



## Description:

Belden's .050" pitch, color-coded PVC flat cable allows for quick identification and circuit tracing, along with easy breakouts for circuit routing, and is designed for mass-termination with standard IDC connectors.

## Physical Characteristics (Overall)

### Conductor

#### AWG:

# Conductors	AWG	Stranding	Conductor Material
10	28	7x36	TC - Tinned Copper

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

Conductor Spacing Outside Center to Outside Center: .45 +/- .007

### Insulation

#### Insulation Material:

Insulation Material	Wall Thickness (in.)
PVC - Polyvinyl Chloride	.010

Substrate Thickness and Material: .010" Clear PVC

Insulation Resistance: >10,000 Mega Ohms

#### Insulation Color Code Chart:

Number	Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Purple
8	Gray
9	White
10	Black

### Outer Shield

#### Outer Shield Material:

Outer Shield Material
Unshielded

### Overall Cabling

Overall Nominal Thickness: .042 +/- .003

Overall Nominal Width: .50

## Mechanical Characteristics (Overall)

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

## Applicable Specifications and Agency Compliance (Overall)

### Applicable Standards & Environmental Programs

<b>UL AWM Style:</b>	2884
<b>UL Rating:</b>	105°C, 300 V RMS, VW-1
<b>EU CE Mark:</b>	Yes
<b>EU Directive 2000/53/EC (ELV):</b>	Yes
<b>EU Directive 2002/95/EC (RoHS):</b>	Yes
<b>EU RoHS Compliance Date (mm/dd/yyyy):</b>	10/01/2005
<b>EU Directive 2002/96/EC (WEEE):</b>	Yes
<b>EU Directive 2003/11/EC (BFR):</b>	Yes
<b>CA Prop 65 (CJ for Wire &amp; Cable):</b>	Yes
<b>MII Order #39 (China RoHS):</b>	Yes

### Flame Test

<b>UL Flame Test:</b>	VW-1
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### Plenum/Non-Plenum

<b>Plenum (Y/N):</b>	No
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## Electrical Characteristics (Overall)

### Nom. Characteristic Impedance:

Description	Impedance (Ohm)
(GS)	150
(GSG)	105

### Nom. Inductance:

Description	Inductance (µH/ft)
@ 1 MHz (GS)	.29
@ 1 MHz (GSG)	.20

### Nom. Capacitance Conductor to Conductor:

Description	Capacitance (pF/ft)
@ 1 kHz (GSG)	18
@ 1 MHz (GS)	10
@ 1 MHz (GSG)	15

### Nominal Velocity of Propagation:

Description	VP (%)
	72

### Nominal Delay:

Delay (ns/ft)
1.40 NS/FT. (GSG)

### 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	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

### Max. Operating Voltage - UL:

**Voltage**

300 V RMS

**Max. Recommended Current:**

**Current**

1 Amp per conductor @ 20°C

**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)**

**Notes:** GS=Ground-Signal Mode; GSG=Ground-Signal-Ground Mode

**Put Ups and Colors:**

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9R28010 000100	100 FT	6.500 LB	NONE		10 #28 PVC RAINBOW

# Rainbow 9R280XX Series

.050" Pitch, 28 AWG, Color-coded PVC

## Product Description

Belden's .050" pitch, color-coded PVC flat cable allows for quick identification and circuit tracing, along with easy breakouts for circuit routing. Designed for mass-termination with standard IDC connectors, the cable is constructed of stranded 28 AWG (7x36) tinned copper conductors, color-coded PVC pre-insulated singles — laminated to a single clear PVC substrate. Fourteen various conductor counts are standard; other sizes are available upon request. The cable is UL approved (CSA available upon request) and passes the VW-1 Vertical Wire Flame Test.

**Color Code:** Brown, Red, Orange, Yellow, Green, Blue, Purple, Gray, White, Black. Sequence is repeated as necessary.

**Application:** Internal interconnection or internal wiring of electrical equipment.

## Physical Specifications

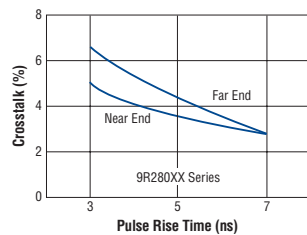
<b>Conductor</b>	28 AWG (7x36) Tinned Copper
<b>Insulation</b>	.010" Nom. Wall Color-coded PVC
<b>Substrate</b>	.010" Nom. Wall Clear PVC
<b>Pitch</b>	.050" ± .005"
<b>Temperature Rating</b>	-20 to +105°C
<b>Flammability Rating</b>	UL: VW-1
<b>UL Approval</b>	File #E12663, Style 2884
<b>CSA Approval</b>	Available upon request
<b>Packaging</b>	100

## Electrical Specifications

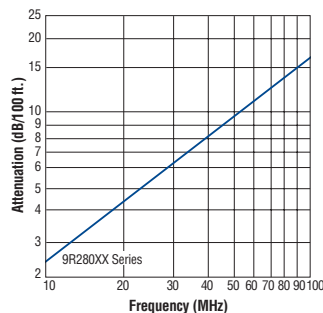
<b>Voltage Rating</b>	300V RMS
<b>Current Rating</b>	1A
<b>Conductor Resistance</b>	68.2Ω/1000 ft.
<b>Insulation Resistance</b>	>1 x 10 <sup>10</sup> Ω • 10 ft. (3m)
<b>Impedance*</b>	105Ω
<b>Capacitance* (@ 1 MHz)</b>	15 pF/ft. (49 pF/m)
<b>Inductance* (@ 1 MHz)</b>	.20 μH/ft. (.66 μH/m)
<b>Propagation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

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

## Unbalanced Crosstalk\*



## Attenuation\*



Part No.	No. of Cond.	Dimensions			
		Width "A"		Span "B"	
		Inch	mm	Inch	mm
9R28010	10	.50	12.70	.45 ±.007	11.43 ±.18
9R28014	14	.70	17.78	.65 ±.007	16.51 ±.18
9R28016	16	.80	20.32	.75 ±.011	19.05 ±.28
9R28020	20	1.00	25.40	.95 ±.011	24.13 ±.28
9R28024	24	1.20	30.48	1.15 ±.011	29.21 ±.28
9R28025	25	1.25	31.75	1.20 ±.011	30.48 ±.28
9R28026	26	1.30	33.02	1.25 ±.011	31.75 ±.28
9R28034	34	1.70	43.18	1.65 ±.011	41.91 ±.28
9R28037	37	1.85	46.99	1.80 ±.015	45.72 ±.38
9R28040	40	2.00	50.80	1.95 ±.015	49.53 ±.38
9R28050	50	2.50	63.50	2.45 ±.015	62.23 ±.38
9R28060	60	3.00	76.20	2.95 ±.015	74.93 ±.38
9R28064	64	3.20	81.28	3.15 ±.020	80.01 ±.51

## Dimensions

