## **Detailed Specifications & Technical Data**



#### ENGLISH MEASUREMENT VERSION

## 9L28310 Flat - Shielded Jacketed 9L283XX Series

For more Information please call

1-800-Belden1



#### **General Description:**

The shielded jacketed 9L283XX series provides shielding from external electrical interference and allows for greater flexibility, ease of termination, while providing exterior protection from the environment.

Physical Characteristics (Overall)	
Conductor AWG:	
# Conductors AWG Stranding Conductor Material	
10 28 7x36 TC - Tinned Copper	
Total Number of Conductors:	10
Conductor Spacing Center to Center:	.050 +/002
Conductor Spacing Outside Center to Outside Center:	.45 +/008
Insulation	
Insulation Material:	
Insulation Material         Wall Thickness (in.)           PVC - Polyvinyl Chloride         .010	
rvc - rolyvinyi chionde	
Insulation Resistance:	>10, 000 Megaohms
Outer Shield Outer Shield Material:	
Outer Shield Trade Name Type Outer Shield Material	Coverage (%)
Beldfoil® Tape Aluminum Foil-Polyester Tape (F	
Outer Shield Drain Wire AWG:	
AWG Stranding Drain Wire Conductor Material	
2-28 7x36 TC - Tinned Copper	
Outer Jacket	
Outer Jacket Material:	
Outer Jacket Material Nom. Wall Thickness (in.)	
PVC - Polyvinyl Chloride .038	
Overall Cable	
Overall Nominal Thickness:	.115 +/015
Overall Nominal Width:	.570 +/035
Mechanical Characteristics (Overall)	
Operating Temperature Range:	-20°C To +105°C
Bulk Cable Weight:	47 lbs/1000 ft.
Applicable Specifications and Agency Compliance (	Overall)
Applicable Standards & Environmental Programs	
UL Rating:	UL AWM Style 2651, 20081
CSA Specification:	AWM II A 105°C 300 V
CSA Rating:	105°C, 300 V RMS, FT1
EU Directive 2011/65/EU (ROHS II):	Yes
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):	10/01/2005
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes

