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1-800-Belden1



## General Description:

Belden's 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.

## Physical Characteristics (Overall)

### Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
7	28	7x36	TC - Tinned Copper

Total Number of Conductors: 14

Conductor Spacing Center to Center Flat Section: .050 +/- .005

Conductor Spacing Outside Center to Outside Center: .65 +/- .012

### Insulation

Insulation Material:

Insulation Material	Wall Thickness (in.)
PVC - Polyvinyl Chloride	0.018

Substrate Thickness and Material: .010

Insulation Resistance: >10,000 Mega Ohms

### Outer Shield

Outer Shield Material:

Outer Shield Material
Unshielded

### Overall Cable

Overall Nominal Thickness Flat Section: .042 +/- .003

Overall Nominal Thickness Twisted Section: .080

Overall Nominal Width: .726

Overall Flat Section Length: 2 +.5/-0

Overall Twisted Length: 18 in.

Flat Section Center to Center Spacing: 20 +/- .50

### Pair

Pair Color Code Chart:

Number	Color
1	Brown/Tan
2	Red/Tan
3	Orange/Tan
4	Yellow/Tan
5	Green/Tan
6	Blue/Tan
7	Purple/Tan

## Spacing

Twisted Pair Spacing Center to Center: .100

## Mechanical Characteristics (Overall)

Operating Temperature Range: -20°C To +105°C

Bulk Cable Weight: 29 lbs/1000 ft.

Min. Bend Radius/Minor Axis: 1.250 in.

## Applicable Specifications and Agency Compliance (Overall)

### Applicable Standards & Environmental Programs

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

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

CA Prop 65 (CJ for Wire & Cable): Yes

MII Order #39 (China RoHS): Yes

### Flame Test

UL Flame Test: VW-1

### Plenum/Non-Plenum

Plenum (Y/N): No

## Electrical Characteristics (Overall)

### Nom. Inductance:

Description	Inductance (µH/ft)
@ 1 MHz	.24

### Nom. Capacitance Conductor to Conductor:

Description	Capacitance (pF/ft)
@ 1 kHz	20
@ 1 MHz	16

### Nominal Velocity of Propagation:

Description	VP (%)
	64

### Nominal Delay:

Delay (ns/ft)
1.6 NS/FT.

### Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)
68.2 OHMS/1000 FT. MAX.

### Nom. Attenuation:

Freq. (MHz)	Attenuation (dB/100 ft.)
10	3.5
20	5.5
30	7.2
40	8.8
50	10.2
60	12
70	13

80	14.2
90	15
100	16

**Max. Operating Voltage - UL:**

Voltage
300 V RMS

**Max. Recommended Current:**

Current
1 Amp per conductor @ 20°C

**Nominal Balanced Characteristic Impedance:**

Description	Impedance (Ohm)
	115

**Nominal Unbalanced Characteristic Impedance:**

Description	Impedance (Ohm)
	100

**Dielectric Withstand Voltage:** 2,000 V RMS

**Typical Balanced Crosstalk - dB Suppression:**

Description	Freq. (MHz)	Start Freq. (MHz)	Stop Freq. (MHz)	Crosstalk (dB)
10 ft. sample length		10	100	35

**Typical Unbalanced Crosstalk:**

Description	Pulse Rise Time (NS) (MHz)	Near End % (MHz)	Far End % (MHz)
10 ft. sample length all grounds connected together.	3	5.8	5.2
10 ft. sample length all grounds connected together.	5	4	3.2
10 ft. sample length all grounds connected together.	7	2.5	2.8

## Notes (Overall)

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

## Kennedy Information (Overall)

**Construction:** 18" of Twisted Pairs, 2" of Flat Section

## Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9V28014 000H100	100 FT	3.200 LB	NONE	E	7 PR #28 PVC VARI-TWIST

**Notes:**

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

## Test Reports

**a) UL**

- i) UL Test Reports are available on-line through the UL Client Document Access web portal.
- ii) UL Inspection Reports are also available through the UL Client Document Access web portal.

**b) CSA**

- i) CSA "Descriptive Report and Test Results" documents are available on the CSA Gateway Portal.
- ii) CSA Inspection Reports are maintained on the CSA issued 'flash drive' at each manufacturing location.

\* other test data may be available if requested at time of order.

Revision Number: 2    Revision Date: 11-08-2012

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## 9V28014 Flat - Vari-Twist® 9V280XX Series

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