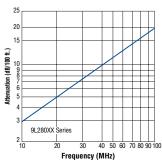
Voltage Rating	300V RMS
Current Rating	1A
Conductor Resistance	68.2Ω/1000 ft.
Insulation Resistance	>1 x 10¹⁰Ω • 10 ft. (3m)
Impedance*	105 Ω
Capacitance* (@ 1 MHz)	15 pF/ft. (49 pF/m)
Inductance* (@ 1 MHz)	.20 μH/ft. (.66 μH/m)
Propagation Delay*	1.40 ns/ft. (4.6 ns/m)

*Test Configuration: G-S-G (ground-signal-ground).

Unbalanced Crosstalk*



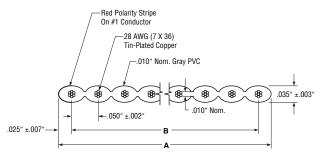
Attenuation*



Part No.	No.	Dimensions				
Standard	of	Widt	h "A"	Span "B"		
[UL & CSA]	Cond.	Inch	mm	Inch	mm	
9L28009	9	.45 ±.008	11.43 ±.20	.40 ±.008	10.16 ±.20	
9L28010	10	.50 ±.008	12.70 ±.20	.45 ±.008	11.43 ±.20	
9L28014†	14	.70 ±.008	17.78 ±.20	.65 ±.008	16.51 ±.20	
9L28015**	15	.75 ±.008	19.05 ±.20	.70 ±.008	17.78 ±.20	
9L28016	16	.80 ±.008	20.32 ±.20	.75 ±.008	19.05 ±.20	
9L28020	20	1.00 ±.008	25.40 ±.20	.95 ±.008	24.13 ±.20	
9L28024†	24	1.20 ±.008	30.48 ±.20	1.15 ±.008	29.21 ±.20	
9L28025	25	1.25 ±.008	31.75 ±.20	1.20 ±.008	30.48 ±.20	
9L28026	26	1.30 ±.008	33.02 ±.20	1.25 ±.008	31.75 ±.20	
9L28034	34	1.70 ±.008	43.18 ±.20	1.65 ±.008	41.91 ±.20	
9L28036**	36	1.80 ±.012	45.72 ±.30	1.75 ±.012	44.45 ±.30	
9L28037**	37	1.85 ±.012	46.99 ±.30	1.80 ±.012	45.72 ±.30	
9L28040	40	2.00 ±.012	50.80 ±.30	1.95 ±.012	49.53 ±.30	
9L28050	50	2.50 ±.012	63.50 ±.30	2.45 ±0.12	62.23 ±.30	
9L28060	60	3.00 ±.012	76.20 ±.30	2.95 ±.012	74.93 ±.30	
9L28064	64	3.20 ±.012	81.28 ±.30	3.15 ±.012	80.01 ±.30	

[†]Not available in R300 packaging.

Dimensions



7.5