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CA Prop 65 (CJ for Wire &	Cable):		Yes		
MII Order #39 (China RoH	S):		Yes		
lame Test					
UL Flame Test:			VW-1		
CSA Flame Test:			FT1		
lenum/Non-Plenum					
Plenum (Y/N):			No		
urface Printing (Overal	II)				
Surface Printing:			BELDEN-T 28 AWG CSA A E12683	WM II A 105°C 300	V FT-1 LL7874 (UL LOGO) AWM STYLE 20081 V
ectrical Characteristic	s (Overall)				
om. Characteristic Impedance					
Description	Impedance (Ohm	ו)			
(GSG) with shield grounded	45				
om. Inductance:					
Description		ance (µH/ft)			
@ 1 MHz (GSG) with shield g					
om. Capacitance Conductor t					
Description		tance (pF/ft)			
<ul> <li>@ 1 kHz (GSG) with shield gr</li> <li>@ 1 MHz (GSG) with shield gr</li> </ul>					
Iominal Velocity of Propagatio	on:				
Description VP (%)					
lominal Delay:					
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield lom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft)	·				
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. tom. Attenuation:	:e:				
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. tom. Attenuation: Description	Freq. (MHz) Atte	nuation (dB/100 ft.)			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded	Freq. (MHz) Atte	nuation (dB/100 ft.)			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded (GSG) with shield grounded	Freq. (MHz) Atte 10 6 20 9.5				
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded (GSG) with shield grounded (GSG) with shield grounded	Freq. (MHz)         Atternation           10         6           20         9.5           30         12.5				
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield low. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. low. Attenuation: Description (GSG) with shield grounded (GSG) with shield grounded (GSG) with shield grounded (GSG) with shield grounded	Freq. (MHz)         Attention           10         6           20         9.5           30         12.5           40         14.9	5 5			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded (GSG) with shield grounded	Freq. (MHz)         Attention           10         6           20         9.5           30         12.5           40         14.9           50         17.2	5 5			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield iom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded	Freq. (MHz)         Attention           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19	5 5 7			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield iom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded	Freq. (MHz)         Attention           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5	5 5 7			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield iom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded	Freq. (MHz)         Atternal           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23	5 5 2 5			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield iom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Iom. Attenuation: Description (GSG) with shield grounded	Freq. (MHz)         Atternal           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5	5 5 2 5			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. om. Attenuation: Description (GSG) with shield grounded (GSG) w	Freq. (MHz)         Atternal           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5	5 5 2 5			
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Iom. Attenuation:         Description         (GSG) with shield grounded	Freq. (MHz)         Atternal           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5	5 5 2 5			
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Iom. Attenuation:         Description         (GSG) with shield grounded         (GSG) with shield grounded <td>Freq. (MHz)         Attention           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5</td> <td>5 5 2 5</td> <td></td> <td></td> <td></td>	Freq. (MHz)         Attention           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5	5 5 2 5			
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Iom. Attenuation:         Description         (GSG) with shield grounded	Freq. (MHz)         Atternal           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26	5 5 2 5			
Delay (ns/ft) 1.7 NS/FT. (GSG) with shield tom. Conductor DC Resistanc DCR @ 20°C (Ohm/1000 ft) 68.2 OHMS/1000 FT. MAX. Tom. Attenuation: Description (GSG) with shield grounded (GSG)	Freq. (MHz)         Atte           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26	5 5 2 5			
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Nom. Attenuation:         Description         (GSG) with shield grounded         (SSG) with shield grounded         (SSG) with shield grounded         Max. Operating Voltage - UL:         Voltage         300 V RMS         Iax. Recommended Current:         Current         1 Amp per conductor @ 20°C	Freq. (MHz)         Atte           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26	5 5 7 7 7 7 7 7 7 7 7 7 7 7 7	(NS) (MHz) Near End % (MH	2) Far End % (MHz)	
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Iom. Attenuation:         Description         (GSG) with shield grounded         (GSG) with shield grounded <td>Freq. (MHz)       Atte         10       6         20       9.5         30       12.5         40       14.9         50       17.2         60       19         70       21.5         80       23         90       24.5         100       26</td> <td>Pulse Rise Time</td> <td>(NS) (MHz) Near End % (MH</td> <td>2) Far End % (MHz)</td> <td></td>	Freq. (MHz)       Atte         10       6         20       9.5         30       12.5         40       14.9         50       17.2         60       19         70       21.5         80       23         90       24.5         100       26	Pulse Rise Time	(NS) (MHz) Near End % (MH	2) Far End % (MHz)	
Delay (ns/ft)           1.7 NS/FT. (GSG) with shield           10m. Conductor DC Resistance           DCR @ 20°C (Ohm/1000 ft)           68.2 OHMS/1000 FT. MAX.           Itom. Attenuation:           Description           (GSG) with shield grounded	Freq. (MHz)         Attending           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26	Pulse Rise Time			
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Idm. Attenuation:         Description         (GSG) with shield grounded         (GSG) with shield grounded <td>Freq. (MHz)         Attending           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26</td> <td>Pulse Rise Time</td> <td>1.5</td> <td>2</td> <td></td>	Freq. (MHz)         Attending           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26	Pulse Rise Time	1.5	2	
Delay (ns/ft)         1.7 NS/FT. (GSG) with shield         10m. Conductor DC Resistance         DCR @ 20°C (Ohm/1000 ft)         68.2 OHMS/1000 FT. MAX.         Iom. Attenuation:         Description         (GSG) with shield grounded         (GSG) with shield grounded <td>Freq. (MHz)         Attending           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26</td> <td>Pulse Rise Time</td> <td>1.5 .9</td> <td>2 1.5</td> <td></td>	Freq. (MHz)         Attending           10         6           20         9.5           30         12.5           40         14.9           50         17.2           60         19           70         21.5           80         23           90         24.5           100         26	Pulse Rise Time	1.5 .9	2 1.5	
Delay (ns/ft)           1.7 NS/FT. (GSG) with shield           10m. Conductor DC Resistance           DCR @ 20°C (Ohm/1000 ft)           68.2 OHMS/1000 FT. MAX.           Itom. Attenuation:           Description           (GSG) with shield grounded	Freq. (MHz)       Atte         10       6         20       9.5         30       12.5         40       14.9         50       17.2         60       19         70       21.5         80       23         90       24.5         100       26	Pulse Rise Time	1.5 .9	2 1.5	

Polarity Identification:

RED POLARITY STRIPE ON #1 CONDUCTOR

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#### 9L28310 Flat - Shielded Jacketed 9L283XX Series

#### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9L28310 010100	100 FT	5.200 LB	BLACK	E	10 #28 PVC FS PVC RIBBON

Notes:

E = MAY CONTAIN MORE THAN 1 PIECE. MINIMUM LENGTH OF ANY ONE PIECE IS 25'

Revision Number: 3 Revision Date: 11-08-2012

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product. Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 2014/35/EU).