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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 |
|---------|-----|-----------|--------------------|
| 32      | 28  | 7x36      | TC - Tinned Copper |

Total Number of Conductors: 64

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

Conductor Spacing Outside Center to Outside Center: 3.15 +/- .020

#### 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: 3.226

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         |
| 8            | Gray/Tan           |
| 9            | White/Tan          |
| 10           | Black/Tan          |
| Over 10 pair | Repeat as required |

#### Spacing

Twisted Pair Spacing Center to Center: .100

### Mechanical Characteristics (Overall)

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

Bulk Cable Weight: 90 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 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                              |
| 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                |
|-----------------|--------|-------------|-------|-------|--------------------------|
| 9V28064 000H100 | 100 FT | 9.300 LB    | NONE  | E     | 32 PR #28 PVC VARI-TWIST |

**Notes:**

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

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