



Product: [9V28050](#)

Flat Vari-Twist Cable 9V280 Series, #28-50c, .050" Pitch

Product Description

Belden PVC Vari-Twist series was designed to reduce crosstalk in the balanced mode by twisting the pairs, but can be mass-terminated in the flat sections with standard IDC connectors.

Technical Specifications

Physical Characteristics (Overall)

Conductor

AWG	Material	Construction n x D	No. of Pairs
28	TC - Tinned Copper	Stranded	25

Total Number of Pairs:	25
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Insulation

Material	Nominal Wall Thickness
PVC - Polyvinyl Chloride	0.018 in

Color Chart

Number	Color
1	Brown/Tan
2	Red/Tan
3	Orange/Tan
4	Yellow/Tan
5	Green/Tan
6	Blue/Tan
7	Purple/Tan
8	Gray/Tan
9	White/Tan
10	Black/Tan
Over 10 pair	Repeat as required

Outer Shield Material

Material
No Shield

Outer Jacket Material

Nominal Wall Thickness
0.08 in

Construction and Dimensions

Cond Spacing Center-Center Flat Section:	.050 in
Cond Spacing Center-Center Outside:	2.45 in
Substrate Thickness and Material:	.010 Clear PVC in
Twisted Pair Spacing Center-Center:	0.1 in

Cabling

Twists	
24 twist/ft	
Flat Section Center to Center Spacing:	20 +/- .50 in
Overall Flat Section Length:	2 +.5/- 0 in
Overall Twisted Length:	18 in
OuterJacket1, Nominal Width:	2.526 in
OuterJacket1, Nom Thick Flat Section:	.042 +/- .003 mm
OuterJacket1, Nom Thick Twisted Section:	0.08 mm

Electrical Characteristics

Conductor DCR

Nominal Conductor DCR
68.2 Ohm/1000ft

Capacitance

Element	Nom. Capacitance Conductor to Conductor
@ 1 kHz	20 pF/ft
@ 1 MHz	16 pF/ft

Inductance

Element	Nominal Inductance
@ 1 MHz	0.24 µH/ft

Impedance

Nominal Balanced Characteristic Impedance []	Nominal Unbalanced Characteristic Impedance
115 Ohm	100 Ohm

High Frequency (Nominal/Typical)

Frequency [MHz]	Nom. Insertion Loss
10 MHz	3.5 dB/100ft
20 MHz	5.5 dB/100ft
30 MHz	7.2 dB/100ft
40 MHz	8.8 dB/100ft
50 MHz	10.2 dB/100ft
60 MHz	12 dB/100ft
70 MHz	13 dB/100ft
80 MHz	14.2 dB/100ft
90 MHz	15 dB/100ft
100 MHz	16 dB/100ft

Delay

Nominal Delay	Nominal Velocity of Propagation (VP) [%]
1.6 ns/ft	64 %

Balanced Crosstalk

Description	Start Frequency [MHz]	Stop Frequency [MHz]	dB Suppression
10 ft. sample length	10 MHz	100 MHz	35 dB

Unbalanced Crosstalk

Element	Typical Unbalanced NEXT %	Typical Unbalanced FEXT %	Typical Cross Talk Pulse Rise Time (ns)
10 ft. sample length all grounds connected together.	5.8 MHz	5.2 MHz	3 ns
10 ft. sample length all grounds connected together.	4 MHz	3.2 MHz	5 ns
10 ft. sample length all grounds connected together.	2.5 MHz	2.8 MHz	7 ns

High Freq

Frequency [MHz]
10 MHz
20 MHz
30 MHz
40 MHz

50 MHz
60 MHz
70 MHz
80 MHz
90 MHz
100 MHz

Current

Max. Recommended Current [A]
per conductor @ 20°C: 1 A

Voltage

Dielectric Withstand Voltage	UL Voltage Rating
2,000 V RMS	300 V RMS

Temperature Range

Operating Temp Range:	-20°C To +105°C
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Mechanical Characteristics

Bulk Cable Weight:	71 lbs/1000ft
Min Bend Radius/Minor Axis:	1.25 in

Standards

UL Rating:	UL AWM Styles 1731, 2693, & 2697
UL AWM Style:	1731, 2693, 2697

Applicable Environmental and Other Programs

EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2003/96/EC (BFR):	Yes
EU Directive 2011/65/EU (ROHS II):	Yes
EU Directive 2012/19/EU (WEEE):	Yes
EU Directive 2015/863/EU:	Yes
EU Directive Compliance:	EU Directive 2003/11/EC (BFR)
EU CE Mark:	Yes
EU RoHS Compliance Date (yyyy-mm-dd):	2005-10-01
MII Order #39 (China RoHS):	Yes

Suitability

Suitability - Indoor:	Yes
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Flammability, LS0H, Toxicity Testing

UL Flammability:	VW-1
UL voltage rating:	300 V RMS

Plenum/Non-Plenum

Plenum (Y/N):	No
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Part Number

Variants

Item #	Color	Length	UPC
9V28050 000H100	None	100 ft	612825222163

Footnote:	E - MAY CONTAIN MORE THAN 1 PIECE. MINIMUM LENGTH OF ANY ONE PIECE IS 25'.
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Product Notes

Notes:	The transition area is included in the twisted length to assure a full 2 inches of flat termination area.
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History

Update and Revision:	Revision Number: 0.294 Revision Date: 04-28-2020
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